

COMMERCIAL VEHICLES ON FREE HIGHWAYS

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From the early days of the Republic to the dawn of the present century the principal roads of the United States were toll roads or turnpikes. All persons using them paid for the privilege at the time of use. There were, of course, many roads of local importance only which were repaired with public funds or with tax labor, but these, in the main, were unsurfaced earth roads. Practically all roads improved by surfacing were financed by tolls collected either by companies or by units of government. So universal was this method that the verb to turnpike, coined from the noun which originally signified only the gate used to stop travelers on the toll roads, was used practically as a synonym for to improve.

Our people will never again submit to a method of collecting revenue for highway improvement which requires the traveler to halt in his journey and pay a toll as the price of proceeding. But, because we do not pay for the use of the roads at the moment of use as we did in the turnpike days is no reason for assuming that we no longer pay for the roads.

No one who has followed the development of the gasoline tax as it has been adopted by one State after another until now when it is collected in 44 States and the District of Columbia; no one who has observed the tendency to increase the rate of this tax once it has been adopted; and certainly, no one who has paid the tax at the rate of two, three or four cents for every gallon of gasoline consumed by an automobile or

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motor truck can be deluded into the belief that the use of the highways is free. The gasoline tax differs nowise in principle from the turnpike toll; and the motor vehicle license fee as it is collected and applied is scarcely distinguishable from it. Together these two methods of taxation yielded in the United States a total of more than \$300,000,000 in 1924, or more than the whole annual expenditure for highway improvement and maintenance in the entire country prior to 1919. This sum and an additional sum of \$158,014,709 paid to the Federal Government as excise taxes on automobiles, motor trucks, and parts for these vehicles, was paid directly by the owners of motor vehicles into the public treasuries and with the exception of the latter the payments were made for the privilege of owning and operating vehicles over the public roads. These same motor vehicle owners, moreover, now number upwards of 15,000,000, in all probability, and certainly they constitute, as a class, a very large proportion of the tax-paying public which contributed last year the balance of the billion dollars of highway revenue that was not collected directly from them as motor vehicle owners. The owners of motor trucks or commercial vehicles paid more than the average owner of a motor vehicle, since their license fees are higher than the fees charged for passenger cars in practically all States and their consumption of gasoline is also heavier.

So when we speak of "free highways" for commercial vehicles we must be sure we know what we are talking about. We can not mean that the use of the highways is entirely free to any commercial vehicle. We mean merely that the owners of commercial vehicles, and especially those owners engaged in the business of transportation as common carriers, do not themselves pay the entire cost of constructing and

maintaining the highways they use out of their revenues as the railroad companies pay for their tracks; and we imply, therefore, that the rates charged for the service of the vehicles are not based upon a complete payment for the use of the roads. Compared with other users of the highways the owners of commercial vehicles pay a greater sum per vehicle for their use. It is only by comparison with the railroads, if at all, that they may be said to enjoy a relatively free use.

It will be well at this point to look, first, into the usage of our highways, to see who is using them, what kinds of vehicles are operated over them and the relative numbers of each kind, what are the highway requirements of the various types of vehicles; and then to ascertain the sources from which funds are obtained for the building and repair of the highways.

Broadly speaking we know that at the end of 1924 there were registered in the several States 17,591,981 motor vehicles of which 15,371,570 were passenger cars, 2,131,332 were motor trucks and 89,079 were taxis, busses and cars for hire. These vehicles are operated over the rural highways and the city streets. It will be noted that the number of passenger cars is approximately seven times as great as the number of motor trucks, taxis, busses and cars for hire, but, from evidence obtained by the Bureau of Public Roads in its transportation surveys in several States, it appears probable that the utilization of the rural highways is more than seven times as great as their utilization by motor trucks. Comparing the operation of the trucks and passenger cars it appears that a greater percentage of the operation of the former than of the latter is over city streets.

There are a number of evidences of this. For example, the Bureau's Maine survey ^{1/} showed that the traffic of trucks on the rural highways increased from 1916 to 1924 at a slower rate than the registration of trucks, while passenger-car traffic increased at a greater rate than passenger-car registration. The same survey showed an average daily utilization of the highways of the State, between July and November 1924, amounting to 2,904,000 vehicle-miles for passenger cars and 263,000 vehicle-miles for motor trucks, a ratio of approximately 10 to 1, whereas the registration of the two classes of vehicles in the State was approximately as 6 to 1. Similar indications in other States in which intensive studies have been made confirm the conclusion that it is generally true that the relative utilization of the rural highways by passenger cars as compared with motor trucks is even greater than the ratio of the registration of the two classes of vehicles, and it is not far from the truth to say that the use of the highways by passenger vehicles is ten times as great as their use by motor trucks.

This fact is adduced merely to show that improved highways are demanded for other purposes than for the operation of commercial vehicles, although it is patent without proof that there would be practically as great a demand for highway improvement as there is now if there were no motor trucks at all. However, since the fact has been brought out, it may be well to mention in passing that the records of the 29 States which segregate license receipts from passenger cars and motor trucks show that the motor trucks, which in these States constitute 13 per cent of the total number of trucks and passenger cars, pay

^{1/} The Maine Highway Transportation Survey, Public Roads, Vol. 6, No. 3,

24 per cent of the total license receipts.

However, the point that must be made clear is that improved roads are needed and demanded by the owners of the more than 15,000,000 passenger cars, and a form of improvement adequate for these vehicles would be required even if there were no motor trucks or commercial vehicles. The passenger cars are so numerous that there is one for nearly every family in the United States. So long as the roads required for these vehicles are paid for by the public, therefore, it makes little difference whether the necessary revenues are raised by taxation levied upon the vehicles or upon any other basis. The cost in any case would be paid by practically the same group, since the owners of passenger cars constitute the great proportion of the tax-paying public. Moreover, it has not been denied that the owners of these vehicles should pay for the roads they demand and require. The only point in question is whether the owners of commercial vehicles using roads for which they pay only in part are thereby subsidized to the extent that the public, or - almost synonymously - the whole group of motor vehicle owners, assists in the payment; and whether these owners of commercial motor vehicles are thus given an unfair advantage in competition with the railroads and other commercial carriers. That is what it comes down to.

Now, it is a fact that while the improvement of highways would be demanded on as great a scale as that which obtains if there were no motor trucks in existence, still the character of the improvement is influenced by the existence and operation of the trucks. Passenger cars with their human burden rarely exceed 3 tons in weight. The great majority weigh less than 2 tons. Practically all of them are

equipped with pneumatic tires; and they travel at a customary maximum speed of about 35 miles an hour. The highest degree of improvement required by the passenger traffic, therefore, is a road paved with a surface that will withstand the static load and impact of a 3-ton vehicle equipped with pneumatic tires, and smooth enough to be reasonably comfortable for travel at 35 miles an hour. As nearly as can be determined this would call for the equivalent of a concrete pavement with an average thickness of 6 inches. Of course, I do not mean to say that a road of this character would necessarily be built wherever passenger automobiles are used. The extent of the maximum improvement naturally depends upon the occurrence of traffic of sufficient density to warrant the necessary expenditure.

As to the motor trucks, their maximum weight is limited by law in all States, the restrictions varying from 8 to 15 tons. The trucks in use range from those which have a carrying capacity of one-half ton up to those built to carry seven tons. Very few trucks are in use which are designed to carry more than seven tons and the number of 7-ton trucks is very small. On all roads the bulk of the motor truck traffic is found to consist of vehicles having a carrying capacity of from 1/2 to 1-1/2 tons; but nearly all roads are used occasionally by 5-ton trucks and in certain sections, and especially near the larger cities such heavy trucks form a considerable percentage of the total traffic.

The truck traffic on the State highways of Connecticut may be taken as typical of the most severe condition that has to be met.

That traffic, as shown by the State-wide survey ^{2/} made by the Bureau of Public Roads, consists of the various sizes of trucks in the following percentages: 1/2 to 1-1/2 tons, 64.7 per cent; 2 to 2-1/2 tons, 14.3 per cent; 3 to 4 tons, 9.9 per cent; 5 to 5-1/2 tons, 10.5 per cent; and 6 1/2 to 7 1/2 tons, 0.6 per cent. The tonnages refer to the carrying capacity of the vehicles, and they average about 2 tons. The gross weight when fully loaded will in each case, be more than twice the load capacity, except as limited by the State law which fixes a maximum limitation of 25,000 pounds. It will be seen, therefore, that in this State where truck traffic is as heavy as it will generally be found to be anywhere, about 80 per cent of the vehicles will not exceed 6 tons in gross weight, and 90 per cent will not exceed 8 tons. Ten per cent of the total number may weigh as much as 10 tons and a few may equal and in rare cases exceed the maximum legal weight of 12 1/2 tons. A considerable proportion of the lighter vehicles are equipped with pneumatic tires, but practically all of the heavier ones have solid rubber tires; and their speed rarely exceeds 25 or 30 miles an hour and generally is less.

There is a popular idea that such traffic is highly destructive and necessarily so. It was implanted in the public mind during the World War when roads which had been built for lighter vehicles were destroyed by the heavy trucks which were put into service by the Army. What happened is inevitable whenever a light-duty road or other structure is called upon to perform heavy duty.

^{2/} Connecticut Highway Transportation Survey, Public Roads, Vol. 5, No. 1, March 1924, p. 10

Roads can be built to carry vehicles of any weight, heavy or light; and so long as the design load is not exceeded there will be no destruction. They will wear out as steel rails, and motor trucks and rubber tires wear out. But they will not be destroyed; and whether the relatively heavy loads be few or many there will be no appreciable difference in the rate of wear.

The first essential is to fix the maximum vehicular weight. That has been done by law in all States. The next is to build the roads to carry the maximum load. That is being done. The next is to enforce the legal weight restriction. Where these three essentials are properly observed there will be no destruction; and the only appreciable result of an increase in the design load will be an increase in the cost of construction.

For such traffic as the Connecticut truck traffic described above several types of pavement will give practically equal service. A suitably designed brick pavement, or a bituminous concrete pavement or a concrete surface might be used. For purposes of comparison it will be assumed that the choice is concrete. In that case a pavement 7 inches thick at the center thickened to 9 inches at the edges would in all probability carry the traffic safely. The average thickness of such a pavement would be somewhat less than 8 inches, but let us say that it would be 8 inches. Then compared with the pavement required for dense passenger car traffic only such a pavement would have an extra thickness of about two inches of concrete - an extra cost of, say \$10,000 a mile. Roughly, that is the measure of the additional cost of building for heavy truck traffic.

Whether or not the additional cost is justified is a comparatively simple problem in economics. The use of heavy trucks is not imperative. Freight can be moved over the highways in one-ton trucks which are no heavier than the larger passenger cars. A large proportion of the tonnage in Connecticut and everywhere else is actually carried in such vehicles. But there is a very decided operating economy in the use of the larger units. Where there is a sufficient volume of freight to be moved and full loads can be provided for the heavier trucks, the cost of the haulage can be considerably reduced. Whether or not to build the road to accommodate the heavier vehicles is then simply a question of the number of such vehicles to be operated. If they are numerous enough the combined savings in operating cost will more than offset the additional cost of the road and it will be economical to expend the larger sum for the road.

Obviously the employment of this method implies that only certain roads will be built as heavy truck roads. That means a classification and building of roads according to duty; and it means a restriction of heavy trucks to operation over heavy-duty roads. Such a classification is already in practical effect in those States where the traffic requires it; and the restriction of the heavy traffic presents no practical difficulty. It takes care of itself. Heavy trucks can be operated economically only between points at which they can take on a full load. Between such centers heavy-duty roads are generally justified by the traffic. It is rarely necessary to prohibit operation of the heavy trucks over by-roads, because there is rarely any occasion for the heavy trucks to turn into such roads. When the highways are properly classified,

economic law accomplishes the restriction of the heavy traffic to the heavy-duty roads and leaves very little for statutory laws to regulate.

Summing up then, I think it is evident that: (1) There would be a demand for improved roads whether commercial vehicles were operated over them or not; (2) as a general rule the passenger car traffic is at least ten times as great as the motor truck traffic; (3) the roads required for the accommodation of the passenger car traffic would be adequate for the transportation of freight in one-ton trucks; (4) the use of larger units makes for more economical operation; (5) the heavy motor trucks do not destroy roads that are built to accommodate them; and (6) if the construction of the roads is properly related to the character of the traffic the operation of the heavier truck units produces savings which more than offset the greater cost of the roads.

Now from what has already been said it must be apparent that if any commercial vehicles are receiving free highway service or even a service that is relatively free, it can be only those commercial vehicles which exceed in weight the passenger cars for which improved roads must be built whether trucks rove or not. These heavy vehicles do necessitate the building of more costly highways than would otherwise be required. For this additional service they do pay higher license fees than the lighter vehicles--fees which in some cases run to more than \$400 a year. But perhaps they do not pay enough; we shall see about that. At any rate no such contention will hold with respect to the light commercial vehicles which impose no greater burden upon the highways than the passenger cars. If these light commercial vehicles pay as much as the passenger cars of equal weight they are paying as

much as can reasonably be expected; and they do pay at least that much - all of them.

Before going into the question of whether or not the heavier trucks pay as much as they should, let us first obtain some idea of the manner in which the cost of the roads is being met. Unfortunately the latest reasonably exact statistics with regard to the revenues obtained from various sources are those collected by the Bureau of Public Roads for 1921. These will no longer serve our purpose because of the great increase in motor vehicle revenue that has occurred since that time. However, it is reasonably certain that the total revenue is now no greater than it was in 1921; we have definite information with regard to the amount of the motor vehicle revenues; and a reasonably reliable estimate may be made of the other revenues. Table 1 presents data developed in this way for 1924 with the more exact 1921 statistics as a basis.

Table 1 - Approximate highway revenue, 1924, exclusive of bonds.

Federal-aid and forest road funds	1/ \$ 90,000,000
Property taxes	415,000,000
Motor vehicle license fees	225,000,000
Gasoline taxes	75,000,000
Miscellaneous taxes	<u>95,000,000</u>
Approximate total revenue derived by taxation	900,000,000

1/ This is the approximate expenditure during the year. As there are no Federal taxes especially levied for road purposes, it is assumed that an amount of the total taxes equal to the road expenditure is raised for that purpose.

In this tabulation the motor vehicle is credited directly with the license fees that are paid for it and the taxes on the gasoline which it consumes. These two special taxes yield \$300,000,000 or one-third of the total highway revenue. But there was paid on account of the motor vehicle, in addition to those direct taxes other taxes which do not appear here to its credit. For example there are the Federal excise taxes which in 1924 amounted to \$158,014,709, and which since the tax was first levied in 1918 have produced more than twice as much revenue for the Federal Government as it has spent for Federal-aid and forest roads. There are also the wheel taxes paid in some States; and the very considerable though inestimable property taxes paid on the vehicles themselves and the manufacturing plants, garages, agencies and service stations which owe their existence to the use of the vehicles. Add all these taxes paid directly or indirectly on account of the motor vehicles and the total will certainly exceed \$500,000,000 for 1924, or more than half of the total highway revenue for the year.

Bear in mind, these are the taxes paid on account of the motor vehicle. Then recall that there are probably more than 15,000,000 motor vehicle owners in the United States with a total population of 112,000,000, and it will be clear that the owners of motor vehicles, as previously remarked, must constitute a very large percentage of the tax-paying class, and hence must pay a large proportion of the highway tax that is not taken from them directly or indirectly on account of the motor vehicles. All of which means that already the improved roads of this country are being paid for in very large part by the owners of motor vehicles.

With this explanation the statement that the owner of a light commercial vehicle is paying as much as can be expected when he pays at least as much toward the cost of constructing and maintaining the highways as the owner of a passenger car of equal weight, will probably be more acceptable.

But what of the owners of the heavier vehicles? Are they paying sufficiently for the special road service they require? It is perfectly evident that they are paying some amount in the form of license fees, some more in gasoline taxes, more still in Federal excise taxes, still more in property taxes on their trucks and garages, and over and above all this the general property taxes which they pay along with all other property owners. Certainly they are paying something for their use of the roads. Their highway service is certainly not free; but do they pay enough?

This much can be said at once: They pay much more than they did ten years ago. In 1914, the average license fee paid by owners of heavy trucks was but little higher than the fees paid by owners of passenger cars. In that year the average fee paid for a 1-1/2 ton truck was only \$5.43. In 1924 the average fee paid for the same size of truck was \$31.15. For a 3-1/2 ton truck in 1914 the average fee was \$8.36; in 1924 it was \$85.75. In other words the 1924 fees for 1-1/2 ton trucks were 485 per cent of the 1914 fees; those for the 3-1/2 ton trucks were 10 times as great as they were ten years previously. But the fees paid by owners of 5-ton trucks increased much more than either of these. The average truck of this size in 1914 paid only \$8.80 a year for its license to operate. Last year the average fee for the same size of truck

was \$139.39, an increase of nearly 1500 per cent. In one State the fee for a truck of this size was over \$400 a year; in three other States the license to operate cost more than \$300; in four States the charge was between \$200 and \$300.

It may be granted that these heavier trucks were not sufficiently charged for their use of the roads in 1914; perhaps they are not paying enough now; but certainly they are paying a very considerable amount.

According to the registration statistics for 1924 there were 1,384,620 trucks of all sizes in the 29 States which classify their license receipts so that the amounts received from passenger cars and trucks can be segregated. These trucks paid license fees totaling \$29,211,455, or an average of \$21.10 per truck. In the same 29 States the 9,107,145 passenger cars registered paid \$93,269,171 or an average of \$10.24 per car. Taking all sizes of trucks together it will be seen from these figures that the average truck paid in license fees only more than twice as much as the average passenger car. It is not possible to compare their gasoline taxes; but if it were we should probably find a somewhat similar ratio.

In arriving at this average truck fee of \$21.10, however, we have included all sizes of trucks, the small with the large. Judging by the percentages of the various sizes of trucks manufactured it is probable that about 80 per cent of the vehicles included are trucks of the capacity of one-ton or less. The fees paid by these vehicles probably do not exceed on the average the fees paid by the passenger vehicles; and for reasons previously mentioned there is no need that they should. Assuming that these vehicles which constitute 80 per cent

of the total number of trucks pay exactly as much as the passenger cars, i.e., \$10.24, it follows that the remaining 20 per cent of all motor trucks which have a gross weight of more than 3 tons must pay an average fee of not less than \$64.50, or about 6.3 times as much as the light trucks. If this judgment be correct, and it is certainly not far wrong, then it follows that the 20 per cent of all trucks which have a gross weight in excess of 3 tons must pay at least 60 per cent of the total license fees paid by all trucks.

Let us see what that would amount to for 1924. As previously stated, the \$29,211,455 of motor truck license fees received by 29 States was paid by 1,384,620 motor trucks. The total number of motor trucks registered was 2,131,332. Assuming that the fees paid by the trucks in the other 19 States and the District of Columbia average as much per truck as in the 29 States for which we have definite figures, it appears that the total of all license fees paid in 1924 by all trucks in the United States could not have been far from \$45,000,000. And, if 60 per cent of this sum was paid by trucks of capacity greater than 1 ton or gross weight in excess of 3 tons, it follows that these trucks probably paid at least \$25,000,000 in license fees alone for their use of the roads. Whatever sums their owners pay in gasoline taxes, in excise taxes, and in property taxes on their trucks and garages would constitute an addition to this sum.

Now, it has been assumed that the construction of roads to accommodate these vehicles should add a maximum of \$10,000 a mile to the cost of the roads they use. If it be assumed that the life of such roads will be 20 years, then the \$25,000,000 paid in license fees is

sufficient to pay \$10,000 a mile and interest at 5 per cent on 33,000 miles of high-type pavement; and according to the best available estimates there are not more than 46,000 miles of such pavement in the United States. In this calculation the license fees only are considered. If the other taxes paid by the heavy trucks were included it is probable that the total would be found to be sufficient to pay the additional cost of \$10,000 for the entire mileage. Certainly, it appears that these heavier commercial vehicles pay a very considerable sum for their use of the highways.

Let us examine the matter from another angle. As previously suggested, the question of the free or relatively free use of the highways by commercial motor vehicles is raised only when their operation is compared with that of other commercial carriers, especially the railroads. It is claimed that the railroad companies must, perforce, build and maintain their own tracks out of the revenues accruing from their operation, whereas the commercial motor trucks, using the public highways, have their roadway provided for them, and enjoy, therefore, an advantage in competition with the railroads. We have already seen enough to be sure that the commercial vehicles do not enjoy a free use of the highways but, on the contrary, that they pay a very considerable sum for such use. Suppose now we examine the relative payments for roadways made by the commercial motor vehicles and a typical railroad system.

It has already been shown that the average license fee paid by all motor trucks in 1924 was \$21.10 per truck. According to the National Automobile Chamber of Commerce the percentages of the various

sizes of trucks manufactured in 1924, rated according to capacity, were as follows: 3/4-ton and less, 10.8 per cent; 1-ton, 71.4 per cent; 1-1/2-ton, 7.7 per cent; 2-ton, 2.2 per cent; 2-1/2-ton, 3.8 per cent; 3-1/2-ton, 1.0 per cent; 5-ton, 1.8 per cent; and over 5-ton, 1.3 per cent. Assuming that these percentages apply approximately for all trucks in use, it appears that the capacity of the average truck is about 1-1/4 tons. Therefore, it may be assumed that the average motor truck license fee is about \$16.90 per ton of capacity.

According to the annual report of the Baltimore and Ohio Railroad Company for the calendar year 1924, that company paid from its revenue during the year a total of \$26,638,363.05 for maintenance of way and structures. The same report states that in the company's equipment there were 100,092 freight cars and 1,441 passenger cars. The freight revenues were more than six times as great as the passenger revenues. Let us consider, therefore, that the entire cost of maintenance of way and structures was paid by the freight business. Assuming then, that the capacity of the 100,092 freight cars averages 40 tons per car, we find that the draft upon the company's revenues for maintenance of way and structures was only \$5.65 per ton of freight-car capacity, or more than ten dollars per ton less than the commercial motor trucks paid in license fees alone for the use of the highways.

We find, therefore, that the commercial motor vehicles not only pay a very considerable sum for their use of the highways, but that, on the average, they actually pay much more per ton of capacity than a typical well-kept railroad sets aside from its earnings for the maintenance of its track and structures. However, there is another aspect to be

considered. The owners of motor trucks may pay a very considerable sum for the use of the highways, and they may pay for that use a greater amount on a capacity basis than the railroads pay for their tracks, but do they pay into the public treasuries for the construction and maintenance of the roads a fair percentage of the income they derive from the operation of their trucks?

In attempting to answer this question we must take into account the character of highway service the commercial-vehicle operators receive. A railroad's tracks are generally maintained in a condition uniformly adequate for its traffic. The commercial motor vehicle operators, on the other hand, have no such uniformly adequate highways to deal with in many of the States; and where the highway service is inadequate it is not to be expected that they will be willing to pay as great a proportion of their income as the railroads pay for their tracks.

A number of the States, however, do offer fairly adequate highway service, and among these is the State of Connecticut. It happens that we know a good deal about the motor truck traffic of that State, so we will take it as an example.

On the basis of the transportation survey made by the Bureau of Public Roads, we estimated that the net volume of motor freight transported over the State road system between September, 1922, and September, 1923, was approximately 88,000,000 ton miles.

At that time there were 23,140 motor trucks registered in the State. How many of these trucks made use of the rural highways and contributed to the total movement noted above it is of course impossible to

say. It may be granted that some of them were operated in the cities exclusively. For our present purposes it is not necessary to know. The fact remains that the owners of all these vehicles were taxed for the maintenance of the State highways whether they used them or not; and, as a group, they paid in registration fees only, according to the Bureau's records, \$956,368.93. They paid, also, some additional sum in the form of permits and licenses; how much can only be estimated. The 29,140 motor trucks and the 148,791 passenger cars registered during the year paid between them in the form of such licenses and permits a total of \$1,070,909. If we assume that the motor trucks paid only in proportion to their numbers (a very conservative assumption) then the motor truck share would be approximately \$200,000. Adding this amount to the sum paid as registration fees we find that they paid in both ways not less than \$1,150,000, and there is still to be added the amount they paid in the form of gasoline taxes. Here again it is impossible to state exactly how much was paid by the motor trucks. The total tax collected from all motor vehicles, including automobiles and trucks was \$880,222.70. If we again assume that the motor trucks paid only in proportion to their numbers (which is again a very conservative estimate) we must credit them with a payment of not less than \$140,000, and this added to the amount paid in other ways would bring their total contribution to the State up to not less than \$1,290,000.

This entire sum was paid into the State treasury by the motor trucks alone and all of it, under the laws of the State, was applicable to the construction and maintenance of the State roads. The excise taxes paid to the United States for new trucks and parts purchased during the year are not included although these taxes also constitute a payment made by

truck operators as a class, and in a sense may be said to be devoted to road improvement since they are paid into the United States Treasury from which are paid out the funds appropriated by the Government for Federal aid.

At the very least, therefore, the motor truck owners of the State of Connecticut may be said to have paid toward the construction and maintenance of the State roads in 1923 the sum of \$1,290,000; and in return they received the benefits of highway service for a total movement of 88,000,000 ton miles. It is fair to say therefore that these owners paid for their use of the State highways at the rate of approximately 1.5 cents per ton mile.

How much this movement may be said to have been worth to the truck owners can only be estimated. The bulk of it consisted of a movement of commodities in trucks owned by the shippers. A smaller portion was moved by commercial truckers. The rates charged for this portion would undoubtedly vary widely with the length of haul and the character and value of the commodities hauled. The rates charged by commercial haulers in various sections of the country range between the approximate limits of 10 and 20 cents per ton-mile, however; and a rate of 15 cents would appear to be reasonable as an average. If, then, we assume the entire Connecticut movement to have been handled by commercial truckers at the average rate of 15 cents per ton-mile, the ratio of the tax paid for the use of the roads to the gross operating revenue would be approximately 10 per cent.

Whether or not this is a fair percentage may be reasonably determined by comparison with the practice of the railroads; and it is interesting to note that during the 12-year period from 1911 to 1922

the average amount charged by the railroads for maintenance of way and structures was 13.5 per cent of their total operating income. Judged by railroad standards, therefore, it would seem that in Connecticut, at least, the contribution of the motor trucks toward the maintenance of the State highways must be regarded as adequate.

It may be granted that in this analysis we have credited to the support of the highways the entire amount of the taxes of various kinds paid by all trucks registered in the State into the State treasury, whereas it is apparent that much of the haulage of these trucks must have been over city streets. But the fact remains that all truck owners, whether they used the State roads or not, did pay for their upkeep; and it is a fair presumption that they paid for the use of the city streets their full share of the taxes levied by the municipalities for the construction and repair of the streets.

It is true that the registration fees for motor trucks were higher in Connecticut in 1925 than in any other State. For the 25 States which segregated the fees received from motor trucks and automobiles, the average in that year was \$18.23 per motor truck as compared with an average of \$32.82 for Connecticut. On the other hand the average capacity of motor trucks in the State was doubtless higher than the average for the United States, and the Connecticut gasoline tax was only 1 cent per gallon which was less than the tax charged by 27 of the 35 States then levying gasoline taxes. Fifteen of those 27 States levied a tax of 2 cents per gallon; two charged 2-1/2 cents; 9 collected a 3 cent tax, and one a tax of 4 cents per gallon.

Moreover, if it be contended that the majority of the States

received a smaller contribution from their motor trucks it must also be admitted that few other States provided highway facilities the equal of those of Connecticut. If, therefore, the motor truck owners in this State paid a greater amount than the average for the use of the State highways, it must be admitted that the majority of States that received less gave less in return.

So then, it is indicated very definitely that commercial vehicle operators not only do not receive free highway service, but that they pay for the service they receive at a higher rate per unit of capacity than the railroads pay for their way and structures and also that, in States where the character of roads they have to operate over will justify it, they pay of their earnings as great a percentage as the railroads.

The comparisons with the railroads have been made largely because it is contended that the supposedly free highway service enjoyed by commercial motor vehicles gives them an unfair advantage over the railroads and enables their owners to establish such low rates for transportation that business, properly the due of the rail carriers is taken from them. It has been shown that this contention is wrong insofar as it presupposes a free highway service for the commercial motor vehicles. It may also be shown from the evidence gathered in our highway transportation surveys that it is wrong in several presumptions upon which it is founded.

The first of these is that the commercial motor trucks come largely into competition with the railroad. Our surveys show definitely that the competitive field is very narrow. In the main, the motor trucks

are engaged in a service of distribution to and from the railroads, in short hauls which are unprofitable to the railroads, and in the extension of transportation service into areas not served by the railroads.

The second presumption is that the commercial vehicles are operated largely as common carriers at a profit. The facts, as we find them, are that the very great majority of them are operated, not as common carriers, but by persons and industries for the shipment of their own commodities, so-called owner-operators. We find moreover that there is every likelihood that the proportion of common carriers will remain low. Those individuals and companies which have thus far engaged in the business as common carriers have found profits to be low instead of high, so low in many cases that they have been forced to suspend operations.

The third presumption is that the motor vehicle operators by virtue of their use of the public highways are able to establish rates which are lower than the rail rates and in that way take business from the railroads. For this presumption also ^{not} ~~there~~ is no reasonable foundation in fact. We find that motor truck rates seldom, if ever, are lower than the corresponding rail rates. Generally they are slightly higher; and the business which the common-carrier trucks get comes to them largely because they offer direct and prompt service and, in some cases, because goods can be shipped safely by them with less crating and packing than by railroad.

But, it may be asked, if all this is true, then what is the reason for the large mileage of track abandoned by the railroads? Since 1916 the railroads have abandoned more than 3,800 miles of track; what is the reason for that abandonment? We have looked into that question,

and we find that just 4.3 per cent of the mileage abandoned since 1920 can be attributed to highway competition. The Transportation Act, passed in that year, required all railroads desiring to abandon trackage to secure certificates of public convenience and necessity from the Interstate Commerce Commission. The facts involved in all abandonments since then are fully set forth in the published opinions of the Commission, and are therefore available for analysis. Of the 2,439 miles abandoned and thus explained, just 4.3 per cent was given up because of highway competition. Nearly 58 per cent was mine and logging trackage abandoned on account of the exhaustion of the natural resources for the exploitation of which it was constructed. Almost 30 per cent was brought about by the competition of other railroads; 1.3 per cent was the result of the rearrangement of lines; and 7.3 per cent was due to other miscellaneous causes.

In the light of these facts revealed by our investigations we have come to the conclusion that the various taxes levied upon commercial motor vehicles are not unduly low and that they are in no sense subsidized to the disadvantage of any other commercial carrier.