

9836

Diagram No . 8554-2

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. FA-20-3-79
Office No..... H-9836

LOCALITY

State Alaska
General Locality Cook Inlet
Locality Chinitna Point

1979

CHIEF OF PARTY
CAPT A.J.Patrick

LIBRARY & ARCHIVES

DATE April 23, 1981

9836

Area 6
Chits

16640 ✓
16645 ✓
16646 ✓
531 ✓
500 ✓
16661 ✓
500 ✓

FOR APPLICATION SEE
"RECORD OF APPLICATION"

HYDROGRAPHIC TITLE SHEET

H-9836

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

FA-20-3-79

State Alaska

General locality Cook Inlet

Locality Chinitna Point

Scale 1:20,000 Date of survey 17 July 79 - 23 August 79

Instructions dated 2 Mar 79 Project No. OPR-P114

Vessel NOAA Ship FAIRWEATHER (2020) Launches FA-3 (2023) and FA-4 (2024)

Chief of party A. J. Patrick, CAPT, NOAA

Surveyed by Lt. A. H. Yanaway, Lt.(JG) M. S. Finke, Lt.(JG) P. J. Quinlan, Ens. V. D. Ross, Ens. M. J. Willis, and CSI E. R. Krick

Soundings taken by echo sounder, hand lead, pole Echo Sounder (Ross)

Graphic record scaled by Ross Digitizer

Graphic record checked by FAIRWEATHER Personnel
Position Verified by _____

Protracted by Matthew G. Sanders Automated plot by PDP 8e computer and Complot Plotter DP-3-5
Sounding Verified by _____

Verification by Matthew G. Sanders

Soundings in fathoms ^{and tenths} 1 feet at MLW MLLW

REMARKS: Times of hydrography GMT (+9 hrs)

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

Awois and Surf ✓ RUD 7/85

Descriptive Report
To Accompany
Hydrographic Survey H-9836
FA-20-3-79

A. PROJECT

The survey was conducted in accordance with: Project Instructions OPR-P114-FA-79, Southern Cook Inlet, dated 2 March 79; Supplements to Instructions, Changes No. 1 dated ~~4 April~~ ^{30 MARCH} 79, No. 2 dated ~~4 April~~ ^{29 MARCH} 79, No. 3 dated 18 July 79, and No. 4 dated 6 August 79; and Data Requirements for 1979 field season, dated 11 April 79. PMC OPORDERS were followed except where directed differently by the above instructions. ✓

B. AREA SURVEYED

The survey covered the western shore of Cook Inlet, from approximately the south side of Chinitna Bay to a point ten miles to the south. Chinitna Bay to the north, and Oil Point to the south were each slightly outside the survey limits. The shoreline tends SSW in this vicinity, and includes Chinitna Point and Dry Bay. The hydrography extended offshore for approximately nine miles. ✓

Boundaries: North - 59° 49' 06" N
South - 59° 39' 10" N
East - 152° 42' 30" W
West - Western shore of Cook Inlet

The field sheet was divided into north and south sections at 59° 44' 40" N due to sheet size limitations of the plotter. A development was plotted on paper at 1:5,000 scale to portray soundings taken at 22.5 meter line spacing on FA-20-3S-79. Boundaries of the development are: ✓

North - 59° 44' 00" N
South - 59° 42' 15" N
East - 152° 58' 00" W
West - 152° 00' 00" W

Inclusive dates of the field work were 16 July 79 to 23 August 79, (J.D. 197 to J.D. 235). ✓

C. SOUNDING VESSELS

All soundings were obtained by two aluminum launches, FA-3 (2023) and FA-4 (2024). Some bottom samples were collected by the FAIRWEATHER (2020). Throughout the survey both launches and the ship used Range/Range Raydist control. There were no unusual vessel configurations. No unusual problems were encountered. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All soundings were taken by ROSS Fineline Fathometers. There were no unusual faults in the equipment.

Serial Numbers of Sounding Equipment:

<u>Vessel</u>	<u>Days</u>	<u>Digitizer</u>	<u>Analog</u>	<u>Inverter</u>
2023	198-199 to 208-209	1054	1047	1046
2023	235	1054	1046	1046
2024	208 to 214	1046	1046	1103
2024	233 to 234-235	1047	1054	1103
2024	235	1047	1054	1108

Corrections

1. Velocity of sound. Martek casts were taken to calculate velocity for the verified smooth sheet, but no velocity corrections were applied to the data plotted aboard ship. For velocity data see the Abstract of Corrections to Echo Soundings in the appendix of this report, and the Report on Corrections to Echo Soundings, OPR-P114-FA-79, dated 1 October 79.
2. Instrument initial. Launch personnel monitored the initial during operations, and the analogs were adjusted to zero initial when necessary. Occasionally during adjustment procedures the initial was momentarily up to one half fathom in error. These soundings were corrected with the corrector tape.
3. Other instrument corrections. Phase check calibrations were done by the ET Department about every other day.
4. Corrections determined from direct comparisons. The sounding systems were checked and TRA was measured by bar checks on every day that weather permitted. No vertical casts were taken.
5. Settlement and Squat. These corrections were not used because they were a maximum of .1 fathom at 2000 RPM, and less than that at the higher and lower speeds which were normally used while sounding.

E. HYDROGRAPHIC SHEETS

This survey was divided into two field sheets, due to size limitations of the plotters. The sheets are FA-20-3N-79 and FA-20-3S-79. The field boat sheets were all constructed aboard the FAIRWEATHER using RK 201, the shipboard PDP 8e computer, and Complot plotter SN 6166-22. Parameters for these sheets are attached at the end of this report. Mylar was used for all sheets except the large scale development, which was

plotted on paper. The field records and plotting sheets will be sent to PMC for verification and smooth plotting. There are no irregularities in projection, scale or other properties of the plotting sheets.

F. CONTROL STATIONS

Three control stations which were previously monumented were recovered during this project. None of them were used for the control of this survey. They are:

Barb	1967	59° 46' 37.8" N,	153° 00' 02.2" W
Chit 2	1967	59° 41' 46.5" N,	153° 02' 49.8" W
Bluff	1913	59° 41' 35.3" N,	153° 03' 09.9" W

All hydrographic position control was by Raydist range/range from two stations located on the east side of Cook Inlet. They were: ✓

101 Ninilchik RM4	1978 Red Raydist	60° 00' 33.3" N,	151° 42' 48.4" W
102 Flat Island	1956 Green Raydist	59° 19' 53.4" N,	151° 59' 33.9" W

All hydrographic control for this survey was accomplished by FAIRWEATHER personnel in accordance with applicable instructions to at least third order, class I standards. The 1927 NAD was used. No unconventional survey methods were used. There were no anomalies in control adjustment, or in closure and ties. There were no known photogrammetric problems. The signal listing used for the Hydroplot system is attached at the end of this report. See the Horizontal Control Report, OPR-P114-FA-79, dated 1 October 79, for further details.

G. HYDROGRAPHIC POSITION CONTROL

Range/range Raydist was used for all position control. The Red station (101) was located near Ninilchik, and the green station (102) was on Flat Island, both of which were on the east side of Cook Inlet. Calibration for launch hydrography was done by a calibration pole located near the mouth of Chinitna Bay, less than one mile from the north boundary of the survey. Its position was determined by intersection methods using third order, class III methods. Its signal number was 119. The Raydist rates for the positions of the launch antennae were determined for when the bows touched the pole. Rates for both the ebb and flood positions were calculated. Immediately before running hydrography the launches were maneuvered bow to pole, with the predetermined rates set in the panelogic and phase meter. Upon touching the pole the phase meters were activated, causing the panelogic to track. Several D.P.s were taken in this position. The rates were averaged and compared to the predetermined rates to calculate a set of correctors. The same procedure was used to calculate correctors for an ending calibration. The average of the two calibrations was used for the daily correctors. For bottom sampling operations the ship used R/R Raydist control, calibrated by range/range/range Minirangers using RK 561. The andist parameter for the launch is 0.0. The andist for the ship is 33.2 M. ✓

For descriptions of the shore station Raydist equipment, see the Electronic Control Report, OPR-P114-FA-79, dated 1 October 79. Raydist equipment used on the sounding launches was as follows:

<u>Launch</u>	<u>Julian Dates</u>	<u>Raydist Transmitter</u>	<u>Navigation Interface</u>
FA-3 (2023)	198 to 208	SN 83	SN 9
"	209 to 210-211	"	SN 16
"	211-212 to 215	"	SN 9
FA-4 (2024)	198 to 214	SN 90	SN 37
"	233 to 235	"	SN 20

For further information see the Electronic Control Report, OPR-P114-FA-79, dated 1 October 79.

No unusual or unique methods of operating or calibrating the electronic positioning equipment were used. There were no unusual equipment malfunctions or substandard operation. There were no unusual atmospheric conditions which affected electronic control. The location of the Raydist stations provided good geometry for this survey. The red Raydist rate (101) was weak during the first part of the survey, and occasional lane losses occurred. On 22 July 79 (J.D. 203) the tower height of the red station was increased from 30 to 50 feet and the signal strength was thereby strengthened to prevent further lane losses. The data retained in the survey prior to this date are known to be accurate because launches were calibrated at the beginning and end of each day. If there was any question about lane loss, the data was rejected. The green signal tower had been extended in height before this survey began. Both towers had 25 foot whip antenna atop them.

The Abstract of Corrections to Electronic Position Control is attached at the end of this report.

H. SHORELINE

Shoreline was traced onto field sheet FA-20-3N-79 from T sheets T-12362 and T-12319, and onto FA-20-3S-79 from T-12319 and T-12318. At the southern end of T-12362 there is an approximate 2000 meter gap in the MHWL. Two notes on the T-sheet state:

"Limit of photo coverage" [at approximately 59/45/46.1 N], and
"From this point [approximately 59/49/00 N] south to limit of photo coverage is covered with excessive glare. A careful examination by field editor is necessary." ([] inserted by this writer.)

Photos supplied to the ship stopped in the vicinity of 59° 49' N and the ship learned from higher command that the photos on adjoining sheet T-12319 have been deliberately disposed of. The ship was directed to field edit the area, but there were no photos and the area includes steep shale cliffs to the waterline. There are no offshore islands, so the MHWL had to be delineated by D.P.s from a launch. There is no better way to delineate this shoreline except by re-flying the photography.

Ship's personnel inspected the inshore area for any discrepancies while running hydrography. None were noted. Besides the normal sounding scheme, shoreline hydrography was run as near to the shoreline as possible on J.D. 209 at high tide. To further delineate the MHWL on J.D. 234, a launch was maneuvered as close as possible to the high water line, and 24 D.P.s and soundings were taken along the beach. At each D.P. launch personnel judged by eye the distance to the waterline in a westerly direction (along the X axis of the X-Y grid). In areas without cliffs, a correction for tide height was added to that distance estimate as follows. The higher high water for J.D. 234 was estimated to be close enough to mean higher high water for this purpose. At the time of each D.P., the difference between predicted tide and maximum tide was multiplied by 3 (assuming a beach slope of 1:3) and that distance was added to the estimated distance to the beach. This total corrected distance from the launch to the higher high waterline was subtracted from the X value of the D.P. to determine the X value of the point on the shoreline. Since distance estimates were judged in a westerly direction, Y values were identical for D.P. and shoreline points. In areas where the shore was vertical cliffs, no correction for tide height was used. The launch personnel estimated the distance in yards, and these quantities were assumed to be meters, because the error in estimation was probably greater than the conversion of yards to meters. RK 300 was used to convert the corrected XY positions to G.P., and these were hand plotted on the field sheet. A line was sketched connecting the points to depict the missing MHWL. The data was smooth processed after leaving the work area and a 3mm discrepancy was noted between the hydrographically delineated MHWL and the photogrammetrically delineated MHWL. It was learned by the ship that a tie of the MHWL could not be effected in the area involving project PH-6301 (part 1) TP-12362 on the north, and project PH-6301 TP-12319 on the south. The MHWL compiled photogrammetrically was derived from 1:60,000 scale bridging photography containing excessive solar glare as per notations by the compilation activity. A request for the re-orientation of the stereo models has been made in the field edit data package. ✓

Although this is the best the ship could do under the circumstances, it is assumed the estimated distances to the cliffs will be second guessed. However, given the relative closeness of the launch to the shore (5 to 20 yards in a launch approximately 10 yards long), even errors of 100% would not explain the discrepancy of 60 meters between the shoreline on the T sheet delineated shoreline. The Raydist control was, the ship believes, excellent. The shoreline hydrography, run by FA-3 on J.D. 209, agrees well with the D.P.s taken by FA-4 on J.D. 234. The ship recommends that unless the MHWL can be compiled from the 1:20,000 photography, the hydrographically delineated MHWL be smoothed in using the D.P.s, and be used as source for the chart in the gap area. The remaining shoreline can be taken from the T-sheet and charted as is. Given the steep shale rock of the shoreline in this area, these MHWL determinations should be more than accurate enough for charting purposes. The ship personnel believe that the hydrographically delineated MHWL is within .5mm at the scale of the survey. ✓

The shoreline shown on T-12362 was field edited during this survey, and the entire coastline was found to be foul with rocks, but no other hazards or items to be charted were found seaward of the high waterline. See the Field Edit Report, OPR-P114-FA-79, dated 1 October 79, for further details. The rest of the shoreline of this survey was inspected but not field edited. Much of it appeared to be foul with rocks near the beach, but no unusual or offshore hazards were observed.

I. *Ledge limits on topo surveys closely adhere to minus sdgs acquired on the survey. The inshore area is considered ledge.*

5.5% of the mainscheme miles of hydrography were crosslines in this survey. On sheet FA-20-3N-79 4.8% of the miles were crosslines, and on FA-20-3S-79 6.1% were crosslines. In water shallower than 11 fathoms, crosslines agreed within one half fm with mainscheme lines. In deeper water, where soundings were rounded to whole fathoms, they agreed within one fm. These differences are not considered discrepancies. In depths shallower than 11 fathoms, where tenths of fathoms are shown, most observed differences are likely to be caused by comparable soundings being several meters away from each other. Heave and roll of the launches can probably also cause errors. Unavoidable inaccuracy in the predicted tides may also be responsible for certain small disagreements when soundings are compared. In water deeper than 11 fathoms soundings are rounded to whole fathoms, so that a one fathom discrepancy on the plot may in fact represent a difference of only one tenth fathom between neighboring soundings. Due to all these possible sources of error, the agreement of crosslines and mainscheme soundings on these sheets is excellent.

J. JUNCTIONS

Contemporary Surveys.

This survey junctions on the south with H-9379, 1:20,000, 1973, and with H-9378, 1:40,000, 1973. H-9379 overlaps this survey by as much as 1/3 mile along the irregular shape of the southwest border of sheet FA-20-3S-79. All soundings agree within one fathom. H-9378 has a small number of soundings that junction with this survey in the extreme southwest corner. All agree within one fathom.

The other surveys of OPR-P114-FA-79 which border this survey are FA-20-4-79 (H-9837) to the ~~west~~ ^{EAST}, and FA-20-2-79 (H-9828) to the north. The soundings on both of those surveys are in excellent agreement with this survey; all soundings shallower than 11 fathoms agree within 1/2 fm, and all deeper soundings agree within one fathom. These differences are likely to be caused by slight positional differences of soundings over rough bottom, by inaccurate predicted tides, by roll and heave of the launches, or by rounding errors of soundings over 11 fathoms deep. Since combinations of these possible errors are unavoidable using the current equipment, these small differences have to be tolerated, and the agreement between surveys is judged to be excellent.

K. PRIOR SURVEYS

H-3566, 1913, 1:40,000 has two lines of soundings in the area of this survey, which were run parallel to the coast, within 1/2 mile of shore, from about the southern limit of FA-20-3S-79 to about 1.5 miles into FA-20-3N-79. The 1913 sounding generally agree within one fathom of the 1979 soundings. ✓

H-3568, 1913, 1:80,000 has only three soundings which overlap with this survey. They are in the southwest corner of FA-20-3S-79, and they agree within one fathom of the 1979 soundings. ✓

H-3354, 1911, 1:40,000 shows one line of soundings parallel to the coast on FA-20-3N-79, all of which agree within one fathom with the soundings of this survey. ✓

H-3755, 1911, 1:100,000 shows soundings which cover much of the area of FA-20-3N-79. They generally agree within 1 to 2 fathoms with this survey. There are no major discrepancies. ✓

H-8296, 1956, 1:20,000 has about 40 soundings which overlap in the extreme northwest corner of FA-20-3N-79. The 1956 soundings are generally about 1 to 2 fathoms deeper than this survey, but those closest to the beach agree within 1/2 fathom. ✓

In addition to the sources of errors possible when comparing contemporary surveys (positional differences between soundings, roll and pitch, tides, and rounding to whole fathoms in deep water) several other possibilities can affect the comparison of modern surveys with prior surveys. Major earthquakes have occurred. Vastly different sounding and positional equipment are now utilized. The quality of tidal predictions may be different now than it was earlier. Erosion and sedimentation may have occurred. Given all those possibilities, the quality of these comparisons is judged to be excellent. ✓

H-8334 W.D., 1956, 1:20,000 shows some dragged areas in the extreme northwest corner of FA-20-3N-79. The cleared depths are in all cases shallower than the soundings of this survey, and generally they are within one fathom of the least depth found this year. Two of the drags extend well onto FA-20-2-79 (H-9828) where the least depths of the swept areas are located. Thus, surveyed depths on FA-20-3N-79 are several fathoms deeper than the cleared depths for these drags. The wire was set for the shallower water on the adjoining survey. ✓

L. COMPARISON WITH CHART 16640, 16th EDITION, DATED 22 JULY 78

In general this survey indicates that the bottom contours on the chart should be redrawn, and many of the soundings on the chart are several fathoms too deep. ✓

Bottom Contours.

The charted fingerlike indentation of the 10 fathom curve extending up to 59° 49.0 N, 152° 58.5' W does not exist. The survey shows the curve running roughly parallel to the coast on FA-20-3N-79 up to about 59° 47.5' N, 152° 58' W where it turns roughly ENE in a much more regular pattern than shown on the chart. The detached 8 fathom shoal at 59° 42.8' N, 152° 59.3' W should at least be expanded, and show a minimum depth of 6.0 fathoms. However, it would probably be better to include this shoal within the longshore 10 fathom curve, because there are quite a few soundings shallower than 10 fathoms in the area between the detached 8 fathom shoal and shore. The 13 fathom sounding on the chart at 59° 42.4 N, 152° 59.0 W is very close to a 10.6 fathom sounding, so it should be changed. Shoreward of this point there are probably enough 8 and 9 fathom soundings to justify moving the charted 10 fathom curve to this area. *Chart areas as shown on the present survey.*

Charted Soundings to be Changed!

<u>Charted Sounding</u>	<u>FA-20-3S-79 Position</u>	<u>Surveyed Minimum Depth in Area</u>
16 Fathoms	59/40.6 N, 152/59.4 W	15 Fathoms ✓
21	59/37.7 152/59.3	17 N/A
19	59/40.9 152/59.3	17 15 N/A
17	59/42.0 152/56.7	18 16 ✓
17	59/43.0 152/56.1	14 ✓
23	59/40.7 152/52.8	18 ✓
18	59/44.1 152/59.1	15 10 ✓
21	59/41.6 152/51.0	19 ✓
20	59/44.0 152/48.9	17 ✓
20	59/40.7 152/46.0	18 ✓
20	59/41.6 152/48.0	18 ✓
21	59/42.8 152/48.8	17 20 ✓
19	59/43.2 152/46.1	17 18 ✓

In addition, the 21 fathom sounding at 59/41.8 N, 152/53.8 W is accurate, but there are some 17 fathom soundings seaward of this point. The 21 fathom sounding at 59/43.2 N, 152/49.8 W should be removed, and the 20 fathom curve should be redrawn in this area. Also the chart should show 16 fathom soundings at 59/44.6 N, 152/45.2 W and at 59/43.5 N, 152/45.0 W.

<u>Charted Sounding</u>	<u>FA-20-3N-79 Position</u>	<u>Surveyed Minimum Depth in Area</u>
3 1/4 Fathom	59/47.0 N, 152/59.1 W	6.0 Fathoms ✓
4 3/4	59/48.7 152/59.1	1.67 ✓
3 1/2	59/49.0 152/59.5	2.0 ✓
10 1/4	59/48.8 152/58.5	9.0 ✓
11	59/47.4 152/57.9	9.8 ✓
12	59/47.9 152/53.6	10.9 11.6 ✓
16	59/46.8 152/50.6	15 ✓
16	59.45.5 152/50.4	16 ✓
18	59/46.3 152/47.0	17 ✓

Hazards.

There are no charted features with indications of uncertainty in the survey area. There were no presurvey review items in this survey. No offshore navigation dangers were found. The charted shoreline shows ~~seven~~ individually charted rocks ^{awash}. The field edit conducted on the northern portion of FA-20-3N-79 shows that this entire area of the coast should be labeled foul with rocks. See the Field Edit Report, OPR-P114-FA-79, dated 1 October 79 for further details. A general inspection of the rest of the coastline showed that the foul area continued in many places down the coast. *Chart bare rocks & rocks awash as shown on the present survey.*

Developments.

The detached 8 fathom shoal area was developed with 22.5 meter line spacing to supplement the 180 meter mainscheme lines in the area. The development position numbers were 2521 to 2734. The development soundings and mainscheme soundings were plotted on paper at 1:5,000. That sheet accompanies the two mylar mainscheme plotting sheets. The shoalest depth found in the development area was 6.4⁹ fathoms at 59°42'44.5" N, 152°59'09.6" W, rather than the charted 8 fathoms. In addition to that development, several other areas were developed and plotted solely on the mainscheme mylar plot:

1. To portray the depth contours and irregular bottom off Chinitna Point the mainscheme lines were split to 90 meter spacing in the area bounded by:
shore to the west
152/58/00 to the east
59/43/00 to the north
59/39/30 to the south
(Some of the 22.5 meter developed area lies within these boundaries.)
Some of these 90 meter lines were further split to 45 meter spacing directly off Chinitna Point.
2. Along the eastern boundary of the survey on both 3N and 3S sheets irregular bottom was found, so the mainscheme lines were split to 90 meter spacing within the following boundaries:
59/46/40 N to the north
59/43/10 N to the south
152/46/20 W to the west
152/44/00 W to the east
3. Four other small areas in the eastern portion of FA-20-3N-79 were split to 90 meter spacing to show more detail in areas which seemed to have irregularities when the 180 meter lines were scrutinized.
4. About .7 miles offshore on both sheets there is a concentration of soundings which looks like a development extending for miles parallel to the beach. It is not a development but simply the area where nearshore lines overlap with offshore lines. The east-west lines are discontinuous because tide height problems near shore made it

advantageous to work there at specific times - the offshore lines could be run at any time (see area 1.5 miles N.E. of Chinitna Pt. and between latitudes N 59/46 and 59/47).

M. ADEQUACY OF SURVEY

This survey is adequate to supercede prior surveys for charting. There are no incomplete or substandard parts. ✓

N. AIDS TO NAVIGATION

There was no correspondence with the U.S. Coast Gaurd regarding aids. There are no aids to navigation in the area of the survey, nor any other man made structures. ✓

O. STATISTICS

<u>Vessel</u>	<u>Positions</u>	<u>Miles of Hydrography</u>	<u>Square Miles of Hydrography</u>
FA-3	1906	602.6	55.0
FA-4	1506	453.1	57.9
Ship	26	0	0
Total	3438	1055.7	112.9

Bottom Samples: 81

Tide Stations: Oil Bay and Chinitna Bay gages were maintained for this survey

Martek casts: See the Corrections to Echo Soundings Report, OPR-P114-FA-79, dated 1 October 79

P. MISCELLANEOUS

No silted areas or unusual submarine features were found. Unusual turbulence was once observed as a launch was proceeding north in seas generally three feet high. It encountered eight to ten foot seas within about a one mile radius of 59°43'00"N, 152°59'00"W. While the launch was in the large waves the personnel aboard could observe relatively calm seas nearby. They concluded that certain tidal current and wind combinations, combined with the irregular bottom characteristics in this area can create large and localized waves. A note to this effect should be placed on the chart and in the Coast Pilot since it could be an extreme hazard to the numerous small craft which transit the area.

with the exception of sand ridges, Area is labeled & delimited on the smooth sheet.

center of sand ridge area

sand ridges as high as 24 ft. in this area.

Q. RECOMMENDATIONS

This entire survey is adequate for charting. No planned construction or dredging is known of in this area. ✓

R. AUTOMATED DATA PROCESSING

The following programs were used to acquire and plot the data of this survey.

<u>Version Date</u>	<u>Tape Number</u>	<u>Purpose</u>
4/18/75	RK 201	grid construction
1/30/76	RK 111	real time Hydroplot
5/12/75	AM 602	editor
5/04/76	RK 330	format check
1/30/76	RK 211	non-real time Hydroplot
11/10/72	AM 500	predicted tides
2/19/75	RK 561	geodetic calibration
2/10/76	RK 300	utility computations

S. REFERRAL TO REPORTS

The following reports pertain to the entire project OPR-P114-FA-79 and thus are not included as part of this report.

Field Edit Report	OPR-P114-FA-79, dated 1 October 79
Electronic Control Report	"
Corrections to Echo Soundings	"
Horizontal Control Report	"
Coast Pilot Report	"

SUBMITTED BY:

Richard Schine, LCDR, NOAA
Field Operations Officer


for Douglas G. Hennick, LT, NOAA

J. APPROVAL SHEET

Field Number: FA-20-3-79

Register Number H-9836

This survey is complete and adequate for charting purposes. I personally supervised the field work and examined the field sheets on a daily basis.



A.J. Patrick CAPT, NOAA
Commanding Officer
NOAA Ship Fairweather S220

I. LANDMARKS FOR CHARTS

There are no aids to navigation, buildings or other man made structures along this coast. There are three bluffs of landmark value which are shown on T-12362 of the Field Edit Report, OPR-P114-FA-79, dated 1 Oct 79.

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from Seldovia, Alaska, corrected to an area east of Slope Mountain, an area offshore southeast of Mt. Iliamna, and to Chinitna Bay, and were interpolated by PDP-8/e computer utilizing AM 500. All times of both predicted and recorded tides were GMT.

Two Fisher-Porter ADR gages were installed at two locations in the project area and three Bristol Bubbler Tide Gages were installed at three other locations in the project area. The locations and period of operation of the gages were as follows:

<u>SITE</u>	<u>LOCATION</u>	<u>PERIOD</u>
SNUG HARBOR (ADR)	60°06.5'N 152°34.7'W	93 days 30 May-30 August
CHINITNA BAY (Bubbler)	59°50.3'N 153°00.0'W	99 days 23 May-29 August
OIL BAY (Bubbler)	59°38.4'N 153°15.7'W	41 days 15 July-24 August
COAL POINT (ADR)	59°36'11"N 151°24'30"W	32 days 3 August-3 September
FLAT ISLAND (Bubbler)	59°19.8'N 151°59.5'W	19 days 8 August-26 August

In addition, a Bristol Bubbler Tide Gage installed by the NOAA Ship RAINIER was removed. Its location and period of operation follows:

ANCHOR POINT	59°46'12"N 151°52'42"W	52 days 12 July-1 September
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SNUG HARBOR

Gage (#7403A3402M5) was installed on 30 May and began operation on the same day. Excellent records were obtained for 93 days, with no interruptions. The marigram read 2.4 feet greater than the staff (which was a taped distance from a known point on the cofferdam.

CHINITNA BAY

Gage (#6814940) was installed and began operation on 23 May. Due to a malfunctioning differential regulator, the gage was replaced on 1 June with gage #72A233. On 12 June, the tubing at the orifice was repaired because it was crimped where the tubing entered the orifice. On 9 July, the paper ran out at 0130 and was restarted at 2205 GMT, 10 July. From 27 July through 30 July the gage gained 23 minutes. At 1600, 23 August, the marigram jammed and was not restarted until 1736, 28 August. Except for these difficulties, the gages obtained excellent records. The gage read 5.35 feet greater than the staff.

OIL BAY

Gage (#67A10292) was installed and began operation on 15 July. The staff was installed and leveled to on 14 July. On 24 July (0415), the marigram jammed and was restarted on 25 July (2032 GMT). On 14 August (0855) the marigram again jammed and was not restarted until 21 August (1830 GMT). Only one day of tides need be interpolated since field work requiring tides was not conducted after 1327 GMT, 15 August, until the gage was restarted. Other than the above mentioned problems, the gage obtained excellent records. The gage read 5.8 feet greater than the staff.

COAL POINT

Gage (7403A3402M4) was installed and began operation on 3 August. No problems were encountered during the gage's operation. The gage read 6.8 feet greater than the staff (which was a taped distance from a recoverable point on the pier).

FLAT ISLAND

Gage (#67A16204) was installed and began operation on 8 August. The staff was installed and leveled to on 7 August (immediately before the gage began operation). Due to an erratic clock, the gage was replaced with gage #67A16206. No loss of records resulted from the malfunctioning gage. The gage read 10.15 feet greater than the staff.

ANCHOR POINT

Gage (#73A227) was installed on 12 July by the NOAA Ship RAINIER. On 28 August (1430 GMT), the paper for the marigram ran out and was not replaced before the gage was removed on 1 September. For further information on this gage, refer to the Tide Note submitted by the NOAA Ship RAINIER.


LEVELS

In a comparison of level records, all staffs (or staff stops) had negligible shifts of less than 0.01 feet with the exception of Chinitna Bay where the staff settled 0.108 feet. In addition several marks changed elevations substantially suggesting that they were unstable. As discussed on the Forms 77-12 submitted on the various stations, the marks were: at Snug Harbor, BM Cannery 1970; at Chinitna Bay, BM 6357A; and at Coal Point, BM B103 1965.

ZONING

No significant observations were made in the field that would have necessitated the installation of another tide gage. It is recommended that all the accumulated data be used to provide a three-dimensional real-time tidal graph. Before real tides are available, it is recommended that the tidal zoning as provided for OPR-P114-FA-79 be used for both hydrography and field edit.

Respectfully Submitted By:



Mark S. Finke LTJG NOAA
Tides Officer

April 9, 1980

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): 945-6357 Chinitna Bay, AK

Period: July 17 - August 22, 1979

HYDROGRAPHIC SHEET: H-9836

OPR: P114

Locality: Lower Cook Inlet, Alaska

Plane of reference (mean lower low water): 5.2 ft.

Height of Mean High Water above Plane of Reference is
13.7 ft. - Chinitna Bay

REMARKS: Recommended zoning:

- (1). West of $152^{\circ}50'$ zone direct.
- (2). East of $152^{\circ}50'$ apply range ratio x1.05.


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-9836

Name on Survey	A	B	C	D	E	F	G	H	K
COOK INLET	16640								1
CHINITNA POINT	16640								2
MT. CHINITNA	16640								3
ALASKA (title)									4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
						Approved:			18
									19
						<i>Charles B. Harrington</i>			20
						Chief Geographer - N/CG2x5			21
						1 FEB 1984			22
									23
									24
									25

APPROVAL SHEET

FOR

SURVEY H- 9886

- 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: 2/25/81

Signed: _____

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9836

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		13	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		6	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2					
VOLUMES						
BOXES (1)			2 smooth			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List) lea cotour, tide, analysis plots & P/O; manuscripts-12319, 12362

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		3459	
POSITIONS REVISED		1	
SOUNDINGS REVISED		14	
SOUNDINGS ERRONEOUSLY SPACED		6	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5		
VERIFICATION OF CONTROL		8	
VERIFICATION OF POSITIONS		92	
VERIFICATION OF SOUNDINGS		174	
COMPILATION OF SMOOTH SHEET		32	
APPLICATION OF TOPOGRAPHY		13	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		8	
COMPARISON WITH PRIOR SURVEYS & CHARTS		47	
VERIFIER'S REPORT		56	
OTHER		16	
TOTALS	5	446	451
Pre-Verification by James S. Green	Beginning Date 14 Nov. 1979	Ending Date 14 Nov. 1979	
Verification by Matthew G. Sanders	Beginning Date 30 July 1980	Ending Date 15 Jan. 1981	
Verification Check by J. S. Green & S. H. Otsubo	Time (Hours) 38	Date 10 Feb. 1981	
Marine Center Inspection by <i>HIT</i>	Time (Hours) 16	Date 3/20/81	
Quality Control Inspection by F.P. Saulsbury	Time (Hours) 68	Date 2/1/84	
Requirements Evaluation by E.W. Derkaganian	Time (Hours) 2	Date 7/18/85	

L. Myers 2/24/84 16 hrs.

REGISTRY NO. H-9836

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
VERIFIER'S REPORT

REGISTRY NO. H-9836

FIELD NO. FA-20-3-79

Alaska, Cook Inlet, Chinitna Point

SURVEYED: 17 July - 23 August, 1979

SCALE: 1:20,000

PROJECT NO. OPR-P114-FA-79

SOUNDING: Ross Fineline Fathometer

CONTROL: Raydist R/R

Chief of Party.....CAPT A. J. Patrick

Surveyed by.....LT A. H. Yanaway, LTJG M. S. Finke, LTJG J. P. Chinlan, ENS M. J. Willis, CST E. R. Krick

Automated Plot by.....PMC Xynetics Plotter

Verified by.....Matthew G. Sanders
Cartographic Technician

1. INTRODUCTION

This survey H-9836(FA-20-3-79), is a basic hydrographic survey of Chinitna Point, Alaska conducted according to Project Instructions dated 2 March, 1979: Supplements to Instructions, Change No. 1 dated 30 March, 1979, No. 2 dated 29 March, 1979, No. 3 dated 18 July, 1979, and No. 4 dated 6 August, 1979. ✓

This project is a continuation of Hydrographic Survey Operations in southern Cook Inlet by NOAA Ships RAINIER and FAIRWEATHER. Surveys were conducted in conformance to the nautical charting plan for new large-scale chart coverage and maintenance of existing charts in the area. The surveys will also provide a new data base for ecological, pollution, engineering and other scientific studies. ✓

The Ross Fathometer was used by both launches to determine the bottom configuration. The Hastings Raydist, used in the range-range mode, was the primary system used for control of the survey. All hydrographic control for this survey was accomplished by FAIRWEATHER personnel. ✓

During the verification process, no unusual problems were encountered. ✓

2. CONTROL AND SHORELINE

See Descriptive Report, Sections F and G and the Horizontal Report, OPR-P114-FA-79, dated 1 October, 1979 for an adequate description of control. See Section H for shoreline. The manuscripts used for ✓

topographic detail are:

- a. unreviewed, Class I, T-12362: July 1970 - July 1979 ✓
- b. reviewed, Class III, T-12319: July 1967 - Feb 1976 (no field edit)
(date of final review)

Since the Class III manuscript has been reviewed, it is shown in black ink. Note on Manuscript T-12362 states: Limit of Photo Coverage. See Section H of the Descriptive Report for additional information. This area of shoreline is shown on the smooth sheet in dashed red, with the field sheet as the source. ✓

3. HYDROGRAPHY

The bottom configuration is mud and silt, with hard areas inside the 5 fathom curve, the slope is gentle and the bottom is flat. These characteristics have been consistent over the years. Crossline soundings agree within 1/2 fathom out to 23 fathoms. Depth curves have been drawn and are complete, except the 0 and 1 fathom curve and in areas foul with rocks. The development of the bottom configuration and the determination of least depth is adequate for this survey. ✓

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements stated in the Hydrographic Manual; except that:

- a. The applicable depths of the Velocity Table 4 were incorrectly scaled. Velocity Table 4 was completely revised. ✓
- b. Bristol Bubbler Tide gages were installed at Chinitna Bay, Oil Bay and Flat Island instead of ADR gages. ✓
- c. Although the Descriptive Report, Section H states that the shoreline originating from T-12319, South of 59°45'N, was field inspected there is no indication in the hydrographic records that the shoreline and offshore features were verified. There are no elevations for rocks plotting offshore. *concur*

5. JUNCTIONS

This survey junctions with four contemporary surveys: to the North, H-9828(1979), 1:20,000; to the East, H-9837(1979), 1:20,000; to the Southwest, H-9378(1973), 1:40,000; to the Southwest, H-9379(1973), 1:20,000. There were no problems in accomplishing these junctions. All depth curves are drawn and complete. The junction notes are inked. The penciled curves on H-9378 and H-9379 should be inked to conform with the junction curves shown on the survey. *H-9378 & H-9379 junctional curves were inked during Q.C.I.* ✓

6. COMPARISON WITH PRIOR SURVEYS

H-3566(1913), 1:40,000; the soundings are in good agreement. The difference being 1/2 fathom. The bottom and shoreline are relatively the same, except for sloughing. ✓

H-3566(1913), 1:80,000; the line of soundings agree within 1 fathom. ✓
The bottom remains unchanged.

H-3354(1911), 1:40,000; the line of soundings agree within 1 fathom. ✓
The bottom remains unchanged.

H-3355(1911), 1:100,000; covers the survey, except inshore. The agreement is good, with 2 1/2 fathoms being the greatest difference. ✓

H-8296(1956), 1:20,000; agrees within a fathom. ✓

This survey supersedes the above surveys for the area of common coverage. **concur**

³
H-8³34 W.D.(1956), 1:20,000; there are no discrepancies between the cleared depths and the survey. **concur**

7. COMPARISON WITH CHART

The survey was compared with chart 16640 16th edition, 22 July, 1978.

1. The soundings on chart 16640 originate from H-3354(1911), and H-3355(1911), ~~the others are of an unknown source.~~ *and miscellaneous sources.*

2. The ten fathom curve does follow the general contour of the land on the chart, with depths extending to 59°48.5'N, 152°58.5'W. **concur**

3. The off-shore shoaling is marked by a 6.⁹/₇₅ fathom least depth at 59°42.⁸/₇₅'N, 152°59.⁴/₇₅'W. **concur**

4. There are no pre-survey review items for this area. During verification, no hazards to navigation were found. *The localized wave area in the vicinity of lat. 59°43'N, long. 152°59' is considered a hazard to small craft navigation.*
a. This survey is adequate to supersede the charted *craft navigation.* hydrography. **concur**

b. Aids to navigation. There are no fixed nor any other aids to navigation within this survey's limits. **concur**

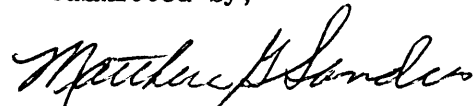
8. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey complies with the Project Instructions, dated 2 March, 1979, through supplement No. 4, dated 6 August, 1979, OPR-P114-RA, FA-79. **concur**

9. ADDITIONAL FIELD WORK

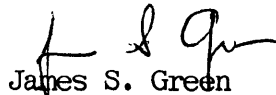
This is a very good basic Hydrography^h Survey^s. No additional field work is required for the area covered by this survey. **concur**

Submitted by,



Matthew G. Sanders
Cartographic Technician
February 11, 1981

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

March 20, 1981

OA/CPM3/JWC

TO: OA/CPM - Charles K. Townsend

FROM: OA/CPM3 - John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9836

This survey is a basic hydrographic survey of Chinitna Point, Cook Inlet, Alaska. This survey was conducted by NOAA Ship FAIRWEATHER in 1979 in accordance with Project Instructions OPR-P114-FA-79 dated March 2, 1979; Change No. 1, dated March 30, 1979; Change No. 2, dated March 29, 1979; Change No. 3, dated July 18, 1979; and Change No. 4, dated August 6, 1981.

The following comments were noted during the inspection of the survey:

1. The area depicted adjacent to Chinitna Point on field sheet FA-20-3-79 illustrated the problem that may be encountered in running splits on a different day from the original hydrography in an area of relatively flat bottom - an unnatural 2 fathom depth curve was produced. This curve should have been addressed and resolved by the FAIRWEATHER before leaving the area since such curves usually indicate data problems (Section 4.5.7.3 of the Hydrographic Manual). Most probably, this problem was in applying predicted tides since the application of actual tides in verification produced normal curves on the smooth sheet. An accurate comparison to charts and prior surveys; however, is dependent upon correct data. *Minor irregularities are still apparent in the delineation of some curves.*

2. The shoreline of this sheet illustrates a problem in photogrammetric support. The shoreline for this survey is from three distinct sources: from the northern limit to 59°46'N it is from a Class I Shoreline Manuscript, from 59°46'N to 59°45'N it is from an estimated sketch by the hydrographer, and from 59°45'N to the southern limit it is from a Class III Shoreline Manuscript. Considering the scale of the survey (1:20,000) to the chart scale (1:200,000) this is not a major problem but it does point out the fact that complete photogrammetric support is necessary for an efficiently conducted survey and to meet the Hydrographic Manual requirements for shoreline delineation. *concur*



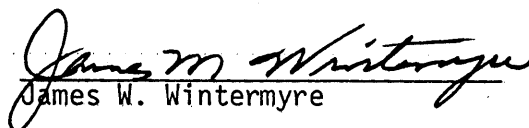
10TH ANNIVERSARY 1970-1980

National Oceanic and Atmospheric Administration


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

The inspection team finds H-9836 to be a basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended. **CONCUR**


John W. Carpenter

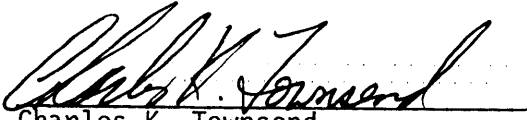

James W. Wintermyre


James W. Steensland


James L. Stringham

ADMINISTRATIVE APPROVAL
H-9836

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



Date



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

OCT 26 1981

OA/C35x1:DEW

RECEIVED

OCT 30 1981

PACIFIC MARINE CENTER

TO: OA/CPM - Charles K. Townsend

FROM: OA/C3 - Roger F. Lanier

SUBJECT: Return of Hydrographic Survey H-9836 (1979) for Additional Verification

RM
Roger F. Lanier

CPM
CPM 3 / action
also provide copies
of letters to all
hit team members
[Signature]

A quality control inspection of survey H-9836 has revealed several deficiencies in verification. These deficiencies are considered significant enough to warrant return of the survey and records to the Pacific Marine Center for correction.

The major deficiencies are as follows:

1. Shoreline manuscripts T-12319 (1967) and T-12362 (1970-79) provide the source for most of the shoreline on H-9836. The T-sheets show rock ledge fringing the entire shoreline. Numerous minus soundings obtained on H-9836 have effectively verified the office interpreted position of this ledge.

A zero depth curve was drafted along the shoreline on the smooth sheet where ledge symbol should have been shown. This depth curve should be removed from the smooth sheet, the minus soundings placed in excess, and a ledge symbol drafted in accordance with the delineation shown on the T-sheets. Modifications to the ledge delineation should be made where dictated by the hydrography (Hydrographic Manual, section 7.3.7.1). *Accomplished 1/24/84*

It should be concluded that the fringing ledge also exists alongshore in the area where it was necessary for the hydrographer to delineate the shoreline. This area should be treated in a similar manner. With the minus and zero soundings excessed, the dashed red shoreline can be more completely portrayed. *Accomplished 1/24/84*

The northern end of the hydrographically determined shoreline should be merged with the shoreline from T-12319. This action will remove the conflict between the two shorelines now shown on the smooth sheet, and will allow the rock awash from T-12319 to fall offshore from the HWL. *Accomplished 1/24/84*

2. Numerous rock awash symbols are improperly drafted on the smooth sheet. Most of them are too large, and many are drafted with improper symbology (one or more legs missing, and legs of unequal length). These rock symbols should be re-drafted as necessary. Where space does not allow the portrayal of all rocks in a group, the number of symbols may be reduced to avoid overlapping (Hydrographic Manual, section 7.3.7.4). *Partially accomplished, some rock awash symbols are still poorly drafted.*

3. The 5-fathom curve in latitude 59°46.5'N, longitude 152°59.2'W reveals depths along a split sounding line to be deeper than adjacent lines and a



crossline. The records in this area should be examined in an attempt to determine the cause of this anomaly. If necessary, erroneous depths should be rejected. *corrected 1/24/84*

I have attached an annotated full-scale copy of the H-9836 smooth sheet which contains directions for the correction of several additional minor items on the smooth sheet.

The smooth sheet and records will be forwarded under separate cover. Please give this survey your earliest attention to assure its completion in a timely manner.

Rec'd in Rockville in January 1984


Attachment (1)

Separate Cover:
Smooth Sheet and Records

cc:
OA/C35 w/o att.
OA/C352 w/o att.

ADDENDUM TO VERIFICATION REPORT FOR H-9876

The deficiencies identified in the attached OA/C35x1 memorandum dated October 26, 1981, have been corrected. *Do not concur. Some deficiencies were ignored by PMC and were corrected during Q.C.I.*

FOR  12/30/83
Ned C. Austin
Chief, Nautical Chart Branch



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG242:FPS

April 8, 1985

TO: Roy K. Matsushige *Del For*
Chief, Hydrographic Surveys Branch

THRU: Chief, Standards Section *gms*

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

SUBJECT: Quality Control Report for Survey H-9836 (1979), Alaska, Cook Inlet,
Chinitna Point

A quality control inspection of survey H-9836 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. Additions and revisions to the smooth sheet are identified in a memorandum furnished verification.

Revisions to survey information were requested of CPM3 per OA/C35x1:DEW memorandum, dated October 26, 1981, "Return of Hydrographic Survey H-9836 (1979) for Additional Verification." The survey and pertinent records were returned to CPM3 in October 1981. In order to assist the verifier, a full-scale copy of the smooth sheet with specific instructions from quality control accompanied the survey records.

Additional processing was performed on the survey and returned by N/MOP21 (CPM3) in December 1983.

With quality evaluation completed, the survey, in general, now conforms to National Ocean Service standards and requirements except as stated in the Verifier's Report and the HIT Report.

CC:
N/CG241





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

JUL 30 1985

N/CG241:RWD

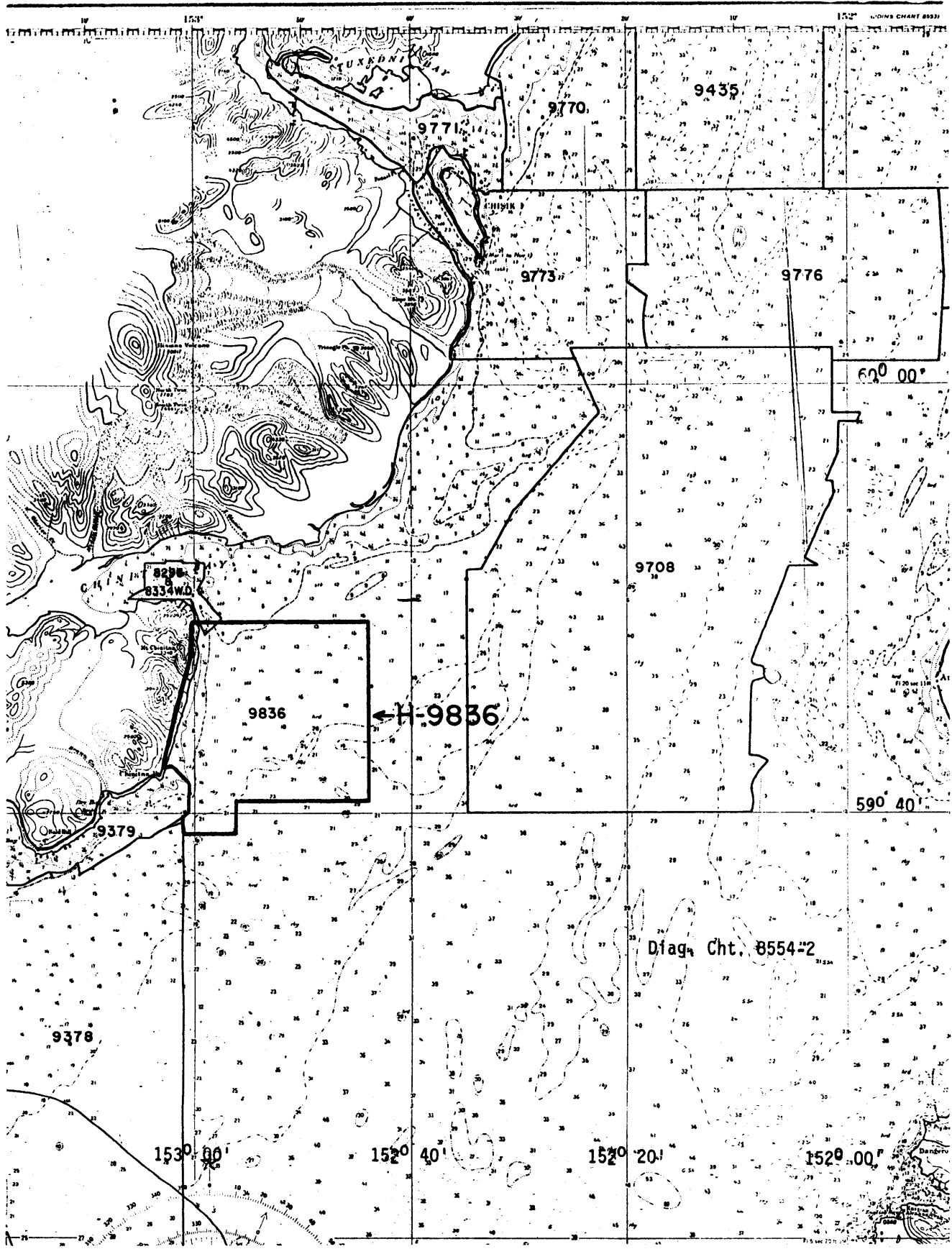
TO: N/MOP - Robert L. Sandquist
FROM: N/CG2 - J. Austin Yeager *Donald E. Matrupfer*
SUBJECT: Report of Compliance for Survey H-9836

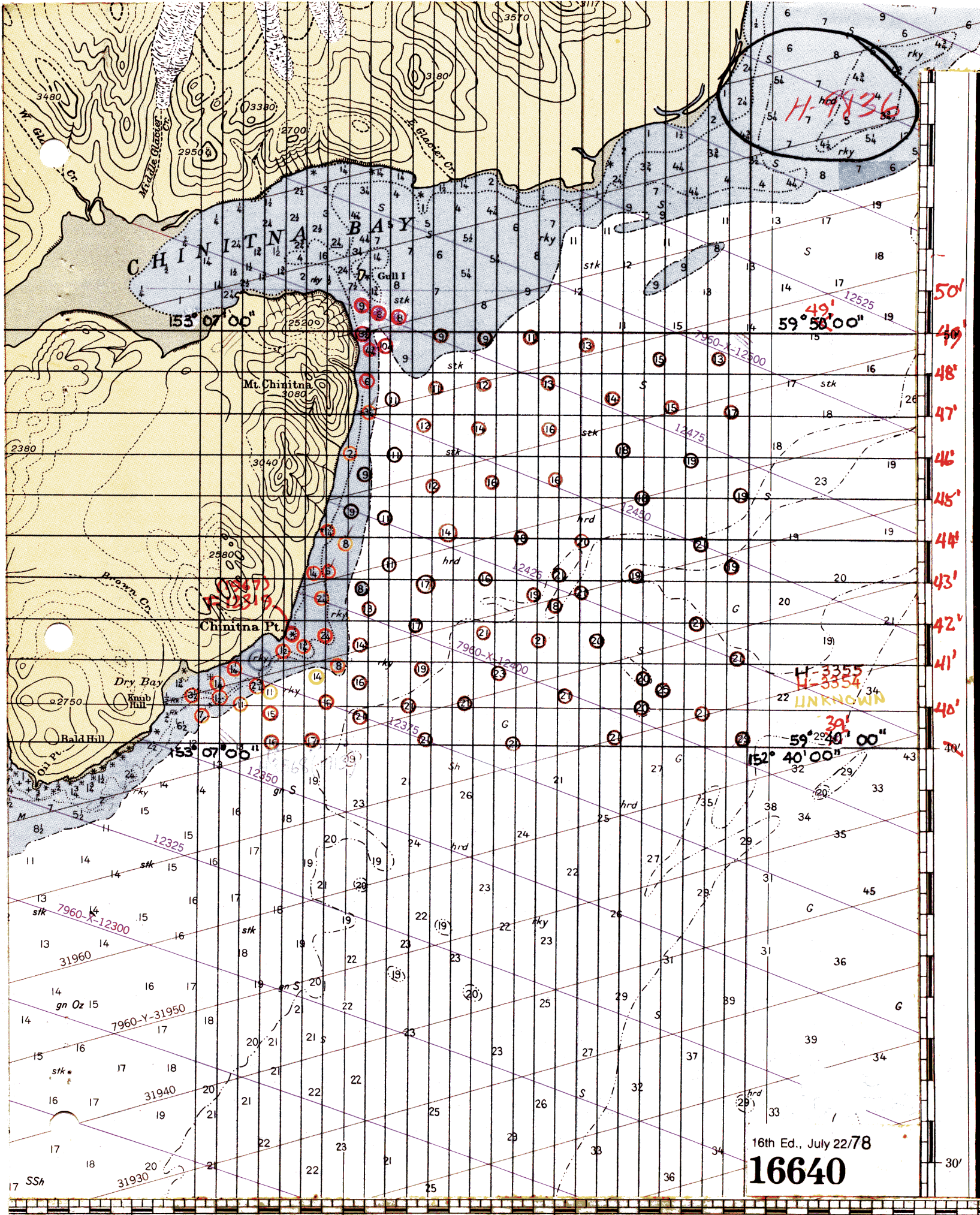
The smooth sheet and Descriptive Report for survey H-9836 (1979), Alaska, Cook Inlet, Chinitna Point, have been reviewed. Please extend my appreciation to the NOAA Ship FAIRWEATHER and your processing unit at the Pacific Marine Center for their efforts in completing this survey. This survey is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-P114-FA-79, dated March 2, 1979. A copy of the Quality Control Report, dated April 8, 1985, is attached.

Attachment

cc:
N/CG242 w/o att.







16th Ed., July 22/78
16640

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9836

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
16661	10-1-84	<i>Prof. W. D. ...</i>	Full Part After Verification Review Inspection Signed Via Drawing No. 1
16013	2-21-89	ED MARTIN	Full Part Before After Verification Review Inspection Signed Via Drawing No. 23 EXAM, NO CORR'S, FULLY APPLD
16648	5-9-89	John Pierce	Full Part Before After Verification Review Inspection Signed Via Drawing No. 3 Fully applied, partly through Diag. 2 of chart 16661
16640	6-26-89	Pearce Hunt	Full Part Before After Verification Review Inspection Signed Via Drawing No. 20 23 rd Ed.
531	4-8-91	<i>Ammacen</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. Applied one (1) sndg. (17 fms) @ 59°41'50"N, 152°46'15"W from SS thru 16640.
500	4-16-91	<i>Ammacen</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. Applied 31 m. sndg. @ 59°41'50"N, 152°46'15"W from SS thru 531.
531	7-13-95 7-25-98	<i>R. G. Elliott R. Orpin</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 21 NO CORR THRU 16013 (SEE LINE 2 ABOVE)
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.