

Canadian Railway and Marine World

February, 1915.

Some Maximums and Minimums in Train Operation.

By Alfred Price, Assistant General Manager, Eastern Lines, Canadian Pacific Railway.

It has become a trite saying that a railway company has nothing to sell except transportation, but in order to sell its sole commodity, it must have an ample supply available at all times, and to do so must buy a variety of materials. During the past ten years every item it uses in construction and in the operation and maintenance of its property has increased in price. For example: steel rails, telegraph poles, car sills and lumber have increased by amounts varying from 29% to 54%, while the wages of its enginemen, trainmen, yardmen, telegraphers and maintenance of way employes have increased from 19% to 79%, an increase in all its purchases, including labor, of approximately 35%.

If a commercial institution had to face the problems of securing sufficient additional revenue to offset such tremendously heavy increases in the cost of its raw material and its labor, it would adopt the simple, and natural expediency of increasing the price of its product, so that the consumer would ultimately pay the piper. But although a railway is a business conducted under much the same conditions as a manufactory, having many similar problems and difficulties, it does not enjoy the privilege of increasing its rates. In proof of this statement the following table, showing the earnings on all Canadian railways during the past seven years, is submitted. The units are, one passenger carried one mile—the passenger mile; and one ton carried one mile—the ton mile:

Year	Passenger mile cents	Ton mile cents
1907	1.911	.815
1908	1.920	.723
1909	1.921	.727
1910	1.866	.739
1911	1.944	.777
1912	1.943	.757
1913	1.973	.758

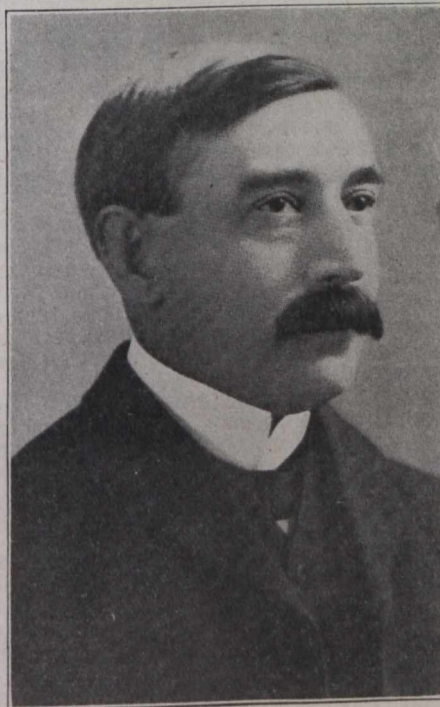
Since 1907, therefore, the earnings per passenger per 100 miles shows an increase of 6c., and per ton of freight per 100 miles a decrease of 5½c. But the ton mile units for 1914 were 23 billions, and the passenger mile units only 3 billions, so that the figures actually represent a very serious decrease in earnings. To be more specific, had the passenger mile and ton mile earnings of 1907 been applied to the 1913 traffic, the railways would have shown an increase in their net earnings of over \$11,000,000.

But, compared to a commercial enterprise, the railway has other handicaps; it cannot, like a manufactory, for instance, close down its plant in dull times and wait until there is a demand for its product, nor can it warehouse its product, holding for higher prices. The public demands that an ample supply of transportation be kept on hand at all times whether required or not; that the railway company be prepared to take care of the peak load whenever an unusual demand occurs, and that the service be efficient. It may, or may not, be reasonable to expect the railway company to do this. In view of these constantly increasing cost of materials the railway has to buy, and the increasing cost of every-

thing it has to sell, it is absolutely necessary that the strictest economy, consistent with efficiency, be practiced, and that intelligent, scientific methods of operation be adopted.

Unfortunately, the existing lines and facilities are not likely to be taxed to handle the traffic for some time to come. It would be folly, therefore, to advocate the lowering of transportation costs by reducing grades, eliminating curves, or building better operating facilities. Instead, it is desired to suggest that, under existing conditions, there are opportunities to reduce the operating expenses, for it will be freely admitted that there is a wide field for economy on Canadian railways without any impairment of efficiency.

The operating official naturally desires to provide a service as satisfactory as can be



Alfred Price, Assistant General Manager, Eastern Lines, Canadian Pacific Railway.

reasonably expected by the public, and at the minimum cost. Efficiency and economy might well be adopted as his slogan, the maximum efficiency at the minimum cost. If he can handle the freight without damaging, or losing it, he will take a long step towards efficiency, and, at the same time, will accomplish something worth while under the head of economy. Last year the freight loss and damage account of Canadian railways amounted to over \$2,000,000, the double the amount paid out in 1911. The shipper wants the goods delivered to the consignee intact, and would gladly waive the \$2,000,000 he now receives to have this done. This sum, therefore, may be regarded as a penalty imposed upon the railway for nonfulfilment of an obligation or con-

tract. The railways are almost entirely responsible for this loss. The waste can be stopped by the adoption of up to date methods and insistence upon the exercise of greater care on the part of agents, billers, checkers, porters and trainmen.

For clearing wrecks and satisfying claimants on account of injuries Canadian railways paid out last year over \$1,500,000. There were no less than 710 people killed by the movement of trains, besides 2,966 injured. It is quite true that almost half of those killed were trespassers, and we are likely to continue to have a harvest of deaths from this cause every year until there is a law making trespassing a criminal offense, and a severe penalty is imposed for a violation. Most of the other fatalities and injuries might have been avoided by the exercise of ordinary care. What is needed more than anything else is increased safety in railway operation. One dislikes to speak of the loss in dollars and cents in the face of the awful loss of life and limb as a result of these accidents. The figures quoted tell their own pitiful tale in terms needing no emphasis. The safety first campaign is doing a grand work, and is entitled to the sympathy and active help of every railway officer and employe.

The largest single operating item is the fuel bill. It amounted to \$28,000,000 last year on Canadian railways. For every locomotive mile run there was consumed 113 lbs. of coal for which was paid 17¼c. It is conceded that in order to secure the maximum tonnage with the minimum consumption everybody having to do with the running of trains must co-operate. The fireman alone might save a considerable sum of money. He now puts 11 scoopfuls of coal into the firebox per mile run. If he could manage to get it down to 10 the net earnings of the railways would increase by \$2,500,000. The question is, "Would he do it if it was his own coal?" But it must not be left to the fireman alone. Coal can be saved by the locomotive man, the locomotive foreman and his staff, the yardmaster and his staff, train despatchers, operators, trainmen, and, in fact, by everyone from the superintendent to the callboy.

It does not pay to run trains at high speeds, for aside from the greater liability to accident, and the relatively greater amount of damage and loss when an accident occurs, the service is expensive. Because of keen competition in certain territories, it would appear to be necessary to schedule some fast passenger trains, but when and where possible the actual running speed should not exceed from 45 to 50 miles an hour.

Last year the average number of passengers per train on Canadian railways was only 62, and the average number of cars was 5.6. The minimum tonnage per passenger train mile should be handled. On the other hand, and for obvious reasons in freight service, the maximum tonnage per train mile should be handled, and all way freights should be scheduled slow enough to enable locomotives to pull their full tonnage under normal weather conditions. It is significant that the Interstate Commerce