

## THE THREE-AXLE VEHICLE.

Transport conditions vary greatly not only in different parts of the world, but also in the different parts of any country such as ours, and consequently the requirements in motor-vehicles to meet those needs will likewise vary, but there is, and always will be, throughout the civilized world a universal desire for a high standard of efficiency in transportation with a relatively low cost in "road construction cum maintenance." In this latter connection, few would deny that the pneumatic tire of to-day justifies special mention, while many authorities would be ready to place the rigid-frame three-axle vehicle next in order of merit. As proof of the suitability of this type of vehicle for the general needs of transport, and as an indication of the present demand, it may suffice to state that in the recently compiled motor-truck schedules of England and of the United States of America many makes of such vehicles are included, and even the 30 cwt. pay-load class is represented. Everybody interested in transport is familiar with the advantages of the pneumatic tire, and likewise it is now generally known to road-controlling authorities that the rigid-frame three-axle vehicle does much less damage to the roadway through impact than the orthodox two-axle motor-truck of the same or of considerably less gross weight. Any owner of the former type of truck could confidently expect his "vehicle-maintenance charge per ton-mile" to be similarly less, and he could also profit through the extra gross-weight allowance given to this type of vehicle on roads with a restrictive load-classification. It has been predicted that in a few years' time the six-wheel vehicle will outnumber the four-wheel vehicle, owing to its ability to carry a greater pay-load for a given gross weight and to its less destructive effect on the roads.

## THE "DIESEL" ENGINE.

The design, tests, and future prospects of the so-called "Diesel" engine for service in the motor-vehicle have been popular subjects for serious discussion in the engineering and transport world during the past year, while much valuable information and experience obtained from the many experimental vehicles actually engaged in daily service has been published.

It is to be expected that the development of such engines would be gradual, in spite of the phenomenally low cost of the fuel consumed and of many other attractive features. Marked progress has been and is still being made with the "Diesel" engine, but the weight of evidence thus far available has not yet given the manufacturer of the competitive petrol-engine cause to reorganize his works or take other drastic action in anticipation of an immediate wholesale demand for compression-ignition units.

A company operating a large fleet of motor omnibuses in the Auckland area has imported and is about to commission a Diesel-engined unit which, when fully laden, will have a gross weight of over 8 tons. As this is the first of its kind to be operated within the Dominion, it will attract much attention, and its performance and the comparative cost of operation will doubtless be watched with interest.

## APPENDIX.

TABLE 1.—MOTOR-VEHICLE REGISTRATIONS, 1925–1930.

TABLE SHOWING THE TOTAL NUMBER OF VEHICLES REGISTERED UNDER THE MOTOR-VEHICLES ACT, 1924, AT 31ST DECEMBER, IN THE YEARS 1925 TO 1930.

(N.B.—Dormant, but not Cancelled, Registrations are included in this Table.)

31st December,	Cars.	Trucks (classified according to Pay-load Capacity).								Omnibuses.	Traction Engines.	Trailers.		Tractors.	Others.	Motor-cycles.	Grand Total.
		Not more than 1-ton.	Over 1-ton and not more than 2-ton.	Over 2-ton and not more than 3-ton.	Over 3-ton and not more than 4-ton.	Over 4-ton and not more than 5-ton.	Over 5-ton and not more than 6-ton.	Over 6-ton.	Total.			Three or More Wheels.	Two Wheels.				
1925	81,662	9,671	2,077	879	713	268	48	17	13,673	1,285	386	198	291	193	369	25,339	123,396
1926	101,462	13,056	2,827	1,155	824	314	48	27	18,251	1,590	465	241	432	328	455	32,101	155,325
1927	111,641	15,601	3,643	1,322	850	340	41	18	21,815	1,143	477	314	535	345	422	34,593	171,285
1928	125,656	17,057	4,302	1,465	866	347	48	21	24,106	1,190	421	269	689	422	460	36,116	189,329
1929	143,814	18,792	6,453	1,668	852	349	51	24	28,189	1,271	372	262	945	449	501	37,349	213,152
1930	155,189	19,894	8,068	1,807	873	350	51	23	31,066	1,308	306	261	1,325	465	505	37,582	228,007