the public may be represented by frequency of service and cheapness of fares. With a tramway system, even not in competition with other methods of transportation, the public are to a large extent protected in these respects, since the tramway company, having a large capital invested in both rails, paving, etc., must run a sufficiently rapid service to enable the charges on capital account to be met and still leave a profit. Further, in order to induce the travelling public to avail themselves of the facilities offered and thus, with a rapid service, fill the cars sufficiently, the charges must be made as low as possible. On the other hand, there is no such guarantee to the public with a motor-'bus service. Here the capital of the company is invested solely in the motor 'buses themselves, with the proportion of depots and workshops, and has no other consideration in capital expenditure. Under these circumstances a motor 'bus company, if allowed to operate with a free and unfettered hand, could run just so many motor 'buses, and at just as high fares, as would, in practice fill practically every seat of each vehicle.

In this way it could earn very large rates per car mile, which, notwithstanding high operating costs, might leave a very handsome return on the capital embarked in the venture. The public would be the sufferers. They would always be sitting in crowded cars, and would have none of the conveniences offered by cars for the most part half empty, which is, from the traveller's point of view, a great condition of comfort, and, during the rush hours of morning and evening, when the traffic per hour is several times that of other portions of the day, there would be a total inadequacy of accommodation; so that those unable to find room in those vehicles would have to seek other means of transit. At the same time, it must be remembered it would be open to the motor-'bus company to run as many 'buses at different hours of the day as would deal with the then existing traffic. In that case, however, the interest on the money invested in those 'buses not in continual service would still have to be paid, as would also the wages of drivers and conductors employed actively for portions of the day, and it is questionable, if due provision were made for dealing with the rush traffic in an adequate manner, that any perceptible saving would be made by the motor-'bus company over the expenditure which would have to be incurred in running a fuller service at all times of the day, whilst the fact that the passengers would have, at all times of the day, to travel in crowded vehicles would make the service unpopular, and induce them to seek other means of moving about.

I have purposely dealt at length with this argument, which is somewhat academical, since I have noticed that such a proposition has lately been seriously mooted in one at least of the important journals devoted to the automobile industry, and I can only suppose that such a proposition has been made from want of experience of what has occurred in the past in dealing with traffic problems. If regarded from all practical points of view, it is certain that no monopoly of traffic will be permitted in any large town where such conditions could arise, and that if such a monopoly were to be granted, it would be coupled with regulations as to the services to be run, and the capacity of the vehicles, thus ensuring adequate protection for the public. On the other hand, if motor 'buses are started in competition with tramways already existing, or if tramways are started, under suitable conditions, in towns where motor 'buses already exist, it is certain that the motor 'bus, if worked on such principles, will cease to exist.

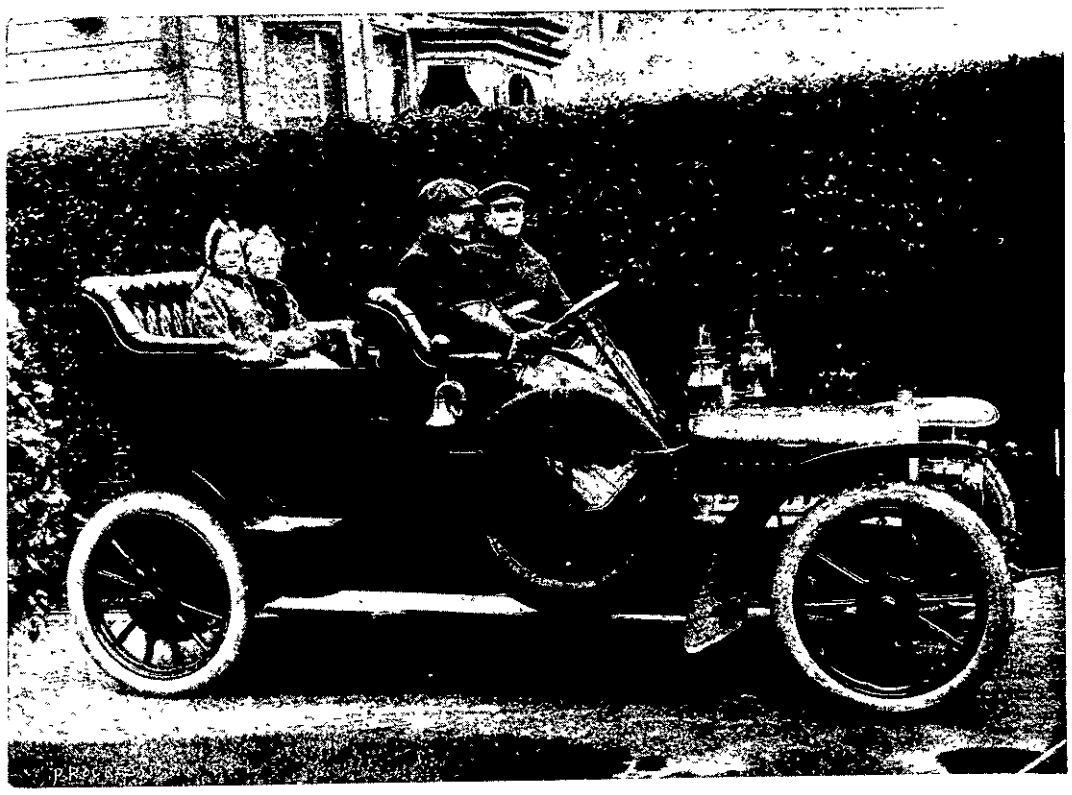
This is an opportune moment at which to refer to the only case I know of in which such conditions have occurred. Hastings, as you are aware, was served by a system of motor 'buses, which I can, from personal observation, state were kept in good condition, and must have been a source of satisfaction to their shareholders, since they paid, I believe, at the rate of 15 per cent. per annum. Until last year they had no opposition to face from tramways. In the middle of last year the first section of a tramway system, to which my firm were engineers, was put into operation, at normal fares, the result being that, long before the tramway system was completed, and within a very few months of its start, the motor 'bus system was entirely discontinued, and those identical motor 'buses are now, I believe, employed in the London traffic. I have seen, time after time, not only in the daily Press, but also in the automobile journals, predictions that it is certain tramway systems will be superseded by motor 'buses. There are not many towns in England where motor omnibuses have established themselves before tramway systems have been installed. Hastings was one of the few places, another is Torquay. At Torquay also a good motor 'bus service has been firmly established, and, under the conditions of its working, is paying well. Electric tramways are now being installed at Torquay, and we shall shortly see whether history, as represented by Hastings, will repeat itself there.

I do not wish it to be thought that I do not believe in the future of the motor omnibus, or that there is not an extensive and growing field for its adoption, and I have a few words to say on this aspect of the question hereafter, but I do want to convince those who are interested in the subject, that no amount of newspaper advocacy will keep a motor 'bus on the road one day longer in any particular district than its financial results in that district warrant. London is pre-eminent amongst large cities as a place where great success may be looked for in the use of motor 'buses, besides the numerous other districts in which tramways will not serve the public so well.

In considering how I could best put before you the financial aspect of the two systems, I came to the conclusion that my purpose would be best served by taking the actual results achieved in a town of medium size running an electric tramway system, and constructing a motor-'bus balance sheet on the same lines, as if, in fact, the town in question were completely served by motor 'buses instead of by tramways, and I have taken the town of Leicester as the example in question for two reasons :—

(1.) That it is a manufacturing town with a population of about 228,000, and is, therefore, neither one of the largest nor one of the smallest towns of this description.

(2.) Because the Corporation of that town, which owns the tramways, determined that no expense should be spared in making the tramway system as perfect as possible, with the result that the capital charges to be met are heavier in proportion than would be the case if a good but not so expensive a system were installed.



THE PRESIDENT OF THE WELLINGTON CHAMBER OF COMMERCE (MR. GEO. SHIRTCLIFFE) ON HIS 12-H.P. PEUGEOT.

The Modern Motor Wagon.

In New Zealand it is gradually becoming recognised that the haulage of loads by motor wagon effects a saving in comparison to horse traction; yet it is not generally known how great that saving actually is. Unfortunately, through the importation of a few low-grade machines, the general adoption of motor transport has been considerably retarded; but the introduction, by the municipalities of Auckland, Wellington and a few enterprising contractors, of machines suitable for colonial conditions has awakened the economical instincts of many who have in the past been obliged to make use of horse traction for the carriage of heavy goods.

It may be asked, in this age of the petrol and electric motor, what is the best power that can be used for the class of work in spite of all efforts to displace it from its position. Steam still remains, and probably always will remain the motive power most suitable for the transport of heavy goods. It possesses many advantages in the way of reliability, simplicity and ease of manipulation, which are entirely lacking in other engines with their complicated gears and clutches that are quite unable to respond to any sudden call or strain thrown upon it to the extent to which the steam engine is capable. And again, in the case of petrol, the running cost is commercially prohibitive; whilst in the best grade steam motor wagon the cost of fuel by the use of coke has been brought down to a minimum. To be commercially successful in a hilly country like ours, it is essential that:

1st. The engine and boiler must be overpowered, or there will be considerable loss in hill climbing power, and stoppages on the road.

2nd. That the boiler must be so placed that the driver shall at all times and under all conditions have an uninterrupted view of the road, or accidents are sure to occur in the traffic of our towns or the narrow and curved roads which exist in our country districts.

3rd. Its construction must be such that it will stand the strain of rough and steep roads, and enable repairs to be easily, and, therefore, economically made.

4th. It must be as far as possible noiseless and smokeless.

With such a motor wagon the time will not be far distant when the horse as a tractor of heavy loads will be a thing of the past, the congestion of our traffic will be minimised and our streets will be cleaner and more sanitary than at present.

All the motor wagons at present in use in Wellington are of the five-ton tipping class, and carry a load of 5 tons. When we see these day after day carrying loads up grades at a pace impossible for horse wagons, we cannot but wonder what is the reason so many horses are still used in our streets, and it can only be due to the initial cost or want of knowledge of the saving effected by its use.

In order to give an estimate, checked from a practical point of view, we have taken the figures from a user of a steam motor wagon who has had considerable experience in the use of horse traction.

A wagon will easily carry 5 tons 40 miles daily, which equals 200 ton-miles per day, or 1,200 per week. The running cost would be as follows :—

	£	s.	d.
Driver	3	0	0
Fuel		14	0
Oil		6	0
Depreciation, Interest on Capital and Repairs	3	6	6
	£7	6	6

Cost of running 5 two-horse drays carrying 2 tons each 20 miles equals 200 ton-miles per day

5 drivers at £2 10s. 0d.	12	10	0
10 horses at 15/-	7	10	0
Interest, depreciation and repairs, also stabling	3	10	0
	£23	10	0

The above figures show a saving per week of £16 4s. 6d. or a total of £843 14s. per annum.