

minimum of traffic and the maximum of fixed charges, as the Transcontinental and Grand Trunk Pacific have.

As traffic developed and conditions warranted, the Canadian Pacific Railway improved its lines, thereby making a double saving of: first, the interest on the excessive first cost during the many years of meagre traffic, and, second, the very much lesser cost of doing work on a constructed line rather than in a wilderness many miles from a railway or other transportation.

The Intercolonial's troubles have been those inherent in all government management—excessive cost of construction, expensive management, and low freight rates.
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Suggested Remedies.—To remedy these matters many different suggestions have been made. These may be summarized as follows:—

1st. Transferring the Canadian Northern, Grand Trunk Pacific and Transcontinental to the Canadian Pacific.

2nd. Government ownership of some, or all, of these railways.

3rd. Aiding the Canadian Northern and Grand Trunk Pacific Railways until such time as they become profitable.

4th. The remedy which the writer advocates, consolidation of the Grand Trunk, Grand Trunk Pacific, Transcontinental and Canadian Northern in one system, under a new company to be formed.

The first of these, *viz.*, disposing of the Canadian Northern, Grand Trunk Pacific and Transcontinental to the Canadian Pacific, might be an ultimate financial success, provided that company were willing to assume the risk, but it is open to the fatal objection that it would entirely do away with all competition, which is absolutely necessary in any business. This remedy may, therefore, be dismissed without further discussion.

Government Ownership.—It does not seem possible that any one who has given serious thought to the matter can be in favor of government ownership of such an extensive system, more especially in a country so dominated by politics as is Canada. One can easily imagine what the result would be: before the first election a cry would go up for lower rates, which the politicians to suit their needs would grant. This would result in deficits such as have been so common on the Intercolonial. These deficits and the fixed charges would have to be met by taxation. The Canadian Pacific would have to meet the government rates, which would surely result in the bankruptcy of that road, or its being taken over by the government.

If all the roads were nationalized the cost would be far too much for the country to finance. There would be an entire lack of competition, which is disastrous to any business. There would be a lack of continuous management, as each party as it attained power would want to reward its own politicians by giving them the best positions on the railways, and the best men would not be selected.

The large army of government appointees necessary to run such a great mileage would be a grave danger to the purity of our elections.

The writer knows of no system of government-owned railways that has been really successful. The German railways have been apparently the most successful. But their success has been much more apparent than real, as they have been run not as a commercial, but as a huge military machine. Before the war many hundreds of miles of double track roads were in existence, with insufficient business for a single track. Money was supplied, with-

out stint, to keep them in first-class military shape, all of which gave them an appearance of prosperity and good management, while, in reality, they were not so economically managed as the English roads.

Government Management in Canada.—Our experience of government-managed railways in Canada has not been such as to justify us in such a gigantic addition to our public responsibilities. We have now five government-owned roads in Canada, and not one of them has earned interest on its cost, and only one (the Temiskaming & Northern Ontario Railway) has earned its operating expenses. * * *

A short examination of the Transcontinental and the Intercolonial Railways is illuminating.

Construction of the Transcontinental.—The Transcontinental was built by a commission without experience in the construction or operation of railways.

The Stanton-Gutelius Commission appointed to investigate its construction, shows that its cost to 1914, exclusive of any rolling stock, amounted to \$99,500 per mile. At the same time this road was being constructed, the Canadian Northern Railway Company built a parallel road for exactly the same purpose, *viz.*, to connect the eastern and western systems. The road is in every respect as efficient an instrument of transportation as is the Transcontinental, and its cost certainly did not exceed \$50,000 per mile.

The Quebec bridge is a link in the Transcontinental System. With the necessary approaches it has cost \$40,000,000 and was decided on and built without any consideration as to its economic value.

Train ferries, which could have been built for a small fraction of its cost, would have served every purpose for many years to come, and would have taken the traffic directly through Quebec, much to that city's advantage. Until a few years ago similar ferries handled all the traffic from the west into New York, and all the traffic across the Detroit and St. Clair Rivers. They are to-day handling all the traffic into San Francisco except that from the south.

It is quite safe to say if the Transcontinental Railway, including the crossing of the St. Lawrence River, had been built by the Canadian Pacific Railway Company, its cost would have been at least \$100,000,000 less than as built by the Dominion Government.

(To be continued.)

TORONTO BRANCH, CAN. SOC. C. E.

The Toronto branch of the Canadian Society of Civil Engineers will hold its regular monthly meeting in the Chemistry and Mining Building of the University of Toronto, on Tuesday, February 13th, at 8 p.m. Dr. A. P. Coleman will deliver a lecture on "Labrador Revisited." Dr. Coleman has made two trips to the wilds of Labrador and has secured many beautiful slides. As this meeting will be of general interest, the executive of the branch extends a cordial invitation to the members to bring their lady friends.

The membership lists of the Toronto branch are being revised and the secretary will be pleased to hear from any member of the Canadian Society of Civil Engineers residing in Toronto who has not been getting notices of the branch meetings.