Readers' Round Table

Railroad Electrification

Editor, THE MAGAZINE OF WALL STREET. Sir:-I have read the article by Mr. Joseph E. Preston, headed "Why Electrification of Railroads Would Increase Profits," and feel that in justice to the railroads who have not grasped the point of view of Mr. Preston that some answer is due. Apparently Mr. Preston has let his enthusiasm for electric motive power tend to obscure his gaining a real knowledge of the facts in regard to the limitations of this form of train propulsion.

It is very hard to see what his references in regard to Mr. H. G. Wells' "Outline of History" and the Cæsars have to do with electric service on our railroads. Yet, it is just this type of literature which appears from time to time in the popular press which makes the average reader feel that the railroads are hundreds of years behind the times when they have not electrified.

It is certainly time to realize that the useful application for railroad electrification is at present extremely limited, but that within these limitations there are numerous instances in which it would be advantageous.

It is entirely improper to compare the operation of passenger trains underground

in the New York subways on a ninetyminute headway with railroad traffic such as occurs on ninety per cent of the mileage of the steam railroad lines of this country, where the average number of trains moved per day is less than ten. Mr. Preston's reference to the New York, New Haven & Hartford is also without its proper scope of information. The New Haven was forced to electrify a portion of its lines because of the electrification of the New York Central's terminal in New York City which it uses. Originally, the electrification extended to Stamford, Connecticut, the end of the local service zone, but it was found to be so unprofitable that it was necessary to electrify to New Haven in order that a complete engine stage would be handled by electric service, thus avoiding a double change of locomotives.

Consider the cost of electrification on a road like the New Haven, which carries as heavy a passenger traffic as there is in the world and with great frequency of train operation. The most recent construction for the four-track line was approximately \$50,000 per mile for overhead structures alone. In addition to this, the company has had to build transformer stations every two to three miles and an enormous power station at Cos Cob, Connecticut, and has also had to make arrangements to purchase electric power in New York City. The first cost of the electric locomotives is approximately twice that of steam locomotives, with a useful life of approximately the same number of years. It will be granted that the coal consumption pertrain mile is considerably less than with steam operation, but the overbalancing features are the fixed charges and depreciation of equipment, even in the case of a heavy traffic road like the New Haven.

Take for instance a line over which is operated only a few trains a day. The initial cost of electrification per mile of track is as great as if a great number of trains are to be operated, for the same overhead structures are required and practically the same sub-station equipment. In this case the fixed charges in proportion to traffic handled would be out of proportion and would be prohibitive.

The financial condition of the New Haven and also of the St. Paul may be in part due to the great expenditures which these two roads have made in electrification. In fact, the first cost of the electrification of the New Haven road between Woodlawn and Stamford was as great as

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READERS' ROUND TABLE

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the first cost of the road itself in that section. In other words, the investment is doubled.

Mr. Preston refers to the best investment the New York Central ever made being the electrification out of the Grand Central Station, and it is quite probable that all of the railroads in the country would electrify tomorrow if New York City's most fashionable street could be built over their tracks and apartment houses produced such as are along Park Avenue. Mr. Preston refers to the fifty million horsepower in the rivers in this country which could be used to produce hydro-electric energy. Possibly Mr. Preston is aware of a financier who will advance the necessary means to develop this power. Has he not heard of the large steam plant which the Buffalo General Electric Company has built so close to Niagara Falls?

It is not the fault of the Big Four Brotherhoods that the railroads are not electrifying as Mr. Preston intimates, but that electrification is extremely expensive and only pays where there is a great density of traffic, or a mountain grade with cheap water power and the possibility of using regenerative braking, or where it is desired to increase the train headway so as to carry a greater traffic at a given time over a line such as was the case of the Norfolk & Western.

The next several years will no doubt find a certain amount of electrification but in all cases this will be governed by the financial problem of where can the money be found and next will it pay? It is no longer possible to issue first mortgage bonds on our railroads, and it would be quite difficult to secure the electric overhead structures by a particular mortgage. The credit of the railroads is such that either debentures or stock, with but a very few exceptions, would be very difficult to sell, so that the means for electrification is extremely difficult to find.

Aside from these few comments, the writer cannot help but agree with Mr. Preston that railroad electrification is desirable.—P. C.

The writer of the above letter, while his criticisms of Mr. Preston's articles are narrowly correct, fails to take into consideration that if railroad managers could they would electrify every mile of road in the country. Mr. Preston's thesis that electrification would render railroad operation more efficient and profitable is a fair . one. Certainly the tendency, albeit a very slow one, is toward putting the roads in certain sections, at least, on the electric basis. The only real difficulty is the securing of funds for this purpose. Were railroad credit high to-day, there is no doubt that there would be a considerable amount of effort expended with regard to the electrification of the roads. Primarily the problem is a financial one and not so much an engineering one, although the difficulties in this latter respect are not to he minimized -EDITOR.



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