9778

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-20-2-78

Office No. H-9778

LOCALITY

State ..... Alaska

General Locality ..... Yakutat Bay

Locality ..... Blizhni Pt. to Pt. Latouche

19 78

CHIEF OF PARTY

C.W. Hayes

LIBRARY & ARCHIVES

DATE ..... Dec. 3, 1979

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

9778

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.: H-9778

FIELD NO.: DA-20-2-78

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

State: Alaska

General locality: Yakutat Bay

Locality: Blizhni Point to Point Latouche

Scale: 1:20,000 Date of survey: August 8 to Sept. 12, 1978

Instructions dated: 13 March 1978 Change No. 1 28 April 1978 Project No.: OPR-0121(525)-DA-78

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

Chief of party: C. William Hayes, CDR, NOAA

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

Soundings taken by echo sounder, hand lead, pole: Ross Fineline 5000, SN 1048 and 1080

Graphic record scaled by: Ship's Personnel

Graphic record checked by: Ship's Personnel

Positions verified by: Bruce A. Olmstead

~~Protracted by~~: James L. Stringham Automated plot by: PMC Xynetics Plotter

Soundings verified by

~~Verification by~~: James L. Stringham, Bruce A. Olmstead

Soundings in: fathoms and tenths ~~feet~~ at ~~MLW~~ MLLW

REMARKS: Time Zone (GMT)

Survey complete

"Misc. Data Filed with Field Records"

Applied to stds 4/24/80

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

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6

A. PROJECT

Survey DA-20-2-78 was accomplished in accordance with Project Instructions OPR-0121(525)-DA-78, Yakutat Bay, Alaska, dated 13 March 1978 and Change No. 1, dated 28 April 1978

B. AREA SURVEYED

The area surveyed is located in Yakutat Bay, bounded on the north and south by latitudes 59°55'N and 59°47'N, respectively, and on the east and west by the east and west shores of Yakutat Bay.

See Verifier's Report Section I

Hydrography began on 8 August 1978 and was completed on 12 September 1978.

C. SOUNDING VESSELS

Two vessels were used as sounding platforms for the survey. They are listed below with the corresponding colors used in data recording and preliminary computer plots.

Vessel #	Platform	Color
3131	DA-1	Red
3132	DA-2	Blue

D. SOUNDING EQUIPMENT

Each sounding vessel was equipped with a Ross Fineline Fathometer, Model 5000; these were used in depths ranging from less than one to 141 fathoms. Serial numbers are as follows:

Vessel#	Fathometer S/N	Digitizer S/N	Transceiver S/N
DA-1	1048	1081	1036
DA-2	1080	1077	1077

Phase calibrations were conducted on a daily basis. The morning procedure was every 10 fathoms from 0 to 200 fathoms. The ending (afternoon) phase calibration was done at midscale for each of the four scales: that is, 30, 80, 130 and 180 fathoms. The midscale calibration provides a check on the possibility of a change in scale initials during the day. The phase was adjusted so the midscale depths were correct; however, due to variations in the fathometer paper, the trace initial was usually below the fathogram "zero" by 0.1-0.3 fath-

oms. For some of the shoal work the phase was reset so the trace initial agreed with the fathogram zero to permit easier scanning. Fathograms adjusted in this manner are so marked.

All fathograms were scanned and compared to digitized depths. Additional soundings (peaks and deeps) and corrections were placed on a correctors tape each day.

Soundings have been corrected for transducer depth and predicted tides. The TRA was determined by bar checks taken twice daily, weather permitting; for both launches the TRA is +0.3 fm. Tide correctors were computed from the daily predicted tides for Yakutat Bay, Alaska. Tide predictions were provided by the Oceanographic Division, Tides and Water Levels Branch, National Ocean Survey, Rockville, Maryland. Correctors were computed at 0.2-fathom intervals and used both "on line" during hydrography and for smooth plotting. Bubbler tide gages were installed by the DAVIDSON at Redfield Cove, at Haenke Island, and at Point Latouche, which is in the northern third of this field sheet (Refer to Field Tide Note).

Soundings on the Final Field Sheets have not been corrected for velocity. Correctors were determined from a Nansen Cast taken on 7 September 1978 for the southern half of the survey and from casts taken on 7 August 1978 and 20 August 1978 for the northern half. See the appended correction to Echo Sounders Report.

E. HYDROGRAPHIC SHEETS

Field Sheets for the survey were prepared using the HYDROPLOT system on the DAVIDSON. A PDP 8/e (S/N 10744) utilizing a Complot DP-3 plotter(S/N 5445-6) was used to produce the Sheets.

The survey is comprised of two 1:20,000 scale computer sheets, the north DA-20-2B-78 and the south DA-20-2A-78. In addition, an overlay of soundings of the area southeast of Blizhni Point has been made to eliminate congestion of soundings due to developments.

See Verifier's Report Sec IV, item C

F. STATION CONTROL

Seven third-order triangulation stations were recovered, and one new monumented triangulation station and three temporary points used for calibration were established for this survey. Reference marks of two existing stations,

ESKER RM 1 1974 and KRUTOI 1941 RM 3 1978, were located third-order and used as Raydist stations for this survey. The stations recovered and established are as follows:

Triangulation Stations Recovered

DOLCE 1974
ESKER 1974 (RM 1 used as Raydist Site)
COYOTE 1977
LUFF 1974
BUZ 1974
BOBCAT 1977 (used as Raydist Site)
KRUTOI 1941 (RM 3 used as Raydist Site)

Stations Established

LOGAN 1978 (used as Raydist Site)

Temporary Calibration points Established

CAL 1
CAL 2
CAL 3

New stations were established by triangulation in the area of Pt. Latouche and by traverse on Krutoi Island. (Refer to the Signal List for geodetic positions of all stations. Refer to the Horizontal Control Note. See also the Electronic Control Report.) Computations are based on the North American 1927 datum.

G. HYDROGRAPHIC POSITION CONTROL

Range-range electronic position control was used for this survey. The Motorola Miniranger III system and the Hastings-Teledyne Raydist mobile DRS system were used for electronic position control. Miniranger position control was used by vessel DA-2 (3132), while vessel DA-1 (3131) and vessel 3130 (NOAA Ship DAVIDSON) used Raydist position control. The DAVIDSON was used for bottom sampling only. Miniranger transponders and Raydist shore transmitters were used after placement on third order triangulation stations.

Calibrations of the Miniranger system was made at least twice daily. These were done using visual three-point sextant fixes using signals along the east shore of the Bay, on Logan Beach.

For the Miniranger system calibration, rates from the sex-

tant fix (using RK 300, utility computations, ver 2/10/76) were compared to the observed rates on the console at the time of the fix. The difference between computed and observed rates were always within 10 meters of the current baseline correctors. Baseline correctors were used as daily correctors for preliminary plotting; for smooth plotting, daily correctors were taken as the average of the two baseline correctors bracketing the time of hydrography. Baseline Calibrations were conducted on 14 July (JD 195) in Yakutat, on 25 August (JD 236) in Yakutat, and on 24 September (JD 268) in Ketchikan. Signal strengths were observed and recorded at all times; if they fell below the minimum accepted signal strengths as determined by the baseline calibrations, the soundings were "time and coursed".

Following is a list of serial numbers for the Miniranger elctronic position control equipment used:

Vessel #	Transceiver S/N	Display Console S/N
(DA-2) 3132	710 ~~721~~	719 ~~707~~

Transponder S/N

CODE 1
CODE 2
CODE 3
CODE 4

The Raydist system was used by vessel 3131 (DA-1) on JD's 229-231, 234-235 and 242-244 on the first setup covering the eastern half of the Bay, and on JD's 245-250 and 255 on the second setup covering the Western Bay. Also, the DAVIDSON (vessel #3130) took bottom samples using the first Raydist setup on JD's 242 and 243.

Calibrations of the Raydist system was done at least twice daily using the same fix method as mentioned above for Miniranger Calibrations. During the initial Raydist Calibrations, observed rates were slewed to within one lane of the computed rates from the sextant fix (using RK 561, H/R calibration, ver 2/19/75). Correctors from the morning and evening calibrations were meaned to obtain an average daily corrector, used during preliminary and smooth plotting. Two lane jumps were detected on the Raydist work on two separate days. The first occurred on JD 247 after the beginning of a line, between fixes 3568 and 3569. The lane jump was misidentified at the time, so the jump was not corrected for preliminary

See verifiers report item a, Section IV

or final plotting. The hydrography after the lane loss was replotted with the proper correctors on the Final Field Sheet overlay. Although this shift leaves a 135-meter gap between lines instead of the 100-meter minimum specified in the Project Instructions for this depth range, the bottom contours are so uniform in this vicinity that they are still adequately delineated.

See Verifiers report, Section I.

The other lane jump occurred on JD 249 at fix 3929. It occurred while the launch was running a straight line and involved a gain of one lane, in the red signal (from LOGAN 1978). The first two fixes of the line were rejected, so the line begins at fix 3930, the missing data was rerun.

For the Raydist work on DA-20-2A, calibration buoys were set in shoal areas to detect whole-lane jumps. The first was set on JD 231 using the BOBCAT 1977-ESKER RM 1 1974 setup. It was checked several times during the course of hydrography on this setup to verify the whole lane count. No problems were experienced on this setup. The second calibration buoy was set on JD 245 on the LOGAN 1978-KRUTOI 1941 RM 3 1978 setup and was checked several times each day of hydrography, on this pair of stations. Although the whole lane checks were consistent within each day, from day to day the whole lane count on the red rate (from LOGAN 1978) shifted. The buoy was set in close along Schooner Beach, just outside the surf zone. It is likely that longshore currents and storm swell action shifted the buoy, from day to day, as the total shift of nearly ten lanes all occurred in the red pattern in a southwesterly direction. The two lane jumps which occurred in the hydrography were detectable on the strip chart and therefore, verification of lane jump with the buoy was not needed.

Following is a list of serial numbers for the Raydist positioning control equipment used:

Vessel#	Navigator S/N	Chart Recorder S/N
(DAVIDSON) 3130	26	15
(DA-1) 3131	54	14

Vessel#	Navigation Interface S/N	Transmitter S/N
3130	4 (Panalogic)	171
3131	34 (Hazlow)	172

Vessel (DA-1) 3131 is equipped with a 28 foot whip antenna.

Raydist shore transmitters were set up and operated as follows:

JD's 229-244:

Station	Color	Transmitter S/N	Antenna Ht (feet)
BOBCAT, 1977	red	234	42 (above station)
ESKER RM 1, 1974	green	15	42 (above station)

JD's 245-255:

Station	Color	Transmitter S/N	Antenna Ht (feet)
LOGAN 1978	red	234	42 (above station)
* KRUTOI 1941, RM 3 1978	green	15	42 (above station)

* Station was adjusted from a traverse of 1959 and a new NAD 1927 value was determined.

H. SHORELINE

The shoreline details were transferred to the Final Field Sheets from Class III manuscripts TP-00614, TP-00615, TP-00617, and TP-00618. All shoreline details have been field edited and applied to the appropriate Class III manuscripts of this survey area. See Field Edit Reports and the referenced shoreline manuscripts.

See Verifier's Report Section II

I. CROSSLINES

Crosslines comprised 16% of the total miles of hydrography. Crossline soundings are in excellent agreement, generally within one fathom of the main scheme hydrography. Crossline soundings are plotted in red on the Final Field Sheet.

J. JUNCTIONS

This survey junctioned with survey number H-9695 (DA-20-4-77), scale 1:20,000, which was done in 1977. There is excellent agreement between this survey and H-9695 with all soundings within one fathom on the two surveys. Junction soundings are shown on the Final Field Sheets in black. Surveys H-9694 (DA-20-1-78) and H-9779 (DA-20-3-78) were conducted during the same season as this survey. Comparisons between soundings on the two cont-

emporary surveys and this survey show excellent agreement. Both contemporary surveys agree with this survey within one fathom.

K. COMPARISON WITH PRIOR SURVEYS

One numbered presurvey review item exists within the limits of this survey: item number 5, which was reported by the NOAA Ship SURVEYOR (Chart Letter 2060 of 1975). The notation of "shoaling to 17 fathoms has been observed throughout this area," charted in latitude 59°48'N, longitude 139°45'W. After the hydrography was completed in this area, it was clear that what the SURVEYOR found was a finger-like extension of the shallows of the western bBay, extending out to approximately latitude 59°48'N, longitude 139°43'W. It is highly possible that this feature is a glacial end moraine which has been eroded away by submarine currents near the center of the Bay. This is further supported by a smaller but similar feature near latitude 59°48'N, longitude 139°40'W, on the eastern side of Yakutat Bay. It is probable that the SURVEYOR discovered part of this western bBay finger-like structure. The most significant area of shoaling is a least depth of 20 fathoms at approximately latitude 59°48'N, longitude 139°43'W. It is significant because of its location near the center of the bBay, and because the depth of water drops off fairly quickly to the east of this area. See Final Field Sheet DA-20-2A-78 and the DA-20-2A-78 Final Field Sheet overlay for details of the finger structure.

See Verifier's Report Sections VII & IX

Selected soundings from prior surveys were plotted in the following representative colors on the Final Field Sheet:

Survey	Scale	Date	Color	
H-2157B	1:20,000	1892	Red	Very small portion
H-2159	1:40,000	1892	Green	
H-6719	1:20,000	1941	Brown	

Very few soundings exist in the area of this survey from prior surveys; the bottom had been inadequately defined and definitive comparisons with prior surveys are not possible. However, the soundings and positions can be compared on a point-to-point basis. Accordingly, Survey H-6719 compared well with this survey, considering that the prior survey junctioned in the western half of the bBay where the shoreline is subject to frequent change. This shoreline change is clearly evident when comparing the H-9778 shoreline with the 1941 H-6719 shore-

See Verifier's Report Section VI

line. It can be seen that the shoreline is gradually building to the east. Soundings in the present survey are all generally three fathoms shoaler than the H-6719 survey. Surveys H-2157 and H-2159 agree fairly well with this present survey, usually within 5 fathoms, except in the western Bay area near shore. Fairly sizable shoreline changes are evident in the west Bay since 1892, when H-2519 was conducted. Stream and glacial runoff sediment are accumulating and building up the western shoreline. Sounding discrepancies between H-2157 and H-2159 and this survey can be seen from longitude 139°58'W to longitude 139°45'W.

L. COMPARISON WITH THE CHART

Representative soundings from Chart 16761, Yakutat Bay, 11th edition, 28 August 1976, have been plotted in violet on the Final Field Sheets for this survey. The comparisons of soundings from the chart with this survey are good; most are within five fathoms except in some areas near steep slopes. Again, as with the prior surveys, the soundings do not completely delineate the bottom, so a complete comparison is not possible. Comparing point-by-point, however, the agreement is fairly good. ✓

M. ADEQUACY

This survey is considered complete and adequate to supersede the common areas covered on H-2157, H-2159 and H-6719. No further survey work in this area is deemed necessary. See Verifier's Report Section II

N. AIDS TO NAVIGATION

There are no aids to navigation located in the area of this survey. ✓

O. STATISTICS

Total number of positions	2,407
Nautical miles of sounding lines	642.8
Square nautical miles of hydrography	45.5
Nansen/Martek casts	11
Bottom Samples	28

✓

P. MISCELLANEOUS

The western shoreline of this survey is sandy and shifts frequently. This is evident in the western shoreline shift seen between prior surveys, the existing chart, and this survey. The aerial photographs for this survey See Verifier's Report Section II & Section IV

show the shifting of the western shore very well. Note should be made on the chart of the possibility of frequent shoreline change. See Field Edit Reports for T sheets TP-00614 and TP-00617. There is only one unavoidable holiday in hydrography, at approximately latitude 59°48'N, longitude 139°52'W. This holiday occurred because of constant breakers in this area. There is a sandbar over which the waves constantly break. This area was deemed too hazardous for the survey vessel and therefore not surveyed. It should also be noted here that ice may be a hazard to navigation in the survey area. Icebergs were encountered and seen in the survey area during the entire period of the survey.

Q. RECOMMENDATIONS

The entire western shoreline of this survey should be noted as "subject to frequent change".

See Verifier's Report Section II & IX

R. AUTOMATED DATA PROCESSINGS

All Final Field Sheets were produced with a PDP 8/e computer linked to a Complot DP 3 plotter. Programs used for data acquisition and processing of this survey were: ✓

Number	Program Name	Version
RK-111	Range-Range Real Time Hydroplot	1/30/76
RK-201	Grid, Signal and Lattice Plot	4/18/75
RK-211	Range-Range Non-Real Time Hydroplot	1/15/76
RK-300	Utility Computations	2/05/76
RK-407	Geodetic Inverse/Direct Computation	10/23/75 ✓
RK-409	Geodetic Utility Package	9/15/73
AM-500	Predicted Tides Generator	11/10/72
RK-530	Layer Corrections for Velocity	5/10/76
RK-561	H/R Geodetic Calibration	2/19/75
AM-602	ELINORE-Line Oriented Editor	5/20/75

S. REFERENCE TO REPORTS

Field Tide Note
Horizontal Control Note
Electronic Control Note
Corrections to Echo Sounders Report
Field Edit Report TP-00614 ✓
Field Edit Report TP-00615
Field Edit Report TP-00617
Field Edit Report TP-00618
Coast Pilot Report

Submitted by,

Timothy A. Peasley

Timothy A. Peasley
ENS, NOAA

Approved and Forwarded by,

C. William Hayes

C. William Hayes
CDR, NOAA
Commanding Officer

OPR-0121-DA-78
DA 20-1-78, DA 20-2-78, DA 20-3-78
SIGNAL TAPE PRINTOUT

001	2	59	42	39307	139	35	16704	250	0003	000000	KNIGHT 1941
005	2	59	37	09880	139	44	41604	139	0003	000000	AREST 1941
036	3	59	36	08421	139	43	49157	139	0001	000000	ALDER 1941
037	3	59	36	39476	139	44	07608	250	0001	000000	CAIN 1941
038	0	59	37	11135	139	43	30010	250	0012	000000	BOHAN 1941
039	7	59	36	31464	139	42	50464	250	0001	000000	CANOE 1941
041	3	59	34	59364	139	40	32627	250	0006	000000	ELBOW 1941
042	6	59	34	11761	139	40	11193	250	0001	000000	HEEL 1941
043	7	59	34	05060	139	38	17314	250	0006	000000	FINGER 1941
044	7	59	34	39155	139	39	01403	250	0006	000000	HEAVY 1941
045	3	59	35	44964	139	40	19908	139	0002	000000	FIRST 1941
046	6	59	35	59587	139	39	25142	250	0001	000000	FITZ 1941
047	4	59	35	41464	139	37	35911	250	0000	000000	GROW 1941
048	7	59	36	22924	139	34	58348	139	0015	000000	HERRING 1941
049	4	59	36	58519	139	36	09507	250	0004	000000	ERMINE 1941
050	4	59	37	29507	139	40	22372	250	0000	000000	KRIWOI 1941 RM 1 1977
051	0	59	37	32453	139	38	24015	250	0003	000000	GRASS 1941
052	3	59	37	32398	139	38	23536	139	0000	000000	GRASS RM 2 1941
053	1	59	39	49598	139	38	43763	250	0002	000000	FOXY 1941
054	5	59	40	16654	139	38	29885	250	0002	000000	KRUTOI 1941
055	7	59	39	50717	139	33	09274	250	0015	000000	GOON 1941
056	7	59	40	51868	139	31	27030	250	0002	000000	ELEANOR 1941
057	7	59	42	13438	139	30	29884	250	0005	000000	LEAN 1974
062	6	59	50	13083	139	47	01978	250	0007	000000	BLIZ 1974
063	3	59	54	49122	139	43	34880	250	0008	000000	ESKER 1974
064	4	59	55	06887	139	34	48888	250	0000	000000	DOLCE 1974
065	4	59	54	10707	139	37	39253	250	0000	000000	LUFF 1974
067	0	59	46	40122	140	00	02573	250	0008	330645	BOBCAT1977
096	1	59	47	53524	139	55	02085	139	0000	000000	COYOTE 1977
098	6	59	41	38758	139	30	15889	139	0002	000000	TONY 1977
099	7	59	41	41831	139	29	35274	250	0002	000000	STUDY 1977
100	1	59	41	57228	139	30	06561	250	0003	000000	MARY 1977
101	7	59	42	08354	139	28	58642	250	0002	000000	OLY 1977
102	0	59	42	18327	139	28	39961	250	0001	000000	HAPPY 1977

The 1941 stations have been adjusted to a 1959 traverse and new NA 1927 values were determined.

The 1977 work is pending final adjustment by NGS and is shown as "Field Position," on the smooth sheet.

103	2	59	42	53688	139	29	58215	250	0002	000000	SNEEZY 1977
104	0	59	42	41416	139	31	15909	250	0003	000000	GRUMPY 1977
105	2	59	43	21507	139	30	24108	139	0002	000000	DOPEY 1977
106	6	59	43	13863	139	31	26428	139	0002	000000	SLEEPY 1977
107	4	59	43	30474	139	31	05608	139	0003	000000	METZ 1977
108	4	59	43	33344	139	31	11592	139	0003	000000	EDEN 1977
109	5	59	43	37320	139	32	13905	250	0003	000000	DOC 1977
110	2	59	43	48306	139	31	33358	250	0003	000000	BASHFUL 1977
111	2	59	44	11124	139	32	21613	139	0002	000000	SNOWHITE 1977
112	5	59	44	19842	139	33	38886	250	0004	000000	EAGLE 1977
113	4	59	44	51505	139	32	54608	250	0009	000000	KISS 1977
114	3	59	38	11172	139	42	50859	139	0000	000000	ERIN 1977
115	7	59	38	45388	139	35	05522	250	0001	000000	HUMPY 1941 1974 RM1
116	3	59	54	48916	139	43	35188	250	0008	330645	ESKER ~~RM 1 1974~~
117	0	59	56	47096	139	37	06219	250	0015	000000	BANCAS 1974
118	3	59	58	28050	139	36	32945	250	0017	000000	LEFTY 1974
119	7	59	58	18985	139	32	47877	250	0017	000000	HAENKE 1974
120	6	59	50	58490	139	37	24216	250	0000	000000	LOGAN 1978
121	6	59	37	09610	139	44	40824	252	0000	000000	TP-1(AREST 1941 OFFST)
122	7	59	54	11078	139	37	40447	252	0000	000000	CAL 1
123	4	59	52	22997	139	38	01859	252	0000	000000	CAL 2
124	4	59	51	38536	139	37	41049	252	0000	000000	CAL 3
125	4	59	50	58490	139	37	24216	250	0000	330645	LOGAN 1978
126	7	59	59	42224	139	30	41119	250	0004	000000	DEALY 1978
127	3	59	40	17271	139	38	29731	250	0000	330645	KRUTOI 1941 RM3 1978
128	0	59	40	17271	139	38	29731	250	0000	000000	KRUTOI 1941 RM3 1978

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

(See reverse for responsible personnel)

☐ TO BE CHARTED ☐ TO BE REVISED ☐ TO BE DELETED	REPORTING UNIT *(Field Party, Ship or Office)*	STATE	LOCALITY	DATE
	DAVIDSON, S-331	Alaska	Yakutat Bay	11/78

The following objects HAVE ☐ HAVE NOT ☐ been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0121-DA-78	DA-20-2-78	H-9778	NAD 1927

CHARTING NAME	DESCRIPTION *(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)*	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION *(See instructions on reverse side)* OFFICE	FIELD	CHARTS AFFECTED
	NONE							

RESPONSIBLE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☐ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

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

FIELD

I. NEW POSITION DETERMINED OR VERIFIED
Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.
EXAMPLE: F-2-6-L
8-12-75

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

FIELD (Cont'd)

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

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

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
Enter 'V-Vis.' and date.
EXAMPLE: V-Vis.
8-12-75

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

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-665-073/1030 Region 6

VELOCITY CORRECTION TABLE 2 ✓

H-9694 H-9778

DA-20-1-78 and DA-20-2A-78

JD 227-257

Corrector	To Actual Depth minus corrector	Fathometer Depth* (Observed)
0.0fm	5.3fm	5.0fm
0.1	14.2	13.9
0.2	21.5	21.2
0.3	29.1	28.8
0.4	36.0	35.7
0.5	43.2	42.9
0.6	50.8	50.5
0.7	58.4	58.1
0.8	66.5	66.2
0.9	76.0	75.7
1.0	86.6	86.3
1.1	98.7	98.4
1.2	111.3	111.0
1.3	122.8	122.5
1.4	135.2	134.9
1.5	147.3	147.0
1.6	159.6	159.3

TRA=0.3fm applied

VELOCITY CORRECTION TABLE 3

H-9778 H-9779
DA-20-2B-78 and DA-20-3-78
JD 218-255

Corrector	To Actual Depth minus corrector	Fathometer Depth* (Observed) RAW
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

OPR-0121-DA-78
DA 20-2-78(H-9778)
TC/TI TAPES PRINTOUT

LAUNCH 3131:

191043 0 0003 0002 229 313100 000000
230000 0 0003 0002 255 313100 000000

LAUNCH 3132:

173541 0 0003 0003 220 313200 000000
235900 0 0003 0003 249 313200 000000

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:

SITE	LOCATION	PERIOD
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 it's 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 negligble 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:

SHEET	GAGE
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.

LATITUDE	LONGITUDE
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 feet 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 negligble distortion from moisture and no sprocket jumps) if a new ink or marking system was used.

Submitted by:

for 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

Period: August 8 - September 12, 1978

HYDROGRAPHIC SHEET: H-9778

OPR: 0121

Locality: Yakutat Bay, Alaska

Plane of reference (mean lower low water): 6.7 ft.

Height of Mean High Water above Plane of Reference is 9.2 ft.

Remarks: Zone direct.

James E Hubbard
Chief, Datums and Information Branch

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-9778

Name on Survey	A ON CHART NO. 16761	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	Shoreline Manuscript	
BLIZHNI POINT	X								TP-00614	1
GRAND WASH RIVER									TP-00614 TP-00617	2
LOGAN BEACH									TP-00618 TP-00615	3
LOGAN BLUFFS									TP-00615	4
POINT LATOUCHE	X								TP-00615	5
~~SCHOONER BEACH~~	X								TP-00617	6
~~STRAWBERRY ISLAND~~									TP-00614 TP-00617	7
YAKUTAT BAY	X								TP-00614 TP-00618	8
DISENCHANTMENT BAY										9
SUDDEN STREAM										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
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										22
										23
										24
										25

Approved:

Chas E. Harrington

Chief Geographer - C3x5

16 JAN 1980

NOAA FORM 76-155 SUPERSEDES C&GS 197

APPROVAL SHEET

FOR

SURVEY H-9778

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 printout has been made. A new final sounding printout 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: September 12, 1979

Signed: [signature]

Title: Chief, Verification Branch

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-9778

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	3&6
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. 1, ARC 1, EXCESS 3	5

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2 - with printouts & misc. data					
VOLUMES	1					
BOXES			1 - Smooth			

T-SHEET PRINTS (List): Class 1 Manuscripts, TP-00617, TP-00618

SPECIAL REPORTS (List): 1 - Tide plot, 1 - contour plot

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS: PRE-VERIFICATION	AMOUNTS: VERIFICATION	AMOUNTS: TOTALS
POSITIONS ON SHEET			2581
POSITIONS CHECKED		2581	
POSITIONS REVISED		101	
SOUNDINGS REVISED		303	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5		
VERIFICATION OF CONTROL		02	
VERIFICATION OF POSITIONS		57	
VERIFICATION OF SOUNDINGS		81	
COMPILATION OF SMOOTH SHEET		75	
APPLICATION OF TOPOGRAPHY		13	
APPLICATION OF PHOTOBATHYMETRY		00	
JUNCTIONS		04	
COMPARISON WITH PRIOR SURVEYS & CHARTS		08	
VERIFIER'S REPORT		40	
OTHER			
TOTALS	5	280	285

Pre-Verification by: James L. Stringham	*Beginning Date*: 1/24/79	*Ending Date*: 1/24/79
Verification by: Pat Corkery, Bruce A. Olmstead	*Beginning Date*: 4/16/79	*Ending Date*: 9/7/79
Verification Check by: James L. Stringham, James S. Green	*Time (Hours)*: 51	*Date*: 9/12/79
Marine Center Inspection by: HIT	*Time (Hours)*: 21	*Date*: 10/15/79
Quality Control Inspection by: R.W. Derkazarian	*Time (Hours)*: 94	*Date*: 1/2/80
Requirements Evaluation by: [signature]	*Time (Hours)*: 4	*Date*: 3/7/80

[signature] 17 hrs 1/15/80

REGISTRY NO. 9778

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: Digitize positions 2962a and 4516.

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-9778 FIELD NO: DA-20-2-78

Alaska, Yakutat Bay, Blizhni Point to Point Latouche

SURVEYED: August 8 - September 12, 1978

SCALE: 1:20,000 PROJECT NO: OPR-0121(525)-DA-78

SOUNDINGS: Ross Fineline Fathometer CONTROL: Motorola Miniranger III
Hastings Teledyne Raydist
Range-Range Mode

Chief of Party. . . . . CDR C. William Hayes
Surveyed. . . . . LCDR A.N. Bodnar, LCDR Calebaugh, LTJG Greenawalt, LTJG Haas, ENS McDougal, ENS Peasley
Automated plot by. . . . . Xynetics Plotter (PMC)
Verified by . . . . . Bruce A. Olmstead, Pat Corkery, James L. Stringham

I. INTRODUCTION

H-9778 (DA-20-2-78) was conducted in accordance with Project Instructions OPR-0121(525)-DA-78, Yakutat Bay, Alaska dated 13 March 1978 and one supplement to instructions dated 28 April 1978. The requirements and needs for hydrographic information have originated from increased use and future activity in Yakutat Bay. (Especially deep draft ship traffic). Yakutat Bay serves as an important refuge for harboring vessels transiting the eastern Gulf of Alaska. Prior hydrographic operations conducted in this area during 1892 and 1941 provide very sparse sounding data for navigation. As such, the present requirements for a combined operations project in Yakutat Bay included a number of basic surveys adequate to delineate the project area. These basic surveys are intended to better portray the area and to confirm or deny any dangers to navigation. The new data will be used to update existing nautical chart coverage.

The location of this sheet lies approximately 15-22 miles due north of the city of Yakutat between Blizhni Point on the west and Point Latouche on the east. Specifically, from Latitude 59°47'00"N to Latitude 59°55'00"N, Longitude 139°35'00"W to Longitude 139°58'00"W. Depths of water range from -0.6 fathoms to 143 fathoms.

A prominent feature constantly drifting through the area of this survey is ice. The ice in Yakutat Bay comes from the glaciers at the head of Disenchantment Bay. Ordinarily the ice banks on the west side of Yakutat Bay as far south as Blizhni Point. This condition may very well contribute

to the unstable shoreline portion of the bay. Navigation along this side should be with caution as a buildup of outwash from the glaciers indicates a shoaling condition.

The electronic correctors for launch 3131 day 247 mentioned in the ships report under Item G were evaluated and the following decision was made from the strip chart; crosslines and calibration data. One lane was gained at the end of day on position 363502. All sounding data between position 3635-3636 was rejected.

The Projection Parameters, Signal List and Electronic Corrector Abstract were amended during the verification process. All corrected data is listed in the smooth printouts to accompany the final PMC plot.

II. CONTROL AND SHORELINE

Stations located to third order accuracy were used to control the entire hydrographic survey. The Motorola Miniranger III and Teledyne Hastings Raydist systems were used in the range-range mode and were employed for interrogation in determining positional data during launch operations. There was no work involving ship hydrography. Specific information and documented methods of procedure are adequately described in Parts F and G of the ships Descriptive Report and the Horizontal Control Report.

The Mean High Water Line was applied from Class I unreviewed manuscripts TP-00614, TP-00615, TP-00617 and TP-00618.

	Dates of Photography	Dates of Field Edit
TP-00614	August 1975	March 1977, Sept 1978
TP-00615	August 1975	August 1978
TP-00617	August 1975	July 1977/August 1978
TP-00618	August 1975	September 1978

Discrepancies with Hydrographic Survey H-9778 (DA-20-2-78) and shoreline manuscript TP-00617 are listed below:

1. The hydrography overlaps the Mean High Water Line by as much as 100 meters from Latitude 59°48'40"N to Latitude 59°49'00"N, Longitude 139°49'00"W to Longitude 139°51'00"W. Here, along 2800 meters of sandy shoreline encompassing the Grand Wash River, this area is exposed constantly to heavy surf, breakers, and sedimentation.

The descriptive report supplied by the NOAA Ship DAVIDSON and the '78 Field Edit Report notes the western shoreline as "subject to frequent change." However, the field editor did not supply photogrammetry with positional or supportive data to substantiate the High Water Line. The 1977 Field Edit report for this area is very explicit in recommending that because of the ambulatory nature of the shoreline between Pt. Manby and Blizhni Pt., the Mean High Water Line should be considered "approximate".

Furthermore, the report states that the verification of the MHWL in the Grand Wash River will be very difficult.

The verifier recommends that Class I manuscript TP-00617 be amended to reflect an approximate MHWL to Blizhni Point as shown on the smooth sheet. Note: See Field Edit Report for TP-00617, Yakutat Bay, Alaska, 1977. ~~(copy attached)~~. Present subsequent hydrography is in conflict with MHWL in the vicinity of lat. 59°48.7', long. 139°51'.

2. The term "Breakers" was removed during field edit application. This is not consistent with either the hydrographic survey data as documented by the hydrographer in the raw data printouts nor the 1977 Field Edit report which cites breakers between the shore and 50 meters offshore.

The verifier recommends that the Class I manuscript TP-00617 reflect the term "Breakers" from Pt. Manby to Blizhni Pt. This to also agree with what is depicted on the smooth sheet.

3. H-9695 (DA-20-4-77) depicts a solid Mean High Water Line. This is not consistent with the present Class I manuscript nor the junctional hydrographic sheet H-9778 (DA-20-2-78).

The Verifier recommends that H-9695 (DA-20-4-77) be amended to reflect the present Class I information. Shoreline was revised to indicate additional field edit information of Aug 1978, on TP-00617

4. The dashed foul line at approximately Latitude 59°48'00"N to Latitude 59°48'40"N, Longitude 139°36'00"W was revised to reflect the dashed red information as shown on the smooth field sheet.

In summary, the 1978 field edit data is neither explicit nor definitive in addressing conflicts between the MHWL and hydrography. However, the Field Edit Report of 1977 specifically makes a recommendation that an approximate shoreline be shown between Pt. Manby and Blizhni Pt. It is quite apparent that in compiling this manuscript, the 1977 information was not considered as a data source in graphically depicting the 1978 work. As stated in Chapter 5, Section 5.4, Field Edit Report, of the Hydrographic Manual, the contents of this report are essential for resolution of discrepancies that may appear during verification of hydrography.

III. HYDROGRAPHY

Soundings at crossings are in good agreement.

The bottom configuration, determination of least depths and development of all standard depth curves was adequate with the exception of the following areas;

a. Prominent areas deficient in the development of least depths.

1.	30 fathoms	Latitude	59°51'~~30~~"N, 26	Longitude	139°39'00"W
2.	20.8 fathoms	"	59°51'~~25~~"N 23	"	139°38'20"W
3.	15.3 fathoms	"	59°50'~~45~~"N 40	"	139°38'40"W
4.	21 fathoms	"	59°49'18"N	"	139°39'22"W

5.	18.2	fathoms	Latitude	59°49'58"N,	Longitude	139°38'15"W
6.	13.2	fathoms	"	59°49'18"N,	"	139°38'18"W
7.	20.1	fathoms	"	59°49'04"N,	"	139°38'27"W
8.	13.2	fathoms	"	59°49'24"N	"	139°37'24"W
9.	19.1	fathoms	"	59°49'47"N	"	139°37'27"W
10.	5.0	fathoms	"	59°48'27"N	"	139°38'42"W
11.	15.1	fathoms	"	59°48'53"N	"	139°38'59"W
12.	13.2	fathoms	"	59°48'42"N	"	139°39'30"W
13.	19.3	fathoms	"	59°48'51"N	"	139°39'30"W
14.	10.0	fathoms	"	59°48'30"N	"	139°40'06"W
15.	33	fathoms	"	59°48'09"N	"	139°41'21"W
16.	37	fathoms	"	59°48'33"N	"	139°41'33"W

b. The zero fathom curve could not be completed on the western or eastern shoreline due to heavy breaker action, foul areas and/or the constantly shifting shoreline.

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;

a. Determination of Raydist calibration for daily correctors did not incorporate a check angle during three point fix observations.

b. Non-compliance with items 3.2 and 3.3 of the Project Instructions under Photogrammetry. As stated in these sections, field edit is required. All discrepancies between hydrography and field edit must be resolved before leaving the area. All discrepancies must be resolved before the field edit data is shipped.

c. Least depths were not plotted on the smooth field sheet. This does not conform to Chapter 4.2 field sheet as defined in the Hydrographic Manual. That is, critical information is frequently extracted from the field sheet prior to verification and applied directly to the nautical charts.

d. The abstract of times of hydrography and or field edit did not include complete times of field edit.

e. Non-complance with Item 4.12 of the Project Instructions under Hydroraphy. Verification Branch did not have a copy of those charts used by the ship for comparison in Yakutat Bay. As stated in the Project Instructions, all charted features, particularly dangers to navigation such as piling, shoals and rocks shall be verified or disproved and a recommendation written so as to provide a positive disposition of the item. It is essential for final survey processing that the copies of those charts used for comparison be included as part of the hydrographic records for each sheet forwarded to CPM3.

f. Non-compliance with 4.13 of the Project Instructions under Hydrography. All uncharted shoals, rocks, wrecks and other dangers to navigation that are discovered during the course of the survey shall be reported to the U.S. Coast Guard. The justification for surveying Yakutat Bay, Alaska

(OPR-525) was to locate dangerous submerged obstructions which may have been missed, incorrectly located or not adequately developed by outmoded survey methods. Because of the potential for increased deep draft ship traffic the aforementioned was of paramount importance. As reflected by the number of undeveloped shoal areas, the primary objective for this project was not met. See Section III a. of this report.

g. The junction with H-9779 (DA-20-3-78) at Latitude 59°54'00"N, Longitude 139°38'00"W is not adequate. A deficiency in sounding data caused several of the standard depth curves to be drawn without supportive soundings between the two contemporary surveys.

h. H-2157 (1892) does not fall within the present survey area as suggested by Item K in the ship's Descriptive Report.

i. Non-compliance with 4.5 of the Project Instructions under Hydrography. Maximum line spacing of 100 meters from 0-20 fathoms from Latitude 59°52' 30"N to Latitude 59°54'00"N along Longitude 139°38'30"W would have better delineated many of the standard curves in this area.

j. Ship made no recommendation concerning PSR#5.

k. Pre-survey Review OPR-525, Yakutat Bay, Alaska, cites the wrong geographic position for PSR #5.

V. JUNCTIONS

H-9778 ~~(DA-20-2-78)~~ (1978) is bordered by three contemporary surveys.

1. H-9779 ~~(DA-20-3-78)~~ (1978). This sheet junctions the northern limits of the present survey. Specifically, Latitude 59°54'00"N, Longitude 139°38' 00"W to Longitude 139°43'00"W. Soundings and depth curves are in good agreement and the junctional note is inked accordingly. However, a deficiency in a portion of the junctional area as stated in Section 4, Item 9, precluded the drawing of some standard depth curves with adequate supportive data.

2. H-9695 ~~(DA-20-4-77)~~ (1977). Bordering the southwest portion of the present survey near Kame Stream and Sudden Stream, this contemporary hydrographic work was accomplished one year before the present survey. Here, at Latitude 59°47'00"N, Longitude 139°45'00"W to Longitude 139°58'00"W an adequate junction was effected. The junctional note is inked accordingly. See Q.C Report, para 2.

3. H-9694 ~~(DA-20-1-78)~~ (1978). This survey is currently in the preliminary stages of position verification. The standard depth curves and junctional notes have been left in pencil. Not available for evaluation at time of Q.C.

VI. COMPARISON WITH PRIOR SURVEYS

a. H-2159 (1892) 1:40,000 Leadline

Comparison made with the present survey in depths ranging from 2.5 fathoms to 167 fathoms reveal differences as much as 35 fathoms shoaler since 1892.

Shoreline on the west side of Yakutat Bay has accreted anywhere from 400-~~4200~~ 2000 meters since the ~~present~~ prior survey. The eastern shoreline has remained stable. difference in position is also attributed to poor prior control.

b. H-6719 (1941) 1:20,000

Comparison made with the present survey in depths ranging from 5 fathoms to 20 fathoms of water reveal a shoaling of 1-2 fathoms. The shoreline from Longitude 139°47'30"W to Longitude 139°51'30"W, Latitude 59°49'00"N to Latitude 59°52'30"N indicates a build-up of the Mean High Water Line in this area from 400-700 meters since 1941.

Because of glacial activity (sedimentation, ice flows), type of data collection equipment, and dynamic natural forces of hydrological processes, the prior survey information is considered unsafe for navigation. Due to the superior positioning and sounding equipment and the current status of the hydrographic information, H-9778 (DA-20-2-78), is adequate to supersede the prior surveys within the common area.

VII. COMPARISON WITH CHART

A chart comparison was made with Chart 16761, 11th Edition, August 28, 1976. The charted hydrography originates primarily with the previously discussed prior surveys.

a. Pre-survey review Item 5 is from Chart Letter 2060 of 1975. Here, at approximately Latitude 59°48'00"N, Longitude 139°43'00"W the NOAA Ship SURVEYOR discovered depths of 17-21 fathoms. The ships conclusion states that a glacial moraine may extend across the entire bay between the 20 fathom curves. An investigation was run in the area of the charted pre-survey review to prove or disprove the existence of this item. The least depth found by the ship was 20 fathoms in the area of Chart Letter 2060 (1975) Latitude 59°48'00"N, Longitude 139°43'00"W. However, several shoaler depths exist on the smooth sheet 800-1000 meters west of this position.

The verifier recommends that the present survey information in this investigation be charted as shown. Furthermore, the note "shoaling to 17 fathoms has been ~~reported~~ observed throughout this area" should be retained as charted.

The present survey is adequate to supersede the charted hydrography.

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

c. Aids to Navigation - There are no aids to navigation in the area of this survey.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey complies with Project Instructions OPR-0121 (525)-DA-78, dated 13 March 1978 and one supplement to instructions dated 28 April 1978 with the exception of those deficiencies as listed in the Verifier's Report.

IX. ADDITIONAL FIELD WORK

H-9778 (~~DA-20-2-78~~) is a good basic survey. Additional field work to be addressed is as follows:

1. Updated photography of the western shoreline of Yakutat Bay from Pt. Manby to Blizhni Pt. See the 1977 Field Edit Report, Section 54, Recommendations.

2. A more thorough investigation of PSR Item #5 to include an additional 3000 meters of shoal investigation east-northeast of Latitude 59°48'00"N, Longitude 139°43'00"W.

Respectfully submitted,

Bruce A. Olmstead

Bruce A. Olmstead
Cartographic Technician
September 11, 1979

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 E
Seattle, WA 98102

DATE : October 16, 1979 OA/CPM3/JWC

TO : OA/CPM - Eugene A. Taylor

FROM : OA/CPM3 - John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9778

This survey is a basic hydrographic survey of Yakutat Bay, Alaska, from Blizhni Point to Point Latouche. 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. Hydrography began on August 8, 1978 and was completed on September 12, 1978.

The following items were noted:

1. PSR #5, the only presurvey item within the limits of this survey, was not completely resolved. Sounding lines were run at the maximum allowable spacing while an examination of the fathograms indicated that the bottom was very rugged and that the least depth was probably not determined.

2. A number of areas, as listed in the Verifiers Report, were not fully developed for least depth determinations.

3. There are significant discrepancies between the hydrography and the field edit manuscripts in determining the location of a portion of the shoreline.

4. This survey greatly upgrades the data available to update the nautical chart of the area into a more complete chart.

The inspection team finds H-9778 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

for Arnold E. Eichelberger

ADMINISTRATIVE APPROVAL
H-9778

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.

E.A. Taylor

Eugene A. Taylor, RADM
Director
Pacific Marine Center

Oct. 19, 1979
Date

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

OA/C352:RWD

January 2, 1980

TO: Glen R. Schaefer GRS
Chief, Hydrographic Survey Division

THRU: Chief, Quality Control Branch gm

FROM: R. W. DerKazarian RW.DerKazarian
Quality Evaluator

SUBJECT: Quality Control Report for H-9778 (1978), Alaska, Yakutat Bay, Blizhni Point to Point Latouche

A quality control inspection of H-9778 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, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier.

The status of some control stations (triangulation stations) could not be substantiated by the National Geodetic Survey (NGS). It is assumed, however, that the necessary records and computations will eventually be submitted to the NGS. Ultimately, therefore, it is expected that the triangulation station status of these control stations will be validated. Accordingly, these control stations are symbolized as triangulation stations pending formal processing and acceptance as such by the NGS, and described as "(Field positions)", on the smooth sheet.

In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. Section III of the Verifier's Report is supplemented by the following:

Line spacing should have been reduced in the general vicinity of latitude 59°48.50'N to latitude 59°49.00'N and longitude 139°40.00'W to longitude 139°43.00'W in order to fully develop the irregularity of the bottom.

A 6-fathom depth in records (not smooth plotted) in latitude 59°51.87'N, longitude 139°46.3'W was not developed to delimit a channel in this area.

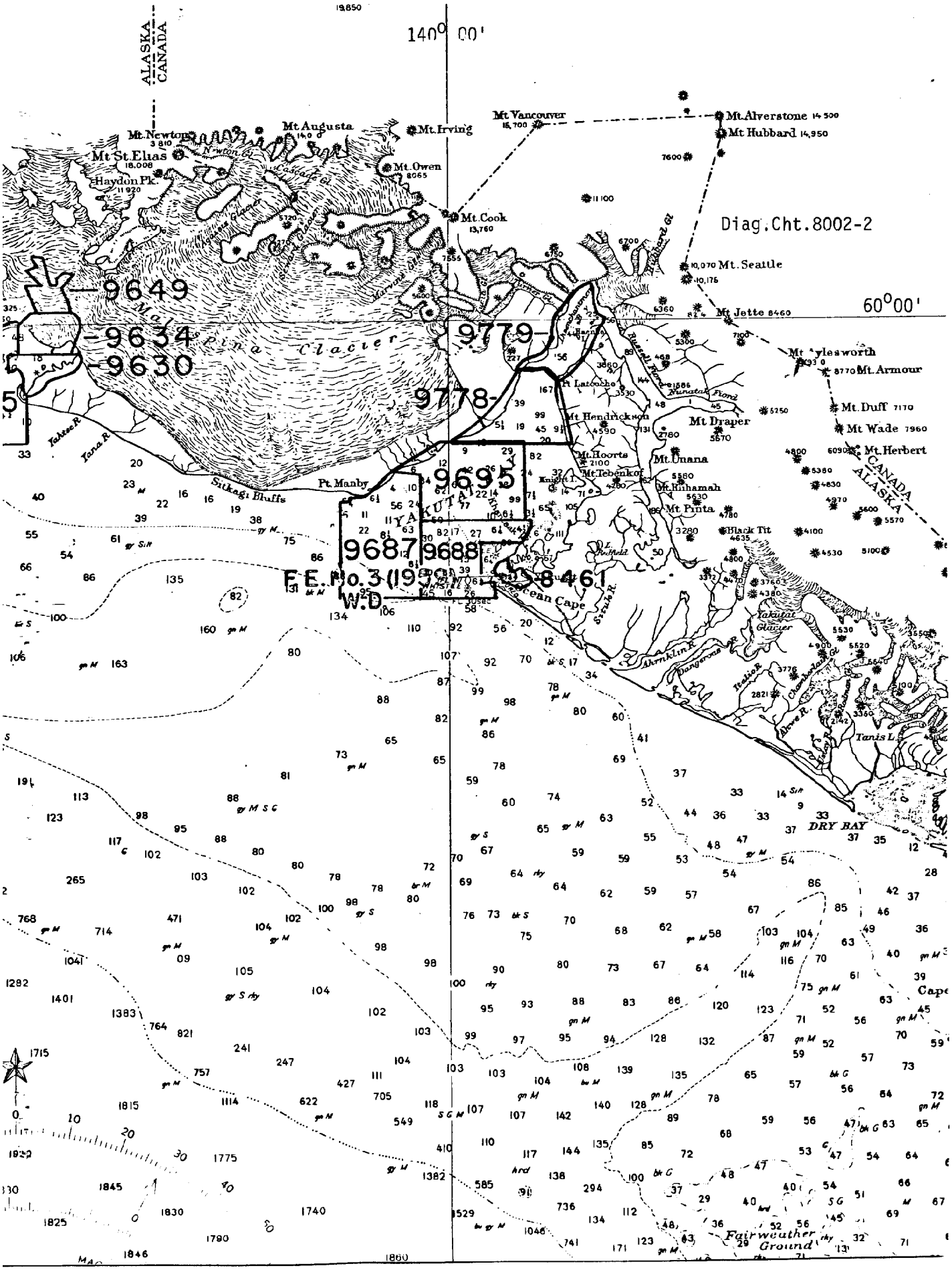
2. Section V of the Verifier's Report is supplemented by the following:

An adequate junction was effected with H-9695 (1977) to the south; however, a partial butt junction was made in the vicinity of latitude 59°47.25'N, longitude 139°57.30'W where present depths were as much as 2.6 fathoms shoaler. These differences are attributed to a seasonal migrating bottom.

3. An 18.9-fathom peak in latitude 59"48.5'N, longitude 139°39.4'W was found at the end of a sounding line and has been added to the smooth sheet.

4. Additional soundings were recalled from excess so that an accurate portrayal of bottom relief would be represented on the smooth sheet.

cc:
OA/C35
OA/C351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Mt. Seattle
Mt Jette
Malaspina Glacier
Yakutat Bay
Pt. Manby
Sitkagi Bluffs
Ocean Cape
Mt Hendrickson
Mt Draper
Mt Unana
Mt Tebenkof
Mt Hoorts
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ALASKA

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

OA/C351:SF

APR 9 1980

TO: OA/CPM - Eugene A. Taylor

FROM: for OA/C3 - Roger F. Lanier

SUBJECT: H-9778 (1978), OPR-0121(525)-DA-78, Blizhni Point to Point Latouche, Yakutat 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 January 2, 1980 (copy attached), and the Hydrographic Survey Inspection Team Report, dated October 16, 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.

(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9778

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 QC
16761	7-18-80	J. Bailey	Full ~~Part Before~~ After ~~Verification Review~~ Inspection Signed Via A
			Drawing No. 12
16760	6/7/83	J. Bailey	Full ~~Part Before~~ After ~~Verification Review~~ Inspection Signed Via
			Drawing No. 13 Applied thru DRWG. AID
			PROOF 16761 #12.
16016	8-K-83	L. A. Simmons	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 23 Exam thru 16760 #13.
			No Curr. at this scale.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63