sometimes continued for periods longer than 5 minutes. This data were considered acceptable due to the uniform nature of the bathymetry. A close comparison with adjacent soundings acquired in better sea conditions showed an acceptable trend in the bottom character. It was concluded that data quality would not be impaired by conducting sounding operations in these conditions.

Pneumatic Depth Gage

Not applicable.

Bar Check and Lead Lines

Bar check and lead lines were calibrated by RAINIER personnel during January 1991 at PMC. Calibration forms are included in the Summer 1991 Corrections to Echo Sounding Data Package for OPR-R184-RA.

Tide Correctors

Tidal zoning and correctors applicable to predicted tides for the Hagemeister, Alaska, reference station (945-5089) were provided in the Project Instructions as amended by change No. 2, dated July 18, 1991, and are shown below:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Time Corrector</th>
<th>Range Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>North of 58°41'00&quot;N</td>
<td>+0 hr 10 min</td>
<td>x1.07</td>
</tr>
</tbody>
</table>

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. *

Tide gages were installed and maintained by RAINIER personnel at Estus Point (946-5429) and at Pyrite Point (946-5123). The control station was re-established at NOAA's FAIRWEATHER's 1988 site at the south end of Hagemeister Island (946-5089). Due to large discrepancies between crosslines, adjacent main scheme lines, and prior survey comparisons when plotting soundings with predicted tides, estimated real-time tide data acquired from digital bubblers were applied to semi-smooth sounding plots and the FFS during this period.

The estimated real-time tides were created by comparing raw digital tide data from the Estus Point station (946-5429) with predicted tides for Sheet F's geographic area using LOTUS 1-2-3 graphics. From this comparison of predicted versus real tide curves, a height corrector of -0.6 feet was determined to reduce the raw digital tide data to MLLW. This tide corrector was further refined to -1.5 feet by comparing, at the junction, the soundings of this survey with H-10253 (1:20,000; 1987). Additional sounding lines were run at this junction to ensure adequate comparisons with which to judge the tide corrector. Estimated real-time tides using a tide corrector of -1.5 feet were then applied throughout Sheet F.

The station descriptions, field tide records, and Field Tide Notes have been forwarded to N/O/MA1212 in accordance with HSG 30 and FPM 4.3. Requests for approved tides have been forwarded to N/O/MA121. Copies of the Field Tide Notes and the request for approved tides are included in Appendix V.*

* Filed with the hydrographic data.