

cellent idea, impossible of realization following the return of roads to private management.

"Solving of the problem of inadequate terminal facilities, and of needed co-ordination of their operation is imperative."

This great shortage of freight cars and motive power and the insufficiency of terminal facilities, in the face of increased traffic, indicates that the motor truck and the highway must be more extensively used than at present if business is to be kept moving in the manner that it should. That it shall be kept moving is absolutely necessary to the life of business and its continued growth.

If we compare the total highway mileage in the country with the railroad mileage, which is as ten to one, and if we also consider the flexibility of the motor truck as against rail operation, and that one method of transport is quite as dependable as the other, we can begin to realize the work that highway transport should be made to do.

In this connection it is also interesting to note that the freight car makes an average of but 15 miles a day and that the average tons per loaded car is less than 28. From this we can get an even better picture of how the motor truck can greatly assist the railroads in moving the traffic of the country.

#### Should Not Compete Generally

I don't believe that the motor truck should compete with the railroads as a general proposition, but I do believe that they should be operated when it can be shown that it is more economical for such operation to take place. By economical I mean where the motor truck, as compared with the railroad, can cut down the time of delivery, make such delivery more frequently and at less cost.

When we realize that the number of absolute business geniuses who have devoted their lives to railroad transportation problems, and then realize the extent to which highway transport can be employed to supplement and extend the usefulness of these same lines, we have a prospect before us broad enough to satisfy the most ambitious and those with the highest ideals.

After the steam railroads, in considering the motor truck as an aid to existing means of transportation, a highway transport survey would concern itself with the relation of highway transport to electric railway service.

The electric railway situation in the cities and suburban and rural districts of this country is in a very chaotic condition. Many lines have been abandoned; others thrown into the hands of receivers, fares raised and service curtailed—all to the great disadvantage of the travelling public. I am quite sure that local surveys would frequently indicate that highway transport in the form of motor buses can very greatly relieve this situation.

#### Motor Bus Permanent Factor

In a recent issue of the "Electric Railway Journal," the assistant to the president of the railway company in one of our large cities, in discussing how buses are run in that city in connection with the railway, makes the following statement:—

"It is believed the motor bus is here to stay, that its use is going to increase largely and that the logical people to handle and develop it are those who have been trained and received their experience in street railway operation. It behooves the progressive street railway manager to study the motor bus situation and be prepared to meet it and to use it as an auxiliary to his other operations, rather than have to fight it as a competitor."

The buses in the city of Newark, N.J., a city of 400,000 people, carried 16,000,000 passengers the first half of last year and statistics from several other cities indicate that the bus surely is here to stay.

Yet many operations of this kind have been inaugurated and have failed, or are not operating to the best advantage of the general public. The proper kind of survey will, in most instances, save such failures and cause the successful operators to give even better service and be more efficient

and point the way to where new operations are desirable and how to inaugurate them successfully.

No general survey of the field of highway transport would be complete that left out of account its use in districts now without rail facilities. Mines, forests and quarries situated in remote sections are generally exploited by big organizations with financial backing sufficient to solve their own transportation problems, and many of them are finding their solution in the use of the motor truck.

#### Opportunity in Farming Districts

In the farming sections, however, where the productive unit is comparatively small, there has not been the same incentive for big business to make a thorough survey of conditions, and here there is a tremendous field of opportunity.

The same factors that affect the big manufacturing institutions in the industrial centres—rising costs, labor shortage and lack of adequate transportation facilities—affect equally the producers in the fields. The situation is serious and at any time may become acute. Every help that can be given to the producer of foodstuffs adds to the well-being of the nation.

Some one in authority has said that if the labor situation on the farms is not relieved in some manner, that in a short time, for a certain period, some of those in commercial and industrial life, will have to assist the farmer in harvesting his crops if we are to obtain a sufficient amount of farm products. One answer to this, and probably the most logical one, is to so arrange the farmer's transportation that it will be unnecessary for him to take labor from his farm to perform this function, as heretofore, and a proper use of the motor truck and the highway will go a long way toward meeting this problem.

#### Expensive System of Distribution

Our present system of goods distribution is probably the most expensive the world has ever known. That the motor truck can reduce such costs has been proven absolutely by the U.S. government. The savings effected by Assistant Postmaster Blakeslee in his actual demonstration of highway transport lines from some of the rural districts in Pennsylvania to Philadelphia and Washington are significant, to say the least. On an exhibit recently shown to the Committee on Post Roads and Postal Service of the House of Representatives, by Mr. Blakeslee, of 41 trips made on the motor-vehicle truck routes, a saving of \$6,612 to the consumer was the result. Added to this was the time saved to the farmers, who had their produce taken from their gate to the market and who were thus enabled to continue performing actual work on their farms. Just previous to the inauguration of these routes by the Post Office Department, I helped to make a survey of part of this district which indicated the savings later effected. Yet the people there did not realize how materially they could be assisted until this investigation had been made.

The hauling and delivery problem of every business should be surveyed in order that the most efficient means of transportation can be used, particularly in reference to the highways. It is astonishing how little most concerns know about the cost of the delivery and hauling end of their business. The concern that usually knows its labor, production, accounting and selling costs, many times has no idea of what its delivery cost is. Yet the delivery and hauling part of the business usually amounts to a great deal. A survey of such a problem will often indicate that it would be more economical to ship or deliver by motor truck than by horse-drawn vehicles, railroad freight or express, or by boat or electric railway. In considering a transportation system, the nature and character of the business it serves should be considered first.

The proper kind of a survey will bring out all the items entering into the cost, which would never be brought out in any other way. For instance, I had occasion the other day to make a survey of the shipping part of a business concerned with the rolling of steel products. This was a