

BRITISH
NORTH AMERICA.

In the single line the ploughshare travels in the centre of the track, throwing the snow off at once upon both sides.

For the double track the snow-plough weighs from 5 to 6 tons, and cost about 125*l*. For the single track it is somewhat lighter.

The plough requires generally, when run without a train, two engines of 20 tons each, or with a train three engines.

When the fall of snow does not exceed a few inches, the small plough, always fixed in front of the engine, consisting of an open frame-work projecting about 5 feet in front, and called a "*cow-scraper*," is found, when cased over, to be sufficient to clear the line. When the fall is deeper, the plough is used immediately after the snow has ceased to fall.

It can be propelled by three 20-ton engines through three feet of newly fallen snow at the rate of six miles an hours.

If the fall does not exceed two feet, it can travel at the rate of 15 miles an hour.

The drifts through which it is propelled are sometimes 15 feet deep, and from 200 to 300 feet long, and at others 8 or 10 feet deep, and from a quarter to half a mile in length.

The line of railway is marked in divisions of about eight miles, to each of which eight or ten men are allotted, who pass along the line each day with small hand-ploughs, picks, &c., clearing away the snow and ice which the trains collect and harden between the rails and the roadway.

It is found that the freezing of the snow or rain upon the rails does not impede the heavy engines, as the weight of the forward wheels is sufficient to break it, and enable the driving wheels to bite.

Whenever, from local causes, the snow is found to drift on the line of railway, snow fences are erected, which are found very effectual. They are simple board fences from 10 to 15 feet high, placed from 10 to 20 feet back from the roadway.

In wet weather the rails become very slippery; but the difficulty is overcome, and the wheels enabled to bite upon the steep gradients by the use of sand-boxes, which are fixed in front of the engine and immediately over the rails. These can be opened at pleasure by the engine-driver, and the sand is used wherever necessary.

The means thus successfully adopted to overcome the obstacles arising from ice and snow are employed much in the same way upon all the railways which are exposed to them.

In the year 1847 the expense incurred under this head (removing ice and snow) upon the western railroad in Massachusetts, was, according to the official return, 2763 dollars, equivalent to 575*l*. sterling.

Upon many of the other lines expenses under the same head are returned, but very much smaller in amount.

In places where the rails are not raised above the general level of the country, much greater difficulty is experienced in keeping the lines clear of snow than in parts where there are embankments.

From the foregoing it does not appear, therefore, that snow need be considered an insurmountable obstacle to the formation of a line of railway from Halifax to Quebec.

To obviate, as much as possible, the liability to interruption from this cause, it is recommended that in the construction of the line, it be adopted as a principle, that the top of the iron rail be kept as high as the average depth of snow in the country through which the line passes.

In Nova Scotia this will require probably an embankment of 2 feet high, gradually increasing as it proceeds northward to the St. Lawrence and along the flat open country on its banks, to 5 or even 6 feet.

The whole of that part of British North America through which this line is intended to be run, being as yet free from railways, the choice of gauge is clear and open.

Without entering into and quoting the arguments which have been adduced in favour of the broad or narrow gauge of England, as it is more a question of detail than otherwise, it will be deemed sufficient for the present report to recommend an intermediate gauge. Probably 5 feet 6 inches will be the most suitable, as combining the greatest amount of practical utility with the least amount of increased expenditure.

With the object of proceeding on to the consideration of expense of construction, the proposed trunk line will be supposed to have a single track with one-tenth additional for side lines and turn outs, to have a rail 65 lbs. to the yard, supported upon longitudinal sleepers with cross-ties, similar to the rail used upon the London and Croydon line; the wood to be prepared according to Payne's process, to have a gauge of 5 feet 6 inches, and as a principle, the top of the rails to be kept above the level of the surface of the ground, at a height equal to the average depth of the snow. For the best information as to the cost of making such a railway, reference must be made to the works of a similar character in the United States.

At about the close of the year 1847, there were in that country nearly 5800 miles of railway completed or in progress. The average cost for those having a single track has been estimated at 22,000 dollars, equivalent to 4166*l*. sterling per mile. For the double track, 32,000 dollars, or 6666*l*. sterling per mile.

But the extreme differences which are to be observed in the cost of construction in the various States are so great, ranging from 1600*l*. up to 24,000*l*. per mile, that no criterion can be established from averages obtained from such discordant data.

The State of Massachusetts affords the best materials for accurate information.

All the railroad corporations are by law obliged to make annual returns to the Legislature, and very valuable statistical information is thereby obtained upon railway affairs.

From the official reports for the year 1847, the following table has been compiled:—