

9729

Diag. Cht. No. 8201-3

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-10-2-77
Office No..... H-9729

LOCALITY

State Alaska
General Locality Wrangell Narrows
Locality Midway Rock to Point Humbug

19 77

CHIEF OF PARTY
Christian Andreasen

LIBRARY & ARCHIVES

DATE July 30, 1979

★ U.S. GOV. PRINTING OFFICE: 1976-609-441

9729

REA 6
MPS
17375
17382
17360 No Corr.

HYDROGRAPHIC TITLE SHEET

H-9729

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-10-2-77

State ALASKA

General locality WRANGELL NARROWS

Locality MIDWAY ROCK TO POINT HUMBUG

Scale 1:10,000 Date of survey 30 Sept - 30 Oct 1977

Instructions dated 3 August 1977 Project No. OPR-448-DA-77

Vessel SHIP DAVIDSON
Launches DA-1 (3131) and DA-2 (3132)

Chief of party Christian Andreasen, Comdg.

Surveyed by LCDR D.B. MacFarland, LTJG C.B. Greenwalt, ENS L.F. Haas ENS E. McDougal

Soundings taken by echo sounder, hand lead, ~~XXX~~ Ross Finline, Model 5000

Graphic record scaled by DAVIDSON Personnel

Graphic record checked by DAVIDSON Personnel

Positions verified John E. Lotshaw Automated plot by PMC Xynetics Plotter

Soundings Verification John E. Lotshaw

Soundings in fathoms 1 ~~XXXX~~ and tenths at MLLW ~~XXXX~~

REMARKS: Survey Time Zone: GMT

Mean Survey Longitude: 132°58.5'W

Field Sheet is complete.

Misc. items were removed from this D.R. and filed with the field records

Applied to stdt 6/25/80

PROGRESS SKETCH

OPR-448-DA-77
WRANGELL NARROWS
ALASKA

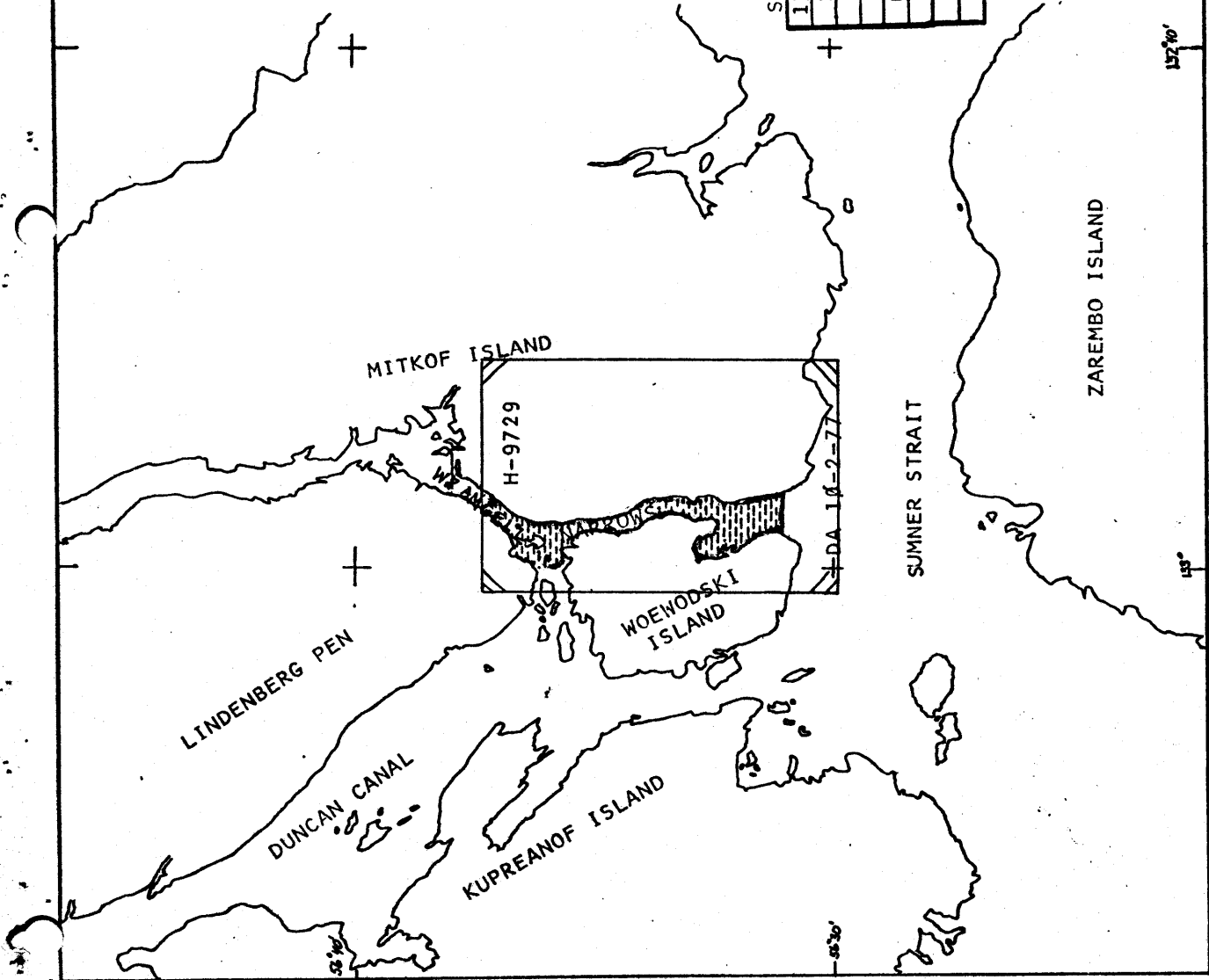
NOAA SHIP DAVIDSON
CDR. C. ANDREASEN, COMDG.

SCALE: CHART 1736 β

OCTOBER 1977

STATISTICS:

131.1	L.N.M. SOUNDING LINE
2.85	S.Q. N.M. SOUNDING
27	TRI. STA. RECOVERED
75	TRI. STA. ESTABLISHED
68	BOTTOM SAMPLES
1	MARTEK CAST
11.8	SHORELINE OF FIELD EDIT
2	TIDE GAGE



132°20'

137°00'

145°

152°30'

A. PROJECT

Navigable area survey DA-10-2-77 was accomplished in accordance with Project Instructions OPR-448-DA-77, Wrangell Narrows, Alaska, dated 3 August 1977 and changes #1, #2 and #3 dated 12 August, 15 September and 12 October 1977, respectively. ✓

B. AREA SURVEYED

The area surveyed lies in the southern end of Wrangell Narrows, Alaska from latitude 56°31'15"N, north to latitude 56°37'00"N. The eastern boundary of the project area consists of the western shore of Mitkof Island. The western boundary, travelling north, is made up of the eastern shoreline of Woewodski Island, longitude 133°00'00"W in Beecher Pass, and the eastern shore of Lindenberg Peninsula. ✓

Tide gages for support of hydrography were installed on September 28. Recovery of existing geodetic control and establishment of new control began on 28 September and continued throughout the project. Hydrography was run from 29 September through 30 October. 1977 ✓

C. SOUNDING VESSELS

The two vessels used as sounding platforms for the survey were DA-1 (vessel #3131) and DA-2 (vessel #3132). They are characterized by the colors red and blue respectively used in all raw data recording and preliminary computer plots. ✓

D. SOUNDING EQUIPMENT

Each sounding vessel used a Ross Fineline fathometer, model 5000, in depths ranging from 0 to 32 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
" "	Transceiver	1077

Areas where hydrography conducted by the two vessels overlapped showed the two sets of soundings to be in excellent

agreement with each other.

Phase calibrations were conducted daily from 0 to at least 50 fathoms at 1 to 10 fathom intervals. ✓

All fathograms were scanned and compared to digitized depths. Additions (peaks and deeps) and corrections were either edited into the master data tape or included on a separate electronic corrector tape. Fathometer initials were maintained at zero. ✓

In addition to fathometers, a leadline comparison to digitized depths was used to determine the least depth of a pinnacle near the survey's western boundary in Beecher Pass. ✓

(0.5-fathom, pos. 7511)
The least depth of Spike Rock was determined by a diver held line. Three peaks were initially identified during the running of a 5 meter grid by a hydrographic launch. Buoys attached to rock anchors were positioned over these peaks. Divers were used to conduct a more thorough search of the Spike Rock area over a 50 foot radius. Because of the dense kelp, a search using a tag line was impossible. However, high points along Spike Rock, which is actually a small ridge, were located by divers with the aid of hand held pressure depth gages. Upon locating a significant peak one diver would place the end of a line on the peak while the other diver surfaced and passed the other end to personnel in a skiff. The skiff was positioned directly over the peak such that the measuring line was vertical. Sextant angles were observed to determine the position of the peak and the diver's line was measured with a steel tape. The diving was conducted within an hour of slack water. Lat. $56^{\circ} 35' 58.07''$ Long. $132^{\circ} 58' 31.07''$ ✓

Soundings on the Final Field Sheet have been corrected for transducer depth and predicted tides. Transducer depth was determined from bar checks made by each launch twice daily, weather permitting. The computed TRA corrector was 0.3 fathom for both launches. Predicted tides were based on daily predicted tides for Ketchikan corrected to Pt. Lockwood on Woewodski Island (#1433 in Tide Tables, 1977). ✓

A 30 day bubbler tide gage was installed on Midway Rock, two 3 day bubbler tide gages were installed in Beecher Pass, one on the eastern shore of Inlet Point and one on the southern shore of Lindenberg Peninsula, and a 30 day ADR tide gage was installed on Light #18 off Anchor Point (refer to Field Tide Note). ✓

Soundings on the Final Field Sheet have not been corrected for velocity. A Martek cast was taken on October 4. (See Corrections to Echo Sounders Report.)

E. HYDROGRAPHIC SHEETS

The field sheet used during this survey was prepared at a scale of 1:10,000 using the Hydroplot system on the DAVIDSON. A PDP 8/e computer was linked with a Complot DP3 plotter (S/N 5445-5) for computation and plotting. The computer sheet was referred to as DA-10-2-77. In addition, one 1:1,000, four 1:2,000 and one 1:2,500 blowups were made of areas congested with soundings.

Contour lines on the Final Field Sheet were erroneously inked as if the soundings were plotted in feet. The matter was discussed with the Pacific Marine Center Verification Branch and it was decided to leave the lines as drawn. Contours and colors are as follows:

<u>Fathom</u>	<u>Color</u>
0	Orange
6	Green
12	Red
18	Blue
30	Red

F. CONTROL STATIONS

MINIRANGER transponders were located at the 21 third order triangulation stations and four intersection stations (I) listed below:

<u>Signal List #</u>	<u>Station</u>
002	GREEN, 1910
004	COAL, 1910
005	GOLD, 1910
006	BOLT, 1910
007	USE 67, 1910
008	USE 64, 1910
009	USE 65, 1910
010	(I) DECEMBER POINT LIGHT, 1977
013	USE 62, 1910-29
014	USE 61, 1910-29
015	USE 55, 1910-29
016	USE 52, 1910-29
017	USE 50, 1910-29

018	LIP, 1929
019	LAD, 1929
020	BON, 1929
023	(I) BOULDER POINT LIGHT, 1977
024	USE 59
025	USE 58
026	USE 56
027	(I) LIGHT #8, 1977
029	HUMBUG, 1977
030	NOB, 1929
036	USE 48
042	(I) BURNT ISLAND FORWARD RANGE LIGHT, 1977

Thirty-three triangulation stations were recovered during the course of this project. Two new triangulation stations and thirteen intersection stations were established using third order methods. (See the Horizontal Control Note.) All computations were based on the North American 1927 Datum. For the geodetic positions of all stations, refer to the Signal List. ✓

G. HYDROGRAPHIC POSITION CONTROL

The Motorola MINIRANGER III positioning system was used in the range-range electronic position control mode for most of this survey. A Wild T-2 theodolite was used in conjunction with the MINIRANGER system in order to run a small area of range-azimuth hydrography in a cove west of Deception Point. Below is a list of the electronic control equipment employed. ✓

<u>Vessel #</u>	<u>Range Console</u>	<u>R/T Unit</u>
DA-1 (3131)	716	709
DA-2 (3132)	707	721

Transponders

<u>Code</u>	<u>S/N</u>
1	723
2	771
3	772
4	773

Daily calibrations were performed at least once per set-up, with as many as four set-ups being utilized each day hydrography was run. Either of the following calibration methods was used: ✓

1. Three sets of three-point sextant fixes were taken as MINIRANGER rates were being recorded. Computed rates calculated from the sextant fixes, using RK-300, were compared to the observed rates. ✓
2. The launch was positioned with its R/T unit as close as possible to a stationary object, usually a triangulation station, of known distance from the MINIRANGER transponder. The distance between the reference station and the vessel was measured, and subtracted from the calculated distance. This distance was then compared with the observed MINIRANGER rate. ✓

The differences between the computed and the observed MINIRANGER readings for either method were within 5 meters of the respective baseline calibration correctors. Signal strength was observed and recorded at all times. The "time and course" method was used in those limited areas where signal strength fell below the minimum. Baseline calibrations were conducted on 26 September in Sitka, Alaska, on 21 October in Ketchikan, Alaska and on 8 November at PMC. Mean correctors derived from the three baseline calibrations have been applied to the positions on the Final Field Sheet. (Refer to Electronic Control Note.) ✓

H. SHORELINE

The shoreline for this survey was derived from manuscripts TP-00551 and TP-00637. A slight east-west offset of the two caused a shift in the shoreline at latitude $56^{\circ}35.0'N$. Items considered dangers to navigation offshore from the high water line were located by three-point sextant fix or by hydrographic detached position using the MINIRANGER system in the range-range mode. Fixed aids to navigation were located by T-2 theodolite intersection. ✓

I. CROSSLINES

Crosslines comprised 9% of the total sounding lines and were in excellent agreement with the main scheme hydrography. ✓

J. JUNCTIONS

This survey junctions to the south with contemporary survey H-9571, a 1:10,000 scale survey completed in 1975 whose ✓

soundings are plotted in green. The only other junction occurs at the western boundary of the project area in Beecher Pass, where a 1:10,000 scale survey (H-9332) was completed in 1972 (soundings in blue). Soundings from DA-10-2-77 are in excellent agreement with H-9571. Most of the 1977 work agrees with H-9332 to within one fathom. A 3.8 fathom sounding from H-9332 plots approximately forty feet to the west of a 7.4 and a 8.8 fathom sounding from this survey at 56°36.8'N and 133°00.2'W. This is explained by the very steeply sloping bottom. A 2 fathom sounding from H-9332 plots between 0.9 and a -0.5 fathom soundings from H-9729. It is recommended that the shoaler soundings from this survey be used to indicate the further extension of the shoal to the north. ✓

K. COMPARISON WITH PRIOR SURVEYS

Representative soundings from three prior surveys were inked on to the Final Field Sheet in three separate colors (though the brown and orange are unfortunately very similar) as indicated below. ✓

<u>Survey</u>	<u>Scale</u>	<u>Year</u>	<u>Color</u>
H-4995	1:10,000	1929	Red
H-4994	1:5,000	1929	Brown
H-4996	1:5,000	1929	Orange

Greater than 99% of the prior survey soundings plotted agree with the present survey to within one fathom or are located within 0.1 nm of a similar depth. All but one of the larger discrepancies involve present survey soundings plotted over deeper prior survey soundings. The most significant of these is a 36 fathom sounding from H-4995 in the midst of soundings in the 20 fathom range according to this survey at 56°32.6'N and 132°57.9'W. This can be attributed perhaps to the use of less sophisticated sounding equipment during the prior surveys. The one significant prior survey sounding (from H-4995 again) which is significantly shallower than surrounding soundings from DA-10-2-77 indicates a 13 fathom depth in the area in which the present survey finds between 17 and 30 fathoms at 56°31.8'N and 132°58.1'W. The sounding is located in an area just west of Midway Rock where the bottom slopes quite steeply, which could account for the difference in depth found by the surveys. The present survey found 10 and 11 fathom depths within 200 feet of this position. Fathograms were rescanned for indications of shoaling, but none were found.

13 is from a prior line obviously displaced ✓

L. COMPARISON WITH THE CHART

The largest scale chart of the area surveyed is Wrangell Narrows, Chart No. 17375, 17th Ed., April 30, 1977, scale 1:20,000. Selected soundings have been inked on the field sheets in violet along with several shoal areas noted by the pre-survey review of this project. Soundings and, where indicated, subsequent developments during this survey substantiated most of the charted soundings with the exception of a 2-3/4 fathom sounding just south of the ¹⁵⁰⁷⁵Battery Islands, and two soundings southwest of Keene Island which showed least depths of 2-3/4 fathoms and 1-3/4 fathoms. Examination of the fathograms from these areas shows no reason to believe that significant shoaling exists as charted.

✓
(2.3 here in) excess
retained 2 3/4 and 1 3/4 from prior survey

M. ADEQUACY OF SURVEY

This survey is adequate to supersede all areas of common hydrography with the following two exceptions. A narrow area along the southeastern side of Wrangell Narrows between latitudes 56°31.35'N and 56°31.7'N and between longitude 132°57'30"W and the shoreline lacks sufficient development. Another small "hole" occurred just east of station COAL 1910 at latitude 56°32.1'N and longitude 132°58.85'W. In both cases the MINIRANGER signal strength dropped below the acceptable minimum value. However, by time and coursing for no more than 14 seconds (two soundings) for any of the lines these gaps could have been filled. It is recommended that soundings be brought forward from H-4995 to fill these gaps.

✓

N. AIDS TO NAVIGATION

The thirteen fixed aids to navigation listed below were located by third order theodolite intersection. For additional information concerning these stations, refer to the Horizontal Control Note.

✓

Intersected Fixed Aids to Navigation

- MIDWAY ROCK LIGHT, 1977
- DECEMBER POINT LIGHT, 1977
- POINT LOCKWOOD LIGHT, 1977
- POINT LOCKWOOD ROCK LIGHT ("1"), 1977
- LIGHT "2", 1977
- BATTERY ISLAND LIGHT ("4"), 1977
- BOULDER POINT LIGHT ("5"), 1977
- LIGHT "8", 1977

LIGHT "10", 1977
BURNT ISLAND LIGHT ("11"), 1977
BURNT ISLAND FORWARD RANGE LIGHT, 1977
BURNT ISLAND AFTER RANGE LIGHT, 1977
BURNT ISLAND REEF LIGHT ("14"), 1977

The nine buoys listed below were located by three-point sextant fixes. Check fixes were obtained for all by sextant and for eight of them by hydrographic detached position. It should be noted that buoy "3TC" was underwater at nearly every stage of tide. The narrowness of the tow channel east of the Battery Islets produced high velocity currents, dragging the buoy underwater even during times when currents in the surrounding areas were considered slack. ✓

<u>Located Buoy</u>	<u>Characteristic</u>	<u>G.P.</u>
"1TC"	Can	56°34'13"N 132°57'57"W
"2A"	F1 R 2½ sec	56°34'12"N 132°58'12"W
"3"	F1 G 2½ sec	56°34'15"N 132°58'24"W
"3A"	F1 G 4 sec	56°34'35"N 132°58'29"W
"4TC"	Nun	56°34'45"N 132°58'15"W
"9"	F1 G 4 sec	56°35'56"N 132°58'30"W
"13"	Can	56°36'36"N 132°58'20"W
"13A"	Can	56°36'41"N 132°58'17"W
"3TC"	Can	56°34'25"N 132°58'05"W

O. STATISTICS

Number of positions.....2413
Nautical miles of sounding line.....131.1
Nautical miles of crosslines.....11.8
Square nautical miles of hydrography...2.85
Martek cast.....1
Bottom samples.....68

P. MISCELLANEOUS

A five meter hydrographic grid was run in Wrangell Narrows just southeast of Keene Island in order to define Spike Rock and to locate its least depth. Rather than a single rock, a north-south trending ridge was discovered and extensively developed. The least depth was finally determined by a diver held leadline. Another five meter grid was used to develop a pinnacle at the western edge of this survey in Beecher Pass. Least depth was determined by leadline.

Q. RECOMMENDATIONS

No additional field work is recommended. As soundings from prior survey H-4995 are in very good agreement with soundings from the present survey, it is recommended that they be brought forward for charting purposes in the areas mentioned in Section M. Fixed navigational aids should be charted at the positions listed in the Horizontal Control Note.

In addition, it should be noted that the Spike Rock area as presently marked by buoy #9 is particularly hazardous to navigation. Though little if any danger is presented to northbound traffic transiting the area, southbound traffic, tending to the western edge of the channel after passing Burnt Island, could conceivably ground on the northern end of the Spike Rock ridge. It is recommended that mariners be advised of the need to turn promptly on the range to avoid the area of Spike Rock. See the Coast Pilot Report.

R. AUTOMATED DATA PROCESSING

All smooth field sheets were produced with a PDP 8/e computer (S/N 24556) and a Complot plotter (S/N 5445-5).

Programs used to process this survey were:

<u>#</u>	<u>Program Name</u>	<u>Version</u>
RK-111	Range-Range Real Time Hydroplot	1/10/76
RK-201	Grid, Signal and Lattice Plot	4/18/75 dup. 10/30/77
RK-211	Range-Range Plot	1/15/76
RK-212	Visual Station Load and Plot	4/01/74
RK-216	Range-Azimuth Plot	2/05/76 ✓
RK-300	Utility Computations	2/10/76
RK-330	Reformat and Data Check	5/04/76 dup. 12/30/76
RK-407	Geodetic Inverse/Direct Computation	10/23/75 dup. 4/28/76
RK-409	Geodetic Utility Package	9/05/73 dup. 2/13/75
AM-500	Predicted Tides	11/10/72 dup. 2/21/75
RK-561	Geodetic Calibration	2/19/75
AM-602	Elinore	5/25/75

S. REFERENCE TO REPORTS

Field Tide Note
Electronic Control Note
Corrections to Echo Sounders Report
Horizontal Control Note
Coast Pilot Report

Submitted by,

Ellen McDougal

Ellen McDougal
ENS, NOAA

Approved and Forwarded by,

for C. William Hansen

Christian Andreasen
CDR, NOAA
Commanding Officer

FIELD TIDE NOTE
Wrangell Narrows, Alaska
OPR-448-DA-77

INTRODUCTION

Field tide reductions of soundings are based on predicted tides from Ketchikan, Alaska corrected to Point Lockwood, Woewodski Island, station #1433 in the 1977 edition of Tide Tables for the West Coast of North and South America. The daily predicted high and low tides were interpolated using the PDP 8/e computer and program AM-500. All times are Greenwich Mean Time.

As instructed by the June 16, 1977 memo, Requirements for Installation and Monitoring of Bubbler Tide Gages Designed for Operation a Minimum of 3 Days, the gage and staff values were recorded every 12 minutes for a high-low or low-high tidal cycle.

Four tide gages were installed in the project area. Locations and periods of operation are:

MIDWAY ROCK 945-1235	56°31'49.1"N 132°57'48.3"W	29 September - 30 October 1977
BEECHER PASS ENTRANCE 945-1287	56°35'41.7"N 132°59'09.4"W	30 September - 30 October 1977
ANCHOR POINT 945-1317	56°38'21.0"N 132°55'56.2"W	29 September - 30 October 1977
BIG SALTERY 945-1291	56°36'18.1"N 132°59'55.9"W	30 September - 30 October 1977

ZONING RECOMMENDATIONS

The following is a recommendation for zoning of tide gage data for the final reduction of hydrography.

Midway Rock	56°30.6'N to 56°34.0'N
Beecher Pass Entrance	56°34.0'N to 56°37.5'N and west to 132°59.1'W
Big Saltery	132°59.1'W to 133°01.0'W

Anchor Point

Backup Data

Comparisons between data from the three bubbler gages indicate very similar times of high and low water, and nearly identical relative heights of tide. Thus, based on a cursory inspection, there appears to be little need for zoning.

MIDWAY ROCK (945-1235)

After a thorough reconnaissance of Wrangell Narrows from latitude 56°30.6'N north to latitude 56°31.8'N, Midway Rock proved to be the most suitable gage site in terms of location, physical characteristics and accessibility at all stages of tide. Midway Rock has a steeply sloping face to the east which was a good location for a tide staff. On the rock itself, there is a steel structure for a US Coast Guard daymark and light. The foundation of this structure provided a level surface on which to set the gage such that it would be protected from the strong winds and driving rain.

A Bristol Bubbler gage (S/N 63A2925, scale 0-30 feet) was installed and began operating 29 September. Good records were obtained after some initial problems were remedied.

The orifice was attached to a thirty pound cement anchor and positioned on a ledge in a suitable depth of water for the range of tide. At 0110Z 30 September, some kelp and extreme currents caused the anchor to slide off the ledge to a new position 3.5 feet deeper. The orifice remained in this position until gage removal on 30 October. The marigram reads 14.1 feet greater than the staff.

Beyond this initial datum shift, relatively few difficulties were encountered at this installation. Prior to the observation of the tidal cycle on 30 September, the time was reset incorrectly. The marigram has been scaled to show the correct time. Between 1330Z and 1545Z, 3 October, the trace was interpolated to cover a break in data caused by an insufficient gas flow rate.

Leveling at Midway Rock

The tide staff was installed 30 September. Five bench marks were set prior to the initial leveling on 2 October. The staff was releveled on 30 October for removal. The

level records indicate a 0.005 meter shift in the staff.

ANCHOR POINT (945-1317)

A Fisher-Porter ADR tide gage (S/N 6903A5568M14) was installed on Wrangell Narrows Channel Light #21 to meet the requirement for a gage at Anchor Point. The gage and staff were installed 29 September 1977. Twelve hours of data were lost from 1000Z until 2200Z, 28 October, when the paper became jammed after becoming wet. It rained every day this month! The gage registered 10.7 feet greater than the staff.

Leveling at Anchor Point

Three existing bench marks were recovered at this gage site. Two additional bench marks were established. The bench marks were leveled to on 1 October and 30 October. Only negligible movement (0.005 meter) is apparent for this staff.

BEECHER PASS ENTRANCE (945-1287)

A Bristol Bubbler gage (S/N 67A16208, scale 0-30 feet) was installed and began operating 30 September. The tide staff was installed and leveled on 1 October. On 1 October the orifice was moved to deeper water to insure that it would be covered at the extreme low tides. Unfortunately, it was moved 10 feet deeper instead of the desired 4 feet. In doing this, a few of the extreme high tides between 13 and 16 October went off the upper end of the scale on the marigram. The curve, which was off the scale for only a short time, was generally recorded on the margin. These extreme high tides have been interpolated. Other than this, the only problem encountered was that the first roll of paper jammed. After 4 October when the paper was replaced, no further problems were encountered. Good records were obtained until the gage was removed 30 October. The marigram read 16.8 feet greater than the staff.

Leveling at Beecher Pass Entrance

Three existing bench marks were recovered at this site. Leveling was done on 1 October and 30 October. No staff movement was apparent.

BIG SALTERY (945-1291)

After a thorough reconnaissance of the area from 56°35.5'N to 56°36.8'N and from 132°59.8'W to 133°01.0'W, latitude 56°36'18.1"N, longitude 132°59'55.9"W was thought to be the most suitable location for a gage site. The steep rock face provides for a convenient staff and gage installation. The gage was placed on a level shelf under the trees several feet above the storm high water line.

A Bristol Bubbler gage (S/N 73A230, scale 0-30 feet) was installed on 30 September. The marigram read 8.9 feet greater than the staff until 14 October. On this date the extreme high tide and the 50-60 knot winds blowing across Beecher Pass from the south combined to destroy the gage. In talking with the owner of the cabin on Keene Island, we were told that this storm was the worst he had experienced since before World War II. He stated that waves were breaking on the side of his cabin.

On 19 October, Bristol Bubbler gage (S/N 73A229) was installed at this site and remained in operation until 30 October. The marigram for this gage read 13.0 feet greater than the staff.

Leveling at Big Saltery

Three bench marks were established at this site. Leveling was done on 1 and 30 October. No staff movement was apparent.

Submitted by,

C. Brian Greenawalt

C. Brian Greenawalt
LTJG, NOAA

Approved and Forwarded by,

Christian Andreasen

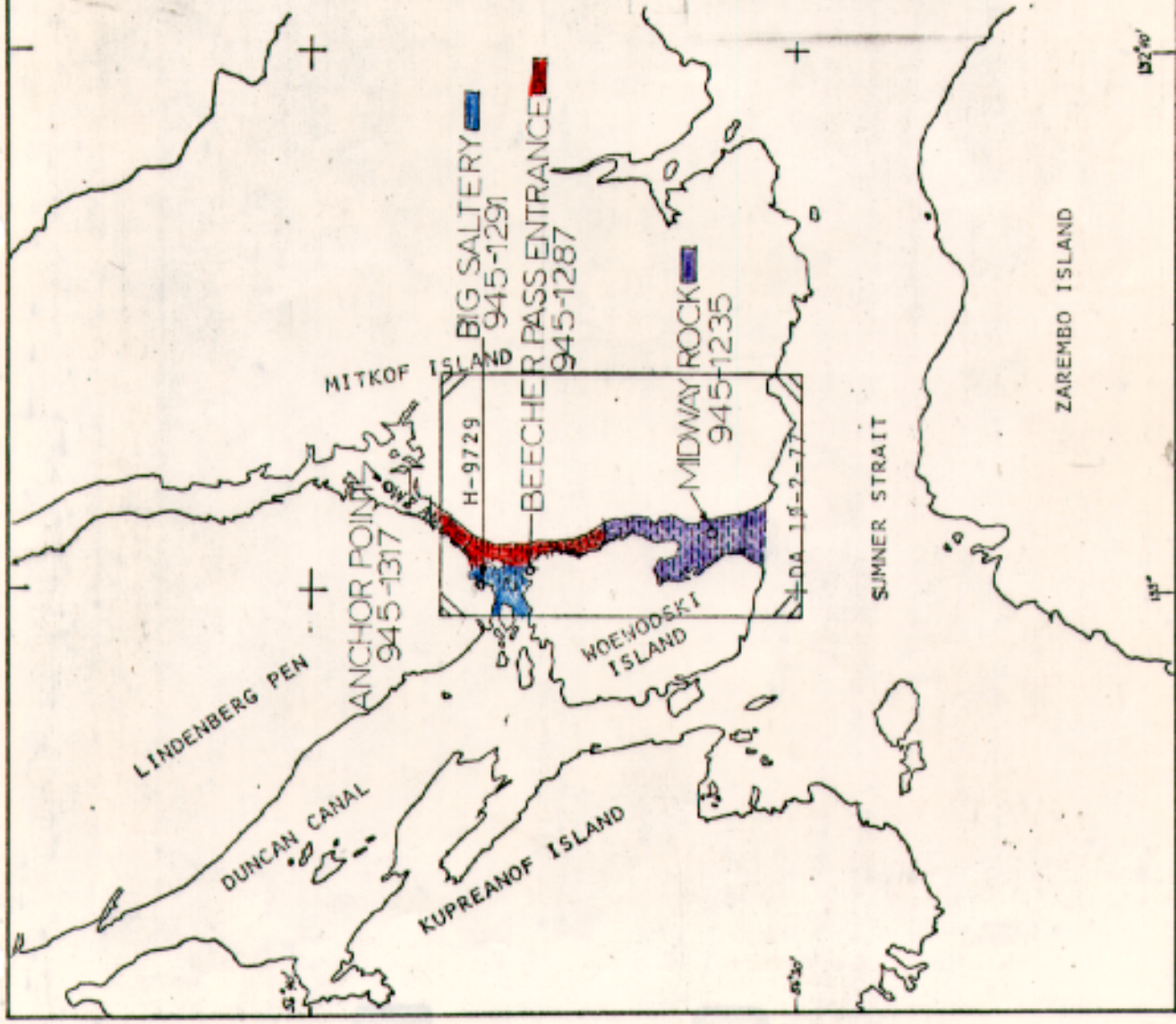
Christian Andreasen
CDR, NOAA
Commanding Officer

TIDE GAGE SKETCH

OPR-448-DA-77
WRANGELL NARROWS
ALASKA

NOAA SHIP DAVIDSON
CDR. C. ANDREASEN, COMDG.

SCALE: CHART 1736β
OCTOBER 1977



CORRECTION TO ECHO SOUNDERS REPORT
OPR-448-DA-77
Wrangell Narrows, Alaska

To determine sound velocity correctors for hydrography done in the survey of Wrangell Narrows for OPR-448-DA-77, a Martek cast was made in accordance with the Hydrographic Manual, section 4.9.5. The cast was made on 4 October 1977 at latitude 56°31'48"N, longitude 132°57'53"W. These correctors apply only to field sheet DA-10-2-77 for JD's 273-303. On 31 October 1977 (JD 304) an attempt was made to take a final Martek cast for the project. However, the Martek battery power supply was found to be dead with no replacements available aboard the DAVIDSON. Therefore, all velocity correctors are based on the initial cast. The temperature/salinity profile during this period probably remained fairly constant as the weather was constant and the high currents through the Narrows would keep the water well-mixed.

Martek unit S/N 357 was used for the cast. This unit was acquired late in the season from the NOAA Ship FAIRWEATHER after the DAVIDSON's was found to be unusable. Temperature and conductivity readings were taken at 5 meter intervals to the bottom and at the same depths while raising the probe. Mean temperature and conductivity readings for each depth were used for the calculations. A bucket sample was taken at the same time as the cast to provide surface temperature and density values. The values were determined using a thermometer and hydrometer. The surface salinity was computed from the density, and this plus the surface temperature were used as correctors along with the calibration corrections taken from the "Report of Calibration" completed by the Northwest Regional Calibration Center in December 1976. A copy of the NRCC report is attached.

The temperature and conductivity values, corrected with the NRCC report, plus bucket surface temperature and salinity were input to computer program RK-530, Layer Corrections to Velocity (version 5-10-76). The computed velocity correctors were then plotted as a function of depth. Correctors at 0.1 fathom intervals with their applicable depth ranges were determined from the plot and tabulated in the Velocity Correction Table.

Bar check data was collected twice a day when weather permitted. The results of the bar checks have been

averaged and tabulated. A TRA value of 0.29 fathom for vessel #3131 (DA-1) and 0.31 fathom for vessel #3132 (DA-2) was determined from the six-foot reading as this value is less affected by current, wind or sound velocity changes than the deeper readings.

Submitted by,

Christian Andreasen, Cdr
Linda F. Haas *for*
ENS, NOAA

Approved and Forwarded by,

Christian Andreasen
Christian Andreasen
CDR, NOAA
Commanding Officer

VELOCITY CORRECTION TABLE

Wrangell Narrows

Vessel #3131 (DA-1), 3132 (DA-2) JD 273-303

<u>Corrector</u>	<u>To depth from surface</u>	<u>Observed depth</u>
0.0 fathom	5.4 fathom	5.1 fathom
0.1	13.5	13.2
0.2	21.6	21.3
0.3	29.5	29.2
0.4	37.4	37.1

BAR CHECK AVERAGES

Wrangell Narrows

Vessel 3131 (DA-1) JD 273-303

<u>True</u>	<u>Sonic</u>	<u>True-sonic</u>
1	0.71	0.29 <i>Fm</i>
2	1.76	0.24
3	2.79	0.21
4	3.78	0.22
5	4.76	0.24
6	5.76	0.24
7	6.72	0.28

Vessel 3132 (DA-2) JD 273-303

<u>True</u>	<u>Sonic</u>	<u>True-sonic</u>
1	0.69	0.31 <i>Fm</i>
2	1.69	0.31
3	2.69	0.31
4	3.67	0.33
5	4.65	0.35
6	5.64	0.36
7	6.62	0.38
8	7.62	0.38

VELOCITY CORRECTIONS COMPUTATIONS

1) CONDUCTIVITY 2) SALINITY
 SPECIFY OPTION (1,2) 1

VESSEL = DAVIDSON

DATE = 04 OCT 1977, WRANGELL NARROWS, AK.

TIME = 2000Z

LATITUDE = 56/31/48

LONGITUDE = 132/57/53

TYPE OF OBSERVATION = MARTEK CAST

SURFACE TEMPERATURE = 8.61

SURFACE SALINITY = 29.00

CAST-DEPTH (SURFACE) (M)	TEMP (DEG C)	CONDUCTIVITY (MILLIMHOS/CM)
0000.0	09.07	30.05
0004.4	09.07	30.05
0008.9	09.01	30.35
0013.4	09.01	30.60
0018.1	08.96	32.15
0022.8	08.91	32.60
0027.6	08.81	32.85
0032.5	08.76	33.10
0037.4	08.65	33.10
0042.3	08.65	33.30
0046.2	08.70	33.70
\$		

DATA BANK INPUT COMPLETED

PUNCH ON? (Y) Y

VESSEL = DAVIDSON

DATE = 04 OCT 1977

TIME = 2000Z

LATITUDE = 056/31/48.00

LONGITUDE = 132/57/53.00

TYPE OF OBSERVATION = MARTEK CAST

CAST-DEPTH (SURFACE) (M)	TEMP (DEG C)	SALINITY (0/00)	SND VEL (M/SEC)
0000.0	08.61	29.00	1477.50
0004.4	08.61	29.00	1477.57
0008.9	08.55	29.35	1477.86
0013.4	08.55	29.60	1478.26
0018.1	08.50	31.23	1480.24
0022.8	08.45	31.74	1480.78
0027.6	08.35	32.08	1480.92
0032.5	08.30	32.38	1481.20
0037.4	08.19	32.48	1480.98
0042.3	08.19	32.69	1481.33
0046.2	08.24	33.06	1482.07

1) CURVE FIT 2) NO CURVE FIT
SPECIFY OPTION (1,2) 1

D

DEPTH 1 = 0.0

DEPTH 2 = 45.0

LAYER THICKNESS = 5.0

ANOTHER INTERVAL? (Y,N) N

PUNCH ON? (Y) Y

MID-DEPTH
(M)

SND VEL
(M/SEC)

LAYER THICKNESS
(M)

0002.50
0007.50
0012.50
0017.50
0022.50
0027.50
0032.50
0037.50
0042.50

1477.46
1477.80
1478.06
1480.02
1480.77
1480.92
1481.20
1480.99
1481.35

0005.00
0005.00
0005.00
0005.00
0005.00
0005.00
0005.00
0005.00
0005.00

VELOCITY CORRECTION TABLE OPTIONS:

- 0) NO TABLE
- 1) IN FEET
- 2) IN FATHOMS
- 3) IN METERS

2
DRAFT = 0.0

ACTUAL DEPTH (SURFACE)
MINUS VELOCITY
CORRECTION
(FM)

VELOCITY
CORRECTION
(FM)

0002.71	0000.03
0005.41	0000.05
0008.12	0000.08
0010.82	0000.11
0013.52	0000.15
0016.22	0000.18
0018.92	0000.21
0021.62	0000.25
0024.32	0000.28

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

0
1
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190

(For deep water add a 0 to the figures)

DEPTHS IN FATHOMS

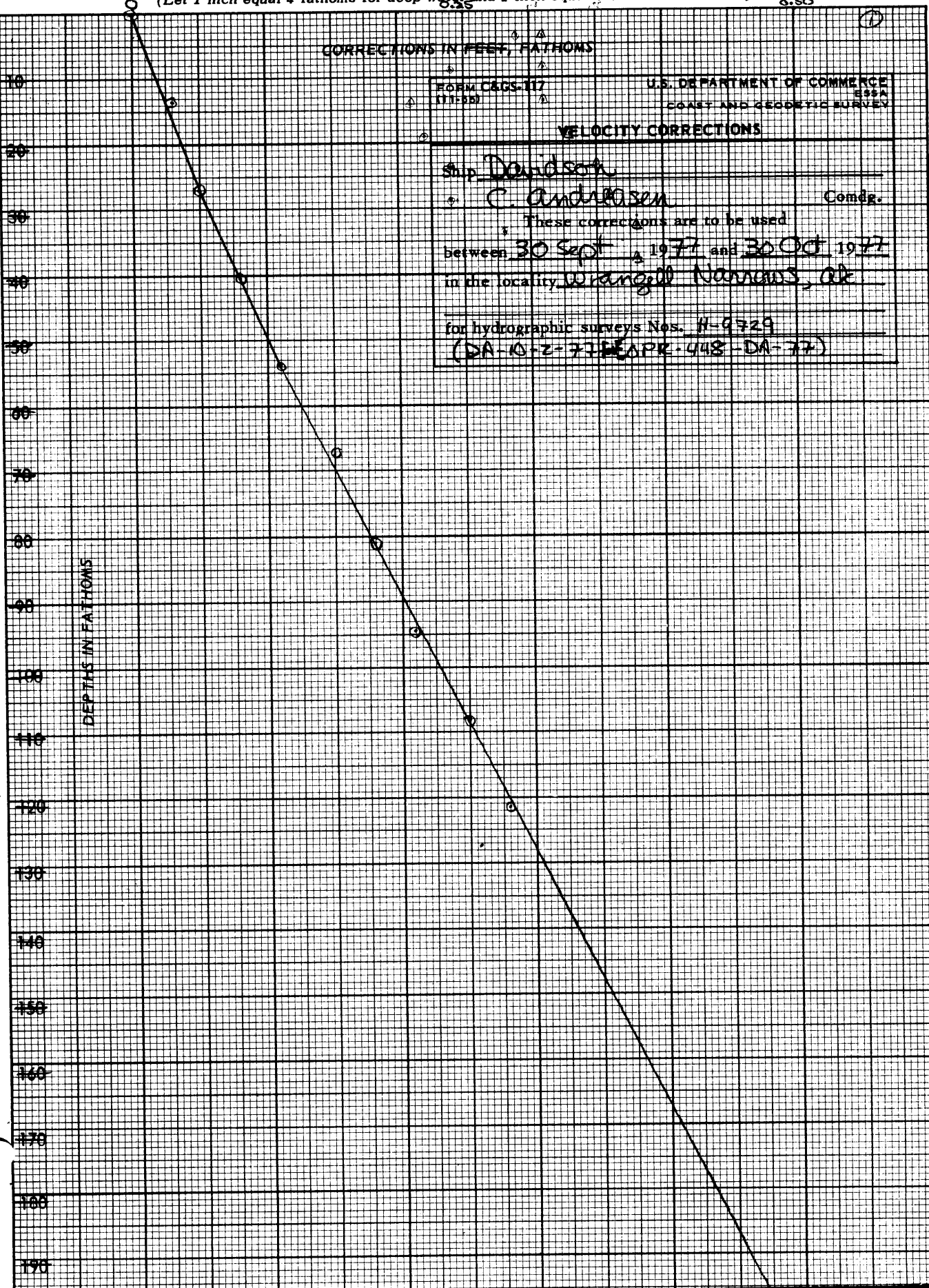
CORRECTIONS IN FEET, FATHOMS

FORM C&GS-117
(11-65)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VELOCITY CORRECTIONS

Ship Dandson
Comdr. C. Anderson
These corrections are to be used
between 30 Sept 1977 and 30 Oct 1977
in the locality Wrangell Narrows, AK
for hydrographic surveys Nos. H-9729
(DA-10-2-77) (APR-448-DA-77)



WORKSHEET

Wraggell Narrows

	depth ^(m)	connector	corrected ^(m)	Temperature ^(°C)	connector	corrected ^(°C)	conductivity ^(mmho/cm)	connector	corrected ^(mmho/cm)
	0.0	0.0	0.0	9.05	+0.02	9.07	27.95	+2.10	30.05
	5.0	-0.8	4.4	9.05	+0.02	9.07	27.95	+2.10	30.05
	10.0	1.1 -1.1	8.9	9.00	+0.01	9.01	28.25	+2.10	30.35
	15.0	-1.6	13.4	9.00	+0.01	9.01	28.40	+2.20	30.60
	20.0	-1.9	18.1	8.95	+0.01	8.96	29.75	+2.40	32.15
	25.0	-2.2	22.8	8.90	+0.01	8.91	30.10	+2.50	32.60
	30.0	-2.4	27.6	8.80	+0.01	8.81	30.35	+2.50	32.85
	35.0	-2.5	32.5	8.75	+0.01	8.76	30.50	+2.60	33.10
	40.0	-2.6	37.4	8.65	0.0	8.65	30.50	+2.60	33.10
	45.0	-2.7	42.3	8.65	0.0	8.65	30.70	+2.60	33.30
	49.0	-2.8	46.2	8.70	0.0	8.70	31.00	+2.70	33.70

OPR-448-DA-77

DA 10-2-77(H-9729)

VELOCITY TAPE PRINTOUT

000054 0 0000 0001 001 000000 000000
000135 0 0001
000216 0 0002
000295 0 0003
000374 0 0004
999999 0 0004

OPR-448-DA-77
 DA 10-2-77(H-9729)
 SIGNAL LIST

001	3	56 31 21637	132 58 34342	250 0001 000000	
		SIT 1910			
002	4	56 31 13732	132 57 17319	250 0002 000000	
		GREEN 1910			
003	6	56 31 49106	132 57 48261	139 0000 000000	
		MIDWAY ROCK LIGHT 1975			
004	0	56 32 04718	132 58 55268	250 0001 000000	
		COAL 1910			
005	7	56 32 17512	132 57 34851	250 0001 000000	
		GOLD 1910			
006	3	56 32 59662	132 58 04861	250 0001 000000	
		BOLT 1910			
007	4	56 33 29340	132 57 21093	139 0001 000000	
		USE 67 1910			
008	5	56 33 49500	132 58 04030	250 0001 000000	
		USE 64 1910-29			
009	4	56 33 59936	132 57 30450	250 0001 000000	
		USE 65 1910-29			
010	4	56 32 53361	132 57 33996	250 0000 000000	
		DECEMBER POINT LIGHT 1977			
011	3	56 33 22649	132 57 44978	139 0000 000000	
		POINT LOCKWOOD LIGHT 1977			
012	3	56 33 58680	132 58 02370	139 0000 000000	
		POINT LOCKWOOD ROCK LIGHT 1977			
013	3	56 34 10807	132 58 31996	250 0002 000000	
		USE 62 1910-29			
014	4	56 34 46284	132 58 09786	250 0002 000000	
		USE 61 1910			
015	4	56 36 01125	132 58 18651	250 0002 000000	
		USE 55 1910-29			
016	0	56 36 46627	132 58 54494	250 0002 000000	
		USE 50 1910-29			
017	0	56 37 00087	132 58 22648	250 0002 000000	
		USE 50 1910-29			
018	6	56 35 41768	133 00 03416	250 0000 000000	
		LIP 1929			
019	3	56 36 05037	133 00 23914	250 0000 000000	
		LAD 1929			
020	6	56 35 46273	132 59 14550	250 0001 000000	
		BON 1929			
021	3	56 34 07137	132 58 03788	139 0000 000000	
		WRANGELL NARROWS LIGHT 2 1977			
022	4	56 34 30456	132 58 21020	139 0000 000000	
		BATTERY ISLAND LIGHT 1977			
023	3	56 34 52962	132 58 32516	250 0000 000000	
		BOULDER POINT LIGHT 1977			

channel LT 1 (on 76-40)

LT # H-DIFF TRIG G.P
LT # 5

024	4	56	35	03079	132	58	10954	250	0000	000000	
				USE 59			1910-29				
025	3	56	35	01903	132	58	30441	250	0001	000000	
				USE 58			1910-29				
026	3	56	35	20886	132	58	32572	250	0002	000000	
				USE 56			1910-29				
027	4	56	35	40216	132	58	21576	250	0000	000000	
				WRANGELL NARROWS LIGHT 8			1977				
028	7	56	36	27931	132	59	12843	139	0000	000000	
				KEENE			1977				
029	0	56	36	43175	132	59	21786	250	0000	000000	
				HUMBUG			1977				
030	1	56	36	03332	132	59	00469	250	0001	000000	
				NOB			1929				
031	4	56	36	08752	132	58	26202	139	0000	000000	
				WRANGELL NARROWS LIGHT 10			1977				
032	1	56	36	27545	132	58	25296	139	0000	000000	- channel LT 11 (on 76-41) ref
				BURNT ISLAND LIGHT			1977				
033	3	56	36	41417	132	58	09352	139	0000	000000	- channel LT 14 (on 76-40) ref
				BURNT ISLAND REEF LIGHT			1977				
036	1	56	37	09810	132	58	04065	250	0002	000000	
				USE 48			1910-29				
037	1	56	37	29614	132	57	35343	139	0001	000000	
				USE 46			1910-29				
038	1	56	37	45327	132	57	16027	139	0001	000000	
				USE 44			1910-29				
039	1	56	37	27405	132	57	03925	139	0001	000000	
				USE 49			1910-29				
040	0	56	30	34020	132	56	54435	139	0000	000000	
				POINT ALEXANDER LIGHT			1975				
041	2	56	35	57739	132	59	37833	139	0001	000000	
				PULL			1929				
042	1	56	36	26488	132	58	31118	250	0000	000000	
				BURNT ISLAND FORWARD RANGE LIGHT			1977				
043	1	56	36	37960	132	58	32346	139	0000	000000	
				BURNT ISLAND AFT RANGE LIGHT			1977				

RESPONSIBLE PERSONNEL

TYPE OF ACTION

N/

ORIGINATOR

OBJECTS INSPECTED FROM SEAWARD

Ellen McDougal, ENS, NOAA

- PHOTO FIELD PARTY
- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- OTHER (Specify)

POSITIONS DETERMINED AND/OR VERIFIED

Christian Andreasen, CDR, NOAA

FIELD ACTIVITY REPRESENTATIVE

FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES

- REVIEWER
- QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

OFFICE ACTIVITY 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
- L - Located
- V - Verified
- 1 - Triangulation
- 2 - Traverse
- 3 - Intersection
- 4 - Resection
- 5 - Field identified
- 6 - Theodolite
- 7 - Planetable
- 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.

RESPONSIBLE PERSONNEL

TYPE OF ACTION

NA

ORIGINATOR

OBJECTS INSPECTED FROM SEAWARD

Linda F. Haas, ENS, NOAA

- PHOTO FIELD PARTY
- HYDROGRAPHIC PARTY
- GEODETIC PARTY
- OTHER (Specify)

POSITIONS DETERMINED AND/OR VERIFIED

Christian Andreasen, CDR, NOAA

FIELD ACTIVITY REPRESENTATIVE

FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES

- REVIEWER
- QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

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

12, 1978

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): 945-1235 Midway Rock
945-1287 Beecher Pass
945-1291 Big Saltery

Period: September 30-October 30, 1977

HYDROGRAPHIC SHEET: H-9729

OPR: 448

Locality: Wrangell Narrows, Alaska

Plane of reference (mean lower low water): 7.8 ft. Midway Rock
12.9 ft. Beecher Pass
5.0 ft. Big Saltery (to 10/14
9.4 ft. Big Saltery (after
Height of Mean High Water above Plane of Reference is 10/19)
14.0 ft. - Midway Rock and Beecher Pass; 14.2 ft. - Big Saltery

Remarks: Recommended zoning:

- (1) ✓ South of 56°34.5' zone direct on Midway Rock.
- (2) ✓ 56°34.5' to 56°36.0' zone direct on Beecher Pass. ✓
- (3) ✓ West of a line extending from Inlet Point to southern tip of Keene Island and extending from northern tip of Keene Island to Pt. Humbug zone direct on Big Saltery.
- (4) 56°36.0' to 56°37.0' zone on Beecher Pass applying range ratio xl.02.
- (5) ✓ North of 56°37.0' zone on Beecher Pass applying +10 minute time correction and range ratio xl.04.

Don M. Spillman
Chief, Tides Branch

GEOGRAPHIC NAMES

H-9729

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">A ON CHART NO.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">B ON PREVIOUS SURVEY NO.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C ON U.S. QUADRANGLE MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">D FROM LOCAL INFORMATION</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">E ON LOCAL MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">F P.O. GUIDE OR MAP</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">G RAND McNALLY ATLAS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">H U.S. LIGHT LIST</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">K</div> </div>											
	BATTERY ISLETS	X										
BEECHER PASS	X											2
BURNT ISLAND	X											3
BURNT ISLAND REEF	X											4
BOULDER POINT	X											5
COPLY REEF	X											6
DECEMBER POINT	X											7
DECEPTION POINT	X											8
HICKS POINT	X											9
INLET POINT	X											10
KEENE CHANNEL	X											11
KEENE ISLAND	X											12
MIDWAY ROCK	X											13
MITKOF ISLAND	X											14
THOROFARE ^{CEH} NO THOROFARE POINT	X											15
POINT HUMBUG	X											16
POINT LOCKWOOD	X											17
POINT LOCKWOOD ROCK	X											18
SPIKE ROCK	X											19
WOEWODSKI ISLAND	X											20
WRANGELL NARROWS	X											21
	X											22
LINDENBERG PENINSULA	X											23
												24
												25

Approved:

Chas E. Harrington
Chief Geographer - C3x5

31 Aug 1979

HYDROGRAPHIC SURVEY STATISTICS

H-9729

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		7 & 8	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		8	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						1-misc. data incl. Tides
CAHIERS	1 - with printouts					
VOLUMES	1					
BOXES			1 - Smooth			

T-SHEET PRINTS (List) TP-00551 (revised), TP-00637

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			2001
POSITIONS CHECKED		2001	
POSITIONS REVISED		114	
SOUNDINGS REVISED		217	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5		
VERIFICATION OF CONTROL		6	
VERIFICATION OF POSITIONS		188	
VERIFICATION OF SOUNDINGS		157	
COMPILATION OF SMOOTH SHEET		80	
APPLICATION OF TOPOGRAPHY		16	
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		8	
COMPARISON WITH PRIOR SURVEYS & CHARTS		11	
VERIFIER'S REPORT		25	
OTHER		8	
TOTALS	5	499	504

Pre-Verification by James S. Green	Beginning Date 24 Feb 1978	Ending Date 24 Feb 1978
Verification by John E. Lotshaw	Beginning Date 26 June 1978	Ending Date 16 Feb 1979
Verification Check by A. E. Eichelberger, James S. Green	Time (Hours) 54	Date 7 March 1979
Marine Center Inspection by HIT	Time (Hours) 24	Date 13 June 1979
Quality Control Inspection by X. W. Wellman	Time (Hours) 105	Date 8-30-79
Requirements Evaluation by D. J. Hill	Time (Hours) 46	Date 4/29/80

G R Meyer 10/10/79 24 hrs Cartex 38 hrs 4/13/79

REGISTRY NO. _____

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. H-9729

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-9729

FIELD NO: DA-10-2-77

Alaska, Wrangell Narrows, Midway Rock to Point Humbug

SURVEYED: September 30 - October 30, 1977

SCALE: 1:10,000

PROJECT NO: OPR 448

SOUNDINGS: Ross Fineline Fathometer

CONTROL NO: Range/Range
Mini Ranger

Chief of Party.....Cdr. Christian Andreasen
Surveyed by.....Lcdr D. B. MacFarland,
Ltjg C. B. Greenawalt, Ens L.F.
Haas, Ens E. McDougal
Automated plot by.....Xynetics Plotter (PMC)
Verified by.....John E. Lotshaw
February 7, 1979

I. INTRODUCTION

The Motorola Miniranger III system operating in the range-range mode was used to control all but a small portion of the survey. This small portion was in a cove west of Deception Point where range azimuth hydrography was run.

Projection parameters used by PMC to accomplish the smooth plot of H-9729 are incorporated as a file listing in the smooth printout. All correctors to positions and soundings on H-9729 can be located in the smooth printout.

Tide reducers used to reduce soundings on the smooth sheet were derived from the Midway Rock, Beecher Pass, and Big Saltery tide gages in accordance with instructions contained in the Form 77-12 issued by the Tides Division, Rockville, MD, dated June 12, 1978.

Processing and verification of H-9729 have proven to be extremely difficult because of very dense patterns of soundings in several development areas. The scale of the survey (1:10,000) precludes a legible display of all data generated. Techniques used to resolve these problems include deletion from the smooth record of selected data which has been shown to be redundant and which ~~does~~^{is} not related to positions and soundings shown on the smooth plot. Multiple overlays have also been used to overcome problems of excess congestion. To show all data gathered without congestion a scale of approximately 1:3,000 would have been required. A paper position overlay of the northernmost portion of the sheet at approximately this scale is included in the shipment to aid in identifying vessel tracks in that area.

II. CONTROL AND SHORELINE

Horizontal and position control are adequately described in paragraphs F&G of the Descriptive Report. All signals are located on triangulation station sites.

Class I unreviewed manuscripts TP-00551 and TP-00637 were utilized on this survey. Their respective dates of photography and field edit are:

TP-00551	1972 - 1975, 77
TP-00637	1974 - 1977

A discrepancy exists between a reef on TP-00637 just offshore of signal #24 and hydrography in the area. This conflict has been resolved by displaying a pattern of soundings from the hydrographic record and deleting the reef features as shown on TP-00637. (See Q.C. Report - item 4)

In general, the hydrographic record is not in conflict with detail shown on the shoreline manuscripts. However, certain rock and reef heights as displayed on TP-00551 appeared to be in error. Inspection of field edit data indicates that times for field edit fixes 18 through 34 taken on ^{plus} Julian day 286 (Oct 13, 1977) were recorded ^{plus} three hours in error. Heights of these features have been revised, using smooth tides applied to the corrected times. Additionally, a reviewed copy of TP-00551 has been produced*, deleting a number of dubious features. Features shown on the smooth sheet include the revised heights for field edit fixes 18 through 34. Other features which were deleted from the reviewed T-sheet are not shown on the smooth sheet. Two copies of TP-00551 are forwarded; the original T-sheet marked up to show revised heights for fixes 18-34, and the reviewed copy showing deleted features. * Shoreline Map TP-00551 has not been reviewed as of 5-5-80 per OA-C3421.

TP-00551 shows Channel Lights 1, 2, 4, and 5 and Midway Rock Light as photo picked points (circles). These features are third order triangulation stations (see the Descriptive Report, Horizontal Control Note).

With the exceptions listed above, all significant detail shown on the manuscripts has been transferred to the smooth sheet.

III. HYDROGRAPHY

Crosslines agree with the main scheme soundings within one fathom in all cases. Such differences as do occur can be accounted for by steep slopes and rough bottoms. No significant disagreements with contemporary junction sheets were noted, and all hydrography is in close agreement with the photogrammetrically derived low water line.

Standard depth curves could be adequately drawn.

The pattern of hydrography on H-9729 is sufficiently dense in all areas to adequately delineate the bottom. In development areas the number of

soundings taken far exceeds the number which can be shown on the smooth sheet. Since the bulk of these soundings could not be shown on the smooth sheet care was taken to ensure that the shoal sounding over each feature was shown and that a pattern of soundings representative of the adjacent bottom was also displayed.

The three levels of excess soundings have been printed on separate overlays in order to reduce the amount of overprinting which would otherwise occur in development areas.

IV. CONDITION OF SURVEY

The smooth sheet and other hydrographic records conform to the requirements of the Hydrographic Manual.

V. JUNCTIONS

Junction was made with contemporary surveys H-9571, 1975, to the south, and with H-9332, 1972, to the west. Penciled curves on those sheets should be inked to agree with those shown on H-9729. A junction with H-9795, 1978, to the north has not been made because that survey is in an earlier stage of processing. Junction curves with H-9795 have been left in pencil pending verification of that sheet. (See Q.C. Report-items 5 and 6)

H-9795 was not available during Q.C. inspection

VI. COMPARISON WITH PRIOR SURVEYS

a.	H-3316	(1911)	1:10,000
	H-4994	(1929)	1:5,000
	H-4995	(1929)	1:10,000
	H-4996	(1929)	1:5,000
	H-6824	(1943)	1:2,000

Comparisons with H-4994 and H-4996 were difficult owing to the scale of these prior surveys (1:5,000) and the fact that the prior surveys were plotted in feet whereas H-9729 is plotted in fathoms^{and tenths}. Comparison of a number of soundings has revealed no major discrepancies between these surveys and H-9729. (See Q.C. Report-items 8 and 9)

Comparison with H-4995, 1929, was easier because this prior survey was at the same scale as H-9729 and was plotted in fathoms. As noted in section K of the descriptive report, a 36 fm sounding from H-4995 falls atop a 26 fm sounding on H-9729 at Latitude 56°32.57' Longitude 132°57.94'. As this sounding occurs in an area where agreement is generally very close, it is possible that this sounding results from an error in compiling H-4995. See Section K of the descriptive report for further discussion of this topic.

A shoal located on H-4995 at Latitude 56°31.⁸⁴ Longitude 132°58.15' shows a minimum depth of 10 fm. Adjacent soundings on H-9729 do not disagree with the existence of a shoal in this area, but do not develop the area sufficiently to confirm it. A 10 fm sounding has been carried forward to H-9729 from H-4995 to indicate probable shoaling in this area. Additional field work to confirm this feature does not appear to be worthwhile because the Wrangell Narrows channel is much shoaler in many other

areas. A 10 fm shoal in this area would not be a hazard to navigation for vessels passing through Wrangell Narrows.

H-3316, 1911, is the source of a number of charted soundings in the southern end of Wrangell Narrows. It is in fair general agreement with H-9729, with most soundings agreeing within two fathoms.

With the exceptions listed above under specific prior surveys and considering that the present survey is at a scale of 1:10,000 whereas two prior surveys are at scales of 1:5,000, H-9729 is adequate to supersede all prior surveys except H-6823, 1943 (WD). (See Q.C. Report-item 17)

b. H-6823WD (1943) 1:2,000

H-6823, 1943 (WD) covers an area of the channel northeast of Keene Island which has been swept to depths up to 19'. H-9729 contains no soundings which conflict with this survey.

The dashed circle PSR item south of Deception Point, a shoal area at Latitude $56^{\circ}32.0'$, Longitude $132^{\circ}58.6'$, was not developed by the hydrographer. The minimum charted depth is 4.5 fm while H-9729 shows a minimum depth of 4.8 fm in the same area. The least depths from H-3316, 1911 should continue to be charted since they have not been disproven by hydrography.

depths were carried forward

The dashed circle PSR item northwest of December Point, a shoal at Latitude $56^{\circ}32.9'$, Longitude $132^{\circ}57.9'$, was not developed by the hydrographer. The minimum charted depth is 9 fm while H-9729 shows a minimum depth of 10.9 fm in the same area. The 9 fm depth should ~~continue to be charted~~ since it has ~~not~~ been disproven by hydrography. Source: H-3316, 1911.

deleted from the chart

credited

The ^{dashed} circled PSR item immediately south of Battery Islets Latitude $56^{\circ}34.1'$, Longitude $132^{\circ}58.04'$ includes Channel Light 2 and the shoal area on which it is situated. This area was not specifically developed by the hydrographer. The 2.75 fm sounding immediately southeast of the light has not been disproven by hydrography. Since it is shoaler than adjacent soundings on H-9729, it should be retained as charted. The source of this sounding is H-4994, 1929. The 2.25 fm sounding charted immediately north of Channel Light 2 also originates with H-4994, but is deeper than a 1.8 fm sounding on H-9729, and should be superseded by that sounding.

The dashed circle PSR item northwest of Battery Islets, three soundings centered at Latitude $56^{\circ}34.7'$, Longitude $132^{\circ}58.2'$ is a shoal feature within the channel with a minimum depth of 2.25 fm. Although no development was run on this feature, a fairly dense sounding pattern on H-9729 shows depths in the area ranging from 4.3 to 5.3 fm with no indication of shoaling. The prior survey, H-4994, also fails to support the existence of this feature and is in good agreement with H-9729. It is recommended that the source of these soundings be investigated, with a view toward eliminating them as charted features if they can be shown to be invalid. (See Q.C. Report-item 11)

PSR item #1, rocks reported in the vicinity of Latitude 56°35.9', Longitude 132°58.6' is the feature known as Spike Rock. The feature was investigated by both a development and a series of leadline soundings. It has been shown to be a fairly large shoal extending along the axis of the channel from Latitude 56°36.9' to Latitude 56°36.95' forming an area where depths of less than 1 fm are common. Least depth over the feature was established by leadline as being 0.5 fm. It is recommended that the 0.5 fm depth be charted as it is shown on the smooth sheet. Recommend the rock awash symbol be removed from the chart and replaced with a 0.5 fathom depth.

The dashed circle PSR item generally surrounding item #1 to the north, west, and south is a large shoal area. Hydrography on H-9729 agrees quite closely with the charted values in this area, with no significant discrepancies. Due to attempts by the Corps of Engineers to remove Spike Rock, it is recommended that charted soundings be superseded by H-9729.

The dashed circle 1.75 fm sounding at Latitude 56°35.8⁵, Longitude 132°59.25' was not specifically developed by the hydrographer. However, it occurs in an area of relatively dense hydrography on H-9729. The shoalest depth shown on H-9729 in that vicinity is 2.1 fm. It is recommended that the 1.75 fm charted sounding be retained as it has not been disproven by hydrography. The source of this sounding is H-4996, 1929. *sdg carried fwd*

The dashed circle 2.75 fm sounding at Latitude 56°35'54"N, Longitude 132°59'27.5"W also originates with H-4996, 1929. This sounding is slightly shoaler than adjacent hydrography on H-9729 and has not been disproven. It should be retained as charted. *sdg carried fwd*

VII. COMPARISON WITH CHART=

Hydrographic

a. Comparison was made with Chart 17375, 17th Ed., April 30, 1977. Charted soundings are generally in good agreement with H-9729, with no large differences noted. Soundings identified on the attached chartlets originate from prior surveys H-4994, 1929, H-4996, 1929 and H-3316, 1911. These charted soundings have been previously discussed in Section VI, Comparison with Prior Surveys.

b. Charted depths which mark the shoal feature in a specific area have been discussed under Section IV, Comparison with Prior Surveys. Those features which are shoaler than adjacent depths on H-9729 and which have been recommended for retention as charted items are displayed on the smooth sheet.

Between Latitude 56°35'40"N and Latitude 56°37'00"N there are a number of lesser depths which intrude into the charted 300' side channel.* The ^{23 ft. and} 23 1/2 ft. controlling ~~cleared~~ depths in the channel should be revised to reflect probable shoaling along the edges of the channel. *(See Q.C. Report-item 15)

With the addition of least depths from prior surveys, the present survey is adequate to supersede the charted soundings. (See Q.C. Report-item 11)

c. Aids to Navigation

Charted positions of non-floating aids to navigation agree with hydrographic positions in most cases. Three positions which differ are:

1. Channel Light 14 (Burnt Island Reef Light) is charted at approximately 25 meters ~~southwest~~^{northeast} of its hydrographic location.
2. Channel Light 10 (Wrangell Narrows Light 10) is charted at approximately ~~25~~³⁰ meters ~~southwest~~^{northeast} of its hydrographic location.
3. Channel Light 8 (Wrangell Narrows Light 8) is charted at approximately 30 meters ~~south~~^{north} of its hydrographic location.

Charted positions of floating aids to navigation differ from hydrographic locations as follows:

1. The charted position of channel buoy #3 is approximately 20 meters north of its hydrographic position.
- *2. Channel buoy #ITC is charted 30 meters ~~north~~^{to the southeast} of its hydrographic position.
- *3. Channel buoy #13 is charted ~~30~~⁴⁰ meters ~~north~~^{to the east} of its hydrographic position.
- *4. Channel buoy #13A is charted ~~35~~⁴⁰ meters ~~north~~^{to the east} of its hydrographic position.

* The charted positions more appropriately mark the intended features

Buoy #4TC does not accurately mark the shoal on which it is placed. It is 65 meters northeast of the edge of the channel, and is inshore of a depth of 1.7 fathoms. *1.7 was misplotted - buoy is positioned satisfactorily buoy still inshore of 1.7 sdg.*

With the above exceptions charted positions of aids to navigation adequately mark the features intended. Hydrographic positions of aids to navigation, with the exceptions listed above, agree with charted positions.

VIII. CONFORMANCE WITH PROJECT INSTRUCTIONS

H-9729 complies with Project Instructions dated 3 August 1977, Change #1 dated 12 August 1977, Change #2 dated 15 September 1977, and Change #3 dated 12 October 1977.

IX. ADDITIONAL FIELD WORK

H-9729 is a good basic survey and adequately delineates its area of coverage. No additional field work is recommended. (See Q.C. Report-item 14)

Examined and approved,

[Signature]
James S. Green
Chief, Verification Branch

Respectfully submitted,

for *A. E. Eichelberger*
John E. Lotshaw
Cartographic Technician
7 February 1979

APPROVAL SHEET

FOR

SURVEY H- 9729

- 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: 4/17/79

Signed: A. E. Eichelberger

for Title: Chief, Verification Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

DATE : June 21, 1979

OA/CPM3/JWC

TO : OA/CPM - Eugene A. Taylor

FROM : OA/CPM3 - *John W. Carpenter*
John W. Carpenter

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9729

This survey is a basic hydrographic survey from Midway Rock to Point Humbug, Wrangell Narrows, Alaska. This survey was conducted by NOAA Ship DAVIDSON in 1977 in accordance with Project Instructions OPR-448-DA-77, dated 13 August 1977, Change 1 dated 12 August 1977, Change 2 dated 15 September 1977, and Change 3 dated 12 October 1977.

The following deficiencies were noted:

1. Dashed circle presurvey review items were not specifically addressed in the Descriptive Report, although they were adequately developed with the exception of the item south of Deception Point.
2. A line of soundings should have been run along range lines (paragraph 4.3.5.4, Hydrographic Manual, Fourth Edition).

Since Spike Rock is now submerged and not visible at MLLW, it is recommended that the buoy at Spike Rock be replaced by a lighted aid to navigation.

The inspection team finds H-9729 to be a good basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.

John W. Carpenter
John W. Carpenter

David B. MacFarland, Jr.
David B. MacFarland, Jr.

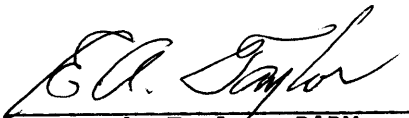
James W. Steensland
James W. Steensland

James L. Stringham
James L. Stringham



ADMINISTRATIVE APPROVAL
H-9729

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

2 JULY 1979

Date



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

OA/C352:KWW

August 30, 1979

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

THRU: Chief, Quality Control *gm* Branch

FROM: K. W. Wellman *K. W. Wellman*
Quality Evaluator

SUBJECT: Quality Control Report for H-9729 (1977), Alaska, Wrangell
Narrows, Midway Rock to Point Humbug

A quality control inspection of H-9729 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

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

1. The reef in the vicinity of latitude $56^{\circ}36.67'N$, longitude $132^{\circ}58.10'W$ (Burnt Island Reef) was arbitrarily placed during verification. Further, the referenced reef, as shown on TP-00637, is in marked conflict with present survey soundings. The delimitation of the reef was revised during quality control inspection to conform to the hydrography shown on the present survey and H-4994. ✓
2. Black dashes were not transferred from a contemporary topographic sheet during verification to delimit foul areas in unsurveyed portions of the present survey. (See section 7.3.6 of the Hydrographic Manual--Fourth Edition.) ✓
3. Elevations for numerous reefs were consistently omitted during verification. This information was available to the verifier and should have been shown on the smooth sheet. (See section 7.3.7.5 and figure B-4 of the Hydrographic Manual--Fourth Edition.) Further, in some cases, erroneous elevations and/or symbols were shown for various features. Necessary revisions/additions were effected during quality control inspection. ✓



4. Reference the comments pertaining to TP-00637 included in section II of the Verifier's Report:

The referenced reef has been verified during the field edit as an identifiable feature. Accordingly, the reef should have taken precedence and should have been plotted on the smooth sheet during verification. The reef was restored to the smooth sheet during quality control inspection. ✓

5. Reference section V of the Verifier's Report:

The comments pertaining to the junction between the present survey and H-9332 are considered misleading. An examination of the junction during quality control inspection revealed conflicting soundings and anomalous depth curve configurations within the common area. Reexamination of the records for both surveys, reconciliation of conflicting soundings and depth curves, and lettering of the junctional note on H-9332 were accomplished during quality control inspection. Further, an unnecessary note pertaining to adjoining survey H-9332 was grouped with the identification of detached soundings shown on the smooth sheet. The junctional note need only appear on the smooth sheet where the adjoining surveys overlap. ✓

6. Reference section V of the Verifier's Report:

The necessity of adding junction notes to the adjoining surveys should have been discussed in the referenced section of the Verifier's Report. (See C35x2 memo, March 21, 1977, "Verifier's Report Format.") ✓

7. A few prior soundings from H-4995 (1929) falling in an area common to H-9729 and H-9571 were unnecessarily carried forward to the present survey during verification. These depths fall within the area developed on H-9571. Appropriate revisions were effected during quality control inspection. ✓

8. Reference section VI-a of the Verifier's Report:

a. One additional prior survey (H-6824 (1943)) had not been considered during verification. It was therefore necessary to effect a comparison between the present survey and H-6824 during quality control inspection. ✓

b. The required statements concerning the probable cause(s) of the noted depth differences are not included in section VI-a of the Verifier's Report. (See "Verifier's Report Format.") ✓

Section VI-a of the Verifier's Report is supplemented by the following:

The listed prior surveys cover the area of the present survey. Comparisons between the present and prior surveys reveal good general agreement. ✓

of depths with scattered differences ranging to within ± 1 fathom. Several rocks and soundings were carried forward from the prior surveys to supplement the present survey. The noted depth differences are attributed to natural causes and to the less accurate methods employed on the prior surveys.

9. Comments pertaining to prior surveys H-4994 (1929) and H-4996 (1929) in section VI-a of the Verifier's Report are meaningless. (See Hydrographic Survey Guideline No. 5, item 1.)

10. Several charted rocks and least depths originating with the prior surveys were not investigated during field work or addressed during verification of the present survey. During the quality control inspection, such items were considered and an appropriate disposition of each was effected. In cases where rocks are not verified or disproved by the hydrographic development in the area, all available information should be consulted and the feature should be adequately disposed of. (See Hydrographic Manual, paragraph 6.3.7.3.) In addition, some charted items at variance with the present survey do not originate with the prior surveys. These charted items at variance with the present survey should be either appropriately reconciled to the present survey or addressed in the Descriptive Report. (See "Verifier's Report Format.")

Section VII-a of the Verifier's Report is supplemented by the following:

Some charted features, however, are not verified or disproved by the present survey. Such items are considered to originate with miscellaneous sources and are referred to the chart compiler.

11. The cross-referenced comments in section VI-b of the Verifier's Report are supplemented by the following:

The three soundings (2 1/4, 3 1/2, and 4 fathoms) charted in the referenced vicinity originate with Bp-64938 (1963). They are not verified or disproved by the present survey and are referred to the compiler for examination.

12. Reference section VII-c of the Verifier's Report:

Several charted navigation lights and buoys at variance with the present survey are addressed in the referenced section of the Verifier's Report. The referenced vectored displacement descriptions were in error for six of the seven aids.

13. During the quality control inspection of the present survey, it was noted that some soundings were erased from the smooth sheet without being placed in the excess data bank.

14. An anomalous 3-fathom depth curve was noted to intrude into the area of the charted channel in the vicinity of latitude 56°35.95'N, longitude 132°58.46'W. The charted controlling depth of the channel in the area is 23 feet. Such an intrusion of lesser depths in the area of the channel should have necessitated closer scrutiny of the hydrography in the area during verification. During quality control inspection, it was noted that the referenced depth curve was distorted on the basis of an excessed 3.2-fathom sounding. The fathogram was examined and was found to have been originally scanned in error. The revised corrected depth is 4.3 fathoms. Appropriate revisions were effected during quality control inspection.

*corrected
on chart*

15. Section VII-b of the Verifier's Report is supplemented by the following:

In addition, attention is directed to the 3.4-fathom sounding in the vicinity of latitude 56°34.05'N, longitude 132°58.00'W which falls in proximity to the edge of the charted channel.

CHT'D

16. Many depth curves were displaced excessively during verification. Such displaced depth curves unnecessarily constricted naturally narrow channels or protruded unnaturally into deep water.

17. Excellent prior surveys made at 1:5,000 scale in 1929 revealed a number of pinnacles and shoals which were not developed in the field nor considered for retention during processing. Critical soundings, ledges, and rocks awash were retained during quality control. These prior surveys should also supplement the present navigable area survey in charting in-shore areas not fully developed on the present survey.

CHT'D

18. Several notes of foul, boulders, stones, and kelp inked in the water area were ambiguous as to the area referred to and were repositioned during quality control inspection.

✓

19. Section VII-a of the Verifier's Report is supplemented by the following:

Attention is directed to the islets charted in the vicinity of latitude 56°34.45'N, longitude 132°58.20'W (Battery Islets). The two northerly islets (as charted) are shown as one islet on TP-00551 and on the present survey. The charted configuration of Battery Islets should be revised to agree with the present survey.

CHT'D

20. An inspection of aerial photographs reveals the islet in latitude 56°36.0'N, longitude 132°59.6'W on TP-00637 to be a tree-covered islet and not one characterized by gravel and rocks. The descriptive terms are assumed to apply to the adjacent beach area. Accordingly, the descriptive notation on the smooth sheet was appropriately repositioned during quality control inspection.

✓

21. The delineation of the uncovering reef shown on TP-00637 in the vicinity of latitude $56^{\circ}36.60'N$, longitude $132^{\circ}58.70'W$ is too large compared to that shown on survey H-4996. Accordingly, the referenced reef area is represented by a rock awash symbol on the present survey. 30"
42"
CHTD

The present elevation, uncovering 9 feet at MLLW, is inconsistent with (a) a note "bares 1/2 ft. at MLLW" on H-4996, (b) . . . a lack of any indication but kelp on photographs of the area, (c) . . . a lack of any record about it on sounding lines 40 meters east and west of it on H-4996 run at 3 feet of tide, and (d) . . . annotations by the present survey hydrographer on a line encircling the feature at 4 feet of tide that he was delineating an area foul with kelp. ✓

In light of such inconsistencies, it is recommended that the elevation of the rock awash be redetermined at an opportune time.

cc:
OA/C35
OA/C351



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

MAY 30 1980

OA/C351:DJH

TO: OA/CPM - Eugene A. Taylor
FROM: OA/C3 - Roger F. Lanier *Roger F. Lanier*
SUBJECT: H-9729 (1977), OPR-448, Alaska, Wrangell Narrows, Midway Rock to Point
Humbog, Report of Compliance with Project Instructions

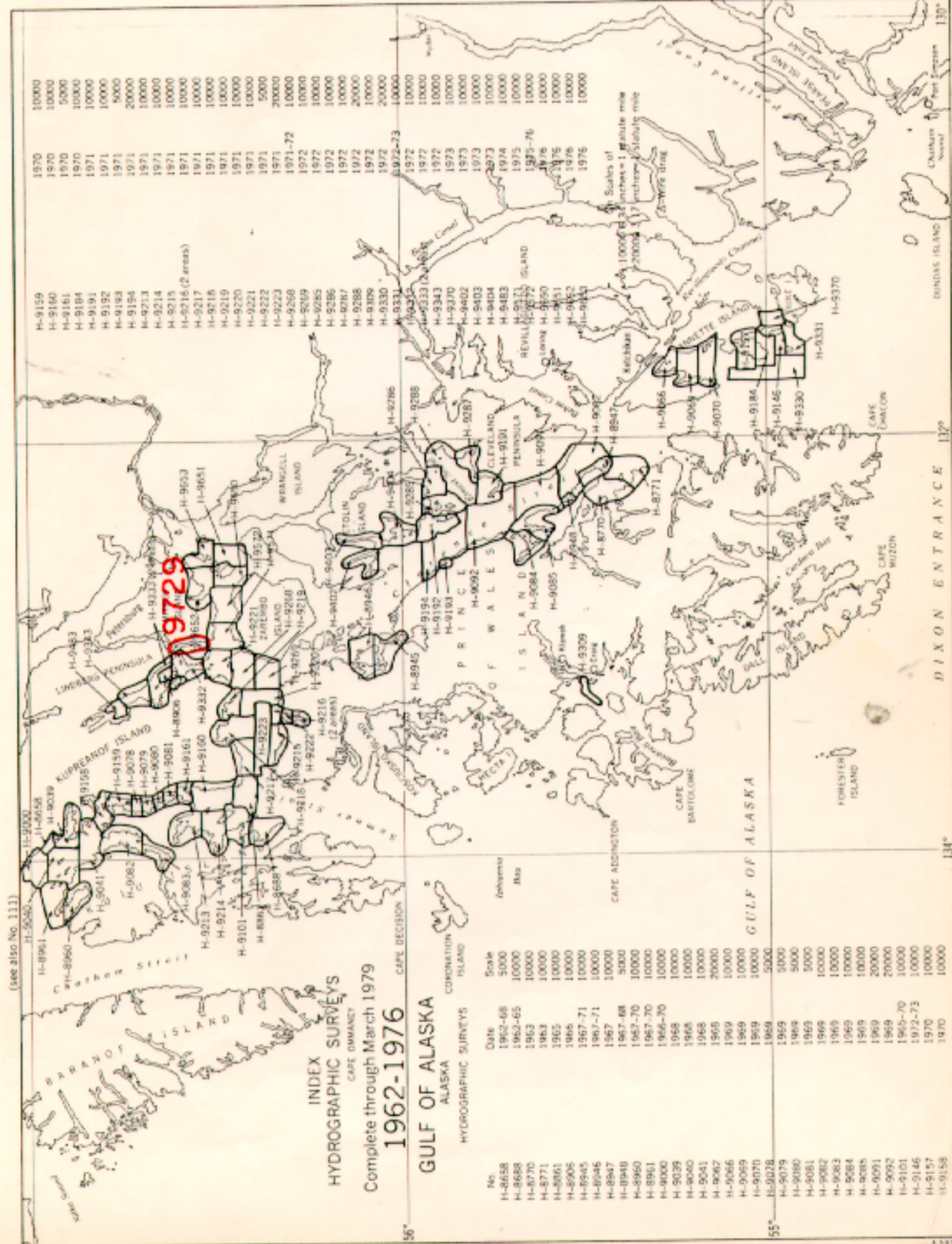
The smooth sheet and Descriptive Report for the subject survey have been examined. This survey, except as noted in the Quality Control Report, dated August 30, 1979 (copy attached), and the Hydrographic Survey Inspection Report, dated June 21, 1979, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-448-DA-77, dated August 3, 1977.

Attachment

cc:
OA/C352 w/o att.



10TH ANNIVERSARY 1970-1980
National Oceanic and Atmospheric Administration



(see also No. 111)

INDEX
HYDROGRAPHIC SURVEYS
CAPE OMANAYT

Complete through March 1979
1962-1976

GULF OF ALASKA
ALASKA

HYDROGRAPHIC SURVEYS

No.	Date	Scale	Remarks
H-8658	1962-68	5000	
H-8658	1962-65	10000	
H-8770	1963	10000	
H-8771	1963	10000	
H-8761	1965	10000	
H-8906	1966	10000	
H-8945	1967-71	10000	
H-8946	1967-71	10000	
H-8947	1967	10000	
H-8948	1967-68	5000	
H-8950	1967-70	10000	
H-8951	1967-70	10000	
H-9000	1966-70	10000	
H-9039	1968	10000	
H-9040	1968	10000	
H-9041	1968	10000	
H-9047	1969	20000	
H-9056	1969	10000	
H-9069	1969	10000	
H-9070	1969	10000	
H-9078	1969	5000	
H-9079	1969	5000	
H-9080	1969	5000	
H-9081	1969	5000	
H-9082	1969	10000	
H-9083	1969	10000	
H-9084	1969	10000	
H-9085	1969	10000	
H-9086	1969	20000	
H-9091	1969	20000	
H-9092	1969	20000	
H-9101	1965-70	10000	
H-9146	1972-73	10000	
H-9157	1970	10000	
H-9158	1970	10000	

134°

DIXON ENTRANCE

130°

CHATHAM SOUND

130°

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9729

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
17375	7/18/80	J. A. Graham	Full Part Before After Verification Review Inspection Signed Via Drawing No. 19 Fully app'd hydro after G.C.
17375	1/23/80	M. D. Kaulis	Full Part Before After Verification Review Inspection Signed Via Drawing No. reconstruction
17382	1/27/81	Nautol	Full Part Before After Verification Review Inspection Signed Via Drawing No. 15 thru 17375
17360	7/6/81	Nautol	Full Part Before After Verification Review Inspection Signed Via Drawing No. 29 thru 17382
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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