

Lake Shore lines from 33 to 36 miles per hour; and on the Hannibal and St. Joseph line about 25 miles per hour. The speed of freight trains on all the lines was between 15 and 20 miles per hour.

The position of acting Chief Engineer, which the Author until recently occupied on the Canada Southern Railway, enabled him to obtain the information in regard to gradients required to make the foregoing investigations; but the like information has not been obtainable for the other railways under consideration, and therefore it is not possible to say whether they waste more or less of the energy of the fuel consumed. A comparison on a similar basis with English railways would be interesting and valuable, but the necessary data do not seem to be available. These figures clearly indicate how much yet remains to be done in economizing the energy developed in the combustion of coal. An engine which wastes 96½ per cent. of the energy with which it is supplied cannot be called perfect.

The Table also shows the cost of the service performed, worked out in a similar manner as the consumption of fuel.