

9545

Diagram No. 8553

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. DA-20-3-75

Registry No. H-9545

LOCALITY

State Alaska

General Locality Cook Inlet

Sublocality East of Kalgin Island

1975

CHIEF OF PARTY

CDR M.H. Fleming

LIBRARY & ARCHIVES

DATE May 26, 1982

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

9545

Area 6

CHARTS

500
16013
16660

HYDROGRAPHIC TITLE SHEET

H-9545

Ken L. Williams

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.

DA-20-3-75

State ALASKA

General locality COOK INLET

Locality EAST OF KALGIN ISLAND

Scale 1:20,000 Date of survey June 16, 1975-Aug. 12, 1975

Instructions dated March 20, 1975; Change No. 1, Apr. 25, 1975; Change 2, May 6, 1975 Project No. OPR-469-DA/RA-75

Vessel NOAA Ship DAVIDSON - Launches 3131, 3132 & Monark 3138

Chief of party CDR M. H. Fleming

Surveyed by CDR M. Fleming, LCDR O. Steffin, LCDR M. Wagner, LT D. Eilers, ENS D. Tenmsen, LTJG J. Sarb, ENS M. Huestis, ENS M. Kenny

Soundings taken by echo sounder, ~~hand lead, tape~~ Ross Finline 5000 SN 1077, 1080, 1048

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Verified ~~Plotted~~ by G. E. Kay, S. H. Otsubo Automated plot by PMC Xynetics Plotter

Evaluated ~~Checked~~ by Karol M. Scott

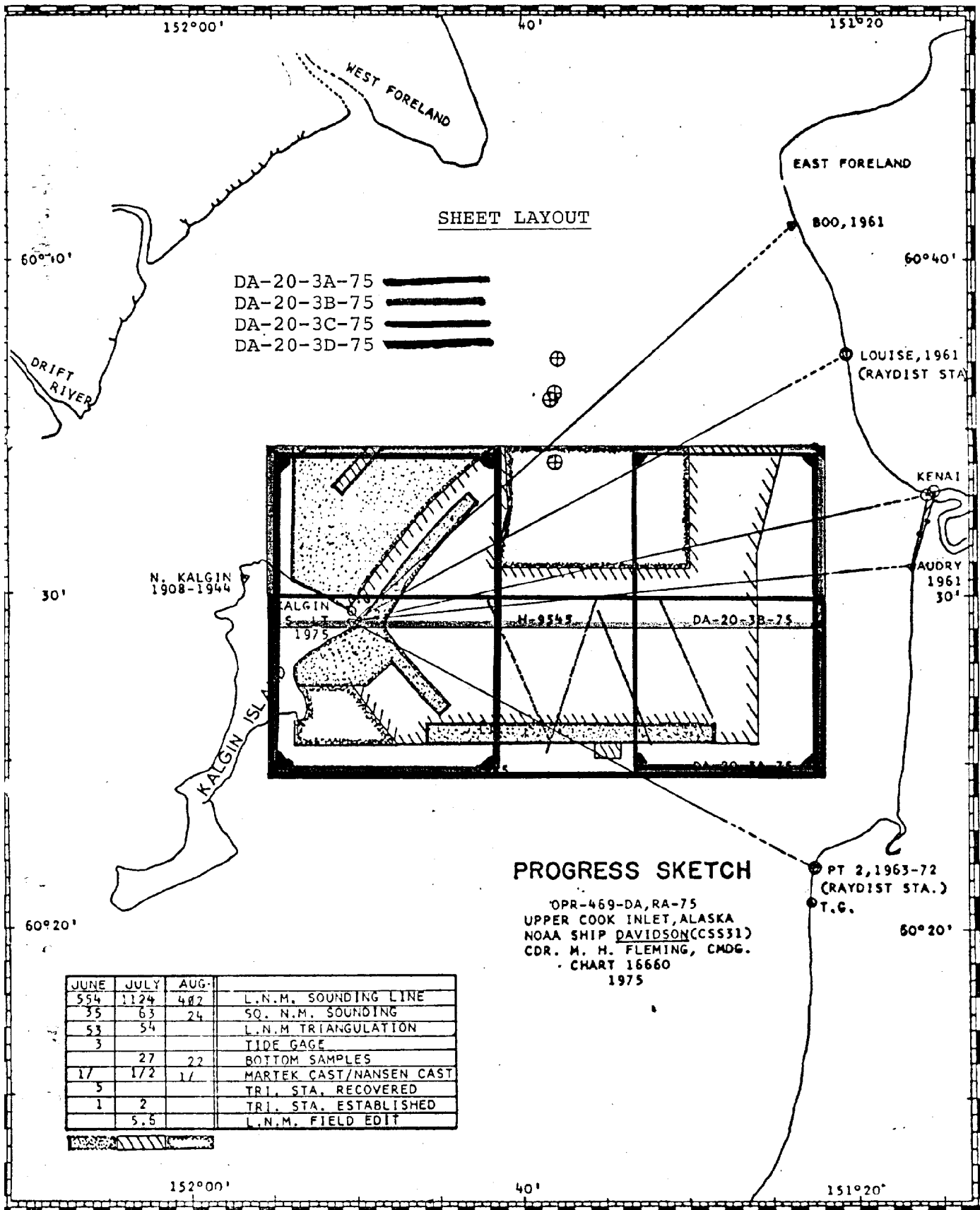
Soundings in and tenths fathoms ~~XXX~~ at ~~MLW~~ MLLW

REMARKS: All times are based on GMT

Misc. data culled from the D.R. are filed with the survey records

STANDARDS CE'D 9-9-82
C. W. J.

XWV. 3-14-91



A. PROJECT

This hydrographic survey was conducted and completed in accordance with project instructions OPR-469-DA-RA-75 dated March 20, 1975. These original instructions were updated with supplemental instructions dated April 25, 1975, and May 6, 1975.

B. AREA SURVEYED

The project area is bounded on the east by longitude $151^{\circ} 24.5' W$ and junctions there with contemporary surveys H-8790, 1964, and H-8789, 1964. The southern boundary is defined by latitude $60^{\circ} 25.4' N$ and junctions with contemporary survey H-9437 conducted in 1974. The survey extends west and includes the northeast tip of Kalgin Island to longitude $151^{\circ} 54' W$ where it junctions with H-8964. Prior survey H-8964 was received on board after junction, according to the project limit sketch, was accomplished. Because of numerous "holidays" discovered in H-8964, a patchwork approach became necessary to satisfy the western boundary of the sheet. Latitude $60^{\circ} 34.5' N$ is the northernmost extent of the survey. Reference to the sheet layout sketch will further elucidate the limits of the project.

Geodetic control work began on June 14 and the last observations were taken on July 31. Hydrography commenced on June 15 and continued through to August 11.

C. SOUNDING VESSEL

DAVIDSON launches DA-1 and DA-2 along with the ship, were utilized to procure the hydrographic data for the survey. Each vessel was assigned a color code for recording data and for the preliminary computer plots. The following is the color code for the three vessels:

<u>Vessel</u>	<u>Vessel #</u>	<u>Color</u>
DAVIDSON	3130	Black
DA-1	3131	Red
DA-2	3132	Blue

All soundings on the smooth field sheet are plotted in black.

D. SOUNDING EQUIPMENT

The Ross Fineline Fathometer, model 5000, was the echo sounder used by all three vessels. Launch DA-1 operated fathometer

S/N 1080 exclusively for hydrography. Fathometer S/N 1077 was utilized by both the ship and DA-2 for all of their hydrography except for ship Hydro on Julian Days 180-81 when S/N 1048 was used. Recorder 1048 has a continuous "wobble" of 0.4 fathoms in the analog trace but the remote display remains stable and is not affected by these analog inconsistencies.

The Bertram launches, vessels 3131 and 3132, employed their fathometers in depths ranging from 1.0 fathoms to 37 fathoms, while the ship's fathometer was operated in 5.8 fathoms to 42 fathoms. (Depths have been corrected for tides on the Field Sheet.)

Data was collected using digitized fathometers by both the launches and the ship. In the launches, depths from the fathometer were fed via an ASI logger to a teletype where the original record was logged both on a printout and on computer tape. On the ship, the real time HYDROPLOT system was used to record and plot the soundings as the hydrography was run.

The fathometers were phase calibrated daily and daily bar checks were taken in both launches. If weather or current conditions prohibited the daily bar check, a lead line comparison was then taken. A TRA corrector of 2fm was applied to the ship's hydrography. A TRA of 0.3 fm was applied to the launch work.

Several Martek and Nansen casts were taken during the extent of the project and velocity correctors were determined. (See Echo Sounding Report.)

All fathograms were scanned for missed depths along with peaks and deeps while running Hydro and scanned again at night on the ship. All sounding additions and corrections were incorporated into the master tape.

Settlement and squat of the launches were taken to be negligible since the swell action present in Cook Inlet is of great enough magnitude to obscure any effect of settlement. In addition, the transducers on the launches are located on the pivot point and any change in squat due to increased or decreased speed is minute.

E. HYDRO SHEETS

The HYDROPLOT system, composed of two PDP8/e computers. S/N's PR03010714 and PC040256431, used in conjunction with COMLOT plotter S/N 5445.5, facilitated the preparation of all of the

project's field sheets. The four computer sheets, 3A, 3B, 3C, and 3D, were later consolidated into two composite field sheets H-9545A and H-9545B on which hydrography was plotted. Detached positions, and rock time and height information in the vicinity of Kalgin Island were plotted on Field Sheet H-9545C, an overlay to sheets H-9545A and H-9545B. (Refer to color-coded sheet layout.) The launches ran mainly on sheet 3C while the ship completed most of the others. All were prepared with a modified transverse mercator projection through the use of computer program AM201. Hydrography was plotted using program RK211.

Position numbers were not plotted on the Smooth Field Sheet because soundings were very dense and position numbers would have obscured sounding detail.

No special position overlay (other than DA-20-3C) was plotted. Reference to position numbers may be made through rough field plots of positions and soundings. This method is considered adequate as an early step in marine center verification is plotting a position number overlay.

Excessing of soundings by deletion from the master data tape was not done. Much of the validity of the survey results in crossline checks of overlapping soundings. These checks would not be possible with soundings deleted from data tapes. Manual excessing was done where critical soundings were obscured on the ~~smooth~~ final field sheet.

F. STATION CONTROL

Existing triangulation stations were recovered and were used as the sites for the raydist control stations. The calibration signals were photo picked and positions confirmed by a traverse run from Kalgin Is. Light, 1975, to establish them as 3rd order class I triangulation. (Refer to signal list and horizontal control report.)

See
Ver/Eval
Report
Section 2

G. POSITION CONTROL

Raydist was utilized as the position control system for this survey. Two raydist shore stations were installed, the red station at LOUISE, 1967, and the green station at PT 2, 1967. Each station consisted of a 20ft tower topped with a 35ft whip antenna. Stations were elevated 50 to 75 ft by the bluff line. Power was supplied to the raydist by eight 12v batteries connected series-parallel to provide 24v. A log was kept for

See
Ver/Eval
Report
Section 2

each station on battery voltage and the dates when batteries were changed.

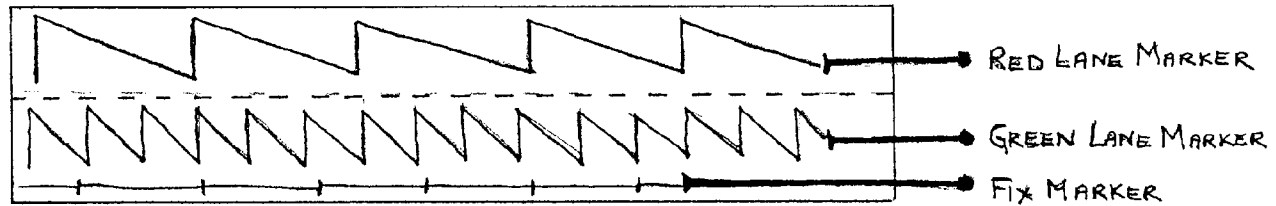
The undergrowth at Station LOUISE accumulated rapidly during the course of the survey and is reflected in a drift of daily calibration correctors. On July 22, the vegetation was thinned out from around the station. The raydist was then retuned since the ground plane had been altered.

The electronic equipment and corresponding serial numbers utilized by the two launches and the ship are as follows:

Vessel Number	<u>3130</u>	<u>3131</u>	<u>3132</u>
Raydist DR-S Navigator	54	47	26
Strip Chart Recorder	L262	16	Set #2
Line Follower	Hydroplot LRI	25	none
Raydist Transmitter	34	22	20
Transmitter Frequency	3306.400	3306.465	3306.500
Hazlow Display/Encoder	33	29	4

The mean raydist frequency, 3306.465 KHz, was used for computer computations.

Raydist strip charts were monitored and annotated with lane and fix numbers whenever the raydist was in operation. The lane and fix pens on the ship's strip chart are of different lengths so the fix mark is produced several inches in front of the proper lane. (See diagram.) This offset is noted at the beginning of several strip charts. Very few lane jumps were observed and all were resolved easily.



Daily calibration of the raydist was accomplished in the launches by a three-point fix while tied up to a calibration buoy located on the north side of Kalgin Island. Program AM560 was used to compute the rates for the primary and check fix. The calibration procedure for the ship was similar to that of the launches except the ship was calibrated while at anchor. Raydist calibrations were conducted at the beginning and end of each day's hydro. The morning and evening correctors were meant to determine the daily corrector and then placed on the respective electronic corrector tape corresponding to

each vessel. (Refer to Electronic Corrector Calibration Report.)

H. SHORELINE

The Class I manuscripts, T-12348 and T-12344, from the FAIR-WEATHER's work in 1974, H-9437, were the source of all the shoreline for the DAVIDSON's field sheets. An overall survey of the field edit was accomplished by the DAVIDSON during the course of the project. The changes and additions to the field edit were logged as hydro data in the form of detached positions and not as part of field edit. (Refer to Field Sheet overlay DA-20-3C-75.)

See Ver/Eval Report Section 2

I. CROSSLINES

It was discovered very early in the project that C331 tidal zoning recommendations based on predicted tides from Nikiski were not adequate to reduce the hydrography for the Kalgin Island project area. The reduced crosslines were several fathoms out and contour lines had little continuity. Even crosslines that were run by the same launch over hydrography run the same day showed discrepancies.

See Ver/Eval Report Section 3

At command discretion, a second tide gage was installed at Kalgin Island. Using the tide information collected from the Kasilof and Kalgin Island tide gages, high and low water times and ratios were determined to modify the recommended zoning. Applying field findings to Nikiski predicted tides, correctors were obtained that more accurately reduced the hydrography gathered. (See Tides Note) The agreement of crosslines improved to within 0.3 fathoms on the average.

After the data is plotted using observed tides, the crosslines should be very good.

J. JUNCTIONS WITH CONTEMPORARY SURVEYS

Survey H-9545 junctions on the east with surveys H-8790 and H-8789. The junction soundings in general agreed very well-- on the average within 0.3 of a fathom. A closer agreement may result after better tide correctors are applied.

The southern limit of the survey junctions with contemporary survey H-9437. The soundings from the 5 fathom curve to the eastern limit correspond well with those acquired by the

FAIRWEATHER in 1974. Inshore near Kalgin Island, however, the two surveys are not compatible. This discrepancy can be explained by several factors. As mentioned previously, the tides in the area are variable. Reference should be made to the FAIRWEATHER's descriptive report for H-9437. Great difficulty was experienced in 1974 in attempting to resolve the 1 & 2 fathom differences in their data for this area. DAVIDSON work appears to be more self-consistent than H-9437 in this vicinity. It is quite possible that the tides near the east shore of Kalgin Island are somewhat different than those occurring on the north side. In addition the area is shoal with many large isolated boulders, many of which are 1 fathom or more in height. Thus, it is difficult to determine which are the representative soundings and where the bottom contours should be drawn.

✓
See
Ver/Eval
Report
Section 5

On the west, the DAVIDSON's survey meets with survey H-8964. These two surveys mesh very well, with representative soundings agreeing to within 0.1-0.3 fathoms.

✓

K. COMPARISON TO PRIOR SURVEYS

H-3196, 1910, and H-3198, 1910, are the two prior surveys that overlap with H-9545 hydrography. H-3196 soundings closely match those found by the DAVIDSON. H-3198 survey soundings are from 1-3 fathoms shoaler than H-9545 soundings.

✓
See
Ver/Eval
Report
Section 6.

There are no presurvey review items within the limits of this survey. *Dashed circle items only.*

See
Ver/Eval
Report
Section 6

L. COMPARISON WITH THE CHART

* In an effort to locate all of the rocks plotted on chart 16660, 16th Ed, 9/28/74, scale (1:194,154), the DAVIDSON performed wire sweep operations. Several of the rocks were not found, and others were discovered in slightly different locations. Below are the results of the wire sweep investigations. Numerous rocks were found that had not previously been located. (Refer to field sheet overlay DA-20-3C-75 for rock positions, heights, and field data.)

See
Ver/Eval
Report
Section 7

<u>Feature</u>	<u>Position on Chart</u>	<u>Results</u>	
Rock	60° 29.15' N 151° 49.7' W	wire swept not found	T-Sheet rock (5) 60° 29' 08.2" N 151° 49' 42.3" W Chart from H-9545 concur
Rock	60° 29.11' N 151° 49.42' W	wire swept not found	T-sheet rock (1) confirmed by Pos. 9602 difference in G.P. due to chart scale Chart from H-9545

* Typo error

✓ 7PS

Rock	60° 29.28' N 151° 49.25' W	wire swept not found	<i>T-sheet rock (2) 60° 29' 18.5" N 151° 49' 14.2" W Chart from H-9545</i>
Rock	60° 29.4' N 151° 48.4' W	wire swept not found	<i>No rock charted at G.P. unresolved</i>
Rock	60° 29.5' N 151° 48.45' W	wire swept not found	<i>No rock charted at G.P. unresolved</i>
Rock	60° 29.26' N 151° 48.25' W	found	<i>Pos. 9601 Chart from H-9545</i>
Rocks	60° 31.2' N 151° 47.12' W 60° 31.6' N 151° 47.12' W	one rock found at: 60° 31.13' N 151° 47.02' W	<i>one subm rock located at Pos. 9605 Chart from H-9545</i>

Disregard charted rocks, chart rocks as shown on the present survey

M. ADEQUACY OF SURVEY

The hydrography gathered during this project is reliable and a representation of the area as it presently exists. This survey should supersede all previous surveys. *concur*

N. AIDS TO NAVIGATION

Kalgin Island Light, the solitary fixed navigational aid in the project area, was resected to Third order Class I accuracy. The determined geographical position agrees very well with the present position in the Coast Guard light list and Chart 16660, 16th Ed Sept 28 74. *concur*

There are no floating navigational aids in the survey area. *concur*

Refer to NOAA Form 76-40 appended.

O. STATISTICS

<u>Vessel #</u>	<u>Hydro Miles</u>	<u>Crosslines</u>	<u>Hydro Positions</u>
3130	843.3	93.5	2984
3131	487.0	57.3	1883
3132	559.6	38.8	2215
Total	<u>1892.0</u>	<u>189.8</u>	

% of Crosslines = 10.03%
Square Nautical Miles of Hydrography = 121.6
Total # of positions = 7082

P. MISCELLANEOUS

The depth contours on both H-9545A and H-9545B, from five to forty fathoms, are smooth. However, in the shoaler areas of the field sheets, the contours are quite irregular. *concur*

Several factors in tandem are contributing to cause contour irregularities. Predicted tide correctors are not precise enough to resolve the hydrography to better than 0.3 fathoms. In the inshore areas this is revealed more drastically than in the deeper waters and thus the shoaler contours are not as smooth. In addition, the swell action along the east side of Kalgin Island was of considerably greater magnitude than in other areas. A swell of 2-3 feet combined with a 0.3 fathom tide discrepancy can result in a false depth of 0.8 fathom or more. Finally, the bottom itself is highly irregular in areas. Specifically the southwest corner of H-9545 field sheet was found to contain many boulders along with bottom scours as is evident from the fathograms for JD 220/221, Fix #6208-6211.

See
Ver/Eval
Report
Section 3

On field sheet H-9545B, the area defined by latitudes $60^{\circ} 32' N$ to $60^{\circ} 34.5' N$ and longitudes $151^{\circ} 42' W$ to $151^{\circ} 48' W$ shows many isolated pockets of 5 fathoms or shoaler water. This is the actual design of the bottom as can readily be seen by referring to the fathograms corresponding to the area. (See DA-2 fathogram JD 179/180, Fix #4751-4754)

Sand
Waves
See
Ver/Eval
Report
Section 3

Hydrographer's discretion was utilized. Depth contours were drawn to give the best representation of the bottom that the data affords.

The currents in Cook Inlet are unique and the mariner should be conscious of their magnitude and variability. In the east side of the project area, the currents run in a north-south direction at approximately a 6-knot maximum current. The area north of Kalgin Island, however, has east-west tidal currents of about the same magnitude. While delineating the 20 fathom curve east of Kalgin Island, strong tide rips and currents were experienced and dense drift lines were frequently encountered in the area. *"Dense drift lines" are lines of flotsam oriented in lines perpendicular to the current flow & may be caused by small, almost imperceptible tidal bores.*

The north bluff line of Kalgin Island is rapidly eroding. Mud slides are very prevalent and leave many boulders at the waterline.

7PS

Kalgin Island residents have observed erosion of the north Kalgin beach in the winter months with deposition occurring during the summer. In addition, the bay just south of Kalgin Island Light appears to be slowly silting in. Ice floes have also been known to deposit many new boulders and shift existing ones during the course of the winter. As a result, the bottom topography around the NE point consists of a hard bottom with many isolated boulders whose positions are variable. It should therefore be kept in mind that the shoreline and near shore area are in a state of flux and are changing with the seasons and the years.

The DAVIDSON also discovered that the Kenai River range runs over extensive mudflats and is only navigable during high tide. Mudflats are delineated correctly on the chart. *H-8789, H-8790*

Q. RECOMMENDATIONS

Due to the extreme tidal currents which are prohibitive for wire dragging, it is recommended that side scan sonar be used to resolve potential navigational hazards on future OPR 469 surveys. Not only is it very difficult to wire drag without mishap, but the boulders in Cook Inlet are scoured and rounded from the silt and strong currents. It is doubtful if a wire drag would hang up on such a rock even if approached from all directions. Side scan sonar, however, could quickly and effectively establish the existence or nonexistence of such features.

The nearshore area around Kalgin Island should be charted as foul with numerous boulders. FAIRWEATHER 1974 field edit defines foul limits. *Foul limits were added to the smooth sheet from T-12344 and T-12348 in 1967, 1970 with 1974 field edit during Q.C.I. Chart the foul limits as shown on the present survey.*

Tides and currents data resulting from 1973 McARTHUR observations should be used to refine field-determined tidal zoning recommendations.

R. AUTOMATED DATA PROCESSING

The launches gathered hydrographic data utilizing a Ross 5000 fathometer linked to an ASI Logger and teletype. The ship's data was collected using the real-time HYDROPLOT System with the AM 100 computer program.

The data tapes were later edited using AM 602 (ELINORE) and converted to master tape format using RK 337 (UNSCRAMBLER).

The final sm. field and work sheets were plotted using RK 211 (RANGE RANGE PLOT). Corrector tapes and master tapes are of the new "1975" format. Included with this report are printouts of the corrector, velocity, signal and TRA/TC/TI tapes.

The following is a list of the computer programs and the specific versions used for the processing of the project's data.

<u>Program</u>	<u>Version</u>
RK 111	8/7/74
RK 210	8/14/75
RK 211	8/16/74
RK 337	8/8/74
RK 407	8/15/74
RK 409	9/5/73
AM 100	11/10/72
AM 500	11/10/72
AM 560	6/6/75
AM 602	5/21/75

S. REFERENCES TO REPORTS

Other pertinent reports are:

1. Coast Pilot Report
2. Horizontal Control Report
3. Corrections To Echo Sounders Report
4. Electronic Control and Calibration Report
5. Marine Mammals Report

H-9545

Approval Sheet

Submitted,

Mary M. Huestis

Mary M. Huestis
ENS, NOAA

Approved and forwarded,

Michael H. Fleming

M. H. Fleming
CDR, NOAA
Chief of Party

The field work on this survey was accomplished under my supervision. Inspection was made of the Field Sheet and supporting records.

M. H. Fleming

M. H. Fleming
CDR, NOAA
Commanding Officer
NOAA Ship DAVIDSON

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD		<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
(Consult Photogrammetric Instructions No. 64.)

FIELD (Cont'd)

OFFICE IDENTIFIED AND LOCATED OBJECTS

I. OFFICE IDENTIFIED AND LOCATED OBJECTS
Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
Enter the applicable data by symbols as follows:
F - Field
L - Located
V - Verified
1 - Triangulation
2 - Traverse
3 - Intersection
4 - Resection
5 - Field identified
6 - Theodolite
7 - Planetable
8 - Sextant
A. Field positions* require entry of method of location and date of field work.
EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
EXAMPLE: Triang. Rec. 8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.
EXAMPLE: V-Vis. 8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

H-9545

SIGNAL LIST PRINTOUT
DA-20-3-75

001	7	60	37	12631	151	20	28382	250	0030	330645	LOUISE, 1961
002	7	60	21	55689	151	22	27177	250	0030	330645	PT 2, 1963-72
003	7	60	30	50559	151	16	37445	139	0010	000000	AUDRY, 1961
004	7	60	30	32803	151	56	44344	139	0070	000000	N. KALGIN, 1908-44
005	7	60	41	01473	151	23	49661	139	0015	000000	BOO, 1961
006	3	60	29	05855	151	50	06119	139	0040	000000	KALGIN ISLAND LIGHT 1975
007	0	60	28	56471	151	49	56440	139	0000	000000	ROCK, 1975
101	5	60	30	44296	151	54	59452	243	0002	000000	HYDRO SIGNAL TOPO
102	5	60	30	10048	151	53	13349	243	0002	000000	"
103	5	60	29	57478	151	52	14770	243	0001	000000	"
104	5	60	29	42196	151	50	48317	243	0001	000000	"
105	0	60	29	17186	151	48	12325	243	0000	000000	DROWNED; 1975 calibration only
106	7	60	28	45306	151	51	18057	243	0036	000000	JILL
107	7	60	28	31911	151	52	06858	243	0036	000000	JACK
108	0	60	33	05308	151	15	29940	243	0030	000000	KENAI REAR RANGE
109	0	60	33	02389	151	15	36508	243	0020	000000	KENAI FRONT RANGE

FIELD TIDE NOTE

OPR-469-DA/RA-75

H-9545

(DA-20-3-75)

Field tide reductions of soundings are based on Nikiski predicted tides corrected for Cape Kasilof and Kalgin Island. These tides were provided upon request from C331 Rockville. Times of High and Low water were estimated from hourly predictions. Reducers were then computed using the PDP8/e computer and AM500 program. All times of recorded tides at Kalgin Island are in Greenwich Mean Time and all times at Cape Kasilof are in Alaska Standard Time (150 west), but were recorded on form 362 in GMT.

Two Bristol Bubbler tide gages were installed in the project area. Location and operational periods are:

<u>Site</u>	<u>Location</u>	<u>Period</u>
Cape Kasilof	60/20.25' North 151/22.9" West	11 June 75 through 28 August 75
Kalgin Island Light Point	60/29.2 North 151/50.1 West	17 June 75 through 12 August 75

Cape Kasilof

Gage #68A9336 was installed and began operating on 11 June 75. Records are continuous through 28 August 75 with the following exceptions:

0100:9 July through 2300 9 July: Data missing, tide observer forgot to wind clock.

0100 15 July through 2000 16 July: Data missing, paper in tide gage jammed.

0900 23 July through 0000 25 July: Data missing due to jammed paper.

The staff was originally built on 12 June 75. The second staff was installed on 24 June 75 after gales and heavy drift destroyed the first staff on 20 June 75. The third staff was installed 22 July 75 after storm action again destroyed the second staff.

12 through 24 June 0.0 on staff equals 12.8ft on gage
24 through 22 July 0.0 on staff equals 13.0ft on gage
22 through 28 August 0.0 on staff equals 11.0ft on gage

The gage and staff were removed 28 August 75.

Kalgin Island, Light Point

Gage 68A9335 was installed and began operating 17 June 75 and was replaced by gage #73A236 on 13 July 75. The gages were switched due to the appearance of possible gage malfunctions due to a stairstep trace being recorded. The orifice was moved into deeper water three times:

17 June to 20 June: 0.0 on staff = -6.4ft on gage
20 June to 24 June: 0.0 on staff = -4.2ft on gage
24 June to 10 July: 0.0 on staff = -1.8ft on gage
10 July to 13 August: 0.0 on staff = 2.9ft on gage

On 13 August 75 a northwest storm and subsequent mud slides from the cliffs above the gage destroyed the tide station. Water did not touch the tidal records which are complete through 12 August 75.

Leveling

Cape Kasilof was leveled upon installation of each new tide staff. Vertical movement was securely arrested for each staff, therefore no staff movement is suspected.

Kalgin Island was leveled to five temporary benchmarks; no significant staff movement occurred.

Zoning Recommendations

We recommend sheet H-9545 be zoned as follows:

West of the line extending from the top of the sheet at 151°-40'W to the bottom of the sheet at 151°-46'W use Kalgin Island observed tides. This line generally follows the twenty-fathom curve and is marked by extreme current differences as the bottom drops steeply to the east.

East of the above line, use Cape Kasilof or Nikiski observed tides corrected by approximately thirty minutes on highs and lows to compensate for the more northerly position of this sheet. The field sheet was plotted using the above demarcation line (launch work west, ship

work east) with the following correctors to Nikiski predictions:

	HIGHS	LOWS
Launch work	-25 min, 0.91 ratio	-13 min, 1.00 ratio
Ship work	-30 min, 0.99 ratio	-30 min, 0.99 ratio

The above relationships were determined by comparing marigrams with predictions.

Reducers were computed using program AM500 after estimating times and values for high and low waters from predicted hourly heights supplied by Rockville.

Predicted tides, when corrected as above, appear adequate. In general, crosslines agreed within $\frac{1}{2}$ fathom which is very good in consideration of the tidal range. Day 206 predictions do not seem to match observations in both ship and launch work and should be checked against smooth tide data.

The results of the NOAA Ship McARTHUR Cook Inlet Tide and Current Survey should be used to refine the time shifts and height ratios.



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

C331-237
GTP

June 27, 1975

TO: Commanding Officer
NOAA Ship DAVIDSON

THRU: Director
Pacific Marine Center

FROM: Chief, Tides Branch *C. A. Andrew*
Oceanographic Division

SUBJECT: Tide Zoning OPR-469-FA

In response to telecon from Commander Forester, PMC,
attached are predicted hourly heights for Nikiski
1975 and tidal zoning in the project area.

Attachment



Supplemental
 OPR-469-FA, RA-74

SUBJECT: Tidal Zoning For Boat Sheets

Time and range corrections have been computed for each boat sheet (field sheet) and should be applied to the predicted tides for Nikiski as furnished. The recommended corrections are as follows:

Sheet	Mean Range	Ratio	Time
A			
North of 60°14'	15.5	0.89	- 1 hr.
South of 60°14'	15.0	0.86	- 1 hr. 30 m.
B			
West of 151°50'	15.8	0.91	- 1 hr. 15 m.
151°50' to 151°40'	16.5	0.93	- 1 hr.
East of 151°40'	16.8	0.97	- 1 hr. 15 m.
C			
East of Kalgin Is. to 151°40'	16.5	0.95	- 1 hr.
East of 151°40'	17.0	0.98	- 45 m.
West of Kalgin Island	15.5	0.89	- 45 m.
D			
North of 60°20'	17.4	1.00	- 45 m.
South of 60°20'	17.0	0.98	- 1 hr.
E			
West of 151°40'	16.8	0.97	- 45 m.
East of 151°40'	17.2	0.99	- 45 m.
F			
West of 151°40'	16.2	0.93	- 30 m.
151°40' to 151°30'	16.8	0.97	- 30 m.
East of 151°30'	17.4	1.00	- 15 m.*

Sheet	Mean Range	Ratio		Time
G .				
East of 151°50'	16.2	0.93	-	30m.
West of 151°50'	15.8	0.91	-	30m.
H-8963	15.5	0.89	-	45m.
H-8964				
West of 152°00'	15.5	0.89	-	45m.
East of 152°00'	16.0	0.92	-	45m.
H-8965				
West of Kalgin Island	15.5	0.89	-	45m.
East of Kalgin Island	16.5	0.95	-	1 hr.

* Time should be corrected depending on distance from the reference station, Nikiski.

1/6/76

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

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

Period: June 15 - August 10, 1975

HYDROGRAPHIC SHEET: H-9545

OPR: 469

Locality: Cook Inlet

June-July 5 9.3 ft.
July 5-31 7.7 ft.

Plane of reference (mean lower low water): August 7.5 ft.

Height of Mean High Water above Plane of Reference: 18.0 ft.
(Kalgin Island)

Remarks: Recommended zoning:

	<u>Time Correction</u>	<u>Range Ratio</u>
(1) West of $151^{\circ}43'$	- 30 min.	x0.90
(2) $151^{\circ}43' - 151^{\circ}28'$	- 30 min.	x0.95
(3) East of $151^{\circ}28'$	- 30 min.	x1.00

for James R. Hubbard
Chief, Tides Branch

GEOGRAPHIC NAMES

H-9545

Name on Survey

A ON CHART NO. 16660
 B ON PREVIOUS SURVEY NO. 3198
 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
 I SHEETS
 K

Name on Survey	A	B	C	D	E	F	G	H	I	J	K	
COOK INLET	X										12344 12348	1
KALGIN ISLAND	X	X									12344 12348	2
LIGHT POINT	X										12348	3
PACKERS CREEK			X									4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Chas E. Harrington

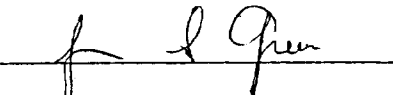
Chief Geographer - C3x5

17 JUNE 1982

APPROVAL SHEET
FOR
SURVEY H-9545

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

Date: 5/12/82



Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9545

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		X 9	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS, ARC, EXCESS		5	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			X			
CAHIERS	X		3	Raw Plo = 3000		
VOLUMES	X					
BOXES			2-smooth Plo, 4 box vol. misc data			

T-SHEET PRINTS (List) 1-12344, 1-12348

SPECIAL REPORTS (List) 1 Notebook Daily Calibrations

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			
POSITIONS CHECKED		7040	7040
POSITIONS REVISED		79	79
SOUNDINGS REVISED		673	673
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	7	*(VER)/(EVAL)	7
VERIFICATION OF CONTROL		31/04	35
VERIFICATION OF POSITIONS		169/07	176
VERIFICATION OF SOUNDINGS		878/15	893
COMPILATION OF SMOOTH SHEET		44/68	112
APPLICATION OF TOPOGRAPHY		15/02	17
APPLICATION OF PHOTOBATHYMETRY		00/00	00
JUNCTIONS		08/06	14
COMPARISON WITH PRIOR SURVEYS & CHARTS		102/07	109
VERIFIER'S REPORT		01/23	24
OTHER		00/36	36
TOTALS	7	1248/158	1423

Pre-Verification by James S. Green	Beginning Date Nov. 4, 1975	Ending Date Nov. 4, 1975
Verification by S.H. Otsubo, G.E. Kay	Evaluation by K.M. Scott	Beginning Date Nov. 5, 1975
Verification Check by S.H. Otsubo, J. S. Green	Time (Hours) 51	Date May 10, 1982
Marine Center Inspection by HIT	Time (Hours) 8	Date May 13, 1982
Quality Control Inspection by F.P. SAULSBURY	Time (Hours) 73	Date 6-16-82
Requirements Evaluation by Dennis Hill	Time (Hours) 2	Date 7/22/82

S. Waples 11 hrs 6/29/82

REGISTRY NO. H-9545

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFICATION/EVALUATION REPORT

REGISTRY NO. H-9545

FIELD NO. DA-20-3-75

Alaska, Cook Inlet, East of Kalgin Island

SURVEYED: June 15, 1975 - August 12, 1975

SCALE: 1:20,000

PROJECT NO: OPR-469-DA/RA-75

SOUNDINGS: Ross Fineline 5000
S/N 1077, 1080, 1048

CONTROL: Hastings Raydist -
Range/Range

Chief of Party.....CDR M. H. Fleming

Surveyed by.....CDR M. Fleming
LCDR O. Steffin
LCDR M. Wagner
LT D. Eilers
LTJG J. Sarb
ENS M. Huestis
ENS M. Kenny
ENS D. Tennsen

Automated plot by.....PMC Xynetics Plotter

Verified by.....Gordon E. Kay
Stanley H. Otsubo

Evaluated by.....Karol M. Scott

1. INTRODUCTION

Note: This survey has been processed utilizing a procedure developed to work in conjunction with the Verification Branch realignment, which established an evaluation process. The survey data was first verified and a smooth sheet compiled by a verifier. Then, an evaluator reviewed the work of the verifier, made the necessary comparisons with prior surveys and charts and wrote the Verification/Evaluation Report.

H-9545 is a basic hydrographic survey conducted by NOAA Ship DAVIDSON and her launches in accordance with Project Instructions dated March 20, 1975; Change 1 dated April 25, 1975; and Change 2 dated May 6, 1975.

This survey includes Light Point on Kalgin Island and lies between latitudes 60°25'00"N and 60°34'30"N and longitudes 151°25'00"W and 151°54'00"W. This area of hydrography exceeds the maximum sheet limits that are prescribed for current surveys by accepted guidelines.

The data collected by the ship proved too voluminous for the PMC system to handle initially. To facilitate processing, the survey data was treated as two independent surveys separated by vessel. Manual excessing of areas where vessels junctioned, holidays, and overprints which were caused by a deficiency in the excess program resulted in the expenditure of considerable hours. The survey was allowed to go dormant as emphasis was placed on other surveys that could effectively be processed. Eventually, large discs were acquired so that normal processing procedures could be utilized on this survey. At the request of Marine Chart Division in October 1981, processing of H-9545 was resumed. The separate parts of the survey were merged to form one file and the survey data reexcessed. These hardware and programming obstacles have resulted in excessive verification time.

Predicted tides based on the Nikiski standard gage and corrected for Cape Kasilof and Kalgin Island were utilized during shipboard processing. Tides used for reduction of final soundings are from the Nikiski gage with time and range adjustments to Kalgin Island, Alaska.

The projection parameters, signal list, and TRA tables have been revised during the verification process. All corrected information is listed in the smooth printouts accompanying the smooth sheet.

2. CONTROL AND SHORELINE

The stations used to control this survey were recovered or established as stated in Section F of the Descriptive Report. KALGIN ISLAND LIGHT, 1975 and DROWNED, 1975 are the only two stations established during the field season that were used for control or calibration which met the triangulation accuracy standards. The other stations which were photopicked are represented as topo stations and were used for calibration.

Raydist employed in the range/range mode controlled hydrography within the survey area. The correctors applied vary from the computed correctors as noted below:

Launch 3131		Should Be				Differences	
Day	Time	Pat. 1	Pat. 2	Pat. 1	Pat. 2	Pat. 1	Pat. 2
168	221430	+000.03	-000.22	-000.12	-000.22	-000.15	000.00
180	195000	-000.13	-000.05	-000.17	-000.07	-000.04	-000.02
217	194615	-000.02	+000.04	+000.02	+000.04	+000.04	000.00

Launch 3132

Day	Time	Pat. 1	Pat. 2	Should Be		Differences	
				Pat. 1	Pat. 2	Pat. 1	Pat. 2
205	194030	-000.16	-000.07	-000.07	-000.16	+000.09	-000.09
217	193245	+000.04	+000.08	+000.05	+000.08	+000.01	000.00

These corrector differences are minor, amounting to the maximum of .3mm at the scale of the survey. This falls within the survey accuracy requirements and was not applied during evaluation. Further information is provided in the Descriptive Report, Section G. *concur*

Shoreline was applied from unreviewed Class I manuscripts T-12344 and T-12348. Photography was flown during June 1967 and July 1970. Field edit was accomplished in August 1974. *concur*

As noted by the ship in Section H, changes to the field edit became part of the hydro records. The hydrographic information is portrayed on the smooth sheet. Rocks affected include the following (T-sheet positions and elevations vary slightly):

<u>Position</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Height</u>	
8001	60°30'02.2"N	151°50'47.9"W	(0)	<i>Chart rocks as shown on the present survey</i>
8004	60°29'56.1"N	151°49'44.4"W	Cov 1 ft. MLLW	
8010	60°30'06.1"N	151°51'29.6"W	Cov 2 ft. MLLW	
9601	60°29'16.0"N	151°48'15.4"W	(7)	
9602	60°29'04.6"N	151°49'19.0"W	(1)	
9603	60°29'03.8"N	151°49'20.2"W	Cov 5 ft. MLLW	
9701	60°30'07.1"N	151°49'40.1"W	Cov 2 ft. MLLW	

3. HYDROGRAPHY

Crossline soundings incorporated within this survey are in good agreement. Differences range between .2 and .5 fathoms in the shoaler areas. This is attributed to the magnitude of the tides and bottom characteristics. *Possibility of inexact tide correctors and irregular bottom*

Sand waves are a prominent feature in an area bounded by latitudes 60°32'00"N and 60°34'00"N and longitudes 151°44'00"W and 151°48'00"W. These are further emphasized by the five fathom depth curve and is characteristic of the constantly shifting bottom. ✓

The bottom configuration, determination of least depths and development of all standard depth curves are adequate. Portions of the zero fathom and one fathom curves were not developed. ~~Generally,~~ These incomplete curves fall in ~~or around~~ fowl areas. Bottom samples were taken during the survey operations and adequately portray the bottom composition.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual of July 4, 1976, with the following exceptions:

a. Position numbers 2000-2983 are duplicated between vessels 3130, J.D. 212-224, and 3131, J.D. 167-184. ✓

b. Sounding volumes do not contain the required stamped information for the beginning and end of the day.

c. Station 103 falls in water ^{is not described in the survey records. It is probably a prominent boulder falling just offshore of the S.L.} and is not described in hydrographic or horizontal control records. ^{Shown as an islet uncov. 2 ft at MHW on T-12348 (1967-74). Since there are so many rocks in the area, this was revised to a rock uncov. 2 ft at MHW during Q.C.I. chart with a rock awash symbol.}

d. The 4.8 fathom sounding at latitude 60°26'14.8"N, longitude 151°26'10.1"W and the 5.1 fathom sounding at latitude 60°26'11.3"N, longitude 151°27'02.4"W were not developed by hydrography. **concur**

5. JUNCTIONS

H-9545 joins six contemporary surveys at its perimeter. Each junction is addressed below.

a. H-8964 (1:20,000) 1967-74 joins the northwestern portion of the present survey. Present soundings are shoaler and curves do not agree. Even though the curves on H-8964 are penciled in the junction area, a butt junction was effected. A copy of the junction survey marked as required is submitted with the data package. Curves should be adjusted to conform to those shown on the submitted copy. The junction note and curves are inked. ^{Differences are attributed to bottom change} **Butt junction effected during Q.C.I.**

b. ^{RN} H-9619 (1:20,000) 1976 lies to the north joining where the bottom is composed of sand, gravel, and pebbles that form a generally sloping bottom. There is a rock and two shoal soundings between the five and ten fathom curves that should be added to the previously verified survey. All other soundings are in good agreement. Curves in the junction area of that survey were penciled. They may now be adjusted to conform to this survey and the junction note inked as ^{Subm rk cov. 6.5 fms at shallow of the two shoal sdgs were trans-ferred to H-9619 during Q.C.I. Minor differences of plus or minus 0.1 to 0.3 fms may be attributed to inexact tidal reducers and/or bottom change.} **one common throughout the junctional area. Differences may be attributed to inexact tidal reducers and/or bottom change.**

c. ^{RN} H-8789 (1:10,000) 1964 and H-8790 (1:10,000) 1964 form the junctions to the east. All soundings are in good agreement. The junction notes are inked accordingly. ^{Minor differences of 0.1 to 0.3 fms are attributed to inexact tide reducers and/or bottom change.}

d. ^{RN} H-9437 (1:20,000) 1974 lies south of the present survey. The soundings are in generally good agreement with the exception of the plotted 20 fathom soundings. During verification of H-9437 soundings were plotted with tenths to eleven fathoms. Since then procedures have changed and tenths are now plotted to twenty-one fathoms. The curve, therefore, is drawn shoaler. The curves have been drawn to reflect present standards. Changes to affected soundings and curves should be done and junction note inked. ^{Accomplished during Q.C.I. Junction is adequate.}

e. ^{SH} H-9777 (1:20,000) 1978 joins this survey at the southeast corner. Soundings are in good agreement. The curves and junction note are inked. **concur**

6. COMPARISON WITH PRIOR SURVEYS

H-3196 (1910) 1:40,000
 H-3198 (1910) 1:200,000 *120,000*
 H-3322 (1911) 1:200,000 *100,000*
 H-8618 (1961) 1:20,000

This area of Cook Inlet was surveyed and plotted previously in foot depths on increments. The present survey was done in fathoms. This fact serves to emphasize differences in soundings. All priors show the same general bottom configuration and reflect soundings somewhat shoaler. Surveying methods alone could account for the differences in soundings. This appears to have been the major attributing factor encountered during the prior survey comparison since the present soundings are deeper but rocks common to both are comparable.

There are four dashed circled pre-survey review items within the limits of the survey: *concur*

- a. The encompassed shoal soundings, *charted from H-3322 (1911) & H-3198 (1910)* at latitude 60°32'N to 60°34'N, longitude 151°41'W to 151°46'W represent the northeastern *underwater* extension of Kalgin Island. This area has been confirmed and further defined by the present survey. The prior survey soundings are comparable and representative of the feature; however, the chart should be updated by the current survey. *charted depths are superseded by pres. survey depths*
- b. The 1-3/4 fm sounding, *charted from H-3198 (1910) 5* at latitude 60°24.8'N, longitude 151°51.2'W is confirmed by present survey soundings of 1.8 fm at latitude 60°25'54"N, longitude 151°51'34"W and latitude 60°26'04"N, longitude 151°51'17"W. Chart from the present survey. *Attributed to bottom change, chart pres. survey depths*
- c. The 10 fm shoal, *charted from H-3198 (1910)* extending north to latitude 60°26.8'N between longitude 151°34'W and 151°35'W is confirmed by present survey soundings with the same coordinates. Chart from H-9545. *charted depths are superseded by pres. survey depths*
- d. The 8 fm sounding, *charted from H-3196 (1910)* at latitude 60°28.5'N, longitude 151°27.2'W is confirmed by 8 fm present survey soundings *near* at the charted positions. Update chart with present survey soundings. *concur*

H-9545 is adequate to supersede all prior surveys within the area of common hydrography. *A portion of H-8617 (1961) W.D. falls within a small area of the northeastern portion of the pres. survey. There are no conflicts with pres. survey depths and effective wire-drag cleaned depths.*

7. COMPARISON WITH CHARTS
16660 (16th Ed., September 28, 1974)

- a. Hydrography - The charted information originates from previously discussed prior surveys. The ship conducted "mini" wire drags to disprove charted rocks as noted in Section L of the Descriptive Report. With the exception of rocks reported by the ship as charted at latitude 60°29.4'N, longitude 151°48.4'W and latitude 60°29.5'N, longitude 151°48.45'W, margin annotations note present survey findings and recommended disposition of those charted rocks. The two rocks listed above were not charted at those coordinates indicated; therefore, disposition cannot be resolved. *Disregard presently charted rocks and chart rocks as shown on the present survey.*

This survey is adequate to supersede all charted hydrography within the common area. *CONCUR*

b. Controlling Depths - There are no controlling depths within the limits of this survey. *CONCUR*

c. Aids to Navigation - Kalgin Island Light was located during the time of this survey. The position agrees with the charted position and adequately serves the purpose intended. *CONCUR*

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

H-9545 (DA-20-3-75) adequately complies with Project Instructions OPR-469-DA,RA-75, Upper Cook Inlet, Alaska. *CONCUR*

9. ADDITIONAL FIELD WORK

This is a good basic survey. No additional field work is required.

Respectfully submitted



Karol M. Scott
Cartographer
May 8, 1982

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 Avenue East
Seattle, Washington 98102

May 14, 1982

TO: CPM - Charles K. Townsend *CKT*
FROM: CPM3 - John W. Carpenter *JWC*
SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9545

This survey is a basic hydrographic survey of East of Kalgin Island, Cook Inlet, Alaska. This survey was conducted by NOAA Ship DAVIDSON in 1975 in accordance with Project Instructions OPR-469-DA-75 dated March 20, 1975; Change No. 1 dated April 25, 1975; and Change No. 2 dated May 6, 1975.

This survey was processed using the evaluation system wherein the verification and evaluation of the survey are divided into two distinct phases.

The inspection team finds H-9545 to be a basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended. *concur*

John W. Carpenter

John W. Carpenter

Roger A. Morris

Roger A. Morris

James W. Steensland

James W. Steensland

James S. Green

James S. Green



10TH ANNIVERSARY 1970-1980

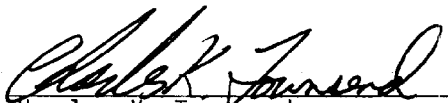
National Oceanic and Atmospheric Administration

A young agency with a historic
tradition of service to the Nation

ADMINISTRATIVE APPROVAL
H-9545

East of Kalgin Island, Cook Inlet, Alaska

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



Charles K. Townsend
Director
Pacific Marine Center

5/14/82
Date



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

C352:FPS

June 16, 1982

TO: Glen R. Schaefer *G.R. Schaefer*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury *F.P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for H-9545 (1975), Alaska, Cook Inlet,
East of Kalgin Island

A quality control inspection of H-9545 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a full-scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

Sunken rocks, with reliable survey depths, covered 3 feet or more at MLLW, are not shown on the present survey as prescribed by the Hydrographic Manual. A sounding in tenths of a fathom, labeled "Rk," should have been shown in each instance instead of a sunken rock symbol described by the depth of water in feet the feature is covered at MLLW. Since this information is clear, with no danger of misinterpretation, it was not revised during quality control inspection.

cc:
C351





NATIONAL OCEAN SURVEY
UNITED STATES

ALASKA - SOUTH COAST

COOK INLET NORTHERN PART

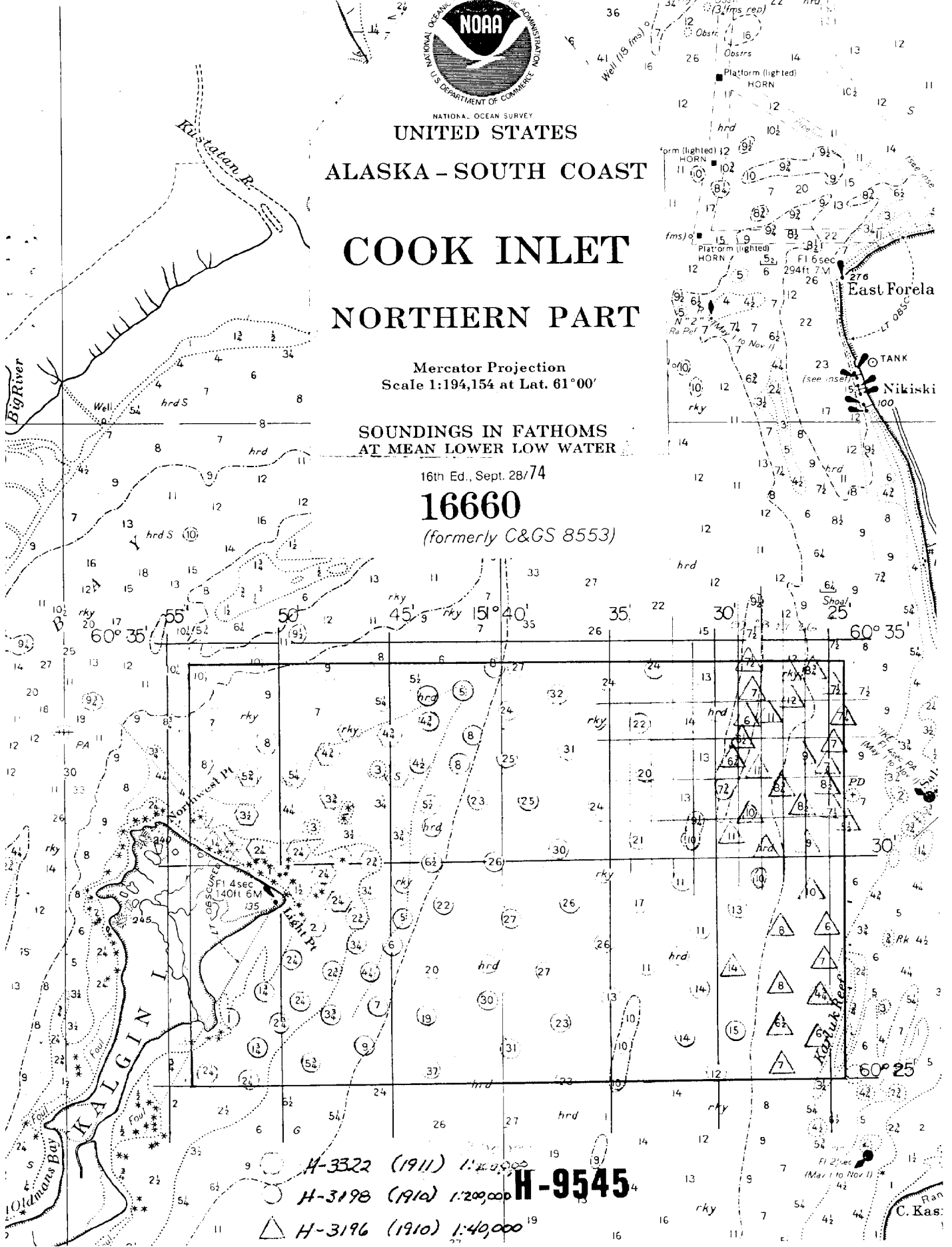
Mercator Projection
Scale 1:194,154 at Lat. 61°00'

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

16th Ed., Sept. 28/74

16660

(formerly C&GS 8553)



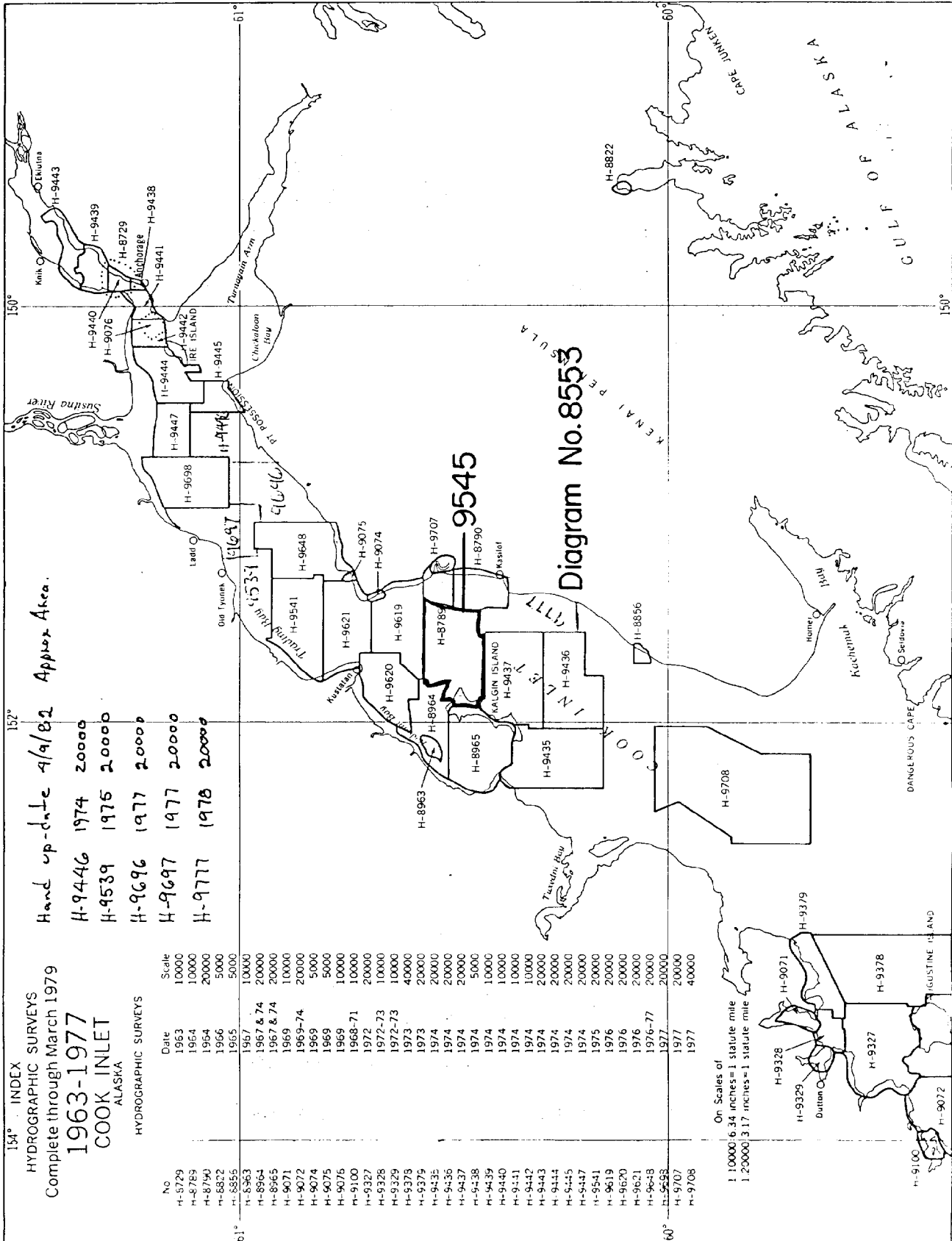
H-3322 (1911) 1:200,000

H-3198 (1910) 1:200,000

△ H-3196 (1910) 1:40,000

H-9545

Fl 21 sec
(Mar 1 to Nov 1)



Hand up-date 9/9/82 Approx Area.

H-9446 1974 20000
H-9539 1975 20000
H-9696 1977 20000
H-9697 1977 20000
H-9777 1978 20000

INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979
1963-1977
COOK INLET
ALASKA

HYDROGRAPHIC SURVEYS

No	Date	Scale
H-8729	1963	10000
H-8789	1964	10000
H-8790	1964	20000
H-8822	1966	5000
H-8855	1965	5000
H-8963	1967	10000
H-8964	1967 & 74	20000
H-8965	1967 & 74	20000
H-9071	1969	10000
H-9072	1969-74	20000
H-9074	1969	5000
H-9075	1969	5000
H-9076	1969	10000
H-9100	1968-71	10000
H-9327	1972	20000
H-9328	1972-73	10000
H-9329	1972-73	10000
H-9378	1973	40000
H-9375	1973	20000
H-9435	1974	20000
H-9436	1974	20000
H-9437	1974	20000
H-9438	1974	5000
H-9439	1974	10000
H-9440	1974	10000
H-9441	1974	10000
H-9442	1974	10000
H-9443	1974	20000
H-9444	1974	20000
H-9445	1974	20000
H-9447	1974	20000
H-9448	1974	20000
H-9449	1974	20000
H-9450	1974	20000
H-9451	1974	20000
H-9452	1974	20000
H-9453	1974	20000
H-9454	1974	20000
H-9455	1974	20000
H-9456	1974	20000
H-9457	1974	20000
H-9458	1974	20000
H-9459	1974	20000
H-9460	1974	20000
H-9461	1974	20000
H-9462	1974	20000
H-9463	1974	20000
H-9464	1974	20000
H-9465	1974	20000
H-9466	1974	20000
H-9467	1974	20000
H-9468	1974	20000
H-9469	1974	20000
H-9470	1974	20000
H-9471	1974	20000
H-9472	1974	20000
H-9473	1974	20000
H-9474	1974	20000
H-9475	1974	20000
H-9476	1974	20000
H-9477	1974	20000
H-9478	1974	20000
H-9479	1974	20000
H-9480	1974	20000
H-9481	1974	20000
H-9482	1974	20000
H-9483	1974	20000
H-9484	1974	20000
H-9485	1974	20000
H-9486	1974	20000
H-9487	1974	20000
H-9488	1974	20000
H-9489	1974	20000
H-9490	1974	20000
H-9491	1974	20000
H-9492	1974	20000
H-9493	1974	20000
H-9494	1974	20000
H-9495	1974	20000
H-9496	1974	20000
H-9497	1974	20000
H-9498	1974	20000
H-9499	1974	20000
H-9500	1974	20000
H-9501	1974	20000
H-9502	1974	20000
H-9503	1974	20000
H-9504	1974	20000
H-9505	1974	20000
H-9506	1974	20000
H-9507	1974	20000
H-9508	1974	20000
H-9509	1974	20000
H-9510	1974	20000
H-9511	1974	20000
H-9512	1974	20000
H-9513	1974	20000
H-9514	1974	20000
H-9515	1974	20000
H-9516	1974	20000
H-9517	1974	20000
H-9518	1974	20000
H-9519	1974	20000
H-9520	1974	20000
H-9521	1974	20000
H-9522	1974	20000
H-9523	1974	20000
H-9524	1974	20000
H-9525	1974	20000
H-9526	1974	20000
H-9527	1974	20000
H-9528	1974	20000
H-9529	1974	20000
H-9530	1974	20000
H-9531	1974	20000
H-9532	1974	20000
H-9533	1974	20000
H-9534	1974	20000
H-9535	1974	20000
H-9536	1974	20000
H-9537	1974	20000
H-9538	1974	20000
H-9539	1974	20000
H-9540	1974	20000
H-9541	1974	20000
H-9542	1974	20000
H-9543	1974	20000
H-9544	1974	20000
H-9545	1974	20000
H-9546	1974	20000
H-9547	1974	20000
H-9548	1974	20000
H-9549	1974	20000
H-9550	1974	20000
H-9551	1974	20000
H-9552	1974	20000
H-9553	1974	20000
H-9554	1974	20000
H-9555	1974	20000
H-9556	1974	20000
H-9557	1974	20000
H-9558	1974	20000
H-9559	1974	20000
H-9560	1974	20000
H-9561	1974	20000
H-9562	1974	20000
H-9563	1974	20000
H-9564	1974	20000
H-9565	1974	20000
H-9566	1974	20000
H-9567	1974	20000
H-9568	1974	20000
H-9569	1974	20000
H-9570	1974	20000
H-9571	1974	20000
H-9572	1974	20000
H-9573	1974	20000
H-9574	1974	20000
H-9575	1974	20000
H-9576	1974	20000
H-9577	1974	20000
H-9578	1974	20000
H-9579	1974	20000
H-9580	1974	20000
H-9581	1974	20000
H-9582	1974	20000
H-9583	1974	20000
H-9584	1974	20000
H-9585	1974	20000
H-9586	1974	20000
H-9587	1974	20000
H-9588	1974	20000
H-9589	1974	20000
H-9590	1974	20000
H-9591	1974	20000
H-9592	1974	20000
H-9593	1974	20000
H-9594	1974	20000
H-9595	1974	20000
H-9596	1974	20000
H-9597	1974	20000
H-9598	1974	20000
H-9599	1974	20000
H-9600	1974	20000

On Scales of
1:10000 6.34 inches = 1 statute mile
1:20000 3.17 inches = 1 statute mile



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

AUG 24 1982

C351:DJH

TO: CPM - Charles K. Townsend

FROM: for C3 - C. William Hayes *Lawson B. Pad*

SUBJECT: H-9545 (1975), OPR-469, Alaska, Cook Inlet, East of Kalgin Island,
Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated June 16, 1982 (copy attached), and the Hydrographic Survey Inspection Team Report, dated May 14, 1982, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-469-DA/RA-75, dated March 20, 1975.

Attachment

cc:
C352 w/o att.



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9545

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
500	9/20/82	M. Sager	Full Part Before After Verification Review Inspection Signed Via Drawing No. 5 Exam for critical corrections only.
16660	11/2/82	L.A. Simmons	Full Part Before After Verification Review Inspection Signed Via Drawing No. 27 Applied direct from smooth sheet
16660	9/10/82	Nator	Full Part Before After Verification Review Inspection Signed Via Drawing No. 1 fully applied copy of Boat sheet to new chart
500	1/17/83	M. Sager	Full Part Before After Verification Review Inspection Signed Via Drawing No. 5 Fully applied thru chart to 16013 Drug # 27
16662	1-27-83	L.A. Simmons	Full Part Before After Verification Review Inspection Signed Via Drawing No. 1-27-83
16660	2/16/83	J. Bailey	Full Part Before After Verification Review Inspection Signed Via Drawing No. 27 Revised depth curves, sndgs, rocks thru X-DRWG CHART 16662.
16013	4/20/83	M. Sager	Full Part Before After Verification Review Inspection Signed Via Drawing No. 27 Revised soundings, depth curves & rocks thru X Drug, chart 16660
531	8-10-83	L.A. Simmons	Full Part Before After Verification Review Inspection Signed Via Drawing No. 18 Exam thru 16013 #27. No Corr.
530	8-10-83	L.A. Simmons	Full Part Before After Verification Review Inspection Signed Via Drawing No. 32 Exam thru 500 #5 No Corr.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.