

9987

Diagram No. 8202-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey ... Navigable Area Hydrographic ...
Field No. FA-10-5-81
Office No. H-9987

LOCALITY

State Alaska
General Locality Port Frederick
Locality Hoonah Harbor and Approaches

1981

CHIEF OF PARTY
CDR W.F. Forster

LIBRARY & ARCHIVES

DATE February 28, 1984

☆U.S. GOV. PRINTING OFFICE: 1980-766-230

REA 6

CHARTS

17302 }
17316 } to sign off see
17300 } Record of Application

HYDROGRAPHIC TITLE SHEET

H-9987

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

FIELD NO.

FA-10-5-81

State Alaska

General locality Port Frederick

Locality Hoonah Harbor and Approaches

Scale 1:10,000 Date of survey Nov. 24 - Dec. 13, 1981

Instructions dated October 14, 1981 Project No. OPR-0343-FA-82

Vessel NOAA Ship FAIRWEATHER and Launches 2023, 2024, 2025, 2029

Chief of party CDR W. F. Forster

Surveyed by LT D. G. Hennick, LT T. A. Baxter, LTJG D. R. Herlihy, ENS A. E. Francis, ENS C. L. Bailey, ENS F. J. Migaiolo

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

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Verified

~~Prepared~~ by L. T. Deodato Automated plot by PMC Xynetics Plotter

Evaluation

~~Verification~~ by D. J. Hill

Soundings in fathoms ~~feet~~ at ~~MHW~~ MLLW

REMARKS: A 1:5,000 scale survey of Hoonah Harbor is included as an inset to the survey.

Revisions and marginal notes in black by Evaluator.

AWOIS checked PWD 4/84

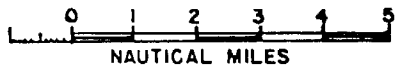
app'd to STS 2-28-84 PWD

XWW 8/21/93

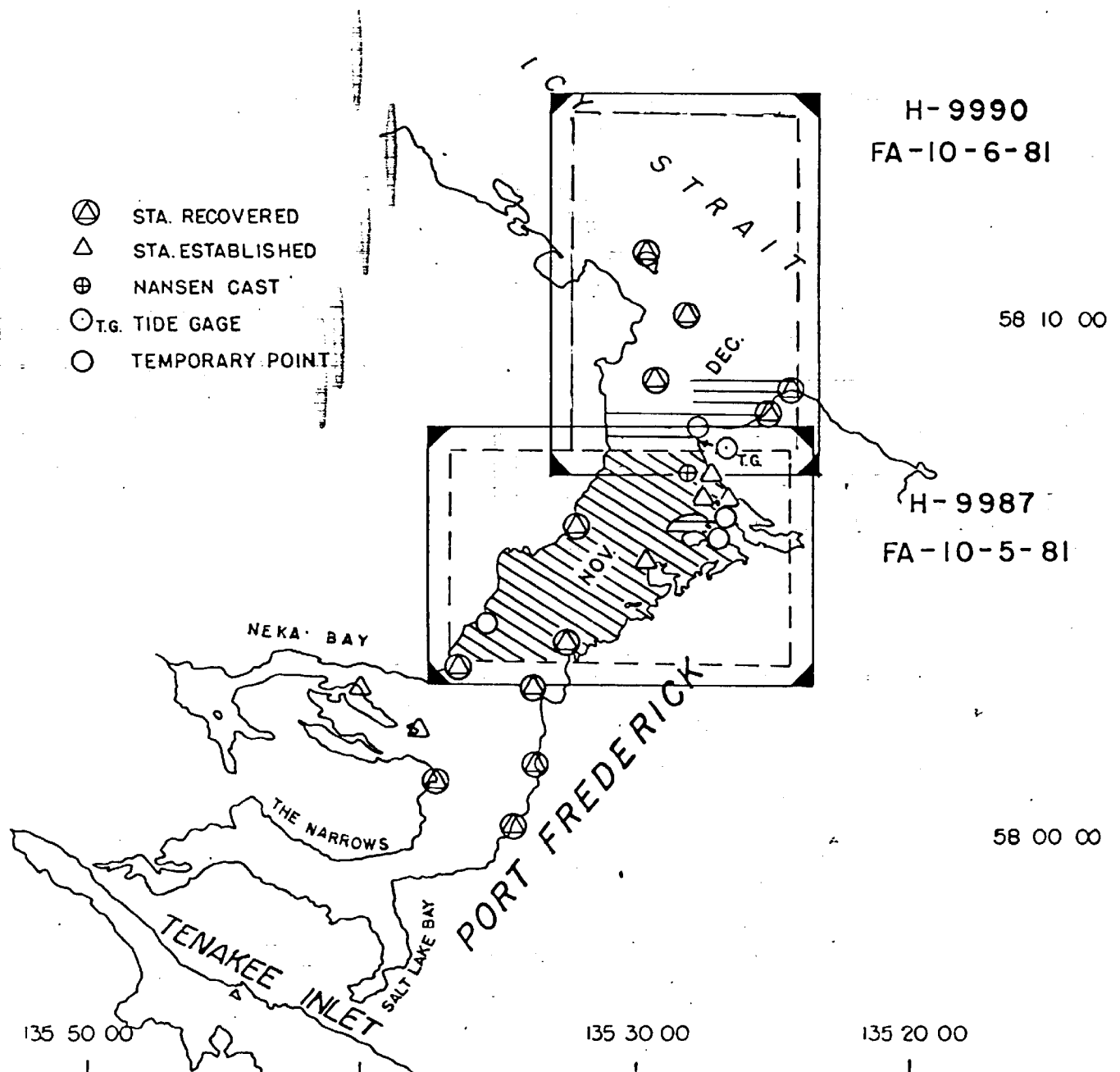
NOV. DEC.

SQ NM SOUNDING LINE	9.7	4.8
LMN SOUNDING LINE	335	307.7
BOTTOM SAMPLES	31	53
NANSEN CAST	1	0
HYDRO CONTROL STATIONS	13	9
WATER SAMPLES ANALYZED	9	0
TIDE GAGES INSTALLED	1	0

MONTHLY PROGRESS SKETCH
 OPR-0343-FA-81
 PORT FREDERICK, S.E. ALASKA
 CDR. WALTER F. FORSTER, CMDG
 SCALE OF NOS CHART 17300
 NOAA SHIP FAIRWEATHER S-220



- ⊙ STA. RECOVERED
- △ STA. ESTABLISHED
- ⊕ NANSEN CAST
- T.G. TIDE GAGE
- TEMPORARY POINT



DESCRIPTIVE REPORT

FA-10-5-81

H-9987

A. Project

This survey was conducted under project instructions OPR-0343-FA-82 dated 14 October 1981, and the following changes: Change Number 1, dated 1~~4~~₅ October 1981, and Change Number 2, dated 23 November 1981. ✓

B. Area Surveyed

This survey was conducted in Port Frederick, Chichagof Island, South East Alaska. The area surveyed runs from shore to shore between latitudes 58°03'20"N to 58°07'30"N and from longitudes 135°26'25"W to 135°36'45"W, including the City of Hoonah. ✓

The hydrography of this survey started on 24 November 1981 (JD 328) and was completed on 1~~2~~₃ December 1981 (JD 34~~8~~₇).

C. Sounding Vessels

Soundings were taken by: FA-3 (2023), FA-4 (2024), FA-5 (2025), and MON 4 (2029). No unusual vessel configurations were used nor were there any unusual problems. Monarch 4 was used for leadline detached positions, including a tagline survey in Hoonah Harbor. ✓

D. Sounding Equipment and Corrections to Echo Soundings

All three survey launches were equipped with Ross Fineline 5000 fathometers. For details on fathometer equipment, see Table 1, Sounding Equipment by Vessel & Date. Echo sounding depth range on this survey was from 0.6 to 95 fathoms. The Ross system performed well at these depths. ✓

Velocity of sound was measured by one Nansen cast. TRA corrections were determined by comparing bar check data to velocity data. Bar checks were conducted twice daily, whenever weather and currents permitted. Phase checks were conducted at the beginning and end of each day by launch personnel. Instrument initial was watched closely by launch personnel for variations and corrected immediately.

Table 1 ✓

Sounding Equipment by Vessel & Date ✓

Vessel	Days	Serial Number				MR Console
		Analog	Digitizer	Transceiver	Inverter	
FA-3	329-346 ✓	1097 ✓	1047 ✓	1047 ✓	1046 ✓	702 ✓
FA-4	328-346 ✓	1047 ✓	1046 ✓	1046 ✓	1054 ✓	701 ✓
FA-5	328-346 ✓	1036 ✓	1036 ✓	1054 ✓	1053 ✓	703 ✓

The Nansen cast was conducted on 28 November 1981 at latitude 58°07.6'N, longitude 135°28.6'W. All thermometers used on this cast were calibrated by the Northwest Regional Calibration Center between May 1979 and March 1981. Beckman salinometer, calibrated by the Northwest Calibration Center in March 1981, was used for this cast. Salinometer #28951 was used.

Settlement and squat correctors measured in April 1981 were determined to be less than 0.05 fathom, thus no corrections were applied to soundings. Certain vessel speeds had correctors greater than 0.05 fathom (See Table 2, Restricted Settlement & Squat Speeds); these speeds were not used while taking soundings.

Table 2 ✓

Restricted Settlement & Squat Speeds ✓

Launch	RPM with S/Sq correctors greater than 0.05 fathom
FA-3 (2023)	1700-1800 ✓
FA-4 (2024)	2000-2200 ✓
FA-5 (2025)	2000 ✓

The settlement and squat tests were conducted in accordance with the Hydrographic Manual, Section 4.9.4.2. ✓

On JD 336, the Ross fathometer aboard FA-3 (2023) malfunctioned in three different ways. The first malfunction caused missed depths because of a loose cable connector. The second malfunction caused variable paper speed because of a loose wire in the analog housing creating frictional drag on the paper, and the third malfunction caused variable paper speed because of a worn drive belt. Most missed depths were recoverable from the analog trace. Scaling of depths between automatic sounding intervals was done only when paper speed remained constant between fixes, shown by evenly spaced initial marks. No peaks or deeps occurred while paper speed was changing. All of the hydrography run that day was retained. For more details see the Corrections to Echo Soundings Report for this project.

All other sounding equipment utilized during this project worked properly.

On PSR No. 8, leadline soundings on two peaks were 0.3 fathom deeper than the fathometer soundings. This was probably due to the difficulty of finding the exact peak through marine growth. In these cases, the fathometer traces were used for the least depths of the shoals.

For convenient field operations, "leadline" soundings recorded in the sounding volume for Monarch 4 were taken by a fiberglass surveyor's tape with a three-pound diver's weight attached. The fiberglass tape was checked under tension before and after the project against a steel tape. No stretching occurred. This system allowed for more accurate soundings than by leadline because depths could be read to tenths of feet, rather than estimated to tenths of feet. The tape was always used in zero current and in depths shoaler than 34 feet.

For further details on sounding equipment or corrections, see the Corrections to Echo Soundings Report for this project.

E. Hydrographic Sheets

Field sheets were plotted aboard the FAIRWEATHER using Houston Instruments plotter (SN 5557-5), PDP 8/e computer (SN 09524) and program RK 201. All field sheets and records will be sent to the Pacific Marine Center for verification and smooth plotting.

Three main sheets with overlays and 11 development sheets were plotted. See Table 3, Hydrographic Sheets, for details.

All developments and PSR items were plotted at a scale of 1:1000, except development A, which was plotted at a scale of 1:750. Diver investigations were attempted to confirm least depths on PSR items and developments. However, physiological problems in one diver prevented diving operations. To ensure that least depths were found without diving, all developments shoaler than 15 fathoms were split to 5 meters, and all peaks shoaler than 2 fathoms were visually inspected and sounded with leadlines. The following is a brief description of each PSR item and development sheet. For location and position numbers of least depths, see Table 4, Development and PSR Least Depths.

PSR item 4 is a development sheet at a scale of 1:1000, around an 8 fathom charted sounding. The least depth of 6.8 fm is located at 58°07'22.2"N, 135°30'50.2"W. Five meter splits were run over the shoaler depths to assure that the least depth was found. Then wider splits were run to assure that a proper development of the bottom profile was made.

Chart as shown on smooth sheet

PSR item 5 is a development sheet at a scale of 1:1000, around a charted 10 fathom sounding. The least depth of 5.0 fm is located at 58°06'44.1"N, 135°30'39.8"W. Five meter splits were run over the shoaler depths.

Chart as shown on smooth sheet

PSR item 6 is a development sheet at a scale of 1:1000, around a charted 33 fathom sounding. The least depth of 20.2 fathoms is located at 58°04'26.2"N, 135°31'59.2"W. Ten meter splits were run over the area.

Chart as shown on smooth sheet

PSR item 8 is a development sheet at a scale of 1:1000, of a charted 3 fathom sounding. ~~Three~~ ^{The} least depths were found as follows: ✓

~~-0.1 fm 58°05'59"N 135°28'29"W~~
~~-0.1 fm 58°05'59"N 135°28'28"W~~
0.6 fm 58°06'04"_{3.6}N 135°28'27"_{2.8}W See Evaluation Report, para. 4e # 50256

Five meter splits were run over the shoaler areas to ensure a proper development of the bottom profile. The entire area was visually inspected at low water to ensure that all rocks and shoals were properly developed. The -0.1 fathom soundings ^{are} ~~are~~ a reef and should be charted as ^{rock uncovering 1 ft. of MLLW as} shown on the final field sheet, ^{smooth} at lat. 58°05'59.1"N, long. 135°28'28.1"W. ✓

PSR item 9 is a development sheet at a scale of 1:1000, of an area where a reported ~~grounding occurred~~. Two least depths were found as follows: ✓

~~0.8 fm 58°06'27"N 135°27'47"W~~
0.4 fm 58°06'24"_{3.6}N 135°27'28"_{4.6}W # 50255

Both of these were developed to 5 meter splits in the shoaler areas and the entire region was visually inspected through clear water at low tide to assure the proper delineation of this area. *Leadline soundings were taken on the peaks. The exact area given for PSR #9 was developed with 20 and 45 meter line spacing with no sign of shoaling in that location. The slight inaccuracy in the position recorded by the mariner at the time of the grounding was probably due to radar fix errors caused by the changed shape of the shoreline at low tide, combined with the small scale of the chart and the inherent accuracy limitations of radar navigation. ✓

Chart as shown on smooth sheet

** Development sheet A is a development of a 6.3 fathom mainscheme sounding. The least depth of 5.7₅ fathoms is located at 58°06'58"_{3.6}N, 135°31'00"_{5.2}W. Five meter splits were run in the area to assure a proper bottom profile and discovery of the least depth. The scale of 1:750 was used to improve legibility. ✓

** Development B is a development of an 8 fathom mainscheme sounding. The least depth of 7.7_{3.6} fathoms is located at 58°06'22"_{3.6}N, 135°31'58"_{2.8}W. The area was developed with 5 meter splits in the shoaler depths and 10 meter splits further out to assure a proper bottom profile and discovery of the least depth. ✓

** Development sheet C is an investigation of 2 shoal mainscheme soundings, 2.4 and 6.4 fathoms respectively. The 2.4 fathom sounding at 58°03'37"_{6.9}N, 135°32'08"_{6.9}W was confirmed by the development to be the shoalest depth in the area, but in the other location, a 4.7_{3.6} fathom sounding was found during the development at 58°03'44"_{3.6}N, 135°32'09"_{3.6}W. Both areas were run at 5 meter splits in the shoaler depths, to assure a proper bottom profile and discovery of the least depth. ✓

There is no Development sheet D. (All soundings in the area of a proposed development D were able to be plotted on the final field sheet and overlay, so sheet D was not needed.) ✓

** *Chart as shown on smooth sheet*

- ** Development E was conducted to disprove a mapped rock awash symbol at 58°06'37"N, 135°26'59"W on the USGS topographic maps. The proper symbol charted near this location should be a ledge. See Section L, Comparison with Chart, for details. *with a 7-foot high point at lat. 58°06'36.1"N, long. 135°27'07.9"W* ✓
- ** Development sheet F is a development of a 4.4 fathom mainscheme sounding. ~~Two least depths were found, their locations are as follows:~~ ✓
~~The~~

3.2 fm	58°04'08"N	135°30'54"W
1.4 fm	58°04'05.3"N	135°30'54.4"W
- A ~~The least~~ depth of 3.2 fm is the top of a mound shaped rock approximately 40 meters in diameter verified by leadline*. The 1.4 fm least depth is also the top of an underwater rock approximately 5 m in diameter, verified by visual inspection and leadline*. The shoaler areas were developed to 5 meter splits to assure a proper bottom profile had been completed. **No leadline records found* ✓
- ** Development sheet G is a development of a mapped rock symbol at 58°03.5'N, 135°33.0'W on the USGS topographic map. Ten meter splits were run in the area, and nothing of any significance was found. Recommendation is made that this rock symbol be removed from the topo sheets. The charted rock awash symbol in nearly the same area will be developed as part of the junctioning survey during spring 1982. *See section L.8, L.9 for discussion and recommendations* ✓

Table 3

Hydrographic Sheets

<u>Field No. or Description</u>	<u>Scale</u>
FA-10-5N-81 ✓	1:10,000 ✓
Overlay to FA-10-5N-81	1:10,000
FA-10-5S-81 ✓	1:10,000 ✓
Overlay to FA-10-5S-81	1:10,000
Hoonah Harbor Area ✓	1:5000 ✓
Overlay to Hoonah Harbor Area	1:5000
PSR 4 ✓	1:1000 ✓
PSR 5 ✓	1:1000 ✓
PSR 6 ✓	1:1000 ✓
PSR 8 ✓	1:1000 ✓
PSR 9 ✓	1:1000 ✓
Development A	1:750 ✓
Development B ✓	1:1000 ✓
Development C ✓	1:1000 ✓
Development E	1:1000 ✓
Development F	1:1000 ✓
Development G	1:1000 ✓

** Chart as shown on smooth sheet

Table 4

Developments and PSR Least Depths

	<u>Position No. of Least Depth</u>	<u>Least Depth</u>	<u>Latitude</u>	<u>Longitude</u>
PSR 4 (#50260)	3124 3090 +1	6.8	58°07'22" ₂ N	135°30'57" _{0.5} W
PSR 5 (#50259)	4613 3012 +6	5.0	58°06'44"N	135°30'39" ₈ W
PSR 6 (#50261)	2657 ₄	20.8	58°04'26"N	135°31'59"W
PSR 8 (#50256)	6616	0.6	58°06'04" _{3.6} N	135°28'27" _{2.8} W
	7567	-0.1	58°05'59" ₇ N	135°28'28" ₇ W
	7570	-0.1	58°05'59"N	135°26'29" ₇ W
PSR 9 (#50255)	7196 7228 +3	0.4	58°06'24" _{3.6} N	135°27'28" _{7.6} W
	7143 6865 +3	1.7 ₀	58°06'27" _{6.8} N	135°27'47" ₄ W
Development A	3568 3483	5.7 ₅	58°06'58" _{7.6} N	135°31'00" _{0 59.9} W
Development B	9063 8995 +3	2.7 _{3.6}	58°06'27" _{3.0} N	135°31'50" _{2 01.8} W
Development C	5775 5807 +1	2.4	58°03'37" _{6.9} N	135°32'09" _{8.9} W
	5829 5741 +1	4.7 ₂	58°03'44" _{3.8} N	135°32'09" ₇ W
Development E	7317-7362		58°06'37"N	135°26'59"W
Development F	8843 8935 +5	1.4	58°04'05" ₃ N	135°30'53" ₄ W
		3.2	58°04'08"N	135°30'54"W
Development G		Nothing Found		

F. Control Stations

FAIRWEATHER personnel established or recovered all hydrographic control stations for this survey. Conventional Second Order Class II or Third Order Class I methods were used and met to establish all geodetic stations on the North American Datum, 1927, except as noted below. ✓

Geographic positions were determined by triangulation, traverse, intersection and resection techniques. Seven new stations were monumented, 5 temporary points established and 4 stations recovered. One signal used for sextant fixes was ~~controlled~~ by sextant angles. ✓
located

Temporary points were used for some Range/Azimuth control stations because the points were located on rip-rap breakwaters. The rip-rap seems likely to settle in future years, so monuments were not installed. Other temporary ✓

points were not monumented because they were necessarily established in crumbling rock or sandy areas which are probably unstable during winter storms. See Table 5, Monumented Control Stations, for a listing of control stations used in this survey, and Appendix F, List of Signals, for the geographic positions of the stations. ✓

Although close closures were obtained, three stations did not meet third order class I requirements because short triangle legs were required. The stations and closures are as follows: ✓

<u>Station Name</u>	<u>Signal Number</u>	<u>Closure</u>
TP 5	585	0.2 m ✓
Radio Tower	300	0.08 m ✓
Hoonah Breakwater Light No. 3	350	0.15 m ✓

For further information, refer to the Horizontal Control Report, OPR-0343-FA-82.

No photogrammetry was used for this survey because no shoreline manuscripts were available. The photos of Port Frederick are still uncontrolled, although third order positions established on visible features in Hoonah Harbor can be used by office personnel to control the photos of that area. ✓

Table 5

Monumented Control Stations

<u>Station Name</u>	<u>Order</u>	<u>Signal No.</u>
Port 1923	3rd	210 ✓
Hump 1923	3rd	220 ✓
Ferry 1981	3rd	270 ✓
Pitt 1981	3rd	320 ✓
Red 1981	3rd	460 ✓
Long 1923	3rd	410 ✓
Game 3 1981	3rd	420 ✓
Fred 2 1923	3rd	440 ✓

G. Hydrographic Position Control

Motorola Mini-Ranger III Range/Range and Range/Azimuth methods were used for positioning echo soundings, and visual control was used for leadline D.P.s, positioning rocks, and shoreline verification fixes. ✓

Mini-Rangers were calibrated on a baseline at Juneau on 8 November 1981 (JD 312) and on 4 December 1981 (JD 338) for the initial and mid-project baseline calibrations (BLC), and at Port Frederick on 14 December 1981 (JD 348) for the final BLC. ✓

Daily systems checks were conducted using the following methods: sextant fixes, calibration poles, or maneuvering close to a geodetic station. See the Electronic Control Report for this project for a table listing the beginning and closing system checks for each block of position numbers. There were no unusual methods of operating the electronics, no unusual atmospheric conditions, no areas of weak signal strengths, no poor geometry, and no systematic errors in position data on the final field sheet. During the first day of hydrography approximate positions were used for R/R stations at Inner Point Sophia Light and Game 3. This caused the mainscheme lines, upon replotting ✓

with revised positions of the Mini-Ranger stations, to be offset by up to 40 meters from the soundings on the boat sheet. This did not affect the accuracy of the final field plot, but splitting these lines was difficult. The first two attempts made to split the mainscheme lines to 45 meters in the areas of 58°07'00"N, 135°30'30"W and 58°06'30"N, 135°31'20"W were rejected as excess data, as shown in the position abstract. Subsequent splits run on these areas properly delineated the bottom contours without decreasing the legibility of the final field sheet. ✓

The area around PSR 8 was split using Range/Range control. DPs were later taken on the peaks using Range/Azimuth control. Comparison of the two control methods shows that the peaks investigated using the Range/Range control system agree within 3 meters of the peaks confirmed with the Range/Azimuth control system. ✓

On the 1:5000 scale sheet of Hoonah Harbor, visual control was used to define positions on piers outside of the inner harbor. All distances measured along these piers were done with a calibrated fiberglass tape. All positions on piers within the harbor were controlled with Range/Azimuth methods. Shoreline of the inner and outer harbor areas was controlled by visual fixes along the MHHW line. Soundings along the faces of the piers in the outer harbor were controlled by measuring between visual fixes. A tagline survey, positions 9864 to 9869, was controlled by attaching the line to positions on the piers, and maneuvering the skiff shoreward parallel to a pier. In a congested narrow channel, leadline positions 9870 and 9871 were controlled by visually ranging the points halfway between two known positions on adjacent piers. These two positions are accurate to at least five meters. ✓

H. Shoreline

No aerial photography or shoreline manuscripts were available for this survey. The shoreline drawn on the 1:10,000 scale final field sheet was obtained from enlargements of USGS topographic maps. This shoreline is drawn in brown and presented for orientation purposes only. This shoreline was not confirmed by fixes and only inspected for major deficiencies; none were found. All offshore features that are currently charted or those that should be charted were delineated by sextant or electronic hydrographic fixes. All rocks and ledges in the intertidal area except those on extensive mud flats were investigated and controlled by visual fixes. The USGS topographic shoreline is recommended to be used for charting until NOS shoreline manuscripts are compiled. ✓

See Evaluation Report, para. 2

The shoreline of the City of Hoonah, on the 1:5000 scale inset, was drawn from sextant fixes taken at the mean higher high water (MHHW) line. This shoreline is recommended for charting. ✓

As-Built survey plans for the breakwaters, piers and floats of Inner Hoonah Harbor were obtained from the Anchorage Office of the Corps of Engineers and are included with the field sheets for this survey. ✓

Control stations located seaward of the shoreline are compiled in Table 6, Control Stations Located Seaward of Shoreline. ✓

Table 6

Control Stations Located Seaward of Shoreline

<u>Station</u>	<u>S/N</u>	<u>Location</u>
TP-2 ✓	582 ✓	✓ On Hoonah Breakwater ✓
TP-3 ✓	580 ✓	✓ " " " ✓
TP-4 ✓	581 ✓	✓ " " " ✓
Red ✓	460	*On *Pitt *Island
Wind Sock ✓	290 ✓	On Dolphin ✓
Ferry ✓	270 ✓	On recent land fill ✓
Hoonah Breakwater Light 2 (Red) ✓	340 ✓	✓ On Hoonah Breakwater ✓
Hoonah Breakwater Light 3 (Green) ✓	350 ✓	✓ " " " ✓
Cal Pole 1 ✓	230 ✓	In Intertidal Zone ✓
Cal Pole 2 ✓	430 ✓	" " " ✓
Cal Pole 3 ✓	360 ✓	Piling ✓

I. Crosslines

27.0 ✓ nautical miles of crosslines were run with a mainscheme total of 211.8 ✓ nautical miles. Therefore, the crosslines mileage equals 12.7% ✓ of the mainscheme mileage.

All apparent discrepancies between mainscheme and crossline soundings are due to slight positional differences in areas of rapid changes in bottom contour. See Table 7, Apparent Mainscheme-Crossline Discrepancies, for details.

Table 7

Apparent Mainscheme-Crossline Discrepancies

<u>Latitude</u>	<u>Longitude</u>	<u>Depth</u>	
		<u>XL</u>	<u>MS</u>
58°05'50"N ✓	135°29'12"W ✓	57 ✓	53 ✓
58°06'45"N ✓	135°30'30"W ✓	52 ✓	45 ✓
58°05'22"N ✓	135°29'57"W ✓	38 ✓	46 ✓
58°04'23"N ✓	135°32'09"W ✓	30 ✓	26 ✓
58°04'34"N ✓	135°34'40"W ✓	57 ✓	59 ✓

J. Junctions

This survey junctions to the north with H-9990, FA-10-6-81. That survey will not be completed until April 1982, so junction comparison will be written as part of the descriptive report for that survey. To the south, this survey will junction with another 1:10,000 sheet as yet unstated. Plans are in effect to start that sheet during the spring of 1982. The junction between the 1:10,000 sheet and the 1:5000 inset sheet (both of the present survey) shows excellent comparisons with no discrepancies.

K. Comparison with Prior Surveys

Two prior surveys cover the area of this survey; they are H-2563 and H-4319. An excellent comparison between this survey and H-2563 exists, with only 3 notable discrepancies. See Table 8, H-2563-Present Survey Discrepancies. Small positional differences on the steeply sloping bottom contours account for these discrepancies.

Table 8

H-2563-Present Survey Discrepancies

<u>Latitude</u>	<u>Longitude</u>	<u>Depth</u>	
		<u>H-2563</u>	<u>Present Survey</u>
58°06'30"N	135°31'10"W	42	34 40
58°06'20"N	135°28'00"W	23	28 22
58°06'20"N	135°29'10"W	70	70 70

For discrepancies between H-4319 and the present survey see Table 9, H-4319-Present Survey Discrepancies. In addition, ^{some} all soundings within a radius of 750 meters of latitude 58°05'54"N, longitude 135°31'15"W are ~~to~~ ^{as much as} 5 fathoms shoaler on the present survey than on H-4319. The specific discrepancies listed in Table 9, H-4319-Present Survey Discrepancies, are also deeper than the soundings of the present survey. A generalization that the area is shoaler now than it was when H-4319 was conducted may be valid, but many of the comparisons are in areas of steep bottom contours, where slight differences in position could account for discrepancies.

Table 9

H-4319-Present Survey Discrepancies

<u>Latitude</u>	<u>Longitude</u>	<u>Depth</u>	
		<u>H-4319</u>	<u>Present Survey</u>
58°03'49"N	135°34'28"W	85	78 78
58°03'35"N	135°34'38"W	81	76
58°03'27 ₆ "N	135°34'44"W	81	76

(Table 9, Continued)

Latitude	Longitude	Depth	
		H-4319	Present Survey
58°03'30 ⁵ "N ✓	135°33'48 ⁷ "W ✓	74 ✓	68 ✓
58°03'59"N ✓	135°31'05"W ✓	34 ✓	27 ✓
58°03'58 ⁵ "N ✓	135°31'16"W ✓	27 ✓	20 18.2
58°05'23"N ✓	135°31'04"W ✓	80 ✓	76 ✓
58°05'33"N ✓	135°30'50"W ✓	80 ✓	76 ✓
58°05'28 ⁸ "N ✓	135°30'38 ⁹ "W ✓	78 ✓	75 ✓
58°05'17"N ✓	135°30'10"W ✓	68 ✓	64 ✓
58°05'24"N ✓	135°29'53"W ✓	53	38 46
58°05'17"N ✓	135°29'57"W ✓	47 ✓	41 ✓
58°05'21"N ✓	135°29'47 ⁸ "W ✓	35 ✓	27 ✓
58°05'35"N ✓	135°29'25"W ✓	40 ✓	37 ✓
58°05'30"N ✓	135°29'12"W ✓	11 ✓	7 11.4
58°05'28"N ✓	135°29'08 ⁹ "W ✓	9 ✓	11.8 6.4
58°05'30 ²⁹ "N ✓	135°33'24 ⁹ "W ✓	10 ✓	8 6.1
58°04'28 ³ "N ✓	135°35'18 ⁴ "W ✓	28 ✓	42 ✓
58°04'10 ⁰⁹ "N ✓	135°35'14"W ✓	33 ✓	48 ³ ✓
58°03'42"N ✓	135°36'28"W ✓	16 ✓	30 ✓

L. Comparison with the Chart

NOAA Chart 17302[✓], 13th Edition, May 13, 1978, was used for comparison with this survey. A copy of a letter to the Coast Guard concerning uncharted hazards to navigation is included after Appendix I, Landmarks for Charts, in this report. ✓

Of the 95 soundings on the chart, 7 (7%)[✓] do not agree within the specifications of the Hydrographic Manual, Section 1.1.2. The general trend of the bottom contours is very close between both surveys. The sounding on the chart at 58°06'04"N, 135°30'29"W[✓] of 9T fathoms appears to be a misplot; possibly the tens digit should have been plotted as a 7, making the depth 71 fathoms which would agree exactly with the present survey depth of 71 fathoms. Probably the charted soundings of PSR items are in disagreement with this survey because the least depths were not previously found. ✓

11 *Comparison is invalid since the sounding's position was incorrectly scaled. The chart and survey agree to within 2 fathoms at this location.*

All discrepancies between the present survey and Chart 17302 are listed in Table 10, Present Survey-Chart Discrepancies.

Table 10
Present Survey-Chart Discrepancies

Location	Depth	
	Chart 17302	Present Survey
58°04'00"N, 135°31'00"W ✓	43 ✓	43 ✓
58°04'30"N, 135°33'30"W ✓	78 ✓	75 ✓
58°04'20 ³ "N, 135°31'52 ⁶ "W ✓	33 ✓	34 ✓
58°06'12 ⁵ "N, 135°27'38 ⁶ "W ✓	5-1/4 ✓	5.2 ✓
58°06'40"N, 135°29'08 ¹⁹ "W ✓	74 ✓	74 ✓
58°06'04"N, 135°30'28 ²⁹ "W ✓	91 ✓	89 ✓
58°05'43"N, 135°30'38 ⁶ "W ✓	79 ✓	76 ✓

A description of the comparison with charted features is as follows, starting at the west side of Port Frederick, north end of the sheet and proceeding counter-clockwise:

- *1. The three islets at 58°06.22'N, 135°32.10'W ✓ should be deleted and replaced by one rock awash at position 9804 ✓ and kelp at position 9805 ✓.
lat. 58°06'10.4"N, long. 135°32'07.9"W
- *2. An islet connected to the shore by a ledge should be charted at 58°05'57^{2.8}"N, 135°32'35⁰"W, ✓ controlled by position 9806 ✓.
lat. 58°06'09.1"N, long. 135°32'03.0"W
- *3. Kelp should be charted at 58°05'50²"N, 135°32'34²"W ✓ controlled by position 9807 ✓.
- *4. A ledge should be charted at 58°05'29⁴"N, 135°33'34^{3.7}"W ✓ controlled by position 9803 ✓.
- *5. The three islets on the chart at 58°04.9'N, 135°35.0'W were not investigated during this navigable area survey because they are distinctly on the mud flats. They should be charted by photogrammetry when the photos are controlled.
- ~~6. All of the charted islets near the west coast from 58°04.8'N to the southern edge of the survey should be removed from the chart. See Evaluation Report para. 7. a~~
- *7. A land fill and rock pier jutting seaward from the coastline should be charted at 58°04'06"N, 135°36'06⁴"W ✓ controlled by positions 5581 ✓ and 5582 ✓.
- *8. An ~~islet~~ ^{rock uncovers 15 feet} connected to shore by a ledge should be charted at 58°03'25"N, 135°32'39"W ✓ controlled by position 9808 ✓ *at lat. 58°03'24.6"N, long. 135°32'38.8"W*

* Concur with recommendations

also on chart 17302

9. The rock awash shown on the USGS topographic map (Juneau A5, Alaska) at $58^{\circ}03'27''N$, $135^{\circ}32'44''W$ was disproved by development G, positions 8795-8828. The charted position of this rock, $58^{\circ}03'27''N$, $135^{\circ}32'38''W$, was not fully developed and will be further investigated on the junctioning survey to be conducted during spring, 1982. *usgs rock disproved. Rock charted on 17302 should be revised to the position in item 8 above.*

Note: The tide gage was not operating properly on JD 334. Therefore, the next 3 features (positions 3133-3145) must be plotted using predicted tides. The accuracy of positions is excellent; only tide gage problems were encountered on this day. *Approved tides received from N/OMS123*

*10. A rocky ledge extends ^{approx. 300 meters} along the beach starting at $58^{\circ}03.62^{\circ}N$, $135^{\circ}32.38^{\circ}W$ and running southeast. Positions 3138-3145 control this feature. This should be ~~plotted~~ ^{charted} as a rocky ledge.

*11. A rocky ledge extends ^{approx. 110 meters} offshore from $58^{\circ}03.78^{\circ}N$, $135^{\circ}31.78^{\circ}W$, controlled by positions 3134-3137. This should be ~~plotted~~ ^{charted} as a rocky ledge.

12. A rocky point extends ^{approx. 50 meters} offshore from $58^{\circ}03.73^{\circ}N$, $135^{\circ}31.80^{\circ}W$, controlled by position 3133. The chart has the proper symbol for this feature.

13. The islet charted at $58^{\circ}03'52''N$, $135^{\circ}31'18''W$ should be ~~controlled~~ ^{deleted} by (position 9811) ~~and an islet should be charted at lat. $58^{\circ}03'51.8''N$, long. $135^{\circ}31'21.3''W$ bare 26 feet.~~

14. The twin islands charted at $58^{\circ}03'52''N$, $135^{\circ}31'52''W$ should be ~~controlled by (position 9810) and be charted as connected by a ledge.~~ ^{deleted}
an islet should be charted at lat. $58^{\circ}03'53.9''N$, long. $135^{\circ}30'59.6''W$

15. The charted rock awash at $58^{\circ}03'58''N$, $135^{\circ}30'49''W$ should be ~~controlled by (position 9809) and a rock uncovered 8 feet should be charted at~~ ^{deleted}
lat. $58^{\circ}03'59.6''N$, long. $135^{\circ}30'50.0''W$.

*16. Position 9885 defines a rock ~~awash~~ ^{uncovered 11 feet} at $58^{\circ}05'14''N$, $135^{\circ}29'46''W$ that should be ~~plotted~~ ^{charted} as such. *3.8*

*17. The three charted islets near $58^{\circ}05'21''N$, $135^{\circ}29'30''W$ should be deleted.

*18. There should be a rock ~~awash~~ ^{uncovered 8 feet charted} at $58^{\circ}05'21''N$, $135^{\circ}29'31''W$ defined by position 9887.

*19. A ledge ^{and rock uncovered 12 feet} should be charted at $58^{\circ}05'21''N$, $135^{\circ}29'38''W$, defined by position 9886. *4.8*

*20. A rock ~~awash~~ ^{ledge and uncovered 14 feet} should be charted at $58^{\circ}05'58''N$, $135^{\circ}28'02''W$ defined by position 9890.

*21. A rock ~~awash~~ ^{uncovered 12 feet} should be charted at $58^{\circ}06'07''N$, $135^{\circ}27'28''W$ defined by position 9891.

22. The islets and shoal charted at $58^{\circ}06'08''N$, $135^{\circ}27'44''W$ should be ~~deleted~~ ^{deleted} changed to rocky ~~awash~~ and a ledge defined by positions 9888 & 9889 ^{should be charted at lat. $58^{\circ}06'09.3''N$, long. $135^{\circ}27'45.5''W$.} and a ^{uncovered 11 feet}

* Concur with recommendations

23. In Hoonah Harbor, the charted piers, dolphins PA, islets, and masts should be deleted. The harbor area should be charted as a 1:10,000 scale inset on the chart, with details taken from the visual fixes in the area, positions 9812-9974, Range/Azimuth fixes 6173-6191, and the engineering drawings of the newly constructed breakwater and floating piers. *See Evaluation Report para. 7.a.*

24. The charted islet at 58°07'22"N, 135°27'42"W should be charted as a ledge defined by position 9894.

25. The charted bottom characteristics should be revised based on bottom samples taken during this survey. The four charted "stk" characteristics can now be updated with more descriptive terms.

26. The obscured area of the Inner Pt. Sophia Light will be investigated as part of the survey which includes that light.

The following are comparisons with this survey and USGS topographic map Juneau A5, Alaska. All features mentioned here should be charted on the NOS chart of the area. *Deleted statements are redundant. See above portion of Section L for charting recommendations.*

~~1. The rock awash at 58°07'22"N, 135°27'42"W should be charted as a ledge defined by position 9894. See #24 of comparison with chart.~~

~~2. The island shown at 58°07.20'N, 135°27.52'W is incorrect and should be replaced as a headland as chart 17302 properly shows.~~

~~3. The rock awash at 58°06'37"N, 135°26'59"W was disproved by development E, positions 7317-7362. Positions 9861-9862 define a ledge that should be charted on both the topo maps and charts near this location.~~

~~4. The rock awash at 58°06'10"N, 135°26'56"W should be deleted and replaced by two rocks ^{uncovering 6 and 5 feet} defined by positions 6422 and 8177. ^{stk} should be charted at lat. 58°06'09.5"N, long. 135°26'58"W and lat. 58°06'09.0"N, long. 135°26'52.5"W,~~

5. Positions 8095 and 8096 define the rocks ^{uncovering 7 and 6 feet} awash at 58°05'40"N, respectively. 135°27'50"W and lat. 58°05'41.8"N, long. 135°27'49.9"W, respectively.

6. ^A The rock ^{uncovered 5 feet} awash at 58°06'46"N, 135°31'48"W ^{and a rock uncovered 11 ft. at lat. 58°06'46.6"N, long. 135°31'46.3"W} should be charted as two ^{3.6} rocks ^{with an interconnecting} awash and a ledge defined by positions 9800-9801.

7. See item 9 of the comparison with chart section for information on the rock awash mapped at 58°03'27"N, 135°32'44"W.

M. Adequacy of Survey

This survey is complete and adequate to supercede prior surveys ^{within the limits of hydrography.} for charting. Although this is a navigable area survey to the 2 fathom contour, ^{most} all rocks, islets, and ledges in the intertidal zone were investigated and charted except for those in areas of extensive mud flats. The latter features should be charted photogrammetrically when controlled photos become available.

N. Aids to Navigation

Two new daybeacon/lights are located on the breakwaters in Hoonah Harbor. These have been located to 3rd order accuracy, except as noted in section F of this report. Positions are listed below.

Hoonah Breakwater Light 2 ✓ $58^{\circ}06'31.954^{\circ}\text{N}$, $135^{\circ}26'54.651^{\circ}\text{W}$ ✓
 Hoonah Breakwater Light 3 ✓ $58^{\circ}06'26.500^{\circ}\text{N}$, $135^{\circ}26'48.882^{\circ}\text{W}$ ✓

Both serve their intended purpose well. Their descriptions in the Light List are accurate.

The Alaska State Ferry System has a scheduled route of 3 ferrys per week into the town of Hoonah. The ferrys proceed directly from the entrance of Port Frederick to the ferry terminal, located at $58^{\circ}07'01^{\circ}\text{N}$, $135^{\circ}27'21^{\circ}\text{W}$. ✓
 Because these ferries are infrequent, and because they navigate slowly into the pier, no ferry routes should be shown on the chart.

O. Statistics

One tide station was used for this survey, but that station was located at $58^{\circ}07'45^{\circ}\text{N}$, $135^{\circ}27'47^{\circ}\text{W}$, which is not within the area of this sheet. ✓

One Nansen cast was taken for velocity correctors.

See Table 11, Statistics, for information concerning hydrographic positions, bottom samples and mileage.

Table 11
 Statistics

<u>Vessel</u>	<u>Positions</u>	<u>Nautical Miles of Hydro</u>	<u>Square Miles of Hydro</u>	<u>Bottom Samples</u>
2020 ✓	8 ✓	-	-	8 ✓
2023 ✓	2626 ✓	127 ✓	5.3 ✓	-
2024 ✓	2531 ✓	124 ✓	5.4 ✓	-
2025 ✓	1252 ✓	61 ✓	2.6 ✓	31 ✓
2029 ✓	174 ✓	-	-	-
TOTAL ✓	6591 ✓	312 ✓	13.3 ✓	39 ✓

1 tide station
 1 Nansen cast

P. Miscellaneous

The tide gage was installed on 19 November (JD 323) ✓, but malfunctioned over the weekend until 24 November (JD 328) ✓. On the morning of 24 November, launches started running hydrography at the same time the gage was being repaired. The gage began operating properly at 1754 UTC JD 328. ✓ Subsequently, all the hydro run before the gage had been restarted for 4 hours was rejected and rerun.

The gage malfunctioned again on 9 December (JD 343) ✓ at 1906 UTC and was restarted on 12 December (JD 346) ✓ at 0424 UTC. All hydrography run during this

malfunction was rejected and rerun. See Table 12, Rejected Position Numbers Due to Tide Gage Malfunctions, for detailed information concerning hydrography rejected because of lack of tidal control.

Table 12

Rejected Position Numbers
Due to Tide Gage Malfunctions

<u>Vessel</u>	<u>Position Numbers</u>
FA-4 ✓	4000-4357 ✓
FA-5 ✓	6000-6140 ✓
FA-4 ✓	8267-8737 ✓
FA-5 ✓	6995-7116 ✓

Q. Recommendations

The following recommendations are made for this survey:

1. A 1:10,000 scale inset of the Hoonah Harbor area should be included on the chart. This harbor is built to accommodate twice as many slips as are currently installed. Therefore, there is a good possibility that this will develop into a fairly important port in the near future. ✓
2. The fish pass in the Hoonah Harbor Breakwater located at 58°06'21"N, 135°26'24"W should be marked as a hazard to navigation. This pass is a break in the rip rap that uncovers 5 feet at low water. This opening looks very much like a harbor exit at high water, but the sloping rocky bottom would cause great damage to a boat attempting to pass through at an unfavorable stage of tide. Also, the currents are strong in the immediate vicinity of the fish pass. ✓
3. The soundings of the Corps of Engineers Post Dredge Survey and those of the present survey of the Hoonah Harbor agree within 0.5 feet. Depths within the harbor should be charted from the Corps of Engineers Post Dredge Survey using the present survey as supplemental material where necessary. The engineering design drawings show the depth approximately 2 feet shallower than the present survey and the post-dredge survey. As the design drawings are only minimum depths, it appears that the contractor removed additional material while dredging to assure that this minimum depth was met. ✓
4. All rocks appearing on the mud flats should be located photogrammetrically when photos are available for those areas. These rocks were not investigated on this present survey, as this is only a navigable area survey.
5. For recommendations as to charted features, see Section L, Comparison with the Chart.

R. Automated Data Processing

NOS Standards were followed for all data acquisition and processing methods. ✓

See Table 13, Computer Programs, for computer programs used on this survey.

Table 13

Computer Programs

<u>Number</u>	<u>Description</u>	<u>Version Date</u>
RK 112	R/R Real Time Plot	03/18/81
RK 201	Grid, Signal and Lattice Plot	04/18/75
RK 211	R/R Non Real Time Plot	01/30/76
RK 212	Visual Station Load and Plot	04/01/81
RK 215	Visual Non Real Time Plot	02/11/81
RK 216	R/Az Non Real Time Plot	02/09/81
RK 300	Utility Package	10/21/80
RK 330	Data Reformat and Check	05/04/76
RK 360	Electronic Corrector Abstract	02/02/76
AM 500	Predicted Tides	11/10/72
RK 530	Velocity Correctors	05/10/76
RK 561	Geodetic Calibration	02/19/75
AM 602	Elinore	05/20/75

Leadline soundings along the faces of piers were hand plotted on the 1:5000 scale overlay of Hoonah Harbor. In accordance with verbal instructions from Pacific Marine Center, these positions were not given artificial range-range rates to allow for machine plotting. The visual fixes from which the leadline soundings were positioned are plotted by machine. ✓

S. Referral to Reports ✓

The following pertain to this survey:

OPR-0343-FA-82 Horizontal Control Report

OPR-0343-FA-82 Electric Control Report
onic

OPR-03430FA-82 Correction to Echo Soundings Report

OPR-0343-FA-82 Coast Pilot Report

A Geographic Names Report will be submitted during spring 1982 when work resumes on this project. That report will cover all four surveys in the Port Frederick area. ✓

A copy of a letter to the 17th Coast Guard District concerning hazards to navigation is included in Appendix I, Landmarks to Charts, in this report. ✓

APPENDIX A: HYDROGRAPHIC SHEET PROJECTION
AND ELECTRONIC CONTROL PARAMETERS

1:10,000 SHEET PARAMETER
LISTING

FA-10-5S-81 SKEW= 0,22,54

001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=30
005 PLSCL=10000
006 PLAT=58/03/00
007 PLON=135/37/30
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

FA-10-5N-81 SKEW= 0,22,54

001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=30
005 PLSCL=10000
006 PLAT=58/04/54
007 PLON=135/37/30
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

1:5,000 INSET SHEET
PARAMETER LISTING

FA-10-5-81 INSET SKEW= 0,20,22

001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=15
005 PLSCCL=5000
006 PLAT=58/05/51
007 PLON=135/28/18
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT SHEET PARAMETER
LISTING

DEVELOPMENT A SKEW= 0,20,50
001 FEST=40000
002 CLAT=6390000
003 CHEI=135/25/00
004 GRID=5
005 PLSCL= 750
006 PLAT=58/06/52
007 PLON=135/31/23.5
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT B SKEW= 0,15,22
001 FEST=40000
002 CLAT=6390000
003 CHEI=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/06/19
007 PLON=135/32/07.5
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT C SKEW= 90,22,40
001 FEST=40000
002 CLAT=6390000
003 CHEI=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/06/30
007 PLON=135/31/02
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT SHEET PARAMETER
LISTING

DEVELOPMENT E SKEW= 0,18,20

001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/06/31
007 PLON=135/27/18
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT F SKEW= 0,12,20

001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/04/03
007 PLON=135/31/06
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

DEVELOPMENT SHEET PARAMETER
LISTING

DEVELOPMENT G SKEW= 0,14 16

001 FEST=40000
002 CLAT=6390000
003 CHED=135/25/00
004 GRID=5
005 FLSCL=1000
006 PLAT=58/03/24
007 PLON=135/32/54
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

PRESURVEY REVIEW SHEET PARAMETER
LISTING

PSR 4 SKEW= 0,12.5,25
001 FEST=40000
002 CLAT=6390000
003 CMEI=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/07/16.5
007 PLON=135/31/14
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

PSR 5 SKEW= 0,17.5,30
001 FEST=40000
002 CLAT=6390000
003 CMEI=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/08/37
007 PLON=135/31/06
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

PRESURVEY REVIEW SHEET PARAMETER
LISTING

PSR 6 SKEW= 0,21,30
001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/04/12.7
007 PLON=135/32/27
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

PSR 8 SKEW= 0,20,30
001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/05/52
007 PLON=135/28/45
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

PSR 9 SKEW= 0,22,30
001 FEST=40000
002 CLAT=6390000
003 CMED=135/25/00
004 GRID=5
005 PLSCL=1000
006 PLAT=58/08/12
007 PLON=135/28/00
008 VESNO=2020
009 YR=81
010 ANDIST=0.0

APPENDIX B: FIELD TIDE NOTE

FIELD TIDE NOTE

OPR-0343-FA-82 (Autumn)

Port Frederick, Alaska

Field tide reduction of soundings was based on predicted tides from Juneau, Alaska, corrected as per project instructions, OPR-0343-FA-82, dated October 14, 1981, amended by Change 1 dated October 15, 1981 and Change 2 dated November 23, 1981. Correctors were as follows:

<u>Time Corrections</u>		<u>Height Correction Ratio</u>
High	Low	
0 minutes	+10 minutes	X 0.90

Predicted Tide Correctors were interpolated by the HYDROPLOT system using program AM 500. All times of both predicted and recorded tides were based on Greenwich Mean Time (GMT). The predicted tides were acceptable for hydrography with no discrepancies in data attributable to tides errors.

The tide station at Juneau, Alaska was the primary gage for the project. Levels were run to this gage on November 6 and December 4, 1981. Agreement with historical level data was within 1 mm. Tide data was collected from the Hoonah harbor tide station, 945-2441, located at the Icy Strait Salmon Company pier, at 58°07'45"N, 135°27'47"W. Hydrographic surveys H-9987 and H-9990 are controlled by this gage.

ADR gage 7304A1380M12 was installed on November 19, 1981 (JD 323) and removed on December 14, 1981 (JD 348), at the end of the field work. Three wire levels were run to a temporary benchmark on November 19, as none of the old benchmarks were recovered at this tide station. Five new benchmarks were installed and levelled to the staff and the temporary benchmark on November 24 and 25.

On November 28, the tidal benchmarks were tied into horizontal control station Ferry 1981, and its reference marks, at the Alaska Ferry Terminal in the town of Hoonah. Benchmark 2441E, 1981, was found to be poorly set at this time and was destroyed, making Ferry RM2, 1981, the fifth benchmark in this level run. The entire abstracted level run includes levels between benchmarks 2441A-2441D, station Ferry 1981, Ferry RM1, 1981, and Ferry RM2, 1981. The level run of 1.81 km closed within 2.0 mm.

The ending levels for this gage were run on December 13, 1981 from the staff to four benchmarks, 2441A to 2441D. This 0.75 km level run closed within 5.6 mm.

In the beginning level run on November 24, the closure of the segment between benchmarks 2441A and 2441B exceeded third order criteria by 2 mm due to poor

visibility under adverse weather conditions, complicated by the fact that benchmark 2441A is a vertically set mark. This segment was closed within third order criteria on December 13, 1981.

Problems occurred with the tide gage which prevented an unbroken sequence of tidal data from being recorded. To prevent the necessity of interpolating tidal curves from an incomplete record, hydrographic data was retained only for times when the gage was operating. All hydrography conducted while the gage was not functioning was rejected and rerun.

OPERATIONAL PROBLEMS

The ADR gage in Port Frederick had the following problems. (See Table I, Chronological List of Gage Malfunctions, for a synopsis.)

Upon installation, the first punch was recorded at 0106Z on November 20. The punch paper became jammed two hours after that at 0306Z; caused either by excessive moisture or poor quality paper punch tape. Additional data was not collected until the gage was restarted at 1754Z on November 24, as the FAIRWEATHER was out of the working grounds for three days. All hydrography run prior to 2200Z on November 24 was rerun to meet the requirement that the tide gage be operating four hours prior to commencement of hydrography.

After the gage was restarted on November 24, the gage was observed to be missing a six minute punch approximately every 4 hours, without losing any time. Also, numerous holes were punched incompletely, causing the chad to remain attached to the paper. These problems were solved when the paper roll was replaced by a roll of old style paper, and the punch block was tightened on December 2 at 2236Z. The chad was removed by hand from all incomplete punches during this period.

On December 4 at 0118Z, the gage battery failed. The FAIRWEATHER was out of the working grounds at this time and no data was gathered until a new battery was installed at 0112Z on December 8.

On December 9 at 1912Z, a gage malfunction occurred which caused the data tape to become intermittently jammed. No useable data was gathered until the gage was restored to service on December 12 at 0424Z. At the time the gage was restored to service, there was indication that someone had tampered with the gage because the ADR housing had been rotated 90° from the original position on the float well. All hydrographic data run during the time the gage was working improperly was rejected and the affected areas were resurveyed on December 12 and 13.

Another paper jam occurred on December 13 at 1218Z. The gage was restarted 5 hours later at 1712Z. Hydrography was not run during this five hour period.

The gage was removed at 2218Z on December 14, at the end of field work during the 1981 season. The float well and staff were left for ease in gage installation when the FAIRWEATHER returns in the spring of 1982.

TABLE I

Chronological List of Gage
Malfunctions
Port Frederick Tide Station
(945-2441)

<u>Date and Time (GMT)</u>	<u>Malfunction</u>
11/20, 0306 to 11/24, 1754	Paper torn, no data gathered
11/24, 1754 to 12/2, 2236	Paper intermittently advancing without data being punched: Incomplete punching of holes.
12/4, 0118 to 12/8, 0112	Dead battery, no data gathered.
12/9, 1912 to 12/12, 0424	Paper jam, no data gathered.
12/13, 1218 to 1712	Paper jam, no data gathered.
12/14, 2218	Gage removed

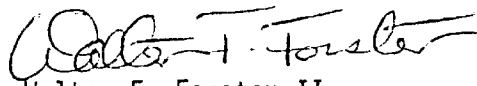
From November 20 to December 14, the gage to staff difference, from eighteen observations, was 20.00 feet. All comparisons are within 0.3 feet of the mean.

Submitted By:



Ann F. Trimble
Lt.(jg), NOAA

Approved By:



Walter F. Forster II
Cdr., NOAA
Commanding Officer

APPENDIX C: GEOGRAPHIC NAMES LIST

F

GEOGRAPHIC NAMES

H-9987

Name on Survey	A ON CHART NO. 17302 B ON PREVIOUS SURVEY NO. H-4319 C ON U.S. QUADRANGLE MAPS ALASKA D FROM LOCAL INFORMATION E ON LOCAL MAPS F P.O. GUIDE OR MAP G RAND McNALLY ATLAS H U.S. LIGHT LIST K											
	CHICHAGOF ISLAND			X								
FALSE POINT	X		X									2
GAME CREEK	X		X									3
GAME POINT	X	X	X									4
GEORGE HALL MEMORIAL BOAT HARBOR					X							5
GRAVE POINT			X									6
HARBOR POINT			X									7
HOONAH	X		X									8
HOONAH POINT	X		X									9
HUMPBACK CREEK	X											10
LONG ISLAND	X	X	X									11
PITT ISLAND			X									12
PORT FREDERICK	X	X	X									13
HOONAH HARBOR												14
ALASKA (title)												15
												16
												17
												18
									Approved:			19
												20
									Charles E. Harshbarger			21
									Chief Geographer - N/C&S 2x5			22
									15 JUNE 1983			23
												24
												25

APPENDIX D: ABSTRACT OF CORRECTIONS TO ECHO
SOUNDINGS

VELOCITY-TRANSDUCER FILE: V09987

LISTING MADE: 02-18-83 02:19:21

TRANSDUCER CORRECTION TABLES

VESSEL: 2020 YR: 81 FM

VESSEL: 2023 YR: 81 FM

VESSEL: 2024 YR: 81 FM

DAY	TIME	TKA COR	VEL TABLE
348	203500	.00	0
348	235959	.00	0

DAY	TIME	TKA COR	VEL TABLE
329	172626	.30	1
331	174447	.00	0
331	175256	.30	1
334	184627	.00	0
334	194124	.30	1
347	235959	.30	1

DAY	TIME	TKA COR	VEL
328	220355	.30	
336	183634	.00	
336	204219	.30	
336	222626	.00	
336	223545	.30	
342	175413	.00	
342	182002	.30	
342	195734	.00	
342	200751	.30	
347	235959	.30	

VESSEL: 2025 YR: 81 FM

VESSEL: 2029 YR: 81 FM

DAY	TIME	TKA COR	VEL TABLE
330	172052	.30	1
335	191633	.00	0
335	204330	.30	1
347	235959	.30	1

DAY	TIME	TKA COR	VEL TABLE
331	170600	.00	0
345	235959	.00	0

DAY	TIME	TKA COR	VEL
342	182002	.30	
342	195734	.00	
342	200751	.30	
347	235959	.30	

VELOCITY TAPE PRINTOUT

H-9987

~
001 000107 0 0000 0001 001 202000 009987
002 000272 0 0001
003 000407 0 0002
004 000544 0 0003
005 000670 0 0004
006 000800 0 0005
007 000930 0 0006
008 001062 0 0007
009 001200 0 1100

APPENDIX E: ABSTRACTS OF CORRECTIONS TO ELECTRONIC
POSITION CONTROL

ELECTRONIC CORRECTOR ABSTRACT

FA10-5N-81

VESSEL : 2023 R/R DP'S

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
174447	331	+00001	+00000
175100		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA10-5N-81

VESSEL : 2023 R/R

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
173044	331	+00000	
173448	336	+00000	+00001
230210	342	-00003	+00002
			+00001
000000	343	-00003	+00001
174923	346	+00002	+00000
183224		+00000	+00000
211502		+00002	+00000
211800		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
FA10-5S-81

VESSEL : 2023 R/AZ

SHEET :H-9987

TIME	DAY	PATTERN 1	PATTERN 2
194124	334	+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA10-55-81 DP'S

VESSEL : 2023 R/AZ

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 0
184627	334	+00000	-31371

ELECTRONIC CORRECTOR ABSTRACT

FA10-5S-81

VESSEL : 2023 R/AZ

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
225120	334	+00000	+76548
233000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA 10-5S-81

SHEET : H-9987

VESSEL : 2023 R/R

TIME	DAY	PATTERN 1	PATTERN 2
172626	329	-00002	+00002
000000	330	-00002	+00002
180703		+00001	-00002
221900		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA10-5N-81 SPLITS

VESSEL : 2023 R/R

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
172244	333	+00000	+00001
180000		+00000	+00000
011456	347	-00001	-00005
020000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 PSR 6 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
223605	330	+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 PSR 8

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
215310	346	+00001	-00002
000244	347	+00001	-00002
004600		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 PSR 4 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
231523	333	+00000	+00001
235400		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 DEVEL A SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
233504	336	+00000	+00002
181551	342	-00005	+00001
185200		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 DEVEL B SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
225510	336	+00001	+00002
195751	342	-00005	+00001
211500		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 PSR 5

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
204535	333	+00001	+00000
215255	342	-00005	+00001
224000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024

SHEET : H-9987

R/R

Main Scheme

TIME	DAY	PATTERN 1	PATTERN 2
220355	328	-00001	-00002
213209	329	-00002	+00001
225654	329	-00002	+00001
000004	330	-00002	+00001
210829	331	-00002	-00001
171311	332	-00002	-00001
225249		-00001	-00002
235200		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
R/AZ MAIN SCHEME
VESSEL :2024 SHEET : FA10-5N-81

TIME	DAY	PATTERN 1	PATTERN 2
182423	336	-00002	61599
204219		-00002	67440
223545		-00002	67112
224837		-00002	76912
225209		-00002	79531
232715		-00002	36927
182002	342	+00001	26448
184845		+00001	47534
212959		+00001	13334
214300		+00000	00000

ELECTRONIC CORRECTOR ABSTRACT

R/AZ MAIN SCHEME

VESSEL :2024

SHEET : FA10-5S-81

TIME	DAY	PATTERN 1	PATTERN 2
180547	335	-00002	46235
225134		-00002	45240
234023		-00002	29154
235638		-00002	26588
000354	336	-00002	41148
000700		+00000	00000

ELECTRONIC CORRECTION ABSTRACT

N/AZ DP'S

VESSEL : 2024

SHEET : FA10-5N-81

TIME	DAY	PATTERN 1	PATTERN 2
183634	336	-00002	64441
222626		-00002	+95888
175413	342	+00001	64490
195734		+00001	09173
195900		+00000	+09909

ELECTRONIC CORRECTOR ABSTRACT
FA 10-55-81
VESSEL : 2024 R/R DP'S SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
204228	332	+00001	+00001
204700		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

R/AZ DP

VESSEL :2024

SHEET : FA10-5S-81

TIME	DAY	PATTERN 1	PATTERN 2
195025	335	-00002	40250
195100		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA 10-5S-81

VESSEL : 2024

R/R

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
182828	330	-00002	-00001
203052		+00001	+00001
171533	331	-00002	-00001
195936		-00001	+00000
190608	332	+00001	-00002
200455		+00001	+00001
165154	346	+00001	+00001
182500		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R PSR 5

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
191748	329	-00001	-00002
224206	346	+00001	-00003
231000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R PSR 4

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
170704	329	-00001	-00002
180400		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R DEVEL A

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
182107	329	-00001	-00002
232254	346	+00001	-00003
000014	347	+00001	-00003
002600		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R DEVEL B

SHEET :H-9987

TIME	DAY	PATTERN 1	PATTERN 2
170507	330	+00000	+00000
213639	346	+00001	-00003
223000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

R/AZ. DP'S

VESSEL : 2024 DEVEL C

SHEET :H-9987

TIME	DAY	PATTERN 1	PATTERN 2
213108	335	-00002	40259
223400		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R PSR 8

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
223014	331	-00002	-00001
235000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/A₂ DEVEL C

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
211122	335	-00002	41356
224300		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

1:5000 INSET

VESSEL : 2024 R/AZ

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
200751	342	+00001	07058
215816		+00001	00000
232400		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R DEVEL F SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
191313	346	+00001	+00001
202500		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2024 R/R DEVEL G

SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
184308	346	+00001	+00000

ELECTRONIC CORRECTOR ABSTRACT
BOTTOM SAMPLES *R/AZIMUTH*
VESSEL : 2025 FA 10-5N-81 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
191347	343	+00000	09050
175550	344	+00000	65326
184300		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
R/AZ PSR 9

VESSEL :2025

SHEET : FA10-5N-01

TIME	DAY	PATTERN 1	PATTERN 2
204938	346	-00003	-00000
223130		-00003	-00000
223600		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
R/AZ 1:5,000 INSET DP(LEADLINE)
VESSEL :2025 SHEET : FA-10-5N-81

TIME	DAY	PATTERN 1	PATTERN 2
191633	335	+00000	13588
193500		+00000	00000

ELECTRONIC CORRECTOR ABSTRACT
RANGE AZIMUTH
VESSEL : 2025 FA10-5N-81 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
204330	335	+00000	-10490
205915		+00000	-19161
212730		+00000	-17036
224600	346	-00002	+60199
234811	347	-00002	-15109
235700		+00000	+00000

ELECTRONIC CONNECTION ABSTRACT
 RANGE/AZIMUTH 1:5,000 INSET DP'S
 VESSEL :2025 SHEET : FA10-5N-81

TIME	DAY	PATTERN 1	PATTERN 2
215217	331	+00000	48000
201526	332	+00000	41340
225324	333	+00000	31235
180430	342	+00000	33106
233020		+00000	17141
235300		+00000	80000

ELECTRONIC CORRECTOR ABSTRACT
 RANGE/AZIMUTH 1:5,000 SCALE INSET
 VESSEL :2025 SHEET : FA10-5N-81

TIME	DAY	PATTERN 1	PATTERN 2
230120	332	+00000	-78000
172900	333	+00000	-57060
195130		+00000	-86000
200830		+00000	-59038
211300		+00000	+96222
222730		+00000	-83245
224700		+00000	-40101
225830		+00000	-26401
230330		+00000	-42548
175840	334	+00000	-10533
191000		+00000	-36140
191900		+00000	-89010
224840		+00000	-68280
215145	335	+00000	-19160
231445		+00000	-33336
174824	336	+00000	-45101
184132	342	+00000	-75332
210333		+00000	-76000
215630		+00000	-09212
235648		+00000	-06533
000000	343	+00000	-24242
000848		+00000	-84451
175810	346	-00002	-24567
182600		-00002	-01342
195700		+00000	+00000

ELECTRONIC CONNECTOR ABSTRACT
DEVELOPMENT "E" R/AZIMUTH
VESSEL : 2025 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
000710	347	-00003	52285
003700		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
 RANGE/RANGE BOTTOM SAMPLES
 VESSEL : 2025 SHEET : FA10-5S-81

TIME	DAY	PATTERN 1	PATTERN 2
183503	330	+00000	+00003
193242		+00003	+00001
210856		+00001	-00001
225146		+00000	+00001
225200		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT
BOTTOM SAMPLES RANGE RANGE
VESSEL : 2025 FA 10-5N-81 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
172052	330	-00002	+00000
182732		+00000	+00003
223955		+00000	-00001
172404	331	-00001	-00002
194800		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

FA 10-55-81

SHEET : H-9987

VESSEL : 2023 R/R

TIME	DAY	PATTERN 1	PATTERN 2
172626	329	-00002	+00002
000000	330	-00002	+00002
180703		+00001	-00002
221000		+00000	+00000

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2023 PSR 6 SHEET : H-9987

TIME	DAY	PATTERN 1	PATTERN 2
223605	330	+00000	+00000

APPENDIX F: LIST OF STATIONS

OFR-0343-FA-82
PORT FREDRICK, AK. SIGNAL LIST

~~SCRAGGY 1923~~ ~~581352 FAIRWEATHER 1981~~
~~190 0 58 10 28805 135 28 16145 250 0009 000000~~

BUT 2 1923 581352 FAIRWEATHER 1981
200 3 58 09 00122 135 29 24916 250 0007 000000

~~MESSY 1981~~ ~~581353 FAIRWEATHER 1981~~
~~205 3 58 08 27817 135 31 08160 250 0006 000000~~

PORT 1923 581353 FAIRWEATHER 1981
210 0 58 07 15173 135 31 11242 250 0007 000000

HUMP 1923 581353 FAIRWEATHER 1981
220 0 58 06 04924 135 32 10627 250 0006 000000

~~CAL POLE 1 1981~~ 581353 FAIRWEATHER 1981
230 0 58 05 06145 135 33 54982 243 0000 000000

~~TP1 1981~~ 581353 FAIRWEATHER 1981
240 0 58 04 08122 135 35 34010 243 0004 000000

~~TP1 ECC 1981~~ 581353 FAIRWEATHER 1981
241 5 58 04 08441 135 35 34472 254 0004 000000

NECK 1923 581353 FAIRWEATHER 1981
250 0 58 03 16677 135 36 29915 139 0005 000000

¹⁹²³
~~NECK RM 1981~~ 581353 FAIRWEATHER 1981
251 5 58 03 16840 135 36 29929 250 0002 000000

INNER PT SOPHIA LT 1981 581352 FAIRWEATHER 1981
260 4 58 07 56664 135 27 48532 250 0009 000000

FERRY 1981 581352 FAIRWEATHER 1981
270 4 58 07 01634 135 27 19565 250 0008 000000

HOONAH CHURCH
~~HIGHER CROSS 1981~~ 581352 FAIRWEATHER 1981
280 2 58 06 47564 135 26 45670 139 0045 000000

CHURCH CROSS
~~WITH BELL 1981~~ 581352 FAIRWEATHER 981
285 2 58 06 34453 135 26 38457 139 0045 000000

~~WIND SOCK 1981~~ 581352 FAIRWEATHER 1981
290 3 58 06 46163 135 26 51920 139 0002 000000

~~RADIO TOWER 1981~~ 581352 FAIRWEATHER 1981
300 2 58 06 31502 135 26 36456 139 0055 000000

PITT 1981 581352 FAIRWEATHER 1981
320 7 58 06 36960 135 27 16310 139 0004 000000

¹⁹⁸¹
~~PITT RM2 1981~~ 581352 FAIRWEATHER 1981

322 5 58 06 36742 135 27 16565 250 0004 000000
~~LEDGE 1981~~ (SEXTANT) VOL. 1 FAIRWEATHER 1981
 330 6 58 06 35355 135 27 07820 243 0001 000000
 HOONAH BKWATER LT 2 1981 581352 FAIRWEATHER 1981
 340 2 58 06 31955 135 26 54651 139 0009 000000
 HOONAH BKWATER LT 3 1981 581352 FAIRWEATHER 1981
 350 3 58 06 26575 135 26 48881 139 0009 000000
 CAL POLE 3 ~~1981~~ 581352 FAIRWEATHER 1981
 360 3 58 06 23693 135 26 42029 243 0000 000000
~~ONG 1923 581352 FAIRWEATHER 1981~~
~~410 3 58 05 48714 135 28 29139 139 0003 000000~~
 GAME 3 1981 581352 FAIRWEATHER 1981
 420 7 58 05 19709 135 29 39142 250 0004 000000
 CAL POLE 2 ~~1981~~ 581353 FAIRWEATHER 1981
 430 7 58 05 00523 135 30 00348 243 0000 000000
 FRED 2 1923 581353 FAIRWEATHER 1981
 440 5 58 03 45528 135 32 34015 250 0006 000000
 GRASS 1981 581353 FAIRWEATHER 1981
 450 7 58 02 53518 135 33 46683 250 0011 000000
 RED 1981 581352 FAIRWEATHER 1981
 460 0 58 06 31968 135 26 54622 250 0008 000000
 TP3 ~~1981~~ 581352 FAIRWEATHER 1981
 580 3 58 06 16324 135 26 44426 254 0007 000000
 TP4 ~~1981~~ 581352 FAIRWEATHER 1981
 581 7 58 06 18972 135 26 49928 254 0007 000000
 TP2 ~~1981~~ 581352 FAIRWEATHER 1981
 582 0 58 06 19458 135 26 28736 243 0007 000000
 TP5 ~~1981~~ 581352 FAIRWEATHER 1981
 585 2 58 05 49212 135 27 04067 254 0005 000000
~~FALSE (TP5) 1981 (ECC)~~ 581352 FAIRWEATHER 1981
 586 4 58 05 49148 135 27 03952 250 0005 000000

APPENDIX G: ABSTRACT OF POSITIONS

MOTOROLA Mini Ranger III System

Shore Stations and Vessel Equipment

Station S/N	Station Name	XPDR Elev. above MSL meter	Console R/T	XPDR Code	Vessel	Julian Day	Purpose	Position:
585	TP 5	0.2 2	701	7	2024	336	R/AZ	8007-8086
270	Ferry	0.0 2	703	5	2025	336	R/AZ	6745-6873
260	Inner Pt Sophia Cr	0.0 9	702	5	2023	342	R/R	3533-3812
420	Game 3	0.1 1	702	6	2023	342	R/R	3533-3812
586	FALSE	0.3 1	701	A	2024	342	R/AZ	8178-8189
580	TP3	0.2 2	701	A	2024	342	R/AZ	8190-8266
322	Pitt Rm2	0.2 2	703	9	2025	342	R/AZ	6874-6907
270	Ferry	0.0 2	703	9	2025	342	R/AZ	6908-6960
581	TP4	0.2 2	703	9	2025	342	R/AZ	6969-6988
580	TP3	0.2 2	701	A	2024	343	R/AZ	8267-8446
270	Ferry	0.0 2	703	9	2025	343	R/AZ	6995-7028
210	Port	0.3 3	701	7	2024	344	R/R	8447-8553
220	Hump	0.3 3	701	6	2024	344	R/R	8447-8553
220	Hump	0.3 3	703	9	2025	344	R/AZ	7067-7116
581	TP4	0.2 2	703	9	2025	344	R/AZ	7029-7066
220	Hump	0.3 3	701	6	2024	345	R/R	8554-8737
210	Port	0.3 3	701	7	2024	345	R/R	8554-8593
241	TP1 ecc	0.2 2	701	9	2024	345	R/R	8554-8737
220	Hump	0.3 3	702	6	2023	346	R/R	3813-3996 7497-7626
210	Port	0.3 3	702	7	2023	346	R/R	3813-3996 7497-7626
260	Inner Pt Sophia	0.0 9	702	A	2023	346	R/R	7627-7683
420	Game 3	0.1 1	702	5	2023	346	R/R	7627-7683
241	TP1 ecc	0.2 2	701	9	2024	346	R/R	8738-8961
220	Hump	0.3 3	701	6	2024	346	R/R	8738-8961
260	Inner Pt Pt Sophia	0.0 9	701	A	2024	346	R/R	8962-9236

MOTOROLA Mini Ranger III System

Shore Stations and Vessel Equipment

Station S/N	Station Name	XPDR Elev. above MSL	Console R/T	XPDR Code	Vessel	Julian Day	Purpose	Position:
450	Grass	0.5 ^{meter} 5	703	A	2025	330	R/R B.S.	6154-6155
251	Neck RM1	1.5 2	703	9	2025	330	R/R B.S.	6156-6163
220	Hump	0.3 3	703	7	2025	330	R/R B.S.	6156-6165
220	Hump	0.3 3	701	7	2024	332	R/R	5421-5537
200	But 2	1.1 2	701	8	2024	332	R/R	5421-5487
251	Neck RM	1.5 2	701	9	2024	332	R/R	5488-5537
440	Fred 2	0.3 3	701	6	2024	332	R/R	5538-5580
450	Grass	0.5 5	701	A	2024	332	R/R	5538-5623
241	TP1 Ecc	0.2 2	701	9	2024	332	R/R	5583-5623
260	Inner Pt Sophia Lt	0.2 9	701	8	2024	332	R/R	5624-5704
420	Game 2 _s	0.1 1	701	7	2024	332	R/R	5624-5704
580	TP3	0.2 2	703	5	2025	332	R/AZ B.S.	6192-6201
580	TP3	0.2 2	703	5	2025	332	R/AZ	6202-6219
260	Inner Pt Sophia Lt	0.2 9	702	8	2023	333	R/R	2905-3132
420	Game 2 _s	0.1 1	702	7	2023	333	R/R	2905-3132
580	TP-3	0.2 2	703	5	2025	333	R/AZ	6220-6341
580	TP-3	0.2 2	703	5	2025	333	R/AZ	6342-6460
220	Hump	0.3 3	702	7	2023	334	R/AZ	3133-3170
586	False	0.3 1	702	7	2023	334	R/AZ	3171-3222
460	RED	0.2 2	703	5	2025	334	R/AZ	6461-6615
220	Hump	0.3 3	701	7	2024	335	R/AZ	5705-5891
270	Ferry	0.0 2	703	5	2025	335	R/AZ	6616-6744
260	Inner Pt Sophia Lt	0.2 9	702	8	2023	336	R/R	3223-3397
420	Game 2	0.1 1	702	6	2023	336	R/R	3223-3397
220	Hump	0.3 3	701	7	2024	336	R/AZ	8000-8005

MOTOROLA Mini Ranger III System

Shore Stations and Vessel Equipment

Station S/N	Station Name	XPDR Elev. above MSL meter	Console R/T	XPDR Code	Vessel	Julian Day	Purpose	Position:
585	TP 5	0.2 2	701	7	2024	336	R/AZ	8007-8086
270	Ferry	0.0 2	703	5	2025	336	R/AZ	6745-6873
260	Inner Pt Sophia Lt	0.2 9	702	5	2023	342	R/R	3533-3812
420	Game 3	0.1 1	702	6	2023	342	R/R	3533-3812
586	FALSE	0.3 1	701	A	2024	342	R/AZ	8178-8189
580	TP 3	0.2 2	701	A	2024	342	R/AZ	8190-8266
322	Pitt Rm 2	0.2 2	703	9	2025	342	R/AZ	6874-6907
270	Ferry	0.0 2	703	9	2025	342	R/AZ	6908-6960
581	TP 4	0.2 2	703	9	2025	342	R/AZ	6964-6988
580	TP 3	0.2 2	701	A	2024	343	R/AZ	8267-8446
270	Ferry	0.0 2	703	9	2025	343	R/AZ	6995-7028
210	Port	0.3 3	701	7	2024	344	R/R	8447-8553
220	Hump	0.3 3	701	6	2024	344	R/R	8447-8553
220	Hump	0.3 3	703	9	2025	344	R/AZ	7067-7116
581	TP 4	0.2 2	703	9	2025	344	R/AZ	7029-7066
220	Hump	0.3 3	701	6	2024	345	R/R	8554-8737
210	Port	0.3 3	701	7	2024	345	R/R	8554-8573
241	TP 1 ecc	0.2 2	701	9	2024	345	R/R	8554-8737
220	Hump	0.3 3	702	6	2023	346	R/R	3813-3996 7497-7626
210	Port	0.3 3	702	7	2023	346	R/R	3813-3996 7497-7626
260	Inner Pt Sophia	0.2 9	702	A	2023	346	R/R	7627-7683
420	Game 3	0.1 1	702	5	2023	346	R/R	7627-7683
241	TP 1 ecc	0.2 2	701	9	2024	346	R/R	8738-8961
220	Hump	0.3 3	701	6	2024	346	R/R	8738-8961
260	Inner Pt Pt Sophia	0.2 9	701	A	2024	346	R/R	8962-9236

MOTOROLA Mini Ranger III System
Shore Stations and Vessel Equipment

Station S/N	Station Name	XPDR Elev. above MSL	Console R/T	XPDR Code	Vessel	Julian Day	Purpose	Position
260	Innen Pt Sophia Lt	meter 0.9 9	701	8	2024	328	R/R	4105-4357
420	Game 3	0.1 1	701	5	2024	328	R/R	4105-4357
420	Game 3	0.1 1	702	5	2023	329/330	R/R	2000-2424
440	Fred 2	0.3 3	702	6	2023	329/330	R/R	2000-2424
420	Game 3	0.1 1	701	5	2024	329/330	R/R	4358-4630
440	Fred 2	0.3 3	701	6	2024	329/330	R/R	4358-4630
260	Innen Pt Sophia Lt	0.9 9	701	8	2024	329/330	R/R	4631-4819
420	Game 3	0.1 1	701	5	2024	329/330	R/R	4631-4819
220	Fred 2	0.3 3	703	A	2025	328	R/AZ	6000-6140
251	Neck RM 1	1.5 2	702	9	2023	330	R/R	2425-2685
220	Hump	0.3 3	702	7	2023	330	R/R	2425-2685
260	Innen Pt Sophia Lt	0.9 9	701	8	2024	330	R/R	4820-4853
420	Game 2	0.1 1	701	5	2024	330	R/R	4820-4922
440	Fred 2	0.3 3	701	6	2024	330	R/R	4854-5093
450	Grass	0.5 5	701	A	2024	330	R/R	4923-5093
220	Hump	0.3 3	702	7	2023	331	R/R	2686-2904
200	But 2	1.1 2	702	8	2023	331	R/R	2686-2904
220	Hump	0.3 3	701	7	2024	331	R/R	5094-5239
200	But 2	1.1 2	701	8	2024	331	R/R	5094-5239
220	Hump	0.3 3	703	7	2025	331	R/R B.S.	6166-6171
200	But 2	1.1 2	703	8	2025	331	R/R B.S.	6166-6171
580	TP 3	0.2 2	703	5	2025	331	R/AZ P.P.	6172-6191
260	Innen Pt Sophia Lt	0.9 9	703	8	2025	330	R/R B.S.	6141-6147
420	Game 3	0.1 1	703	5	2025	330	R/R B.S.	6141-6153
420	Game 3	0.1 1	703	5	2025	330	R/R B.S.	6164-6165
440	Fred 2	0.3 3	703	6	2025	330	R/R B.S.	6148-6155

ABSTRACT OF POSITIONS Vessel 2023 H- 9987

Console # 702
(or Mobile unit)

FA-10-5-81

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPDR #		MS	XL	TYPE OF HYDRO		BS or DPs	Sheets Main Sheet	Enlargement #	Rejected or Duplicated Positions
			51 Visual	52 Range			MS SPLITS.	PSR #				
329	2000-2341	4	5/420	6/440	X					X		2009, 2081, 2166
329	2342-2378	4	5/420	6/440	X					X		
329/330	2379-2424	4	5/420	6/440	X					X		
330	2425-2455	4	9/251	7/220	X					X		
330	2457-2462	4	9/251	7/220	X					X		
330	2463-2610	4	9/251	7/220	X					X		2481, 2496, 249 2504, 2547, 2549, 2587, 2594
330	2611-2685	4	9/251	7/220				X #6			X	PSRG
331	2686-2867 *2698-2700	4	7/220	8/200	X				* DP		* on split sheet	2732, 2736, 276 2768, 2867
331	2877-2904	4	7/220	8/200		X				X		2895-2899 2869-2876
331	3839-3895	4	7/220	8/200	X	X						

CONTR. CODES: 01 Visual; 03 Range/Az; 04 Range/Range 05 Hyperbolic; 08 Hyper/Visual; 09 Range/V ja.

ABSTRACT OF POSITIONS Vessel 2025-

H- 9987
 FA- 10-S-81
 Console # 703
 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS		MS	XL	TYPE OF HYDRO			BS or Dps	Sheets where Plotted		Rejected or Duplicated Positions
			St. and XPDR #	52 XPDR			MS SPLITS.	PSR #	DEVEL. #		Main Sheet	Enlargement #	
333	6276-6315	3	589/5		X							X	6286, 6288, 6290
333	6342-6400	3	589/5		X							X	
333	6416-6460	3	589/5		X							X	
333	6401-6458	3	589/5			X						X	
333	6220-6275	3	589/5					X				X	
333	6335-6341	3	589/5					X				X	
333	6316-6334	3	589/5		X							X	
333	6409-6415	3	589/5		X							X	
334	6461-6489	3	460/5		X							X	
334	6490-6497	3	460/5						X			X	
334	6498-6593	3	460/5		X							X	
334	6594-6615	3	460/5		X							X	

ABSTRACT OF POSITIONS

Vessel 2025

H- 9987
 FA- 10-5-81
 Console # 703
 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPR #		TYPE OF HYDRO						Sheets where Plotted		Rejected or Duplicated Positions	
			S1/Abdr, M	S2/XPR	MS	XL	MS SPLITS.	PSR #	DEVEL. #	BS or DPs	Main Sheet	Enlargement #		
336	6858-6873	3	270/5		X							X	1:5,000	
342	6874-6882	3	322/9									X	1:5,000	
342	6883-6907	3	322/9		X							X	1:5,000	
342	6908-6911	3	270/9		X							X	1:5,000	
342	6942-6960	3	270/9			X						X	1:5,000	
342	6964-6972	3	581/9		X							X	1:5,000	
342-43	6973-6982	3	581/9									X	1:5,000	
343	6983-6989	3	581/9			X						X	1:5,000	
343	6995-7009	3	270/9		X							X		
343	7011-7028	3	270/9									X	1:5,000	
344	7029-7036	3	581/9									X	1:5,000	
344	7042-7066	3	581/9									X		
344	7067-7091	3	220/6									X		

NOT PLOTTED (superseded by SPTS CD 344)

09 Range/Visual : 09 Range/Visual

ABSTRACT OF POSITIONS

Vessel 2025

H- 9987
FA- 10-S-81

Console # 703
(or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS		TYPE OF HYDRO							Rejected or Duplicated Positions						
			SI /Ave	M /M	MS	XL	MS SPLITS	PSR #	DEVEL. #	BS or Dps	Sheets where Plotted Main Sheet		Enlargement #					
335	6616-6619	3	270	7														
335	6620-6630	3	270	7														
335	6631-6644	3	270	7														
335	6645-6663	3	270	7														
335	6664-6674	3	270	7														
335	6675-6731	3	270	7														
335	6732-6744	3	270	7														
336	6745-6853	3	270	5														
336	6854-6857	3	270	5														

01 Visual: 02 Range/Av: 04 Range/Range: 05 Hyperbolic: 08 Hyper/Visual: 09 Range/Vis

ABSTRACT OF POSITIONS

WSSR/2025

H- 9787

FA-10-S-81

Console # 763
(or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS			TYPE OF HYDRO							Rejected or Duplicated Positions	
			SI	M	53	MS	XL	MS SPLITS.	PSR #	DEVEL. #	BS or DPs	Sheets where Plotted Main Sheet		Enlargement #
344	7092-7116	3							X	A			X	
346	7117-7130	3							X				X	
346	7131-7176	3							X				X	7256
346	7177-7285	3							X	9			X	7256
346	7286-7293	3							X	9			X	7256
346	7294-7302	3							X				X	7303, 7304
346-347	7305-7362	3							X				X	7352

CONTROL CODES: 01 Visual; 03 Range/Az; 04 Range/Range; 05 Hyperbolic; 08 Hyper/Visual; 09 Range/Visu-

ABSTRACT OF POSITIONS

115521 2024

H- 9987 Console # 701
 FA- 10-5-81 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPDR #		TYPE OF HYDRO				SHEETS WHERE PLOTTED		Rejected or Duplicated Positions			
			S1 / M	S2 / M	MS	XL	MS SPLITS.	PSR #	DEVEL. #	BS or Dps		Sheets Main Sheet	Enlargement #	
346	8734-8737	4	241 / 9	220 / 6		X					X			
346	8738-8748	4	241 / 9	220 / 6		X					X			8742, 8744
346	* 8749-8744	4	241 / 9	220 / 6		X					X			8786
346	8795-8828	4	241 / 9	220 / 6							X			
346	8829-8961	4	241 / 9	220 / 6							X			
346	8962-9067	4	260 / A	420 / 5							X			
346	9068-9112	4	260 / A	420 / 5							X			
346- 347	9113-9236	4	260 / A	420 / 5							X			

CONTROL CODES: 01 Visual; 03 Range/Az; 04 Range/Range; 05 Hyperbolic; 08 Hyper/Visual; 09 Range/Visual

ABSTRACT OF POSITIONS

Vessel 2024 H- 9987 Console # 701
 FA- 10-5-81 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS		TYPE OF HYDRO			SHEETS WHERE PLOTTED		Rejected or Duplicated Positions				
			SI AROR, M	53 AROR	MS	XL	MS SPLITS.	PSR #	DEVEL. #		BS or DPS	Main Sheet	Enlargement #	
342	8263-8266	3	580 A						X		X	1:5000		8263
343	8267-8300	3	580 A									1:5000		
343	8301-8426	3	580 A						X	9				
343	8427-8446	3	580 A											
344	8447-8470	4	210 7						X					
344	8471-8481	4	210 7								X			
344	8482-8553	4	210 7								X			8495, 8501 8593-8596
345	8554-8593	4	220 6						X	9				
345	8594-8634	4	241 9											8629
345	8635-8708	4	241 9						X					8635-8639 8704
346	8709-8733	4	241 9						X					8723

CONTROL CODES: 01 Visual; 03 Range/Az; 04 Range/Range; 05 Hyperbolic; 08 Hyper/Visual; 09 Range/Visual

ABSTRACT OF POSITIONS

Vessel 2024

H- 9987

FA- 10-5-81

Console # 701
(or Mobile unit)

DAY	POSITIONS	CONTROL CODE *	CONTROL STATIONS		TYPE OF HYDRO		SHEETS WHERE PLOTTED		Rejected or Duplicated Positions										
			CONTROL and XPDR #	STATIONS #	MS	XL	MS SPLITS.	PSR #		DEVEL. #	BS or OPS	Main Sheet	Enlargement #						
332	5583-5623	4	450/A	241/9	X														
332	5624-5704	4	260/8	420/7	X														5631, 5652
335	5705-5772	3	220/7		X														
335	5773-5841	3	220/7		X														"C" X "C"
335	5842-5879	3	220/7																
335	5888-5891	3	220/7																
336	8000-8005	3	220/7		X														
336	8007-8066	3	585/7		X														8028, 8037, 8039
336	8068-8075	3																	

ABSTRACT OF POSITIONS

Vessel 20241

H- 9987
FA- 10-S-81

Console # 101
(or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPR #		TYPE OF HYDRO							Sheets where Plotted		Rejected or Duplicated Positions	
			S1	S2	MS	XL	MS SPLITS	PSR #	DEVEL. #	BS or DPs	Main Sheet	Enlargement #			
330	5056-5079	4	440/6	450/A		X							X		5067-68
330	5080-5093	4	440/6	450/A	X								X		5159, 5166, 5221
331	5094-5239	4	220/7	200/8	X								X		5221
331	5240-5249	4	220/7	200/8		X							X		5262, 5264
331	5250-5331	4	220/7	200/8	X				X				X		5302
331	5332-5420	4	220/7	200/8					#8						5418
332	5421-5487	4	220/7	200/8	X								X		5498, 5504
332	5488-5537	4	251/9	220/7	X								X		5542
332	5538-5543	4	440/6	450/A		X							X		
332	5544-5580	4	440/6	450/A	X								X		
332	5581-5582	4	440/6	450/A									X		55

01 Range/A: 02 Range/A: 03 Range/A: 04 Range/A: 05 Hyperbolic: 08 Hyper/Visual: 09 Range/Visual

ABSTRACT OF POSITIONS *Wesley 2024*

H- 9987

Console # 701
(or Mobile unit)

FA-16-S-81

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS		TYPE OF HYDRO		SHEETS WHERE PLOTTED		Rejected or Duplicated Positions			
			ST. #	ST. #	MS	XL	MS SPLITS	PSR #		DEVEL. #	BS or Dps	Main Sheet
328	4105-4357	4	260/8	420/5	X				X			4151, 4171, 4321-24
329	4358-4630	4	260/8	420/5				X "A"				4559, 4600
329	4631-4686	4	420/5	440/6		X			X			4631-36 4671-73
329-330	4687-4796	4	420/5	440/6	X				X			4799
330	4797-4867	4	420/5	440/6	X				X			
330	4808-4819	4	420/5	440/6	X				X			4823-4825
330	4820-4853	4	260/8	420/5				X "B"				
330	4854-4908	4	420/5	440/6	X				X			4892
330	4909-4922	4	420/5	440/6	X				X			4943-4944
330	4923-4955	4	440/6	450/A	X				X			

CONTROL CODES: 01 Visual; 03 Range/Az; 04 Range/Range; 05 Hyperbolic; 08 Hyper/Visual; 09 Range/Visual

ABSTRACT OF POSITIONS Vessel 2023

H- 9987 Console # 702
 FA- 10-5-81 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPR #		MS	XL	TYPE OF HYDRO			DEVEL. #	BS or DPs	Sheets where Plotted		Rejected or Duplicated Positions
			ST Azimuth	M			PSR #	PSR #	Main Sheet			Enlargement #		
333	* 2959-2983	4	8/260		X split							X	* on split sheet	-
333	2992-3076	4	8/260					5					PSR # 5	3006-3007
333	3077-3132	4	8/260					4					PSR # 4	
334	3133-3145	3	7/220							X				3144
334	3146-3170	3	7/220		X							X		
334	3171-3222	3	7/586		X							X		3165, 3186, 3204
336	3223-3397	4	8/260		X							X		
336	3398-3470	4	8/260						X B				X B	
336	3471-3530	4	8/260						X A				X A	
342	3533-3594	4	5/260						X A				X A	3531, 3532
342	3595-3669	4	5/260						X B				X B	3595-3598 3628-3636

CONTROL RANGE: 01 Visual; 03 Range/Az; 04 Range/Range; 05 Hyperbolic; 08 Hyper/Visual; 09 Range/Visual

ABSTRACT OF POSITIONS *Vessel*

H- 9987 Console # 1705
 FA- 10-5-81 (or Mobile unit)

DAY	POSITIONS	CONTROL CODE*	CONTROL STATIONS and XPR #		TYPE OF HYDRO						Rejected or Duplicated Positions		
			S/A	M	MS	XL	MS SPLITS.	PSR #	DEVEL. #	BS or Dps		Sheets where Plotted Main Sheet	Enlargement #
342	3670- 3746	4	260/5	420/6				X #5				PSR 5	3713
342	3747- 3797	4	260/5	420/6	X					X			
342	3804- 3812	4	260/5	420/6		X						X	
346	3813- 3838	4	220/6	210/7		X						X	3830
346	3839- 3899	4	220/6	210/7	X							X	3897
346	3904- 3996 7477- 7540	4	220/6	210/7			X #8					X	3900-3903
346	7541- 7626	4	220/6	210/7			X #8					X	
347	7628- 7683	4	260/A	420/5	X							X	Dev. D & split sheet

CONTR. CODES: 01 Visual; 03 Range/Az; 04 Range/Range 05 Hyperbolic; 08 Hyper/Visual; 09 Range/V 1a.

APPENDIX H: BOTTOM SAMPLES

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

NOAA SHIP *Fairweather*

VESSEL	PROJ. NO.	YEAR	APPROX. POSITION		DEPTH	WEIGHT	AP-PROX.	LENGTH	COLOR	FIELD DESCRIPTION	REMARKS	DATE CHECKED
2020	(5H10) OPR0343M B2	1981	LATITUDE	LONGITUDE	(Fathoms)	OF SAMPLER	TRAIL	OF CORE	OF SEDIMENT		(Unusual conditions, cohesiveness, denting cutter, size, no., type of bottom relief (e.g., slope, plain, disposition, etc.))	
0001	12/14/81	58/07/8	135/29/14						6Y	CLAY		1/27/81
0002	12/14/81	58/06/45	135/29/57						6Y	CLAY		
0003	12/14/81	58/05/56	135/30/24						6Y	CLAY		
0004	12/14/81	58/05/31	135/31/35						6Y	CLAY		
0005	12/14/81	58/04/59	135/32/21						6Y	CLAY		
0006	12/14/81	58/03/48	135/34/18						6Y	CLAY		
0007	12/14/81	58/04/21	135/33/19						6Y	CLAY		
0008	12/14/81	58/04/21	135/31/55						6Y	CLAY bk sh G		

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Pathoms)	WEIGHT OF SAM- PLER	AP- PROX. TRAN- SECTION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS <small>(Unusual conditions, cohesion, density, cutter, strength, position of bottom, relief, etc.)</small>	OBS. INIT.
		LATITUDE North	LONGITUDE West								
2025	(FA-5)	0PR 0343	FA02	1981		FA 10-58-81					
		PROJ. NO.		YEAR	FA 10-58-81						
		CHECKED BY			FA 10-58-81						
		DATE CHECKED			FA 10-58-81						
6149	11/26/81	58/05/34	135/32/55	36.7		gn stk M, brk Sh					
6150	11/26/81	58/05/05	135/33/38	39.6		gn fine S, brk Sh, P					
6151	11/26/81	58/04/48	135/34/27	37.0		gn fine S, brk Sh, P					
6152	11/26/81	58/04/38	135/35/25	40.5		gn stk M					
6153	11/26/81	58/04/01	135/35/26	33.2		gn stk M, P					
6154	11/26/81	58/03/55	135/35/59	40.3		gn stk M					
6155	11/26/81	58/03/31	135/36/22	35.7		gn fine S, M					
6156	11/26/81	58/03/33	135/32/48	36.4		gy stk M, fine S, P					
6157	11/26/81	58/04/03	135/32/23	52.5		gy crss S, P, M					
6158	11/26/81	58/03/51	135/31/43	21.4		gn crss S, P					
6159	11/26/81	58/04/25	135/31/25	64.0		gn stk M					
6160	11/26/81	58/04/09	135/31/08	41.7		gn stk M					
6161	11/26/81	58/04/47	135/30/42	27.2		gn fine S, P, Brk Sh					
6162	11/26/81	58/05/11	135/30/15	56.7		gn fine S, M					
6163	11/26/81	58/05/32	135/29/30	35.1		br stk M, P					
6165	11/26/81	58/05/54	135/28/34	16.4		gn, stk M, brk Sh					

Use more than one line per sample if necessary.

APPENDIX I: LANDMARKS FOR CHARTS

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

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

Replaces C&GS Form 567.

<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED	REPORTING UNIT (Field Party, Ship or Office) FAIRWEATHER	STATE Alaska	LOCALITY Port Frederick	DATE 1/2 /82	ORIGINATING ACTIVITY <input checked="" type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> COMPILATION ACTIVITY <input type="checkbox"/> FINAL REVIEWER <input type="checkbox"/> QUALITY CONTROL & REVIEW GRP. <input type="checkbox"/> COAST PILOT BRANCH
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The following objects HAVE HAVE NOT been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO. 0343-FA-82 JOB NUMBER H-9987 SURVEY NUMBER North American 1927

CHARTING NAME	DESCRIPTION <small>(Record reason for deletion of landmark or aid to navigation. Show triangulation station name, where applicable, in parentheses.)</small>	LATITUDE		LONGITUDE		METHOD AND DATE OF LOCATION <small>(See Instructions on reverse side)</small>		CHARTS AFFECTED
		° /	// D.M. Meters	° /	// D.P. Meters	OFFICE	FIELD	
Light/ Dayshape	Hoonah Breakwater Light 2	58 06	31.955	135 26	54.651		F-3-6-L 11/26/81	17302
Light/ Dayshape	Hoonah Breakwater Light 3	58 06	26.575	135 26	48.881		F-3-6-L 11/26/81	17302
Windsock	Orange windsock mounted on a dolphin at the seaplane float pier.	58 06	46.163	135 26	51.920		F-3-6-L 11/28/81	17302
Hoonah Church Higher Cross	Higher of two crosses on one church.	58 06	47.564	135 26	45.670		F-3-6-L 11/28/81	17302
Church Cross With Bell	Single cross on a church mounted directly above a bell.	58 06	34.453	135 26	38.457		F-3-6-L 11/28/81	17302
Radio Tower	This is the only major mast in the City of Hoonah.	58 06	31.502	135 26	36.456		F-3-6-L 11/28/81	17302

*Rep. 91002
Sheet 1-276(84)*



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
NOAA Ship FAIRWEATHER S220

CPM220/DGH:rmw/A-16

28 January 1982

Commander
17th Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99802

Dear Sir:

During a recent hydrographic survey in Port Frederick, several hazards to navigation were surveyed which should be published in the Notice to Mariners. They are as follows:

1. The fish pass at latitude 58°06'20"N, longitude 135°26'25"W in the east end of the new breakwater at Hoonah appears at some stages of the tide to be a boat exit from the George Hall Memorial Boat Harbor (Inner Hoonah Harbor). However, the sill of this fish pass is rip rap which goes dry at 5 feet of tide, making boating through the pass hazardous. There are also unfavorable currents in the immediate vicinity of the pass. All mariners are advised to keep clear of this gap in the breakwater, using instead the entrance between Hoonah Breaker Lights 2 and 3.
2. An uncharted ^{1.0}~~0.9~~ fathom rock exists at latitude 58°06'27"N, longitude 135°27'49"W, 1/4 mile WSW of Pitt Island. Depths from 5 to 9 fathoms exist between this rock and Pitt Island.
3. An uncharted 0.4 fathom shoal exists at latitude 58°06'22"N, longitude 135°27'23"W, 1/8 mile SW of Pitt Island. Depths from 1 to 2 fathoms exist between this shoal and Pitt Island.
4. An uncharted 0.6 fathom rock exists at latitude 58°06'03"N, longitude 135°28'22"W 1/8 mi. NNW of Long Island. Depths from 7 to 13 fathoms exist between this rock and Long Island.
5. A reef that bares 0.1 fathom at low tide exists at latitude 58°05'59"N, longitude 135°28'27"W 1/8 mile NW of Long Island. Depths from 3 to 5 fathoms exist between this reef and Long Island. Depths from 2 to 12 fathoms exist between this reef and the rock described in item 4 above.
6. On the east side of Port Frederick, 4.2 miles SW of Hoonah, an uncharted 4.3 fathom rock exists at latitude 58°03'44"N, longitude 135°32'09"W, in the mouth of a small cove 0.2 mile E of a fingerlike peninsula. Depths from 11 to 22 fathoms surround this rock.



10TH ANNIVERSARY 1970-1980
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tradition of service to the Nation

7. An uncharted 2.4 fathom rock exists at latitude 58°03'38"N, longitude 135°32'11"W, near the center of the cove mentioned in item 6 above. Depths from 4 to 12 fathoms surround this rock.

Sincerely,



Cdr. Walter F. Forster, NOAA
Commanding Officer
NOAA Ship FAIRWEATHER S220

APPENDIX J: APPROVAL SHEET

HYDROGRAPHIC SURVEY STATISTICS

H-9987

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	8
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	12

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS			3			
VOLUMES						
BOXES			2			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

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			5478
POSITIONS CHECKED		5478	
POSITIONS REVISED		829	
SOUNDINGS REVISED		154	
SOUNDINGS ERRONEOUSLY SPACED		8	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			

TIME - HOURS

CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5	*(VER)/(EVAL)	
VERIFICATION OF CONTROL		27/08	35
VERIFICATION OF POSITIONS		151/04	155
VERIFICATION OF SOUNDINGS		238/09	247
COMPILATION OF SMOOTH SHEET		54/8431	5885
APPLICATION OF TOPOGRAPHY		15/00	15
APPLICATION OF PHOTOBATHYMETRY		00/00	0
JUNCTIONS		06/02	08
COMPARISON WITH PRIOR SURVEYS & CHARTS		00/09	09
VERIFIER'S REPORT		00/24	24
OTHER			
TOTALS		491/8887	581578

Pro-Verification by J. S. Green	Beginning Date 2/17/82	Ending Date 2/17/82
Verification by L. T. Deodato	Beginning Date 8/9/82	Ending Date 4/8/83
Verification Check by S. H. Otsubo, J. S. Green	Time (Hours) 33	Date 4/11/83
Marine Center Inspection by HIT	Time (Hours) 13	Date 4/15/83
Quality Control Inspection by	Time (Hours)	Date
Requirements Evaluation by	Time (Hours)	Date

*Time in this column is for Verification (VER) and Evaluation (EVAL)

Approval Sheet

This survey is complete and adequate for charting purposes. The Commanding Officer supervised field work and inspected field records and plotting sheets on a daily basis.

Submitted By:



Craig Bailey
Ens., NOAA

Approved By:



Walter F. Forster II
Cdr., NOAA
Commanding Officer
NOAA Ship FAIRWEATHER S220

PACIFIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO: H-9987

FIELD NO: FA-10-5-81

Alaska, Port Frederick, Hoonah Harbor and Approaches

SURVEYED: November 24 - December 13, 1981

SCALE: 1:10,000

PROJECT NO: OPR-0343-FA-82

SOUNDINGS: Ross Fineline 5000

CONTROL: Mini-Ranger III
Range-Range, Range-Azimuth
and Sextant Visual

Chief of Party.....CDR W. F. Forster

Surveyed By.....LT D. Hennick
LT T. Baxter
LTJG D. Herlihy
ENS A. Francis
ENS C. Bailey
ENS F. Migaiolo

Automated Plot By.....PMC Xynetics Plotter

Verified By.....L. T. Deodato

Evaluated By.....D. J. Hill

1. INTRODUCTION

H-9987 (1981) is a navigable area survey conducted in accordance with Project Instructions OPR-0343-FA-82, dated October 14, 1981 with Change 1 dated October 15, 1981 and Change 2 dated November 23, 1981.

The survey extends south into Port Frederick from latitude 58°07'30"N and terminates at latitude 58°03'30"N. The 2-fathom inshore limit prescribed by the project instructions was generally exceeded and the 0-fathom curve has been adequately developed in many areas. A 1:5000 scale inset of the harbor area at Hoonah has been included on the smooth sheet in order to adequately portray the intensified development of that area.

Field tide reductions are based on predicted tides from Juneau, Alaska corrected for time and range per the project instructions. Final tide reductions are based on a temporary ADR gage installed at Hoonah Harbor (945-2441).

Projection parameters were revised to those necessary to plot the survey using a polyconic projection on a 91cm by 140cm sheet. The limits of plotted hydrography exceed those specified in the Hydrographic Manual.

Velocity correctors were revised slightly based on a rescaling of the velocity corrector graph.

Transducer corrector table times were revised to exclude periods of data acquisition when the echo sounder was not used.

The field generated transducer correction tables have been replaced in the Descriptive Report by revised tables.

The signal list is changed to reflect the latest name and date information.

The digital records for this survey have been updated to include all categories of information required to comply with N/CG letter, Policy for Certification and Delivery of Hydrographic Surveys, December 17, 1982.

2. CONTROL AND SHORELINE

Hydrographic position control is adequately discussed in paragraphs F and G of the Descriptive Report, Horizontal Control Report OPR-0343-FA-82, and Electronic Control Report OPR-0343-FA-82. The smooth sheet was plotted using published and field positions of control stations.

Shoreline is not shown on the smooth sheet except in the area of Hoonah because hydrography conflicts with the charted shoreline. The Hoonah shoreline originates with the present survey and was positioned by sextant fixes. Portions of the shoreline determined to be accurately located are depicted with a solid red line while approximate locations are depicted with a dashed red line.

3. HYDROGRAPHY

Soundings at crossings are in good agreement.

Standard depth curves have been completed with the exception of the 0-fathom curve in some areas inshore beyond the limits of hydrography.

The development of bottom configuration is adequate in all navigable areas and least depths have been determined on all submerged rocks and shoals.

Some soundings along the breakwaters in the vicinity of latitude $58^{\circ}06'16.5''N$, longitude $135^{\circ}26'45.0''W$, latitude $58^{\circ}06'21.0''N$, longitude $135^{\circ}26'52.3''W$ and latitude $58^{\circ}06'28''N$, longitude $135^{\circ}26'46''W$ have been displaced to improve the legibility of the breakwaters. Leadline soundings along pier faces in Hoonah Harbor have also been displaced to improve legibility of the piers.

4. CONDITION OF SURVEY

The smooth sheet and accompanying hydrographic records adequately conform to the requirements of the Hydrographic Manual with the following exceptions:

a. Bottom samples obtained in the Hoonah area were not logged on the Oceanographic Log Sheet-M, necessitating that data be abstracted directly from sounding volumes.

b. The Abstract of Times of Hydrography was incomplete and did not include the first day of hydrography.

c. The Descriptive Report contains specific recommendations regarding revisions to U. S. Geological Survey (USGS) topographic maps. These recommendations have been reviewed and appropriate information has been incorporated as part of the present survey. The recommendations may be used for chart revision as considered appropriate.

d. The Descriptive Report, section L, Comparison With Charts, contains discussions of features which originate with prior surveys while section K, Comparison With Prior Surveys, contains little discussion of important features and no discussion of the five presurvey review items investigated.

e. The field sheet shows a 4.1-fathom sounding at latitude $58^{\circ}03'43.8''N$, longitude $135^{\circ}32'09.7''W$ and a shoal area (PSR Item 8) in the vicinity of latitude $58^{\circ}06'03.3''N$, longitude $135^{\circ}28'22.8''W$ which are inadequately documented in the field records. The raw data printouts and the Descriptive Report contain no information regarding the nature of these features as either rocks or shoals. However, a reference to these features in a danger to navigation letter, January 28, 1982, from the chief of party to the 17th U. S. Coast Guard District describes them as rocks. Accordingly, the smooth sheet portrays the 4.1-fathom sounding as 4.2 Rk (reduced to MLLW) and the shoal area as a submerged rock covered 0.6 fathoms at MLLW.

5. JUNCTIONS

<u>Survey</u>	<u>Scale</u>	<u>Relative Location</u>
H-9990 (1981-82)	1:10,000	North
H-10010 (1982)	1:10,000	South

The junctions have been completed and are inked.

6. COMPARISON WITH PRIOR SURVEYS

a. H-2563 (1901) 1:20,000

Comparison with H-2563 is generally good, particularly in depths greater than 50 fathoms. However, two anomalous 76-fathom soundings at latitude $58^{\circ}07'17''N$, longitude $135^{\circ}28'15''W$ and latitude $58^{\circ}07'22''N$, longitude $135^{\circ}28'21''W$ are not representative of the bottom configuration as shown on the present survey and are probably the result of a 10-fathom recording error, making these prior soundings too deep.

A 7.2-fathom sounding has been carried forward at latitude $58^{\circ}05'34''N$, longitude $135^{\circ}29'08''W$ to supplement the present survey.

The area southeast of Pitt Island has changed drastically as a result of the construction of a small boat basin at Hoonah. The present survey is adequate to supersede H-2563 in its entirety in this area to the extent of high water line development by the hydrographer. In other areas, H-2563 is superseded to the limits of hydrography on the present survey to include

several reefs, ledges and a pier at latitude 58°04'06"N, longitude 135°36'06"W.

b. H-4319 (1923) 1:20,000

Comparison with H-4319 indicates that prior depths are generally deeper by as much as 13 fathoms. The greatest discrepancy occurs in depths less than 40 fathoms and are attributable to a combination of sounding displacement on steep slopes and better surveying techniques on the present survey. The present survey is adequate to supersede H-4319 to the limits of present hydrography.

There are five presurvey review items within the limits of the survey. Discussion of these items is contained in section E, Hydrographic Sheets, of the Descriptive Report. With the exception of PSR Item 8, the field disposition and discussion of each item as supplemented by marginal notes is adequate.

PSR Item 8, a 3-fathom sounding charted at latitude 58°06'04.9"N, longitude 135°28'24.6"W, although adequately developed was not completely described in the Descriptive Report. The field sheet portrayal of this feature was revised on the smooth sheet to a 0.6 Rk, based on a description contained in a letter from the hydrographer to the 17th U. S. Coast Guard District (see paragraph 4.e). With this revision the present survey is adequate to supersede the charted 3-fathom sounding.

AWOIS
50256

7. COMPARISON WITH THE CHART

17302, 13th Ed., May 13, 1978

a. Hydrography - Most soundings and features originate with the prior surveys and have been previously addressed.

The feature charted as Dols PA at latitude 58°06'54"N, longitude 135°27'06"W originates with a miscellaneous source and is not considered disproven since the records contain no information regarding a specific investigation. It is recommended that the feature be revised to submerged until additional work is conducted to verify or disprove its existence.

The dangerous sunken wreck with masts charted at latitude 58°06'36"N, longitude 135°26'42"W was deleted by Local Notice to Mariners 37 of 1979.

Extensive shoreline changes have occurred at Hoonah as the result of the construction of a small boat basin. The present survey has developed the area using hydrographic methods and will be adequate for charting the changes until updated photogrammetric compilations become available.

Charted rocks and islets shoreward of the 0-fathom curve not specifically addressed in the Descriptive Report generally fall outside of the limits of hydrography. These features should be retained until they can be addressed by additional work.

Comparisons with the USGS topographic map contained in section L, Comparison With The Chart, have been reviewed and revised as required to insure that the recommendations refer to Chart 17302.

The present survey is adequate to supersede the chart within the common area.

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

c. Aids to Navigation - There are no aids charted within the survey area. Two new aids described in the U. S. Coast Guard Light List were located and positions reported using NOAA Form 76-40. These aids adequately serve their intended purpose.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey adequately complies with the project instructions.

9. ADDITIONAL FIELD WORK

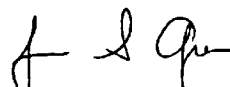
This is an excellent navigable area survey and no additional field work is necessary.

Respectfully submitted,



Dennis J. Hill
Cartographer

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



James S. Green
Supervisory Cartographer

ATTACHMENT TO DESCRIPTIVE REPORT FOR SURVEY H-9987

I have reviewed the smooth sheet, accompanying data, and reports of this navigable area hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.


Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:KWJeffers

SIGNATURE AND DATE:

 5/6/83

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.


Director, Pacific Marine Center (Date)

DATE: April 30, 1982

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 945-2441 Hoonah Harbor, Port Frederick, AK

Period: November ~~28~~⁴ - December ~~17~~⁴, 1981 *Revised per telecon J. Mullen (N/OMS123) 3/31/83*

HYDROGRAPHIC SHEET: H-9987

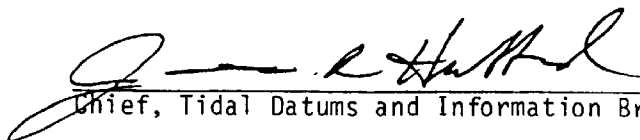
OPR: 0343

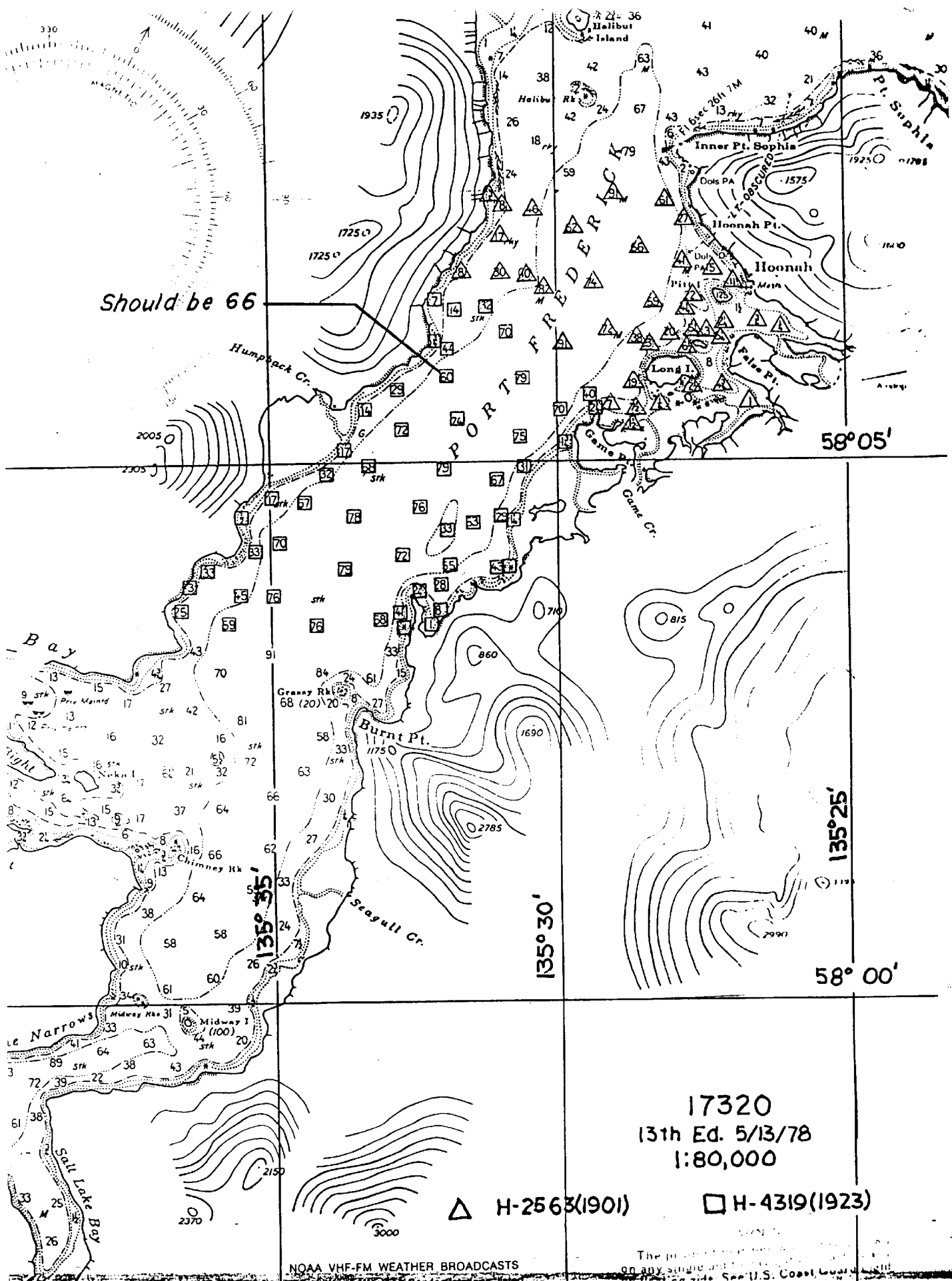
Locality: Port Frederick, Alaska

Plane of reference (mean lower low water): 13.30 ft.

Height of Mean High Water above Plane of Reference is 14.09 ft.

REMARKS: Zone Direct.


Chief, Tidal Datums and Information Branch



Should be 66

58° 05'

135° 25'

58° 00'

17320
13th Ed. 5/13/78
1:80,000

△ H-2563(1901) □ H-4319(1923)

NOAA VHF-FM WEATHER BROADCASTS

The information on this chart is current as of the date shown in the title block. For the most current information, consult the latest edition of this chart or the U.S. Coast Guard's electronic publications.

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

Hydrographic Index No. 111E

