

IV.A.1 - TIDE AND WATER LEVELS

IV.A.1.i - Station Description

A back up water level sensor was installed on June 4, 2007 at the US Coast guard base Portsmouth Station in New Castle, New Hampshire in support of the Field Hydrographic Course at the University of New Hampshire. The reason for the installation was because the permanent tide gauge installed and operated by NOAA was showing data gaps in both the transmission and on the internal data logger. Data from the newly installed back up water level sensor would be used to fill any gaps in the data from the primary NOAA gauge if necessary.

On June 7, 2007 Carl Kammerer of the Joint Hydrographic Center (JHC) replaced the Aquatrak Controller in the NOAA gauge. After the replacement of the controller there were three data gaps each of which were only 6 min long. The gaps were on June 6, 2007 at 12:12 (UTC), June 9, 2007 at 21:00 (UTC) and June 13, 2007 at 19:24 (UTC). Surveying for this project was scheduled to be done between June 11th and 13th. However, due to rough seas, 3-5 ft, no data was collected on June 13th. Thus the previously mentioned gaps in the primary gauge data did not effect the survey.

In order to prepare for the back up gauge installation a team of students from the Center of Coastal and Ocean Mapping (CCOM) made a reconnaissance trip to the site and determined the most appropriate location to install the backup gauge was along the eastside of the covered Coast Guard pier. This location was chosen because of its vicinity to the survey area and the primary NOAA gauge, the USCG pier provided an excellent structure for mounting the gauge and a floating dock provided a working platform for banding the sensor's cable to the piling.

The backup sensor was mounted inside a 4-in diameter white PVC pipe using a 5" stainless steel section of althread. This section of althread penetrated through both the pipe and mounting hole on the end of the sensor (see IV.A.2). Stainless steel nuts and washers were used to fasten the sensor in an upright position to prevent pivoting of sensor around the mounting rod. The offsets for the sensor in the PVC pipe are shown in appendix IV.A.3. The 10-ft PVC pipe was attached to the piling with steel banding. The cable connecting the sensor to the datalogger was routed up the same piling the PVC pipe was mounted to, under the wood flooring of the pier and inside the covered building where the entire logging unit; which includes the logger, battery, compensating unit and external battery; rested in place against a metal support beam. Mounting the logger inside the building both protected the unit from weather, which was important because the unit itself was not fully weather resistant and water leaked through the seam around the door, and provided a dry place for the tide observer to download data or perform maintenance on the logger.