THE POTENTIAL OF HIGHWAY TRANSPORTATION DURING AN EMERGENCY

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Publication No. L52-106

INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D.C.

Mr. John V. Lawrence, Managing Director of the American Trucking Associations, Inc., was born at Babylon, New York, 3 August 1899. During the First World War, he served with the U.S. Navy. He is a graduate of New York University with the degree of Bachelor of Commercial Science. From 1920 to 1925 Mr. Lawrence was with the Commercial Engineering and Installation Divisions of the Western Electric Company, manufacturing subsidiary of the Bell Telephone System. In 1925 he joined the staff of the Automobile Manufacturers Association, then the Automobile Chamber of Commerce, and served first in the Export Department and later as the Association's South and Central American representative. He became European manager for AMA in 1928 and stayed in that post until 1932. Although he maintained headquarters in Paris, he covered all Europe, North Africa, and the Near East to the Indian Border. Mr. Lawrence participated in the formation of the American Trucking Associations in the days of the trucking industry's code of fair competition under the National Industrial Recovery Act. Since then, he has taken an active part in the affairs of many committees and organizations whose work directly affects the welfare of the trucking industry. Among them are the National Highway Users Conference, the Engineering Committee of President Truman's Highway Safety Conference, and the American Trade Association Executives.

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MR. HILL: Hilaire Belloc, the historian, was greatly impressed with the influence of the highway on our everyday lives, in fact so much so that he wrote a book about it, entitled "The Road." He said, "The road is one of the great human institutions. It is fundamental to social existence. Its varied effect appears in every department of the state, and determines the location and growth of cities. It controls the development of strategies and fixes the sites of battles. In short it moves and controls all history."

The highway carrier has increased its proportion of all freight carried in this country since the close of World War II. This is in part due to its flexibility, for it alone of all carriers can complete its function without aid from other types of transport.

In discussing the place of this industry in mobilization, we must consider not only the vehicles and their manpower coefficient but the state of the highways themselves. The highways of the Nation are being worn out.

Our speaker comes to us from discussions of this subject in high places, at the national level. He has been the spokesman for his industry before Congress and has helped to mold opinion and form policy. We welcome him not only because he is experienced and able but because he is frank and sincere.

It is our pleasure to hear Mr. John Lawrence, Managing Director of the American Trucking Associations, on "The Potential of Highway Transportation During an Emergency." Mr. Lawrence.

MR. LAWRENCE: General Holman, Mr. Hill, ladies, and gentlemen: It is indeed a pleasure to be here. It has been my privilege several times in recent years to appear on round-table discussions that were held in this institution. I say it is indeed a pleasure because of the very fine consideration you give speakers, the knowledge of the subject that you have, and the intelligent questions you give us. I am always delighted to accept your invitation.

I am not going to give you any formal speech today. You might say I would just like to talk with you about some of the problems we have; an inventory of the facilities that are available today; what the outlook is; and so forth. I will try to divide my talk into various

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phases such as the vehicle fleet itself, the terminal situation, and then, as Mr. Hill said, the vital factor is the highway network of this country--its present condition and future prospects.

The vehicle themselves have increased tremendously in the truck field since the coming of World War II. At that time there had been about 4.5 million trucks in operation in this country, a slight setback of 6 or 8 percent from the prewar figures. In other words, not a thing was produced; some of them were unavoidably being wrecked in accidents, unfortunately, which we have in all forms and kinds of human activity; and others have just worn out and couldn't be replaced.

We try to look at the picture, insofar as average life is concerned, from the standpoint of the condition of the fleet as we call it, on 1 September 1941. I just mention that to give you a bird's-eye view of what I am trying to explain. In other words we start off at that point because it was possible to keep things going with what we had--and with certain parts that were furnished--from 1941 to VJ-day in 1945, or more than four years.

When you come right down to production there were only 7,500 power units produced during the period of World War II. Along toward 1944 the condition was getting rather serious and approval was given for the production of 75,000-odd units as replacements. I don't think one unit of those was delivered before VJ-day because so much lead time is required. The lines were shut down and had to be started up again. It takes nine months to get a power unit out.

After VJ-day we had a condition that had never existed before, what with strikes, shortages, and other things, you might say the truck manufacturer's shops were full of units that were say 92 percent completed. One would lack a transmission, one a carburetor, and the trucks wouldn't operate without them. They were practically completed, but there was something missing off each one. That situation has changed considerably during the intervening years, and the total has increased from the 4.5 million to well over 8 million.

Now let us look at the condition of that fleet. This is what has happened, with the most astounding growth in population the world has ever known--which is continuing in this country, as clearly shown by the 1950 census when we finally passed 150 million people--new areas are opening up. The demand for truck transportation has been terrific. If you will look at the census figures, you will find that we have had a phenomenal increase in population in the Pacific Coast States in that interim period.

The same is true of the Southwest and Southeast, particularly in the states bordering on the Atlantic and the Gulf of Mexico. In those

areas there is very little network of rail lines, so the increasing dependency is on truck transportation. No one is building new rail lines. According to the reports of the California Railroad Commission, 70 percent of the volume goes by truck and the other 30 percent goes by rail, pipeline, and other forms of transportation.

So the result is we have an 8-million-vehicle fleet, but the average age is much worse than it was on 1 September 1941. Our last estimate--we keep it current as to the average ages of these vehicles, replacements, retirements, and so forth--is such that in order to get the fleet in that same condition, we would have to produce 2.7 million units overnight in some miraculous way. At the present rate of production, that would be going on for three years. In other words, by some miracle you would have to turn out nearly three years' production in one night to bring the fleet to that point.

Physically, it is not in condition to do so. The reason for that is briefly this: With sudden shifts, sometimes by temporary things and with the pre-Korean situation, a lot of predictions had been made-- about the worst of which was that there would be a depression. There had been a stoppage of buying for a few months. The production of trucks had been reduced in volume. The result has been that the old ones have been kept in service when they should have been retired. Parts were put in but they are wearing out all the time and will inevitably reach the point where they just give out. That is about the picture today.

On the vehicles themselves, I would say their capacity is considerably greater. In looking over the production figures for what we call heavy-duty equipment, you find production has increased to a far greater extent than it has for what we call the medium or the lighter class. Now, defined, any light equipment runs up to 9,000 pounds loaded--gross weight, whereas from 9,000 to 16,000 pounds we call medium.

To illustrate what I mean by medium, you see these pickup and delivery trucks, two-axle trucks that run around town and pick up and drop freight, either from rail lines, motor lines, or various other forms of transportation. Then for anything over 16,000 pounds we go into light heavies and heavy heavies but that is gross weight.

The trailer use has increased tremendously. At one time in over-the-road operations, we used to have a single trailer for a single tractor. On local transfer work they would use three trailers for each truck. In other words you were supposed to load one, unload another, and return another in between. That type of ferry service has been extended to 200 miles and is not unusual up to 500 miles where multiple trailers are used.

Again, tractors have increased their motor power tremendously; the tractor will drop a trailer after service and will be ready to go out

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with another one. They don't remain together, which requires a great deal of standardization. We have undertaken standardization in a fifth wheel connection base, on which the front end of the trailer rests, as well as other types of standardization, such as light couplings and brake connections between the cab and the rear end.

There has been a great deal of improvement in that equipment and it has increased the average size. Some of it has been the result of changes in restrictive rules and regulations in states. Prior to World War II we had a weight limitation of 18,000 pounds--vehicle, loading, and everything else--in Kentucky at that time. That was suspended only during the war under an emergency condition. Now the weight limitation has been put on a 42,000-pound basis. So the whole capacity has increased.

During World War II a great many vehicles were laid up and many of them were cut out of service. They couldn't prove their essentiality. They were short of gasoline. Although probably normal, luxury crosshauling was stopped and rate of mileage, that in times of affluence you can enjoy as a luxury, was being cut down. The result was that from about 90 billion ton-miles carried over the highways of this country, intercity, just prior to World War II, this number shrank to around 65 billion on an average in the war years. By 1949 it was back up to 90 billion; next year it is figured to come to about 140 billion. Some of the experts in the Defense Transportation Administration indicate they expect it to go to 160 billion ton-miles in the not too distant future.

Now we come around to the types of vehicles we have for design, for instance, tailored to the job. One of the problems, as I said, has been power units. I think all of you who have gone around the country can see that while not all trucks have speeded up, they can take grades easier. There has been a tendency that way. Many operators formerly used 325-350 cubic inch engines. A great many now have 500 cubic inch or larger engines. On the west coast we have the double bottom, which is a six axle--the regular three axles under the head end of a straight truck, drawing a three-axle trailer behind it. Those vehicles used to use Diesel engines of 200 horsepower. They would rather go into gasoline engines, such as the Hall-Scott engine with 1,090 cubic inches and 275 horsepower. It is quite a power plant. We are looking for a lot of development of power plants as time goes on.

So far as the present outlook for vehicular supply, it was a little tight right after Korea. What had happened was that, with all the predictions of a drop in business in May, the fellow that was going to buy equipment just said, "I will have a look and see. We will wait and do a little more maintenance before we replace those."

Then tonnage went sky high. Because of scare buying and everything else, truck loadings have been increasing from VJ-day until, for the

first time, they showed a slight drop in the third quarter of last year. What had happened was that the scare buying was over, people were heavy with inventories, our tonnage was dropping off. During the months just prior to that--from June 1950 on--there had been this tightness, particularly in the heavy vehicles which had the long lead time, the special built jobs, a great number of parts. It takes months to get them out. There was quite a tightness in the situation. That has eased, and since then things are going along fairly well in that field.

The allocations of materials by the National Production Administration seem to be coming along very nicely. The production of all vehicles has been running at about 250,000 a quarter. Their breakdown is usually on the basis of 56 percent for the lights, 30 percent in the medium field, and about 14 percent in the heavy-duty equipment. Some of that has been going to the military. I am not talking of the military vehicle as such, but the military use of standard or commercial equipment for the movement that they have been doing in recent years, the ordinary movement of things around and not as tactical vehicles. That is the picture.

We are looking forward this year to a continuance of that unless things get much tighter. The market is about easy; it is not free. You might say there are no surpluses but still it is not too tight; the equipment is moving in reasonable quantitites as the demand requires. We are trying to keep up these fleets so you can live on fat for sometime; you couldn't replace it.

Coming to the other construction, it has been rather difficult in an industry such as ours, with the tremendous number of companies involved in it, to get adequate material, at least adequate on such things as you have for building construction; that is controlled today. We have been able to survey it and find that there will be about 414 companies this year that will either build new terminals or reconstruct old ones. It is a problem because the average one will run about 140 tons of structural steel, which is tight. It will run probally 2,000 pounds of copper, which is as scarce as hens' teeth, and 700 or 800 pounds of aluminum. So it is a struggle to get these stories before the proper people and then get the constructions that have been held essential production after you get permission to build. It is a hunting license to go out and get the material to build with. We are hoping the situation will move along fairly well.

On the matter of highways over which we operate, we have a network in this country of about 3 million miles, of which 300,000 are in the primary system. About 70 percent of the truck traffic moves over those main highways and almost all the balance--the less than 30 percent that remains--moves over the major secondary highways in its distributive work. But the bulk of it moves over the main highways.

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We have been tremendously interested in that particular thing and from this standpoint our highways have not kept up with the demand placed upon them. In other words when you realize we are away beyond 1960 estimates of vehicles which involves transportation of all types--passenger cars, trucks, busses--we have a system that hasn't kept up to the standard in that it is wearing out.

In other words you take the pavement on those roads. Twenty-odd years is a good life for it before something should be done on it. Most of these constructions were built in the twenties and thirties. We have been trying to extend that system over hard-surfaced roads but haven't had the facilities to do the job of replacement. We have to also consider that during World War II, there was money in the bank; but, there was no manpower and no materials.

I think all of us are familiar with the fact that 18 months were really lost in getting back to work after VJ-day because a lot of the road building equipment had been shifted out of that area, either for building air fields in this country or overseas. Those contractors had been moved to other jobs or they were dissipated. It took 18 months to reorganize and get them back together again. So you can see that for a period of over five years nothing was done, even to the extent of giving decent maintenance to the roads. That is something that takes 20 years to catch up on if you lose 5.

Now in the situation here with materials, that is the bad outlook in the future--how are these roads going to be maintained? Of course, they use a great amount of structural steel. We say there is a capacity of 103 or 108 million tons at the present time of all steel. Structural steel and the fabrications of it have never run more than 4 million tons to my knowledge, so that when you take anywhere from 100,000 to a quarter of a million tons of structural, you are asking for a lot from a pot that is being drawn on for defense purposes. It is indicated, however, that those requirements will drop off in the last part of this year as those projects will be completed. Then there may be relief for highway work.

There has been a cut in the allocations. First of all they had this highway program; then it was sent back. They were told to pare it down. So the pruning shears were put on it. Then when it went to the allocation authorities, they granted 26 percent of the pared-down amount. The reinforcement material may be available, but if you can't build culverts or bridges, ther is no sense of building stretches of road that can't be connected. So they say, "Why give you one if we can't give you the other?" Even though they have the allocations, they haven't been able to translate them into steel. So we have an outdated road system. It is too narrow, of peculiar construction--by methods of the past which is going to take a longtime to bring up to standard--let alone the increase in the amount of traffic in the normal areas in which people can get around.

In other words 20 million more vehicles have been put on the road in recent years with no expansion in road plant to speak of.

That brings us to the other point. We were discussing it with some of the faculty members and I indicated I would like to brief you on it and give our viewpoint on these things. We hear a great deal of discussion of the damage done to the roads by heavy axle loads, but here is the picture.

I don't know whether anybody knows or can tell at this time just what the damage is. We had road tests. The last ones on which axle weights were developed were made in 1922 and 1923, on what was called Bates Road in Illinois. The State of Illinois at that time was embarking on a roadbuilding program--was one of the leaders in that field in the twenties. They sold 100 million dollars worth of bonds. Before building, they decided to do some testing to find out what the right type of construction was. So they used in the test work, World War I army trucks with solid tires. The change from the solid tire to the first high-pressure and later the ballon tire took place in 1927. The first pneumatic tires on trucks went into operation in 1927. So they made calculations and tried to do it by empirical formula. Since that time they have been adjusting that old data.

In 1950 we had another road test. The road was on route 301, which is the alternate road into Richmond out of Baltimore. It cuts out Washington and crosses the Potomac at Morgantown; it is carrying a lot of north-south traffic. There was a piece put on in April of 1950.

It was announced that the road had a very fine granular subbase, 18 inches of gravelly material; that it was 9"-7"-9" double parabola type of pavement; that it was quite the thing, this double parabola. The concrete pavement was thicker at the edge, 9 inches at the edge. The parabola comes 7 inches in the center and goes out to the outer 9 inches again. This road happened to be double parabola with a joint in between. There has been only about 50 or 60 miles of that built in the country. Most engineers fought shy of it because double parabola keeps water and moisture under it. Moisture is the worst thing under a road. It works through the support.

In 1823 John McAdam spoke about that. If the soil is kept dry it will support any weight. Some of the fellows who plunged into road building in the early days forgot what McAdam taught. The interesting thing was that after they started, the soil borings were taken. The granular subbase was under only 15 percent of the test road section. The rest was plain Maryland mud. The water under the road acted up as soon as they started to beat it. There was poor local drainage, the water backed up there all through the heavy rains.

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The conditions were not conducive to a road test. To begin with the road was not what it should be. At high noon on 28 December 1951, I was down there. Traffic heading to Flordia and other southern points and traffic heading north into New England was rolling at over 50 miles an hour which is the maximum limit in Maryland. Most people don't know that road was tested. That road is operating today. I just learned over in Baltimore this morning that even, with all of this 30-year truck traffic treatment that it was given, repairs cost 9,000 dollars. The majority of that we can see as our own engineers were pulling out old shoulders, ditching, and doing things to it that hadn't been done orginally, with a small part spent in patching the pavement. In other words, the engineers ran those trucks up and down, day and night, at one-minute intervals to give the simulation of 30 years of ordinary truck traffic. So I don't think the results from that are conclusive at all. Realizing that, I think many of the state engineers who participated in it were a little disappointed.

Two other tests are going to be run. One is out in Malad, Idaho. Construction will commence after winter breaks and the tests will be conducted shortly thereafter. The road is of different thinknesses. The engineers know the exact composition. There is no question about what is down underneath. It is not like the Maryland test where they found a poor base under it. In the western test they are going to know exactly what is under it.

Then in the Mississippi Valley, at a point not yet selected, the engineers are going to carry on a very extensive test on new construction, something like the State of Illinois did in 1923. They took a half million dollars to see whether they were right before they started their road program. It is wise to do these things. In the Mississippi Valley there will be two roads. The test on the west coast is different, using a road built of bituminous asphalt. The test in the Mississippi Valley will employ both bituminous (a flexible type) pavement, and concrete pavement of varying thicknesses. Again the engineers will load these trucks, weighed to the pound, carrying concrete blocks so the load doesn't shift, and keep running them day and night up and down. In these other tests they found day and night was a little rough so they were going to run two 8-hour shifts. We look for these tests to bring quite a bit of information.

In the meantime our road building had been hodgepodge. The state laws, so far as capacity is concerned, have been hodgepodge. There is a tendency now to get a large number of sections, such as New England or the Northeastern States, to have a fair degree of uniformity; eleven Western States have been trying for years. Such states as Virginia, Kentucky, and Tennessee were below the general level. You can see what trouble that creates because traffic runs north and south and

when we operate across the area, the low states set the weight for all. Pennsylvania, in the northeastern block, is the low state on east-west traffic to and from Central New England and New York, as you go through Pennsylvania from those points.

We have a curious difference in one thing. In the West they use multiple axles, a longer vehicle. Some of these lengths in the tractor-trailer are 60 feet. Some states allow over 50, but normally 50 feet of combined vehicle is it and that is a five-axle job. The semitrailer-full trailer combination is a six-axle job. When you come east, we use either the three-axle tractor semi or sometimes the tandem-axle trailer with a two-axle tractor.

That last vehicle in the minds of many is not too sensible, but where you put the double axle on you have increased the weight on the aft end and then to keep the axle in balance on the forward end the trailer tandem must be well forward. It doesn't make for an efficient handling, but when you get the five-axle job, the trailer is resting on the two aft tandems on the tractor and balances with the tandems on the rear.

But in the East, particularly in New England where the roads are winding, you can't use the longer vehicle. The people in the West say they can use it under similar conditions. It is longer but it will track just as easily. Be that as it may, the tendency in the East has been to depend on the long-time axle weight of 18,000 pounds. You will find in the 12 Northeastern States, from Ohio to New England, Maryland, the District of Columbia, the axle weights are more than 18,000 pounds.

There may be another need for it. In the Western States you have more of an agricultural, nonindustrial population. For instance, just take the matter of the tank truck alone, you have to run a tank truck to capacity. The weight of a gallon of gasoline or No. 2 house oil runs 6 to 7 pounds a gallon. If you take this area from Baltimore up to the Delaware River-Pennsylvania area, it is dotted with chemical plants. Those solvents will weigh from 11 to 16 pounds. To fill an adequate tank with it, you will run heavy weight. That is why you find higher axle weights in these eastern states.

Terrain may have a lot to do with it, too. In New England, outside the Boston plain, it is one solid piece of rock. Those roads ought to be able to carry that. On the other hand all the northeastern area is glaciated. In fact a big glacier sat on top of New England proper and reached out into Ohio, down in this direction. So you have different soil to work in here and materials to get in and put subgrades under it. That probably will account for it.

There is a great deal of talk about overloading. I wouldn't deny the records; weighing sources every day show it. We have carried on a

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strong movement to discourage it for a number of years. As I mentioned before, I think a lot of it developed as a result of the war, from the looseness with which everything was done during wartime: "Go move the tonnage; it is needed; get it away." It might be the result of hurried preparation of building up a big military machine.

In World War II lots of things couldn't be covered in the regulations. We had an awful lot of sealed delivery operations, either to a military or naval establishment. A truck would be sent in under this instruction, "Spot the trailer there; we will load it and seal it. Don't touch the seals. It will be opened by us; we will tell you when to come back for the trailer."

I know one particular driver who pulled one of those sealed deliveries out. He said, "I refuse to drive this. I don't think I will be able to stop it." It was loaded by a sergeant with a few men who just kept loading if there was room and, instead of 24,000 pounds, there were 45,000 pounds of stuff there.

We are all on a better basis. Everybody was plunged into it at Pearl Harbor. I think the organization will be much better this time. We will have better-trained men. You can't just pick up men and make them expert. If a fellow has been working 10 years on a dock, he knows how to load trucks.

Since the war many states, notably Maryland, Indiana, Wisconsin, have taken definite steps and our people have proposed to their legislatures that they raise their overweight fines to almost prohibitive levels. A lot of states allow full trailers. There is always a little of it because you will find in a lot of the violations you read of they sometimes have the wrong license or the trailers got mixed up with the wrong papers and they were fined for that. Lots of times there is a slight shift of load, because of a quick stop, for instance.

We have gone into the question of weighing because many portable scales showed as much as 800 pounds out. A fellow is fined on tandems. They are supposed to chock them up and keep them level; if you weigh one side and then another, you can weigh 900 pounds over. A lot of these old pit scales were designed for horse and wagon. The coal yards have an incline to them. If you put the brakes on the truck you put 700 or 800 pounds extra on the axle. So we insist that they be chocked and the brakes released before the weighing is done. That has made a big change in the number of tickets. We passed a resolution in one of our annual meetings that we don't condone it.

A fellow may get nailed for a shift in the load. It is unfortunate for him. I suppose he can't help it. Our feeling is that if state laws are wrong, let industry and agriculture get together and straighten them out.

Mr. Hill, I just tried to cover a couple of phases here. I understand it is the custom to answer questions at this time.

QUESTION: Mr. Lawrence, many of us have had an opportunity to observe operations on western European roads, particularly I am thinking of Germany, France, Belgium, and Holland. They are mostly the macadam type where they pull truck loads with three or four trailers, about 25 feet long. In the international trucking operation from Holland, Czechoslovakia, and Austria, they usually have 8 or 10 axles to each load. My point is, I haven't observed that their roads have been difficult to maintain. Why don't we increase capacity by using multiple trailers in this country?

MR. LAWRENCE: There have been two things: First, I would state this, they were forbidden by law. On the other hand truck traffic is really express. The fast rate of speed is of the essence. I don't mean a man tearing along at a terrific speed. I mean the ability to reduce time between pickup and delivery. So the result is that some folks who have used them in the East where we have heavily congested traffic found them unsatisfactory. They immediately turned around and discarded all that and said it was too slow. They built higher-powered tractor semitrailers.

As to the roads, the Romans built those European roads; they were really put down. While the surface gets out of whack, the road is still there. That is the difficulty we had in our harum-scarum building program, particularly where they laid the pavement over poor clay. There was nothing under the surface.

Another thing is the operating difficulty. They would be unwieldy to handle as compared to western traffic. Our big problem is that everybody passing trucks, you or I, we always figure it is a big thing. It is in the way. We will never be able to get the speed of the truck accelerated up to the passenger car level. The relationship of horsepower to gross weight is about 10 to 1.

Now what happens is that every time a truck engine is improved, passenger car engines move up, too. Our organization did a pretty good safety job prior to World War II. Then during World War II, we lost everybody. The result was we had to do more safety work. We didn't have any more accidents, but they had ruinous ones when they had them. We had inexperienced men. It takes and has taken us a long time to get back to the courtesy of the old days. I am afraid we would anger the public more if we had those long slow multiple trailers than to use the faster vehicle that in the long run will turn out the ton mileage just as well as the lumbering, bigger vehicle.

QUESTION: I was wondering what the reaction of the trucking association is to the charge of the railroads that the railroads pay

for their own roadbed and truckers do not. Railroads are taxed; the money is used for the roadbed for competing transportation.

MR. LAWRENCE: Briefly on being taxed, our folks pay income tax, excess profits, and anything else just as any other business does. We are faced with special forms of Federal excise that do not go into roads. Alone in Federal excises, gasoline, parts, tires, equipment, and everything else will total this year two billion dollars. Now that is aside from the road taxes. On an average the trucks of all classes contribute about one-third of the special tax money to build highways. The ones they are kicking about as the trucks compete with them pay a lot more.

Go out and look at the McLean trucks. Those larger trucks paid over 3,000 dollars each in road taxes last year. You see they are doing 150,000 miles at about three miles to the gallon. They are paying a tremendous amount of money for those roads, our folks say. That impresses me. Comparatively, I probably pay 50 dollars in gas tax and for plates on my car. I think the toll-road people are in business to sell transportation. We don't agree that the toll method is proper or cheap. What is the difference in tolls? The Pennsylvania turnpike is in business to sell right-of way use to people. Its differential runs about like this: one and a half dollars on passenger cars; six or seven and a half dollars on a truck and trailer, in that range, which is four or five times greater than others. You compare that with the regualr road taxes that McLean pays on those units, which is many times what I pay on my passenger car--3,000 dollars compared to about 50 dollars.

QUESTION: Getting back to the over-all length of the axle and loading heavy, do you think the industry would go into overlength vehicles and axle loading if there were no restrictions?

MR. LAWRENCE: It would depend. I forgot to mention in the Mississippi Valley test which is proposed, the authorities are not going to let a road go to pieces. They are going to maintain it. There was no structural improvement in the road in the test. But they are going to check the maintenance, cost of construction, cost of the different types so as to decide on the vehicle weight, axle loads, what is the proper one economically. How much would they charge a 30,000-pound axle truck or a 50,000-pound tandem drive. The reason I mentioned it was that produce is loaded up to the roof. In loading forzen orange juice coming up from Flordia, only a small part of the truck body is filled because it is too heavy to load it full. What is the limitation? Would it be wiser to build certain trucks for that so you can fill that body?

You will find some people who will overload the truck; some do it deliberately. But I think if there were no limitation, most people

would watch the weight because it would go back to the tire expense. The tire wouldn't stand it. A set of rubber tires costs from 1,000 to 1,400 dollars. Unless a fellow is crazy, he will not load with no regard to the money in his tires.

QUESTION: In relation to the tests, would you explain who sponsors them, who controls the, and who pays for them, and how do you arrange for the various types of vehicles and weights to move over those roads?

MR. LAWRENCE: The test which was set up in Maryland was proposed at a meeting down in Columbus, rather hurriedly organized and in a few months the road had been selected. Then each of the 12 states that participated in that chipped in 10,000 dollars if I recall correctly. They asked for a little more; they ran short of money.

Originally, the Army was going to supply the drivers for the test. Then Korea came along. They thought that after the summer training period they would supply them--from September on; that was out of the question.

The test itself was under the general supervision of the Highway Research Board. Generally, the United States Bureau of Public Roads supplied the test personnel. In Maryland, the project engineer was a Bureau of Roads man. The stress and soil test were made by the Bureau of Public Roads men with their own equipments which are extremely expensive. Tests were made on Maryland state roads.

The trucks were of varying makes. There were eight trucks in Maryland, each a make different from the specifications they wanted. They were supplied free by the manufacturer of each make. The gasoline and lubricants were supplied by oil companies competing, although they usually have an agreement that one company supplies the whole effort and then they split the cost.

QUESTION: We had a speaker here from the state Civil Defense organization who indicated that in the event of an emergency and we get into difficulty, they are going to grab every truck and bus in the state. The military may have a demand for those trucks. I wonder if your organization has hone into the reporting angle of what will be available and what could be made available? Is there any angle where state organizations couldn't touch these trucks, anything along that line?

MR. LAWRENCE: I think you have made a very good point. I have been at a good many of the Civil Defense meetings. A truck is a truck to the public, but there all types of them. Do they want light jobs to run some tools for demolition work, carry a bit and brace in them? Do they want heavy ones to carry other material? We are always fearful,

with no disrespect to our Civil Defense authorities, if that thing is carried out, they will immobilize every truck there is and not know which one to use.

We are trying to work with them. Our suggestion has been to classify trucks, A, B, C, D. For instance, these over-the-road trucks carrying freight for you folks, shouldn't be driven out and used for a purpose not suited to their needs. That might be class D, the last ones that they needed. We are trying to work on that difficult problem, necessarily depending on our local affiliates, one for every state in the Union, two in California and two in Illinois, to get those fellows to work with local authorities and with the military on an intelligent basis.

QUESTION: You mentioned the shortage of 2.7 million vehicles. That would put us, if we had them now, back in the same position we were in 10 years ago.

MR. LAWRENCE: As to average age, yes.

QUESTION: I wasn't quite clear whether you indicated we in fact had a program to make up that shortage?

MR. LAWRENCE: We have lost ground.

QUESTION: If so, in this three-year period, how big does the 2.7 million have to increase to make up the ground we will lose in that time?

MR. LAWRENCE: I can give you this. We have lost about a half million since 1946. It was about 2.2 million. So you see there is another half million added to that over-age group. In other words we were below relatively. We are still. We haven't lost too much ground. There has been an increase in the number available. The percentage in 1941, average age, five and a fraction years; average age now is eight and a fraction years, which would give you another way of stating it.

QUESTION: You mentioned a little about it, but it seems that every state has different laws. Did anyone ever think about trying to get all the states to adopt uniform laws with all this interstate commerce?

MR. LAWRENCE: I think our folks have been trying to program something, at least get it on a regional basis. The flow of traffic is usually regional or from one region to another. You have some vehicles that go around--like a furniture van--all over the United States, but generally they keep to one area or region so it would be a good thing.

Back in the Seventy-seventh Congress there was a bill proposed which would allow Federal intervention, but not Federal setting of sizes and weights. If after a hearing, the ICC found that if a state law covering traffic over a particular highway, in a particular area of the state or a whole state, was burdensome for interstate commerce, it could be

set aside. What has happened? On the basis of working on laws, some people have endeavored to secure uniform provisions. We have some pitched battles in the states. Most of those laws have been amended to the point where they are not on the basis of any engineering or sound economic need, but are purely on an emotional and political approach. It is just a battle all along.

QUESTION: Has your organization done any, what you might call, mobilization planning with the Goverment, aside from attack, by which to control cargoes and truck services? In the event of full mobilization or all-out effort, have you worked out any detailed plan along the lines with any goverment agency?

MR. LAWRENCE: No, sir. Our units are there to handle it. We try to keep a sort of flexible outfit. We immediately set up our folks in the states. They are there to help work out just how things can be done.

In 1942 I came to Washington from our annual meeting and was called to the Munitions Building. We were asked to recruit two truck regiments for the Persian Gulf. We phoned and wired our contacts. I got 5,770 some-odd volunteers in five days with 258 officer candiates. I mention that because that was just by getting on the telephone and telling these fellows, "Go get them." I always operated, not on a set plan which you might have to throw into the waste basket--but by having an organization there and telling them, "Here is the problem; do it."

QUESTION: You mentioned the fact that there was an inclination toward doing away with the Diesel operation and I believe you brought out the point that it was due to the fact that the gasoline increased your power much more and you got better potential that way. I just wondered what was being done in order to increase the number of Diesel operated vehicles?

MR. LAWRENCE: Maybe I left the wrong impression. I meant that the 275 horsepower gasoline engine happened to be available. Nevertheless the maximum on a Diesel is 200. The Diesel people are stretching themselves to get into that market. In some instances Diesel fuel was not taxed before. There is about a 50-percent saving by using Diesel compared with gasoline, job for job. That existed when you didn't have the 2-cent Federal tax. That takes away from the differential, there, because of greater efficiency. A lot of states where Diesel prevail have not only taxed the Diesel, but at the same time they put the tax higher than on gasoline, which cuts the differential. They are not being abandoned in any way, but in place of a 200 Diesel, they wanted a 275 horsepower engine. Now the Diesel is putting out 300 horsepower engines.

QUESTION: Would you discuss whether ther is any possibility that we will have an extension of toll roads such as those in Pennsylvania

and New Jersey? I have heard that some trucking companies refuse to use them because the driver gets up to 90 miles an hour and on those jackknife curves they lose time. Certainly a lot of companies do use them. Is there any possibility of extending those roads?

MR. LAWRENCE: I think the toll road is coming in because of the political aspects of our highway planning. As you know the interstate system of roads is a 38,000-mile network, but they are not progressing in the work on that. I will tell you why.

Take Indiana--there is a section of Ft. Wayne, on that Detroit-Chicago expressway, that runs around 2 million dollars a mile. When the Indiana Legislature heard about that, the boys in the southern area said, "We could build 20 or 30 miles for that in our area." So they got the money and the other job was neglected. That is going on all over the country. We think a system is being developed to build the important one first. The strategic system is not being built and is not being modernized.

Now, as a whole the public wants roads. It will pay for them. The people are going on the toll roads. The "New York Times" yesterday had a piece in it saying that the Jersey turnpike authorities had worried for fear they wouldn't have enough business, but they are 30 percent over expectations already and don't know what to do. Not all of our people are using the Jersey turnpike: it is rolling country. You might save an hour but pay seven and a half dollars or so for its use. There is a pretty good route over 25, so people go that way.

The Pennsylvania turnpike had an advantage in an old grade through the mountains--run through by borings, small, we will admit, but it was easier and less costly to punch out a boring rather than drive one through and cut it out. It had a grant from WPA as well. There was a road test in Pennsylvania with all types of trucks, again with concrete--three runs over U.S. 30 and three runs over the turnpike, with every type of vehicle. In the bracket of 40,000 or 50,000 pounds, on a 160-mile run as compared with U.S. 30, a motorist saved 16 gallons of gasoline on the turnpike; and in time, 2 hours and 30 minutes eastbound and 3 hours and 40 minutes westbound. In Jersey it is rolling country and motorists do not make those savings. I understand from our people that some of them go into Camden now; some don't go on the new road at all. Some say, "Why should I pay seven and a half dollars for what I get out of it?"

MR. HILL: Mr. Lawrence, we have asked you all the questions we possibly could. Thank you very much.