10099

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-40-2-83

*Office No.* H-10099

## LOCALITY

*State* Alaska

*General Locality* Cook Inlet

*Locality* Offshore Chinitna Point to Augustine Island

1983

CHIEF OF PARTY
CDR J.P. Vandermeulen

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DATE August 21, 1984

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10099

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

# HYDROGRAPHIC TITLE SHEET

H-10099

**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-40-2-83

State ALASKA

General locality Cook Inlet

Locality Offshore Chinitna Point to Augustine Island

Scale 1:40,000 Date of survey June 24 - July 21, 1983

Instructions dated February 18, 1983 Project No. OPR-P114-RA-83

Vessel NOAA Ship RAINIER (2120)

Chief of party J. P. Vandermeulen, Commander, NOAA

Surveyed by LCDR D. Yeager, LT S. Iwamoto, LT S. Ludwig, LTJG M. Mathwig, LTJG R. Koehler, ENS B. Postle, ENS J. Judson, ENS W. Logue, ENS K. Barton, SST R. Hastings

Soundings taken by echo sounder, hand lead, pole Ross Fineline Fathometer

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Verification ~~Protracted~~ by I. A. Almacen Automated plot by PMC Xynetics Plotter

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

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

REMARKS: All times are in UTC

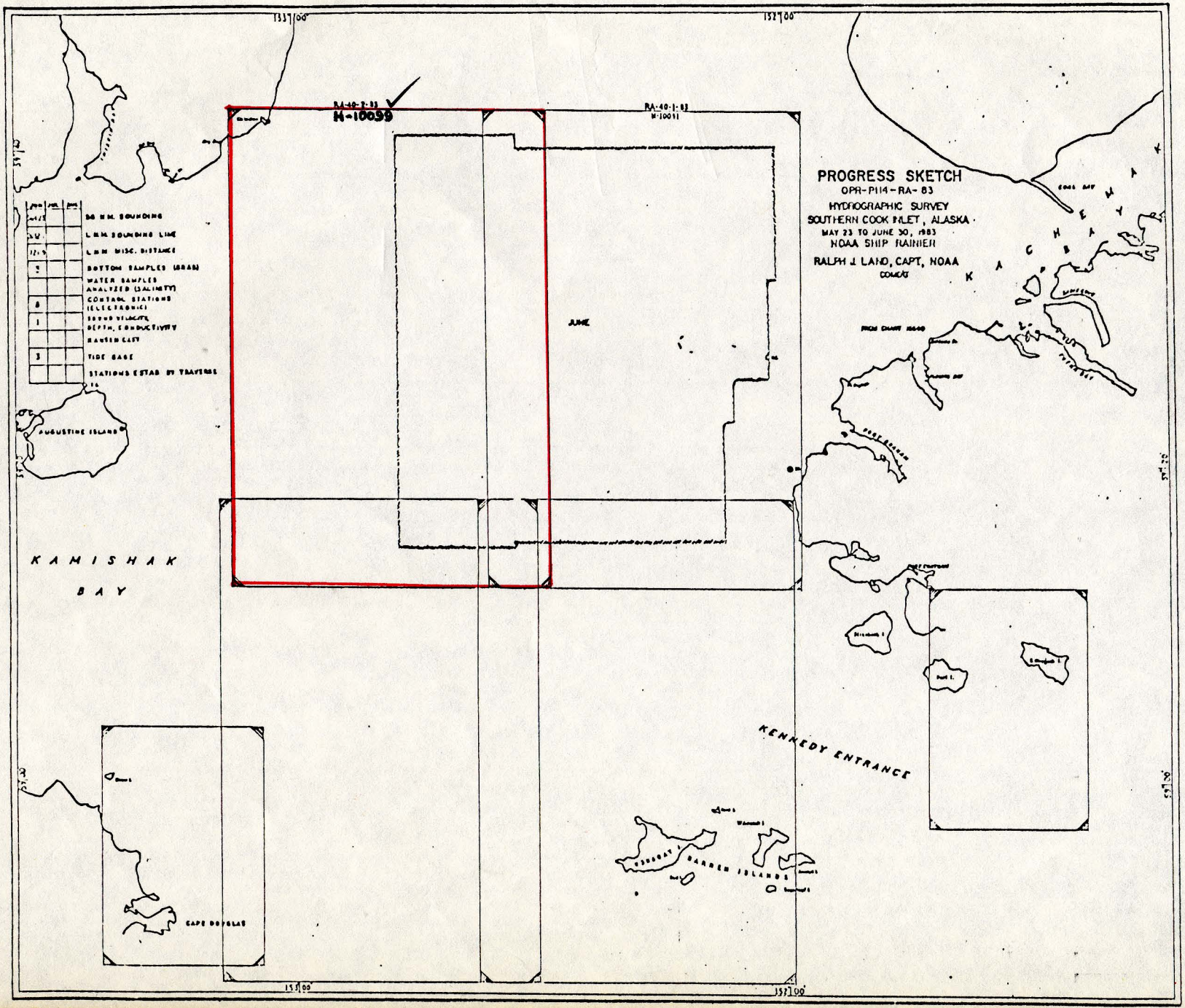
Annotations in black were made during evaluation.

STANDARDS CK'D 8-31-84
C. LOY

✓ AWOIS 9/84 MD (NO SURF)

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

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


PROGRESS SKETCH
OPR-P114-RA-83
HYDROGRAPHIC SURVEY
SOUTHERN COOK INLET, ALASKA
MAY 23 TO JUNE 30, 1983
NOAA SHIP RAINIER
RALPH J. LAND, CAPT, NOAA
COMDG
RA-40-2-83
H-10099
RA-40-1-83
H-10011
JUNE
KAMISHAK BAY
KENNEDY ENTRANCE
AUGUSTINE ISLANDS
CAPE DOUGLAS
BARREN ISLANDS
FROM CHART 16640
50 M.M. SOUNDING
L.M.M. SOUNDING LINE
L.M.M. MISC. DISTANCE
BOTTOM SAMPLES (GRAB)
WATER SAMPLES
ANALYZED (SALINITY)
CONTROL STATIONS (ELECTRONIC)
SOUND VELOCITY, DEPTH, CONDUCTIVITY
RANGER CAST
TIDE GAGE
STATIONS ESTAB BY TRAVERSE
153°00'
152°00'
59°15'
59°00'

A. PROJECT

Survey H-10099 was conducted in accordance with Project Instructions OPR-P114-RA-83, Southern Cook Inlet, Alaska, dated February 18, 1983, and Change No. 1 dated March 18, 1983.

B. AREA SURVEYED

Survey H-10099 was a continuation of hydrographic survey operations in southern Cook Inlet by the RAINIER. The survey area extended south of 59° 41.0'N, west of 152° 32.0' W, north of 59° 15.0'N, and east of 153° - 02.0'W.

Inclusive dates of the survey were June 24 to July 21, 1983.

C. SOUNDING VESSEL

All soundings were obtained using the NOAA Ship RAINIER (2120). There was no unusual sounding vessel configuration used or problems encountered.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Sounding Equipment

All echo soundings obtained during this survey were obtained by NOAA Ship RAINIER (2120). The ship was equipped with a Ross Fineline fathometer system which included the following components: A model 4000 transceiver (S/N 1080), a model 5000 analog trace recorder (S/N 1070 and 1071), a model 6000 digitizer (S/N 1040) and a 100 khz transducer.

Multiple analog recorders were used due to intermittent failure of the recorders to advance the paper at a constant rate. No peaks were missed due to this problem.

Sound Velocity Correctors

Table No. 1 summarizes the STD cast data obtained using STD S/N 5652, model No. 9040 calibrated on May 1983.

Table No. 1

STD Cast Data

| Date | Location |
|---|---|
| 13 June 1983 (JD 164) | 59° 26.9'N 152° 02.2'W |
| 27 July 1983 (JD 208) | 59° 24.3'N 153° 04.7'W |

For each set of data, actual depths minus the velocity corrections were graphed versus the velocity corrections. Preliminary velocity correctors for this survey were determined from the 13 June 1983 STD cast. (See Echo Soundings Report, OPR-P114-RA-83 for details concerning computations). Velocity Table No. 3 and the final velocity tape correctors were obtained by averaging the results of the two graphs. Depths corresponding to standard velocity correction intervals were then picked off the resultant graph. A copy of the graphs, Velocity Table No. 3 and a listing of the velocity tape are provided in the separates following the text.

All smooth field sheets were prepared using the preliminary velocity correctors. See Letter dated Feb 28, 1984

Sounding Vessel Draft Corrector

The historical draft of RAINIER (2.6 fathoms) was applied to all echo soundings obtained during this survey. A listing of the TC/TI tape is provided in the separates following the text.

Sounding Instrument Correctors

During survey operations the blanking depth was set to a value shoaler than the shoalest bottom expected. Analog depths were substituted for missing or erroneous digital soundings as part of standard scanning procedures.

The initial trace on the analog recorder was maintained at zero. Correction for drift of the initial was applied during scanning.

Phase calibrations and belt tension checks were performed in accordance with section 4.9.6 of the Hydrographic Manual, Hydrographic Survey Guidelines and PMC OPORDER, Appendix B.

E. HYDROGRAPHIC SHEETS

Field sheets RA-40-2E-83 and RA-40-2W-83 were prepared on board the RAINIER using the Hydroplot system and Complot plotter. The sheets were based on modified transverse mercator projections. A list of parameters used to define the hydrographic sheets is attached. All field records will be sent to the Pacific Marine Center, Seattle, Washington for verification. The smooth field sheets for this survey are plotted at a 1:40,000 scale.

F. CONTROL STATIONS

One new station, BLUFF POINT 2 RM 5, was established to Third Order, Class I specification and was used for a Raydist site.

All other control stations were existing geodetic stations on the North American 1927 Datum. For more information, refer to the Horizontal Control Report, OPR-P114-RA-83.

G. HYDROGRAPHIC POSITON CONTROL

Range/Range Raydist was the only method used for hydrographic position control. Calibraton of Raydist was performed using sextant fixes based on Third Order, Class I or better positions. Occasional checks to Raydist positions were computed using Mini-Ranger III systems.

A Raydist antenna to transducer (ANDIST) correction (32.2m) has been applied via the parameter tape.

There were two Raydist shore stations. All soundings were based on position control from these two locations. Raydist mobile equipment consisted of the DR-S system navigator (model 2a-67A, serial number 58) and the Hazlow navigation interface (serial number 15). The tables below summarize the Mini-Ranger mobile and shore equipment and Raydist shore locations:

Mini-Ranger Mobile Equipment

| Vessel | Console | R/T S/N |
|---|---|---|
| 2120 | 720 | 2710 |

Mini-Ranger Shore Equipment

| Code | Transponder S/N | Station Number |
|---|---|---|
| B | 4951 | 209 |
| C | 1628 | 104 |
| D | 1569 | 103 |
| D | 1569 | 106 |
| E | 911721 | 105 |
| O | 912698 | 102 |
| 2 | B1106 | 107 |
| 2 | B1106 | 206 |

Raydist Shore Equipment

| Code | Station Number |
|---|---|
| Green | 100 |
| Red | 101 |

Raydist Calibration and System Check

Raydist calibrations were accomplished by two sextant angles and a check angle. Partial lane correctors were determined from the average of three sextant fixes with inverse distances less than ten meters. Smooth field sheets are plotted with partial lane correctors averaged from initial and ending calibrations.

Mini-Ranger fixes were computed and compared to Raydist, when possible, to confirm whole lane count. Mini-Ranger baseline calibrations were conducted at Mare Island, California on May 3, 1983. For more information concerning calibrations, refer to Electronic Control Report OPR-P114-RA-83.

Raydist and Mini-Ranger Performace

All shore stations were positioned on Third Order, Class I or better geodetic stations. Power to Raydist was supplied by Teledyne generators. Power to Mini-Rangers was supplied by 12-volt batteries connected in series.

The Raydist performed very well. An initial problem with the Teledyne generator at BLUFF POINT 2 RM 5 was alleviated by replacing the generator completely on July 9, 1983 (JD 190). Mini-Ranger systems also performed well.

H. SHORELINE

There was no shoreline within the limits of this survey.

I. CROSSLINES

A total of 109 miles of crosslines were run, representing 8.7% of the mainscheme mileage. Crossline agreement is excellent; 100% of the comparisons are within one fathom.

J. JUNCTION

The junction of this survey was compared with contemporary surveys, H-10105, H-10091 and H-10104. In addition, comparisons were made with surveys H-9378 (1973), H-9708 (1977), H-9836 (1979), and H-9837 (1979). Junction agreement in all cases was good, generally within one fathom.

K. COMPARISON WITH PRIOR SURVEYS

This survey was compared with prior surveys:

H-3206 (1910) (1:120,000 enlarged to 1:40,000)
H-3355 (1911) (1:100,000 enlarged to 1:40,000)
H-3568 (1913) (1:80,000 enlarged to 1:40,000)
H-3805 (1915) (1:120,000 enlarged to 1:40,000)

Except for the isolated discrepacies noted below, the prior surveys compared favorably with the present survey considering the scales and dates of the prior surveys. In general, 80% of the sounding comparisons were within three fathoms.

There were ten unnumbered dashed PSR soundings identified for comparison within the survey area. These soundings were charted from the above prior surveys. In all cases it is recommended that the results of the present survey supercedes the prior surveys. The following significant descrepancies were found:

See Evaluation Rpt Sec 6

Dashed PSR Items

20 fathom sounding charted at 59° 33.2'N, 152° 54'W is 22 fathoms in the present survey.

19 fathom sounding charted at 59° 34.7'N, 152° 55.3'W is 21 fathoms in the present survey.

19 fathom sounding charted at 59° 33.6'N, 152° 57.5'W is 21 fathoms in the present survey.

27 fathom sounding charted at 59° 23.5'N, 152° 54.6'W is 32 fathoms in the present survey.

28 fathom sounding charted at 59° 24.2'N, 152° 41.5'W is 31 fathoms in the present survey.

30 fathom sounding charted at 59° 25.8'N, 152° 45.0'W is 34 fathoms in the present survey.

29 fathom sounding charted at 59° 30.5'N, 152° 41.2'W is 33 fathoms in the present survey.

20 fathom sounding charted at 59° 38.2'N, 152° 37.5'W is 29 fathoms in the present survey.

There was one numbered PSR item identified within the survey area:

PSR #50576 (AWOIS listing): Oil platform in reported position 59° 30' 55" N,152° 39'12" W.

The platform was not present during the course of this survey and it is considered disproved.

In addition to the sounding discrepancies addressed in the above PSR items, the following was noted in comparison of the present survey with prior survey H-3355 (1911) (1:100,000 enlarged to 1:40,000):

The 20 and 30 fathom curves in the area of 59° 38'N, 152° 46'W have shifted as much as two miles in a southeasterly direction. It is recommended that future chart editions depict the 20 and 30 fathom curve as indicated in the present survey.

L. COMPARISON WITH THE CHART

This survey was compared with chart 16640, 18TH Edition, November 29, 1980, 1:200,000 enlarged to 1:40,000 and chart 16640, 19TH Edition, April,1983,1:200,000. The results of the present survey show good agreement with the published chart with the exception of those items previously discussed in Section K, COMPARISON WITH PRIOR SURVEYS.

No dangers to navigation were found.

Two significant discrepancies were noted: The 30 fathom curve charted at 59° 19.7'N, 152° 56.0'W no longer exists; depths are 36 fathoms on the present survey. A 37 fathom charted at 59° 25.0'N and 153° 00.0'W no longer exists; depths are 27 fathoms at this location.

M. ADEQUACY OF SURVEY

This survey is complete and sufficient to supercedes all prior surveys for charting purposes.

N. AIDS TO NAVIGATION

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

O. STATISTICS

| Survey Vessel | Linear Nautical Miles of Hydro | Square Nautical Miles of Hydro | Number of Positions |
|---|---|---|---|
| RAINIER (2120) | 1,357.0 | 380.62 | 2,539 |

Bottom Samples: 16
Tide Stations: 2
Velocity Casts: 2

P. MISCELLANEOUS

There are no reported dangers to navigation in the survey area. An area of sand-waves (with 2-4 fathom peaks) running in a north-south direction was found in the vicinity of 59° 25'N, 152° 36'W.

No anomolous currents were observed or reported during the survey.

Supplemental LORAN-C data was acquired and interfaced to the HYDROPLOT system as required by section 8.4 of the Project Instructions. No malfunction of the LORAN-C receiver occurred during data acquisition on this survey.

Q. RECOMMENDATIONS

No additional field work is recommended for this survey.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished per instructions in the Hydrographic Manual (4th Edition), Manual Automated Hydrographic Surveys, PMC OPORDERS, Hydrographic Survey Guidelines and the Hydrographic Data Requirements for the 1983 Field Season.

Soundings and positions were taken by a Hydroplot system using Range-Range/Hyperbolic Hydroplot program RK 112. There are daily master

tapes and corresponding corrector tapes which include the TRA, electronic calibration correctors for Raydist and all depth corrections. 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 | 8/04/81 |
| RK 201 | GRID, SIGNAL, AND LATTICE PLOT | 4/18/75 |
| RK 211 | RANGE-RANGE NON-REAL TIME PLOT | 2/02/81 |
| 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 409 | GEODETIC UTILITY PACKAGE | 9/20/78 |
| AM 500 | PREDICTED TIDE GENERATOR | 11/10/72 |
| RK 561 | H/R GEODETIC CALIBRATION | 12/01/82 |
| AM 602 | ELINORE--LINE ORIENTED EDITOR | 12/08/82 |
| RK 606 | TAPE DUPLICATOR | 8/22/74 |
| AM 607 | SELF-STARTING BINARY LOADER | 8/10/80 |
| RK 610 | BINARY TAPE DUPLICATOR | 12/01/82 |
| AM 902 | REAL TIME CHECKOUT | 11/10/72 |
| DA 903 | DIAGNOSTIC--INSTRUCTION TIMER | 2/27/76 |
| RK 905 | HYDROPLOT CONTROLLER CHECKOUT | 3/15/82 |
| RK 935 | HYDROPLOT HARDWARE TESTS | 3/15/82 |
| RK 950 | HARDWARE TESTS (Documentation Only) | 6/02/75 |

The HP-9815 and HP-97 calculators were used to compute geographic positions of electronic control stations and velocity of sound corrections for the plotting of smooth field sheets.

S. REFERRAL TO REPORTS

The following reports contain information related to this survey:

| | |
|---|---|
| Echo Sounding Report | OPR-114-RA-83 |
| Electronic Control Report | OPR-114-RA-83 |
| Horizontal Control Report | OPR-114-RA-83 |
| Coast Pilot Report | OPR-114-RA-83 |

Respectfully Submitted,

Brian S Postle

Brian S. Postle
ENS, NOAA

PARAMETER TAPE LISTING
RA-40-2-83 (H-10099)

```
RA-40-2W-83
SKEW:90,20,54
FEST=76000
CLAT=6514000
CMER=152/30/0
GRID=2/0
PLSCL=40000
PLAT=59/12/12
PLON=152/43/42
VESNO=2120
YR=83
ANDIST=32.2


RA-40-2E-83
SKEW:90,20,54
FEST=76000
CLAT=6514000
CMER=152/30/0
GRID=2/0
PLSCL=40000
PLAT=59/12/12
PLON=152/29/30
VESNO=2120
YR=83
ANDIST=32.2
```

# FIELD TIDE NOTE

Field tide reduction of soundings for survey H-10099 was based on predicted tides from Seldovia, Alaska (945-5500). Corrections were obtained from Preliminary Tidal Zoning OPR-P114-RA-83. The predicted tides were derived using program AM500.

The reference station at Seldovia was leveled at the beginning of survey operations on May 24, 1983. Three permanent benchmarks (including the primary mark) were connected to the tide staff. Final levels were run to five benchmarks on August 12, 1983. No significant displacement of the staff occurred.

Two subordinate stations provided data for survey H-10099.

A bubbler tide gage was installed on June 2, 1983 at the historical site near Oil Point (945-6463), 59° 38.4'N, 153° 15.7'W. Five permanent benchmarks were recovered and leveled to the tide staff on June 1, and August 17, 1983. No significant displacement of the staff occurred. The gage operated well throughout the period of hydrography.

The second bubbler tide gage was installed on June 4, 1983 at the historical site near Burr Point on Augustine Island (945-6537), 59° 25.2'N, 153° 25.5'W. Five permanent benchmarks were recovered and leveled to the tide staff on June 5 and August 17, 1983. No significant displacement of the staff occurred. The gage operated well throughout the period of hydrography.

In addition to the two subordinate stations installed for this survey, there was another tide station operating concurrently for adjacent survey operations.

A bubbler tide gage was installed on May 24, 1983 at the historical site on Flat Island (945-5452), 59° 19.8'N, 151° 59.5'W. Five permanent benchmarks were recovered and leveled to the tide staff on May 25 and August 11, 1983. The staff value of the zeroline on the analog record is +4.25 feet.

The time meridian used for record annotation at all sites was 0° (UTC).

NOAA FORM 76-155
(11-72)

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

# GEOGRAPHIC NAMES

**SURVEY NUMBER**

H-10099

| Name on Survey | A ON CHART NO. 16640 | B ON PREVIOUS SURVEY NO. | C ON U.S. QUADRANGLE MAPS | D FROM LOCAL INFORMATION | E ON LOCAL MAPS | F P.O. GUIDE OR MAP | G RAND MCNALLY ATLAS | H U.S. LIGHT LIST | K | |
|---|---|---|---|---|---|---|---|---|---|---|
| ALASKA | | | | | | | | | | 1 |
| COOK INLET (Title | X | | | | | | | | | 2 |
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NOAA FORM 76-155 SUPERSEDES C&GS 197

TC/TI TAPE LISTING ✓
RA-42-2-83 (H-10099)

VESSEL - 2122 (RAINIER)
FATHOMETER S/N 1070,1071

065750 0 0026 0003 175 212000 000000
~~892680~~ 0 0026 0003 202 000000 000000
235459

VELOCITY TAPE LISTING
RA-40-1-83 (H-10091) ✓
RA-40-2-83 (H-10099)

TABLE NO. 3

```
000075 0 0000 0003 001 000000 000000
000154 0 0001
000243 0 0002
000322 0 0003
000411 0 0004
000495 0 0005
000579 0 0006
000658 0 0007
000742 0 0008
000821 0 0009
000955 0 0010
000984 0 0011
999999 0 0012
```

# ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2120 SHEET : RA-40-2-83

| TIME | DAY | PATTERN 1 | PATTERN 2 |
|---|---|---|---|
| 065750 | 175 | -00020 | +00026 |
| 150101 | 175 | -00020 | +00026 |
| 030128 | 176 | -00037 | +00019 |
| 130055 | 176 | -00037 | +00019 |
| 011543 | 177 | -00028 | +00026 |
| 101739 | 177 | -00028 | +00026 |
| 233534 | 177 | -00041 | +00020 |
| 000907 | 178 | -00041 | +00020 |
| 091641 | 178 | -00041 | +00020 |
| 183503 | 178 | -00041 | +00020 |
| 001138 | 179 | -00041 | +00020 |
| 053539 | 179 | -00041 | +00020 |
| 145245 | 179 | -00041 | +00020 |
| 233145 | 179 | -00043 | +00004 |
| 000025 | 180 | -00043 | +00004 |
| 055142 | 180 | -00043 | +00004 |
| 000631 | 188 | -00036 | +00036 |
| 174752 | 188 | -00036 | +00036 |
| 000016 | 189 | -00036 | +00036 |
| 055639 | 189 | -00036 | +00036 |
| 133358 | 189 | -00036 | +00036 |
| 020902 | 192 | -00045 | -00062 |

# ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2120 SHEET : RA-40-2-83

| TIME | DAY | PATTERN 1 | PATTERN 2 |
|---|---|---|---|
| 120123 | 192 | -00045 | -00062 |
| 214739 | 192 | -00045 | 00062 |
| 000018 | 193 | 00045 | 00062 |
| 064209 | 193 | -00045 | -00062 |
| 170301 | 193 | -00045 | 00062 |
| 000030 | 194 | -00045 | -00062 |
| 025008 | 194 | -00045 | -00062 |
| 133620 | 194 | -00045 | -00062 |
| 000515 | 195 | -00045 | -00062 |
| 055738 | 195 | -00054 | -00054 |
| 112531 | 195 | -00046 | -00020 |
| 053701 | 202 | -00040 | +00046 |
| 081859 | 202 | -00050 | +00046 |

MASTER STATION LIST
OPR-P114-RA-83
SOUTHERN COOK INLET, ALASKA

FINAL VERSION

100 3 59 54 58131 152 42 26726 250 0036 329649
/RED 1979 (GREEN RAYDIST) FAIRWEATHER G.P.

101 3 59 39 38888 151 39 46043 250 0241 329649
/BLUFF POINT 2 RM 5 1956 1983 (RED RAYDIST) FIELD G.P.

102 3 59 39 37645 151 39 44972 250 0244 000000
/BLUFF POINT 2 1956 NGS LISTING

103 3 59 41 46525 153 02 49788 250 0025 000000
/CHIT 2 1967 NGS LISTING

104 3 59 22 16846 153 21 10454 250 0107 000000
/MOUND 1913 NGS LISTING

105 3 59 19 53806 151 59 34030 250 0021 000000
/FLAT ISLAND LIGHT 1956 NGS LISTING

~~106 3 59 00 27638 153 22 26497 250 0011 000000~~
/SHAW 1946 NGS LISTING

~~107 3 58 52 30292 153 17 36891 250 0033 000000~~
/SUKOI 1967 NGS LISTING

200 3 59 46 11106 151 51 53282 139 0022 000000
/ANCHOR POINT LIGHT 1975 NGS LISTING

~~201 3 59 41 03434 151 38 12378 139 0343 000000~~
/LOFGREN (USE) 1964 NGS LISTING

202 3 59 33 03328 151 27 54887 139 0024 000000
/COHEN ISLAND ROCK LIGHT 1975 NGS LISTING

203 3 59 25 30165 151 53 05113 139 0031 000000
/POINT POGIBSHI LIGHT 1975 NGS LISTING

204 3 59 41 35349 153 03 09872 139 0329 000000
/BLUFF 1913 NGS LISTING

205 3 59 39 23836 153 09 16363 139 0324 000300
/DRY 1913 NGS LISTING

206 3 59 38 01532 153 14 47033 259 3013 000300
/OIL 1913 NGS LISTING

~~208 3 59 25 06941 153 25 13325 139 3016 000330~~
/BURR 1913 NGS LISTING

209 3 59 27 09938 151 43 08218 139 0320 000300
/GRAY CLIFF LIGHT CENTER 1956 NGS LISTING

~~211 3 59 41 02323 151 37 41274 139 0139 000330~~
/KGTL TOWER 1981 RA-81 POSITION

~~215 3 58 55 06741 153 19 32646 139 3058 000330~~
/DOUGLAS 1964 NGS LISTING

~~216 3 58 58 49113 153 17 48111 139 3363 000333~~
/SOUTH DOUGLAS 1938 NGS LISTING

ABSTRACT OF POSITIONS

H-10099

RA-40-2-83

| Day | Positions | CTRL | S1 M S2 | Remarks |
|---|---|---|---|---|
| 175 | 1000-1190 | 04 | 100-101 | Mainscheme Lines |
| 175 | 1191-1200 | 04 | 100-101 | Crossline |
| 176 | 1201-1401 | 04 | 100-101 | Mainscheme Lines |
| 177 | 1402-1412 | 04 | 100-101 | Crossline |
| 177 | 1413-1551 | 04 | 100-101 | Mainscheme Lines |
| 177 | 1552-1564 | 04 | 100-101 | Crosslines |
| 178 | 1565-1727 | 04 | 100-101 | Mainscheme Lines |
| 178 | 1728-1747 | 04 | 100-101 | Crosslines |
| 178 | 1748-1831 | 04 | 100-101 | Mainscheme Lines |
| 178 | 1832-1833 | 04 | 100-101 | Crossline |
| 178 | 1834-1839 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/24.2N, 152/42W |
| 178 | 1840-1848 | 04 | 100-101 | Mainscheme Lines |
| 178 | 1849-1851 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/25.8N, 152/45.0W |
| 178/179 | 1852-1878 | 04 | 100-101 | Crosslines |
| 179 | 1879-1882 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/30.4N, 152/41.2W |
| 179 | 1883-1888 | 04 | 100-101 | Crossline |
| 179 | 1889-2069 | 04 | 100-101 | Mainscheme Lines |
| 179/180 | 2070-2079 | 04 | 100-101 | Crossline |
| 180 | 2080-2113 | 04 | 100-101 | Mainscheme |
| 180 | 2114-2116 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/30.4N, 152/41.2W |
| 180 | 2117-2122 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/25.8N, 152/45.0W |
| 180 | 2123-2128 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/24.2N, 152/42W |
| 180 | 2129-2182 | 04 | 100-101 | Mainscheme Lines |
| 180 | 2183 | 04 | 100-101 | Bottom Sample |
| 180 | 2186-2199 | 04 | 100-101 | Mainscheme Lines |
| 188 | 2200-2208 | 04 | 100-101 | Crossline |
| 188 | 2209-2339 | 04 | 100-101 | Mainscheme Lines |
| 188 | 2340-2349 | 04 | 100-101 | Crossline |
| 188/189 | 2350-2628 | 04 | 100-101 | Mainscheme Lines |
| 192/193 | 2629-3098 | 04 | 100-101 | Mainscheme Lines |
| 193 | 3098-3130 | 04 | 100-101 | Dev. @ 59/18N, 153/01W |
| 193 | 3131-3140 | 04 | 100-101 | Crossline |
| 193 | 3141-3160 | 04 | 100-101 | Development @ 59/21N, 152/50 |
| 193 | 3161-3165 | 04 | 100-101 | Crossline |
| 193/194 | 3166-3174 | 04 | 100-101 | Dev. Unnumbered PSR Item @ 59/23.6N, 152/55.0W |
| 194 | 3175-3185 | 04 | 100-101 | Crosslines |
| 194 | 3186-3190 | 04 | 100-101 | Dev., Prior Survey Sounding @ 59/26.8N, 152/53.2W |
| 194 | 3191-3204 | 04 | 100-101 | Crosslines |

| Day | Positions | CTRL | S1 M S2 | Remarks |
|---|---|---|---|---|
| 194/195 | 3205-3494 | 04 | 100-101 | Mainscheme Lines |
| 195 | 3495-3509 | 04 | 100-101 | Bottom Samples |
| 202 | 3511-3539 | 04 | 100-101 | Mainscheme Lines |

Vesno = (2120) RAINIER
Andist = +32.2 Meters
Rejected Positions: 1907, 1921, 1944, 2184-2185, 3295, 3510, 3514

NOAA FORM 75-44
(11-72)

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

# OCEANOGRAPHIC LOG SHEET - M
## BOTTOM SEDIMENT DATA

| VESSEL | PROJ. NO. | YEAR | | CHECKED BY | DATE CHECKED |
|---|---|---|---|---|---|
| 2120 | OPR-P114-RA-83 | 83 | SOUTHERN COOK INLET, ALASKA RA-40-2-83 (PAGE 1 OF 1) | R.C. GIVENS | 18 AUG 83 |

| SERIAL NO. | DATE | SAMPLE POSITION LATITUDE | SAMPLE POSITION LONGITUDE | DEPTH (Fathoms) | WEIGHT OF SAMPLER | APPROX. PENETRATION | LENGTH OF CORE | COLOR OF SEDIMENT | FIELD DESCRIPTION | REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.) | OBS. INIT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2183 | 29 JUN 83 | 59°N 27' 00.88" | 152° W 36' 49.99" | 27.0 | 85# | | | gy. | fne. S. | ✓ | RCG |
| 3495 | 15 JUL 83 | " 38' 04.16" | " 51' 01.16" | 17.7 | " | | | gy. | Silt, brk. Sh., med. P. | ✓ | RCG |
| 3496 | " | " 36' 21.28" | " 59' 07.94" | 18.6 | " | | | gy. | Silt, brk. Sh. | — | RCG |
| 3497 | " | " 32' 57.79" | " 54' 32.91" | 20.5 | " | | | gy. | Silt, brk. Sh., crs. P. | ✓ | RCG |
| 3498 | " | " 28' 33.86" | 58' 51.01" | 21.4 | " | | | gn. | med. S. | ✓ | RCG |
| 3499 | " | " 28' 14.54" | " 51' 13.06" | 24.8 | " | | | gn. | fne. S. | ✓ | BEB |
| 3500 | " | " 23' 45.80" | " 56' 03.18" | 28.2 | " | | | gn. | fne. S. | ✓ | BEB |
| 3501 | " | " 18' 01.83" | 153° W 00' 25.76" | 27.5 | " | | | gn. | fne. S., crs. P., brk. Sh. | — | BEB |
| 3502 | " | " 17' 06.66" | 152° W 53' 20.94" | 44.7 | " | | | gn. | Silt. | ✓ | BEB |
| 3503 | " | " 21' 22.18" | " 49' 11.65" | 40.1 | " | | | gn. | Silt | ✓ | BEB |
| 3504 | " | " 19' 39.50" | " 40' 15.44" | 36.7 | " | | | gn. | fne. S. | ✓ | BEB |
| 3505 | " | " 27' 16.99" | " 41' 27.68" | 32.6 | " | | | bk. | fne. S. | ✓ | PMN |
| 3506 | " | " 31' 49.64" | " 38' 42.09" | 32.5 | " | | | bk. | fne. S., brk. Sh. | ✓ | JEB |
| 3507 | " | " 34' 42.05" | " 42' 31.41" | 29.2 | " | | | bk. | fne. S., brk. Sh. | ✓ | JEB |
| 3508 | " | " 39' 01.86" | " 43' 36.14" | 20.2 | " | | | bk. | med. S., St. | ✓ | JEB |
| 3509 | " | " 37' 57.59" | " 37' 07.12" | 28.8 | " | | | bk. | fne. S., brk. Sh. | ✓ | JEB |
| | | | | | | | | | | | |

*Use more than one line per sample if necessary.*

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978—665-016/1064

APPROVAL SHEET

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY

H-10099

RA-40-2-83

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OPORDER, Hydrographic Survey Guidelines, and the 1983 Data Requirements Letter. 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
Commander, NOAA
Commanding Officer

U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

# HYDROGRAPHIC SURVEY STATISTICS

H-10099

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

| RECORD DESCRIPTION | AMOUNT | RECORD DESCRIPTION | AMOUNT |
|---|---|---|---|
| SMOOTH SHEET | 1 | SMOOTH OVERLAYS: POS., ARC, EXCESS | 4 |
| DESCRIPTIVE REPORT | 1 | FIELD SHEETS AND OTHER OVERLAYS | 2 |

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

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS(List):

NOTES TO THE HYDROGRAPHER(List):

SPECIAL REPORTS(List):

NAUTICAL CHARTS(List):

*OFFICE PROCESSING ACTIVITIES*

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

| PROCESSING ACTIVITY | AMOUNTS | | |
|---|---|---|---|
| | *VERIFICATION* | *EVALUATION* | *TOTALS* |
| POSITIONS ON SHEET | | | 2533 |
| POSITIONS REVISED | 6528 | | 6528 |
| SOUNDINGS REVISED | 1106 | | 1106 |
| CONTROL STATIONS REVISED | | | |
| | TIME-HOURS | | |
| | *VERIFICATION* | *EVALUATION* | *TOTALS* |
| PRE-PROCESSING EXAMINATION | 2 | | 2 |
| VERIFICATION OF CONTROL | 2 | 2 | 4 |
| VERIFICATION OF POSITIONS | 40 | 6 | 46 |
| VERIFICATION OF SOUNDINGS | 77 | 11 | 88 |
| VERIFICATION OF JUNCTIONS | 2 | 1 | 3 |
| APPLICATION OF PHOTOBATHYMETRY | | | |
| SHORELINE APPLICATION/VERIFICATION | | | |
| COMPILATION OF SMOOTH SHEET | 15 | 4 | 19 |
| COMPARISON WITH PRIOR SURVEYS AND CHARTS | 1 | 10 | 11 |
| EVALUATION OF SIDESCAN SONAR RECORDS | | | |
| EVALUATION OF WIRE DRAGS AND SWEEPS | | | |
| EVALUATION REPORT | 1 | 4 | 5 |
| OTHER | | | |
| Digitization | 5 | | 5 |
| TOTALS | 145 | 38 | 183 |

| | *Beginning Date* | *Ending Date* |
|---|---|---|
| *Pre-processing Examination by* | | |
| *Verification of Field Data by* I. A. Almacen | *Time(Hours)* 140 | *Ending Date* 4/26/84 |
| *Verification Checks by* S. H. Otsubo, J. S. Green | *Time(Hours)* 29 | *Ending Date* 7/11/84 |
| *Evaluation and Analysis by* C. R. Davies | *Time(Hours)* 38 | *Ending Date* 6/1/84 |
| *Inspection by* D.Hill | *Time(Hours)* 2 | *Ending Date* 7-19-84 |

PACIFIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO: H-10099 FIELD NO: RA-40-2-83

Alaska, Cook Inlet, Offshore Chinitna Point to Augustine Island

SURVEYED: June 24 - July 21, 1983

SCALE: 1:40,000 PROJECT NO: OPR-P114-RA-83

SOUNDINGS: Ross Fineline Fathometer CONTROL: Range/Range
Hastings Raydist

Chief of Party.....CDR J. P. Vandermeulen
Surveyed by.....LCDR D. Yeager
LT S. Iwamoto
LT S. Ludwig
LTJG M. Mathwig
LTJG R. Koehler
ENS B. Postle
ENS J. Judson
ENS J. Logue
ENS K. Barton
SST R. Hastings

Automated Plot by.....PMC Xynetics Plotter

Verified by.....I. A. Almacen

Evaluated by.....C. R. Davies

1. INTRODUCTION

H-10099 is a basic hydrographic survey conducted in accordance with the following:

Project Instructions OPR-P114-RA-83, dated February 18, 1983 and Change No. 1, dated March 18, 1983.

H-10099 is a continuation of hydrographic survey operations in southern Cook Inlet, offshore from Chinitna Point to Augustine Island.

One temporary bubbler tide gage, Oil Point (945-6463) was installed and operated concurrently with field operations. The Oil Point tide gage was utilized to zone the survey for reduction of sounding data on the smooth sheet. Soundings on the final field sheet were reduced on the basis of predicted tides from Seldovia, Alaska (945-5500). Further information is available in the Field Tide Note.

During verification the following data was changed:

a. Projection parameters were changed to center the hydrography on the smooth sheet to change the projection to polyconic.

b. Tide level values are from observed tides, see form 712.

c. Velocity correctors were changed to reflect a corrected velocity, in accordance with MOP letter dated February 28, 1984, (copy attached).

d. Electronic correctors were revised to reflect the mean of the calibrations.

Numerous abstracts and supplements not relevant to the user of the processed data have been removed from the Descriptive Report and filed with the field records.

2. CONTROL AND SHORELINE

Positions of the horizontal control stations used during survey operations are published geodetic and field positions based on the North American Datum of 1927. The smooth sheet was plotted using the field and published NGS coordinates. Hydrographic positioning was conducted using Hastings Raydist (Range/Range) system.

All remaining information affecting the positioning and station control of this survey is listed in paragraphs F and G of the Descriptive Report, the Horizontal Control Report and the Electronic Control Report for OPR-P114-RA-83.

There is no shoreline within the limits of H-10099.

3. HYDROGRAPHY

Crossline soundings are in good agreement. The depth curves could be adequately drawn. Hydrography within the limits of H-10099 was adequate to determine the bottom configuration and least depths. Small discrepancies can be attributed to the irregular nature of the bottom and sand waves.

4. CONDITION OF SURVEY

The hydrographic records and report are adequate and conform to the requirements of the hydrographic Manual.

5. JUNCTIONS

H-10099 is bordered by three contemporary surveys:

H-10091 (1983) Joins
H-10104 (1983) Joins
H-10105 (1983) Joins

Soundings, depth curves, and junction notes are inked in agreement. One sounding was transferred from H-10091 (1983) to H-10099 (1983) at latitude 59°26'06"N and longitude 152°32'48"W.

H-10099 is bordered by four adjoining surveys.

| | | |
|---|---|---|
| H-9378 | (1973) | Adjoins |
| H-9708 | (1977) | Adjoins |
| H-9836 | (1979) | Adjoins |
| H-9837 | (1979) | Adjoins |

The "Adjoins" condition exists because the above mentioned surveys are unavailable.

Adequate agreement was made with all standard depth curves, and the junctional notes are inked accordingly. However the curves on H-9378 (1973) are not in total agreement at the 20 fathom curve. The chart compiler should refer to H-10099 for the accurate portrayal of affected depth curves.

6. COMPARISON WITH PRIOR SURVEYS

| | | |
|---|---|---|
| H-2978 | (1:120,000) | 1908 |
| H-3206 | (1:120,000) | 1910 |
| H-3355 | (1:100,000) | 1911 |
| H-3568 | (1:80,000) | 1913 |
| H-3805 | (1:120,000) | 1915 |

The prior survey compares well with the present survey, generally within plus or minus 1 to 3 fathoms with extreme differences of about 8 fathoms. Most differences can be attributed to data acquisition techniques and irregular bottom profile caused by sand waves. The present survey supersedes the prior survey information within the common area.

The two unnumbered dashed-circle PSR items not discussed in Section K of the Ship's Report are a 28 fathom sounding charted at latitude 59°29'36"N longitude 152°35'36"W and a 27 fathom sounding charted at latitude 59°23'48"N longitude 152°34'30"W. These soundings are confirmed by like soundings on this survey and are, therefore, superseded by data found on the survey.

The remaining eight unnumbered dashed circle presurvey review items listed in Section K of the Ship's Report were developed at 200 meter spacing. None of these shoal surroundings were located; depths in the area surrounding each item were found consistent with the priors (H-3805 and H-3355). Seven of these items originate from H-3805 which was surveyed utilizing Bassnett tubes that were noted by the hydrographer as unreliable (see attached excerpt from H-3805 Descriptive Report). The remaining item, a 20 fathom sounding charted at latitude 59°38'12"N, longitude 152°37'30"W, is inconsistent with surrounding data on the prior and appears to be a misread depth. These eight unnumbered dashed circle presurvey review items are superseded by data from H-10099.

7. COMPARISON WITH CHART

16640, 19th Edition, April 23, 1983

a) Hydrography. All charted information originates with the prior surveys previously discussed in section 6. All charted features have been satisfactorily investigated and discussed.

One presurvey review item, PSR #50576 (AWOIS listing), an oil platform at reported position latitude 59°30'55"N and longitude 152°39'12"W, was looked for and not found. The oil platform has been removed, this area should be charted according to H-10099.

H-10099 is adequate to supersede charted hydrography within the common area.

b) Controlling Depths. There are no controlling depths within the limits of the present survey.

c) Aids to Navigation. There are no aids to navigation within the limits of the present survey.

8. COMPLIANCE WITH INSTRUCTIONS

H-10105 adequately complies with the project instructions and changes listed in section 1 of the report.

9. ADDITIONAL FIELD WORK

This is a good basic hydrographic survey. No additional field work is necessary.

Respectfully submitted,

Charles R Davies

Charles R. Davies
Cartographic Technician
July 11, 1984

This survey has been verified and evaluated. I have examined this survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. This survey is recommended for approval.

James S. Green
Supervisory Cartographer

February 21, 1984

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-10099

Locality: Southern Cook Inlet, Alaska

Time Period: June 24-July 21, 1983

Tide Station Used:

945-6463 Oil Point, Alaska
945-6477 Cape Douglas, Alaska

Plane of Reference (Mean Lower Low Water):

945-6463 = 15.15 ft.
945-6477 = 16.37 ft.

Height of Mean High Water Above Plane of Reference:

945-6463 = 13.3 ft.
945-6477 = 12.5 ft.

Remarks: Recommended Zoning: (See page 2)

James R. Hubbard
Chief, Tidal Datums Section

February 21, 1984

H-10099

A. North of latitude 59°36.0'

1. West of longitude 152°35.0' zone on 945-6463 and apply x1.01 range ratio.

2. East of 152°35.0' zone on 945-6463 and apply x1.05 range ratio.

B. South of latitude 59°36.0' to 59°28.0'

1. Zone on 945-6463 and apply x1.01 range ratio.

C. South of latitude 59°28.0' to 59°17.0'

1. West of longitude 152°35.0' zone on 945-6463 apply -10 minute time correction and x0.97 range ratio.

2. East of 152°35.0' zone on 945-6463 apply -15 minute time correction and x1.01 range ratio.

D. South of latitude 59°17.0'

1. ~~Zone on 945-6477 and apply x1.03 range ratio.~~ SEE TIDE STATUS.
Zone for area south of LAT. 59°17.0'. Zone on 945-6463 and apply x0.97 Range Ratio and -10 minute time correction.

National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

FEB 28 1984

N/MOP:MPK

TO: Commanding Officer
NOAA Ship RAINIER

FROM: N/MOP - Charles K. Townsend

SUBJECT: Sound Velocity Corrections

It has been determined that the velocity tables were calculated incorrectly for all projects in which the new Sound Velocity/Depth Measuring System (SV/D) was used. Projects included are OPR-P114-RA-83, OPR-0168-RA-83, and S-0908-RA-83. Project S-0907-RA-83 used tables from OPR-0168-RA-83.

A "Data Reduction Program" was written by the ship for the HP-97 that incorrectly calculates a velocity correction factor based on the depth (determined from pressure readings) and sound velocity at that depth. Since sound velocity in most cases varies with depth, the water column must be considered in layers with a velocity correction factor determined for each layer. The corrections computed are then summed to arrive at total velocity corrections applicable to given depths. The velocity correction factors must be redone using the "summation of layers" method for all projects.

Another factor not considered in the HP-97 program is the vessel's draft. Velocity tables are tabulated so that the entering argument is the observed depth plus the draft. Using the SV/D, the first layer includes the water column from the surface to the transducer. This fact necessitates a corresponding shift in layer thickness when calculating the first layer correction unless the draft effect is negligible.

For projects OPR-0168-RA-83 and S-0908-RA-83 the incorrect pressure coefficients were entered into the "Coefficient Input Program". Sound velocity and depth values should be recomputed for these projects.

The results of these corrective actions should be submitted as addenda to the appropriate Corrections to Echo Sounding Reports (enclosed) and forwarded to the Nautical Chart Branch, N/MOP21 prior to departure in mid-February. The addendum should include a brief explanation, HP-97 program results (if applicable), layer correction worksheets, graphs, and velocity tables. Refer to the Hydrographic Manual, section 4.9.5.2, for instructions on layering and determining corrections.

Questions regarding this matter should be referred to Dennis Hill, N/MOP211, telephone 527-6853.

3805

Diag. Cht. No. 8502-1, 8554-1, 8553, 8556-1

C. & G. SURVEY
L. & A.
MAR 31 1916
Acc. No.

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: ALASKA

11—5613

# DESCRIPTIVE REPORT.

Sheet No. 3805

LOCALITY:

Cook Inlet Approaches

191 5

CHIEF OF PARTY:

R S Patton

Jim,
For your request,
Frank

3805

DESCRIPTIVE REPORT

Hydrographic Sheet No. 3805

1:120,000

Approaches to Cook Inlet, Alaska.

All general information pertaining to this region is given in my seasonls report, as such information applies equally to a number of sheets. The scope of this descriptive report is therefore limited to a statement of technical matters relating to the survey.

The instructions for this work called for the hydrography from the eastern limit of the sheet west to longitude 153°, and from the deep shown on the chart in latitude 58° 40' northward to a junction with the previous work in about the latitude of Seldovia. Lines were to be run two miles apart, with splits one mile apart in depths less than 50 fathoms. All broken areas to be developed.

The soundings were made with the Bassnett sounders. Personally, I have never found any form of pressure tube which gave satisfaction and have always been reluctant to use them; in fact, this season was the first on which I had used such tubes. The exceptional conditions which justified their use in this case, are discussed in detail in my annual report dated June 30,1915.

In order that there might be as little uncertainty as possible in connection with the use of these tubes, a check up-and-down cast was taken about every fifth position. From these check casts arbitrary corrections to the soundings as recorded by the sounders were derived. These corrections have been applied to all the soundings, and are recorded in red in the sounding records. The significant fact developed by the use of these tubes is that no systematic corrections to the registered depths could be developed. The errors were the result of conditions not only uncertain in their nature, but also which varied from day to day.

A special development was made of the region 5 to 10 miles eastward of East Amatuli Island, where 13 and 17 fathom soundings were shown on the chart. Neither shoal nor suspicious soundings were found.

Search was also made for the "Break,E.D., shown on the chart about 10 miles south of East Chugach Island. Broken ground of considerable extent, with a least found depth of 33 fathoms exists in this vicinity. It is not believed, however, that there is any depth shoal enough to be a menace to navigation. This opinion is based not so much upon the completeness of the development, as upon the fact that the work was done at a time when there was a considerable sea running, a sea which should have broken on any area shoal enough to be dangerous, or at least should have piled up sufficiently to be plainly visible. Heavy tide rips were encountered, but soundings placed in these ~~reefs~~ rips showed uniformly deep water. Lest the development actually made be considered insufficient it may be stated that because of the difficulty, even in comparatively smooth weather, of running, in the strong currents a closely spaced system of lines over this area, its development was postponed until a time when the sea was rough enough to indicate any danger by breaking or piling up, and it was because no such evidence of shoal water was observed, that a closer search was not made.

On the western half of the work, because of the regular and gently sloping bottom, it was thought best to depart slightly from the system outlined in the instructions.

Instead of changing at the 50 fathom curve, from a one to a two mile width between lines, the spacing was gradually widened from a little less than one mile at the northern limit to two miles at the southern.

The control for the work was obtained from the triangulation of the previous years. Additional signals, as needed, were determined by sextant cuts taken in the course of the hydrography, and all such cuts were recorded in the sounding records. Because of the lack of a right object for the work at eastern limit of the sheet, a wing was added to take in the coast as far eastward as Pye Islands. To prevent distortion, this wing was not pasted to the sheet, but made to be placed alongside it by means of a given distance on lines common to the two parts.

As the party was broken up immediately upon the completion of field work, the sheet was forwarded to the Office in an unfinished condition, to be completed by the various officers on duty there during the winter.

A table of statistics is attached.

Respectfully submitted,

R. S. Patton

Chief of Party.

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10099

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.

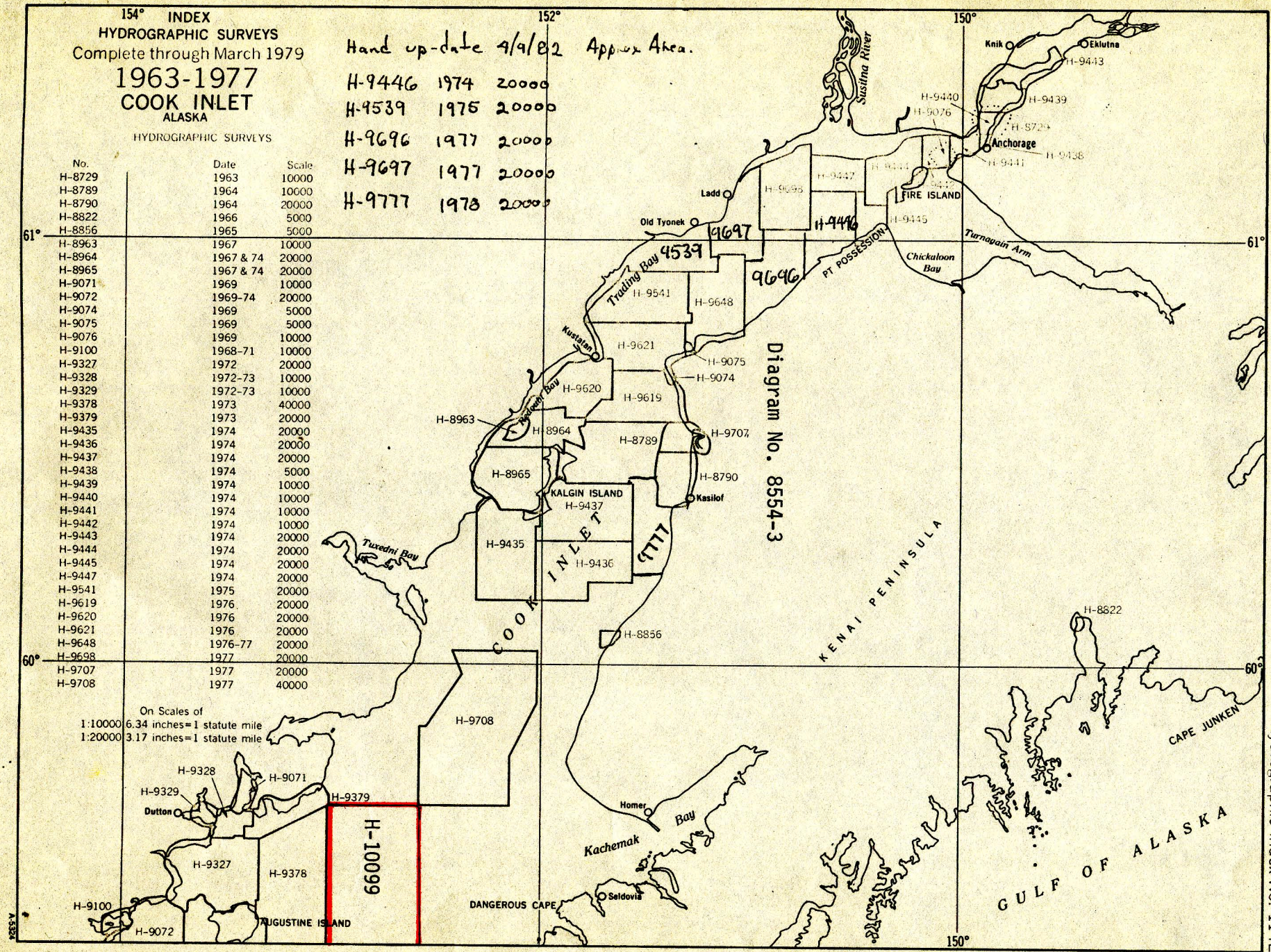
David W. Yeager 7/19/84
Chief, Nautical Chart Branch (Date)

CLEARANCE: SIGNATURE AND DATE:

N/MOP2:LWMordock 7/24/84

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.

7/25/84
Director, Pacific Marine Center (Date)




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

Hydrographic Index No. 114E

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

NAUTICAL CHART DIVISION

# RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10099

## 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 |
|---|---|---|---|
| 16103 | 11/27/84 | B. Fernandez | ~~Full~~ Part Before After Verification Review Inspection Signed Via |
| | | | Drawing No. 27 |
| | | | Etom. for critical conv., no conv. |
| 16648 | 12/7/84 | H.J. Brauchi | Full ~~Part Before~~ After Verification Review Inspection Signed Via |
| | | | Drawing No. Fully app'd survey in area common with 16648. |
| 500 | 5/28/84 | RR House | [redacted] Part [redacted] After Verification Review Inspection Signed Via |
| | | | Drawing No. 5 |
| 16640 | 10/85 | J.M. O'Connor | Full ~~Part Before~~ After Verification Review Inspection Signed Via |
| | | | Drawing No. 22 Applied |
| 16013 | 3/29/91 | ALMACEN | Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via |
| | | | Drawing No. Fully applied sndgs. from SS thru 16640. |
| 531 | 4/12/91 | ALMACEN | Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via |
| | | H | Drawing No. Fully applied sndgs. from SS thru 16013. |
| 500 | 4/17/91 | ALMACEN | Full ~~Part~~ ~~Before~~ After Verification Review Inspection Signed Via |
| | | | Drawing No. Applied 34, 53 & 58 meters sndgs. from SS thru 531. |
| 531 | 7-13-95 | R. Elliott | ~~Full~~ Part Before After Verification Review Inspection Signed Via |
| | 7-28-95 | C Harpine | Drawing No. 21 APPL'D THRU 16013 DR6 #30 |
| | | | Full Part Before After Verification Review Inspection Signed Via |
| | | | Drawing No. |
| | | | Full Part Before After Verification Review Inspection Signed Via |
| | | | Drawing No. |

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

USCOMM-DC 8558-P63