

9779

Diag. Cht. No. 8002-2.

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey Hydrographic
Field No. DA-20-3-78
Office No. H-9779

LOCALITY

State Alaska
General Locality Disenchantment Bay
Locality ... Point Latouche to Miller Glacier ...

1978

CHIEF OF PARTY

..... C. W. Hayes

LIBRARY & ARCHIVES

DATE Nov. 7, 1979

★ U.S. GOV. PRINTING OFFICE: 1976-669-441

62726

Area 6

- 16760

- 16761

16016

HYDROGRAPHIC TITLE SHEET

H-9779

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

FIELD NO.

DA-20-3-78

State Alaska

General locality Disenchantment Bay

Locality Point Latouche to Miller Glacier

Scale 1:20,000 Date of survey 6 August - 2 Sept. 1978

Instructions dated 13 March 1978 Project No. OPR-0121(525)-DA-78

Vessel NOAA Ship DAVIDSON(3130), DA-1 (3131), DA-2 (3132)

Chief of party CDR C. William Hayes

Surveyed by LCDR Bodnar, LCDR Calebaugh, LTJG Greenawalt, ENS McDougal, ENS Peasley, LTJG Haas, Ship's Personnel

Soundings taken by echo sounder, ~~xxxxxxx~~ Ross Finline, Model 5000, S/N 1048, S/N 1080

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Position verified Patrick J. Corkery Automated plot by Xynetics Plotter (PMC)

~~Plotted by~~ James L. Stringham and Patrick J. Corkery

Soundings in fathoms und tenths of
~~xxxxxxx~~ MLLW

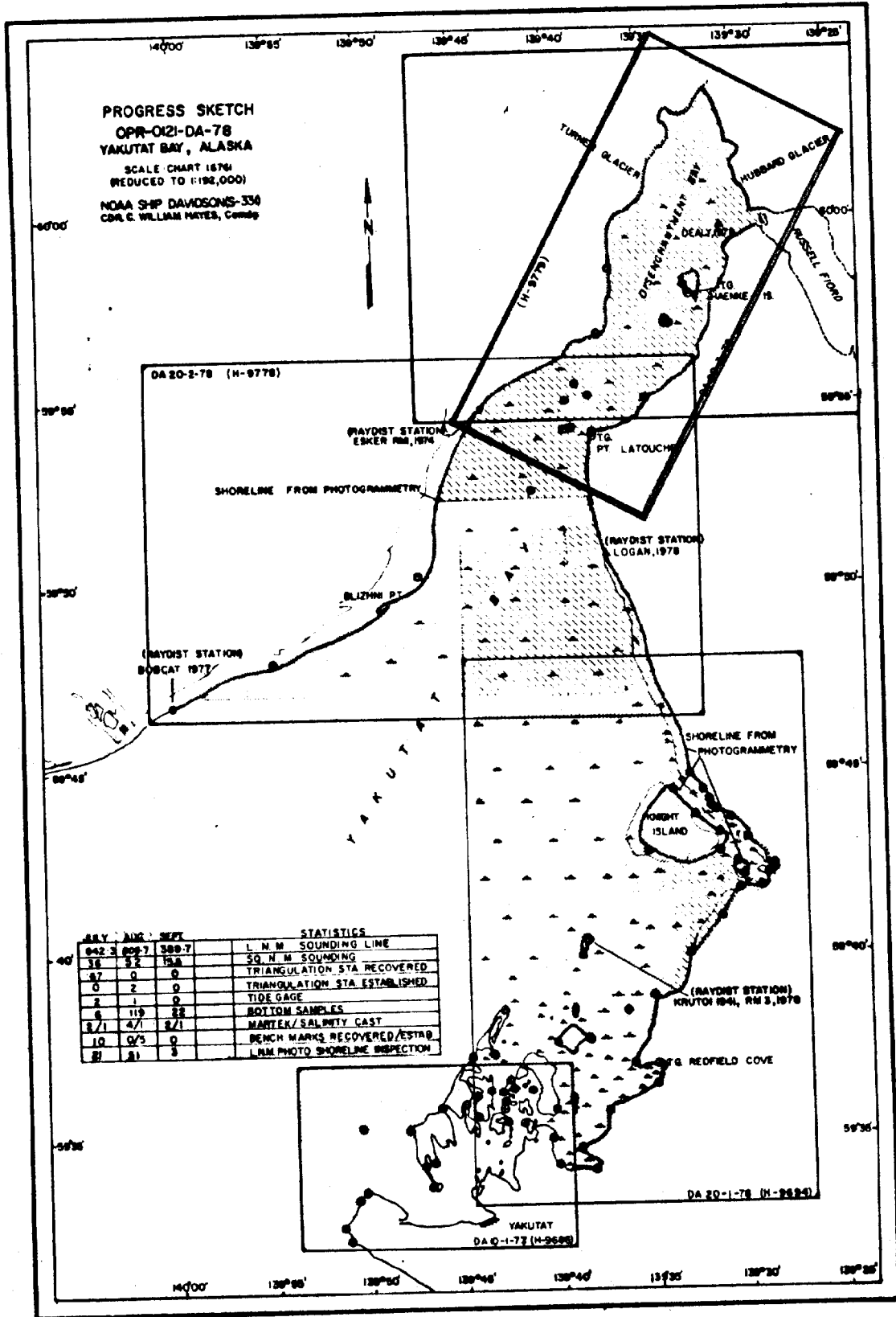
REMARKS: Time Zone - GMT

Survey complete

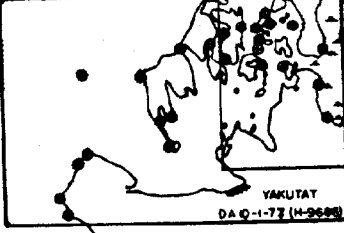
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[Signature]

**PROGRESS SKETCH
OPR-0121-DA-78
YAKUTAT BAY, ALASKA**

SCALE CHART 1876
(REDUCED TO 1:192,000)
NOAA SHIP DAVISOONS-330
CDR. C. WILLIAM HAYES, Comdg



| REV. | NO. | DEPTH | STATISTICS |
|------|-----|-------|--------------------------------|
| 042 | 3 | 389.7 | L N M SOUNDING LINE |
| 38 | 2 | 18.8 | 50 N M SOUNDING |
| 07 | 0 | 0 | TRIANGULATION STA. RECOVERED |
| 0 | 2 | 0 | TRIANGULATION STA. ESTABLISHED |
| 2 | 1 | 0 | TIDE GAGE |
| 8 | 119 | 22 | BOTTOM SAMPLES |
| 8/1 | 4/1 | 2/1 | MARTELK/SALINITY CAST |
| 10 | 0/5 | 0 | BENCH MARKS RECOVERED/ESTAB. |
| 21 | 21 | 3 | LNM PHOTO SHORELINE INSPECTION |



| <u>MARTEK CASTS</u> | <u>DATE</u> | <u>LATITUDE</u> | <u>LONGITUDE</u> | |
|---------------------|-------------|-----------------|------------------|---|
| (S/N 395) 1 | 07 Aug | 59°54'27" | 139°39'00" | ✓ |
| 2 | 07 Aug | 59°54'40" | 139°39'31" | |
| 3 | 20 Aug | 59°57'09" | 139°34'11" | |
| 4 | 20 Aug | 59°57'56" | 139°33'58" | |

See corrections to Echo Sounders Report.

Transducer depth was determined from twice daily bar checks by each launch. Because of the increased error introduced by wind, currents, and sound velocity changes, only the one and two-fathom readings were made for computing TRA. TRA correctors of +0.3 fathoms have been determined for both launches. ✓

Bristol Bubbler tide gages were installed at Point La-touche (945-3228) and Haenke Island (945-3191) to control hydrography. See field Tide Note. ✓

Soundings on the Final Field Sheet have been corrected for TRA and predicted tides, but not velocity. ✓

E. HYDROGRAPHIC SHEETS

The field sheet used for this survey is referenced as DA-20-3-78. It is a Modified Transverse Mercator projection prepared at a scale of 1:20,000 using the HYDRO-PLOT system aboard the DAVIDSON. The sheet is skewed 63° to fit the survey onto one field sheet. ✓

One inset at a scale of 1:10,000 was prepared to show the developments north of Haenke Island. ✓

All field records will be forwarded to Pacific Marine Center for verification and final smooth plotting. ✓

F. CONTROL STATIONS

Six third-order triangulation stations were recovered and used for electronic and visual control hydrography: ✓

| | |
|--------|------|
| BANCAS | 1974 |
| DOLCE | 1974 |
| ESKER | 1974 |
| HAENKE | 1974 |
| LEFTY | 1974 |
| LUFF | 1974 |

In addition, two third-order, Class I stations were established for use during this survey: ✓

DEALY 1978 (TRAVERSE) ✓
LOGAN 1978 (TRIANGULATION)

Three third-order temporary triangulation stations were also established for calibration purposes. ✓

All computations are based on the North American 1927 Datum. See attached Signal List and Horizontal Control Note for the geodetic positions of these stations. ✓

G. HYDROGRAPHIC POSITION CONTROL

The Motorola MINI-RANGER III positioning system was used in the range-range and range-azimuth modes. Listed below are those electronic components used during the survey: ✓

| <u>VESSEL</u> | <u>EDP#</u> | <u>CONSOLE</u> | <u>R/T UNIT</u> |
|---------------|-------------|----------------|-----------------|
| DA-1 | 3131 | 707 | 721 |
| DA-2 | 3132 | 710 | 719 |

| | <u>CODE 1</u> | <u>CODE 2</u> | <u>CODE 3</u> | <u>CODE 4</u> |
|---------------------|---------------|---------------|---------------|---------------|
| Transponders (S/N): | 723 | 771 | 772 | 773 |

Daily calibrations were performed prior and subsequent to hydrography controlled by a specific MINI-RANGER configuration, at any time MINI-RANGER rates became unsteady or during periods of decreasing visibility. Calibrations were accomplished either by three-point sextant fixes taken simultaneously with the MINI-RANGER rates or by positioning the launch at a fixed calibration point (CAL 1) and observing the rates. The differences between the computed and observed distances were within the required ±10 meters of the July, 1978 baseline calibration correctors. ✓

Baseline calibrations were conducted on 14 July, 1978 and 24 August, 1978. These baseline calibrations were conducted over measured ranges from station Grass 1941 to Station Heavy 1941 and from Tony 1977 to Happy 1977 in Yakutat Bay. The mean of the correctors found by these two baseline calibrations have been applied to the positions on the Final Field Sheet. (See Electronic Control Note) ✓

H. SHORELINE

The shoreline for this survey was derived from Class III Manuscripts TP-00613, TP-00614 and TP-00615. The ✓

shoreline with Hydro DP's applied is drawn on the Final Field Sheet in black. The limits of the glaciers are subject to frequent change and therefore are shown by a broken black line. ✓

I. CROSSLINE

Crosslines comprised 15.4% of the total sounding lines and were in good agreement with the main scheme hydrography. Agreement was generally within one fathom. ✓

J. JUNCTIONS

This survey junctions on the south with contemporary survey H-9778, DA-20-2-78. Agreement between soundings was excellent, generally within 1 fathom. ✓

Agreement between soundings obtained by the two survey launches was also very good. The soundings agreed within 2 fathoms along the steeply sloped bottom. ✓

K. COMPARISON WITH PRIOR SURVEYS

The following numbered Presurvey Review items were within the limits of this survey: ✓

PSR #6. The rocks awash, PD, charted in latitude $59^{\circ}59.5'$, longitude $139^{\circ}32.5'$, originates with Chart Letter 467 of 1911. No further information is available. See Verifier report item VII

PSR #7. The two rocks awash, PD, charted in latitude $59^{\circ}59.7'$, longitude $139^{\circ}30.7'$, originates with Chart Letter 173 of 1908. No further information is available. See Verifier report item VII

PSR #8. The 2 fathom sunken rock, PD, charted in latitude $60^{\circ}00.0'$; longitude $139^{\circ}29.8'$, originates with Chart Letter 21 of 1914. The letter states that the SHIP PRINCESS MAQUINA, while proceeding slowly, went aground in the above position. See Verifier report item VII

PSR #9. The soundings, PA, charted in the vicinity of latitude $60^{\circ}02'$, longitude $139^{\circ}32'$, originate with Chart Letter 1562 of 1973. See Verifier report item VII

All areas in the vicinity of the reported rocks of the presurvey review items #6, #7 and #8 were investigated. A rock island was found at PSR item #7 only. Items #6, #7 and #8 were probably all the same rocks, but located inaccurately. See Verifier report item VII

Item #6 is over a very smooth bottom at 126 fathoms. See Verifier report item VII

Item #8 lies over a sloping bottom, between 12 and 40 fathoms. No trace of any rocks was found at these locations.

See Verifier report item VII

The rock island found at Item #7 was located by third-order, Class I traverse methods. Station Dealy was established on the highest point on the rock. The rock lies in a north-south direction. The highest point is 18 ft above mean lower low water. At mean high water, the rock appears as four nobs, the highest being 7 ft above the water.

See Verifier report item VII

Hydrography was done in the area of PSR Item #9. Depths found by this survey are shoaler than the charted depths.

See Verifier report item VII

No prior surveys were supplied for the surveyed area.

L. COMPARISON WITH THE CHART

Soundings from Chart 16761, 11th edition, 1978⁶ scale 1:80,000, have been transferred to the Final Field Sheet in violet. Soundings from this survey do not agree well with those charted. A comparison shows a disagreement of ±50 fathoms. The charted soundings were taken with leadline and are probably very inaccurate considering the currents observed by DAVIDSON in the survey area. Also, since copies of the original smooth sheets for these soundings were not supplied to the DAVIDSON, it is not known whether datum adjustments have been applied, or how the hydrography was controlled.



M. ADEQUACY OF SURVEY

This survey is adequate to supersede all prior surveys and charted hydrography. Three "holidays" exist where continuous concentrations of ice prevented soundings from being taken. These holidays are at:



| <u>Latitude</u> | <u>Longitude</u> |
|-----------------|------------------|
| 60°01'45"N | 139°31'00"W ✓ |
| 60°00'12"N | 139°33'40"W ✓ |
| 60°00'30"N | 139°30'30"W ✓ |

N. AIDS TO NAVIGATION

No aids to navigations exist within the boundaries of this survey.



O. STATISTICS

Number of Positions 1066 ✓

| | | |
|--|-------|---|
| Nautical Miles of Sounding Lines (total) | 225.8 | ✓ |
| Nautical Miles of Cross Lines | 34.8 | ✓ |
| Square Nautical Miles of Hydrography | 24.8 | |
| Martek Casts | 4 | |
| Nansen Casts | 1 | |
| Bottom Samples | 15 | |

P. MISCELLANEOUS

The concentration of icebergs and ice floes greatly hampered this survey. Shoreline along the western side of Disenchantment Bay could not be sounded because of ice. ✓

Ice was continually calving from Hubbard and Turner Glaciers; making them too dangerous to delineate. The glaciers are very active and their limits change daily. ✓

Standing waves and a hydraulic jump were observed at the entrance to Russel Fiord between Hubbard Glacier and Osier Island and between Osier Island and the mainland. The tide in the fiord appears to lag the tide in Yakutat Bay by as much as 1 1/2 hours. Hydrography done east of longitude 139°30'00"W cannot be accurately reduced for tides. Soundings in this area are strictly reconnaissance and should be used with caution. ✓

Q. RECOMMENDATIONS

No additional fieldwork is recommended. ✓

All soundings from prior surveys should be superseded by this survey for charting purposes. ✓

A precautionary note should be added to the chart warning of the ice conditions in Disenchantment Bay and of the tide and strong currents existing in the vicinity of Osier Island. ✓

R. AUTOMATED DATA PROCESSING

The Final Field Sheet was produced with a PDP 8/e Computer (S/N 5445-6). Programs used in the processing of this survey were:

| <u>#</u> | <u>NAME</u> | <u>VERSION</u> |
|----------|--------------------------------|----------------|
| RK-111 | Range-Range Real Time Plot | 1/30/76 |
| RK-161 | Range-Range Hydrolog | 2/02/76 |
| FA-181 | Range-Azimuth Logger | 2/23/78 |
| RK-201 | Grid, Signal, Lattice Plot | 4/18/75 |
| RK-211 | Range-Range Non-Real Time Plot | 1/15/74 |
| RK-212 | Visual Station Table Load | 4/01/74 |

| <u>#</u> | <u>NAME</u> | <u>VERSION</u> |
|----------|----------------------------------|----------------|
| RK-216 | Range-Azimuth Non-real Time Plot | 2/05/76 |
| RK-300 | Utility Computations | 2/05/76 |
| RK-330 | Reformat and Data Check | 5/04/76 |
| RK-407 | Geodetic Inverse/Direct Comp. | 10/23/75 |
| RK-409 | Geodetic Utility Package | 9/15/73 |
| AM-500 | Predicted Tide Generator | 11/10/72 |
| RK-530 | Layer Corrections for Velocity | 5/10/76 |
| AM-602 | Elinore-Line Oriented Editor | 5/20/75 |

S. REFERENCES TO REPORTS

Field Tide Note
Corrections to Echo Sounders Report
Horizontal Control Note
Coast Pilot Report
Field Edit Reports for TP-00613, TP-00614 and
TP-00615
Electronic Control Note

Submitted By:



C. Brian Greenawalt
LTJG, NOAA

Approved and Forwarded By:



C. William Hayes
CDR, NOAA
Commanding Officer

VELOCITY CORRECTION TABLE 3 ✓

DA-20-2B-78 and DA-20-3-78
JD 218-255

| <u>Corrector</u> | <u>To Actual Depth</u> <i>minus Corrector</i> | <u>Fathometer Depth*</u> <u>(Observed)</u> |
|------------------|--|---|
| 0.0fm | 10.4fm | 10.1fm |
| 0.1 | 19.1 | 18.8 |
| 0.2 | 25.9 | 25.6 |
| 0.3 | 32.0 | 31.7 |
| 0.4 | 37.8 | 37.5 |
| 0.5 | 43.8 | 43.5 |
| 0.6 | 50.6 | 50.3 |
| 0.7 | 57.6 | 57.3 |
| 0.8 | 65.1 | 64.8 |
| 0.9 | 72.8 | 72.5 |
| 1.0 | 80.6 | 80.3 |
| 1.1 | 88.6 | 88.3 |
| 1.2 | 96.5 | 96.2 |
| 1.3 | 104.6 | 104.3 |
| 1.4 | 112.5 | 112.2 |
| 1.5 | 120.6 | 120.3 |
| 1.6 | 128.4 | 128.1 |
| 1.7 | 136.4 | 136.1 |
| 1.8 | 144.4 | 144.1 |
| 1.9 | 152.4 | 152.1 |

TRA=0.3fm applied

U



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

#37

C13/JFD

April 19, 1977

TO: Maxwell M. Rogers
Chief, Nautical Chart Branch, C321

FROM: Joseph F. Dracup *Joseph F. Dracup*
Chief, Control Networks Division, C13

SUBJECT: Geographic Positions - Vicinity of Yakutat Bay, Alaska

Attached are the report and supporting documents concerning the geographic positions in the vicinity of Yakutat Bay. The problem encountered is a fairly common one in the coastal triangulation, particularly in Alaska.

✓ 6-12759
To summarize the 1941 survey, whose field positions were used to compile the charts in question, was controlled by published positions on the NAD 27 which had been determined by the International Boundary Commission, via intersection of three Boundary Peaks which in turn had been positioned by intersection methods from the Glacier Bay triangulation to the south. There are no marks or signals on these peaks. This is an extremely weak connection, but the best available at the time.

→ In 1959, a Tellurometer traverse was run from NAD 27 positions in the vicinity of Nizina to Yakutat Bay, Controller Bay and Lituya Bay connecting three detached networks. The previous surveys in the Yakutat Bay area were readjusted; and in a supplementary computation, the 1941 survey was adjusted to this net. The shifts in position amount to over 2" in latitude and almost 1" in longitude.

Attachments



Yakutat Bay, Alaska Triangulation

The original surveys in the Yakutat Bay area were made in 1892 and computed on the Yakutat Datum. A definition of this datum may be found in Special Publication No. 242 "Definitions of Terms Used in Geodetic and Other Surveys" p. 24.

Beginning in 1931, the triangulation accomplished by the International Boundary Commission (IBC) in Southeast Alaska was recomputed on the North American 1927 (NAD 27) Datum and the positions published in the IBC report "Tongass Passage to Mount St. Elias." The IBC surveys included some stations established by the Coast and Geodetic Survey (C&GS) in 1892 in the vicinity of Yakutat Bay.

The connection of the Yakutat Bay triangulation to the Glacier Bay net (sketches 18, 19, and 20) was made through observations to three unmarked Boundary Peaks (sketches 20 and 21) which had been determined by intersection from the Glacier Bay triangulation. The IBC publication infers the connection was made via Mt. Fairweather (Boundary Peak No. 164) and does not mention the other two points, but the listing (p. 309) shows azimuths and distances to these stations. At best this tie to the NAD 27 is extremely weak, but for charting purposes must be considered to be on that NAD 27. All sketches of interest from the IBC publication are attached.

In 1941, ^{G-12759} the C&GS carried out a survey covering most of the Yakutat Bay area. This network was controlled by the positions for MALASPINA SOUTHWEST BASE 1892 and OCEAN CAPE 2 1906, as determined on the NAD 27 by the IBC. The 1941 field positions are considered to be on the NAD 27, and this should be shown on all records.

Listings of these field positions are attached, including p. 309 of the IBC report, which gives the positions for the stations used as control mentioned previously. The 1941 survey was not adjusted until 1960, following a readjustment of the IBC Yakutat Bay net in 1960, which will now be described. Positions for all stations published in the IBC report are also attached.

The 1940 survey in the vicinity of Lituya Bay (continuation of 1926 work), south of Yakutat and earlier surveys in Controller Bay to the west, had not been connected to the Yakutat Bay triangulation. To make these ties and also to improve the connection to the NAD 27, a Tellurometer traverse was observed in 1959 from the 1912 IBC and 1953 C&GS surveys at Nizina on the north. The adjustment included the 1959 work, the IBC triangulation in Yakutat Bay, and the 1940 traverse at Lituya Bay; and was adjusted to established control at Nizina, Controller Bay, and Lituya Bay. In addition, the IBC published positions for the Boundary Peaks mentioned earlier were also held fixed. These positions are identical to those used to

bring the NAD 27 to Yakutat Bay. The positions in the vicinity of Yakutat Bay shifted over 2" to the south in latitude and less than 1" to the east in longitude. Although the scale (lengths) remained essentially unchanged, the azimuths are about 47" less than those determined by the IBC. This orientation change creates a problem such that it is not possible to provide datum shifts of a more or less constant nature for the entire affected area. The IBC computations had used the astronomic azimuth observed at YAKUTAT ASTRONOMICAL STATION in 1892 to orient the net. This azimuth was not included in the 1960 readjustment.

The positions in the vicinity of Yakutat Bay presently in the NGS published files should be identified in all records as being on the NAD 27, as determined in the readjustment of 1960. Although the 1941 survey was not actually readjusted, this statement will account for the differences in the Field Positions, as shown on the charts and perhaps elsewhere and the published values.

Joseph F. Dracup

Joseph F. Dracup
Chief, Control Networks Division
National Geodetic Survey
April 19, 1977

COMPUTATION

FIRST-ORDER TRIANGULATION

| | | | | | | | | | | | | | |
|-----------|----------|------|----|----|-------|-----------|----------|-------|------|--------|-------|----|----|
| α | 2 | to 3 | 37 | 21 | 43.53 | α | 3 | DEALY | to 2 | HAENKE | 37 | 21 | 44 |
| β | \angle | $\&$ | + | | | β | \angle | | $\&$ | | + 167 | 50 | 49 |
| α | 2 | to 1 | | | | α | 3 | | to 1 | | 205 | 12 | 33 |
| α' | 1 | to 2 | | | | α' | 1 | | to 3 | | 22 | 12 | 34 |

First Angle of Triangle

| | | | | | | | | | | | | | | | | | | | | |
|---------|----|----|----------------|-----------------|--------|------------|-----|----|--------|---------|----|----|--------|--------------|-----------------|-----------|------------|-----|--------|--------|
| ϕ | 59 | 59 | 42.224 | 2 | DEALY | λ | 139 | 30 | 41.119 | ϕ | 59 | 59 | 42.224 | 3 | DEALY | λ | 139 | 30 | 41.119 | |
| | | | $s = 3240.485$ | $\Delta\lambda$ | | | | | | | | | | $s = 21.993$ | $\Delta\lambda$ | | | | | |
| ϕ' | 59 | 58 | 18.985 | 1 | HAENKE | λ' | 139 | 32 | 47.877 | ϕ' | 59 | 59 | 42.867 | 1 | DEALY | RM 2 | λ' | 139 | 30 | 40.515 |

(INVERSE)

| | | | | | | | | | | | | | |
|-----------|----------|------|---|--|--|-----------|----------|------|--|--|------|----|----|
| α | 2 | to 3 | | | | α | 3 | to 2 | | | 37 | 21 | 44 |
| β | \angle | $\&$ | + | | | β | \angle | $\&$ | | | + 73 | 22 | 33 |
| α | 2 | to 1 | | | | α | 3 | to 1 | | | 110 | 44 | 17 |
| α' | 1 | to 2 | | | | α' | 1 | to 3 | | | 290 | 44 | 16 |

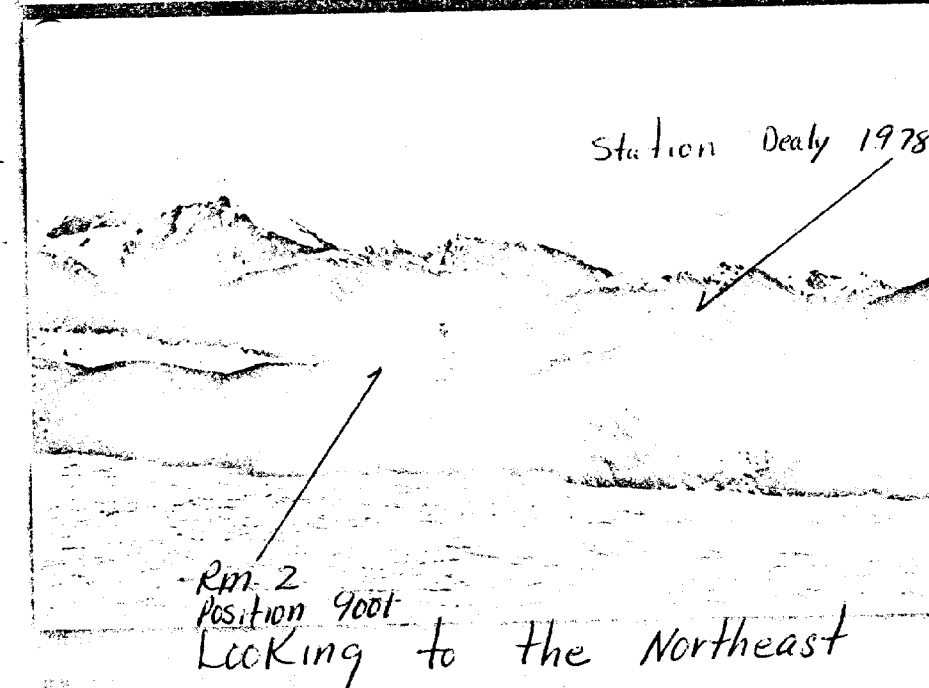
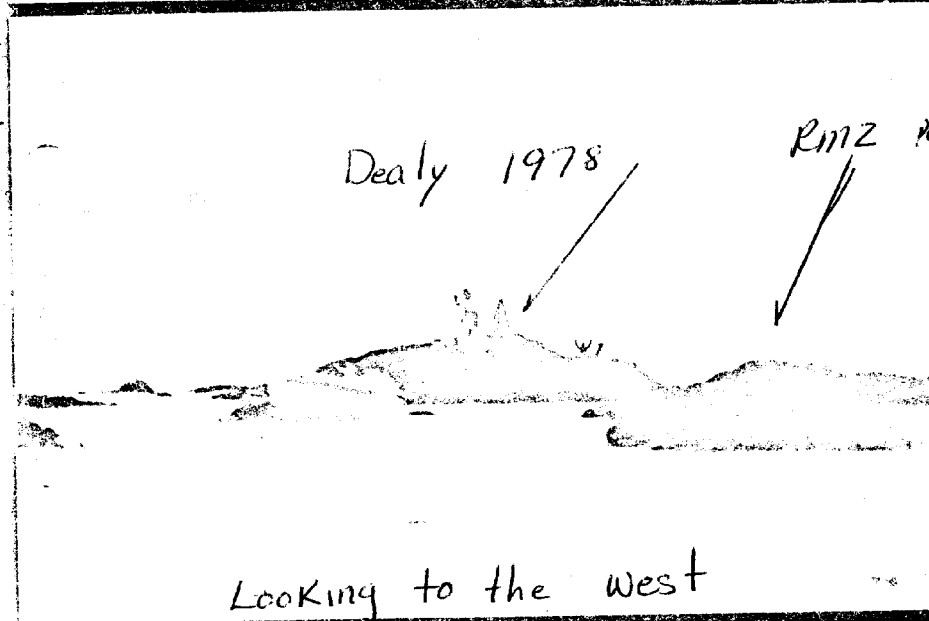
First Angle of Triangle

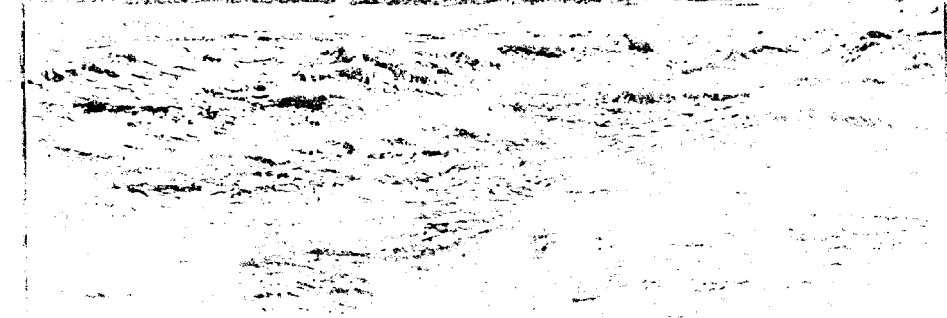
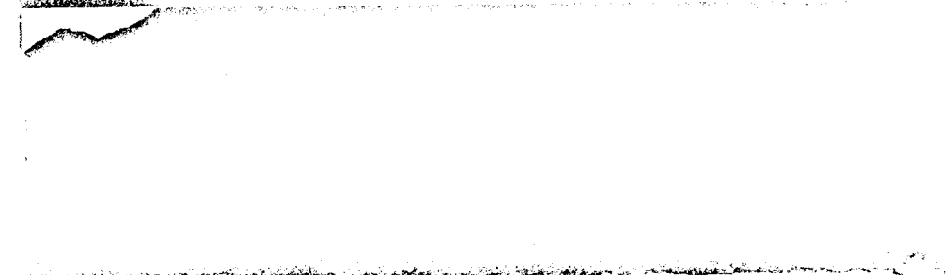
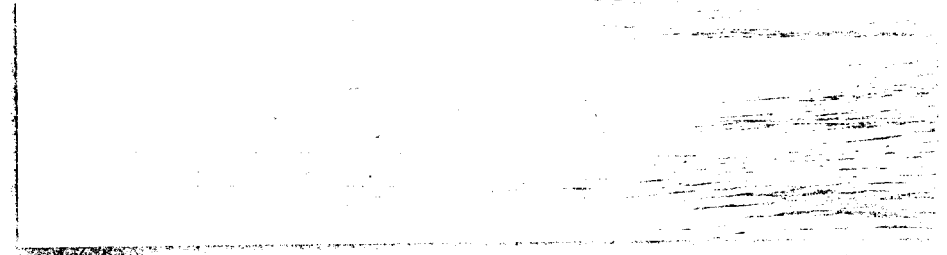
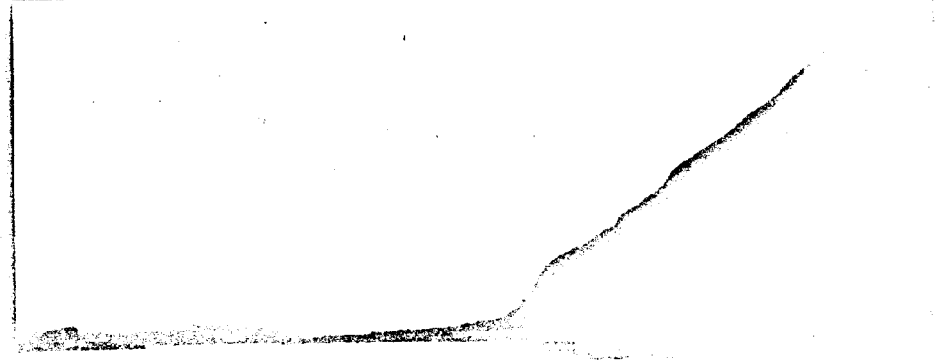
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|---------|--|--|--|-------|--|---------|----|----|--------|---|--------------|-----------------|------------|-----|--------|--------|
| ϕ | | | | 2 | | ϕ | 59 | 59 | 42.224 | 3 | DEALY | λ | 139 | 30 | 41.119 | |
| | | | | $s =$ | | | | | | | $s = 24.073$ | $\Delta\lambda$ | | | | |
| ϕ' | | | | 1 | | ϕ' | 59 | 59 | 42.499 | 1 | DEALY | RM 1 | λ' | 139 | 30 | 42.571 |

| | | | | | | | | | | | | | |
|-----------|----------|------|---|--|--|-----------|----------|------|--|--|--|--|--|
| α | 2 | to 3 | | | | α | 3 | to 2 | | | | | |
| β | \angle | $\&$ | + | | | β | \angle | $\&$ | | | | | |
| α | 2 | to 1 | | | | α | 3 | to 1 | | | | | |
| α' | 1 | to 2 | | | | α' | 1 | to 3 | | | | | |

First Angle of Triangle

| | | | | | | | | | | | | | |
|---------|--|--|--|-------|--|---------|--|--|--|-------|--|--|--|
| ϕ | | | | 2 | | ϕ | | | | 3 | | | |
| | | | | $s =$ | | | | | | $s =$ | | | |
| ϕ' | | | | 1 | | ϕ' | | | | 1 | | | |





Standing Wave near Osier Island

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NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

- TO BE CHARTED
(If field party, ship or office)
- TO BE REVISED
- TO BE DELETED

REPORTING UNIT
(If field party, ship or office)

NOAA Ship DAVIDSON

STATE

Alaska

LOCALITY

Yakutat Bay

DATE

Sept 78

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY

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

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

OFFICE

FIELD

CHARTS
AFFECTED

OPR PROJECT NO. OPR-0121-DA-78

JOB NUMBER H-9779

DATUM N.A. 1927

POSITION

CHARTING
NAME

DESCRIPTION
(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses.)

LATITUDE

LONGITUDE

D.M. Meters

D.P. Meters

None

SURVEY APPROVAL SHEET
H-9779 (DA-20-3-78)

- A. Amount and degree of personal supervision of field work and frequency of record and sheet inspection:

DIRECT DAILY

- B. State whether the survey is complete and adequate or if additional field work is recommended:

SAME AS REPORT

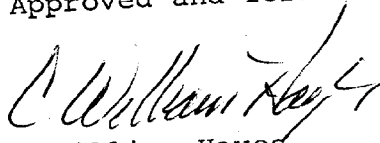
- C. Cite additional information or references that may be of assistance for verifying and reviewing the survey:

NONE

- D. Signed statement of approval of the field sheet and all accompanying records:

DATE: 12/4/78

Approved and forwarded by:



C. William Hayes
CDR, NOAA
Commanding Officer

FIELD TIDE NOTE
OPR-0121- (525) -DA-78
Yakutat Bay, Alaska

Field tide reduction of soundings was based on predicted tides for Yakutat, Alaska as supplied by Rockville, MD. The reductions were interpolated by a PDP 8/e computer utilizing program AM-500. All times of both predicted and recorded tides are GMT.

Three 0-20 feet scale Bristol Bubbler tide gages were installed in the project area. Locations and periods of operation are as follows:

| <u>SITE</u> | <u>LOCATION</u> | <u>PERIOD</u> |
|---------------------------|-------------------------------|-----------------------------|
| Redfield Cove 945-3208 | 59°36'50"N 139°34'50"W | 07 July- 15 Sept. 1978 |
| Pt. Latouche 945-3210 | 59°54'10"N 139°37'39"W | 13 July- 13 Sept. 1978 |
| Haenke Island 945-3191 | 59°57'54.5"N 139°32'25.0"W | 17 August- 15 Sept. 1978 |

The Yakutat Primary Station (945-3220) was in operation for the entire project

REDFIELD COVE 945-3208

Gage S/N 73A234 was installed and began operation 07 July 1978. This gage was found to be defective (gage-staff comparisons not constant) during the tide cycle observations. On 11 July, it was replaced with gage S/N 63A17966. Good records were obtained from the new gage. It ran trouble-free through its removal on 15 Sept. 1978. The staff read 5.1 feet greater than the marigram.

The staff was installed on 07 July 1978, and removed 15 September 1978. Levels were done on both dates.

PT. LATOUCHE 945-3210

Gage S/N 73A225 was installed and began operation on 13 July, 1978. This gage ran relatively trouble-free through its removal on 13 Sept. 1978. Good records were obtained with the exception of 15-17 July when the ink stopped flowing. On 19 July the gage datum was shifted to center the trace on the marigram. Prior to 19 July the staff read 8.0 feet greater than

the gage. After this date the staff read 5.0 feet greater than the gage. At 0910Z on 13 September the orifice moved 0.6 feet (deeper). This occurred 7 1/2 hours prior to gage removal.

The staff was installed on 13 July and removed on 13 September. Levels were done on both dates.

HAENKE ISLAND 945-3191

After thorough reconnaissance, the southwest side of Haenke Island was selected as the best site for this gage. It is the site most protected from the ever-present ice in Disenchantment Bay.

Gage S/N 66A17554 was installed and began operation on 17 August, 1978. On two occasions, 03 September and 06 September, the marigram paper jammed causing the loss of 38 hours and 22 1/2 hours of data respectively. No hydrography or field edit was conducted on these dates. The gage was removed on 15 September. The staff read 5.8 feet less than the gage.

The staff and five benchmarks were installed on 17 August. The staff was not removed due to high seas and ice pack during the final days of the project. Levels were done on 17/18 August and 15 September.

LEVELS

Levels were run between the staff and five bench marks at the three gage sites. All tide staffs showed negligible movement.

The benchmarks at the Redfield Cove site appear to be unstable. Levels done this year agree with the 1977 levels for BM #1 and BM A only. BM's #2, #3 and B show definite signs of movement; as much as 0.07 ft in the case of BM #3. It is recommended that BM B, #2 and #3 be used with caution.

ZONING

Zoning recommendations are as follows:

| <u>SHEET</u> | <u>GAGE</u> |
|--------------|----------------------------------|
| DA-20-1-78 | Redfield Cove |
| DA-20-2-78 | Pt Latouche |
| DA-20-3-78 | Pt Latouche and Haenke Island |

All hydrography on Sheet DA-20-3-78 north of the line formed by the following points should be reduced using

the Haenke Island gage.

| <u>LATITUDE</u> | <u>LONGITUDE</u> |
|-----------------|------------------|
| 59°56'45"N | 139°32'00"W |
| 59°57'45"N | 139°13'00"W |
| 59°57'00"N | 139°35'00"W |

Most of the hydrography south of these points was conducted prior to the installation of the Haenke Island gage.

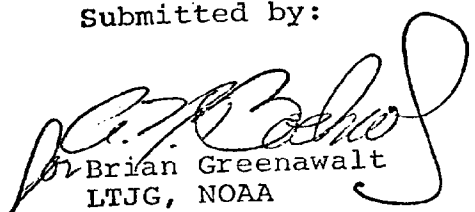
The area east of 139°30'00"W cannot be accurately portrayed by the Haenke Island tide gage. The tide cycle in this area lags that of Disenchantment Bay by as much as 1 1/2 hours. Standing waves and strong currents were observed as the water flowing between Russell Fiord and Disenchantment Bay attempted to equalize the hydraulic gradient caused by the constriction of flow and the time lag. A gage could not be installed in this area because of the high concentration of ice along the shore.

FIELD EVALUATION OF MYLAR MARIGRAM

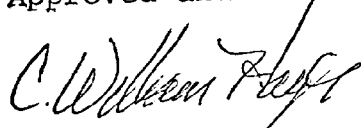
The MYLAR marigram paper supplied by Pacific Tides Party was used for one day only. The present chart inks do not dry fast enough and spread. The trace becomes 0.3 feet wide on the 1-20 foot scale marigram. As the marigram is taken up, the wet ink is pressed on the back of each succeeding layer leaving a second trace.

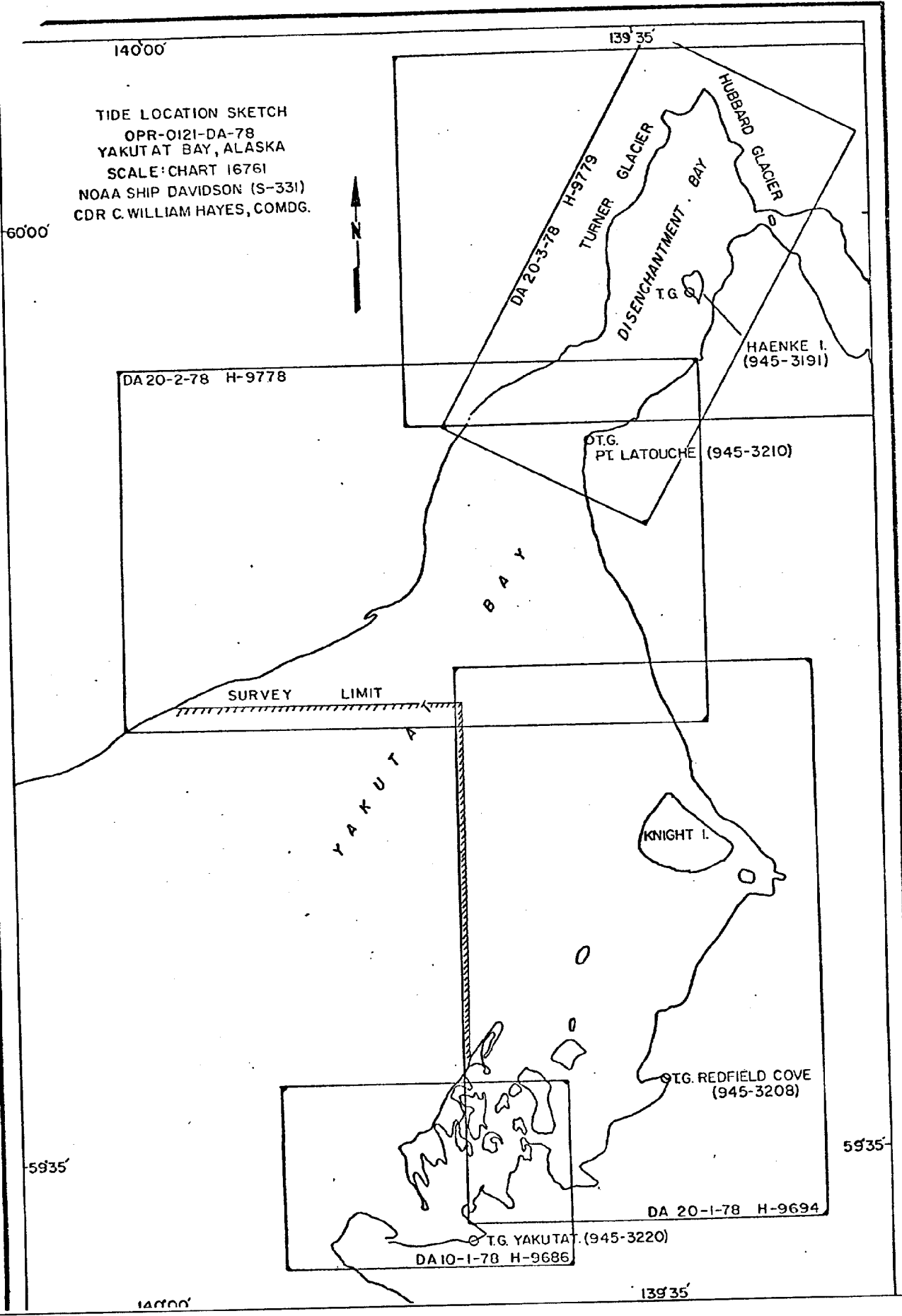
This paper would work very well (ie negligible distortion from moisture and no sprocket jumps) if a new ink or marking system was used.

Submitted by:


Brian Greenawalt
LTJG, NOAA

Approved and Forwarded by:


C. William Hayes
CDR, NOAA
Commanding Officer



May 9, 1979

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): 945-3210 Pt. Latouche, AK
945-3191 Haenke Island, AK

Period: August 6 - September 2, 1978

HYDROGRAPHIC SHEET: H-9779

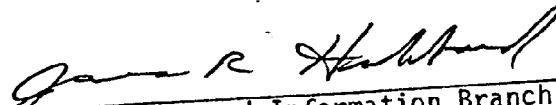
OPR: 0121

Locality: Yakutat Bay, Alaska

Plane of reference (mean lower low water): 6.7 ft. - Pt. Latouche
5.3 ft. - Haenke Island
Height of Mean High Water above Plane of Reference is
9.2 ft. - Pt. Latouche; 9.3 ft. - Haenke Island

Remarks: Recommended zoning:

- (1). South of $59^{\circ}57'$ zone direct on Pt. Latouche.
- (2). North of $59^{\circ}57'$ zone direct on Haenke Island.


Chief, Datums and Information Branch

HYDROGRAPHIC SURVEY STATISTICS

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

| RECORD DESCRIPTION | | AMOUNT | RECORD DESCRIPTION | | AMOUNT |
|--------------------|--|--------|------------------------------------|--|--------|
| SMOOTH SHEET | | 1 | BOAT SHEETS & PRELIMINARY OVERLAYS | | 238 |
| DESCRIPTIVE REPORT | | 1 | SMOOTH OVERLAYS: POS. ARC, EXCESS | | 5 |

| DESCRIP-TION | DEPTH RECORDS | HORIZ. CONT. RECORDS | PRINTOUTS | TAPE ROLLS | PUNCHED CARDS | ABSTRACTS/SOURCE DOCUMENTS |
|--------------|--------------------------------|----------------------|------------|------------|---------------|----------------------------|
| ENVELOPES | | | 1 - Smooth | | | |
| CAHIERS | 1 - with printouts & misc data | | | | | |
| VOLUMES | 1 | | | | | |
| BOXES | | | | | | |

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

1 - Tide Plot

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 | | | 1035 |
| POSITIONS CHECKED | | 1035 | |
| POSITIONS REVISED | | 383 | |
| SOUNDINGS REVISED | | 255 | |
| SOUNDINGS ERRONEOUSLY SPACED | | 0 | |
| SIGNALS (CONTROL) ERRONEOUSLY PLOTTED | | 0 | |
| | TIME - HOURS | | |
| CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION) | 4 | | |
| VERIFICATION OF CONTROL | | 4 | |
| VERIFICATION OF POSITIONS | | 43 | |
| VERIFICATION OF SOUNDINGS | | 112 | |
| COMPILATION OF SMOOTH SHEET | | 47 | |
| APPLICATION OF TOPOGRAPHY | | 8 | |
| APPLICATION OF PHOTOBATHYMETRY | | | |
| JUNCTIONS | | 4 | |
| COMPARISON WITH PRIOR SURVEYS & CHARTS | | 6 | |
| VERIFIER'S REPORT | | 46 | |
| OTHER | | | |
| TOTALS | 4 | 270 | 274 |

| | | |
|---|----------------------------|-------------------------|
| Pre-Verification by James S. Green | Beginning Date 12/12/78 | Ending Date 12/12/78 |
| Verification by James L. Stringham - Patrick J. Corkery | Beginning Date 4/17/79 | Ending Date 8/31/79 |
| Verification Check by James S. Green - James L. Stringham | Time (Hours) 22 | Date 9/7/79 |
| Marine Center Inspection by HIT | Time (Hours) 7 | Date 9/20/79 |
| Quality Control Inspection by F. P. SAULSBURY | Time (Hours) 10 | Date 11-19-79 |
| Requirements Evaluation by <i>[Signature]</i> | Time (Hours) 4 | Date 3/6/80 |

J. M. Green 13 Feb 1/4/80

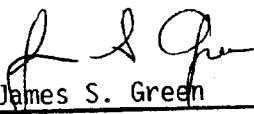
APPROVAL SHEET

FOR

SURVEY H- 9779

- 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: 12 Sep 1979

Signed:  James S. Green

Title: Chief, Verification Branch

REGISTRY NO. H-9779

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

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

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. _____

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

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

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9779

FIELD NO: DA-20-3-78

Alaska, Disenchantment Bay, Point Latouche to Miller Glacier

SURVEYED: 6 August - 2 September 1978

SCALE: 1:20,000

PROJECT NO: OPR-0121(525)-DA-78

SOUNDINGS: Ross Fineline Fathometer

CONTROL: Mini-Ranger
Range-Azimuth and
Range-Range mode

Chief of Party.....CDR C.W. Hayes
Surveyed by.....LCDR N. Bodnar, LCDR J. Calebaugh,
LTJG B. Greenawalt, LTJG L. Haas,
ENS E. McDougall, ENS T. Peasley
Automated plot by.....Xynetics Plotter (PMC)
Verified by.....James L. Stringham

I. INTRODUCTION

H-9779 (DA-20-3-78) was conducted in accordance with Project Instructions OPR-0121(525)-DA-78, Yakutat Bay, Alaska, dated 13 March 1978. There is one Supplement to Instruction (Change #1), dated 28 April 1978.

The area surveyed is Disenchantment Bay, located at the head of Yakutat Bay, from latitude 59°54'00"N, north to the face of Miller and Hubbard Glaciers, and east to longitude 139°28'30"W near Osier Island.

The launch hydrography indicates steep slopes along the entire east shoreline of Disenchantment Bay, steep slopes on segments of the west shoreline and steep slopes around almost all of Haenke Island. Shoal areas in the north vicinity of Haenke Island and the rocks awash and islet area occupying station Dealy also displayed steep slopes.

Some sounding lines were diverted due to floating ice, and calving ice off the Hubbard and Turner Glaciers prevented investigations close to these two areas. Hydrography stopped just west of Osier Island at the entrance to Russell Fiord due to strong currents, shoal areas, and calving ice.

The smooth sheet tide reducers utilized Point Latouche and Haenke Island tide gages zoned at Latitude 59°57.0"N. Generally, the smooth tide reducers agree very well with predicted tide reducers.

Projection parameters used to prepare the smooth field sheet have been revised to center the hydrography plotted on the smooth sheet. Parameters used by PMC are appended in the smooth printout. All correctors used to plot and reduce soundings are located in the smooth printout.

II. CONTROL AND SHORELINE

See items F, G and H of Ship's Descriptive Report for an adequate description of survey control and shoreline changes.

The following Class I unreviewed manuscripts with their respective dates of photography and field edit were used for H-9779, 1978.

| <u>Manuscript</u> | <u>Date of Photography</u> | <u>Date of Field Edit</u> |
|-------------------|----------------------------|---------------------------|
| TP-00613 | Aug 1975 | Aug 1978 |
| TP-00614 | Aug 1975 | March 1977 |
| TP-00615 | Aug 1975 | Aug 1978 |

The shoreline detail was transferred from the above Class I manuscripts to the smooth sheet except for the dashed high water line shown in red ink at Latitude 60°00.1'N and Longitude 139°29.0'W, which was transferred from the smooth field sheet with no supporting detached positions.

In the vicinity of signal DEALY, 1978 on day 230 the following two detached positions were taken: 4300 and 4301. After verification of survey information position 4300 was rejected and 4301 is an approximate position. Detached position 4300 at Latitude 59°59'43.93"N, Longitude 139°30'41.39"W reduced to a height of 7 feet above MHW the same height of DEALY 1978. The horizontal control report description of DEALY 1978 states that station DEALY is located on the highest point of the rock islet. During verification it was believed that detached position 4300 is the same rock as DEALY RM2 and the geographic position and height of the rock described under position 4300 is in error. Position 4300 was deleted and position 9001, the G.P. of DEALY 1978 RM2, was used. A height of 13 feet above MLLW was displayed for Position 9001. The source of this height is the horizontal control report description attached to the verifier's report. *Rock awash at pos 4301 in lat. 59°59.68', long 139°30.94' was rejected during G.C.I.*

Position 9000 is the location of DEALY 1978 RM1.

Both detached positions 9000 and 9001 were added during verification to improve the topographic information around station DEALY 1978. The positions of RM1, Position 9000, and RM2, Position 9001, were computed. (See attached station description, copies of photographs of station area and computation sheets copies attached to verifier's report). *Positions 9001 & 9002 are not plotted on the overlay*

The hydrographic Position 4301, *locating a rock awash* at Latitude 59°59'41.50"N, Longitude 139°30'57.08"W is believed to be in error but was retained as plotted on the field sheet. The rock falls in approximately 30 fathoms of water and no mention of a rock is noted in other days of hydrography near the position of 4301. Position 4301 is listed in the printout with a weak fix strength. The raw data has only one mini-ranger reading for the detached position, no check angles and/or estimated distances to DEALY 1978 station was made. *Note on raw data printout describes this rock as being on the south end of an island.*

see G.C. Report

I believe Position 4301 is a position approximate at best. This conclusion was reached after a review of the hydrographic data and verbal discussions with people aboard the ship DAVIDSON during the time of survey.

The dashed shallow line was superseded by depths and was not transferred to the smooth sheet from the Class I manuscript. *Added portions of shallow areas where considered useful*

III. HYDROGRAPHY

Crossline soundings are in good agreement.

Standard depth curves could be adequately drawn except in the areas listed below:

1. At Latitude 59°57'30"N, Longitude 139°32'12"W, and off the south tip of Haenke Island; *- considered adequate for charting*
2. At Latitude 59°59'55"N, Longitude 139°29'25"W, off the south face of Hubbard Glacier; *Curves O.K. - Development for least depths is inadequate*
3. At and around the rocks & islets occupying station DEALY, Latitude 59°59'42.2"N, Longitude 139°30'41.2"W, the 0 to 10 fathom curves cannot be drawn adequately; *adequate for a 1:80,000 scale chart*
4. Around the perimeter of Haenke Island, the 0 to 10 fathom curves cannot be adequately drawn; *Adequate for a 1:80,000 scale chart*
5. Near the faces of Hubbard and Turner Glaciers, the 0 to 50 fathom curves cannot be adequately drawn because of heavy ice flows. *Inaccessible to the hydrographer*

Basic hydrography is adequate to delineate bottom configurations and determine least depths except in the following listed areas:

1. A shoal area off the northwest tip of Haenke Island at Latitude 59°58'45"N, Longitude 139°33'20"W; *concur*
2. A shoal area off the northeast tip of Haenke Island at Latitude 59°58'48"N, Longitude 139°31'36"W; *concur*
3. A shoal area off the east bank of Disenchantment Bay at the entrance to Russel Fiord, Latitude 59°59'35"N, Longitude 139°29'45"W; *concur*
4. A shoal area off the south face of Hubbard Glacier, Latitude 59°59'58"N, Longitude 139°29'10"W; *concur*
5. Soundings ranging from 34 to 43 fathoms were recorded in the passage between the east bank of Disenchantment Bay and Haenke Island, but the verifier feels this area was not adequately surveyed. Evidence of an undeveloped one fathom shoal on the east bank of the bay midway through the passage and 400 meter east-west spacing reinforces this contention. *concur*

IV. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements as stated in the Hydrographic Manual with the exception of:

1. The numbered presurvey review items located in the area of the smooth sheet were not adequately investigated or disposed of in the ship's report, with clear recommendations supported by raw field data.
2. The rock awash symbols inked in red on the smooth ^{sheet} were not supplied in the field edit information for positions on the Class I manuscripts as the red ink symbols suggests.
3. Generally the smooth field sheet did not display all the topographic information found on the Class III manuscripts such as, rock awash, ledge, reef and islet symbols were not displayed on (DA-20-3-78) final sheet.
4. The final field sheet did not display a precautionary note "floating ice, a danger to Navigation" in the three areas listed in ships report under Item M, page 5 and Items Q and P, page 6, *nor did the smooth sheet*
"Danger to navigation" was noted on the smooth sheet during O.C.I.

5. Detached positions were not taken near the standing wave mentioned in the ships report under Item P, page 6. A descriptive note of the dangerous standing wave and/or tide rips was not inked on the smooth field sheet. Tide rips notes displayed on the smooth sheet were based on the ships report and verbal accounts from crew members. (See paper copies of the photographs displaying the standing wave attached to verifier's report. *noted on smooth sheet during R.C.*)

6. South edge of H-9779 was not squared nor developed adequately to determine the junction information with H-9778 and a holiday was noted at Latitude $59^{\circ}53.7'N$ to $59^{\circ}54.5'N$ and along Longitude $139^{\circ}38.0'W$ in the junction area. *H-9778 not in office yet 11-16-79*

V. JUNCTIONS

H-9779 (DA-20-3-78) is bordered on the south by contemporary survey H-9778 (DA-20-2-78) scale 1:20,000. Soundings and depth curves are in good agreement. However, a holiday was noted at Latitude $59^{\circ}54.0'N$, Longitude $139^{\circ}38.0'W$ in the overlapping junction information causing standard depth curves to be drawn for a large distance without supporting soundings. The depth curves and junction note are inked. *H-9778 not in office yet 11-16-79*

VI. COMPARISON WITH PRIOR SURVEYS

The prior survey history was checked during verification of this survey and was found to contain no prior survey data. The soundings charted in the common area of H-9779 will be disposed of in the chart comparison section. Generally the soundings sources identified were chart letters. ✓

VII. COMPARISON WITH CHART

A comparison was made with Chart 16761, 11th Edition, August 28, 1976.

a. Hydrography

Since this is the first basic survey in this area, the charted hydrography consists entirely of outside sources.

1. Five soundings from latitude $59^{\circ}58'00''N$ to $60^{\circ}00'00''N$ originated from a National Geographic Society Expedition in 1910.
2. The two "deeper than 120 fathoms" soundings at approximately Latitude $59^{\circ}57.0'N$, Longitude $139^{\circ}34.0'W$ originate from Chart Letter 476 of 1910.
3. The source of the soundings from Latitude $59^{\circ}54'00''N$ to $59^{\circ}58'00''N$ could not be identified except for the two deeper than 120 fathoms.
4. The four PA soundings at Latitude $60^{\circ}02'00''N$ originate from Chart Letter 1562 of 1973.
5. The three rocks awash PD at Latitude $59^{\circ}59'30''N$, Longitude $139^{\circ}32'30''W$, originate from Chart Letter 467 of 1911.
6. The two rocks awash PD at Latitude $59^{\circ}59'40''N$, Longitude $139^{\circ}30'40''W$, originates with Chart Letter 21 of 1914.

Comparison of charted soundings with the current survey soundings reveals large discrepancies. In 100 to 130 fathom water, the old charted soundings were up to 100 fathoms deeper; and in less than 100 fathoms of water, the old soundings are ^{generally} 20 fathoms different. Differences here could be

attributed to improved positioning methods of present day hydrography and accurate reduction of soundings from approved survey fathometers.

The following presurvey review items are addressed separately with recommendations below:

PSR Item 6

The rocks awash PD, charted at Latitude 59°59.5'N, Longitude 139°32.5'W originates with Chart Letter 467 of 1911. The rocks contained in PSR-6 plots in 128 fathoms of water as shown on present survey. This ship DAVIDSON did not develop the area with a cross hatch of lines spaced at 50 to 100 meters to discredit any possibility of a shoal. However, it is believed that the rocks described in PSR-6 are the same rocks as listed in PSR-7. I recommend the rocks charted at Latitude 59°59.5'N, Longitude 139°32.5'W be removed from the chart and replaced with the 128 fathoms of water found on this survey. *concur*

PSR Item 7

The two rocks awash PD, charted at Latitude 59°59.7'N, Longitude 139°30.7'W, originates with Chart Letter 173 of 1908. On this ^{present} survey the ship found a rock island and located it by Third Order, Class I traverse methods. Station DEALY 1978, Latitude 59°59'42.224"N, Longitude 139°30'41.119"W, was established on the highest point of this rock (18 ft. above MLLW), *(9 ft. above MHW)*

I recommend the topographic information be charted as displayed on the smooth sheet H-9779, 1978. *concur*

PSR Item 8

A 2-fathom sunken rock PD, charted at Latitude 60°00.0'N, Longitude 139°29.8'W, originates with Chart Letter 21 of 1914. This item, however, was not developed sufficiently to prove or disprove its existence because it plots in between 200 meter line spacing of H-9779. Chart Letter 21 of 1914 also states that Professor Martin of the University of Wisconsin, who claimed to have made extended surveys in Yakutat Bay, was on board the "Princess Maquinna" when the grounding occurred. This would suggest that the rock is small, and that the bottom has a very steep slope. *Consider the 2 1/2 fm sdg in lat 59°59.95', long 139°29.27' on the pres. survey is this 2fm rock*

During the time of hydrography in the area of PSR-8, two additional important shoal soundings were recorded on J.D. 232:

1. A 2.5-fathom sounding at Latitude 59°59'57.9"N, Longitude 139°29'10.99"W. See Position 2336-02. *Consider this to be the charted 2fm rock - PD*
2. A 2.7-fathom sounding at Latitude 59°59'36.95"N, Longitude 139°29'44.25"W. See Position 2358-05.

The 2-fathom sunken rock PD requires a development much larger than supplied by ship DAVIDSON. This verifier recommends that this item be retained on the chart, and that the soundings listed above be added to the chart.

*Do not
concur,
delete 2 fm
RK (PD) Chart
area as shown
on pres. survey*

PSR Item 9

Four soundings, 6, 111, 121, ^{110,} PA, charted in the vicinity of Latitude 60°02'N, Longitude 139°32'W. The ship DAVIDSON did not develop the above area because of ice. The coverage from this survey is adequate *concur* to supersede the four soundings furnished by Chart Letter 1562 of 1973. I recommend the removal of the four charted PA soundings from the chart and replacement with least depths from present survey.

After comparison with Chart 16761, 11th Edition, August 28, 1976, the following features were not disproved and are recommended to be carried as charted:

| <u>Feature</u> | <u>Latitude</u> | <u>Longitude</u> |
|----------------|-----------------|------------------|
| Rock awash | 60°00'12" 10' | 139°29'20" 10' |
| Rock awash | 59°59'56" | 139°28'40" |
| Rock awash | 59°59'98' | 139°28'18' |

The present survey is adequate to supersede charted hydrography for areas of common coverage except for previously mentioned items.

b. Controlling Depths

There are no controlling depths within the limits of this survey.

c. Aids to Navigation

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

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey complies with Project Instructions OPR-0121(525)-DA-78, Yakutat Bay, Alaska dated 13 March 1978 and the supplement to instructions, Change No. 1 dated 28 April 1978, except for the following item Page 3, paragraph 4.5 Line Spacing. Maximum line spacing should be as follows:

"100 meters - 0 to 20 fathoms and maximum spacing of 1:10,000 scale sheets

200 meters - 20 to 30 fathoms

400 meters - over 30 fathoms

Line spacing shall be reduced as necessary for full development of any bottom irregularities."

IX. ADDITIONAL FIELD WORK

This is a good hydrographic survey and no additional field work is recommended.

Respectfully submitted,



James L. Stringham
Cartographic Technician
31 August 1979

Examined and approved,



James S. Green
Chief, Verification Branch

A. PROJECT

Basic hydrographic survey H-9779 (DA-20-3-78) was accomplished in accordance with Project Instructions OPR-0121-(525)-DA-78, Yakutat Bay, Alaska, dated 13 March 1978 and Change #1, dated 28 April 1978. ✓

B. AREA SURVEYED

The area surveyed is Disenchantment Bay at the head of Yakutat Bay, from latitude 59°54'30"N, north to Turner and Hubbard Glaciers and east to longitude 139°28'30"W. ✓

Field work was begun on 13 July 1978 with the installation of Pt. Latouche tide gage, and was concluded on 15 September 1978 with the removal of Haenke Island tide gage. ✓

C. SURVEY VESSELS

The two vessels used as sounding platforms for this survey were DA-1 (EDP #3131) and DA-2 (EDP #3132). They are identified by the colors red and blue respectively used in all raw data recordings and preliminary computer plots. The ship DAVIDSON (EDP #3130) was used for all bottom sampling accomplished on this sheet. ✓

D. SOUNDING EQUIPMENT

Both sounding vessels used a Ross Fineline fathometer, Model 5000, in depths ranging from 0 to 139 fathoms. Serial Numbers are as follows: ✓

| <u>VESSEL</u> | <u>EQUIPMENT</u> | <u>S/N</u> |
|---------------|------------------|------------|
| DA-1 (3131) | Fathometer | 1048 |
| | Digitizer | 1081 |
| | Transceiver | 1036 |
| DA-2 (3132) | Fathometer | 1080 |
| | Digitizer | 1077 |
| | Tranceiver | 1077 |

 ✓

Phase calibrations were conducted at least once daily. Fathometer initials were maintained at zero. ✓

Four MARTEK casts and one Nansen cast were taken to determine velocity correctors. Only the average of the four MARTEK casts were used in the final determination. Dates and locations of MARTEK casts are as follows: ✓



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

Pacific Marine Center
1801 Fairview Avenue E
Seattle, WA 98102

DATE : September 25, 1979

OA/CPM32/JSG

TO : OA/CPM - Eugene A. Taylor

FROM : OA/CPM3 - John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9779

This survey is a basic hydrographic survey of Point Latouche to Miller Glacier, Disenchantment Bay, Alaska. This survey was conducted by NOAA Ship DAVIDSON in 1978 in accordance with Project Instructions OPR-0121(525)-DA-78 dated March 13, 1978 and Change No. 1 dated April 28, 1978.

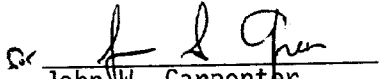
The DAVIDSON is to be commended for their survey efforts in a very difficult area. It is recognized that ice conditions prevented the ship from remaining in the survey area for a lengthy period.


The following deficiencies were noted:

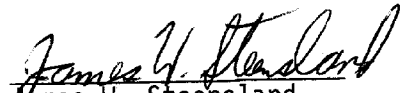
- a. Several shoal indications were not developed to determine least depths (See Section III of the Verifier's Report).
- b. A detached position ⁴³⁰¹ on a rock was not substantiated (no check). The plot is in 30 fathoms of water, probably in error (See Section II of the Verifier's Report). Rock rejected during A.C.I.
- c. Depth curves could not be adequately drawn in areas due to excessive line spacing (See Section III of the Verifier's Report).
- d. Presurvey Review items were not positively disposed of in the Descriptive Report (Paragraph 5.3.4 K of the Hydrographic Manual).
with the exceptions noted in the verifiers report
The inspection team finds H-9779 to be a good basic survey adequate to supersede common areas of prior surveys and charted hydrography.




Administrative approval is recommended.


John W. Carpenter


David B. MacFarland, Jr.



James W. Steensland


Stanley H. Otsubo

ADMINISTRATIVE APPROVAL

H-9779

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.



Eugene A. Taylor, RADM
Director
Pacific Marine Center

Sep 28 1979
Date



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

OA/C352:FPS

November 19, 1979

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

THRU: Chief, Quality Control Branch *gm*

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

SUBJECT: Quality Control Report for H-9779 (1978), Alaska, Disenchantment Bay, Point Latouche to Miller Glacier

A quality control inspection of H-9779 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

The junction on the south with H-9778 (1978) was not examined since this survey has not yet been received in Rockville.

1. Depth curves were generally mechanically drawn. Many alongshore curves omitted during verification were added during quality control inspection and have been noted on the one-half-scale copy of the smooth sheet.
2. The 24-fathom sounding charted in latitude 59°59.95'N, longitude 139°30.10'W from a National Geographic Society Expedition report of 1910 is considered discredited by 35-fathom to 41-fathom depths on the present survey that fall in the same area.
3. The discussion pertaining to the location of a rock awash at latitude 59°59'41.50"N, longitude 139°30'57.08"W (Position 4301) under the heading "Shoreline and Control" in the Verifier's Report is in error. This feature is located at latitude 59°59.63'N, longitude 139°30.8'W as determined by two intersecting lines of position from electronic rates listed on the raw data printouts. The position of this rock is in agreement with remarks made by the hydrographer that the rock plots on the south



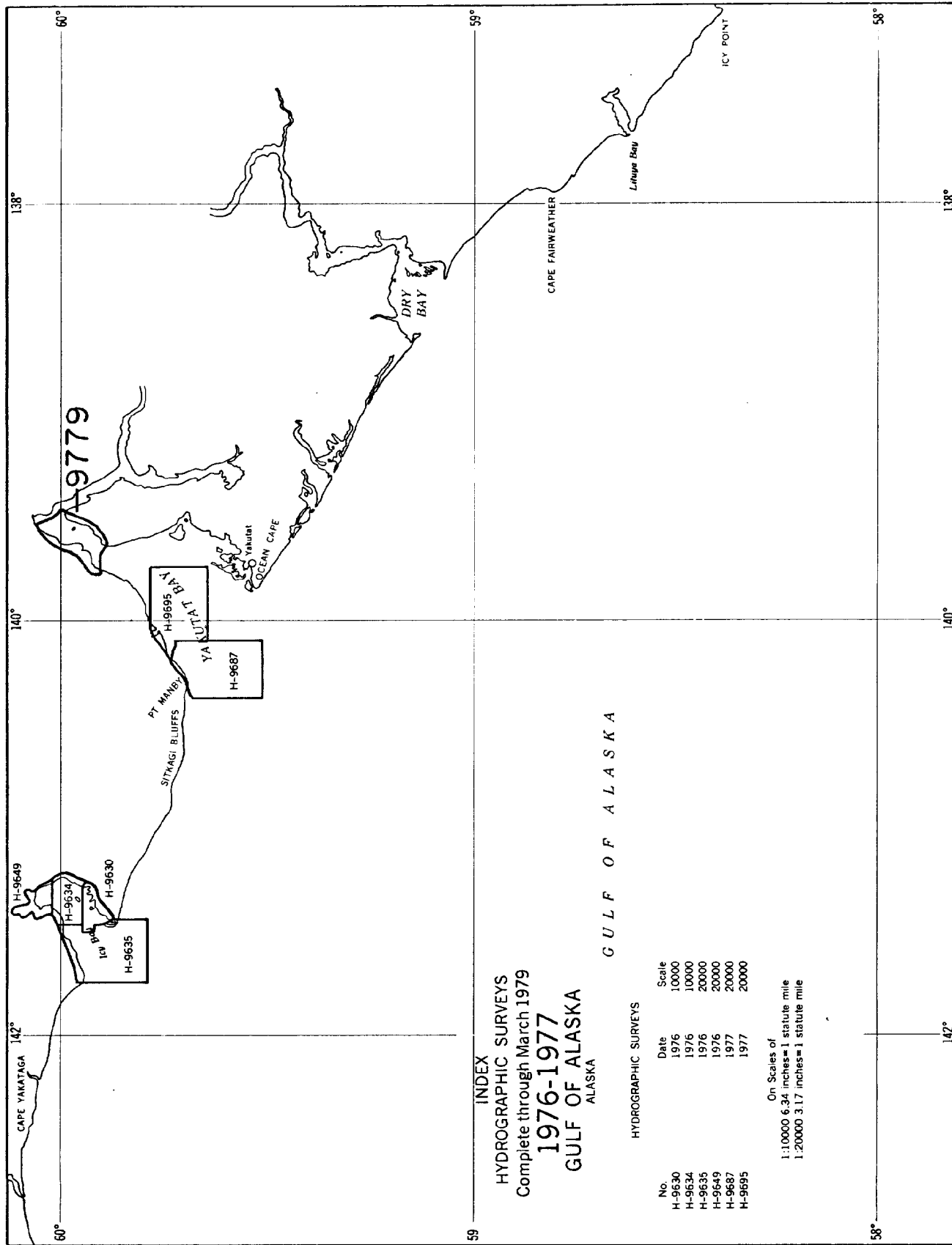
end of an island which appears on TP-00615. Therefore, the verified position of this item was expunged from the smooth sheet during quality control.

4. The approximate sizes of bottom samples listed in the survey records are about 120 mm in diameter. This size corresponds to descriptions for stones as indicated in table 4-9 of the Hydrographic Manual. The mistaken entry "Rock" for some bottom characteristics was, therefore, revised to stones during quality evaluation.

cc:

OA/C35

OA/C351



INDEX
 HYDROGRAPHIC SURVEYS
 Complete through March 1979
 1976-1977
 GULF OF ALASKA
 ALASKA

G U L F O F A L A S K A

HYDROGRAPHIC SURVEYS

| No. | Date | Scale |
|--------|------|-------|
| H-9630 | 1976 | 10000 |
| H-9634 | 1976 | 10000 |
| H-9635 | 1976 | 20000 |
| H-9649 | 1976 | 20000 |
| H-9687 | 1977 | 20000 |
| H-9695 | 1977 | 20000 |

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



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

APR 9 1980

OA/C351:SRB

TO: OA/CPM - Eugene A. Taylor

FROM: *for* OA/C3 - Roger F. Lanier *R. Lanier*

SUBJECT: H-9779 (1978), OPR-0121(525)-DA-78, Point Latouche to Miller Glacier, Disenchantment Bay, Alaska, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated November 19, 1979 (copy attached), and the Hydrographic Survey Inspection Team Report, dated September 25, 1979, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-0121(525)-DA-78, dated March 13, 1978.

Attachment

cc:
OA/C352 w/o att.



10TH ANNIVERSARY 1970-1980

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