

RECEIVED 8-24-84  
DOCKET NO. OPMO-0184  
ITEM # 23

MOTOR VEHICLE MANUFACTURERS ASSOCIATION  
of the United States, Inc.

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W. PAUL TIPPETT, *Chairman*  
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August 21, 1984

Mr. Kenneth E. Feith  
Director of Review  
Docket OPMO-0184  
Office of Air and Radiation (OAR-445)  
U.S. Environmental Protection Agency  
Washington, D.C. 20460

n-96-01  
II-A-956

Dear Mr. Feith:

The Motor Vehicle Manufacturers Association of the United States, Inc. (MVMA)\* submits the following information and comments in support of previously filed petitions requesting that the U.S. Environmental Protection Agency (EPA the Agency) defer the effective date of the 80 dB medium and heavy truck noise emission standard (40 CFR §205.52(a)(ii)). The information presented supports the conclusion that a deferral of the 80 dB truck noise standard would have a minimal, if any, effect on health and welfare benefits, particularly if the Interstate Motor Carrier (IMC) Noise Emission Standards (40 CFR Part 202) were made more stringent.

Addressing EPA's concern of ensuring continued public benefits during the period of any deferral the Agency might grant, MVMA projects that environmental benefits will continue to be realized for the following reasons:

- o There is a continual change in the make up of the medium and heavy truck population as noisier pre-1978 models are replaced by quieter trucks built to comply with the Federal 83 dB standard.

\*MVMA members are AM General Corporation, American Motors Corporation, Chrysler Corporation, Ford Motor Company, General Motors Corporation, International Harvester Company, M.A.N. Truck & Bus Corporation, PACCAR Inc, Volkswagen of America, Inc., and Volvo North America Corporation.

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- o There is a growing trend toward the use of quieter radial tires on medium and heavy trucks. This trend has the potential to achieve environmental noise reduction comparable to that predicted for the 80 dB noise standard. Moreover, that noise reduction is likely to be realized much earlier than the Agency has previously projected because a complete phase-in of an 80 dB truck fleet would take approximately 30 years.
- o Sales-weighted analysis of available 1979 model year truck manufacturer production verification data yields an estimated weighted-average sound level of 80.3 dB. Though more current truck noise data have not been analyzed in detail, there is reason to believe that this average is lower.

For these reasons, it would appear that the loss in near-term welfare benefits, if any, due to the delayed entry of 80 dB trucks into the fleet would be minimal.

The attached Appendix elaborates upon the foregoing points and presents information which supports the petitions for a deferral of the 80 dB noise new truck emission standard.

As recorded in item 15 of the synopsis of the March 29, 1984 meeting of EPA, manufacturers and user representatives, MVMA is not opposed to a reasonable reduction of the IMC truck noise emission standard in conjunction with a deferral of the 80 dB new truck noise standard. MVMA would support an in-use noise standard, set appropriately above the new truck standard, which takes into account testing variables such as ambient temperature and atmospheric pressure, wind, sound measuring equipment variations, test site terrain, presence of reflecting surfaces, and potential human error.

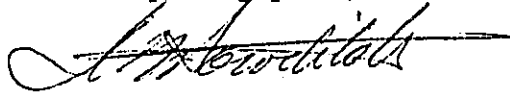
MVMA supports the petitions urging EPA to defer the effective date of the 80 dB new truck noise standard to coincide with, or follow the effective date of the new heavy-duty engine NOx and diesel particulate exhaust emission standards so that noise control efforts would not have to be repeated. MVMA believes that deferral of the effective date of the 80 dB standard will have an imperceptible impact on the public welfare, particularly if complemented by a reasonable reduction of the IMC noise emission standard for in-use vehicles manufactured after January 1, 1978 and the continued replacement of older trucks in service with new trucks designed to meet an 83 dB noise standard.

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We call to your attention the necessity for timely action on this matter. If we can be of assistance to you in answering any questions, please do not hesitate to call upon us at (313) 872-4311.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Fred W. Bowditch", written in dark ink over a horizontal line.

Fred W. Bowditch  
Vice President  
Technical Affairs

Attachments

## APPENDIX

Presented below are MVMA's analyses of three different sources of information which support our position that the effective date of the 80 dB new medium and heavy truck noise standard should be postponed. In order of presentation, the elements of this Appendix include:

- I. Rise in the Use of Radial Tires
- II. Community Noise Research Findings
- III. EPA Quiet Truck Program

## I. Rise in the Use of Radial Tires

One of the key findings of research conducted by Battelle Columbus Laboratories for the MVMA <sup>1/</sup> was that the benefit (in terms of reduced percentage of people exposed to an Ldn of 55 dB or greater) to be realized from the 80 dB medium and heavy truck noise standard would be essentially equivalent to that achievable by equipping the present truck fleet with radial tires while maintaining the 83 dB new truck noise standard. At the time these findings were originally published, MVMA was able only to suggest that the trucking industry was moving toward the expanded use of radial tires on trucks. Subsequently, it has been determined that the increasing usage of radial tires is actually occurring. As a result of this development, the benefits that EPA planned to achieve through the imposition of an 80 dB standard will be attained with the current 83 dB standard at essentially no additional cost to the trucking industry. In addition, these benefits will be realized in the immediate future whereas EPA's approach would take some 30 years to achieve (since it would take about 30 years to completely phase in a fleet of 80 dB regulated trucks). To be more specific:

Battelle projects a population exposure to Ldn 55 or greater of 42 percent with an 80 dB new truck standard and the 1979 mix of tires (17 percent radials).

Battelle projects a population exposure to Ldn 55 or greater of 43 percent with an 83 dB new truck standard and all trucks equipped with radial tires.

In short, either route achieves essentially the same benefits; but the second scenario cited above achieves it much sooner and at a much lower cost.

Evidence of the trend in radial tire usage is convincing. According to Business Week (3/1/82), <sup>2/</sup> the rise in the percentage of trucks equipped with radial tires will substantially increase during the period 1979-1985.

The chart below (based on information from truck manufacturers annually compiled by MVMA and provided for use in the U.S. Department of Transportation's Voluntary Truck and Bus Fuel Economy Program) further documents the rapid rise in the use of radial tires in the nation's truck fleet.

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Numbers in brackets refer to references cited at the end of this document.

Percentage of New Trucks Equipped  
with Radial Tires

Truck Class	Year										Est 83
	1973	74	75	76	77	78	79	80	81	82	
3-6	.09	.06	.28	1.2	4.3	3.8	7.1	5.7	10.8	16.0	14.9
7	.64	1.3	3.3	7.3	10.6	7.7	6.9	9.2	15.7	12.8	19.5
8	3.2	3.8	7.8	24.0	23.2	29.5	34.2	40.7	62.1	64.5	81.7

In a recent conversation, Goodyear Tire Company representatives indicated that about 40 percent of the truck tires sold today are radials and they estimated that by 1987, approximately 60 percent of all tires sold will be radials. In March, 1983, the American Trucking Association found, through a poll of some of its fleet members, that class 7 and 8 fleets are quickly moving to a 99 percent radial tire usage and that for trucks-in GVW class 6 and below, a 65-91 percent radial tire use rate is on the horizon.<sup>3/</sup> Thus, it is obvious that the noise emitted by medium and heavy trucks is declining at an accelerated pace due to the rapid increase in the use of radial tires on the nation's truck fleet.

It is instructive to examine why radial tires are surpassing bias-ply tires in truck usage. Although the initial cost of radial tires is higher than bias-ply tires, radial tires

"...average 25% more miles on their original tread and can then usually be retreaded at least twice. By comparison, many truckers say they are lucky to be able to retread bias-ply tires even once. Radials also offer fuel savings of 2% to 6% and a 40% reduction in down-time caused by such problems as punctures."<sup>4/</sup>

As a result, the lower life cycle cost of radial tires is leading the way to their increased usage. In view of the trend toward a national truck fleet equipped with radial tires and the resultant noise reduction, a deferral of the 80 dB new truck standard is projected to have an insignificant effect on future community noise levels.

## II. Community Noise Research Findings

As part of MVMA's ongoing program of research on transportation-related noise, Battelle Columbus Laboratories recently completed a computer modeling study to examine the extent to which medium and heavy trucks contribute to community noise on a national scale.<sup>5/</sup> The impact of noise from these vehicles was assessed in terms of the percentage of the national population that was (or would be) exposed to noise levels in excess of an  $L_{dn}$  of 55 dB.

The major objective of the project was to determine the noise exposure to which future populations were likely to be subjected, given different assumptions about how noise from these vehicles might be controlled. Though the initial findings from this research have already been reported to the EPA, the 80 dB issue is so important that it is worth reviewing some of the more significant conclusions to come out of this work. It is believed that they should have a bearing on the eventual resolution of this issue.

In brief, the Battelle study indicates that in the absence of any truck noise regulation, 57 percent of the nation's population would be exposed to an  $L_{dn}$  in excess of 55 dB. The study indicates that the current 83 dB new truck noise standard lowers that percentage to 48 percent. The study further points out that even if all truck engine/power train noise were eliminated, this ideal case would still only result in a minimum of 35 percent of the national population exposed to an  $L_{dn}$  of 55 dB or greater. Using the ideal condition as the ultimate target (and considering an overly conservative criterion of  $L_{dn}$  55 dB), the current 83 dB new truck standard achieves virtually half of the maximum benefit that is theoretically possible (and most of what we believe is realistically attainable).

In addition, Battelle's analysis indicates that the 80 dB new truck standard would lower the impact of an  $L_{dn}$  of 55 dB or greater to 42 percent of the population. This order of reduction of the impact of  $L_{dn}$  55 dB would be achieved by the increase in usage of radial tires (as discussed in Section I). This further minimizes the difference between the theoretically ideal condition and what is currently being achieved, at no additional cost to the industry.

### III. EPA Quiet Truck Program

We have also examined the EPA Quiet Truck Program reports prepared by Bolt, Beranek and Newman (December, 1981). These reports contain estimates of the total additional cost for a nominal 75 dB truck, as opposed to an 83 dB model, based on estimates of both increased original equipment costs and added maintenance costs. By combining added maintenance costs and new equipment costs, an average cost increase of some \$1,500 (in 1979 dollars) was estimated. Some observations on the estimate of these additional costs are in order. The estimated additional costs covered only the first year of operation during which maintenance costs are typically lowest for new vehicles. Consequently, they do not take into account the increased costs that would be incurred over the entire useful life of a vehicle. In addition, the study vehicles were operated through a duty cycle involving only long distance travel over paved surfaces. Such usage is not representative of the more severe duty cycles that other types of heavy-duty vehicles subject to this regulation would experience. Under more severe operating conditions, maintenance costs would be higher to retain the effectiveness of the noise control measures. These factors tend to indicate that the Bolt, Beranek and Newman cost estimates are low.

Note: Estimated costs for noise control typically follow an exponential curve, so that if the estimated first year costs of a 75 dB truck are on the order of \$1,500 then the estimated costs for an 80 dB truck might reasonably be in the neighborhood of \$380 (in 1980 dollars - from the Bolt, Beranek, Newman reports), according to their dollars-per-dB formula. However, designing to an incremental noise reduction of 2 or 3 dB is difficult at best. Some truck configurations that meet the 83 dB new truck noise standard would require full noise control treatment to meet the incremental 3 dB reduction to 80 dB. In those cases, original equipment and maintenance costs that will apply to an 80 dB truck would approach the costs associated with a 75 dB truck. The cost relationship is no longer exponential.

Additional cost implications can be generated from these program reports. For example, it has been estimated that in non-hostile operating environments, the best available noise absorptive materials will have to be replaced every five years. However, in hostile operating environments, a far more frequent (and thus more costly in the long term) replacement interval would occur. The costs of the replacement components are not addressed in the Bolt, Beranek and Newman estimates. Also, in more severe operating conditions, this maintenance expense would be expected to increase, thus raising the estimated maintenance costs further.



#### REFERENCES

1. The Contribution of Medium and Heavy Trucks to Community Noise on National Scale, Battelle Columbus Laboratories, March, 1981.
2. A Three-Way Race in Radial Truck Tires, Business Week, pp. 19-20, March 1, 1982.
3. Jim Barr, American Trucking Association.
4. A Three-Way Race in Radial Truck Tires, op cit., p. 20.
5. The Contribution of Medium and Heavy Trucks to Community Noise on National Scale, op cit.