

In North America pooling is, on the contrary, very general, though little used for passenger-service, and a tendency to using single crews is generally manifest. It is, however, in place to remark that the organization of train services depend to a large extent on local conditions.

Notes.

The discussion on this subject went to prove that it was more economical to allot engines to certain crews. Enginemen took a pride in their own engines, and exercised far greater care in working them than was the case if rarely having the same engine continuously.

The pooling system was more expensive as regards fuel and stores, and it was a most difficult matter to fix the responsibility for damage and undiscovered defects. In England some railways go so far as to paint the engineman's name on the engine, and the date it was given into his charge. The New Zealand practice is to allot engines to single crews who run the engines—that is, each engineman has as far as is practicable his own engine.

7. AUTOMATIC COUPLERS.

Advantages and disadvantages of automatic couplers; improvements effected in their construction; their use in conjunction with other couplings.

Reporters.—America—Mr. A. W. Gibbs, General Superintendent of Motive Power, Pennsylvania Railroad, America; England—Mr. F. W. Pettigrew, Locomotive Carriage and Wagon Superintendent, Furness Railway, England.

Conclusions of Congress.

The Congress recognises the universal use of the automatic car-couplers in the United States, Canada, and Mexico. While the type (master car-builders) remains the same as first adopted, the details have been continually improved. Devices for automatic coupling the air-brake, air-signal, and steam-heat pipes are used to some extent. They are only in the experimental stage. In countries other than those mentioned above several systems of automatic car-couplers, either of the American (M.C.B.) type or other type have been tried. The necessity of working with couplers of a different type from those in use causes great difficulty during the transition stage. Several representatives were in favour of the American (M.C.B.) type on account of its great strength, especially where large cars are used, while other representatives favoured the use of such types of couplers as could be more readily applied to existing stock, so as to reduce the period of transition. The British representatives expressed the opinion that the system used in Great Britain and Ireland is at present satisfactory as regards rapidity of handling as well as the safety of the employees.

Note.

This subject does not affect New Zealand materially, as the coupler in use is automatic—a combined central buffer, coupler, draw gear. No side-buffers are used, and I know of no safer appliance as regards the employee. Were it necessary to make a change, which could only be done at enormous expense, I should certainly recommend an automatic coupler of the type M.C.B., as used in America.

8. ELECTRIC TRACTION.

Progress made in electric traction on important lines of railways—continuous current, alternating current, polyphase current; experiments made with high-tension currents.

Reporters.—America—Mr. W. D. Young, Electrical Engineer, Baltimore and Ohio Railroad; France—Mr. Paul Dubois, Engineer of the Central Service Motive Power of the Orleans Railway, Paris, France; Great Britain and Belgium—Mr. Ernest Gerard, General Inspector, Chief of the Cabinet of the Belgian Minister for Railways; Italy—Mr. Victor Tremountani, Chief Inspector of the Electrical Section of the Mediterranean Railway of Italy.

Conclusions of Congress.

The section recognises that electric traction should be considered at present as an important auxiliary of steam traction, being capable of handling certain portions of railway traffic with economy and advantage. It is impossible in a general exposition to point out the exact service to which electricity can be most readily applied, the application being essentially a question of local conditions, each particular case requiring special study. In this study there must be taken into account the expense of electrification, and the following points: (1.) Conditions of service—that is, the frequency and weight of trains; and (2) the physical conditions of the line, such as length, profile and plan.

In comparing the expenses of operation by electricity and by steam, the interest and depreciation on the electrical installation must be considered. The increase in revenue which the improvements in service will generally produce should also be given consideration. An important point in the use of electricity is the increase in the present station facilities resulting from the reduced number of movements in the stations by the use of electric traction. From the information furnished to the Congress it would appear that with the third rail as now used security can be assured under favourable conditions without it being necessary to cover or protect the third rail for its entire length. The Congress has heard with much interest the results experienced with high-speed electric traction between Marienfeld and Zossen, and also of the tests and first applications for traction purposes of the alternating monophase motors in service in several countries.

Finally, the Congress recommends that on account of their future usefulness exact data on the cost of electric traction be obtained.