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The electric single rail projected by F. B. Behr, for the elevated railway to be built from Liverpool to Manchester, is not the style of railway that can be practically successful. With the single rail system the one wheel would not be sufficient to attain a very high rate of speed, as the one-rail system would cause the wheels to slip, & the extra friction which would be caused by oscillation that must take place from the uneven loading of cars, wind, etc., would be a great detriment.

The new system is perfectly free from any interference from these causes, the railway itself can be built much cheaper, lighter & safer & the cars remain the same type as the surface cars are at present. Of course the cost of building an elevated railway would be greater on the first outlay than a surface railway, on account of the height it must be made at some places, as in crossing rivers, towns, etc. This will require pillars or piers to be made very heavy & strong for perfect safety. But, on the other hand, the mileage can be reduced on the average at least 25 to 30%. There would be comparatively no right-of-way to pay for, as only the pillars will take up any valuable space in the country, & very little anywhere. No embankments, no ditches, water culverts, stone or brick arches for roadways, no tunnels to be cut through mountains, no fences, no men to guard level crossings or on the track, no accidents to trains on crossings, no ballast required, & no expense caused by the killing of people & animals.

Then comes the difference in cost of operation of the two systems. On the electric elevated there would be comparatively no dead weight of locomotives, the motor car being much lighter than the steam locomotive, less than half the dead weight of the cars to be hauled over the line. The staff of engineers & firemen, with all the assisting staff at engine-houses, would be reduced. There would be no hauling of coal & water over the line. Water stations, water pipes, water pumping engines, coal stations, all would be abandoned for three power stations per 100 miles, where boilers, engines & machinery are stationary. No damage from fire caused from sparks of locomotives, & no more burning up of trains and passengers when trains are run off the track & down embankments, or in collisions. Moreover, by moving the passenger trains from the surface, greater facilities would be given for the movement of freight trains, thus preventing many accidents & delays to the freight in transit.

As to the possibility of revenue sufficient to warrant the outlay, it is enough to consider the prospects of such a line built from New York to Chicago. The time now necessary to make that run is about 35 hours, while the time would be only 7 hours on the elevated, the distance being reduced to 700 miles, & the train running at 100 miles an hour. And this besides the fact that a person would arrive by the elevated railway perfectly rested & ready for business, in place of requiring 6 or 8 hours to rest, as is the case after one has travelled to Chicago by the present system. Passengers could afford to go a distance of 300 or 400 miles to start for Chicago from New York. Passengers from Quebec, Montreal or Boston could reach New York in one night & take the elevated. They would still make the journey in about half the time now required. In the vicinity of Chicago the same would apply. An elevated line built now between these two points would be only a beginning of the new system, it would not only return a high rate of interest on the outlay, but would confer a general benefit on the traveling human race.

The writer of the foregoing article is a consulting engineer in Montreal, who, since Mr. Blair became Minister of Railways, has on several occasions been employed on matters connected with the government railways.

The article contains a good many statements that are likely to be dissented from by other engineers & by railway men generally, & we invite a free discussion of it in these columns. For the present we abstain from reference to Mr. Davis' "railway of the future," further than to say that very few are likely to agree with him as to its "positive safety from all accidents." But we must take decided objection to some of his statements as to the railways of to-day.

Mr. Davis says "the number of accidents on railways of all kinds & under all circumstances, have been continually on the increase, that railway managers have had in view only cheapness of operation of their lines, & that cheap material & construction have been used, anything that would call for a little additional expense for the minimizing of accidents not being entertained."

These statements are entirely unwarranted & at variance with facts. It is true that in the United States the liability to train accidents has somewhat increased with increasing train mileage, but this does not warrant the inference that the number of personal injuries has increased relatively to revenue train mileage. In Canada the government statistics refer only to those accidents from which personal injury results. They show that from 1875 to 1897 the number of passengers killed per million carried averaged for the whole period 1.25. From 1890 to 1897, the highest in any one year was 1.03 in 1892, & in 1897 it was only .43. This shows a decrease of accidents, not an increase.

Train accidents may be divided into two classes, those for which the railway corporations may properly be held responsible, as due to defects in tracks, in equipment, or in regulations, & those beyond their control, as when proximately caused by obstructions, by malice, by negligence, or by disobedience of orders. Speaking generally, the diminution of train accidents must be brought about by improvement in the permanent way, by increased efficiency in appliances, in regulations, in discipline & in inspection. And there is no doubt, whatever, that in all these respects marked advances have been made on Canadian railways in the past few years & are still continually going on. That "cheap material & construction have been used," & that "anything that would call for a little additional expense for the minimizing of accidents has not been entertained," is absolutely incorrect. There has been a steady improvement in both material & construction. The various standard roadbeds of to-day are infinitely better than they were 10 years ago, the rails are much heavier & less liable to breakage, & the structures are vastly improved by the substitution of steel & masonry where formerly a good deal of wood was used. As a marked instance of the expense gone to to minimize accidents, we may mention the great precautions adopted by the C.P.R. for its main line through the mountains & canyons of British Columbia, & its consequent immunity from accidents there. The high standard of construction adopted by the C.P.R. may also be referred to. In the same way there are the improvements which have been made & are still going on in the G.T.R. lines, all with a view to improve the carrying capacity of the road & to ensure additional safety. And what is true of the two principal systems, applies to most of the other lines. In connection with the permanent way improvements may be mentioned the increased use of derailing devices, safety switches & guard rails on bridges & trestles.

The passenger car equipment has been rendered much safer by the increased solidity of its construction, by the introduction of vestibules, by the use of air brakes & automatic couplers, & by the substitution of steam heat for stoves; then there has been the introduction of the block system on some