

In cases where great additional cost would attend an enlargement of the canal to sixty feet, as where the back opposite to the towing path is of solid rock, very difficult to remove, and an excavation of the proper depth, but narrower than sixty feet, yields enough of that material to sustain the outer embankment by walling, the breadth of the canal is reduced to fifty feet. Situations may be easily imagined, and, although none such have been encountered, may hereafter be found on this canal, where an economy may recommend a contraction of its breadth, to less than its present minimum.

But if any doubt existed as to the relative cost of canals of different cross sections or volumes of water, none any longer remains, if the size of their boats be fixed, as to the superior facility of the motion of those boats on broad and deep, rather than upon narrow, or shallow canals.— Science has, to a certain extent, sufficiently ascertained for practical use, this interesting principle.

From the able report of the United States' Engineers on the plan recommended by them for the Chesapeake and Ohio Canal, the Board take pleasure, in transferring to this the following extract, which has often been referred to in the reports of the Committees of the Chesapeake and Ohio Canal Convention, and of the House of Representatives upon the same subject.

“PLAN AND ESTIMATE OF THE CANAL.

“Transverse section of the Canal is exhibited on the sheet No. 3. The breadth at the bottom is 33 feet; at the surface, 48 feet; the depth of water, 5 feet; the tow path, 9 feet wide; the guard banks, 5 feet at the top; the surf beams, kept on the level of water, 2 feet wide each; the tow path, and top of the guard bank, 2 feet above the surface of the canal.

This transverse section is to be modified where local circumstances require it, and, more especially, in the cases of deep cutting, steep side cutting, embanking, and also, where the canal is supported by walls. In the framing of the plan, a due attention has been paid to these modifications, with a view to conciliate the convenience of the work with the strictest economy. The depth of 5 feet has been preserved throughout the line, but the breadth has been often much lessened. As to the surf beams, they are intended to protect the slopes from being washed off, as also to lessen the resistance opposed to the boat, by affording to the eddy water a free passage.