The effect of this decrease in flow velocity will be to decrease the magnitude of the erosive forces along the shoreline while increasing the likelihood of deposition in the trap (as opposed to areas further inland). As the trap begins to fill up the cross-sectional area of the inlet decreases and the flow velocities increase, thereby increasing the magnitude of the erosive forces along the shoreline and decreasing the tendency of deposition in the trap until conditions equivalent to those when the trap is full exsit. As a result, it may be concluded that conditions most conducive to erosion along the shoreline and deposition of the eroded material further inland exist when the trap is full. Based on this conclusion, model testing was limited to conditions corresponding to the filled trap.

3.3 Tide Records

Data obtained at the seven tide gages were utilized in the computation of inlet hydraulic parameters as well as in the calibration of the physical model. Analysis of these data resulted in the determination of tidal ranges at each gage, ratios of these ranges relative to that of the inlet mouth (gage T-1), and lags of high water and low water at each gage relative to high and low water at gage T-1. These data are presented in Table 3.1. In addition, as an illustration, a cumulative histogram of the tide record from gage 2A over the time period September 30 to November 7, 1982 is provided in Fig. 3.2. Data from the National Ocean Survey (NOS) Tide Tables indicate an average tide range of 0.75 m and a spring tide range of 1.1 m for the inlet vicinity. The tidal ranges measured corresponded well with the NOS predictions in terms of magnitude (within 0.1 m) but were found to be less comparable in terms of the time of occurrence (within 30 minutes).