

I have never yet heard of but one rail road company that pretended to be able to pay their actual expenses for less than two cents per ton per mile,* though there have been several instances of an intention at some future day to work cheaper than that. Until the thing is accomplished, *we are compelled to assume two cents per ton per mile as the present minimum of railway expenses.* Half a cent per ton per mile, though below the average, is not the minimum of the cost of freight on a good canal with horse power.

But, after all, past experience on this head is of much less value than is generally supposed. A new element has been introduced into the question of canal navigation. The use of steam, even on small canals, has set all our former calculations aside, and completely changed all the data of this problem.

On the Birmingham and Liverpool Junction Canal, steam tugs have been more than a year in constant operation carrying on the trade by drawing boats in regular and long trains. The canal is of small dimensions, and presents numerous impediments to the success of the experiment. The cross section is small, the locks narrow, the line crooked, and the bridges frequent and low.

Your canal, on the contrary, has all the advantages of an ample depth and breadth, capacious locks, freedom from the obstruction of bridges, and moderate and well developed flexures. Notwithstanding the impediments on the English line, success is complete; and there can be no doubt that, with your advantages, and a large and steady trade in addition, it will be still more striking. On the English line, from six to ten boats are taken in a train; on yours, two or three would be sufficient.

I am not well informed in respect to the tonnage of the boats of the Chesapeake and Ohio Canal; but I presume that, in estimating their capacity at about 90 tons, I shall be within the limit. A small engine, say fifteen or twenty horse power, placed in one of these boats will move it, with two other boats of equal burden in tow, at three miles per hour.

The capital required will be—

For three boats, at \$1,000 each	\$3,000
For a twenty horse power engine	2,000

Aggregate capital required for transporting 250 tons	<u>5,000</u>
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To convey this amount of freight on a rail road will require—

A twenty ton locomotive, at	\$10,000
Fifty cars of five tons each, at \$300	15,000

Capital in an equivalent train	<u>25,000</u>
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* I do not wish to make any invidious remark in this paper; but the accounts of the only work professing to carry at an actual cost for less than two cents per ton per mile are not so published as to justify any public confidence in them.