

MR. S. H. JENKINSON'S REMARKS IN CONNECTION WITH HIS VISIT TO AUSTRALIA
TO INVESTIGATE SELF-PROPELLED CARS.

PETROL RAIL-CARS.

So far as petrol rail-cars are concerned, it is clear from Mr. Jenkinson's report that certain types have been run successfully in New South Wales and Victoria, the working-costs averaging in the former for the type now adopted about 1s. 3d. per car-mile. He states that petrol-cars have not been found suitable for suburban services. They do not lend themselves readily to frequent stopping and starting, and the acceleration is very low, due to the necessity for changing gears. Running up to speed on a slipping clutch, which is necessary at starting, leads to a large amount of wear-and-tear, and the changing of gears throws heavy shocks on the engine and gear. In road service these troubles are not so serious, due to the smaller weight of the cars, and they are masked by the cushioning effect of the pneumatic tires. Whatever the reason, the fact remains that throughout Australia it is agreed that petrol rail-cars have proved unsuitable for suburban work, and Mr. Jenkinson's observations confirm this. The only cases where these cars are running on short services are at Mildura and Frankton, in Victoria. These are runs of seven and ten miles in length, but are quite distinct from suburban working in the character of the traffic.

The services for which petrol rail-cars have been found suitable are country branch lines of from fifty to one hundred and fifty miles in length. The conditions in Australia are, of course, very different from those in New Zealand, but typical sections in this Dominion which correspond more or less closely with the runs referred to are, say, Invercargill-Tuatapere, Invercargill-Lumsden, Gore-Switters, Timaru-Fairlie, Woodville-Featherston, Napier-Waipukurau, and Thames-Frankton. In Australia mixed trains are used very much less than in New Zealand, although the configuration of the railway systems there favour their use to a greater extent than here. The practice adopted as far as possible in Australia is to run one (or more) passenger-trains per day and a goods-train at infrequent intervals, say, bi-weekly. Under these conditions there is a good field for motor-cars in New South Wales, but so far one particular car is the only promising one in sight, and about twenty of these should be in service within a year. In Victoria the closer population calls for larger trains, and in the majority of cases a train carrying from one hundred and twenty to one hundred and fifty people is desired. There is no prospect of this demand being met by petrol rail-cars, but a Leyland car is under construction, and will be tested with a trailer.

DESIGN OF CAR.

The small low-powered rail-cars have not proved suitable for traffic purposes, nor have they given reasonable mechanical reliability on the road. Vibration is excessive with light cars, and easy running can only be secured by building cars of reasonably long wheel-base. For these reasons the use of small cars, either singly or with trailers, is not being extended. Design has crystallized round bogie cars seating from fifty to seventy people, weighing 12 to 15 tons, and from 45 ft. to 60 ft. in length. To give such a car a reasonable reserve of power, and allow the engine to work at an economical rate with an expectation of fair service, a petrol-engine of about 100 horse-power is required. It is very difficult to construct transmission-gears and clutches capable of transmitting any higher power, and from all directions the designer is being driven to the use of such sizes and powers of cars as I have mentioned. Mr. Jenkinson states that his experience convinces him that the engine must be placed at one end of the car where the driver can be close to the engine and tell at once if anything is going wrong. Neglect of this precaution has already led to very expensive mishaps in petrol rail-car working, and will, Mr. Jenkinson is convinced, lead to more. This necessarily means that the car can run in one direction only in ordinary service, but the provision of triangles or turntables is a simple matter for such light vehicles.