

better trackage for passenger trains, then cut out the passenger engines and do all terminal work with electric locomotives. This would get rid of the smoke nuisance which is becoming very bad. It would also eliminate the flying cinders as well as a great part of the noise. There is nothing more terrifying to sensitive people than the exhaust blasts from 5 or 6 locomotives all going at once, some in one direction and some in another. It is quite likely if changes of this kind were inaugurated we would have no more of a three or four million dollar viaduct. Again Toronto is so situated that electrical power should be bought for a reasonable price on account of Niagara electric power being right at our door. But suppose a satisfactory bargain could not be made with the electrical companies we are still in a good position to generate the necessary electricity. A first-class power plant could be built on the lake front where coal could be delivered by boat, and where the necessary water could be had just for the pumping of it. A modern steam power station of say 10,000 h.p. would handle a large part of the work and do it for one half of the coal now used on the locomotives. A further reduction in cost of coal could also be made by using a cheaper grade of coal than can be used on locomotives. The capacity of the present trackage would be increased by one-third and the present congestion greatly relieved. We also find that recent improvements on electric roads concerning electric block systems, make it safe to operate trains, closer together, than can be done on steam roads. When an automatic block system device will record in the driver's cab whether the block is clear or not, and if the engineer does not heed it the train will be stopped for him 1,000 feet before reaching the end of the block, beside putting him in direct communication with the dispatcher. It must allow, a quicker and more frequent train movement with reasonable safety. It is also stated that the wear on the tires of the drive wheels of an electric locomotive is very much less than that upon the steam locomotive, for the reason that there is less slipping and torque upon the axles is the same all the way round, and with correct sanding devices the slipping of wheels should be almost unknown. The amount of oil used daily would also make a great saving as with the electric apparatus there would be only the axles and side bars to lubricate. It is also said the care of an electric locomotive is less than for steam. Of one thing we may be assured, and that is, when we discard the use of a steam boiler we have got rid of the most expensive part of the locomotive to keep clean, and in good running order; in fact, the heaviest part of the repair bill is upon the boiler.

The centre of gravity on an electric locomotive will be much lower than it is upon a steam locomotive, and this should