10143

Diagram No. 8554-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-40-1-84

Office No. H-10143

LOCALITY

State Alaska

General Locality Cook Inlet

Locality Kennedy Entrance

19 84

CHIEF OF PARTY
CDR J.P.Vandermeulen

LIBRARY & ARCHIVES

DATE January 6, 1986

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

10143

AREAS
CHARTS
16606 ✓ 77062
16645 ✓ 82,1662
16680 ✓ 200
16580 ✓ 250
16649 ✓ 300
16723 ✓
330 ✓

TO SIGN OFF SEE "RECORD OF APPLICATION TO CHARTS"

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10143

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 40-1-84

State Alaska

General locality Cook Inlet

Locality Kennedy Entrance

Scale 1:40,000 Date of survey July 20 - August 8, 1984

Instructions dated February 16, 1984 Project No. OPR-P114-RA-84

Vessel NOAA Ship RAINIER (S221), Launches 2123 and 2124

Chief of party CDR J. P. Vandermeulen, NOAA

Surveyed by LT T. Rulon, LTJG S. Konrad, ENS J. Judson, ENS K, Barton, ENS C. Wilson, ENS J. Griffin, ENS M. Pickett, Lt. R. Hastings

Soundings taken by echo sounder, hand lead, pole Raytheon DSF-6000N

Graphic record scaled by RAINIER Survey Department

Graphic record checked by RAINIER Survey Department

Verification [redacted] by James Shofner Automated plot by PMC Xynetics Plotter

Evaluation [redacted]ion by Gordon E. Kay

Soundings in fathoms [redacted] at [redacted] MLLW

REMARKS: Marginal notes in black were made during evaluation and analysis of H-10143 at the Pacific Marine Center, Nautical Chart Branch, Seattle, Washington. Separates are filed in the back of the accordian folder.

ADNOIS / Surf Chart GMSM 4/29/86

SC 4-21-97

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

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

PROGRESS SKETCH

OPR-P114-RA-84

HYDROGRAPHIC SURVEY

SOUTHERN COOK INLET, ALASKA

JUNE 16 - JUNE 30 , 1984

NOAA SHIP RAINIER

JOHN P. VANDERMEULEN, CDR., NOAA

COMD'G

FROM CHART 16640

JUN	JUL	AUG	SEP
38.28			
447.3			
359.0			
7			
0			
8			
0			
0			
1			
4			
12.6			
2.0			

SQ. N.M. SOUNDING
L.N.M. SOUNDING LINE
L.N.M. MISCELLANEOUS DISTANCE
BOTTOM SAMPLES (GRAB)
WATER SAMPLES ANALYZED (SALINITY)
CONTROL STATIONS (ELECTRONIC)
SOUND VELOCITY, TEMPERATURE, DEPTH
NANSEN CAST
TIDE GAGE
STATIONS ESTABLISHED BY TRAVERSE
L.N.M. SIDE SCAN SONAR
SQ.N.M. SIDE SCAN SONAR

A. PROJECT

Survey H-10143 was conducted in accordance with Project Instructions OPR-P114-RA-84, Southern Cook Inlet, Alaska, dated February 16, 1984, Change No. 1 dated April 27, 1984 and Change No. 2, dated June 21, 1984.

B. AREA SURVEYED

Survey H-10143 was performed in the area around Kennedy Entrance, Alaska between July 20 and August 8, 1984 (Julian Dates 202 thru 221). The area was bounded to the east by longitude 151/26/00W, to the west by approximately longitude 152/02/00W, to the north by latitude 59/05/00N, and to the south by latitude 58/50/00N.

C. SOUNDING VESSELS

All soundings were obtained using the following hydrographic survey vessels: ~~RA-4~~ (2124), ~~RA-3~~ (2123) and RAINIER (2120). Bottom samples were obtained by RAINIER (2120). No unusual sounding vessel configurations were utilized. RAINIER was used for all sound velocity casts.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Sounding vessels were equipped with Raytheon DSF-6000N dual beam echo sounders and depths ranged from 0 fathoms to 115 fathoms.

Vessel	Sounding Equipment	Serial No.
RAINIER (2120)	Raytheon DSF-6000N	A115N
RA-3 (2123)	Raytheon DSF-6000N	A119N
RA-4 (2124)	Raytheon DSF-6000N	A117N

Both hardware and operational problems were encountered with the DSF-6000N echo sounders which were especially noticeable while in shallow water or while operating in the dual beam/high digitize mode. For further details regarding this see Corrections to Echo Soundings Report OPR-P114-RA-84.

The DSF-6000N echo sounders were operated primarily in the dual beam/high digitize mode. Approximately 5 percent of the time the high frequency beam could not track bottom and instead appeared as noise on the graphic record. When this occurred the depth values were scanned from the low frequency trace, or at times, the echo sounders were operated in the wide beam only mode. There were no discrepancies at the junctions of the wide beam and narrow beam data as the two traces were in close agreement at the points of changeover.

All soundings were taken from the launches under Mini-Ranger Range/Range or Range/Azimuth control. Since the echo

sounding transducers on launches are directly below the Mini-Ranger R/T units the ANDIST associated with these survey data is 0.0 meters. The final field sheets were plotted with this ANDIST value for vessels (2123) and (2124).

All soundings for this survey taken from the ship RAINIER were under Mini-Ranger control. The ship's DSF-6000N echo sounder (midships transducer pair) was used for all soundings. A mean ANDIST value of +6.6 meters was used for the two transducers of a DSF-6000N pair, this introduces only a trivial error at the 1:40,000 survey scale. The final field sheets were plotted with this ANDIST value for RAINIER.

Bar checks for vessels (2123) and (2124) were conducted at least once daily for both beams of the DSF-6000N echo sounder as per the Provisional Operating and Processing Instructions for the DSF-6000N Echo Sounder. All bar checks were performed within, or directly adjacent to, the survey area. They were used to confirm proper system function, and bar check data were combined with velocity data to determine launch TRA correctors. The TRA for the wide and narrow beams were within 0.1 fathom of each other and were averaged together to obtain a single TRA value. These TRA calculations result in a 0.3 fathom TRA for both launches and the final smooth sheets were plotted with this value.

A vertical cast was not conducted for RAINIER. The DSF-6000N (S/N A115N) echo sounder aboard RAINIER was checked previously by a series of bar checks while the unit was installed aboard vessel (2124). These checks indicated an instrument error of 0.1 fathom. The final TRA of 2.3 fathoms for RAINIER is based on the average draft during the survey plus the 0.1 fathom instrument correction. The final field sheets were plotted using a preliminary TRA on 2.4 fathoms for RAINIER.

Velocity corrections were derived from one Nansen cast taken during the survey at Latitude 59/01/12N, Longitude 151/54/42W. The effect of draft was negligible and a single velocity table was created utilizing a draft of 2.4 fathoms. The velocity correctors apply to both beams of the DSF-6000N echo sounders. A printout of velocity table is included in the separates following the text.

TC/TI tapes were made in accordance with PMC OPORDER, Appendix Q. Printouts of the TC/T1 tapes are included in the separates following the text.

For further details on corrections to echo soundings for this survey, see Corrections to Echo Soundings Report OPR-P114-RA-84.

E. HYDROGRAPHIC SHEETS

Field sheets RA-40-1E-84 and RA-40-1W-84 were prepared on RAINIER by JST Barnes and AST Bookheim respectively, using the PDP 8/e Hydroplot System and Complot Plotter which produce a modified transverse Mercator projection. A list

of parameters used to define the field sheet is provided in the separates following the text. The sheets are at a scale of 1:40,000. There are two expansion sheets (1 and 2) at a scale of 1:10,000 and 1:5,000 respectively, covering developed areas.

All data and accompanying field records will be sent to Pacific Marine Center for verification.

F. CONTROL STATIONS

Horizontal control for survey H-10143 was provided by the recovery of five existing stations:

AMATULI LIGHTHOUSE
EAST CHUCACH LT
PERL ROCK LIGHT
CAPE ELIZABETH LIGHT
TOP 1931
CAMILLE 1984 (This station was located during this survey)

A copy of the master station list is included with this report. All stations are Third-Order, Class 1, or better.

Details concerning geodetic control for this survey can be found in the Horizontal Control Report, OPR-P114-RA-84.

G. HYDROGRAPHIC POSITION CONTROL

Range/Range control using Motorola Mini-Ranger III instruments was the method used for hydrographic position control for this survey.

MINI-RANGER MOBILE EQUIPMENT

Vessel	Console	R/T S/N
2120	715	911615
2123	720	2710
2124	B0269	B1388

MINI-RANGER SHORE EQUIPMENT

Code	Transponder S/N	Station Numbers
A	1645	111
D	1569	109
E	911721	113
F	911711	108
1	C1883	116

CALIBRATIONS AND PERFORMANCE

Mini-Ranger calibrations and system checks were performed in accordance with PMC OPORDER, Appendices M and S.

Initial mini-ranger baseline calibrations for this project were conducted at Lake Union, Seattle, Washington on May 22 and 23, 1984. Ending baseline calibrations for this survey were conducted on the Homer Spit, Homer, Alaska on August 25, 1984.

Only initial correctors were used to plot the smooth field sheet. The initial calibrations also determined the minimum signal strength cutoff values for each system. ANDIST correctors were applied via the parameters tape. Critical calibrations to confirm baseline correctors were performed using three point sextant fixes with check angles for vessels (2120) and (2124) and two theodolite angles (S/N 75599 and 73226) for vessel (2123). Daily systems checks were performed as required using the three range method.

Mini-Ranger performance was generally fair. High-gain antennas were installed on codes A, D, and F which allowed using Mini-Rangers for control for ship hydro operations at distances as great as 38,000 meters while still maintaining acceptable signal strengths. Problems were encountered due to the presence of "range holes" during ship operations which caused the signal strengths to drop below minimum cutoff strengths. Whenever possible, sounding lines were then plotted on the basis of constant course and speed. Otherwise portions of lines were re-run at a different time and/or under a different pair of control stations. Two of the five shore control stations were established for the express purpose of circumventing the range hole problem.

All Mini-Ranger control stations were set up on Third Order Class I positions or better. For more information regarding calibrations and systems checks, refer to the Electronic Control Report, OPR-P114-RA-84.

H. SHORELINE *There is no shoreline within the limits of this survey.*

Shoreline on the smooth field sheets was transferred in brown from Chart 16606 and is for orientation purposes only.

I. CROSSLINES

A total of 66 nautical miles of crosslines were run during the survey, representing 8.9% of the mainscheme mileage. Agreement of soundings at crossings was excellent (within 2 fathoms).

J. JUNCTIONS

This survey junctions to the west with H-10149 (1984) and H-10105 (1983) and to the north with H-10033 (1982-84) and H-9890 (1980). Soundings agree to within 2 fathoms and depth contours can be drawn smoothly at the junctions.

K. COMPARISON WITH PRIOR SURVEYS

The survey was compared to the following prior surveys: H-8619 (1961, 1:40,000), H-5191 (1931, 1:40,000) and H-5192 (1931, 1:40,000). The soundings agreed to within 2 fathoms and the depth contours agreed well except as follows. At location 58/52/~~30N~~24N 151/53/00W, prior survey H-5192 shows a 22 fathoms peak which was not discovered by this survey. Because the present survey does not disprove the existence of the peak, it is recommended that the 22 fathoms peak remain as charted. The following table shows locations where shoaler depths were found on this survey than the prior survey:

58°52'24"N 151°52'42"W

Concur. The 22-fathom sow brought forward in red violet from H-5192

H-10143

Present Depth	Prior Depth	Prior Position	Prior Survey
18.1fm	29 fm	58/58/20N 151/33/40W	H-5191
38 fm	50 fm	59/04/20N 151/50/40W	H-5192
34 fm	42 fm	59/04/30N 151/47/30W	H-5192
38 fm	60 fm	58/52/00N 151/43/00W	H-5192
37 fm	48 fm	59/04/30N 151/43/50W	H-5192
39 fm	45 fm	58/52/10N 151/53/50W	H-5192
29 fm	33 fm	59/04/40N 151/42/30W	H-5192

* A dive investigation least depth was obtained using a diver's wrist depth gauge.

It is recommended to use the depths from the present survey for charting purposes.

* 3.5 MLLW On July 26, 1984 a dive was made to find a ~~least~~ depth of ~~2.7~~ fathoms at 58/50/56.8~~7~~N, 151/45/04.5~~8~~W on Cowanesque Rock which compares to prior survey depth of 2.5 fathoms on H-8619WD. The 2.5 depth was transferred from H-8619WD onto H-10143, see Evaluation Report Section B. Position #4064

On July 25, 1984 a dive was made on Kennedy Rock to find a least depth of 4.7 MLLW fathoms at 58/55/32N, 151/25/42.68W as required by Pre-Survey Review item 50265. Position #7002

Chart according to this survey

L. COMPARISON WITH THE CHART

This survey was compared to NOS chart No. 16606, 7th Edition, October 20, 1979, published at a scale of 1:77,062. Comparison of soundings and depth contours between this survey and the chart showed good agreement except the items noted in section K.

M. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supersede all prior surveys for charting purposes, except as noted in section K.

N. AIDS TO NAVIGATION

There is one aid to Navigation within the limits of the survey. On July 25, 1984 a dive was made and it was found that Buoy KE adequately marks Kennedy rock. *see Evaluation Report section 4*

O. STATISTICS

Sounding Vessel	Linear Nautical Miles of Hydro	Number Of Pos.
2123	40.7	952
2124	28.9	780
2120	822.4	~~1560~~ 1490
Total	892.0	~~1731~~ 1652

Area: 241.55
Bottom Samples: 14
Velocity Casts: 1
Tide Stations: 2

P. MISCELLANEOUS

No anomalous currents were observed or reported during this survey.

During survey work accomplished by vessel (2120), simultaneous Loran C rates were recorded for chain 9990 and are included with the survey.

Q. RECOMMENDATIONS

This survey is complete and no additional field work is recommended at this time.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished in accordance with the Hydrographic Manual (Fourth Edition), Manual of Automated Hydrographic surveys, the PMC OPORDER, Hydrographic Survey guidelines and the Hydrographic Data requirements for 1983.

Soundings and positions were taken by an ASI Logger and a Hydroplot system. Hyperbolic Range/Range Hydroplot program RK 112 was used in conjunction with the Hydroplot system. There are daily master tapes and corresponding corrector tapes which include the TRA for the sounding vessels, electronic control baseline correctors for Mini-Ranger consoles and R/T units and all depth corrections. Velocity tapes were generated from SV/D cast data. The following is a list of all computer programs and version dates used for data acquisition or processing:

Number	Description	Version

RK 112	Hyperbolic, R/R Hydroplot	10/12/83
RK 201	Grid, Signal, and Lattice Plot	4/18/75
RK 211	Range/Range Non-Real Time Plot	2/13/84
RK 212	Visual Station Table Load	4/01/74
RK 216	Range/Azimuth Non-Real Time Plot	2/24/84
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 530	Layer Correction for Velocity	5/10/76
RK 561	H/R Geodetic Calibration	12/01/82
AM 602	Elinore-Line Oriented Editor	12/08/82
AM 603	Tape Consolidator	10/10/72
AM 606	Tape Duplicator	8/22/74
AM 607	Self-Starting Binary Loader	8/10/80
RK 610	Binary Tape Duplicator	12/01/82
RK 612	Line Printer List	3/22/78
RK 900	Plot Test Tape Generator for AM 902	5/07/76
RK 901	Core Check	3/01/72
AM 902	Real Time Checkout	11/10/72
DA 903	Diagnostic-Instruction Timer	2/27/76
RK 905	Hydroplot Controller Checkout	3/18/81
RK 935	Hydroplot Hardware Tests	3/15/82
RK 950	Hardware Tests (Documentation Only)	6/02/75

S. REFERENCE TO OTHER REPORTS

The following reports contain information related to this survey:

Echo Sounding Report	OPR-P114-RA-84
Electronic Control Report	OPR-P114-RA-84
Horizontal Control Report	OPR-P114-RA-84
Coast Pilot Report	OPR-P114-RA-84

Respectfully submitted,

John S. Griffin

John S. Griffin
ENS, NOAA

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

H-10143

RA-40-1-84

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

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

John P. Vandermeulen

John P. Vandermeulen, CDR, NOAA
Commanding Officer
NOAA Ship RAINIER

MASTER STATION LIST
OPR-P114-RA-84
SOUTHERN COOK INLET, ALASKA
RA-40-1-84 (H-10143)

FINAL VERSION 9/6/84

```
108 0  59 06 25029 151 26 29533  250 0111 000000
/EAST CHUGACH LIGHT 1977                NGS LISTING

109 3  58 54 58936 151 56 59541  250 0037 000000
/AMATULI LIGHTHOUSE                     NGS LISTING

111 3  59 08 49791 151 52 28807  250 0015 000000
/CAPE ELIZABETH LIGHT                   NGS LISTING

113 2  59 05 26266 151 41 32582  250 0020 000000
/PERL ROCK LIGHT                        NGS LISTING

116 2  59 05 46006 151 39 27627  250 0001 000000
/TOP 1931                               NGS LISTING

215 4  58 52 43043 152 02 04379  250 0035 000000
/CAMILLE 1984                             RAINIER
```

FIELD TIDE NOTE
RA-40-1-84
H-10143

Field tide reduction of soundings for survey H-10143 was based on predicted tides from Seldovia, Alaska (945-5500). Corrections were obtained from Preliminary Tidal Zoning OPR-P114-RA-84. The predicted tides were derived using program AM500.

Two Bristol Bubbler tide gages were installed at two locations in the project area. Location and period of operation are as follows:

SITE	LOCATION	PERIOD
Ushagat Island	58/56/30N,152/14/30W	June 17-August 31,1984
Perl Island	59/07/48N,151/41/48W	July 18-August 31,1984

USHAGAT ISLAND

Gage (S/N 64A11026) was installed and levels were run June 17, 1984. No staff was installed, therefore, levels were run from reference mark BM3 to the waters edge.

On August 9, 1984 a storm caused the orifice to relocate to a position 3.0 ft deeper. The orifice was secured at this level by divers on August 17, 1984. Records are consistent and should be accurate throughout this period.

The marigram was lost completely from 0730 hrs August 20 to 2100 hrs August 22, when the orifice was washed ashore during a storm. The orifice was reinstalled and good records were obtained until the orifice tubing developed a leak at 0945 hrs August 26 during another gale. The tubing was repaired and good records were obtained until the gage was removed August 31, 1984. Weather conditions did not permit a final leveling to the waters edge.

PERL ISLAND

Gage (SN 64A11031) was installed, leveled, and began operation July 18, 1984. A staff was installed and good records were obtained until a storm on August 20 caused the staff to fall. The staff was not replaced. Levels run to the waters edge proved the orifice had not moved. One day of records was lost from 1400 hrs August 22 to 1330 hrs August 23 due to a malfunction of the pen. Good records were obtained until 0200 hrs August 26 when the orifice line was broken during a storm. The gage was down and records were lost until the removal on August 31, 1984. A final leveling to the waters edge could not be made because the gage was not operating.

LEVELS

The reference station at Seldovia was leveled June 21, 1984. Final levels were run August 24, 1984. Initial and final levels compared very well.

Final levels on the two subordinate stations at Ushagat Island and Perl Island were run August 28, and August 31, 1984 respectively.

Date: 01/03/85

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: P114

Hydrographic Sheet: H-10143

Locality: Kennedy Entrance, Cook Inlet, Alaska

Time Period: July 20 - August 8, 1984

Tide Station Used: 945 5427 Perl Island, Alask
945 5478 Ushagat Island, Alaska

Plane of Reference (Mean Lower Low Water): 945 5427 = 20.28 ft.
945 5478 = 15.45 ft.

Height of Mean High Water Above Plane of Reference: 945 5427 = 12.8 ft.
945 5478 = 12.9 ft.

Remarks: Recommended Zoning

See page 2

James C. Hubbard
Chief, Tidal Datum Section

DATE: 01/02/85

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

TIDE NOTE FOR HYDROGRAPHIC SHEET (CONT'D)

OPR-P114 H-10143

1. Southeast of line formed by 2 points located at, 58°45.5' and 59°07.5'
   151°49.0' 151°23.0'

   a. South of latitude 58°57.0' zone on 945 5427 and apply -10 minute time correction and x0.89 range ratio to all heights.
   b. North of latitude 58°57.0' zone on 945 5427 and apply x0.89 range ratio to all heights.

2. Northwest of the previous line to a line formed by 2 points located at, 58°45.5' and 59°07.5'
   152°13.0' 151°38.0'

   a. East of the longitude 151°49.0' zone on 945 5427 and apply x0.94 range ratio to all heights.

   b. West of longitude 151°49.0' zone on 945 5427 apply +10 minute time correction and x0.94 range ratio to all heights.

3. Northwest by a line formed by 2 points located at 58°45.5' and 59°07.5'
   152°13.0' 151°38.0'

   a. East of longitude 152°00.0'

   FROM PHONE CONV. W/JOE M. 2-25-85

      1. South of latitude 59°00.0' zone on 945 5427 and apply +10 minute time correction and x0.98 range ratio to all heights.

      2. North of latitude 59°00.0 zone on 945 5427 and apply x0.98 range ratio to all heights.

   b. West of longitude 152°00.0'

      1. South of latitude 58°54.0' zone on 945 5478 and apply a -10 minute time correction to all heights.
      2. North of latitude 58°54.0' to 59°00.0' zone direct on 945 5478.
      3. North of latitude 59°00.0' zone on 945 5478 and apply +10 minute time correction to all heights.

** Tide reducers requested for May 15-17, 1981 (J Day 135-137) are not available, no tide gage was installed in the survey area during the course of the survey.

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10143

GEOGRAPHIC NAMES

* Name on Survey	A ON CHART NO. 16606 (11th Ed. 04/24/81)	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
Barren Islands										1
Cowanesque Rock										2
Kennedy Entrance										3
CHUGACH ISLANDS										4
PERL ISLAND										5
EAST CHUGACH ISLAND										6
USHAGAT ISLAND										7
SUD ISLAND										8
NORD ISLAND										9
EAST AMATULI ISLAND										10
WEST AMATULI ISLAND										11
SUGARLOAF ISLAND										12
GULF OF ALASKA										13
DORA REEF										14
NAGAHUT ROCKS										15
PERL ROCK										16
PERL ISLAND										17
EAST CHUGACH ISLAND										18
ALASKA (title)										19
COOK INLET					Approved:					20
										21
					Charles L. Harrington					22
					Chief Geographer - NOS/CG2x5					23
					OCT 15 1984					24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10143

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	6
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	2

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES						
ENVELOPES						
VOLUMES						
CAHIERS	2					2
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): Chart enlargement of 16606 7th Ed.

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			1652
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	80.5		80.5
VERIFICATION OF SOUNDINGS	106		106
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	46		46
COMPARISON WITH PRIOR SURVEYS AND CHARTS		23	23
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT	41	21	62
GEOGRAPHIC NAMES			
OTHER* DIGITIZATION			9
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	276.5	41	326.5

Pre-processing Examination by: J. L. Stringham	Beginning Date: 2/13/85	Ending Date: 2/14/85
Verification of Field Data by: J. Shofner	Time (Hours): 276.5	Ending Date: 10/22/85
Verification Check by: B.A. Olmstead, J.L. Stringham, G.E.Kay, J. Green	Time (Hours): 44	Ending Date: 11/25/85
Evaluation and Analysis by: Gordon E. Kay	Time (Hours): 44	Ending Date: 11/15/85
Inspection by: D.J. Hill	Time (Hours): 4	Ending Date: 11/27/85

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PACIFIC MARINE CENTER
EVALUATION REPORT
H-10143

1. INTRODUCTION

H-10143 was accomplished by the NOAA Ship RAINIER (S-221) in accordance with the following project instructions:

OPR-P114-RA-84, Southern Cook Inlet, dated February 16, 1984
Change No. 1, dated April 27, 1984
Change No. 2, dated June 21, 1984

H-10143 is an offshore survey situated in Kennedy Entrance, Alaska. This entrance marks the southeast gateway into Cook Inlet. Just off the northern limits of this survey are the Chugach Islands which are nestled 5 nautical miles south of the Kenai Peninsula. Off the western limits of this survey are the Barren Islands, which include West and East Amatuli Islands and Sugarloaf Island. From these islands the survey extends due east 16 nautical miles where it ends at longitude 151°26'00"W near Kennedy Rock. The southern limit is latitude 58°50'00"N near Cowanesque Rock.

Predicted tides based on the Seldovia, Alaska (945-5500) gage were used during field processing. Tide correctors used for the reduction of final soundings reflect approved hourly heights zoned from Perl Island, Alaska (945-5427) and Ushagat Island, Alaska (945-5478).

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA table for vessel 2120 was changed to 2.4 fathoms to agree with the Descriptive Report. The revised data is listed in the smooth position/sounding printout.

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

2. CONTROL AND SHORELINE

Hydrographic control and positioning are adequately discussed in sections F and G of the hydrographer's report and in the Horizontal and Electronic Control Reports for OPR-P114-RA-84.

Horizontal control station positions used during hydrography are either published or field positions based on the North American datum of 1927.

There is no shoreline within the limits of H-10143.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. The depth curves could be completely and adequately drawn. Delineation of the bottom configuration and the determination of least depths are adequate.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except as noted in the Preprocessing Examination Report, dated October 12, 1984 and as follows:

a. The hydrographer did not make a comparison with prior survey H-3805 (1915) and H-5194 (1931).

"State the quality of general agreement between the new and old surveys and give conclusions or opinions as to the reasons for significant differences". Hydrographic Manual 5.3.4.K also reference Project Instructions 6.10.

b. The hydrographer did not obtain the position of Kennedy Entrance Obstruction Bell Buoy KE.

"Position and depths at all floating aids to navigation in the project area shall be determined during the hydrographic survey". Hydrographic Manual 4.5.13.2; also reference Project Instructions 4.2.2.3. (see section 9 of this report).

5. JUNCTIONS

H-10143 junctions with the following surveys:

Survey	Year	Scale	Note	Color	Area
H-9890	1980	1:20,000	Adjoins	Orange	North-Northwest
H-10033	1982-84	1:20,000	Joins	Red	Northeast
H-10105	1983	1:40,000	Adjoins	Brown	Northwest
H-10149	1984	1:20,000	Joins	Violet	South-Southwest

Soundings were transferred from H-9890, H-10033 and H-10149 to effect an adequate junction.

H-9890 and H-10105 have been processed and submitted to Rockville for charting. Junction comparisons were made using copies. Soundings are in agreement and depth curves on H-10143 were brought into coincidence with those on H-9890 and H-10105.

There are no contemporary surveys to the south; however, a comparison with charted depths reveals good agreement with the present survey.

6. COMPARISON WITH PRIOR SURVEYS

H-3805 (1915) 1:120,000
H-5191 (1931) 1:40,000
H-5192 (1931) 1:40,000
H-5194 (1931) 1:120,000
H-8619 (1961) WD 1:40,000

A review of "The Prince William Sound, Alaska, Earthquake of 1964 and Aftershocks", Volume III, Page 32, table 2 indicates that the area southwest of Port Chatham on the Kenai Peninsula and northwest of Carrey Inlet, Shuyak Island in Kennedy Entrance experienced a possible subsidence of 0.5 to 1.0 fathoms during the 1964 earthquake. A comparison between prior surveys and the present survey indicates an approximate difference in depths of -0.5 to -3.0 fathoms. If consideration is given to the above subsidence effect on the prior data then the present survey is in agreement.

The following soundings and notes have been transferred from the priors onto the H-10143 smooth sheet.

Depth-Fathoms	Source	Color	Latitude North	Longitude West
"Heavy Swell"	H-5191	Red	58°55'42"	151°25'44.4"
22	H-5192	Red Violet	58°52'24.0"	151°52'42.0"
50	H-5192	Red Violet	58°52'28.8"	151°50'26.4"
28	H-5192	Red Violet	58°59'28.8"	151°34'02.4"
25	H-5192	Red Violet	58°53'19.2"	151°53'06.0"
"tide eddy"	H-5194	Brown	58°51'00"	151°46'00"
2.5 Rk	H-8619WD	Green	58°50'57.6"	151°45'06.00"

Depths brought forward from the prior surveys were not adjusted for subsidence. Users of the present survey are advised to use discretion and adjust data transferred from prior surveys if deemed appropriate.

AWOIS item #50265 is adequately discussed in section K of the hydrographer's report.

Except for H-8619WD H-10143 is adequate to supersede the prior surveys within their common areas.

7. COMPARISON WITH CHART

Chart 16606, 7th Edition, dated October 28, 1979; scale 1:77,062.

a. Hydrography - Most charted information originates with the prior surveys discussed in section 6 of this report. Charted information compares well with H-10143. Differences are attributed to the age of priors, changes in data acquisition techniques, and subsidence from the 1964 earthquake.

Geographic names appearing on the smooth sheet have been approved by the Chief Geographer and are placed in accordance with this chart.

H-10143 is adequate to supersede charted hydrography within the common area.

There have been no dangers to navigation identified or reports submitted by the NOAA Ship RAINIER or the Pacific Marine Center Nautical Chart Branch for this survey.

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

c. Aids to Navigation - There are no fixed and one floating aid within the limits of this survey. The floating aid, Kennedy Entrance Obstruction Bell Buoy KE, was not adequately located, and should remain as charted. It was transferred onto the smooth sheet from the field sheet without supporting positional information. The charted aid to navigation adequately serves its intended purpose.

8. COMPLIANCE WITH INSTRUCTIONS

H-10143 adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate basic survey. Additional field work is recommended to obtain the least depth on Cowanesque Rock at latitude 58°50'57.6"N and longitude 151°45'06"W, and to determine the position of Kennedy Entrance Obstruction Bell Buoy KE.

Gordon E. Kay
Cartographer

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

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10143

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

Chief, Nautical Chart Branch (Date)

CLEARANCE: SIGNATURE AND DATE:

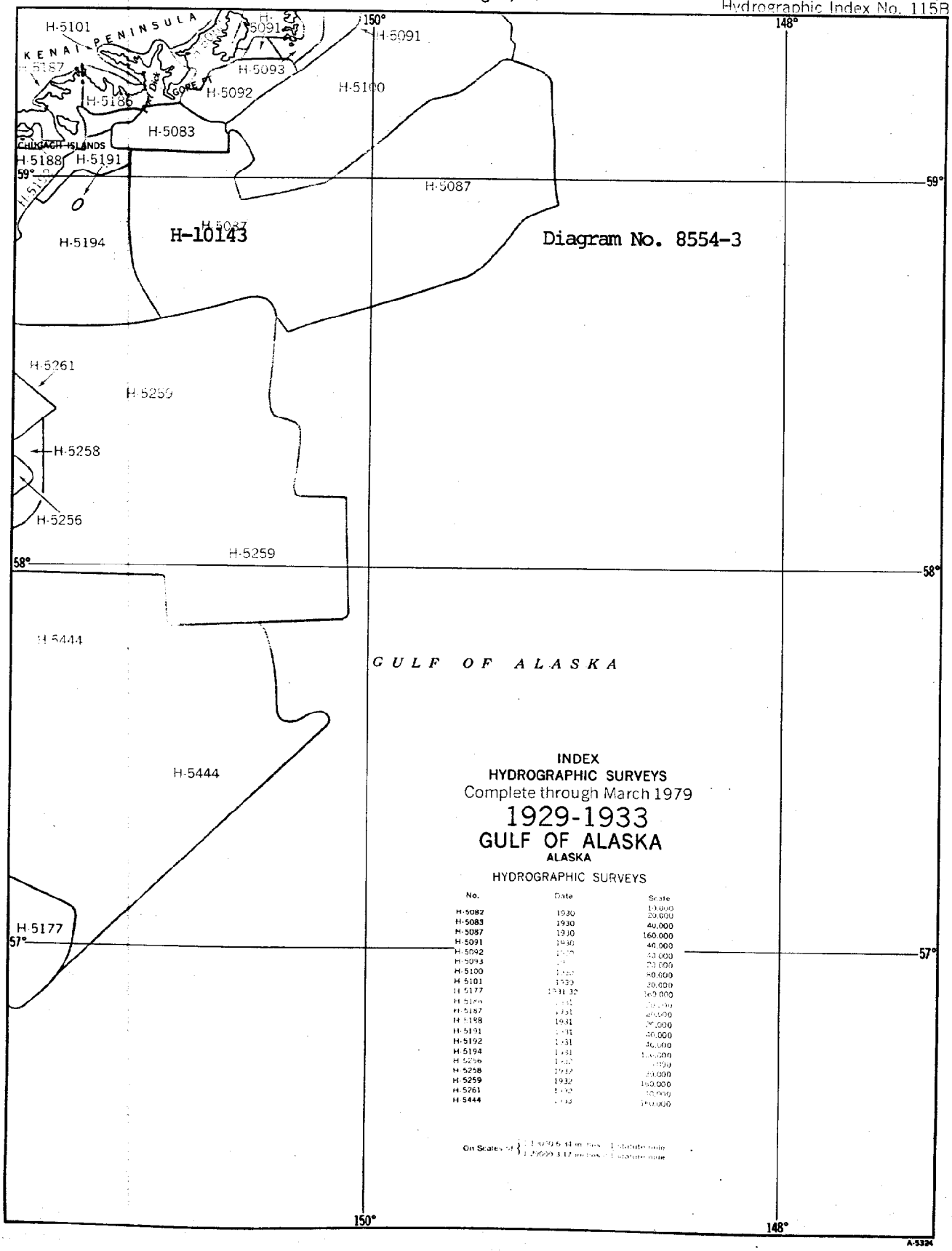
N/MOP2:LWMordock

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

Director, Pacific Marine Center (Date)

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

Hydrographic Index No. 115B



INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979

1929-1933
GULF OF ALASKA
ALASKA

HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-5082	1930	20,000
H-5083	1930	40,000
H-5087	1930	160,000
H-5091	1930	40,000
H-5092	1930	80,000
H-5093	1930	20,000
H-5100	1930	80,000
H-5101	1930	20,000
H-5177	1931, 32	80,000
H-5186	1931	20,000
H-5187	1931	40,000
H-5188	1931	20,000
H-5191	1931	40,000
H-5192	1931	40,000
H-5194	1931	80,000
H-5256	1932	20,000
H-5258	1932	80,000
H-5259	1932	160,000
H-5261	1932	80,000
H-5444	1933	160,000

On Scales of { 1:20,000 & 1:40,000 = 1 statute mile
1:80,000 & 1:160,000 = 1 statute mile

A-5324

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10143

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
16606	2/3/89	R Brumfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 11 8th Ed.
16580		R Brumfield	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. #20 8th Ed.
~~16645~~ 16645	10/3/88	Corbett	Full ~~Part Before~~ After Marine Center Approval Signed Via
			~~Drawing No.~~ 14th ED DWG #17 (thru 16606)
16680	1/17/89		Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 17 8th Ed.
16013	2-21-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 28 REVISE 20 TO 18½ CM SDG.
531	3-6-89	ED MARTIN	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 19
16640	5-22-89	Pearce Hunt	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 23 20th Ed.
	/	R.A. Lillis	Full ~~Part Before~~ After Marine Center Approval Signed Via
530	6-29-89		Drawing No. 34
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED

Appd to SDs 1-6-95 jbr