

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: February 25, 1987

Marine Center: Pacific

OPR: P180

Hydrographic Sheet: H-10197

Locality: South of Kilokak Rock, Shelikof Strait, Alaska

Time Period: June 19 - September 27, 1986

Tide Station Used: 945-8464 Agripina Bay, AK

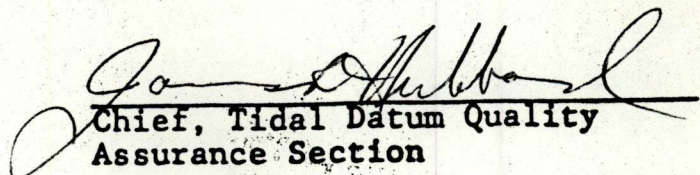
Plane of Reference (Mean Lower Low Water): 0.17 Ft.

Height of Mean High Water Above Plane of Reference: 10.2 Ft.

Remarks: Recommended Zoning:

This supercedes tide note dated January, 21, 1987

1. North of Latitude $57^{\circ}09.0'$ apply a X1.06 range ratio to all heights.
2. South of Latitude $57^{\circ}09.0'$ zone direct.


Chief, Tidal Datum Quality
Assurance Section

II. Field Tide Note
1986 Field Season

The tide gage located at Kodiak, Alaska (945-7283) served as the reference station for the predicted tides used for correctors on surveys H-10197, H-10214 and H-10215 as specified by Project Instructions OPR-P180-FA-85,86.

The controlling tide station is Sand Point, Alaska (945-9450), the operating station at Seldovia, Alaska (945-5500) will supply additional control for datum reduction.

Predicted tide correctors were interpolated aboard the FAIRWEATHER using data from the 1986 West Coast Tide Tables and program AM 500 dated November 10, 1972. All correctors calculated were based on zone correctors supplied by the project instructions and tabulated below.

Time Correction		Height Correction
<u>High Water</u>	<u>Low Water</u>	<u>Range Ratio</u>
+0hr 25min	+0hr 40min	x 1.32

All times of predicted and reported tides are expressed in Universal Coordinated Time. Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

One field tide station, Agripina Bay (945-8464), was established in support of these surveys. The Agripina Bay Station, located at latitude 57/06/24, longitude 156/26/24, operated throughout the period of surveying on sheets H-10197, H-10214 and H-10215. The station was installed on June 17, 1986 (DN 168) and removed on September 27, 1986 (DN 270). Two Bristol Bubbler analog tide gages were installed in a cove on the northern side of the largest island in Agripina Bay. The gages, serial numbers 67A 16201 and 68A 9335, had a range of 0 to 30 feet. The orifices were bolted to a rock approximately 6 inches above the bay floor. The tubing was led across the bottom and weighted with rocks along its length. The staff was bolted to a 2x4 with stainless steel lag bolts. The staff was bolted to a rock face at the 3-foot mark; braced by a strongback at the 8-foot level with two guy wires which led from the top of the 2x4 to eyebolts set in rock. Zero of the tide staff equals 9.9 feet on gage A and 10.6 feet on gage B. For further information refer to the Tide Station Report #945-8464, Agripina Bay, Alaska.

Gage A

At the start of the 3-hour observations on June 18, 1986 (DN 169), a leak was found at the orifice tube fitting, the leak was fixed and the observations were restarted.

At 1700UTC July 31, 1986 (DN 212) the gage paper jumped the sprockets, it was noted that the time was subsequently one hour fast, the time was reset on August 5, 1986 (DN 217).

On September 5, 1986 (DN 248) the gage paper was found to be jammed, it had jumped the sprockets and tore. It was noted and reset at 1650UTC on September 5, 1986. During this same time period the back-up gage was also jammed. Tides need to be interpolated for the period of 1520UTC to 1650UTC on September 5, 1986.

Gage B

On July 7, 1986 (DN 188) the gage paper was found to have jammed, it was reset at 1632UTC on the same day.

From 2200UTC on July 19, 1986 (DN 200) to 0500UTC on July 20, 1986 (DN 201) the marigram shows a stepping pattern on the trace, apparently the gage corrected itself. No action was taken.

On July 23, 1986 (DN 204) at 2033UTCz the gage time was adjusted incorrectly to a 12 hour error. Time was correctly adjusted at 2127UTC on the same day.

On July 31, 1986 (DN 212) the gage time was again incorrectly set, 1 hour slow. Time was reset on August 5, 1986 (DN 217) at 1915UTC.

On September 4, 1986 (DN 247) the gage paper was installed incorrectly resulting in periodic jamming of the paper. This was corrected on September 11, 1986 (DN 254) at 1703z. During this time period the primary gage also malfunctioned resulting in the need for tide interpolation (see gage A explanation).

Levels

Opening levels were run on June 17, 1986 (DN 168) to five recovered standard NOS brass disks and one eyebolt (a temporary benchmark). Closing levels were run on September 27, 1986 (DN 270) over the same run. A maximum error of 0.003m between benchmark set-ups was obtained for both opening and closing levels. A difference of 0.012m was obtained between the opening and closing levels for the segment from the staff to the temporary benchmark. This difference may be due to the fact that the rodman has to stand on the staff support for this segment.

Zoning Recommendations

None

Field Tide Note
OPR-P180-FA-85
Agrimina Bay, Alaska

The tide gauge at Kodiak, Alaska (945-7283) served as the reference station for the predicted tides used for correctors on survey H-10197 as stated in the project instructions, OPR-P180-FA-85. Leveling and maintenance of this station is performed by the Pacific Tide Party.

Predicted tide correctors were interpolated aboard FAIRWEATHER using data from the 1985 West Coast Tide Tables and program AM 500 dated November 10, 1972. The correctors used were provided in the project instructions (OPR-P180-FA-85). The correctors are +25 minutes for high water, +40 minutes for low water and a height ratio of $\times 1.32$.

All times of predicted and reported tides are expressed in Universal Coordinated Time (UTC). Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

Two field tide stations, Agrimina Bay (945-8464) and Imuya Bay (945-8427), were established in support of this survey (see the Field Tide Note for Imuya Bay, Alaska for further information). The Agrimina Bay station, located at latitude 57/06/30 N, longitude 155/26/24 W, operated throughout the period of operation on OPR-P180-FA-85. The station was installed on August 10, 1985 (DN 222) and removed on September 12, 1985 (DN 255). The gauge, a Bristol Bubbler analog tide gauge, was installed in a small inlet on the northern side of the largest island in Agrimina Bay. The gauge, serial number 68A 9333, had a range of 0 to 30 feet. The orifice was secured to a 150 pound rock and placed in approximately 17 feet of water at MLLW. The tubing was weighted with rocks along its entire length. The staff was a fiberglass staff secured to a 2x4 with stainless steel lag bolts. The staff was secured to a rock face by 4 guy wires and a strongback. Zero of the tide staff equalled 17.1 feet on the gauge. For further information refer to the Tide Station Report #945-8464, Agrimina Bay, AK.

Opening levels were run to five standard NOS brass benchmarks and one temporary benchmark (an eyebolt) on August 20, 1985 (DN 232) with a closure of 2 mm over the entire 0.5 mile run. Closing levels were run on September 12, 1985 (DN 255) with a closure of 2 mm over the same run. There is a difference in the elevation between the opening and the closing levels of BM 8464 D and BM 8464 E of 7 mm which will be resolved in the 1986 field season.

No zoning recommendations are forwarded.