

No. 34: Miles run, 22,738; coal used, 21 lb. per mile; wages and repairs, 0·5d. per mile; materials for repairs, 1·08d. per mile; average load, 6-wheel carriages, 7·9 tons.

The writer asks concerning me, "Surely he cannot mean that a goods engine running 10 miles an hour makes as great a mileage as a passenger engine that runs 40." This will depend on how many hours each runs (the figures are Mr. Evans's).

The writer of the pamphlet says it is new to him that there are different ways of computing train-mileage.

The report of the Railroad Commissioners of the Commonwealth of Massachusetts in 1875 states that the following question was put to, and answers received from, different companies:—

Question: "At what daily mileage were gravel trains and engines engaged in switching computed in your train-mileage?"

Answers:

Boston and Albany Railway Company: "Gravel, actual. Switching, 5 miles an hour."

Boston and Lowell Railway Company: "Gravel, actual. Switching, 6 miles an hour."

Boston and Maine Railway Company: "No daily mileage, but in gross for gravel trains. Switching is not kept."

Boston and Providence: "One hundred and sixty-three miles."

Connecticut River Railway Company: "Actual mileage, road repairs and wood trains. Switching engine averaged at 35 miles per day."

Eastern Railway Company: "Eighty-four miles."

Fitchburgh Railroad Company: "Switching, 50 miles a day. Wood, gravel, and snow, actual distances run."

And so on, showing great variations. The writer of the pamphlet is thus unaware of the practice in his own country in this respect. It is to be regretted that he should have been ignorant of the significance of the train-mileage figures which he quotes so largely. At the end I append a statement of the train-mileage performance of engines on a large number of American lines, compiled from American official returns, which shows an average very far below that claimed by the writer. The lowest average is only 14,855 train-miles per engine per annum, and the highest only 24,790.

In New Zealand, the rule laid down is this: Train-mileage is the station-to-station distance of passenger and goods trains, *plus* the distance one way of engines assisting trains. No allowance is permitted for shunting or for ballast trains.

We have thus before us one of the causes why the Americans could show much better train-mileage than New Zealand.

Here are the remarks of the same Commissioners on the subject of train-mileage: "The accuracy of any result arrived at through the application of this test necessarily depends, in the first place, on the correctness with which the mileage account is kept, and upon what in each case enters into it. That, again, is decided by arbitrary rules: some corporations make the computation in one way, some in another." Then follow comments on the cases previously quoted; and the report continues, "In the first place, therefore, there is no uniformity in the mileage account, upon which the value of the test depends."

What value, then, is to be placed on the quotations of the performances of American engines in train-mileage, when these are the opinions of American Commissioners, carefully arrived at after a minute examination into the working of a large system of American railways? My former remark, to which the writer takes exception, will apply with greater force, backed by this evidence—"To compare the train-mileage of two countries in so crude a manner is therefore manifestly erratic."

I shall again draw on the Commissioners' remarks on "Railroad Accounts and Returns" of the Massachusetts corporations. They speak thus:—

"The railroad returns are, and must continue to be, essentially unreliable, if not even deceptive, until a radical reform in the methods of railway bookkeeping is effected. . . ."

Of the returns they say,—

"They are collected by authority of the law and compiled by public officials; they are prepared under oath and upon a uniform schedule of interrogatories, the answers to which are carefully tabulated. . . . Under all these conditions the returns go out to the public with a species of indorsement of their truthfulness and accuracy on the part of the commonwealth. They thus enjoy an authority which in no way belongs to them. In the popular mind it is naturally supposed that, as the results are uniform, the methods through which they are arrived at are likewise uniform, and it requires a very considerable familiarity with the railroad accounts to see that this is not the case."

The italics are my own. Having given a very considerable amount of attention to railway accounts and working, and having compiled the system of accounts in use on the New Zealand railways, I can, in a general way, most thoroughly indorse the latter remarks of the American Commissioners. For instance, the cost per ton-mile of haulage expenses can only be properly appreciated by an expert. An engine drawing 1,200 tons on a level straight line will only draw 80 tons on a straight 1 in 40 grades with the same expenditure of power, and the same cost of fuel and wages. Hence the cost of haulage per ton-mile on the Canterbury main lines should not be compared with that on the Wellington line with 1 in 35 and 40 grades, or with that of the Auckland lines with 1 in 40 grades. To a layman who observes the cost per ton-mile in