

increased, the danger from snow, especially in the mountains, where electric traction would be peculiarly advantageous, is much increased. The troubles arising from the failure of any part of the electric installation are widespread, and much more disastrous than the failure of a steam locomotive.

Operating  
and Fixed  
Charges

"Balancing the pros and cons, it is found that electric traction materially reduces the operating expenses, but materially increases the fixed charges. The saving in operating expenses is nearly directly in proportion to the number of trains per day: the greater the density of traffic, the greater the saving. The cost of installation is in a great measure independent of the density of the traffic, or the number of trains per day. On a road of a given standard, the cost of many of the items which go to make up the whole, is the same, whether the trains be few or many. The problem thus always resolves itself into this: With the number of trains per day on a given section of a road, will the undoubted savings and operating expenses be sufficient to offset the undoubted increase in fixed charges? Every division of the road is a separate and independent problem.

"Canada is a very large and sparsely settled country, with a greater railway mileage per capita than any other country in the world, hence the traffic per mile is very thin. The Canadian Pacific, I understand, has not, as yet, found a place where the traffic is sufficiently dense to justify the cost of installation of electric traction.

"Coal has increased greatly in cost and is difficult to obtain at any price. The scarcity is only temporary, but part, at least, of the increased cost is sure to be permanent. As labour and all supplies have increased in price, the operating expenses have risen rapidly. Therefore, from an operating point of view, electric traction has become more desirable. This is largely offset by the increased cost of money, making the fixed charges due to an electric installation decidedly greater. No road in Canada, excepting the Canadian Pacific, is in a position financially to contemplate large capital expenditures.

"You will thus see that the question is highly complicated, and one on which it would be impossible to prepare a discussion of any permanent value in the time available. Will you, therefore, kindly thank Sir Clifford for the honour he has done me, and tell him I am only declining because I do not believe I could prepare an address of any permanent value in the time at my disposal."

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