9541

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. .....RA-20-5-75.....

Office No......H-9541.....

LOCALITY

State .....ALASKA.....

General Locality COOK INLET.....

Locality .....TRADING BAY.....

.....

1975

CHIEF OF PARTY
Charles E. Townsend

LIBRARY & ARCHIVES

DATE .....January 27, 1978.....

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

9541

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-9541

HYDROGRAPHIC TITLE SHEET

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.

RA-20-5-75

State Alaska

General locality Cook Inlet

Locality Trading Bay

Scale 1:20,000 Date of survey 11 June - 21 Aug '75

Instructions dated March 20, 1975 Project No. OPR-469-RA-75

Vessel Ship RAINIER and Launches 2123 (RA-3), 2124 (RA-4), 2125 (RA-5) and 2126 (RA-6)

Chief of party CDR C. K. Townsend

Surveyed by LT K.P. Dolan, LTJG A.A. Armstrong, LTJG R.W. Ellis, LTJG C.A. Cavin
LTJG K.A. Andreen, ENS G.B. Stanke, ENS J.Osborne

Soundings taken by echo sounder, ~~[illegible]~~ Ross Fathometer Model 5000

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Positions verified ~~[illegible]~~ by John E. Lotshaw Automated plot by PMC Xynetics Plotter

Soundings
Verification by John E. Lotshaw

Soundings in fathoms and tenths ~~[illegible]~~ at ~~[illegible]~~ MLLW

REMARKS: This survey is complete and adequate to supersede all prior surveys, in the common area.

Miscellaneous data filed with field records.

Applied to stds 7/10/78

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

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

A. Project

This survey was accomplished in accordance with Project Instructions OPR-469-DA,RA-75, dated March 20, 1975.

B. Area Surveyed

This survey covered part of the area known as Trading Bay in Upper Cook Inlet, Alaska from June 11 to August 21, 1975.

The southern limit of the survey was latitude 60°48'00"N. The western limit was the shoreline. The eastern limit was longitude 151°18'20"W. The northern limit of the survey was latitude 60°55' 00"N except that the boat sheet extended to the shoreline north and west of longitude 151°34'48"W. The extension of the sheet into the northwest corner was to provide a good junction with H-9539 (RA-20-3-75). Plotter limitations at Pacific Marine Center precluded extending H-9539 west as far as the shoreline in this area; the boat sheet (H-9539) would have been tpo long for the plotter at Pacific Marine Center.

C. Sounding Vessels

Survey launches used to obtain hydrographic data for this survey were RAINIER launches 2123, 2124, 2125, and 2126. In addition, the RAINIER took bottom samples and TDC's. Launches 2123 and 2124 are Bertram launches; launch 2126 is a Uniflite; and launch 2125 is the new aluminum-hulled launch. Launch 2123 was used to obtain bottom samples only.

D. Sounding Equipment and Corrections to Echo Soundings

Soundings were obtained by Ross Fathometers, model 5000, in conjunction with Ross Digitizers, model 6000, serial numbers:

Launch	Fathometer	Digitizer
2124	1071	1042
2125	1040 (JD 225-226)	1040-3
	1070 (JD 226,227,231,232)	1042
2126	1071 (JD 218-221, 223-227)	1040-3
	1040-6 (JD 198-199, 203-205, 217-218)	1040-3
	1042 (JD 210,212)	1040-3

A copy of fathometer calibration procedures is included as a separate following the text.

Generally, bar checks were taken daily throughout the project on each launch. A daily TRA was computed for each launch from bar checks. (On those days when a launch was unable to get a bar check, the previous day's TRA was used.) All plotted soundings on the smooth and semi-smooth boat sheets include TRA corrections, but not velocity corrections.

At this point a note on processing non-digitized soundings should be included. When scanning for peaks, deeps, and missed depths, the digital and analogue values immediately before and after the missed depth were compared. The value picked off the analogue trace reflected any differences between digital and analogue values on either side of the sounding in question.

A special note on the fathometer problems encountered by launch 2126 is in order here. At higher speeds (above 2800 RPM) the recorder

is strongly affected; wavering initial and spurious long marks begin to show up on the analogue trace. (For examples of the former problem, see the fathograms for JD 198/199, JD 220/221, JD 221 at the beginning of the day; for examples of the latter problem, see the fathogram for JD 219/220.) For those times the initial was bad, the scanning procedure described above was employed with special care. The fathometer and digitizer were changed as itemized by the table earlier in this section, and the launch was run at slower speeds to minimize the problem.

Velocity corrections were determined from Nansen and TDC casts taken on 6/19/75 (JD 170), 7/22/75 (JD 203), and 8/20/75 (JD 232). Corrections were incorporated on Transducer Correction/Table Indicator (TC/TI) tapes for automated processing. For further information concerning sounding equipment and corrections refer to Corrections to Echo Soundings, OPR-469-RA-75.

E. Boat Sheet

Transverse Mercator Projection and soundings were plotted by RAINIER personnel using the PDP 8/e Hydroplot System (PDP 8/e computer, S/N 1011, DP-3 Complot Plotter S/N 5445-7). Rough boat sheet projections and plottings were plotted on RA-5 and RA-6 and the system mentioned above, but only the onboard plotter system mentioned above was used for the smooth sheet. The plotting was begun on 8/12/75 and completed on 9/6/75. The projection was plotted on the first day, and the soundings were plotted up through 9/6/75. There was no discernible distortion observed during the plotting.

Problems, however, were encountered with the rough boat sheets. Due either to improper adjustment of the plotters on RA-5 and RA-6, or the admittedly poorer quality of the paper, the rough boat sheets took a beating on this project. The holes which guide the paper through the plotter were elongated and eventually tore. Numerous rough boat sheets were required; the average "lifespan" of a rough boat sheet was less than a week. The semi-smooth boat sheet was of paper also, and suffered problems with hole elongation. Distortion from this elongation was minor, but any scaling from the semi-smooth boat sheet should be used with caution. This problem did not affect the smooth boat sheet, since it was plotted on mylar and on the onboard Complot System. It is mentioned here because much of the data plotted on line on the rough sheets is not plotted where the boat actually ran--the distortion is very bad in places.

F. Station Control

Station Control for this boat sheet included both existing triangulation and new stations established with methods that met or exceeded third-order precision. Triangulation stations available in the project area included BOULDER, TYONEK, TYONEK 2, MOWK, BIRCH HILL, CREEK, GOOSE FLAT, and HELEN. All of these stations with the exception of HELEN were included in an extensive survey by the PATHFINDER in 1966. The positions of these stations were obtained from field geographic position lists produced by the PATHFINDER. A

position for HELEN was recomputed using survey data obtained in this survey because the published position of HELEN was dated before the 1964 earthquake.

New control was established during this survey primarily by traverse. Primary existing stations used to control traverses were BOULDER, CREEK, and TYONEK. New stations established included SOUTH, SOUTH M/R, UNION (was recovered as a topographic station but was included in the traverse), SHORT, BRUCE, GRANITE, GRANITE M/R, and KING. Numerous intersection stations were established. Three pilings of the new pier at North Foreland were intersected from BRUCE, GRANITE, and TYONEK (FORELAND PILING 3, FORELAND PILING 4, FORELAND PILING 5). Thirteen of the fourteen oil drilling platforms of Upper Cook Inlet were located by intersection. It was first intended to use the platform derricks as control to calibrate the electronic control systems by sextant fixes. In addition, the positions of the platforms were required to verify the plotted platform positions on the chart. Intersection of the derricks from selected triangulation stations began. Later it was discovered that the derricks were capable of being moved over the entire platform to service oil wells located in legs of the platforms. The idea of using the derricks as calibration signals was abandoned but the intersections continued with the intention of using the computed derrick positions as positions for the platform.

Station Control is discussed in further detail in the HORIZONTAL CONTROL REPORT, OPR-469-RA-75. An abstract of horizontal control is appended in the Station List for reference.

G. Position Control

The Teledyne Hastings Raydist System (range-range phase comparison) was used for position control of soundings. Some bottom samples used visual control. The Raydist Stations were positioned on shore on stations SHORT and SOUTH. The Raydist sets used on the launches were as follows:

Launch	SET 1	SET 2	SET 3
2124		11 June--20 Aug	21 Aug
2125	11 June--21 Aug		
2126		21 Aug	11 June--20Aug

Refer to the Electronic Control Report, OPR-469-RA-75, for the serial numbers of the individual components making up each set.

Calibrations were taken at least twice a day, before and after the hydrography, by ranges utilizing the platforms in Trading Bay. The corrections were applied as discussed in Section S.

Refer to Section S and the Electronic Control Report, OPR-469-RA-75 for more information concerning the application of correctors, the designation and operation of the Raydist sets, and the use of the platforms for calibrations.

H. Shoreline

Shoreline was transferred to the boat sheet from T-Sheet manuscripts TP-12038 and TP-12039. Where the shoreline is drawn in black, the area was verified by field edit. The shoreline and topographic details were not completed for the area surveyed by field edit. That portion of the shoreline drawn in blue was not verified

See Verifier's Report Sect II

by field edit (from latitude 60°50'15" N north to latitude 60°57'00" N). A significant portion of the MHW (shore) line is unverified due to the inaccessability of the area. New photography must be flown to provide an up-to-date shoreline.

For more detail regarding the shoreline, refer to the Field Edit Report, OPR-469-RA-75.

I. Crosslines

Approximately 108.4 nautical miles of hydrography run were crosslines. This equals 5.8% of the total hydrography run. A careful scanning of the smooth boat sheet, comparing crosslines with main scheme lines, produced generally excellent agreement (within ½ fathom in most cases). It should be noted here that deeper than eleven fathoms, the sounding is rounded to the nearest fathom (0.8 rounds up, 0.7 rounds down), so apparent discrepancies of one fathom may in fact be as little as 0.1 fathom difference. Smooth sheet plotted in fathoms and tenths to 21 fathoms.

The use of tidal zoning supplied by Rockville undoubtedly helped in reducing the data for this boat sheet, and in the excellent agreement of crosslines with main scheme. (For more details regarding this zoning, refer to the Field Tide Note in the Separates Following the Text.)

The use of several launches to obtain the sounding data produced no problem; i.e. no discrepancies were found which could be attributed to data having been gathered by more than one launch.

J. Junctions

Adequate junction was made with the following contemporary survey: See Verifier's Report sect IV

Registry No.	Field No.	Scale	Date
H-9539	RA-20-3-75	1:20,000	1975

Comparisons were generally good, within one fathom. The comments applying to crosslines also apply here.

K. Comparison with Prior Surveys

This boat sheet was compared with H-3199 (1:100,000, 1910) and H-3215 (1:40,000, 1910). In general, agreement was good. There were a few discrepancies, however, of up to five fathoms (latitude 60°51'06" N, longitude 151°32'54" W). This was not unexpected, since both prior surveys were completed prior to the 1964 earthquake. The irregular bottom in the entire survey area undoubtedly also contributed to these discrepancies.

Pre-survey items 18, 24, and 32, status and description of oil drilling platforms, can be described as follows:

PSR #24 The platform at latitude 60°49'45"N, longitude 151°29'01"W is called "Baker." It is a five-legged platform with a single derrick and is the northernmost of a group of four platforms. A position for the derrick was found (signal 139) and is submitted with this report. It should be noted that the derricks on all of the platforms can be moved from one leg to another, as operating requirements change.

See Verifier's Report, para VII

PSR #24 The platform at latitude 60°47'45"N, longitude 151°29'45"W is owned by Shell Oil Company and is called "Platform A." It is a four-legged platform with a single derrick and is the second in a group of four platforms (just south of platform "Baker"). A position for the derrick (signal 140) is submitted with this report. See Verifier's Report, para VII

PSR #32 (1) The platform at latitude 60°48'28"N, longitude 151°37'59"W is called the "Dolly Varden." It is a four-legged platform with two derricks and is the southernmost of a group of six platforms. Positions for both of the derricks (signals 152 and 153) are submitted with this report. Origin C/L 1179 (1967); Delete charted note "under constr" See Q.C. Report

PSR #18 The platform at latitude 60°50'23"N, longitude 151°36'48"W is called "Grayling." It is a four-legged platform with two derricks and is the fifth south in a group of six platforms. Positions for both derricks (signals 143 and 151) are submitted with this report. See Verifier's Report, para. VII

PSR #18 The platform at latitude 60°53'49"N, longitude 151°34'44"W is referred to as the "Monopod." It has one leg and one derrick and is the third platform in a group of six. A position for the derrick (signal 137) is submitted with this report. See Verifier's Report, para VII

PSR #32 (3) The platform at latitude 60°55'10"N, longitude 151°33'27"W has three legs and two derricks. It is the second from the most northerly platform in a group of six. It is called "Texaco

Superior Trading Bay Platform 'A'." Positions for the two derricks (signals 145 and 146) are submitted with this report. PSR #32

(4) The platform at latitude 60°55'42"N, longitude 151°31'49"W has three legs and one derrick and is the northernmost platform in a group of six. It is called "Spark" and is owned by Atlantic Richfield Company. A position for the derrick (signal 136) is submitted with this report.

Survey records did not indicate whether the platforms were "lighted" or contained a "horn," retain charted notes. Origin C/L 1777(69)

All the superstructures of the platforms are similar: all have approximate dimensions of 40-50 meters square and are 20-30 meters high. All platforms in Upper Cook Inlet are operating at present and are pumping oil. There are no platforms under construction at this time in Upper Cook Inlet.

Pre-survey Review Item 21, present positions and least depths of two submerged obstructions (destroyed oil drilling platforms), was searched for by one launch. Launch 2125 searched for PSR 21 on JD 233 (positions 1509-1522). A series of shallow soundings were obtained, and what appeared to be "noise" showed up on the fathogram. The noise was evaluated as bubbles escaping from a gas well on the bottom. Leadline depths were taken repeatedly and showed three fathoms of water. No trace of the platform was found, ~~at positions 8468 and 8470.~~ Possibly the strong currents have moved the remains, or silt has been deposited over what remained of the platform. It is recommended that this item be removed from the chart. ~~Also pos. 8454 - 8489, and pos 1099 - 1107.~~

See Verifier's Report Sect VII

See O.C. Report

PSR 22, verification of and least depths for two submerged oil platforms, was searched for by two launches. Launch 2128 searched for the platforms on JD 233 (positions ~~8454-8489~~ 2935-2974). Launch 2125 searched for the platforms on JD 233 (positions 1464-1504 and 1523-1552). No trace of the platforms was found. It is possible the platform reported as being in 3¼ fathoms of water (latitude 60°49.3'N, longitude 151°30.4'W) was not reported in the proper location (the depths of the water where the platform was reported to be averaged 14--17 fathoms). It is recommended these ~~platforms~~ obstructions be ~~removed from~~ retained on the chart.

The Alaska District Engineer (U.S. Army Corps of Engineers) was contacted (see letter dated August 18, 1975 in the Separates Following the Text) concerning these obstructions and their possible removal. Their reply stated that they had little information about the obstructions. With the letter they submitted a copy of a proposed single pipe truss storage in Beshta Bay. This information is included in the Separates Following the Text.

PSR 23, the nature, position and extent of spar buoys over a submerged drilling area, was searched for by Launch 2126 on JD 233 (positions 8434-8453). Nothing was found; it is therefore recommended this obstruction area not be charted.

In addition, two unnumbered PSR items were investigated. An eleven fathom sounding reported at latitude 60°51.6'N, longitude 151°20.0'W, was searched for by launch 2126 on JD 233 (positions 8490-8504). The general depth in the area was 11 to 12 fathoms.

A one fathom sounding at latitude 60°48.0'N, longitude 151°43.5'W was not searched for by a special development; however a sounding of 1.5 fathom was obtained during the course of the regular main scheme lines. See Verifier's Report, para VII

Submitted with this report is a blueprint presented to the RAINIER by Union Oil Company officials detailing the pipelines in the area. Refer to Section P for more details.

L. Comparison with the Chart

This survey was compared with Chart 16660 (16th Ed., Sept. 28, 1974, 1:194,154). Agreement with the chart is in general excellent; within one fathom in most cases. The MLW line on the west end of the sheet appears to have shifted slightly. With the high currents in the area and the associated sedimentation, this is not unexpected, and should not pose a hazard to navigation. The only vessels likely to be navigating in the area are small fishing boats, and the local fishermen are quite aware of the shifting shoreline.

Depth Changes See Verifier's Report Sect VI

M. Adequacy of Survey

This survey is complete and adequate to supersede prior surveys for charting.

The only deficiency is in the field edit of the MHW line. A significant portion of the MHW line is unverified due to the inaccessability of the area. Strong currents and extensive mud flats made the area virtually impossible to field edit. New photography is a must to provide an up-to-date shoreline.

All fathogram field survey records were scanned and checked for deeps and peaks with appropriate changes made to the original records.

N. Aids to Navigation

There are no Coast Guard-maintained aids to navigation within the limits of this boat sheet. None are recommended.

The platforms in the area are excellent aids to navigation. Positions for those platforms within the limits of this sheet are given in Section K of this report.

O. Statistics

Launch	NM Sounding Lines	Total Pos. No.	Remarks
2120 (ship)	--------	26	Bottom samples
2123	--------	8	Bottom samples
2124	45.1	249	
2125	994.6	3417	
2126	840.4	2546	
Total	1880.1	6220	

This survey contains 101.3 square nautical miles of hydrography.

P. Miscellaneous

Submitted with this report is a permit plan of the U.S. Army Corps of Engineers (~~see the Separates Following the Text~~ Forwarded to M.C.D.) showing the Trading Bay area. A submerged pipeline running from Granite Point to East Foreland, east of the platforms, is not presently charted.

The information regarding the uncharted pipeline was submitted to the RAINIER by Union Oil Company officials. This pipeline should be charted.

This Pipeline Not Located on H-9541

Q. Recommendations

Aside from the recommendations presented earlier regarding new photography for shoreline purposes, and the pipeline which is presently uncharted, no further specific recommendations are considered necessary for this survey.

R. References to Reports

Corrections to Echo Soundings, OPR-469-RA-75.

Horizontal Control Report, OPR-469-RA-75.

Electronic Control Report, OPR-469-RA-75.

Field Edit Report, OPR-469-RA-75.

Descriptive Report to Accompany Hydrographic Survey H-9539, (RA-20-3-75) OPR-469-RA-75.

S. Data Processing Procedures

Data acquisition and processing was handled primarily with the "new format" hydroplot software. Occasions during data acquisition did arise that necessitated use of the old format programs. Change of format was handled effectively by computer program RK 337 UNSCRAMBLER such that all data processed by the ship was handled with the latest computer software. All data tapes submitted to Pacific Marine Center reflect the use of the "new format" computer software.

The following discussion deals primarily with processing of the sounding data in the production of the boat sheet. Information relating to tides processing procedures can be referenced in the Field Tide Note in the appendix. Field edit procedures can be referenced in the Field Edit Report, OPR-469-RA-75 and procedures for velocity corrections can be referenced in the Corrections to Echo Soundings, OPR-469-RA-75. Processing of the data followed instructions for the 1975 field season as set forth by the Processing Division of Pacific Marine Center in the letter dated 13 February 1975.

Sounding data for this boat sheet was collected through the hydroplot and hydrolog system and also through the ASI logger system. These logging systems operated satisfactorily to produce the required teletype printouts (permanent field record) and raw data tapes.

Raw data was processed in such a way that the final data tapes and boat sheet plots included the necessary corrections for position, depth, and time. No specific effort was made to use the raw data tapes as they were produced aboard the launches for the sounding plots. These tapes were edited to remove data not necessary to the final plot such as sounding lines rejected in the field, detached positions used for calibration, and other logged data of no particular use to the sounding plot. Also removed from the raw electronic master tape were the corrector records. These corrector records were removed because they would add algebraically to the correctors as

applied through the corrector tape and give erroneous position plots. The raw electronic master tape was also edited to correct for soundings that had not digitized properly. This editing was accomplished only after the fathograms had been check scanned. All editing was annotated in some fashion on the original teletype printout of the data.

The corrector tape was made to apply TRA, Mini-Ranger busts (where appropriate), corrections to electronic positioning control, soundings not corrected on the master tape, and peaks and deeps. TRA (transducer displacement) was obtained from the daily bar checks or from the bar check of the previous day if no bar check was taken. Correctors for the positioning information came from the daily calibrations. Drift (difference in partial lanes) from one calibration to the next was handled by a simple linear interpolation scheme. This scheme was documented in a simple set of instructions that was used for processing of the correctors. The documented scheme can be referenced in the appendix. Depths on the corrector tape superceded depths on the master tape. In most cases these depths were identical. Peaks and deeps were added to the corrector tape in standard format. After master tape and corrector tape had been edited and produced, a rough plot was made to inspect the data. Any data that needed to be corrected was changed by editing the master tape. In most cases these changes involved the change of a misdepth or the removal of unnecessary data that had been missed during the first edit of the raw

tapes. Occasionally a misdepth was corrected by an editing of the corrector tape. In either case the data tapes were made ready for the semi-smooth plot.

The semi-smooth plot was used by ship personnel to determine quality and completeness of the data. It was used for planning purposes to determine if a surveyed area was complete or needed further work done. Any additional changes that were necessary to master and/or corrector tapes were noted and edited appropriately. This editing produced the final tapes that were then used to plot the smooth plot of the boat sheet. Printouts of these tapes were made to help reflect all of the changes that had been made to the original raw data tapes and printouts.

Processing of other data occurred simultaneously with processing of sounding data. Bottom samples were collected in the field with a variety of control methods. All bottom samples were logged in sounding volumes. Positions for the samples were computed and logged in the sounding volumes and then plotted on the semi-smooth sheet. After the adequacy of the bottom samples was determined from the plots on the semi-smooth sheet, the positions of the samples were transferred to the final boat sheet.

Few detached positions were taken during the survey that were not covered by field edit. Those taken were plotted on the final boat sheet. An extensive system of detached positions was undertaken through field edit for rocks and other dangers. Information pertaining to field edit detached positions can be referenced in the Field Edit Report, OPR-469-RA-75.

Grids, signals, and electronic control lattices were plotted on all of the boat sheets with computer program RK 201 GRID, SIGNAL, AND LATTICE PLOT. Pre-survey review items, prior surveys soundings and junction soundings were transferred to the final boat sheet by hand and shoreline was transferred from the appropriate T-Sheet manuscripts under the direction of field edit.

Boat sheets submitted with this report include the rough sheets used in the launches, the semi-smooth sheet, and the final boat sheet.

A listing of the computer programs and their respective dates used during data acquisition and processing follows.

PROGRAM	VERSION DATE	TITLE/DESCRIPTION
AM 100	10 Nov 72	Real Time Hydroplot
RK 111	7 Aug 74	Range-Range Real Time Hydroplot
RK 161	7 May 74	Range-Range Real Time Hydrolog
AM 170	10 Nov 72	Real Time Hydrolog
AM 201	10 Nov 72	Grid and Lattice Plot
RK 201	19 Feb 75	Grid, Signal, and Lattice Plot
AM 202	10 Nov 72	Visual Station Load and Plot
RK 211	16 Aug 74	Range-Range Position and Sounding Plot
RK 212	1 Apr 74	Visual Station Load and Plot
AM 300	24 May 73	Utility Computations
AM 301	8 Dec 72	Visual Station Table Maker (VISTA)
RK 301	12 Aug 74	Visual Station Table Maker (VISTA)
MI 335	5 Apr 73	Data Tape Time Change

RK 337	8 Aug 74	Unscrambler
PM 360	21 Mar 74	Electronic Corrector Abstract
RK 407	15 Aug 74	Geodetic Direct and Inverse Computation
RK 409	5 Sept 73	Geodetic Utility Package
AM 500	10 Nov 72	Predicted Tide Generator
RK 530	25 Jun 74	Velocity Correction Computations
RK 561	19 Feb 75	Geodetic Calibration
RK 562	10 Sept 74	Calibration Using Azimuths
AM 602	8 Jul 75	ELINORE Line Editor
AM 603	10 Oct 72	Binary Tape Duplicator
RK 606	22 Aug 74	Paper Tape Duplicator
AM 607	1 Jan 71	Self-Starting Binary Loader

Wang Intersection for TTY Output 700/PF/022

Respectfully submitted,

Cheryl Cavin

Cheryl Cavin, LTJG NOAA

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Nikiski, Alaska using corrections supplied by C331. Each boat sheet was divided into two tidal zones for reduction of soundings. The correctors and hourly heights were interpolated by the PDP8/e computer, utilizing AM500. All times of both predicted and recorded tides are based on GMT, except for PHILLIPS Platform A, which was installed on Alaska Daylight Time, but was scanned for hourly heights on GMT.
Time and ratio corrections for each sheet are listed below:

Sheet	Ratio	Time Correction
H-9541 (RA-20-5-75)		
West of Tidal Bdry.	0.99	+57 m
East of Tidal Bdry.	1.03	+57 m
H-9539 (RA-20-3-75)		
West of Tidal Bdry.	0.94	+36 m
East of Tidal Bdry.	1.00	+36 m

Seven Bristol Bubbler Tide Gages were installed in the project area. Location and period of operation is as follows:

SITE	LOCATION	PERIOD
North Foreland	61°02.9'N 151°09.5'W	May 28, 1975--August 20, 1975 85 days
AMOCO Platform BRUCE	61°00'N 151°18'W	May 30--August 10 73 days
ARCO Platform SPARKS	60°55.7'N 151°31.8'W	June 24--August 9 47 days
PHILLIPS Platform "A"	61°04.6'N 150°57.1'W	July 2--August 20 50 days
West Foreland	60°42.8'N 151°43.6'W	May 15--August 21 99 days
Nikishka Bay	60°44.4'N 151°18.3'W	May 8--August 22 107 days
Point Possession	61°02.3'N 150°24.0'W	May 20--August 5 78 days

North Foreland-- Gage was installed and began operation on May 28, 1975. Levels were begun on 28 May, and completed on May 30. Two staffs were installed and leveled on May 28. The gage needle was knocked off the pins and did not record from 1520 on 6/18 until 0145 on 6/20, when RAINIER personnel reseated the pen. The gage was operational until 6/23, at 1553, when the observer deflected the pen until it was again knocked off the pins. The trace was lost until 7/1 at 0416, when RAINIER personnel again reseated the pen. Observer was supplied with a felt-tip pen so deflection was unnecessary. A tidal pool believed created by nearby pier construction formed around the orifice, showing up on the marigram on 7/7. At extremely low tides, it will be necessary to use the tides for Platform BRUCE, with correctors for North Foreland. Marigrams reads 16 feet greater than the upper staff; 23.2 feet lower than the lower staff.

AMOCO Platform BRUCE--On May 28, the gage was installed outside one of the four legs of the platform. This proved to be a 3-day job; it was completed May 30, 1975, and the gage began operation. On 7/10 the gage was replaced; the old gage apparently had damaged bellows; the trace was not smooth, but had a stair-stepped effect.(This was later thought to be a factor of the damping valve being down too much). Old gage serial #67A16204; new gage serial #68A9329. The trace is bad from 7/3 - 7/9. A cloth tape with weight attached was used for a tide staff; it proved ineffective. The cloth tape acted as a kite in even a moderate breeze. A pulley apparatus with piano wire and a weight was installed on 7/1; staff observations before this date will not show any constant difference with the gage readings. Marigram reads 2.3 to 2.9 feet higher than the staff (lowering the weight to the water's edge is a very subjective thing, and there were four observers for this gage.)

ARCO Platform SPARKS--Installed 6/24, and leveled the same day. As with BRUCE, the tape device for obtaining staff comparisons proved ineffective; a pulley apparatus was installed 7/2. Lower band on leg (band securing orifice) parted and the angle iron to which the orifice was attched bent away from the leg on 7/9. The trace shows a jump of 1 to 2 feet. On 7/11 the tubing connecting the orifice was cut and a new orifice spliced to the tubing. The orifice was then re-banded to the leg. The gage was removed 8/9. Marigram read 2.5 to 3.3 feet higher than the staff.

PHILLIPS Platform "A"--Gage installed inside an unused leg and began operation 7/2. Gage was put on Alaska Daylight Time by mistake; however, hourly highs and lows were scanned in GMT. Gage was leveled on 7/2. Removed and leveled on 8/20. Observer apparently allowed clock to wind down; gage stopped at 2200 on 8/15. Marigram reads 5-6 feet higher than staff.

West Foreland--Gage was installed by the McARTHUR and leveled 5/15. On 6/25, the staff was found to be completely removed by a storm; levels to BM3 from the water's edge were used as staff comparisons. The elevation of BM3 was assumed to be 40.000 feet. There is no record from 6/26 thru 7/11 due to broken tubing. The gage was installed on Alaska Daylight Time; set to GMT on 6/5. Removed 8/21 by the RAINIER.
Nikishka Bay--Gage was installed 5/8 by McARTHUR; dampening valve turned down too much at start; corrected by observer on 5/10. Gage installed on Alaska Daylight Time, reset to GMT at 2330 on 22 May. The gage was vandalized between 24 and 26 May, and again prior to 6/10. The gage was removed August 22 by the RAINIER. Marigram reads 0.2 feet more than the staff.
Point Possession--Gage installed and leveled on 5/20 by the McARTHUR. Observation on 5/28 showed that the nitrogen bottle was empty and the tubing stretched at one location to the point of restricting the flow. In addition, the staff was destroyed. Leaking regulator and bad fitting at the orifice supply line plagued this gage on 6/18 and on 6/26. On 7/7 the orifice was moved to 1 foot deeper water. The gage was removed and leveled on 8/5 by the McARTHUR. Marigram reads 10 feet lower than the staff. From 5/31 until removal, staff readings were taken by leveling from BM1 reset to the waterling.

Tides branch in Rockville, C331, has been requested to provide zoning for both field sheets.

VELOCITY CORRECTOR TAPE LISTING
RA-20-5-75(H-9541)

TABLE # 3
SCALE - FATHOMS

```
000035 0 0000 0003 000 000000 000000
000105 0 0001
000175 0 0002
000235 0 0003
000295 0 0004
000360 0 0005
000420 0 0006
000500 0 0008
```

STATION LIST
OPR-469-RA-75

RA-20-3-75 H-9539
RA-20 5-75 H-9541

See Base plots ok
Listing - checks ok
DJK
8/18/78

117 3 61 04 36172 150 56 53605 139 0036 000000
PHILLIPS PLATFORM A 1974 61 150 3
FROM 1974 RAINIER SURVEY
REF. GEODETIC CONTROL REPORT, OPR-469-RA-74

118 3 60 55 16723 150 44 58088 139 0024 000000
BIRCH HILL USE 1942 60 150 4
FROM 1966 PATHFINDER SURVEY

121 3 60 43 11800 151 24 18344 139 0080 000000
HELEN 1961 60 151 1
REF. HORIZONTAL CONTROL REPORT

122 3 60 46 18333 151 15 25933 250 0067 000000
BOULDER 1909 60 151 1
FROM 1966 PATHFINDER SURVEY
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION

123 3 61 02 42229 151 09 48549 139 0000 000000
FORELAND PILING 3 1975 61 151 2
REF. HORIZONTAL CONTROL REPORT

124 3 61 02 40052 151 09 46092 139 0000 000000
FORELAND PILING 4 1975 61 151 2
REF. HORIZONTAL CONTROL REPORT

125 3 61 02 37875 151 09 43651 139 0000 000000
FORELAND PILING 5 1975 61 151 2
REF. HORIZONTAL CONTROL REPORT

126 3 60 55 16716 150 44 57189 139 0024 000000
CREEK 1963 60 150 4
FROM 1966 PATHFINDER SURVEY

127 3 61 02 43855 151 10 54088 139 0050 000000
TYONEK 1909 61 151 2
FROM 1966 PATHFINDER SURVEY
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION

STATION LIST
(CONTINUED)

128 3 60 55 16705 150 44 55812 250 0039 329646
SHORT 1975 60 150 4
NORTHERN RAYDIST STATION
ELEVATION GIVEN IS TO TIP OF RAYDIST ANTENNA
REF. HORIZONTAL CONTROL REPORT

129 3 60 59 57419 151 17 52089 250 0027 000000
BRUCE 1975 60 151 1
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION
REF. HORIZONTAL CONTROL REPORT

130 3 60 44 09021 151 21 13213 250 0075 329646
SOUTH 1975 60 151 1
SOUTHERN RAYDIST STATION
ELEVATION GIVEN IS TO TIP OF RAYDIST ANTENNA
REF. HORIZONTAL CONTROL REPORT

131 3 61 00 42103 151 20 37491 139 0042 000000
GRANITE 1975 61 151 2
REF. HORIZONTAL CONTROL REPORT

132 3 60 44 09721 151 21 09677 139 0059 000000
UNION 1969 60 151 1
RECOVERED AS TOPOGRAPHIC STATION
REF. HORIZONTAL CONTROL REPORT

133 3 61 00 44406 151 20 22369 250 0038 000000
GRANITE M/R 1975 61 151 2
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION
REF. HORIZONTAL CONTROL REPORT

134 3 60 44 09309 151 21 13189 250 0065 000000
SOUTH M/R 1975 60 151 1
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION
REF. HORIZONTAL CONTROL REPORT

135 3 61 00 37437 151 30 03220 250 0015 000000
GOOSE FLAT 1909 61 151 3
FROM 1966 PATHFINDER SURVEY
ELEVATION INCLUDES M/R TRANSPONDER ELEVATION

136 3 60 55 42499 151 31 49330 243 0000 000000
PTFM 10 1975 60 151 4
ATLANTIC RICHFIELD PLATFORM SPARK
DERRICK
REF. HORIZONTAL CONTROL REPORT

STATION LIST
(CONTINUED)

137 3 60 53 48760 151 34 43901 243 0000 000000
PTFM 8 1975 60 151 4
UNION-MARATHON TRADING BAY PLATFORM
BEST KNOWN AS "MONOPOD"
DERRICK
REF. HORIZONTAL CONTROL REPORT

138 3 60 51 55588 151 36 20079 243 0000 000000
PTFM 7 1975 60 151 4
ATLANTIC RICHFIELD NORTH MCARTHUR RIVER PLATFORM
BEST KNOWN AS "PLATFORM KING SALMON"
DERRICK (NOT TO BE CONFUSED WITH KING 1975
WHICH IS ALSO ON PLATFORM KING SALMON)
REF. HORIZONTAL CONTROL REPORT

139 3 60 49 45665 151 29 00943 243 0000 000000
PTFM 4 1975 60 151 1
AMOCO PLATFORM BAKER
DERRICK
REF. HORIZONTAL CONTROL REPORT

140 3 60 47 44865 151 29 45156 243 0000 000000
PTFM 3 1975 60 151 1
SHELL-RICHFIELD-STANDARD PLATFORM A
DERRICK
REF. HORIZONTAL CONTROL REPORT

141 3 60 45 50263 151 30 08560 243 0000 000000
PTFM 2 1975 60 151 4
SHELL PLATFORM C
DERRICK
REF. HORIZONTAL CONTROL REPORT

142 3 60 44 08138 151 30 45892 243 0000 000000
PTFM 1 1975 60 151 4
AMOCO PLATFORM DILLON
DERRICK
REF. HORIZONTAL CONTROL REPORT

143 3 60 50 22854 151 36 48124 243 0000 000000
PTFM 6B 1975 60 151 4
UNION PLATFORM GRAYLING
WEST DERRICK OF TWO DERRICKS
REF. HORIZONTAL CONTROL REPORT

```
144 3  60 51 55547 151 36 21558  250 0036 000000
          KING 1975         60 151 4
          TRAVERSE STATION IN CENTER OF
          PLATFORM KING SALMON
          ELEVATION INCLUDES M/R TRANSPONDER ELEVATION
          REF. HORIZONTAL CONTROL REPORT

145 3  60 55 10227 151 33 26201  243 0000 000000
          PTFM  9A  1975     60 151 4
          TEXACO SUPERIOR TRADING BAY PLATFORM A
          EAST DERRICK OF TWO DERRICKS
          REF. HORIZONTAL CONTROL REPORT

146 3  60 55 10646 151 33 27567  243 0000 000000
          PTFM  9B  1975     60 151 4
          TEXACO SUPERIOR TRADING BAY PLATFORM A
          WEST DERRICK OF TWO DERRICKS
          REF. HORIZONTAL CONTROL REPORT

147 3  60 57 29569 151 19 54583  243 0000 000000
          PTFM  11A  1975     60 151 1
          MOBIL GRANITE POINT PLATFORM
          WEST DERRICK OF TWO DERRICKS
          REF. HORIZONTAL CONTROL REPORT

148 3  60 57 29347 151 19 52403  243 0000 000000
          PTFM  11B  1975     60 151 1
          MOBIL GRANITE POINT PLATFORM
          EAST DERRICK OF TWO DERRICKS
          REF. HORIZONTAL CONTROL REPORT

149 3  60 58 37300 151 18 46024  243 0000 000000
          PTFM  12  1975      60 151 1
          AMOCO PLATFORM ANNA
          DERRICK
          REF. HORIZONTAL CONTROL REPORT

150 3  60 59 56701 151 17 52304  243 0000 000000
          PTFM  13 1975    60 151 1
          AMOCO PLATFORM BRUCE
          DERRICK (NOT TO BE CONFUSED WITH BRUCE 1975
          WHICH IS ALSO ON PLATFORM BRUCE)
          REF. HORIZONTAL CONTROL REPORT

151 3  60 50 22597 151 36 46761  243 0000 000000
          PTFM  6A  1975      60 151 4
          UNION PLATFORM GRAYLING
          EAST DERRICK OF TWO DERRICKS
          REF. HORIZONTAL CONTROL REPORT
```

STATION LIST
(CONCLUDED)

```
152 3  60 48 28325 151 37 57790  243 0000 000000
            PTFM  5A  1975    60 151 4
            MARATHON PLATFORM DOLLY VARDEN
            EAST DERRICK OF TWO DERRICKS
            REF. HORIZONTAL CONTROL REPORT

153 3  60 48 28350 151 37 59272  243 0000 000000
            PTFM  5B  1975      60 151 4
            MARATHON PLATFORM DOLLY VARDEN
            WEST DERRICK OF TWO DERRICKS
            REF. HORIZONTAL CONTROL REPORT

XXX X  61 02 51616 151 09 50604  139 0010 000000
            NORTH FORELAND LIGHT 1975   61 151 2
            NOT USED FOR POSITION CONTROL OF SOUNDINGS
            REF. HORIZONTAL CONTROL REPORT

XXX X  60 43 11793 151 24 18364  139 0000 000000
            HELEN 1961      60 151 1
            THIS POSITION FROM HORIZONTAL CONTROL DATA
            60 151  SUPPLEMENT NO. 1  PAGE 1
            THIS POSITION NOT USED IN THIS SURVEY
```

NOAA FORM 76-40 (8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
RAINIER	ALASKA	UPPER COOK INLET	AUG. 1975

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-469-RA-75	Ph-6013	RA-20-5-75 (H-9541)	N.A. 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° /	LATITUDE // D.M. Meters	POSITION LONGITUDE ° /	LONGITUDE // D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
"SHELL PTFM A"	Shell Oil Platform "A"	60 47	44.865 1388.7	151 29	45.156 683.2		F-3-6-L 8-75	16660 (8553)
"PTFM BAKER"	Oil Platform called "Baker"	60 49	45.665 1413.4	151 29	00.943 14.3		"	"
"PTFM DOLLY VARDEN"	Oil Platform called "Dolly Varden" (East Derrick)	60 48	28.325 876.7	151 37	57.790 873.8		"	"
"	Oil Platform called "Dolly Varden" (West Derrick)	60 48	28.350 877.5	151 37	59.272 896.3		"	"
"PTFM GRAYLING"	Oil Platform called "Grayling" (East Derrick)	60 50	22.597 699.4	151 36	46.761 706.3		"	"
"	Oil Platform called "Grayling" (West Derrick)	60 50	22.854 707.4	151 36	48.124 726.9		"	"
"PTFM KING SALMON"	Oil Platform called "King Salmon"	60 51	55.588 1720.6	151 36	20.079 303.1		"	"
"PTFM MONOPOD"	"Monopod" Oil Platform	60 53	48.760 1509.3	151 34	43.901 662.1		"	" 69
"TEXACO PFTM A"	Texaco Oil Platform "A" (East Derrick)	60 55	10.228 316.6	151 33	26.202 394.8		"	"

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
RAINIER	ALASKA	UPPER COOK INLET	AUG. 1975

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-469-RA-75	PH-6013	RA-20-5-75 H-9541	N.A. 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° / // D.M. Meters	POSITION LONGITUDE ° / // D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	METHOD AND DATE OF LOCATION FIELD	CHARTS AFFECTED
"TEXACO PTFM A"	Texaco Oil Platform "A" (West Derrick)	60 55 10.646 329.5	151 33 27.567 415.3		F-3-6-L 8-75	16660 (8553)
"PTFM SPARK"	Oil Platform called "Spark"	60 55 42.499 1315.5	151 31 49.330 743.2		"	"

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APPROVAL SHEET

H-9541 (RA-20-5-75)

OPR-469-RA-75

Alaska

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, FMC OPORDER, and the Instruction Manual for Automated Hydrographic Surveys. The data was examined daily during the execution of the survey.

The boatsheets and the accompanying records have been examined by me and are considered complete and adequate for charting purposes and are approved.

Charles K. Townsend
CDR, NOAA

11/25/75

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): Nikishka

Period: July 17-August 21, 1975

HYDROGRAPHIC SHEET: H-9541

OPR: 469

Locality: Cook Inlet

Plane of reference (mean lower low water): 12.3 ft.

Height of Mean High Water above Plane of Reference: 18.5 ft.

Remarks: Recommended zoning:

		Time correction	Range ratio
(1)	West of 151°36'	+5 min.	x0.93
(2)	151°36'-151°25'	+10 min.	x0.96
(3)	East of 151°25' South of 60°52'	+10 min.	x0.99
(4)	East of 151°25' North of 60°52'	+25 min.	x0.98

James P. Hubbard
for Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No.

H-9541

Name on Survey	A On Chart No 16660	B On previous survey No	C On U S coastpilot page	D From local information	E On local maps	F P.O. Guide or Map	G Rand McNally Atlas	H U.S. Light List T-12026	K	
MC ARTHUR FLATS ✓									X	1
MC ARTHUR RIVER ✓	X									2
MIDDLE GROUND SHOAL ✓	X									3
SEAL SLOUGH ✓									X	4
TRADING BAY ✓	X									5
COTTONWOOD SLOUGH ✓										6
COOK INLET ✓										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
						APPROVED				18
						Chas E. Harrington				19
						STAFF GEOGRAPHER – C51x2				20
						13 MARCH 1978				21
										22
										23
										24
										25

APPROVAL SHEET

FOR

SURVEY H-9541

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: 8 Dec 1977

Signed: [signature]

Title: Chief, Verification Branch

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

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9541

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & 2-pos.overlays 3-excess overlays	1	BOAT SHEETS	2 parts
DESCRIPTIVE REPORT	1	OVERLAYS (preliminary)	7

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	4 5-with printouts & misc.data					
VOLUMES		1				
BOXES			1-Smooth	1 StripCharts		

T-SHEET PRINTS (List) T-12025

SPECIAL REPORTS (List)

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

PROCESSING ACTIVITY	AMOUNTS: PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				6220
POSITIONS CHECKED		6220		
POSITIONS REVISED		49		
DEPTH SOUNDINGS REVISED		370		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
Verification of Control		10		
Verification of Positions		281		
Verification of Soundings		520		
Smooth Sheet Compilation		204		
ALL OTHER WORK		24	HIT 15	
TOTALS	3	999		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY James S. Green	12/24/75	12/24/75
VERIFICATION BY John E. Lotshaw	2/10/76	11/8/77
REVIEW BY Q.C. Robert W. Dexhnaman 70 hrs		3/7/78

Carstens 17 hr 4/25/78

Critique: 5 hrs 5-5-78 [illegible]

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

Reg. No. 9541

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

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

CARDS CORRECTED

DATE_____ TIME REQ'D_____ INITIALS_____

REMARKS:

Reg. No. _____

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

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

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQ'D._____ INITIALS_____

REMARKS:

H-9541

Information for Future Presurvey Reviews

Future surveys should expect considerable change in the area of Middle Ground Shoal whose shoal parts appear to migrate seasonally.

Position Index Lat.	Long.	Bottom Change Index	Use Index	Resurvey Cycle
604	1515	5	2	25 years
604	1514	5	2	25 years
604	1513	4	2	25 years
604	1512	4	2	25 years
605	1515	5	2	25 years
605	1514	5	2	25 years
605	1513	5	2	25 years
605	1512	5	2	25 years

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9541 FIELD NO: RA-20-5-75

Alaska, Cook Inlet, Trading Bay

SURVEYED: June 11 - August 21, 1975

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

SOUNDINGS: Ross Fineline Fathometer CONTROL: Raydist

Chief of Party.....CDR Charles K. Townsend
Surveyed by.....K. P. Dolan, A.A. Armstrong, R.W. Ellis, C.A. Cavin, K.A. Andreen, G.B. Stanke, J. Osborne
Automated Plot by.....Xynetics Plotter (PMC)
Verified by.....John E. Lotshaw
November 11, 1977

I. INTRODUCTION

H-9541 is a comprehensive basic survey of the western half of Upper Cook Inlet between the latitudes of 60°47' and 60°56'. The survey area contains most of the features known as Trading Bay and Middle Ground Shoal.

The Teledyne Hastings Raydist System operating in the range-range mode was used to control the main scheme hydrography. Visual control was also used to locate some bottom samples.

Projection parameters used by PMC to accomplish the smooth plot of H-9541 are incorporated as a file listing in the smooth printout. All correctors to positions and soundings on H-9541 can be located in the smooth printout.

Tide reducers used to reduce soundings on the smooth sheet were derived from the Nikishka tide gage located at Lat. 60°44.4', Long. 151°18.3'. All tide correctors have been approved by the Tides Branch, Rockville, MD.

Processing of H-9541 has proven to be difficult because of the physical size of the survey and because of the dense sounding patterns which it contains. These constraints have exceeded the capabilities of data processing equipment in some areas, such as the automated excessing program. Much processing and detail work which is normally automated was performed manually on H-9541. This, in turn, caused the verification manhours devoted to the project to exceed those which would be normally allocated.

II. CONTROL AND SHORELINE

Horizontal and position control are described in paragraphs F and G of the Descriptive Report, and in the Horizontal Control Report, OPR-469-RA-75.

Shoreline was transferred from Class I manuscripts T-12025, T-12026, and T-12038.

Dates of photography and field edit respectively:

T-12025	1966-75
T-12026	1966-76
T-12038	1966-75, 76

Additional field edit has been accomplished during the 1976 field season and Class I manuscripts subsequently provided. See OPR-469-FA-77, Change No. 3, General Instructions.

There are no discrepancies between hydrography and the shoreline manuscripts and all significant detail shown on the manuscripts has been transferred to the smooth sheet.

III. HYDROGRAPHY

Crosslines agree with main scheme soundings within one fathom in all cases, with most crossings agreeing within two tenths of a fathom. No significant disagreements with contemporary junction sheets were noted, and all hydrography is in close agreement with the photogrammetrically derived low water line.

Standard depth curves could be adequately drawn.

The pattern of hydrography on H-9541 is extremely dense in all areas of the sheet and is adequate to delineate the bottom and to determine least depths in all cases. In some shoal areas and in most developments, the number of soundings taken far exceeds the number which can be shown on the smooth sheet. Since the bulk of these soundings could not be displayed, care was taken to show the shoaler depth in each area. A pattern of soundings representative of the adjacent bottom was also selected to be shown.

The three levels of excess soundings have been plotted on separate overlays in order to reduce the amount of overprinting resulting from the dense sounding pattern.

IV. CONDITION OF SURVEY

The smooth sheet and other hydrographic records conform to the requirements of the Provisional Hydrographic Manual.

V. JUNCTIONS

Junction was made with contemporary survey H-9539, 1975 to the north and with H-9648, 1976 to the east. These junctions agree in detail and depth curves in the junction areas have been inked. A junction was not made with H-9621, 1976 to the south because that survey is in an earlier stage of processing and a sounding plot is not available for comparison. Junction curves with H-9621 have been left in pencil pending verification of that sheet.

VI. COMPARISON WITH PRIOR SURVEYS

H-3199, 1910, and H-3215, 1910 are the prior surveys of the area covered by H-9541. Agreement with both prior surveys was generally ~~excellent~~ good, as noted in paragraph K of the Descriptive Report. Some areas of the survey have isolated differences of up to five fathoms which are probably due to the rough bottom in the adjacent areas. These differences have been noted in paragraph K of the Descriptive Report. There is also evidence of shoaling along the leading edge of the mud flats which extend into Trading Bay in the vicinity of the McArthur River. With these exceptions, H-9541 agrees ~~almost precisely~~ favorably with the prior surveys and is adequate to supersede prior surveys on the area.

VII. COMPARISON WITH CHART See Q.C. Report

Comparison was made with Chart 16660 (16th Ed., September 28, 1974, Scale 1:194,154). Charted soundings are in general agreement with H-9541, with the exception of the shoaling described in paragraph VI above. Differences of up to three fathoms were noted in other area of the chart, but the majority of soundings on H-9541 agree within one fathom of the charted values.

~~Soundings identified on the attached chartlet originate from prior surveys H-3199 and H-3215, 1910.~~

PSR Item #18, five oil drilling platforms under construction was compared to positions located for platforms on H-9541. Two of these are located within H-9541 sheet limits. The platform charted at Lat. 60°50'23", Long. 151°36'55" contains signals #143 and #151. The platform charted at Lat. 60°53'48", Long. 151°34'45" contains signal #137. Exact coordinates for these signals are included in the control file listings for H-9541. Origin C/L 1957(#6) See Des. Rep., para K.

Survey records did not indicate wether the platforms were "lighted" or contained a "horn" retain charted notes. See QC rep.

PSR Item #21 consists of two submerged obstructions, located at Lat. 60°51.5', Long. 151°27.6' and Lat. 60°51.0', Long. 151°28.6'. These features were ~~located~~ charted on C&GS Chart #8853, 8th Ed., Oct. 10, 1966, but are not ~~located~~ charted on Chart #16660, 16th Ed., Sept. 28, 1974, the current chart at the time of the survey. One submerged obstruction was located in this area and is shown on the smooth sheet as an obstruction, with a shoal sounding of -1.4 fm. This feature is located at Lat, 60°51'02", Long. 151°28'31" and is probably the remains of the second platform described above. Soundings which locate the remains are the second out from position #8870 and the third out from position #8468. An obstruction symbol should be charted at this position. Remains of the other platform were not located by the dense pattern of soundings

Origin C/L 112(1965) See Des. Rep., para K See Q.C. Report

The -1.4 fm was rejected, inconsistent with the recorded notes.

60 48 45
151 31 15

20ft PA
60°29'14"
151°30'22.2"

in the area, and its existence has been neither proven nor disproven.

PSR Item #22, two destroyed oil platforms located at Lat. 60°48.75', Long. 151°31.25' and Lat. 60°49.3', Long. 151°30.4' were not located by this survey. A shoal sounding of 11.8 fm was located approximately 600 meters west of the first feature and a shoal sounding of 12.5 fm was located approximately 150 meters east of the second feature. ~~These soundings have been annotated on the smooth sheet as obstructions.~~ It is recommended that these obstruction ~~symbols be charted in the positions shown on the smooth sheet.~~ be retained as charted. Origin N.M. 23(1965) and N.M. 6(1965) See Des. Report, para K.

PSR Item #23, an obstruction and four spar buoys located at Latitude 60°48.75', Long. 151°28.75' was searched for, but not found. Line spacing used, however, did not provide for total coverage of the bottom even though the sounding pattern was very dense. This is because the narrow beam of the Ross fathometer intercepts only a small bottom area in shoal waters. This feature causes it to be a relatively poor instrument to use in searching for obstructions. Since the entire bottom in the area of investigation has not been inspected, the obstruction cannot be said to be disproven. It is, therefore, recommended that the charted obstruction symbol be retained. Origin N.M. 45 (1963)

PSR Item #24 consists of two oil platforms located at Lat. 60°49.75', Long. 151°28.90' and at Lat. 60°47.75', Long. 151°29.8'. Survey records did not indicate wether the platforms were "lighted" or contained a "horn". Retain charted notes.

These platforms hold signals 139 and 140, respectively, with coordinates as indicated in the control file for H-9541. See Des. Report, para K. Origin C/L 867 (1966)

An unnumbered PSR Item, an 11-fathom sounding located at Latiu60°51.6', Long. 151°20.0' is an area with a typical depth of 11.5 fathoms. Since 11.5 fathoms would have been rounded down to an even 11 fathoms on prior surveys, the present hydrography is in agreement with this charted soundings. Origin H-8530 (1960) Chart present survey depths.

An unnumbered PSR item, a seventeen fathom sounding located at Lat. 60°49.0' Long. 151°38.0' is in an area averaging slightly over nineteen fathoms in depth. The seventeen fathom sounding should be deleted and replaced by a more representative sounding from the current survey. Origin H-3199 (1910) Concur

An unnumbered PSR item,,a one fathom sounding located at Lat. 60°48.0', Long. 151°43.5' falls in an area where the shoal surveyed sounding is 1.5 fathoms. It is recommended that the one fathom sounding be deleted from the chart and replaced by a sounding from the current survey. Origin H-3215 (1910) Concur present 1.4 nearby

H-9541 is considered adequate to supersede the charted information. See Q.C. Report.

No charted aids to navigation are located within the boundaries of H-9541. No new aids to navigation were located during the survey work on H-9541.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

H-9541 complies with the Project Instructions dated March 20, 1975.

IX. ADDITIONAL FIELD WORK

H-9541 is an excellent basic survey and adequately delineates its area of coverage. No additional field work is recommended.

Respectfully submitted,

John E. Lotshaw
Cartographic Technician
November 11, 1977

Examined and approved,

James S. Green
Chief, Verification Branch

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

9 January 1978

TO: Eugene A. Taylor
Director, Pacific Marine Center

FROM: Glen R. Schaefer
Chief, Processing Division

SUBJECT: PMC Hydrographic Survey Inspection Team Report -- H-9541

This survey is a basic survey of Trading Bay, Cook Inlet, Alaska. This survey was conducted by NOAA Ship RAINIER in 1975 in accordance with Project Instructions OPR-469-DA, RA-75, dated 20 March 1975.

The Hydrographic Inspection Team concurs with the verifier in recommending that obstructions, as noted in his report, be carried forward for charting purposes due to the inadequate bottom coverage by the narrow beam depth sounding system employed. Any further hydrographic surveys in this area should be with a wide beam sonar system.

The inspection team finds H-9541 to be an excellent basic survey adequate to supersede common areas of prior surveys and charted hydrography.

Glen R. Schaefer

John C. Albright

James W. Steensland

Stanley H. Otsubo

ADMINISTRATIVE APPROVAL

H-9541

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

E A Taylor

Eugene A. Taylor, RADM
Director
Pacific Marine Center

11 Jan. 1978
Date

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

C352/RWD

March 7, 1978

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian
Quality Evaluator

SUBJECT: Quality Control Report for H-9541 (1975), Trading Bay, Cook Inlet, Alaska

Survey H-9541 was inspected to evaluate the accuracy and adequacy of the survey with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data.

Junctional surveys H-9539 (1975), H-9621 (1976), and H-9648 (1976) have not been received at Headquarters as of the date of this report. The adequacy of their junctions will be considered at the time of their respective quality evaluations.

In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the report by the Verifier and the Hydrographic Inspection Team and as follows:

1. Two prior surveys of 1960 and 1963 were not considered in the Verifier's Report "Comparison with Prior Surveys" discussion. The following information supplements and is in addition to this discussion.

H-8530	(1960)	1:40,000	(unreviewed)
H-8726	(1963)	1:40,000	

These surveys taken together cover the area of Middle Ground Shoal and eastward, in common with the present survey. Prior survey H-8530 (1960) has been superseded in part by H-8726 (1963). The remaining portion of H-8530 is in good agreement with present survey depths. Variable differences of 1 fathom are noted, which can be attributed to whole fathoms being used on the prior work and fathoms and tenths used on the present work to depths of 21 fathoms.

A comparison with H-8726 (1963) indicates that on Middle Ground Shoal a considerable amount of migration has taken place in shoal areas of 0 to 5 fathoms and that they have changed in size and shape. For instance, a prior -0.6-fathom shoal is presently in an area of 4 to 5 fathoms in latitude 60°52.5', longitude 151°24.0'; and a prior deep of 5.3 fathoms is in an area of 1.4 fathoms in present depths in latitude 50°51.7', longitude 151°28.0'. These changes can be attributed to the shifting of bottom sediments by the strong tidal currents in this area. The general position of Middle Ground Shoal has remained constant over many years. Areas with depths greater than 10 fathoms have remained fairly stable.

With the addition of a 9.9-fathom sounding carried forward, the present survey is adequate to supersede these prior surveys in the common area.

2. The following information is in addition to, and supersedes in part, the Verifier's Report, Paragraph VII, the "Comparison with Chart."

a. Hydrography

The charted information originates with the previously discussed prior surveys in the Verifier's Report, paragraph VI, and the previously mentioned surveys above, which require no further consideration, supplemented by numerous chart letters and Notices to Mariners. It should be noted that the Presurvey Review items were originally addressed on previous chart editions and several items have subsequently been revised in charting through chart letters and Notices to Mariners.

Attention is directed to the following:

(1) The platforms under construction (Presurvey Review Item 18), addressed in the Verifier's Report, paragraph VII, were subsequently revised in charting from the original Presurvey Review description to Platform (lighted) HORN, through CL/328 (1968), which indicates these items to contain a light and horn and to be no longer under construction. The Descriptive Report in paragraph K mentions all platforms in the survey area are operating and none are under construction.

(2) The obstructions (Presurvey Review Item 21), destroyed oil drilling platforms, addressed in the Verifier's Report, paragraph VII, were subsequently revised in charting from the submerged obstructions to wells, through CL/1179 (1967) and CL/328 (1968). The obstruction at latitude 60°51.0', longitude 151°28.5' originally smooth plotted as a -1.4-fathom sounding is considered to be in error. Notes in the records identified the sounding from the depth profile as resulting from gas bubbles escaping from a well. A search at MLLW indicated no visible obstruction that would correspond to a -1.4-fathom sounding. It is considered that the charted wells shown on later chart editions adequately reflect these features.

(3) The two obstructions (Presurvey Review Item 22), oil platforms, addressed in the Verifier's Report, paragraph VII, were investigated by the present survey but their existence was not verified or disproved. Shoaler depths located in the vicinities of these reported obstructions are actually the bottom topography and not indications of obstructions. It is recommended that the charted information be retained.

(4) Numerous oil wells (Presurvey Review Item 31) and their depths charted throughout the area of the present survey, originating with CL/328 (1968), were not verified or disproved by the present survey and should be retained as charted.

(5) The platforms, under construction (Presurvey Review Item 32), charted in latitude 60°48'28", longitude 151°37'59" and latitude 60°51'55", longitude 151°36'18", originate with CL/1179 (1967); subsequent CL/328 (1968) indicates these platforms to have been completed and both having a light and horn. The Descriptive Report and Verifier's Report did not address the latter platform, although the present smooth sheet indicates that a topographic signal is located in that position; an accurate position is provided in the signal list. The Descriptive Report mentions that all platforms are operating and none are under construction.

(6) The pipeline areas charted in the following positions originate with their respective origins; these items have not been investigated by the present survey and should be retained as charted.

	Latitude	Longitude	Origin
centered in	60°49.45'	151°25.0'	L-1556(66)"R"; L-384(67)
	60°49.0'	151°29.5'	L-867(66); L-1556(66)
radiating from	60°49.1'	151°46.0'	L-1556(66); L-1720(67)
	60°55.2'	151°32.6'	L-1777(69)

With the exception of the Presurvey Review items not disproved as mentioned in the Descriptive Report, paragraph K; the Verifier's Report, paragraph VII; and the item mentioned above, the present survey is adequate to supersede the charted information in the common area.

b. Aids to Navigation

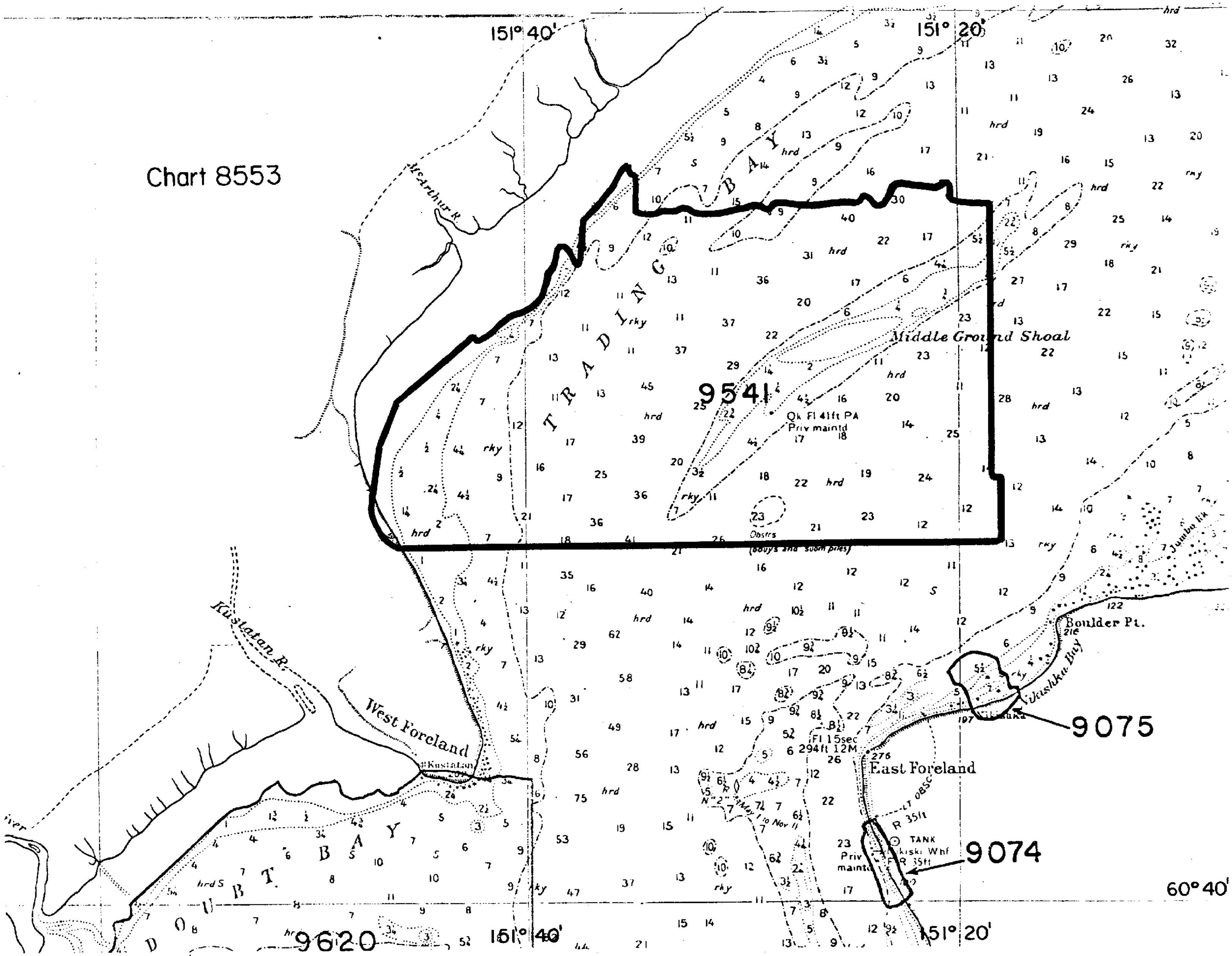
No maintained aids fall within the area of the present survey; however, there are numerous privately maintained lights that mark the oil drilling platforms. The present survey did not verify the existence or adequacy of the lights to mark their intended features.

3. Two landmarks in the vicinity of latitude 60°49.00', longitude 151°47.3' were not shown on the present smooth sheet. These have been transferred

from the present photogrammetric manuscript. Several landmark descriptions (oil platforms) were also added to the smooth sheet during the quality evaluation.

cc:
C351

Chart 8553



151° 40'
151° 20'
Trading Bay
9541
Middle Ground Shoal
Qk Fl 41ft PA
Priv maintd
McArthur R.
Kustatan R.
West Foreland
Kustatan
Doubt Bay
9620
East Foreland
Fl 15sec
294ft 12M
TANK
R 35ft
Nikiski Whf
9074
9075
Boulder Pt.
Nikishka Bay
60°40'

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

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9541

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 QC.
16660	8/18/78	Lennon, DJ.	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. #34 11/4/77 only critical data added
500		J Graham	Full ~~Part Before~~ After Verification Review Inspection Signed Via
		1 bn	Drawing No. 3 DL
16663	3/19/81	N.J. Borawski	Full ~~Part Before~~ After Verification Review DK Inspection Signed Via
			Drawing No. Fully app'd QIC survey
16662	12/31/85	Nelson	Full ~~Part Before~~ After Verification Review QC Inspection Signed Via
			Drawing No. 1 thru 16663
16660	4/26/91	B. SZATKOWSKI	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 29 thru 16663
			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
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			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