

duced to the level of Low Water Ordinary Spring Tides, viz.: 16.08 feet below a Bench Mark, cut near the South east angle of the Sail loft at the Dockyard." The tidal observations from the self-registering gauge have also shown that the datum as thus defined, is closely in accord with mean low-water at spring tides. This datum may, therefore, be accepted as correct and well established.

The tide-gauge is situated at the Marine and Fisheries wharf, a property adjoining the Dockyard; and the Admiralty datum as above defined, has been used for reference throughout the series of observations, since 1895. The levels were then carried over to the gauge from the above Bench-mark, and they have been repeatedly checked by myself in subsequent years; and any changes in elevation at the gauge, due to settlement or other causes, have been carefully allowed for. The Tidal Survey levels are thus consistent throughout, and in accord with the Chart datum.

The best relation between the other two datum planes, was established by Mr. E. H. Keating, when City Engineer at Halifax, from comparisons between twenty-one Bench-marks, which define the City datum and the Royal Engineers' datum respectively. From his original notes, the difference between them, as indicated by these Bench-marks, ranges from 1.61 to 1.96 feet, when two exceptional values are discarded which he has marked. The actual average of the nineteen remaining differences is 1.81 feet; and the mean value which Mr. Keating has finally adopted, places the Halifax City datum at 1.85 feet below the Royal Engineers' datum. This value for the difference has been generally adopted.

This relation being established, it is clear that if the elevation of the Bench-mark in the Dockyard with reference to either of these datum planes, could be correctly ascertained, the desired relations would result. A further endeavour was accordingly made this season, to connect the Halifax city levels with the Bench-mark in the Dockyard. But the City Bench-marks in that vicinity were found to have both "original" and "corrected" elevations; besides showing a want of agreement with each other; and no method of working out the comparisons could be devised to give a satisfactory result. Discrepancies ranging from four inches to a foot remained outstanding which could not be accounted for, as there was no means of knowing which of them had the greater balance of probability in their favour.

The elevation of the Bench-mark in the Dockyard is given as