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 24 - December 14, 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

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:

Time Corrections		Height Correction Ratio
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.