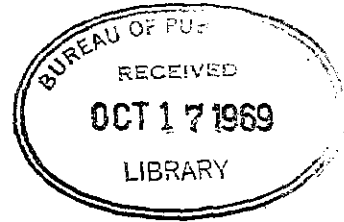


U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
WASHINGTON, D.C. 20591



Testimony of  
F. C. TURNER

Federal Highway Administrator

on

H.R. 11870 and H.R. 11619, bills: "To amend section 127 of title 23, United States Code, relating to vehicle weight and width limitations on the Interstate System."

Prepared for delivery before the  
Subcommittee on Roads of the House  
Committee on Public Works.

September 3, 1969

Mr. Chairman and members of the Subcommittee:

The bills before you today, H. R. 11870 and H. R. 11619, would change section 127 of title 23, United States Code, which governs the maximum widths and weights of vehicles permitted to use the Interstate Highway System. If enacted, H. R. 11870 would affect those maximum limitations in the following manner: it would increase from 18,000 pounds to 20,000 pounds the maximum permissible single axle weight including tolerances; increase from 32,000 pounds to 34,000 pounds the maximum tandem-axle weight including tolerances; and increase the maximum overall vehicle gross weight from 73,280 pounds to a weight derived from a formula contained in the bill but, notwithstanding other limitations in the bill, permit two consecutive sets of tandem axles to carry

a gross load of 68,000 pounds if their extremes were spaced a minimum of 36 feet apart. This bill would also increase from 96 inches to 102 inches the maximum permissible width and establish 70 feet as the maximum overall length of any vehicle combination using the Interstate System. Finally, the bill contains "grand-father clauses" which, as we understand them, would permit States presently allowing larger or heavier vehicles on the Interstate System to continue to do so to the same extent permissible under present law.

H. R. 11619 pertains only to motor buses, and would allow buses up to 102 inches in width to operate on the Interstate System.

As you are aware, a vehicle sizes and weights bill with somewhat different provisions passed the Senate last session but failed of enactment in the House. (S. 2658, 90th Congress). Now the proposal is before you once again. We have taken a hard look at this matter to determine whether, in facilitating the movement of goods and people in the Nation's commerce, the interest of the traveling public as well as the life of our highways are being fully protected. In particular, we have examined the provisions of these bills to weigh the transportation benefits which would accrue to the Nation against the effect on the safety and convenience of the motoring public

and the additional wear and tear which would occur on our public road network.

Our review of the available data has lead to the following conclusions about these proposals:

(1) If modified as I will discuss later, the economic benefits which might be passed on to the public in terms of standardization, convenience and reductions in operating costs, would outweigh the economic costs to the public in terms of wear and tear on the highway network caused by the use of larger vehicles. The modifications we suggest will minimize the damage which the larger vehicles could cause to many structures on our existing non-Interstate road networks, will reduce problems of large truck maneuverability, and will prevent unwanted increases in pavement wear.

(2) Our review of the available data bearing on highway safety considerations does not permit the reaching of a definitive conclusion. We have reexamined government studies and reviewed the current records of the trucking industry and experience on toll roads in States where larger vehicles similar to those proposed in the bills are now permitted to operate under special permit. Although these data indicate that larger trucks are not involved in accidents more frequently than smaller vehicles, they also indicate that the accidents in which larger trucks are

involved more often result in fatalities and injuries. However, we should point out that the available statistics in these areas are limited and may not be completely representative.

In sum, while we believe that the economic benefits would outweigh the economic costs occasioned by the enactment of these proposals, if amended as I will indicate later, we do not have sufficiently reliable evidence to make a clear case for or against the proposals on safety grounds. Should the Congress in its consideration of these proposals decide that increased truck sizes and weights would not adversely affect highway safety measurably and, therefore, decide to act favorably on legislation, we feel strongly that it should not do so without adding certain additional safeguards which we think are essential. Later in my testimony I will detail these safeguards to minimize potential adverse effects the larger trucks might have on safety.

1. Highway Traffic and Safety Consideration. Safety is the first concern of the Department of Transportation. We carefully reviewed the available material in an effort to determine whether these larger vehicles, if authorized, would increase the number or frequency of vehicle accidents on the road.

Our analysis covered the records, work and information available within the Bureau of Motor Carrier Safety, the National Highway Safety Bureau and the Bureau of Public Roads; the experience of several trucking companies which now operate large vehicles under special permit or other arrangements; accident records of a major toll road which allows such trucks to operate; statistics compiled by the National Safety Council; and prior evidence collected in the earlier report to Congress on this subject by the Secretary of Commerce (House Document No. 354, 88th Cong., 2nd Sess. (1964)).

Nobody, of course, can say with finality whether the increased sizes and weights contemplated by these measures would result in an increase in accident involvement by these or other vehicles. However, we do know that larger vehicles are not now involved in an inordinately large proportion of accidents. A comparison of the available operating experience records of trucks of various sizes on routes where the largest vehicles are now permitted to operate indicated that the accident rate of the largest trucks is actually lower than that of smaller ones.

Various reasons may be advanced for this. For example, these larger and hence more costly vehicles are usually operated by companies in a better financial position to maintain them and are driven by the most experienced drivers.

Whatever the cause, there does not appear to be any statistical basis for assuming that vehicles of the size being proposed by these bills would be any more likely to be directly involved in accidents than the large vehicles presently on the roads which they would replace over a period of ten years. However, evidence is scarce on whether the presence of the larger vehicles might indirectly cause more accidents.

There can be no denying that many drivers on the highways are apprehensive about passing or approaching trucks. Caution is certainly appropriate in all such circumstances, as indeed it is in every case of highway driving. But the available information respecting actual operating experience with these larger vehicles does not appear to support a contention that there is more likelihood of an automobile having an accident with a larger truck than with a smaller one. Whether the proposed incremental increase in truck size would significantly aggravate adverse driver reactions beyond that already induced by present truck sizes is, of course, not subject to precise measurement. Highways of present Interstate design standards make adequate, safe provision for passing or overtaking such vehicles. While I fully appreciate the effect that present large trucks have upon the mental and emotional attitude of the general motoring public, it would be speculation on anybody's part to

state that this apprehension would be significantly different because of the increment of change in size and weights should this legislation be enacted.

As I stated earlier, Government studies indicate that the accidents in which large trucks are involved more frequently result in deaths or injuries than accidents in which smaller vehicles are involved. One reason for this is that heavy trucks, designed for interstate commerce, spend most of their driving time in high-speed travel between cities, and the more severe accidents occur at higher speeds. Another important factor is the physical fact that when a heavy truck strikes a smaller vehicle, the overwhelmingly greater (15 or 20 to 1) weight and momentum of the truck tends to demolish the smaller vehicle.

The Department is, of course, presently at work on truck safety matters under its present authority. Under this authority and responsibility the National Highway Safety Bureau of the Federal Highway Administration is presently moving ahead on a priority basis on the development of a broad array of new safety performance standards for trucks and buses. During 1970 concentrated attention will be given to completing pending rule making work on brake system performance standards to increase significantly the braking capability of heavy trucks and buses.

This standard will require truck and bus stopping capability closer to that of automobiles as well as balanced braking systems to reduce such hazards as skidding and jackknifing. These standards are planned to become effective over a period beginning January 1, 1971.

A number of other rule making items are also expected to become effective January 1, 1971. The Safety Bureau is presently developing a consumer information regulation which will require manufacturers to indicate the acceleration performance of trucks and buses under varying load conditions. Such information will not only be of assistance to vehicle drivers, but more importantly will provide a basis upon which to establish minimum performance requirements.

During fiscal year 1971, it is expected that a safety performance standard for truck tires will be issued requiring performance characteristics similar to those already in effect for automobile tires. In addition, the work now in progress on performance standards for rear underride guards should be completed to permit issuance of the standard early in fiscal 1971.

These and other rulemaking actions by agencies within the Department of Transportation will continue in the interests of increased safety whether or not the Congress enacts legislation to permit larger vehicles to use the public highway systems.



But it is important to note that some of the improved safety performance that these standards will require in the larger trucks and buses will be achieved, according to our automotive engineers, only if any increased overall width allowed is accompanied by a corresponding increase in track width. Consequently, the possibility of these larger vehicles appearing in numbers on the Nation's highways makes essential appropriate safety standards to govern their manufacture. For example, it would be unacceptable merely to allow existing truck or other vehicle bodies to be widened to the new 102-inch width, or place on a present flatbed body a wider load, without revising the running gear itself to the larger width. Similarly, we believe that the proposed increased weights should not be allowed except where they are accompanied by improved braking, higher power to weight ratios, wider vehicle tracks and other beneficial features.

The Department has existing authority, under the National Traffic and Motor Vehicle Safety Act of 1966 and the safety provisions of Part II of the Interstate Commerce Act, to promulgate appropriate safety standards for the manufacture of these new larger vehicles and to regulate their operation by interstate carriers. We therefore recommend that, should Congress decide to enact this legislation, it delay the effective date of the vehicle weight and dimension increases

until the Department has promulgated appropriate safety standards governing the aspects of performance mentioned. We would suggest that the effective date be delayed about three years to enable us to develop and promulgate such standards.

Such a delay would have an additional safety advantage because, in the interim period, there will be an increase in the percentage of our highway network that has been completed to modern design standards. We think that the delay in effective date we suggest would be a means of insuring that the vehicle, the road, and the load are more nearly consistent with one another and that no one element of this important combination will be substantially modified without appropriate simultaneous corrections in the other elements of the system.

2. Vehicle Weights. Present size and weight limitations on commercial vehicles using the Interstate Highway System date from the Federal-Aid Highway Act of 1956 which first authorized the financing of the system. That Act limited size and weight increases under State laws to specified maximums conforming to policies endorsed by the American Association of State Highway Officials (AASHO), or the then prevailing State law, whichever was greater. A number of States, particularly in the Northeast, had then and have now

axle load limitation of 22,400 pounds whereas the AASHO policy called for 18,000 pounds.

Section 210 of the 1956 Act called for a comprehensive investigation and report by the Secretary of Commerce including recommendations for the maximum sizes and weights of vehicles using the Federal-aid systems. Based on extensive road tests conducted by the Bureau of Public Roads, AASHO, the Highway Research Board and industry, this report was prepared and submitted in 1964 as House Document 354, 88th Congress, 2nd Session.

H. R. 11870 is consistent in many respects with the recommendations in the 1964 report. It does, however, depart from those positions in certain respects which we believe inadvisable.

We have no difficulty with the proposals in the bill which would allow vehicles on the Interstate System with single axle loads up to 20,000 pounds including tolerances, tandem axle loads up to 34,000 pounds including tolerances, and an overall gross weight computed in accordance with the formula presently in the bill. These load limits were contemplated in the 1964 report to Congress and the Interstate System is being designed to carry vehicle loads of these weights. The proposed increases allowable in axle loadings are actually rather small when judged in the light of the limits which already exist in many States, because the weight limits in H. R. 11870 would specifically include

all "tolerances"; that is, the variations above the load limit now permitted under State law, regulation or custom.

Under the "grandfather clause" of the present law, 33 States are now limited to 18,000 pound single axle loads and 13 of these provide a statutory enforcement tolerance ranging from 500 to 2,000 pounds. Nine States permit single axle loads of 22,400 pounds, and Hawaii permits a 24,000 pound single axle loading. Also to be recognized in this consideration is the fact that administrative enforcement tolerances are in existence in many of the States having an 18,000 pound limit even without a statutory provision for tolerances.

Similar realities exist in comparing a change in statutory limit of 32,000 pound tandem axle load to a limit of 34,000 pounds which includes all tolerances.

From these considerations it seems apparent that the proposed increase in axle weight limit would have relatively little significance in its effect on relative structural life of the highway. Our greatest concern for the effect of increased truck weights results from the fact that there are many bridges in the Nation on which no accurate data are available as to the bridge structural capacity rating. Bridges rated as H20 and HS20 design loading are capable of carrying the proposed axle loads without overstress. These are the type structures being constructed on the

Interstate System and on other Federal and State systems carrying large traffic volumes. Bridges rated as H15 and HS15 design load capacities can carry these loads within allowable overstress and all recently constructed bridges on Federal-aid primary and secondary projects are being designed to at least this H-15 loading standard.

However, it must be recognized that to be efficient transporters, trucks cannot operate exclusively on a limited highway system. A serious deficiency does exist in the load carrying capacity of thousands of bridges on the 3.7 million or more miles of highways, roads, and city streets in this country. The Bureau of Public Roads, in cooperation with AASHO, the Consulting Engineers' Council, and other interested and knowledgeable individuals, is just completing a Bridge Maintenance Inspection Manual which will include uniform procedures for making inventories and ratings of bridges. This is being accomplished in accordance with section 26 of the 1968 Federal-Aid Highway Act. Until complete inspections and structural ratings are made of the older bridges, it will not be possible to determine the ability of these bridges to carry either the present legal loads or the weights as contemplated in the proposed legislation.

While many bridges off the Interstate System are incapable of accommodating indefinite repetitions of the axle or

gross loads now proposed, neither are they capable of accommodating vehicles at the current legal limits without shortened lives. Wholesale replacement of old and inadequate structures is a necessity whether or not the load limits are increased.

Subsection (b) (on pages 2 and 3 of the bill) would permit two consecutive sets of tandem axles to carry a gross load of 68,000 pounds, notwithstanding the other restrictions of the bill, providing the distance between the extremes of these consecutive axle sets was 36 feet or greater. We believe this to be seriously objectionable. As presently drafted, subsection (b) could theoretically permit a load of 60,000 pounds on one set of such consecutive tandem axles provided the load on the other did not exceed 8,000 pounds. This is an extreme example, not likely to occur, but it is nonetheless an illustration of what would be permissible under the provision. Tandem axle loads greater than 34,000 pounds would cause undesirable overstress both to bridges and to pavement surfaces. We think that there should be no exceptions to the formula stated on page 2 of the bill, which was developed specifically to preclude or minimize overstress on highway structures, and therefore do not favor enactment of subsection (b).

Before I leave the subject of vehicle weights, two further matters in the bill need clarification. First, there should be no misunderstanding that the provisions in this bill are intended to apply to loaded and not empty vehicles. To make this perfectly clear, we recommend that line 1 on page 2 of the bill be amended by inserting the phrase, "including any load thereon", after the words "used by vehicles or combinations thereof".

Second, my testimony assumes a common understanding of the technical terms used in the bill, particularly the terms "tandem axle" and "tandem axle weight". In the past, some questions have arisen over the meaning of these phrases. At least one State Attorney General has interpreted "tandem axle" to mean any two consecutive axles regardless of their construction, spacing, or the way they were mounted on the vehicle. We therefore recommend that the Committee formally recognize in its report the applicability of the following definitions of these terms, which will also be found on page 14 of the 1964 report to Congress on Vehicle Dimensions and Weights (House Doc. 354, 88th Cong.):

"Tandem axle.--Any two or more consecutive axles whose centers are more than 40 inches but not more than 96 inches apart, and are individually attached to and/or articulated from a

common attachment to the vehicle including a connecting mechanism designed to equalize the load between axles.

"Tandem axle weight.--The total weight transmitted to the road by two or more consecutive axles whose centers may be included between parallel transverse vertical planes spaced more than 40 inches and not more than 96 inches apart, extending the full width of the vehicle."

We also understand the other technical terms in H. R. 11870 to have been used as defined in that report and we urge that the Committee's report on this measure include all of these definitions of terms if they are not included in the bill itself.

3. Vehicle Dimensions. The bill would increase the maximum permissible width of vehicles using the Interstate System from 96 to 102 inches, "plus additional width necessary for safety devices and tire bulge due to loads". The principal reason for this dimensional change is to provide consistency with the standards promulgated for intermodal freight containers, now established at exactly 96 inches or 8 feet. The extra inside width will accommodate the width of such containers plus necessary room for their fittings. The Interstate highways are already being built to accommodate vehicles of this dimension and current standards for other Federal-aid systems are similarly set to accommodate this size of vehicle.



The additional three inches which would be available on each side of the vehicle would permit an improved equipment design to result in operating characteristics such as greater rollover resistance, increased steering and braking stability of vehicles when cornering or under severe wind conditions, wider spacing for spring mounting and frame members to provide higher stability factors, more space for larger tires and brake drums, and more tire and brake cooling capability, all of which are factors to improve vehicle performance and operating safety characteristics. The Department intends to promulgate safety standards which would require truck manufacturers to incorporate these kinds of safety features in the larger trucks.

Of course, as referred to earlier, there is a question of the psychological impact of a larger truck on many motorists. The effect of this on safety is not known. It is doubtful that many motorists could detect the incremental change in truck dimension or weight that would be provided by the bills.

If you proceed to act on H. R. 11870 at this time, we recommend that it be amended in two other respects. First, the words "officially approved" should be inserted immediately before "safety devices" in line 6 on page 2 of the bill to limit such devices to those required or permitted by Federal,

State or local law or regulation. In the same line, the phrase "and tire bulge due to loads" can be deleted. This "tire bulge" proviso originated many years ago when vehicles were being converted from solid or high pressure pneumatic tires to the wider low pressure pneumatic tires. The necessity for this exception no longer exists.

The fact that the size and weight bill last year was not enacted reflected the opinion of many people that it was deficient in failing to set an overall maximum vehicle length. This is one of the matters at which we have taken a particularly hard look. We agree with the authors of H. R. 11870 that a definite maximum vehicle combination length is desirable.

However, in lieu of the 70 foot limitation proposed in the bill, we would recommend that the limit be not more than 65 feet for vehicle combinations. This length was included as a recommendation in the 1964 Department of Commerce report and is also consistent with current AASHO policy, as their representative testified before your Subcommittee on the 17th of July. Experience has indicated that the Interstate System can satisfactorily accommodate vehicles of this dimension. In addition, we assume that the States would, in line with current AASHO policy and the recommendations in the 1964 report, provide suitable

intermediate maximum lengths for single unit trucks, buses, trailers, and truck tractor semi-trailer combinations commensurate with this 65 foot length for vehicle combinations. We urge that such provisions be clearly associated with the 65 foot figure and that the current AASHO policy be followed in this respect.

4. The Grandfather Clauses. We do not think it would be justified to permit the operation of larger vehicles indefinitely on the roadways by virtue of pre-existing laws. We therefore recommend that the "grandfather clause" provisions be eliminated, effective at the end of seven years from the date of enactment of this legislation. This will permit the industry sufficient time to phase out the operation of existing larger vehicles.

Should the Committee decide to retain these clauses, however, we make the following suggestions.

A number of witnesses at last year's hearings have expressed concern that the so-called "grandfather" clauses in H. R. 11870 (lines 15 through 19 on page 2 and subsection (c) on page 3 of the bill) would open the Interstate System to even larger vehicles than specified in the bill or allowed under current law. We hope that these clauses are not intended to have that effect. Rather, we interpret them in the same manner as the similar provisions now in

23 U.S.C. 127. That is, that their purpose is to allow the continued operation on the Interstate System of larger vehicles than specified only to the same extent and under the same conditions as those vehicles are presently allowed to operate legally. In other words, if larger vehicles may under current law use the Interstate System in a given circumstance under a special permit, then issuance of such permits would continue to be permissible under H. R. 11870. We do not, however, understand those clauses to permit larger vehicles regularly and continually to use the Interstate as a matter of course on a blanket annual basis. We consider the permit procedure to cover unusual, infrequent and non-recurring special circumstances on a one-trip, individual permit authority.

In view of the apprehension concerning the effect of the grandfather clauses, therefore, we urge that the bill be amended to make this understanding clear to all by adding the phrase "and under the same conditions and circumstances" following the word "dimension" on line 16 of page 2 of the bill. The clause would then read (new language underscored):

"\* \* \* or the corresponding maximum weights or dimensions and under the same conditions and circumstances permitted for vehicles or combinations thereof using the Interstate System within such State under laws or regulations established by appropriate State authority in effect on July 1, 1969, whichever is the greater. \* \* \*"

We also see no need for subsection (c), which is merely another way of stating the same "grandfather" concept.

As indicated in the preceding paragraph, we note that in many cases special permits are being issued covering all operations of a vehicle or a fleet for an entire year, and renewed annually, so that in effect the basic law is being regularly abrogated for some users. The permit system is adequately described in the current AASHO policy statement to cover special one-time only situations and not routine or recurring trips. I strongly urge that you include a clear definition of what is intended by "permit" operations, preferably in the bill itself in line with the AASHO language. In many respects the statute has become meaningless when permits are issued for recurring operations which should be brought under the limitations.

5. Limiting the maximum weights and dimensions of vehicles using any Federal-aid highway system. My testimony thus far has been directed to the maximum weight and dimensions appropriate for vehicles using the Interstate highway system. Present Federal law imposes such restrictions only with respect to this system (23 U.S.C. 127(a)), and the legislation before you would also apply only on the

Interstate highways. We think it appropriate at this time to apply these restrictions to the entire Federal-aid system.

Even though the Interstate highway system is the safest and most modern in the Nation, considerations both of safety and protection of the public investment in these highways have persuaded the Congress to place a maximum limit on the weights and dimensions of vehicles which may utilize it. If such limits are needed on the Interstate System, the similar restrictions on maximum sizes and weights are advisable for the other Federal-aid systems.

Yet, under the present law, the States can -- and in fact certain States do -- permit larger vehicles on the Federal-aid primary and secondary systems than they do on the Interstate System. This incongruous practice could continue under H. R. 11870. It is questionable from a safety standpoint; it could jeopardize the extensive Federal investment in the Federal-aid primary and secondary systems.

I would stress, too, that with an extension of maximum weight and size limits to the entire Federal-aid system, each State would retain its authority to set its own lower maximums on all Federal-aid highways within its boundaries, just as it may now do with respect to the Interstate System when such special controls are deemed

necessary. The States could be expected to continue to exercise their authority to set lower maximums or use restrictions suitable to their own conditions and needs, within the Federal maximum limitations.

Two final comments: This Department has transmitted legislation to the Congress to increase heavy truck user charges so that this class of highway user bears what our previous reports to Congress have indicated to be a more equitable share of the cost of federally-aided highway construction. This legislation would carry out congressional policy as set forth in section 209(b) of the Highway Revenue Act of 1956. It relates to existing disparities in sharing of costs and should be enacted before and regardless of whether any increase in size and weights is authorized. If this is not done, then an increase in truck weights would simply compound the current inequitable distribution.

Second, enactment of this legislation will, over the course of the next several years, expectantly lead to increasing numbers of these larger vehicles on the highways. The majority of their trips will likely be medium or long distance hauls. Regardless of whether these larger vehicles are, as claimed by their advocates, as safe as those presently

on the roads, it cannot be denied that the automobile driving public would prefer to have their numbers minimized, a result which would at the same time also have the salutary effect of reducing pavement wear, bridge stress, and maintenance costs. For these reasons, should the Congress enact this legislation, we intend to explore both legislative and administrative means of further developing the mode of transporting trailers by rail.

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