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**DEPARTMENT OF TRANSPORTATION**

**National Highway Traffic Safety Administration**

**49 CFR Part 571**

**Docket No. NHTSA-2016-0087**

**RIN 2127-AK92**

**Federal Motor Carrier Safety Administration**

**49 CFR Part 393**

**Docket No. FMCSA-2014-0083**

**RIN-2126-AB63**

**Federal Motor Vehicle Safety Standards; Federal Motor Carrier Safety Regulations; Parts  
and Accessories Necessary for Safe Operation; Speed Limiting Devices**

**AGENCIES:** National Highway Traffic Safety Administration (NHTSA) and Federal Motor Carrier Safety Administration (FMCSA), Department of Transportation (DOT).

**ACTION:** Notice of Proposed Rulemaking (NPRM).

**SUMMARY:** NHTSA and FMCSA are proposing regulations that would require vehicles with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting device initially set to a speed no greater than a speed to be specified in a final rule and would require motor carriers operating such vehicles in interstate commerce to maintain functional speed limiting devices set to a speed no greater than a speed to be specified in the final rule for the service life of the vehicle.

Specifically, NHTSA is proposing to establish a new Federal motor vehicle safety standard (FMVSS) requiring that each new multipurpose passenger vehicle, truck, bus and school bus with a gross vehicle weight rating (GVWR) of more than 11,793.4 kilograms (26,000

pounds) be equipped with a speed limiting device. The proposed FMVSS would also require each vehicle, as manufactured and sold, to have its device set to a speed not greater than a specified speed and to be equipped with means of reading the vehicle's current speed setting and the two previous speed settings (including the time and date the settings were changed) through its On-Board Diagnostic connection.

FMCSA is proposing a complementary Federal motor carrier safety regulation (FMCSR) requiring each commercial motor vehicle (CMV) with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting device meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture, including the requirement that the device be set to a speed not greater than a specified speed. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting devices for the service life of the vehicle.

Based on the agencies' review of the available data, limiting the speed of these heavy vehicles would reduce the severity of crashes involving these vehicles and reduce the resulting fatalities and injuries. We expect that, as a result of this joint rulemaking, virtually all of these vehicles would be limited to that speed.

**DATES:** You should submit your comments early enough to ensure that the docket receives them not later than **[INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may submit comments, identified by one or both of the docket numbers in the heading of this document, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

- Mail: Docket Management Facility: U.S. Department of Transportation, 1200 New Jersey Avenue S.E., West Building Ground Floor, Room W12-140, Washington, D.C. 20590-0001
- Hand Delivery or Courier: 1200 New Jersey Avenue S.E., West Building Ground Floor, Room W12-140, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.
- Fax: 202-493-2251.

*Instructions:* For detailed instructions on submitting comments and additional information on the rulemaking process, see the Public Participation heading of the Supplementary Information section of this document. Note that all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided. Please see the “Privacy Act” heading below.

*Privacy Act:* Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the *Federal Register* published on April 11, 2000 (65 FR 19477-78) or you may visit <http://www.regulations.gov>.

*Docket:* For access to the docket to read background documents or comments received, go to <http://www.regulations.gov> or the street address listed above. Follow the online instructions for accessing the dockets.

**FOR FURTHER INFORMATION CONTACT:**

NHTSA: For technical issues, you may contact Mr. Markus Price, Office of Vehicle Rulemaking, Telephone: (202) 366-1810. Facsimile: (202) 366-7002. For legal issues, you may

contact Mr. David Jasinski, Office of Chief Counsel, Telephone (202) 366-2992. Facsimile: (202) 366-3820. You may send mail to these officials at: The National Highway Traffic Safety Administration, Attention: NVS-010, 1200 New Jersey Avenue S.E., Washington, D.C., 20590.

FMCSA: For technical issues, you may contact Mr. Michael Huntley, Vehicle and Roadside Operations, Telephone (202) 366-5370. Facsimile: (202) 366-8842. For legal issues, you may contact Mr. Charles Medalen, Office of Chief Counsel, Telephone (202) 366-1354. Facsimile: (202) 366-3602. You may send mail to these officials at: The Federal Motor Carrier Safety Administration, Attention: MC-PSV, 1200 New Jersey Avenue S.E., Washington, D.C. 20590

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## **I. Executive Summary**

Studies examining the relationship between travel speed and crash severity have confirmed the common-sense conclusion that the severity of a crash increases with increased travel speed.<sup>1</sup> Impact force during a crash is related to vehicle speed, and even small increases in speed have large effects on the force of impact. As speed increases, so does the amount of kinetic energy a vehicle has. Because the kinetic energy equation has a velocity-squared term, the kinetic energy increase is exponential compared to the speed increase, so that even small increases in speed have large effects on kinetic energy. For example, a 5 mph speed increase from 30 mph to 35 mph increases the kinetic energy by one-third.<sup>2</sup> The effect is particularly relevant for combination trucks (i.e., truck tractor and trailer) due to their large mass.<sup>3</sup> Additionally, higher speeds extend the distance necessary to stop a vehicle and reduce the ability of the vehicle, restraint device, and roadway hardware such as guardrails, barriers, and impact attenuators to protect vehicle occupants in the event of a crash.<sup>4</sup>

All vehicles with electronic engine control units (ECUs) are generally electronically speed governed to prevent engine or other damage to the vehicle. This is because the ECU

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<sup>1</sup> See, e.g., Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, College of Engineering, University of Arkansas, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).

<sup>2</sup> Virginia Commonwealth University Safety Training Center Website, <http://www.vcu.edu/cppweb/tstc/crashinvestigation/kinetic.html>.

<sup>3</sup> Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).

<sup>4</sup> Liu Cejun & Chen, Chou-Lin, NHTSA, An Analysis of Speeding-Related Crashes: Definitions and the Effects of Road Environments, DOT HS 811 090 (Feb. 2009).

monitors an engine's RPM (from which vehicle speed can be calculated) and also controls the supply of fuel to the engine. The information NHTSA has analyzed indicates that ECUs have been installed in most heavy trucks since 1999, although we are aware that some manufacturers were still installing mechanical controls through 2003. We seek comment on when ECUs with speed limiting capabilities became widely used for the other heavy vehicles covered by this proposal, such as buses and school buses.

The Department of Transportation has previously examined the issue of mandatory speed limitation for CMVs. In 1991, NHTSA published a report titled "Commercial Motor Vehicle Speed Control Devices,"<sup>5</sup> in response to the Truck and Bus Safety and Regulatory Reform Act of 1988.<sup>6</sup> This report reviewed the problem of heavy vehicles traveling at speeds greater than 65 mph and these vehicles' involvement in "speeding-related" crashes.<sup>7</sup> At that time, the report found that combination trucks tended to travel at just over the posted speed limit. The report was supportive of fleet applications of speed monitoring and speed limiting devices, but concluded that, because of the small target population size as compared to the overall size of the population, there was not sufficient justification to require the application of speed limiting devices at that time.

Several factors have changed since the submission of the 1991 report, including the data on the target population, changes in the costs and technology of speed limiting devices, and the repeal of the national maximum speed limit law. These changes undermine the conclusions contained in the 1991 report and support our reexamination of this safety issue.

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<sup>5</sup> NHTSA, Commercial Motor Vehicle Speed Control Devices, DOT HS 807 725 (May 1991).

<sup>6</sup> Truck and Bus Safety and Regulatory Reform Act of 1988, Pub. L. No. 100-690, 102 Stat. 4527 (Nov. 18, 1988).

<sup>7</sup> For the purposes of the report, a vehicle was considered to be "speeding" if its estimated travel speed exceeded the posted speed limit.

In 2006, NHTSA received a petition from the American Trucking Associations (ATA) to initiate a rulemaking to amend the Federal Motor Vehicle Safety Standards (FMVSS) to require vehicle manufacturers to limit the speed of trucks with a Gross Vehicle Weight Rating (GVWR) greater than 26,000 pounds to no more than 68 miles per hour (mph). Concurrently, the ATA petitioned the FMCSA to amend the Federal Motor Carrier Safety Regulations (FMCSR) to prohibit owners and operators from adjusting the speed limiting devices in affected vehicles above 68 mph. That same year, FMCSA received a petition from Road Safe America to initiate a rulemaking to amend the FMCSRs to require that all trucks manufactured after 1990 with a GVWR greater than 26,000 pounds be equipped with electronic speed limiting devices set at not more than 68 mph.

On January 26, 2007, NHTSA and FMCSA responded to these petitions in a joint Request for Comments notice in the Federal Register, seeking public comments on the petitions.<sup>8</sup> On January 3, 2011, NHTSA published a notice granting the petitions for rulemaking and announced that the agency would initiate the rulemaking process with an NPRM.<sup>9</sup>

Using Fatality Analysis Reporting System (FARS) and National Automotive Sampling System General Estimates System (NASS GES) crash data over the 10-year period between 2004 and 2013, the agencies examined crashes involving heavy vehicles (i.e., vehicles with a GVWR of over 11,793.4 kg (26,000 pounds)) on roads with posted speed limits of 55 mph or above. The agency focused on crashes in which the speed of the heavy vehicle likely contributed to the severity of the crash (e.g., single vehicle crashes, crashes in which the heavy vehicle was

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<sup>8</sup> 72 FR 3904 (Jan. 26, 2007).

<sup>9</sup> 76 FR 78 (Jan. 3, 2011).



the striking vehicle). The agencies estimated that these crashes resulted in 10,440 fatalities<sup>10</sup> from 2004 to 2013. On an annual basis, the fatalities averaged approximately 1,044 during this period.

The agencies' analysis found that crashes involving heavy vehicles traveling faster are more deadly than crashes involving heavy vehicles traveling at lower speeds. Given this fact, NHTSA is proposing to require multipurpose passenger vehicles, trucks, buses and school buses, with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting device. As manufactured and sold, each of these vehicles would be required by NHTSA to have its device set to a speed not greater than a specified speed. NHTSA is proposing a lead time of three years from publication of a final rule for manufacturers to meet the proposed requirements.

FMCSA is proposing a complementary Federal Motor Carrier Safety Regulation (FMCSR) requiring multipurpose passenger vehicles, trucks, and buses and school buses with a GVWR of more than 11,793.4 kilograms (26,000 pounds) operating in interstate commerce to be equipped with a speed limiting device meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture, including the requirement that the device be set to a speed not greater than the specified speed. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting devices for the service life of the vehicle.

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<sup>10</sup> The fatality numbers were also adjusted to reflect the effect of new heavy vehicle requirements that have been adopted by NHTSA within the last several years (e.g., the final rule adopting seat belt requirements for passenger seats in buses (78 FR 70415 (Nov. 25, 2013)), the final rule to adopt electronic stability control requirements for heavy vehicles (80 FR 36049 (June 23, 2015))).

Vehicles with GVWRs above 26,000 pounds include multipurpose passenger vehicles, trucks, and buses and school buses and will be referred to as heavy vehicles within this notice. The purpose of this joint rulemaking is to reduce the severity of crashes involving these heavy vehicles and to reduce the number of resulting fatalities.

Since this NPRM would apply both to vehicle manufacturers and motor carriers that purchase and operate these vehicles, this joint rulemaking is based on the authority of both NHTSA and FMCSA.

NHTSA's legal authority for today's NPRM is the National Traffic and Motor Vehicle Safety Act ("Motor Vehicle Safety Act").

FMCSA's portion of this NPRM is based on the authority of the Motor Carrier Act of 1935 (1935 Act) and the Motor Carrier Safety Act of 1984 (1984 Act), both as amended. The two acts are delegated to FMCSA by 49 CFR 1.87(i) and (f), respectively.

These legal authorities and the legal basis for the proposed FMCSR are discussed in more detail in Section II of this notice.

NHTSA is proposing that speed limiting device requirements apply to all multipurpose passenger vehicles, trucks and buses with a GVWR of more than 11,793.4 kg (26,000 pounds). NHTSA considered several factors in determining the GVWR threshold for the proposed FMVSS. These vehicles carry the heaviest loads, and small increases in their speed have larger effects on the force of impact in a crash. Additionally, many of these vehicles are regulated by FMCSA and its State partners, permitting the establishment of an FMCSR to ensure the enforcement of the speed limiting requirements throughout the life of the vehicles.

Although the petitions for rulemaking requested that NHTSA permit manufacturers to set the speed limiting device at any speed up to and including 68 mph, the agency has not proposed

a specific set speed. In Section X of this document and in the Preliminary Regulatory Impact Analysis, Initial Regulatory Flexibility Analysis, and Draft Environmental Assessment accompanying this proposal, NHTSA has considered the benefits and costs of 60 mph, 65 mph, and 68 mph maximum set speeds.

The agencies estimate that limiting the speed of heavy vehicles to 60 mph would save 162 to 498 lives annually, limiting the speed of heavy vehicles to 65 mph would save 63 to 214 lives annually, and limiting the speed of heavy vehicles to 68 mph would save 27 to 96 lives annually. Although we believe that the 60 mph alternative would result in additional safety benefits, we are not able to quantify the 60 mph alternative with the same confidence as the 65 mph and 68 mph alternatives.

To determine compliance with the operational requirements for the speed limiting device (i.e., that the vehicle is in fact limited to the set speed), NHTSA is proposing a vehicle-level test that involves accelerating the vehicle and monitoring the vehicle's speed. The proposed test procedure is substantially based on the United Nations Economic Commission for Europe (UNECE) regulation on vehicle speed limiting devices,<sup>11</sup> with several modifications discussed in detail later in this document.

In order to reduce additional potential costs to vehicle manufacturers, NHTSA is not proposing requirements to prevent tampering or restrict adjusting the speed setting as part of the proposed FMVSS. Instead, to deter tampering with a vehicle's speed limiting device or

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<sup>11</sup> UNECE R89, Uniform provisions concerning the approval of: I. Vehicles with regard to limitation of their maximum speed or their adjustable speed limitation function; II. Vehicles with regard to the installation of a speed limiting device (SLD) or adjustable speed limitation device (ASLD) of an approved type; III. Speed limitation devices (SLD) and adjustable speed limitation device (ASLD)," E/ECE/324–E/ECE/TRANS/505//Rev. 1/Add. 88/Amend. 2 (January 30, 2011).

modification of the set speed above the specified maximum set speed after the vehicle is sold, the proposed FMVSS would be reinforced by the proposed FMCSR, which would require motor carriers to maintain the speed limiting devices at a set speed within the range permitted by the FMVSS. To assist FMCSA's enforcement officials with post-installation inspections and investigations to ensure compliance with the requirement to maintain the speed limiters, NHTSA is proposing to require that the vehicle set speed and the speed determination parameters be readable through the On-Board Diagnostic (OBD) connection.<sup>12</sup> In addition to the current speed limiter settings, NHTSA is proposing that the previous two setting modifications (i.e., the two most recent modifications of the set speed of the speed limiting device and the two most recent modifications of the speed determination parameters) be readable and include the time and date of the modifications.

In addition to the new vehicle requirements included in this proposal, NHTSA is considering whether to require commercial vehicles with a GVWR of more than 26,000 pounds currently on the road to be retrofitted with a speed limiting device with the speed set to no more than a specified speed. The agency has not included a retrofit requirement in this proposal because of concerns about the technical feasibility, cost, enforcement, and small business impacts of such a requirement. However, we are seeking public comment to improve our understanding of the real-world impact of implementing a speed limiting device retrofit requirement. As an alternative to a retrofit requirement, the agencies are also requesting

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<sup>12</sup>Further information on the specification of the OBD connection is available at <http://www.epa.gov/obd/regtech/heavy.htm>.

comment on whether to extend the set speed requirement only to all CMVs with a GVWR of more than 26,000 pounds that are already equipped with a speed limiting device.

Based on our review of the available data, limiting the speed of heavy vehicles would reduce the severity of crashes involving these vehicles and reduce the resulting fatalities and injuries. Because virtually all heavy vehicles are CMVs and would be subject to both the proposed FMVSS and the proposed FMCSR, we expect that, as a result of this joint rulemaking, virtually all heavy vehicles would be speed limited.

The agencies project that this joint rulemaking would be cost-beneficial. Specifically, by reducing the severity of crashes involving heavy vehicles, we estimate that limiting heavy vehicles to 68 mph would save 27 to 96 lives annually, limiting heavy vehicles to 65 mph would save 63 to 214 lives annually, and limiting heavy vehicles to 60 mph would save 162 to 498 lives annually.<sup>13</sup> Based on range of fatalities prevented, this rulemaking would prevent 179 to 551 serious injuries<sup>14</sup> and 3,356 to 10,306 minor injuries with a maximum set speed of 60 mph, 70 to 236 serious injuries and 1,299 to 4,535 minor injuries with a maximum set speed of 65 mph, and 30 to 106 serious injuries and 560 to 1,987 minor injuries with a maximum set speed of 68 mph.

Additionally, we project that this joint rulemaking would result in fuel savings and greenhouse gas (GHG) emissions reductions totaling of \$848 million annually, assuming a 7 percent discount for fuel and a 3 percent discount rate for GHG, for 60 mph and 65 mph speed

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<sup>13</sup> Although we believe that the 60 mph alternative would result in additional safety benefits, we are not able to quantify the 60 mph alternative with the same confidence as the 65 mph and 68 mph alternatives.

<sup>14</sup> The fatality-to-injury ratios for AIS 3, AIS 4, and AIS 5 injuries coincidentally add up to 1. Accordingly, the number of serious injuries prevented (AIS 3-5) is estimated to be equivalent to the number of fatalities. Please consult the PRIA for additional discussion on how the agencies estimated the injuries prevented.

limiter settings.<sup>15</sup> For 68 mph speed limiters, we would expect fuel savings and GHG emissions reductions to result in benefits of \$376 million annually.

The cost of the proposed FMVSS to vehicle manufacturers is expected to be minimal. As discussed above, most vehicles to which the proposed FMVSS would apply are already equipped with electronic engine controls which include the capability to limit the speed of the vehicle, but may not have these controls turned on automatically.

In addition to the costs to vehicle manufacturers, we have evaluated the societal cost implications of these proposed rules. We estimate that the proposed rules would cost \$1,561 million for 60 mph speed limiters, \$523 million for 65 mph speed limiters, and \$209 million for 68 mph speed limiters \$433 million annually, assuming a 7 percent discount rate, as a result of the potentially lower travel speeds and delay in the delivery of goods. However, the estimated fuel savings benefits of this proposed rule exceed these estimated societal costs.

The commercial trucking market fits the classic definition of a negative externality, in which benefits are enjoyed by one party, but the costs associated with that benefit are imposed on another. In this case, higher travel speeds may produce more severe traffic crashes that result in more death, more injury, and greater property damage. While the cost of excess fuel consumption is borne by the vehicle fleet operators, the resulting fatalities, greenhouse gases, and pollutants may be imposed on society. The agencies estimate that this rule would be cost-beneficial. Even assuming that the proposed rule would result in the high cost estimate and the low benefit estimate, the net benefits of this rulemaking are estimated to be \$1.1 billion to \$5.0

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<sup>15</sup> For internal consistency and because of the way the social cost of carbon is estimated, the annual benefits are discounted back to net present value using the same discount rate as the social cost of carbon estimate (3 percent) rather than 3 percent and 7 percent. Please refer to Section X for additional information.

billion annually for 60 mph speed limiters, \$1.0 billion to \$2.8 billion annually for 65 mph speed limiters, and \$0.5 to \$1.3 billion annually for 68 mph speed limiters, assuming a 7 percent discount rate.

Table 1  
Annual Total Benefits, 7% Discount  
(in millions of 2013 dollars\*)

Benefits	60 mph		65 mph		68 mph	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Combination Trucks	\$2,571	\$6,134	\$1,458	\$3,074	\$640	\$1,384
Single-unit trucks	\$105	\$230	\$85	\$128	\$36	\$53
Buses	\$20	\$159	\$21	\$79	\$8	\$32
Total	\$2,695	\$6,522	\$1,564	\$3,281	\$684	\$1,469

\* Numbers were rounded to the nearest integer.

Table 2  
Annual Costs, 7% Discount  
Associated with Increased Delivery Time  
(in millions of 2013 dollars)

	60 mph	65 mph	68 mph
Cost	\$1,534	\$514	\$206

Table 3  
Overall Net Benefits to Heavy Vehicle Industries  
Associated with Speed Limiters, 7% Discount  
(in millions, 2013 dollars)\*

Vehicle	60 mph		65 mph		68 mph	
	Min.	Max.	Min.	Max.	Min.	Max.
Total Benefits	\$2,695	\$6,522	\$1,564	\$3,281	\$684	\$1,469
Total Costs	\$1,561	\$1,561	\$523	\$523	\$209	\$209
Net Benefit	\$1,136	\$4,964	\$1,039	\$2,757	\$475	\$1,260

\* The estimates may not add up precisely due to rounding

The agencies seek comments and suggestions on any alternative options that would lower cost and maintain all or most of the benefits of the proposal, as well as information relative to a phase-in of the proposed requirements or alternatives to our proposed three-year lead time for manufacturers to meet the requirements of the new FMVSS.

## **II. Legal Basis**

Since this NPRM would apply both to vehicle manufacturers and motor carriers that purchase and operate these vehicles, this rulemaking is based on the authority of both NHTSA and FMCSA.

NHTSA's legal authority for today's NPRM is the National Traffic and Motor Vehicle Safety Act ("Motor Vehicle Safety Act"). Under 49 U.S.C. Chapter 301, Motor Vehicle Safety (49 U.S.C. 30101 et seq.), the Secretary of Transportation is responsible for prescribing motor vehicle safety standards that are practicable, meet the need for motor vehicle safety, and are stated in objective terms.<sup>16</sup> "Motor vehicle safety standard" means a minimum performance standard for motor vehicles or motor vehicle equipment. When prescribing such standards, the Secretary must consider all relevant, available motor vehicle safety information.<sup>17</sup> The Secretary must also consider whether a proposed standard is reasonable, practicable, and appropriate for the types of motor vehicles or motor vehicle equipment for which it is prescribed and the extent to which the standard will further the statutory purpose of reducing traffic accidents and associated deaths.<sup>18</sup> The responsibility for promulgation of FMVSS is delegated to NHTSA. In

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<sup>16</sup> 49 U.S.C. 30111(a).

<sup>17</sup> 49 U.S.C. 30111(b).

<sup>18</sup> Id.



proposing to require that heavy vehicles be equipped with speed limiting devices and that these devices initially be set to a speed not greater than a maximum specified speed by the manufacturer, the agency carefully considered these statutory requirements.

Mandating speed limiting devices in heavy vehicles and requiring that those devices be set at speeds not greater than a maximum specified speed would meet the need for motor vehicle safety by reducing the severity of crashes involving heavy vehicles and reducing the number of fatalities and injuries that result from such crashes. These safety benefits are summarized above and discussed in more detail below in Section X. The proposed FMVSS would be practicable because the vehicles that would be subject to the requirements already have speed-limiting capability. The proposed FMVSS also contains objective performance criteria for evaluating the required speed limiting device, including a vehicle test procedure based on a United Nations Economic Commission for Europe (UNECE) test procedure, specification of the type of setting information that must be retrievable (i.e., the current speed setting and speed determination parameters as well as the last two modifications of each) and the means by which such information must be retrievable (i.e., through the OBD connection). As described above, NHTSA decided to focus on vehicles with a GVWR above 26,000 pounds and believes that the proposed requirements are appropriate for these vehicles because they carry the heaviest loads and because small increases in their speed have larger effects on the force of impact in a crash. Additionally, these vehicles are regulated by FMCSA and its State partners, permitting the establishment of an FMCSR to ensure the enforcement of the speed limiting requirements throughout the life of the vehicles.

FMCSA's portion of this NPRM is based on the authority of the Motor Carrier Act of 1935 (1935 Act) and the Motor Carrier Safety Act of 1984 (1984 Act), both as amended. The two acts are delegated to FMCSA by 49 CFR 1.87(i) and (f), respectively.

The 1935 Act authorizes the Department of Transportation (DOT) to “prescribe requirements for — (1) qualifications and maximum hours of service of employees of, and safety of operation and equipment of, a motor carrier; and (2) qualifications and maximum hours of service of employees of, and standards of equipment of, a motor private carrier, when needed to promote safety of operations” [49 U.S.C. 31502(b)].

The 1984 Act confers on DOT authority to regulate drivers, motor carriers, and vehicle equipment. “At a minimum, the regulations shall ensure that — (1) commercial motor vehicles are maintained, equipped, loaded, and operated safely; (2) the responsibilities imposed on operators of commercial motor vehicles do not impair their ability to operate the vehicles safely; (3) the physical condition of operators of commercial motor vehicles is adequate to enable them to operate the vehicles safely . . . ; and (4) the operation of commercial motor vehicles does not have a deleterious effect on the physical condition of the operators” [49 U.S.C. 31136(a)(1)-(4)]. Sec. 32911 of the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) [Pub. L. 112-141, 126 Stat. 405, July 6, 2012] enacted a fifth requirement, i.e., to ensure that “(5) an operator of a commercial motor vehicle is not coerced by a motor carrier, shipper, receiver, or transportation intermediary to operate a commercial motor vehicle in violation of a regulation promulgated under this section, or chapter 51 [Transportation of Hazardous Material] or chapter 313 [Commercial Motor Vehicles Operators] of this title” [49 U.S.C. 31136(a)(5)].

The 1935 Act authorizes regulations on the “safety of operations and equipment” of a for-hire carrier and “standards of equipment” of a private carrier, “when needed to promote safety”

[49 U.S.C. 31502(b)(1)-(2)]. Speed limiting devices constitute safety equipment, as the preamble of this proposed rule amply demonstrates, and the 1935 Act therefore authorizes FMCSA to require that such equipment be maintained as long as the vehicle is in service.

Because NHTSA is proposing to require vehicle manufacturers to equip every new multipurpose passenger vehicle, truck, and bus with a gross vehicle weight rating (GVWR) of more than 11,739.4 kilograms (26,000 pounds), FMCSA proposes to require motor carriers operating such vehicles in interstate commerce to maintain functional speed limiting devices set at not more than the maximum specified speed for the service life of the vehicle. Two provisions of the 1984 Act are immediately relevant. A speed limiting device installed to improve safety must be “maintained,” as required by § 31136(a)(1), to ensure that its benefits are actually realized in normal operations. Properly maintained speed limiting devices will also ensure that “the responsibilities imposed on operators of commercial motor vehicles do not impair their ability to operate the vehicles safely” [§ 31136(a)(2)] in the sense that drivers cannot be ordered to drive more than the maximum set speed.

The proposed rule does not directly address § 31136(a)(3), dealing with the physical condition of the driver, or § 31136(a)(4), concerning the effect of driving on the physical condition of operators. However, the proposed rule would significantly reduce the consumption of diesel fuel (which is used by most vehicles heavier than 26,000 pounds), with corresponding reductions in exhaust emissions. The effect on the health of drivers (and others) from exposure to diesel exhaust is difficult to estimate in the absence of a dose/response curve, significant changes in the chemical composition of diesel fuel over the years, and the presence of confounding factors like smoking [see, “Hours of Service of Drivers,” 70 FR 49978, 49983-49987, August 25, 2005]. Nonetheless, reducing the total volume of exhaust emissions will

likely have some beneficial effect on the health of many individuals, including drivers. This issue is discussed further in the Draft Environmental Assessment prepared for this NPRM.

Finally, consistent with § 31136(a)(5), a working speed limiting device will make it more difficult for a “motor carrier, shipper, receiver, or transportation intermediary” to coerce a driver to exceed highway speed limits in violation of the regulatory requirements of 49 CFR 392.2 and 392.6.

The 1984 Act confers jurisdiction over “commercial motor vehicles” (CMVs) operating in interstate commerce. The term CMV includes 4 alternative definitions: a minimum weight of 10,001 pounds gross vehicle weight (GVW) or GVWR, whichever is greater [49 U.S.C. 31132(1)(A)]; two different capacity thresholds for different types of passenger vehicle operation [§ 31132(1)(B)-(C)]; or the transportation of placardable quantities of hazardous material [§ 31132(1)(D)]. NHTSA proposes to require manufacturers to install speed limiting devices only on vehicles with a GVWR above 26,000 pounds. FMCSA has no authority to regulate vehicle manufacturers [49 U.S.C. 31147(b)] but proposes to require operators of CMVs covered by the NHTSA requirement who use the vehicles in interstate commerce to maintain speed limiting devices at the same level of effectiveness as the original equipment, irrespective of the CMV’s passenger capacity or use to transport placardable quantities of hazardous material.

Before prescribing any regulations, FMCSA must also consider their “costs and benefits” [49 U.S.C. 31136(c)(2)(A) and 31502(d)]. Those factors are discussed in this proposed rule.

### **III. Background**

#### **A. Speed Limiting Technology**

All vehicles with electronic engine control units (ECUs) are electronically speed limited to prevent general damage to the vehicle. This is because the ECU monitors an engine’s RPM

and also controls the supply of fuel to the engine. Available information indicates that ECUs have been installed in most heavy trucks since 1999, though we are aware that some manufacturers were still installing mechanical controls through 2003.<sup>19</sup> In addition, it appears that the practice of voluntarily setting the speed limiting devices, most often at speeds from 60 to 70 mph, has grown in recent years. Some trucking fleets use ECUs to limit the speed of their trucks in order to reduce the number of speed-related crashes, reduce fuel consumption, and reduce maintenance costs.

#### B. NHTSA's 1991 Report to Congress on CMV Speed Control Devices

Section 9108 of the Truck and Bus Safety and Regulatory Reform Act of 1988 required the Secretary of Transportation to conduct a study on whether devices that control the speed of CMVs enhance safe operation of such vehicles and to submit to Congress a report on the results of the study together with recommendations on whether to make the use of speed control devices mandatory for CMVs.<sup>20</sup>

In response to this Act, NHTSA published a Report to Congress titled "Commercial Motor Vehicle Speed Control Safety."<sup>21</sup> This report reviewed the problem of heavy vehicle speeding (in particular, at speeds greater than 65 mph, which was the maximum rural Interstate speed limit at the time) and "speeding-related" crash involvements.<sup>22</sup> The report described and assessed devices available to control truck speed, and addressed the mandatory use of speed

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<sup>19</sup> Hino Motors indicated in its comments to the 2007 Request for Comments that it manufactured mechanically controlled vehicles through model year 2003.

<sup>20</sup> Truck and Bus Safety and Regulatory Reform Act of 1988, Pub. L. No. 100-690, 102 Stat. 4527, 4530 (Nov. 18, 1988).

<sup>21</sup> NHTSA, Commercial Motor Vehicle Speed Control Safety, DOT HS 807 725 (May 1991). A copy of this report has been placed in the docket.

<sup>22</sup> For the purposes of the report, a vehicle was considered to be "speeding" if its estimated travel speed exceeded the posted speed limit.

control devices by heavy trucks. The report stated that, by all measures of crash involvement, speeding was not a significant factor in the crashes involving single-unit trucks. Thus, most of the report addressed combination trucks, which presented a more complex picture.

The report described the results of non-detectable radar studies that showed that highway speed limit compliance by combination trucks was poor but better than that of passenger vehicles. In the non-detectable radar studies examined in the report, most trucks that were found to be speeding were traveling at just over the posted speed limit. Crash statistics indicated that speeding was generally less associated with combination truck crashes than it was with passenger vehicle crashes. The report described devices available to control truck speed and ways that they were applied in commercial fleet settings. The report was supportive of fleet applications of speed monitoring devices and speed limiting devices but at that time concluded that there was not sufficient justification to consider requiring all heavy trucks to be so equipped due to the small number of target crashes and uncertainties regarding the potential for crash reduction, which suggested that the benefits of mandatory speed limitation were questionable. Specifically, problem size statistics<sup>23</sup> suggested that the number of target crashes was low, e.g., approximately 30 fatal crash involvements per year for combination trucks. The report also noted that all speeding-related crash statistics cited in the report used the categorization “speeding-related” or “high-speed-related,” but that these terms did not necessarily mean that speeding was the primary cause of the crash or any resulting fatalities. The report stated that virtually all crashes involve multiple contributing factors and that the elimination of any one

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<sup>23</sup> For the purposes of the 1991 report, the “problem size” included crashes where the Police Accident Report indicated speeding at a speed greater than 70 mph.

factor—e.g., high speed—may or may not prevent the crash. Thus, the report viewed the identified speeding-related and high-speed-related crashes as only potential target crashes for speed control devices. The report concluded that although speed control devices (if not tampered with) were likely to reduce the highway speeds of those trucks that do speed, their effectiveness in preventing and/or reducing the severity of these potential target crashes was unknown.

### C. Petitions for Rulemaking

#### 1. American Trucking Associations (ATA) Petition

On October 20, 2006, the ATA submitted a petition to NHTSA, pursuant to 49 CFR 552.3, to initiate a rulemaking to amend the FMVSS to require vehicle manufacturers to limit the speed of trucks with a GVWR greater than 26,000 pounds to no more than 68 mph.<sup>24</sup>

Concurrently, the ATA petitioned FMCSA, pursuant to 49 CFR 389.31, to initiate a rulemaking to amend the FMCSR to prohibit owners and operators from adjusting the speed limiting devices in affected vehicles in a way that enables the vehicles to exceed a speed of 68 mph.

The ATA stated that reducing speed-related crashes involving trucks is critical to the safety mission of both NHTSA and FMCSA, and that the requested requirements are necessary in order to reduce the number and severity of crashes involving large trucks. ATA's petition stated:

A lack of focus on speed as a causal or significant contributing factor in crashes involving large trucks represents a significant gap in the federal government's truck safety strategy. While much of the federal truck safety budget has focused on ensuring the safe condition of equipment, on driver fatigue, and on prevention of impaired driving, it is clear from the research that speeding is a more significant factor in crashes involving trucks than any of the factors that currently receive the largest proportion of agency attention and resources.

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<sup>24</sup> Docket No. NHTSA-2007-26851-0005.

The “Justification” section of ATA’s petition also stated:

ATA analyzed five years of fatal truck-involved crash data. We found that in 20 percent of truck-involved crashes where speeding on the part of the truck driver was cited as a factor in the crash, and the truck’s speed was recorded, the speed of the truck exceeded 68 mph. However, because the truck’s speed is reported by investigating officers in only about half of truck-involved fatal crashes, it is impossible to determine the actual number of potential crashes that might be avoided by limiting top truck speed to 68 mph. However, reasonable assumptions can be made and ATA believes the number of fatal crashes that could be avoided is significant.

The ATA stated in its petition that reducing the speed of trucks will likely reduce both the number and severity of crashes, although ATA did not quantify injury or fatality reduction benefits. The ATA also stated that the reduced number of crashes, resulting from the lower speed for trucks, will reduce congestion, thereby reducing societal costs associated with the loss of productivity that occurs when vehicles have been disabled in a crash or delayed at a crash site.

According to the ATA, there will be little or no cost increase for truck and truck tractor manufacturers associated with limiting the maximum speed since speed limiting devices are already installed on these vehicles during manufacture as a feature of the electronic engine control unit. Also, the ATA contended that the cost to carriers for the increase in time required to complete a delivery will be offset by savings in fuel consumption, fewer crashes, and less equipment wear.

## 2. Road Safe America Petition

On September 8, 2006, Road Safe America, a public safety interest group, and a group of nine motor carriers<sup>25</sup> petitioned FMCSA to amend the FMCSRs to require (1) electronic speed

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<sup>25</sup> The nine motor carriers who cosigned the Road Safe America petition are Schneider National, Inc., C.R. England, Inc., H.O. Wolding, Inc., ATS Intermodal, LLC, Dart Transit Company, J.B. Hunt Transport, Inc., U.S. Xpress, Inc., Covenant Transport, Inc., and Jet Express, Inc.



governors on all trucks with a GVWR over 26,000 pounds, (2) that these electronic speed governors be set at not more than 68 mph, and (3) that all trucks manufactured after 1990 be equipped with such electronic speed governors.<sup>26</sup> The Road Safe America petition stated that the proposal to limit truck speed to 68 mph would reduce the number of truck collisions and save lives. According to Road Safe America, limiting truck speed to 68 mph will have an immediate and uniform impact with little or no detrimental effect on the lawful operation of CMVs.

#### D. Request for Comment

On January 26, 2007, NHTSA and FMCSA published a joint Request for Comments notice in the Federal Register (72 FR 3904) seeking public comments on the ATA and Road Safe America petitions. This notice included a summary of the ATA and Road Safe America petitions, a review of heavy truck crash statistics, a brief summary of the 1991 NHTSA Report to Congress on Commercial Vehicle Speed Control Devices, and a request for specific information concerning the appropriateness of a Federal regulation limiting the speed of large trucks to 68 mph. The notice discussed how NHTSA is responsible for developing and issuing FMVSSs that establish minimum safety requirements for motor vehicles sold in the United States, and that if NHTSA ultimately established requirements to equip trucks with speed limiting devices as requested, FMCSA would initiate a rulemaking proceeding to amend the FMCSRs as necessary to ensure that trucks are equipped and maintained with a speed limiting device meeting the requirements specified in the applicable FMVSS.

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<sup>26</sup> Docket Nos. NHTSA-2007-265.281-0001, NHTSA-2007-265.281-0002.

The Agencies received over 3,000 comments in response to the Request for Comments, mostly from private citizens and small businesses.<sup>27</sup> Of these, many supported a regulation that would limit the speed of large trucks to 68 mph, including trucking fleets and consumer advocacy groups. Other comments submitted by independent owner-operator truckers, one trucking fleet association, and private citizens were opposed to the rulemaking approach requested in the petitions.

*Supported*

Comments from private citizens and small organizations supporting the petitions include responses from individuals who were involved in crashes with heavy trucks or had friends or relatives who were killed or severely injured in crashes with large trucks. The private citizen supporters of the petitions include non-truck drivers who stated they are intimidated by the hazardous driving practices of some truck drivers, such as speeding, tailgating, and abrupt lane changes. These comments expressed the belief that limiting the speed of heavy trucks to 68 mph would result in safer highways, and several private citizens recommended that trucks be limited to 65 mph rather than 68 mph.

Trucking organizations and safety groups supported the petition for similar reasons, and the comments summarized below represent the range of issues they addressed.

Schneider National, Inc. (Schneider), a motor carrier with a sizeable trucking fleet, indicated that its trucks have had speed limiting devices set to 65 mph since 1996. According to Schneider's crash data involving its own fleet, vehicles without speed limiting devices accounted

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<sup>27</sup> Docket No. NHTSA-2007-26851, available at <http://www.regulations.gov/#!docketDetail;D=NHTSA-2007-26851>).

for 40 percent of the company's serious collisions while driving 17 percent of the company's total miles. Schneider stated that its vehicles have a significantly lower crash rate than large trucks that are not speed limited or have a maximum speed setting greater than 65 mph.

J.B. Hunt Transport, Inc. (J. B. Hunt), another large trucking fleet, commented that a differential speed between cars and large trucks will result from trucks being equipped with speed limiting devices set below the posted speed limit. This speed differential may cause a safety hazard; however, J.B. Hunt believes that the current safety hazard caused by large trucks traveling at speeds in excess of posted limits is of greater concern.

Advocates for Highway and Auto Safety (Advocates) commented that large trucks require 20 to 40 percent more braking distance than passenger cars and light trucks for a given travel speed. Advocates also indicated that it did not believe that the data in the agency's 1991 Report to Congress are still valid because the speed limits posted by the States over the past ten years are much higher than the national posted speed limit of 65 mph that was in effect in 1991.<sup>28</sup>

The Insurance Institute for Highway Safety (IIHS) stated on-board electronic ECUs will maintain the desired speed control for vehicles when enforcement efforts are not sufficient due to lack of resources. IIHS stated that there is already widespread use of speed governors by carriers and a mandate will result in net safety and economic benefits. IIHS asserted that limiting trucks to 68 mph would enhance safety but that limiting the vehicles to speeds below 68 mph would be safer.

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<sup>28</sup> We agree with Advocates that the conclusions of our 1991 report are no longer valid, and have discussed this issue in detail in the section titled "Applicability of the 1991 Report to Congress on Heavy Speed Limiters."

The Governors Highway Safety Association (GHSA) commented that large trucks are over-represented in motor vehicle crashes, stating that, based on 2004 data, large trucks were 3 percent of registered vehicles and represented about 8 percent of the total miles traveled nationwide, but were involved in 12 percent of traffic fatalities. GHSA stated that conventional approaches to vehicle speed control do not provide optimal benefits because of limited enforcement resources and the large number of miles of highway to cover. Accordingly, GHSA stated that it is prudent to consider requiring speed-limiting devices since they are currently installed in large trucks and can be adapted to be tamper-resistant.

Several comments, including those from ATA's Technology & Maintenance Council, provided information concerning economic, non-safety benefits that would result from requiring large trucks to be speed limited. The Technology & Maintenance Council stated that an increase of 1 mph results in a 0.1 mpg increase in fuel consumption, and for every 1 mph increase in speed over 55 mph, there is a reduction of 1 percent in tire tread life.

*Opposed*

Comments opposing the petitions were received from many independent truck drivers, the Owner-Operator Independent Drivers Association (OOIDA), the Truckload Carriers Association (TCA), and private citizens (non-truck drivers).

OOIDA asserted that mandating speed limiting devices would not reduce the number of crashes involving heavy trucks. Specifically, OOIDA commented that the agency's 1991 Report to Congress is still valid today – asserting there is no need to mandate speed limiting devices because the target population (high speed crashes) is still small compared to the total number of truck crashes. According to OOIDA, speed limiting devices would not have an effect on crashes in areas where the posted speed limit for trucks is 65 mph or below. OOIDA believes that the

petitioners are attempting to force all trucks to be speed-limited so that the major trucking companies with speed-limited vehicles will not be forced to compete for drivers against independent trucking operations that have not limited their speeds to 68 mph or below. OOIDA also questioned the magnitude of the fuel economy benefits that would be realized with speed limiting devices and stated that it is not necessary to set large truck speed limiting devices at 68 mph to realize most of the economic benefits cited by the petitioners, because improved fuel economy and reduced emissions can be achieved with improved truck designs. OOIDA also stated that driver compensation and the lack of entry level driver training contribute to the problem of driving at excessive speeds.<sup>29</sup>

TCA and OOIDA both commented that a speed differential will be created in many states by the 68 mph speed limit for heavy trucks and a higher speed limit for other vehicles. This speed differential could result in more interaction between cars and trucks, thus posing an additional safety risk for cars and trucks.

#### *Other Issues*

According to comments from CDW Transport, a trucking fleet, speed limiting devices should be required on passenger vehicles as well as CMVs.

Several comments from private citizens and small businesses opposed to the petitions stated that speed is not the only cause of crashes -- that weather and highway conditions are also significant factors. There were some comments stating that passenger vehicles cause the majority of the crashes between trucks and passenger vehicles. Some commenters stated that

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<sup>29</sup> FMCSA notes that Section 32305 of MAP-21 requires the agency to complete a rulemaking requiring entry-level training for all drivers seeking a commercial driver's license (CDL).

truck drivers will experience more fatigue with a 68-mph maximum speed, which could result in more crashes. Others expressed the opinion that State and local law enforcement agencies should enforce the speed of all vehicles on the nation's roads and highways, while some commenters favored a 75-mph limit for truck speed limiting devices, instead of 68 mph, to match the highest posted speed limit in the country.

The Truck and Engine Manufacturers Association (EMA)<sup>30</sup> provided information concerning the cost of tamper-proof speed limiting devices for large trucks. EMA estimates a one-time cost of \$35 million to \$50 million would be required to develop ECUs with tamper-resistant speed limiting devices and a one-time cost of \$150 million to \$200 million to develop ECUs with tamper-proof speed limiting devices. With both of these ECU designs, there would be additional costs to make adjustments to the ECU for maximum speed, tire size, and drive axle and transmission gear ratio information.

#### E. NHTSA Notice Granting Petitions

On January 3, 2011, NHTSA published a notice granting the two speed limiting device-related petitions.<sup>31</sup> Based on information received in response to a request for comments, we stated that these petitions merit further consideration through the rulemaking process. In addition, because the petitions involved overlapping issues, NHTSA stated that it would address them together in a single rulemaking. Finally, the agency noted that the determination of whether to issue a rule would be made in the course of the rulemaking proceeding, in accordance with statutory criteria.

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<sup>30</sup> In 2011, the Engine Manufacturers Association, which includes the Truck Manufacturers Association, announced a new joint name for the organization, the Truck and Engine Manufacturers Association.

<sup>31</sup> 76 FR 78 (Jan. 3, 2011).

## F. FMCSA Research - Speed Limiting Device Installation on CMVs

In March 2012, FMCSA published a research report on a study intended to identify the safety impacts of implementing speed limiting devices in commercial vehicle fleet operation.<sup>32</sup> The FMCSA study focused on the reduction in truck crashes that could have been avoided and/or mitigated with an active speed limiting device installed. This was the first study to use actual crash data collected directly from truck fleets, representing a wide array of crashes. More specifically, the study included data from 20 truck fleets, including approximately 138,000 trucks, and it analyzed more than 15,000 crashes. The findings showed strong positive benefits for speed-limited trucks. In terms of safety benefits, results indicated that trucks equipped with speed limiting devices had a statistically significant lower speed-limited-relevant crash rate compared to trucks without speed limiting devices (1.6 crashes per 100 trucks/year versus 2.9 crashes per 100 trucks/year).

FMCSA's Compliance, Safety, and Accountability Program<sup>33</sup> (CSA) addresses the issue of speeding-related crashes through its Unsafe Driving BASIC. This BASIC is a strong predictor of crash rates, although not the severity of crashes.

The FMCSA report focused on the effectiveness of a set speed limiter in avoiding crashes. Because this research relied on fleets to report crashes, a level of uncertainty was introduced based on varying reporting techniques. Additional uncertainty was introduced because of difficulties in establishing comparable routes in order to balance risk exposure.

While the FMCSA study was large, the agencies are using a distinctively different approach for

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<sup>32</sup> Hanowski, R. et al., Research on the Safety Impacts of Speed Limiter Device Installations on Commercial Motor Vehicles: Phase II, FMCSA-RRR-12-006, March 2012, available at <http://ntl.bts.gov/lib/51000/51300/51361/Speed-Limiters.pdf>

<sup>33</sup> <http://csa.fmcsa.dot.gov/>

the estimation of benefits that includes 10 years of crash data analysis. As described later in this notice, NHTSA has examined actual crashes and the severity of those crashes at various speeds to estimate the safety benefits of reducing crash speeds. While NHTSA's approach to estimating the safety benefits is more conservative, the agency has greater confidence that the benefits demonstrated in our approach will be fully realized because of our approach's ability to more effectively isolate the effects of speed reduction on safety.

#### **IV. Heavy Vehicle Speed Related Safety Problem**

##### **A. Heavy Vehicle Crashes at High Speeds**

Studies examining the relationship between travel speed and crash severity have concluded that the severity of a crash increases with increased travel speed.<sup>34</sup> Impact force during a crash is related to vehicle speed, and even small increases in speed have large effects on the force of impact. As speed increases, so does the amount of kinetic energy a vehicle has. Because the kinetic energy equation has a velocity-squared term, the kinetic energy increase is exponential compared to the speed increase, so that even small increases in speed have large effects on kinetic energy. For example, a 5 mph speed increase from 30 mph to 35 mph increases the kinetic energy by one-third.<sup>35</sup> The effect is particularly relevant for combination trucks (i.e., truck tractor and trailer) due to their large mass.<sup>36</sup> Additionally, higher speeds extend the distance necessary to stop a vehicle and reduce the ability of the vehicle, restraint device, and

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<sup>34</sup> Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).

<sup>35</sup> Virginia Commonwealth University Safety Training Center Website, <http://www.vcu.edu/cppweb/tstc/crashinvestigation/kinetic.html>.

<sup>36</sup> Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).



roadway hardware such as guardrails, barriers, and impact attenuators to protect vehicle occupants in the event of a crash.<sup>37</sup>

In evaluating the role travel speed plays in heavy vehicle crashes, the agencies used FARS and GES crash data over the 10-year period between 2004 and 2013 to examine crashes involving heavy vehicles (i.e., vehicles with a GVWR of over 11,793.4 kg (26,000 pounds)) on roads with posted speed limits of 55 mph or above. The agency focused on crashes in which the speed of the heavy vehicle likely contributed to the severity of the crash (e.g., single vehicle crashes, crashes in which the heavy vehicle was the striking vehicle). The agencies estimated that these crashes resulted in 10,440 fatalities<sup>38</sup> from 2004 to 2013 (approximately 1,044 annually).

Among the 10,440 fatalities, 9,747 resulted from crashes involving combination trucks, 442 resulted from crashes involving single unit trucks and the remaining 251 resulted from crashes involving buses.

Table 4  
**Adjusted** fatal target population based on FARS, crash and occupant counts  
 For vehicles with a GVWR greater than 11,793 kg (26,000 lbs.), 10 years, 2004 – 2013

Combination Truck		Single Unit truck		Bus	
Crash counts	Person counts	Crash counts	Person counts	Crash counts	Person counts
9,285	9,747	417	442	194	251

## B. NTSB Motorcoach Speed-Related Crash Investigation

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<sup>37</sup> Liu Cejun & Chen, Chou-Lin, NHTSA, An Analysis of Speeding-Related Crashes: Definitions and the Effects of Road Environments, DOT HS 811 090 (Feb. 2009).

<sup>38</sup> The fatality numbers were also adjusted to reflect the effect of new heavy requirements that have been adopted by NHTSA within the last several years (e.g., the final rule adopting seat belt requirements for passenger seats in buses (78 FR 70415 (Nov. 25, 2013)), the final rule to adopt electronic stability control requirements for heavy vehicles (80 FR 36049 (June 23, 2012)).

In addition to examining the FARS and NASS GES data relating to fatal heavy vehicle crashes, the agencies reviewed the National Transportation Safety Board (NTSB) Accident Reports to better understand the details surrounding high-speed crashes involving motorcoaches. The agencies identified one motorcoach crash in which excessive vehicle speed was cited as a major safety risk. The crash occurred on U.S. Route 163, in Mexican Hat, Utah, on January 6, 2008.<sup>39</sup> Nine passengers were fatally injured and 43 passengers and the driver sustained injuries.

As part of the crash investigation, NTSB conducted a vehicle speed analysis and estimated that the motorcoach was likely traveling 88 mph at the time of the crash. Although the motorcoach had a speed-limiting device with a maximum speed of 72 mph, NTSB determined that the motorcoach was capable of achieving a higher speed while in 10<sup>th</sup> gear when going downhill.

Based on the facts surrounding this crash, this incident does not necessarily demonstrate the safety risk that speed-limiting devices are meant to address. Existing speed-limiting devices regulate a vehicle's speed by monitoring the engine's RPM and controlling the supply of fuel to the engine, but do not limit the downhill speed of a vehicle. Although today's proposal would not necessarily limit speed on downhill portions of roadways, we are requesting comments on whether a device that could limit speeds in such a situation is technically feasible.

## **V. Applicability of NHTSA's 1991 Report to Congress on CMV Speed Control Devices**

As discussed above, in 1991, NHTSA published a report titled "Commercial Motor Vehicle Speed Control Devices."<sup>40</sup> This report reviewed the problem of commercial vehicle

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<sup>39</sup> NTSB/HAR-09/01 PB2009-91620; Motorcoach Run-Off-the-Road and Rollover U.S. Route 163, Mexican Hat, Utah; January 6, 2008.

<sup>40</sup> DOT HS 807 725 (May 1991).

operations at speeds greater than 65 mph and these vehicles' involvement in speed-related crashes. The report found that combination trucks tended to travel at just over the posted speed limit. The report was supportive of fleet applications of speed monitoring and speed-limiting devices but concluded that, because of the small target population size, there was not sufficient justification to require the application of speed-limiting devices at that time.

In response to the two petitions received by NHTSA, we reexamined the report and determined that several factors have changed since its submission in 1991, including data on the target population, changes in the costs and technology of speed limiting devices, and the repeal of the national maximum speed limit law. These changes undermine the conclusions contained in the 1991 report.

The 1991 report focused on the crash involvement rate of heavy vehicles. The report estimated 39 fatalities annually involving combination trucks traveling in excess of 70 mph. However, the report stated that NHTSA was unable to determine whether the reduction in heavy vehicle travel speeds would actually reduce the crash risk (or resulting fatality risk) of these vehicles significantly, since other, non-speed-related factors might still have occurred to cause the crashes. The report determined that the incremental benefits of mandatory speed limiting devices were questionable.

As described in more detail below and in the Preliminary Regulatory Impact Analysis (PRIA) that accompanies this NPRM, included in the docket, the agencies have analyzed more recent data from 2004 to 2013 in order to determine the potential benefits of limiting the maximum speed of vehicles with a GVWR of over 11,793.4 kg (26,000 pounds). Instead of focusing on the effect of such devices on crash involvement rate, we have focused on their effect on crash severity and used this approach to isolate the effect of speed on the fatal crash rate.

Accordingly, this methodology allows us to estimate with greater certainty the lives that can be saved by electronically setting the maximum speed of vehicles with a GVWR of over 11,793.4 kg (26,000 pounds). Additionally, the 1991 report detailed the mechanisms for limiting speed available at that time and their associated costs. While the report accurately predicted the proliferation of electronically-controlled engines capable of limiting speed, it also noted the high cost of installing mechanical engine speed governors on vehicles. The available information indicates that electronically-controlled engines have been installed in most heavy trucks since 1999, though we are aware that some manufacturers were still installing mechanical controls through 2003. Accordingly, many of the equipment cost concerns discussed in the 1991 report are inapplicable today.

Finally, during the time the 1991 report was being developed, the maximum speed limit in the U.S. was 55 mph.<sup>41</sup> The national speed limit was repealed in 1995.<sup>42</sup> Examining current State speed limits, the maximum posted speed limits for trucks vary between 55 and 85, with 35 States having a maximum posted truck speed limit above 65 mph.<sup>43</sup>

- **55 mph:** California, District of Columbia
- **60 mph:** Hawaii, Michigan, Washington

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<sup>41</sup> Although the maximum national speed limit was 55 mph, some rural interstates were exceptions to this, with maximum speed limits of 65mph.

<sup>42</sup> The Emergency Highway Energy Conservation Act in 1974 mandated a 55 mph national maximum speed limit on all U.S. highways and tied highway funds to the enforcement of the limit by States. The Surface Transportation Uniform Relocation Assistance Act (1987) gave each state the right to increase speed limits on portions of the Interstate system lying within the least-populated areas of its boundaries. The National Highway System Designation Act of 1995 gave States the ability to set speed limits.

<sup>43</sup> Insurance Institute for Highway Safety, Maximum Posted Speed Limits, <http://www.iihs.org/iihs/topics/laws/speedlimits?topicName=speed>, (last visited June 2016).

- **65 mph:** Alaska, Connecticut, Delaware, Indiana, Massachusetts, Montana, New Jersey, New York, Oregon, Rhode Island, Vermont
- **70 mph:** Alabama, Arkansas, Florida, Georgia, Idaho, Illinois, Iowa, Kentucky, Maryland, Minnesota, Mississippi, Missouri, New Hampshire, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, Wisconsin
- **75 mph:** Arizona, Colorado, Kansas, Louisiana, Maine, Nebraska, New Mexico, North Dakota, Oklahoma
- **80 mph:** Nevada, South Dakota, Utah, Wyoming
- **85 mph:** Texas

Thus, vehicles, including those with a GVWR of 11,793.4 kg (26,000 pounds), are now traveling faster than they were in 1991.

Based on the foregoing, the agencies have determined that it was appropriate to reexamine the report to Congress and have come to the conclusion that the concerns and conclusions in that report are no longer valid. However, we have no plans at this time to prepare an updated study, given limited agency resources.

## **VI. Comparative Regulatory Requirements**

In developing this proposal, the agencies examined speed-limiting requirements in other countries, which are summarized below. Several jurisdictions have imposed speed-limiting requirements on certain heavy vehicles and have developed test procedures to ensure that covered vehicles meet these requirements. The Canadian provinces of Quebec and Ontario limited the speed of large trucks to 65 mph in July 2009. In Australia, large trucks have been limited to 62 mph since 1990, with a 56 mph limit for road trains (multiple trailers). The

European Union has limited the speed of large trucks and buses under its jurisdiction to 62 mph since 1994. Japan limited large trucks to 56 mph in 2003.

#### A. Canada

Transport Canada does not have a Canadian Motor Vehicle Safety Standard for heavy vehicle speed limiting; however, the provinces of Ontario and Quebec do require that if a CMV is equipped with an electronic control module capable of being programmed to limit vehicle speed, it must be set to no more than 105 km/h (65 mph).<sup>44</sup> This requirement does not apply to buses, mobile cranes, motor homes, vehicles manufactured before 1995, vehicles with a manufacturer's gross vehicle weight rating under 11,793.4 kg (26,000 pounds), ambulances, cardiac arrest emergency vehicles, or fire apparatuses.

Additional requirements for Ontario include the following:

- A speed-limiting device is properly set if it prevents a driver, by means of accelerator application, from accelerating to or maintaining a speed greater than permitted.
- The maximum speed shall be set by means of the electronic control module that limits the feed of fuel to the engine.<sup>45</sup>
- A CMV is exempt if it is equipped with an equally effective device, not dependent on the electronic control module, which allows limitation of vehicle speed, remotely or not, but does not allow the driver to deactivate or modify the set speed.

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<sup>44</sup> See Highway Traffic Act, R.S.O. ch. H.8, Section 68.1, available at [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_90h08\\_e.htm#s68p1s1](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h08_e.htm#s68p1s1), and Equipment, RRO/1990-587, available at [http://www.e-laws.gov.on.ca/html/regs/english/elaws\\_regs\\_900587\\_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900587_e.htm). In Quebec and Ontario, enforcement is carried out primarily using standard speed control methods to identify heavy vehicles being driven at more than 105 km/h. Complementing these methods, they use portable electronic testing units connected to a port located inside the truck's cab, highway controllers to access motor data and determine whether the speed limiter has been set at a speed of 105 km/h or less. <http://www.mto.gov.on.ca/english/trucks/trucklimits.shtml>.

<sup>45</sup>See O. Reg. 396/08, s.1

- All aspects of a CMV's computer device or devices, computer programs, components, equipment and connections that are capable of playing a role in preventing a driver from increasing the speed of a CMV beyond a specified value shall be in good working order.
- A CMV's electronic control module shall contain information that accurately corresponds with any component or feature of the vehicle referred to in the module, including information regarding the tire rolling radius, axle gear ratio and transmission gear ratio.

## B. Australia

In Australia, heavy goods vehicles and heavy omnibus maximum road speed are regulated through the Australian Design Rule (ADR) 65/00 "Maximum Road Speed Limiting for Heavy Goods Vehicles." This standard applies to heavy omnibuses with a gross vehicle mass (GVM) of 5 tons or more (UNECE category code M3), as well as heavy goods vehicles over 12 tons (UNECE category code N3). For "Road Train" vehicles, the maximum road speed capability is established by the State or Territory authority. For other heavy goods vehicles and for heavy omnibus vehicles, the maximum road speed capability may be no greater than 100 km/h (62 mph).

The ADR allows for vehicles to be speed-limited by means of gearing or a governor and tested with the following conditions:

- The tires shall be bedded and the pressure shall be as specified by the manufacturer.
- The vehicle shall be at 'Unladen Mass.'
- The track surface shall be free from standing water, snow or ice and shall be free from uneven patches; and the gradient shall not exceed 2 percent

and gradients shall not vary by more than 1 percent excluding camber effects.

- The mean wind road speed measured at a height at least 1 meter above the ground shall be less than 6 m/s with gusts not exceeding 10 m/s.
- The instantaneous vehicle road speed shall be recorded throughout the test with a road speed measurement accuracy of at least plus or minus 1 percent at maximum time intervals of 0.1 seconds. The test is then conducted “starting from a road speed 10 km/h less than the ‘Set Speed’ and the vehicle shall be accelerated as much as possible without changing gear by using a fully positive action on the accelerator control. This action shall be maintained without changing gear for at least 30 seconds after the ‘Set Speed’ is achieved.” The acceptance criteria for this test are twofold.
  - Within the first 10 seconds after reaching the ‘Set Speed’ the maximum vehicle road speed shall not exceed 105% of ‘Set Speed’ and the rate of change of vehicle road speed shall not exceed 0.5 m/s<sup>2</sup>.
  - More than 10 seconds after reaching the ‘Set Speed’, the maximum vehicle road speed shall not differ from the ‘Set Speed’ by more than plus or minus 3.3% of the ‘Set Speed’ and the rate of change of road speed shall not exceed 0.2 m/s<sup>2</sup>.

### C. Europe

In 1992, the European Commission (EC) issued directive 92/6/EEC, requiring installation of speed limiting devices on trucks weighing over 12,000 kg (26,400 pounds) and buses with



eight or more passenger seats weighing over 10,000 kg (22,000 pounds). The directive required that the speed limiting devices be set in such a way that covered trucks could not exceed 90 km/h (55.9 mph) and that covered buses could not exceed 100 km/h (62.1 mph). These requirements were phased in, initially applying to new vehicles registered after January 1, 1994. A retrofit requirement was subsequently added so that the speed-limiting requirements apply to all covered vehicles registered after January 1, 1988.

That same year, UNECE enacted Regulation 89 (ECE R89), which details uniform provisions concerning the approval of vehicles with regard to their maximum speed and installation of speed limiting devices, as well as approval of speed limiting devices themselves.<sup>46</sup> This regulation specifies general requirements for vehicles with speed limiting devices, as well as performance requirements and test procedures.

The ECE R89 test involves running the vehicle on a test track at a speed 10 km/h (6.2 mph) below the set speed and then accelerating the vehicle as much as possible until at least 30 seconds after the vehicle speed has stabilized. The speed of the vehicle is recorded at intervals of less than 0.1 second. The test is considered satisfactory if the stabilized speed of the vehicle does not exceed the set speed of the vehicle by more than five percent of the set speed or 5 km/h (3.1 mph) (whichever is greater), the maximum speed does not exceed the stabilized speed by more than five percent, and the variance in vehicle speed and rate of change of vehicle speed does not exceed certain thresholds during specified portions of the test.

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<sup>46</sup> UNECE R89, Uniform provisions concerning the approval of: I. Vehicles with regard to limitation of their maximum speed or their adjustable speed limitation function; II. Vehicles with regard to the installation of a speed limiting device (SLD) or adjustable speed limitation device (ASLD) of an approved type; III. Speed limitation devices (SLD) and adjustable speed limitation device (ASLD)," E/ECE/324–E/ECE/TRANS/505//Rev. 1/Add. 88/Amend. 2 (January 30, 2011).

In 2002, the EC issued directive 2002/85/EC, which extended the coverage of the speed limiting device requirements to include trucks weighing between 3,500 kg (7,716 pounds) and 12,000 kg (26,400 pounds) and buses with eight or more passenger seats weighing less than 10,000 kg (22,000 pounds).

The ECE R89 requirements are as follows:

- The speed limitation must be such that the vehicle in normal use, despite the vibrations to which it may be subjected, complies with certain provisions including the following:
  - The vehicle's speed limiting device (SLD) must be so designed, constructed and assembled as to resist corrosion and ageing phenomena to which it may be exposed and to resist tampering in accordance with the paragraph below.
    - The limitation threshold must not, in any case, be capable of being increased or removed temporarily or permanently on vehicles in use.
    - The speed limitation function and the connections necessary for its operation, except those essential for the running of the vehicle, shall be capable of being protected from any unauthorized adjustments or the interruption of its energy supply by the attachment of sealing devices and/or the need to use special tools.
  - The speed limiting function shall not actuate the vehicle's service braking device. A permanent brake (e.g., retarder) may be

incorporated only if it operates after the speed limitation function has restricted the fuel feed to the minimum fuel position.

- The speed limitation function must be such that it does not affect the vehicle's road speed if a positive action on the accelerator is applied when the vehicle is running at its set speed.
- The speed limitation function may allow normal acceleration control for the purpose of gear changing.
- No malfunction or unauthorized interference shall result in an increase in engine power above that demanded by the position of the driver's accelerator.
- The speed limitation function shall be obtained regardless of the accelerator control used if there is more than one such control which may be reached from the driver's seating position.
- The speed limitation function shall operate satisfactorily in its electromagnetic environment "without unacceptable electromagnetic disturbance for anything in this environment."
- The applicant for approval shall provide documentation describing checking and calibration procedures. "It shall be possible to check the functioning of the speed limitation function whilst the vehicle is stationary."

Annex 5 of the ECE R89 regulation provides specific vehicle, test track, test equipment, and test methods upon which we have based our proposed test procedure. The ECE regulation also contains specific acceleration, deceleration, and speed.

The test begins with the vehicle running at a speed 10 km/h below the set speed and then accelerated as much as possible using a fully positive action on the accelerator control. This action is then maintained for at least 30 seconds after the vehicle speed has been stabilized. During the test, the vehicle's precise speed and time are collected in order to calculate the maximum speed, stabilized speed, the amount of time required to stabilize the speed, maximum acceleration before the stabilized speed is established, and the maximum acceleration during the stabilized period.

#### D. Japan

In Japan, speed limitation devices are required to be installed on motor vehicles used to carry goods and have a GVWR of 8 tons or more or a maximum loading capacity of 5 tons or more. These devices are also required on trucks drawing trailers which have a GVWR of 8 tons or more or a maximum loading capacity of 5 tons or more. The general rules for these devices are as follows:

- The speed limitation device shall be so constructed that the vehicle may not be accelerated by the operation of the acceleration devices, such as the accelerator pedal, when the vehicle is running at its set speed.
- The set speed of the speed limitation device shall be any speed not exceeding 90 km/h. Furthermore, the speed limitation device shall be so constructed that the users, etc. of the vehicle cannot alter the set speed nor release the setting.
- The speed limitation device shall be fully capable of “withstanding the running.” Even if wrong operation, etc., of the speed limitation device should occur, it would not incur any

increased output that will exceed the engine output determined by the condition of the accelerating devices, such as the depressing amount of the accelerator pedal.<sup>47</sup>

- On motor vehicles equipped with “plural” accelerating devices, the speed limitation device shall actuate for every accelerating device.
- The speed limitation device shall not actuate the service brake device of the vehicle. However, the speed limitation device may actuate the auxiliary brake device only after the fuel supply has been minimized.
- The speed limitation device and connections necessary for its operation (except connections whose disconnection will prevent the normal motor vehicle operation) shall be capable of being protected from any unauthorized adjustments that will hamper the function of the speed limitation device or the interruption of its energy supply, such as power supply, by the attachment of sealing devices and/or the need to use special tools. However, this provision shall not apply to speed limitation devices whose function can be confirmed while the vehicle is stopping.

The conformity of these requirements is tested either by the use of a proving grounds test, a chassis dynamometer test, or by an engine bench test in the following ways:

- Proving grounds test
  - Conditions of the test vehicle

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<sup>47</sup> NHTSA understands this provision to require robustness of the speed limitation device and limitations on the impacts of its failure.

- The air inflation pressure of the tires shall be the value as posted in the specification table. Moreover, the tires shall be ones that have undergone break-in.
    - The weight of the test vehicle shall be the vehicle weight. However, on motor vehicles equipped with a spare tire and onboard tools, the test may be conducted with such articles mounted on the vehicle.
  - Characteristics of proving ground
    - The surface of the proving ground shall be flat paved road. Gradients shall not exceed 2% and shall not vary by more than 1% excluding camber effects.
    - The surface of the proving ground shall be free from water pool, snow accumulation or ice formation.
  - Ambient weather conditions
    - The mean wind speed shall be less than 6 m/s. Moreover, the maximum wind speed shall not exceed 10 m/s.
- Acceleration test
  - Test Procedure
    - The vehicle running at a speed 10 km/h below the set speed shall be accelerated as much as possible by operating the accelerator device, e.g. by depressing the accelerator pedal fully. This action shall be maintained at least 30 seconds even after the vehicle speed has been stabilized. The vehicle speeds shall be recorded during the test in order to establish the curve of the speed versus the time. In this case, the accuracy of the speed

measurement shall be within 1%, whereas the accuracy of the time measurement shall be within 0.1 second.

- The test shall be carried out for each gear ratio allowing in theory the set speed to be exceeded.
- Requirements
  - In this test, the speed of the test vehicle shall satisfy the following requirements enumerated below.
    - The stabilized speed shall not exceed the set speed plus 5 km/h nor a speed of 90 km/h.
    - After the stabilization speed has been reached for the first time, the maximum speed shall not exceed the stabilization speed multiplied by 1.05. Furthermore, the absolute value of the rate of change of speed shall not exceed  $0.5 \text{ m/s}^2$  when measured on a period greater than 0.1 second.
    - Within 10 seconds of first reaching the stabilized speed, the speed limitation function shall be controlled in such a way that the following requirements are satisfied.
    - The speed shall not vary by more than 4% of the stabilized speed or 2 km/h, whichever is greater.
    - The absolute value of the rate of change of speed shall not exceed  $0.2 \text{ m/s}^2$  when measured over a period greater than 0.1 second.
  - Steady speed test
    - Test procedure

- The vehicle shall be driven at full acceleration up to the steady speed by operating the acceleration device, e.g. by depressing the accelerator pedal fully. Then, the vehicle shall be maintained at this stabilized speed at least 400 meters. The vehicle's average speed shall be measured after the vehicle attained the stabilized speed. Next, the same measurement shall be repeated on the proving ground but in the opposite direction. The mean of the two average speeds measured for both test runs shall be considered the mean stabilized speed. The whole test shall be conducted five times. In this case, the speed measurements shall be performed with an accuracy of 1% whereas the time measurements shall be carried out with an accuracy of 0.1 second.
- The test shall be carried out for each gear ratio allowing in theory the set speed to be exceeded.
- Requirements
  - In this test, the speeds of the test vehicle shall satisfy the following.
  - On each test run, the mean stabilized speed shall not exceed the set speed plus 5 km/h or a speed of 90 km/h.
  - The difference between the maximum value and the minimum value of the mean stabilized speeds obtained during each test run shall be no more than 3 km/h.
- Chassis dynamometer test
  - Conditions of chassis dynamometer



- The equivalent inertia weight shall be set with an accuracy of  $\pm 10\%$  of the vehicle weight of the test vehicle.
- Acceleration test
  - Test procedure
    - The vehicle running at a speed 10 km/h below the set speed shall be accelerated as much as possible by operating the accelerating device, e.g. by depressing the accelerator pedal fully. This action shall be maintained at least 20 seconds even after the vehicle speed has been stabilized. The vehicle speeds shall be recorded during the test in order to establish the curve of the speed versus the time. In this case, the accuracy of the speed measurement shall be within  $\pm 1\%$ , whereas the accuracy of the time measurement shall be within 0.1 second.
    - The load of the chassis dynamometer during the test shall be set to the forward running resistance of the test vehicle with an accuracy of 10%. Furthermore, when the competent authority approves it as appropriate, the load may be set to the maximum power of the engine multiplied by 0.4.
    - The test shall be carried out for each gear ratio allowing in theory the set speed to be exceeded.
- Test procedure
  - The vehicle shall be driven at full acceleration up to the steady speed by operating the accelerating device, e.g., by depressing the accelerator pedal fully. Then, the vehicle shall be maintained at this stabilized speed at least 400 meters. The vehicle's average speed shall be measured after the test vehicle has attained the

stabilized speed. This average speed shall be considered the mean stabilized speed. The whole test shall be conducted five times. The speed measurements shall be performed with an accuracy of  $\pm 1$  percent, whereas the time measurements shall be carried out with an accuracy of within 0.1 second.

- The load of the chassis dynamometer shall be changed consecutively from the maximum power of the engine to the maximum power of the engine multiplied by 0.2.
- The test shall be carried out for each gear ratio allowing in theory the set speed to be exceeded.
- In this test, the requirements prescribed shall be satisfied.
  - Engine bench test
    - This test method can be carried out only when the competent authority recognizes that this bench test is equivalent to the proving ground measurement.
- Indication
  - With regard to those motor vehicles equipped with a speed limitation device that has complied with the requirement of this Technical Standard, a mark shall be indicated at a place in the vehicle compartment where the driver can easily see the mark and at the rear end of the vehicle (excluding truck tractors).

## **VII. Proposed Requirements**

### **A. Overview**

#### **1. Proposed FMVSS**

NHTSA is proposing to establish a new FMVSS that would require new multipurpose passenger vehicles, trucks, buses, and school buses with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed-limiting device. Additionally, as manufactured and sold, each vehicle would be required to have its device set to a specified speed. Although NHTSA has not specified a maximum set speed in this proposal, NHTSA intends to specify a maximum set speed in a final rule implementing this proposal. NHTSA has considered the benefits and costs of a 68 mph maximum set speed as requested in the petitions as well as 60 mph and 65 mph maximum set speeds in the overview of benefits and costs discussed in Section X of this document and in the Preliminary Regulatory Impact Analysis, Initial Regulatory Flexibility Analysis, and Draft Environmental Assessment accompanying this proposal.

To determine compliance with the operational requirements for the speed-limiting device (e.g., that the vehicle is in fact limited to the set speed), NHTSA is proposing a vehicle level test that involves accelerating the vehicle and monitoring the vehicle's speed. The proposed test procedure is substantially based on the UNECE R89, described above.

Finally, to assist FMCSA's enforcement officials with post-installation inspections and investigations to ensure compliance with the speed limiting device maintenance requirement, NHTSA is proposing to require that the vehicle set speed and the speed determination parameters be readable through the On-Board Diagnostic (OBD) connection.<sup>48</sup> In addition to the current speed limiting device settings, NHTSA is proposing that the previous two setting modifications

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<sup>48</sup>Further information on the specification of the OBD connection is available at <http://www.epa.gov/obd/regtech/heavy.htm>.

(i.e., the two most recent modifications of the set speed of the speed limiting device and the two most recent modifications of the speed determination parameters) be readable and include the time and date of the modifications.

NHTSA solicits comment on all aspects of the proposed FMVSS, including the requirements for a speed-limiting device, the initial set speed requirement, the types of vehicles to which the speed limiting device requirements should be applicable, the proposed recording requirement and potential alternatives, and the proposed test procedure.

## 2. Proposed FMCSR

FMCSA is proposing an FMCSR requiring each CMV with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed-limiting device meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture, including the requirement that the device be set to a specified speed. As with the FMVSS, FMCSA has not specified the maximum set speed in this proposal, FMCSA intends to specify the maximum set speed in a final rule implementing this proposal. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed-limiting devices for the service life of the vehicle. FMCSA solicits comment on all aspects of this proposed FMCSR.

### B. Applicability

#### 1. Proposed FMVSS

NHTSA is proposing that speed limiting device requirements apply to all new multipurpose passenger vehicles, trucks and buses with a gross vehicle weight rating of more than 11,793.4 kg (26,000 pounds). Although the majority of the estimated safety benefits of this joint rulemaking are for combination trucks because they travel more vehicle miles at high speeds, and thus are involved in more high-speed crashes, this rulemaking would also reduce the

number of fatalities from crashes involving other types of heavy vehicles, some of which carry a large number of passengers. Additionally, because other heavy vehicles like single unit trucks and heavy buses have the same heavy-duty engines as combination trucks, the costs associated with installing the required speed-limiting devices in these vehicles would be minimal. For these reasons, the agency has tentatively concluded that it is appropriate to subject all types of heavy vehicles to the speed-limiting device requirements.

Regarding the GVWR threshold, NHTSA decided to focus the speed-limiting device requirements on those vehicles that carry the heaviest loads and for which small increases in speed have larger effects on the force of impact in a crash. These vehicles would also be subject to both FMCSA's regulations applicable to vehicles operated in interstate commerce and states' compatible regulations adopted as a condition of receiving Motor Carrier Safety Assistance Program (MCSAP) grants.

Specifically, NHTSA considered how FMCSA and its state partners could effectively enforce the proposed standard to realize the potential safety benefits. These benefits result from maintaining the speed-limiting devices after they are sold. In general, NHTSA does not have the authority to regulate the use of motor vehicles or motor vehicle equipment by vehicle owners. However, almost all of the vehicles with a GVWR over 11,793.4 kg (26,000 pounds) are CMVs and their maintenance is regulated by FMCSA through the FMCSRs.<sup>49</sup> As discussed throughout this notice, if NHTSA requires speed limiting devices as requested in the petitions, FMCSA will simultaneously amend the FMCSRs to ensure that CMVs with a GVWR over 26,000 pounds that

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<sup>49</sup> Some vehicles covered by the FMVSS would not be covered by the FMCSR. These vehicles include transit buses, motor homes, most school buses, and CMVs in exclusively intrastate service. States may voluntarily require CMVs in exclusively intrastate service through FMCSA's Motor Carrier Safety Assistance Program, as discussed in Section VII.D.1 below.

operate in interstate commerce are equipped and maintained with a speed limiting device meeting the requirements of the FMVSS. Accordingly, NHTSA is proposing to limit the applicability of the speed limiting device requirements to vehicles with a GVWR over 11,793.4 kg (26,000 pounds) in order to ensure that these vehicles continue to be speed limited.

NHTSA requests comment on the applicability of the proposed speed limiting device requirements, specifically whether the proposed requirements should apply to vehicles with a GVWR of 11,793.4 kg (26,000 pounds) or lower. We are interested in the costs, if any, to manufacturers of these lighter vehicles, as well as the costs to the operators of these vehicles – and, if applicable, the operators’ customers -- resulting from the additional travel time.

## 2. Proposed FMCSR

Consistent with the proposed FMVSS, the proposed FMCSR would also apply to each multipurpose passenger carrying vehicle, truck, bus and school bus (to the extent they fall under FMCSA jurisdiction) with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds).

FMCSA requests comment on the cost of enforcement of the proposed FMCSR, training, new enforcement tools that may be required, and the costs, if any, to law enforcement partner agencies.

## C. Proposed FMVSS Requirements

NHTSA’s general approach in developing performance requirements for speed limiting devices was to identify key areas of performance pertinent to the overall effectiveness of speed limiting devices, thus reducing the severity of crashes, as well as to consider opportunities to harmonize the proposal with other global regulations. Considering that almost all vehicles covered by the proposed FMVSS are used for commercial purposes, the proposed requirements

also include performance aspects to assist inspectors in the verification of the speed limiting device setting and pertinent speed determination parameter settings.

The proposed requirements are generally consistent with those in the UNECE regulation for vehicles with regard to limitation of their maximum speed. These requirements are located in part I of UNECE R89. While not all the provisions of the UNECE standard are pertinent to NHTSA's proposed regulation, we have evaluated this and other standards and have proposed specific text that best supports the purpose of the proposed FMVSS.

## 1. Definitions

We are proposing three new definitions with respect to the speed limiting device. The first definition is the set speed ( $V_{set}$ ). The set speed is the speed limiting device setting, or the intended maximum cruising speed of the vehicle and the speed reported through the OBD connection. The speed would be no greater than a speed to be specified in a final rule implementing this proposal. Additionally we are proposing a definition for the actual maximum average cruising speed of the vehicle, which is referred to as the stabilized speed ( $V_{stab}$ ). Although we provide a detailed test procedure for obtaining this speed, it is generally the maximum speed that the vehicle can achieve on level ground once the speed control device has stabilized. The  $V_{stab}$  speed is required to be equal to the  $V_{set}$  speed. We seek comment on the ability of manufacturers to build equipment capable of meeting this requirement. Finally, the maximum speed ( $V_{max}$ ) is the maximum speed that the vehicle can achieve during the transitional or settling period prior to the vehicle speed being stabilized. This is often referred to as the overshoot in a control device. All three of these vehicle speed definitions have the same general meaning as those used in the UNECE regulation.

## 2. Set Speed

NHTSA is proposing that, as manufactured and sold, each vehicle’s speed limiting device would be required to have a set speed of no greater than a speed to be specified in a final rule implementing this proposal. Although the petitions for rulemaking requested that NHTSA permit manufacturers to set the speed limiting device at any speed up to and including 68 mph, the agency has not proposed a specific set speed. In Section X of this document and in the Preliminary Regulatory Impact Analysis, Initial Regulatory Flexibility Analysis, and Draft Environmental Assessment accompanying this proposal, NHTSA has considered the benefits and costs of 60 mph, 65 mph, and 68 mph maximum set speeds.

The agencies estimate that limiting the speed of heavy vehicles to 60 mph would save 162 to 498 lives annually, limiting the speed of heavy vehicles to 65 mph would save 63 to 214 lives annually, and limiting the speed of heavy vehicles to 68 mph would save 27 to 96 lives annually. Although we believe that the 60 mph alternative would result in additional safety benefits, we are not able to quantify the 60 mph alternative with the same confidence as the 65 mph and 68 mph alternatives.

NHTSA also examined maximum posted speed limits for heavy vehicles. The following table shows the distribution of maximum posted speed limits.

Table 5

<b>Maximum Posted Speed Limit for Certain Larger Vehicles</b>	<b>Number of States (including the District of Columbia)</b>
55 mph	2
60 mph	3
65 mph	11
70 mph	21
75 mph	9
80 mph	4
85 mph	1



The purpose of this joint rulemaking is to save lives by reducing the severity of crashes involving heavy vehicles. NHTSA and FMCSA are proposing to accomplish this by requiring that those vehicles be equipped with speed limiting devices. The proposed rules are not intended as a mechanism to enforce maximum speed limits set by States. However, the agencies are mindful that the proposed rules would limit the travel speed of heavy vehicles below the maximum posted speed limits in some States. We have therefore considered the distribution of State speed limits as one factor in deciding the appropriate set speed requirement. The above table illustrates that the vast majority of States (41 States) have maximum truck speed limits between 65 mph and 75 mph, with the most common maximum truck speed limits being 70 mph (21 States) and 65 mph (11 States).

We have also examined data from EMA<sup>50</sup> showing the factory speed limiting device settings for trucks<sup>51</sup> manufactured in 2010 and 2011. By far, the single most common speed limiting device setting for the 332,530 vehicles manufactured during this period was 65 mph (24.8% - 82,474 vehicles). Trucking fleets generally custom order truck tractors and request speed limiting device settings from the manufacturer based on the costs and benefits of various maximum speeds. The high number of vehicles set to 65 mph suggests that this is a reasonable maximum speed at which to efficiently and safely transport goods, even if it is not the optimum maximum speed for every company.

NHTSA will weigh all of these factors in choosing a maximum set speed for newly manufactured large vehicles and FMCSA will weigh these factors in considering what maximum

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<sup>50</sup> EMA, Vehicle Speed Limiter Settings – Ex Factory 2010 & 2011 (Nov. 2011).

<sup>51</sup> EMA indicated that the vehicles included in the data consist of mostly heavy-duty trucks and truck tractors with some medium-duty trucks. EMA further indicated that the data included a significant portion of the total heavy-duty production since the start of 2010. See id.

set speed at which motor carriers would be required to maintain speed limiters. The benefits estimates indicate that substantially more lives would be saved if heavy vehicles are limited to 65 mph versus 68 mph with an additional increase in lives saved if heavy vehicles are limited to 60 mph instead of 65 mph. However, the agencies will also consider State speed limits and the economic impact on manufacturers and fleets including current speed limiter settings and the potential for harmonization with Ontario and Quebec maximum set speed requirements of 105 km/h (65 mph). NHTSA and FMCSA will consider other maximum set speeds both within that range of speeds and outside of it. NHTSA and FMCSA request comment on what an appropriate maximum set speed would be and why that speed should be chosen over other possible maximum set speeds.

We are proposing that the speed limiting device be permitted to allow normal acceleration control for the purpose of gear changing. It is important to provide acceleration control for the purpose of gear changing in order to maintain vehicle drivability. We note that, as proposed, the speed-limiting device must limit the speed of the vehicle regardless of the gear selection. Additionally, we are proposing that the maximum speed (overshoot) not exceed the stabilized speed by more than 5 percent. Likewise, the stabilized speed must not exceed the set speed.

### 3. Tampering and Modification of the Speed-Limiting Device

Unlike UNECE R89, NHTSA is not proposing any requirement on manufacturers to make the speed limiting device tamper-resistant or to restrict modification of the speed limiting device settings. In other words, although the proposed FMVSS would require that the initial set speed be not greater than a specified speed, a speed limiting device could be capable of

adjustment above the specified speed and still meet the requirements of the proposed FMVSS. However, because the proposed FMVSS would be reinforced by the proposed FMCSR, we expect that virtually all of these vehicles would be limited to the specified speed.

As described below, NHTSA is concerned about tampering and modification of the speed limiting device settings after a vehicle is sold. After considering various means of preventing these types of activities as described below in the Regulatory Alternatives section, the agency has tentatively decided not to include this type of requirement because of the costs that such a requirement would impose on manufacturers. NHTSA is also concerned about the feasibility of establishing performance requirements that would be objective and effective in resisting various methods of tampering.<sup>52</sup>

In particular, the agency is concerned about speed limiting device setting adjustment and tampering that could allow vehicles to travel faster than the specified maximum set speed. The agency is also concerned about post-sale modification of the speed determination parameters such that they do not match the equipment on the vehicle or the failure to modify the parameters after replacing equipment. Either of these actions could result in the vehicle being capable of traveling at speeds higher than the set speed. Finally, the agency is concerned about potential tampering with the speed limiting device, such as hacking the ECU to disable the speed-limiting

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<sup>52</sup> The agency notes that some manufacturers may voluntarily decide to install speed limiting systems with features to restrict modification of the settings and/or make the device tamper-resistant as part of their compliance approach under the fuel efficiency program for medium- and heavy-duty vehicles. Specifically, the fuel efficiency program for medium- and heavy- duty vehicles permits manufacturers to implement a fixed maximum vehicle speed through a speed limiter feature and use the maximum speed as an input for the model used for purposes of certification to the standards of the fuel efficiency program (76 FR 57106, 57155 (Sep. 15, 2011)). Although the speed limiter may be adjustable, compliance is based on the highest adjustable speed setting. Speed settings that are protected by encrypted controls or passwords are not considered when determining the highest adjustable speed, and manufacturers are required to use good engineering judgment to ensure that the speed limiter is tamper resistant.

device, installing a device that sends a false signal to the speed-limiting device, or replacing the ECU with an ECU that does not limit the speed.

In contrast, NHTSA believes that some modifications should not be restricted, like adjusting the set speed below the maximum specified set speed and changing the speed determination parameter values as necessary to reflect replacement equipment (e.g., equipping the vehicle with different-size tires). These types of modifications do not interfere with, and may even facilitate, vehicles continuing to operate at speeds no greater than the maximum specified set speed after they are sold. Accordingly, NHTSA is proposing to require that speed-limiting devices have some means of adjusting the speed determination parameter values as necessary to reflect replacement equipment.

In order to deter those types of activities that would allow a vehicle to travel above the maximum specified set speed, the proposed FMVSS would be reinforced by the proposed FMCSR, which would require motor carriers to maintain the speed limiting devices in accordance with the requirements of the proposed FMVSS. For example, the FMCSR would prohibit vehicle operators from adjusting the set speed above a maximum specified set speed.

To assist in verifying the performance of the speed limiting device while the vehicle is in use, NHTSA is proposing that the vehicle set speed and the speed determination parameters, such as tire size and gear ratios, be readable through the OBD connection. In addition to the current speed limiting device settings, NHTSA is proposing that the previous two setting modifications (i.e., the previous two modifications of the set speed and the previous two modifications of the speed determination parameters) be readable and include the time and date when they were modified.

NHTSA seeks comment on the proposed speed limiting device setting readability requirements. For example, is reporting the time and date of setting modifications feasible or should some other value be specified (e.g., mileage at the time of modification)? What are other appropriate speed determination parameters, in addition to tire size and gear ratios, that should be readable through the OBD connection? Should the agency specify additional requirements to ensure that the speed limiting device settings are readily accessible through the OBD connection and in an easy-to-understand format in order to facilitate enforcement, and, if so, what should those requirements be?

NHTSA also seeks comment on any alternative approach that would allow inspectors to verify the speed limiting device settings at a reduced cost.

#### 4. Test Procedure and Performance Requirements

NHTSA is proposing a vehicle-level test that involves the acceleration of the vehicle on a test track. The agency is proposing various track and weather conditions, based on the widely utilized UNECE regulation and other vehicle tests that are conducted on test tracks, to ensure the repeatability of testing. The test begins with the vehicle traveling at a steady speed that is below the set speed. The vehicle is accelerated using a full positive action on the accelerator control. Such action is maintained for at least 30 seconds after the vehicle speed has been stabilized. During the testing, the instantaneous vehicle speed is recorded during the testing in order to establish the curve of speed versus time. A more detailed summary of the proposed test procedure follows.

*Vehicle conditions.* The vehicle would be tested with the tire pressure at the manufacturer's specified pressure in the unloaded weight condition with a single operator.

*Test Track conditions.* The test surface would be a surface suitable to enable stabilization speed to be maintained and be free from uneven patches, with gradients not exceeding 2% and not varying by more than 1% excluding camber effects. The test track would be a paved surface free from standing water, snow, or ice.

*Ambient weather conditions.* In order to prevent inconsistency in the test, the test would be performed when the mean wind speed measured was less than 5 m/s and the temperature between 45°F and 104°F. NHTSA is proposing a less stringent wind speed condition than the UNECE requirement in order to maintain consistency with other FMVSS track tests.

*Test equipment.* The speed measurement would be independent of the vehicle speedometer and accurate within plus or minus 1 percent.

*Running the test.* The vehicle would be run at a speed 10 km/h below the set speed and would be accelerated as much as possible using a full positive action on the accelerator control. This action would be maintained at least 30 seconds after the vehicle speed stabilized. The instantaneous vehicle speed would be recorded during the testing in order to establish the curve of speed versus time.

The speed versus time curve would then be evaluated in order to find the stabilized speed and the maximum speed. Under the proposed requirements, the maximum speed achieved during the test must be no greater than 5 percent of the stabilized speed and the stabilized speed must not exceed the set speed. The agency notes that this proposed requirement is more stringent than the UNECE requirement, which specifies that the stabilized speed must be within 5 percent or 5 km/h of the set speed of the set speed. Adopting the UNECE tolerance would mean that a vehicle could have a stabilized speed of 5 km/h (3 mph) above the specified maximum set speed and still meet the proposed requirements. NHTSA will choose a maximum

set speed based primarily on safety considerations with considerations also given to other benefits including fuel savings and the costs of the rule including opportunity costs due to slower deliveries. Whatever maximum speed is ultimately chosen, it will be based on these considerations and allowing vehicles to operate 5 km/h (3 mph) above the maximum set speed will lessen the benefits associated with the chosen maximum set speed. NHTSA seeks comment as to manufacturers' ability to meet this requirement.

Additionally, NHTSA is not proposing to include the acceleration limits specified in the UNECE standard of  $0.5 \text{ m/s}^2$  within the first ten seconds and  $0.2 \text{ m/s}^2$  beyond the first ten seconds (both measured over a time greater than 0.1 s) of the vehicle first reaching the set speed. We question if these acceleration values are achievable during an on-road test. Our calculations indicate that such a requirement limits the change in vehicle speed over any 0.1 second period to no more than 0.045 mph.

$$a = \frac{v_2 - v_1}{t_2 - t_1}$$

$$\frac{0.2m}{s^2} = \frac{\Delta v}{0.1s - 0s}$$

$$\frac{0.02m}{s} = \Delta v$$

$$\frac{0.02m}{s} = \Delta v$$

$$0.045 \text{ mph} = \Delta v$$

Given the extreme precision that would be required both of the speed control device and the test equipment, NHTSA proposes not to include the acceleration limits as specified in the UNECE standard. We seek comment as to the necessity of an acceleration limit and, if needed, what a reasonable limit could be.

#### D. Proposed FMCSR Requirements

FMCSA is proposing an FMCSR requiring each CMV with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting device meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture, including the requirement that the device be set to a speed not greater than a specified maximum speed. This maximum speed will be based on the maximum speed chosen by NHTSA in a final rule implementing this proposal. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting devices for the service life of the vehicle.

##### 1. Enforcement

FMCSA's roadside enforcement activities are limited by the small size of its staff. The Agency therefore relies on its State partners for enforcement of its safety rules at the roadside. Through the Agency's Motor Carrier Safety Assistance Program (MCSAP), FMCSA provides Federal grants to the States to support the adoption and enforcement of compatible safety regulations. Therefore, FMCSA's adoption of a rule requiring interstate motor carriers to maintain speed limiting devices would be accompanied by the States' adoption of compatible rules applicable to both interstate and intrastate motor carriers pursuant to 49 CFR Part 350.

The inclusion of the OBD feature for the speed limiting device would enable FMCSA and its State partners to enforce the proposed rule during roadside inspections, at the discretion of the Agency and its State partners. The enforcement of the requirements could be conducted in a targeted manner, periodically or randomly to provide an effective deterrent to carriers tampering with or disabling the device to avoid the need for the Agency and its State partners to consider changes to the standard inspection procedures or increases in the amount of time needed to complete a roadside inspection. FMCSA is again seeking comment and information regarding



the cost of enforcement of the proposed FMCSR, training, new enforcement tools that may be required, and the costs, if any, to law enforcement partner agencies.

In addition, State law enforcement officials responsible for motor carrier safety oversight could cite CMV drivers for violations of the speed limiting device requirements as part of traffic enforcement activities. If the vehicle is observed to be operating in excess of a posted speed limit greater than the maximum specified set speed, and the vehicle was manufactured on or after the effective date of the proposed rule, the speeding violation would then serve as prima facie evidence that the speed limiting device was inoperative, or the setting altered. And, the driver could be subject both to a speeding ticket and motor carrier safety citation for operating a CMV with a speed limiting device that failed to meet the requirements of the State's version of the Federal requirement. Conversely, if the vehicle were clocked at the maximum specified set speed in a 50-mph zone, the driver could be ticketed for speeding, but the officer would make no assumption about the effectiveness of the speed limiting device.

### **VIII. Regulatory Alternatives**

In deciding on the approach proposed in this NPRM, NHTSA and FMCSA have examined the following alternatives to this proposal.

#### **A. Other Technologies Limiting Speed**

NHTSA also requests comment on the feasibility of technologies which would limit the speed of the vehicle to the speed limit of the road, as an alternative option to the a requirement limiting vehicle speed to a specified set speed. These technologies might include a GPS, vision system, vehicle to infrastructure communication, or some other autonomous vehicle technology. This could have the effect of reducing fatalities while limiting the economic effects of this rule on roads that have a posted speed above the maximum set speed. Heavy vehicle operators could

also potentially choose between vehicles equipped with speed limiting devices set to a specified maximum set speed and vehicles with GPS-based, vision based, or vehicle-to-infrastructure-based, or other autonomous vehicle technology devices depending on their needs.

Our preliminary conclusion is that requiring these technologies to limit vehicle speed would not be feasible and/or cost-effective at this time, but the agencies are seeking comments from the public on this preliminary conclusion. The agencies would not publish a final rule requiring speed limiters using these technologies without first publishing another proposed rule addressing them. The agencies also request comment on whether they should consider allowing GPS-based speed limiters, which adjust to the actual speed limits on roads, to be used as an alternative means of compliance if conventional speed limiters are required.

The agencies understand that some trucking fleets use similar devices for monitoring purposes, but we have several questions about regulating a GPS-based, vision based, or vehicle-to-infrastructure-based device, and we invite comments on the following areas:

- What would be the costs associated with installing and maintaining a GPS-based, vision based, or vehicle-to-infrastructure-based speed limiting device?
- How easy would it be for a driver to interfere with the ability to receive speed limit information without detection and thereby travel faster than the posted speed limit? Are there tamper-resistant technologies available to limit such action?
- What is the best method for determining the posted speed limit on a given section of highway? For GPS-based systems, would the speed map need to be managed federally and made available to the vehicle during operation or could a third-party map be usable considering the certification requirement?

- How would such a device handle posted speed changes such as dual day/night speed limits and construction zones?
- Is the current GPS coverage sufficient for such a device? How would temporary coverage outages be addressed for enforcement purposes?
- What would be the framework for a compliance test procedure?
- What are the limitations of the technologies in applications such as false positives?
- Should a speed-limiting device that is correlated to the highway speed still have a set speed lower than the posted speed limit?

#### B. Tampering

As discussed above, at this time NHTSA is proposing to require a speed limiting device that reports the last two modifications of the set speed and the last two modifications of the speed determination parameters, along with the time and date of the modifications. NHTSA is not proposing any requirement on manufacturers to make the speed limiting device tamper resistant or to restrict modification of the speed limiting device settings. In other words, although the proposed FMVSS would require that the initial set speed be not greater than a maximum specified speed, a speed limiting device could be capable of adjustment above the maximum specified speed and still be compliant with the proposed FMVSS.

Although NHTSA is concerned about tampering and modification of the speed limiting device settings after a vehicle is sold, after considering various means of preventing these type of activities the agency has tentatively decided not to include a requirement to prevent tampering because of the costs that such requirements would impose on manufacturers and because we are concerned about the feasibility of establishing performance requirements that would be objective and effective in resisting various methods of tampering.

In general, there are several design approaches for restricting modification of the speed limiting device settings and/or making the ECU tamper resistant, namely through passwords (Pass Code) and coding of the device using hardware (Hard Code). The Pass Code design approach has two options. The first Pass Code option is to set the speed limiting device setting at the OEM factory. With the first Pass Code option, subsequent owners would be able to legitimately change the setting if vehicle components that would directly affect the speed limiting device performance are altered and recalibration is necessary. However, speed limiting devices with the first Pass Code option would not be tamper resistant. The second option is to set speed limiting device setting at the OEM factory and make it “factory password protected.” With the second Pass Code option, vehicle owners would have to make a formal request to either the vehicle or engine manufacturers to change the setting. According to EMA, if a vehicle owner needed to make any subsequent changes, it would cost approximately \$300 per vehicle with the second Pass Code option. The Hard Code design approach is to hardcode the speed limiting device set speed in the ECU, based on characteristics of each vehicle produced. The Hard Code option would eliminate all possibilities of subsequent changes unless the entire ECU is replaced. With this approach, subsequent ECU changes would cost owners \$2,000 or more.<sup>53</sup>

In addition to the costs to manufacturers and vehicle owners that would result, such requirements would place an unrealistic burden on manufacturers to certify that equipment will resist methods of tampering that may be unknown at the time of certification.

Although a basic password requirement may seem straightforward, establishing specific

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<sup>53</sup> Truck Manufacturers Association (EMA), “Informational Meeting with NHTSA Speed Limiter Tamperproofing”, July 9, 2007, NHTSA-2007-26851-3841.

objective performance requirements for a password device that resists hacking would be challenging, and such requirements may not ultimately achieve the desired outcome of preventing tampering. Additionally, hacking methods that are unknown to the agency or to manufacturers could compromise such a tamper-resistant device. In the future, it may be possible to fool even a speed-limiting device that is hard coded into the ECU by providing false input signal.

NHTSA is also concerned that such devices could interfere with the types of modifications that NHTSA believes should not be restricted, like adjusting the set speed within the range of speeds up to the maximum specified set speed and changing the speed determination parameter values as necessary to reflect replacement equipment (e.g., equipping the vehicle with different-size tires). These types of modifications do not interfere with, and may even facilitate, vehicles continuing to operate at speeds no greater than the maximum specified set speed after they are sold.

Given these concerns and the additional costs to vehicle manufacturers from installing devices that restrict modification of the speed limiting device settings and/or are tamper-resistant, NHTSA is not proposing to include these requirements. However, we invite comment on these various means of restricting modification of the speed limiting device, including their effectiveness and cost, as well as whether objective performance requirements can be established.

FMCSA proposes to enforce NHTSA's speed limiting device requirements for vehicles manufactured after the effective date of the FMVSS. Specifically, drivers and carriers would be subject to Federal civil penalties if they are determined to have operated CMVs with a GVWR of more than 26,000 pounds in interstate commerce when the speed limiting device is (1) not

functioning, or (2) set at a maximum speed in excess of the maximum specified set speed. They would be subject to Federal civil penalties of up to \$2,750 for drivers and up to \$11,000 for employers who allow or require drivers to operate CMVs with speed limiting devices set at speeds greater than the maximum specified set speed.

If a speed limiting device is not functioning, drivers and carriers could avoid violations by driving no faster than the maximum specified set speed until the vehicle is repaired. Under 49 CFR Part 396, drivers are required to prepare driver vehicle inspection reports (DVIRs) which document all defects or deficiencies observed by or reported to the driver during the work day. At any time the driver observes that the vehicle can exceed the maximum specified set speed, he or she should document the problem on the DVIR, which triggers a duty on the part of the motor carrier, upon receipt of the report, to correct the problem.

We are interested in receiving comments on ways to read the set speed and speed determination parameters other than through the OBD connection. Comments should consider ways to reduce the equipment cost required for enforcement officials based on roadside and facility-based enforcement programs.

### C. Test Procedures

NHTSA is proposing a test procedure that is similar to that in the UNECE R89 regulation, which is widely used in many parts of the world, as opposed to an independent test track procedure. We believe this approach limits the cost of certification to manufacturers and increases their ability to use common engineering designs already included in the ECUs installed on vehicles around the world.

The European standard includes the additional testing methods of vehicle dynamometer and engine dynamometer. These test methods may provide additional flexibility for

manufacturers that are unable to use a test track, or during unfair weather conditions. We seek comment on whether NHTSA should consider these test methods as an option to our proposed track test.

#### D. Electromagnetic Interference

Unlike the UNECE regulation, NHTSA has chosen not to include an electromagnetic disturbance requirement in the proposed FMVSS. The agency is concerned that speed limiting devices, as well as all safety critical electronic equipment, operate within the installed environment with respect to electromagnetic interference (EMI). However, if the agency finds a safety need to pursue EMI requirements, it will likely be conducted in a broad way that covers various electronic devices. At this time, the agency does not intend to apply EMI requirements on an ad hoc basis to specific regulations. The agency seeks comment on whether the EMI requirements of the UNECE regulation should be included in the FMVSS.

### **IX. Other Issues**

#### A. Retrofitting

Road Safe America requested in its petition that all trucks manufactured after 1990 be required to be equipped with electronic speed governors. NHTSA is again seeking comment and information regarding the possibility of requiring all multipurpose passenger vehicles, trucks and buses manufactured after 1990 with a gross vehicle weight rating of more than 11,793.4 kg (26,000 pounds) to be retrofitted with electronic speed limiters.

The Secretary of Transportation has authority to promulgate safety standards for “commercial motor vehicles and equipment subsequent to initial manufacture.”<sup>54</sup> The Office of the Secretary has delegated authority to NHTSA to: “promulgate safety standards for commercial motor vehicles and equipment subsequent to initial manufacture when the standards are based upon and similar to a [FMVSS] promulgated, either simultaneously or previously, under chapter 301 of title 49, U.S.C.”<sup>55</sup> Additionally, FMCSA is authorized to enforce the safety standards applicable to CMVs operating in interstate commerce.<sup>56</sup> We request information on several issues relating to retrofitting used vehicles.

We seek to know more about the technical and economic feasibility of a retrofit requirement. In its comment to our 2007 Request for Comments, EMA expressed concern about retrofitting all post-1990 trucks. EMA’s first concern related to retrofitting vehicles manufactured from 1990 to approximately 1994 to 1996, which were frequently equipped with mechanically controlled engines with mechanical speed limiting devices. EMA indicated that it would be impractical to retrofit these vehicles with modern ECUs and they estimated that it would cost \$1,000 to \$1,500 per vehicle to retrofit those vehicles currently without ECUs with a mechanical speed limiting device. EMA’s second concern related to retrofitting ECU-equipped vehicles (i.e. post 1994 to 1996 vehicles) with tamper-proof speed limiting devices. EMA described three approaches to retrofitting these vehicles with varying degrees of tamper protection. The estimated costs of these retrofit approaches ranged from \$100 to \$2,000 per vehicle, and EMA estimated that one million vehicles would have to be retrofitted. Additionally,

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<sup>54</sup> Motor Carrier Safety Improvement Act of 1999, Pub. L. 106–159, § 101(f), 113 Stat. 1748 (Dec. 9, 1999).

<sup>55</sup> 49 CFR 1.95(c).

<sup>56</sup> 49 U.S.C. 31136(a).



two of the three approaches would require redesigning the software and/or hardware of each engine model and would entail additional costs ranging from \$2,500,000 to \$10,000,000 per engine model. EMA estimated there are 40 engine control devices from 1990 to the present that would have to be modified.

Hino Motors submitted a comment stating that it does not support the retrofitting of trucks that were manufactured with mechanically controlled engine devices, noting that it manufactured trucks with mechanically controlled engine devices through the model year 2003. The company stated that retrofitting older mechanically controlled engine devices with electronic controls would be costly to vehicle owners.

AAA requested that the agency explore the idea of retrofitting trucks currently on the road.

Based on the comments received, NHTSA is concerned that requiring the retrofitting of CMVs with speed limiting devices could be costly. Further, we understand that requiring retrofitted vehicles to meet every aspect of the performance requirements set forth in this proposal would impose additional costs beyond the costs associated with setting the speed limit. However, a number of these requirements are designed to assist enforcement personnel in the verification of the speed limiting device setting and pertinent vehicle parameter settings, and both NHTSA and FMCSA are concerned about the practicability of roadside enforcement if these were not included in any retrofit requirements. Given the agencies' concerns about technical feasibility, cost, enforcement, and impacts on small businesses, we are seeking public comment to improve our understanding of the real-world impact of implementing a speed limiting device retrofit requirement on existing vehicles and whether it is appropriate to have different requirements for these vehicles.

## Retrofit Requirements

Please explain why the agency should (or should not) consider requiring a speed limiting device requirement for existing heavy vehicles. Please discuss:

a. What portions of the existing heavy vehicle fleet are not equipped with speed limiting devices, are equipped with mechanical speed limiting devices, or are equipped with ECUs? The agencies are also seeking this type of information for the fleets owned by small businesses.

b. How old are vehicles in each of these categories and what are their expected lifetimes? The agencies are also seeking this type of information for the fleets owned by small businesses.

c. In what model year did manufacturers cease manufacturing vehicles equipped with mechanically controlled engines?

d. Is it technically feasible to retrofit a vehicle equipped with a mechanically controlled engine with an ECU and if feasible what would be the cost to do so?

e. What technically feasible approaches, if any, are there to retrofit mechanical speed limiting devices so that they have some level of tamper resistance, and what are the costs of such approaches?

f. What technologies are available to increase the tamper resistance of speed limiting devices in ECUs and what would be the cost to retrofit existing vehicles with these technologies?

As an alternative to a retrofit requirement, the agencies request comment on whether to extend the set speed requirement to all CMVs with a GVWR of more than 26,000 pounds that are already equipped with a speed limiting device and how such a requirement would impact our cost benefit analysis. As explained throughout this document, all vehicles with electronic engine control units (ECUs) are generally electronically speed governed to prevent engine or other damage to the vehicle, and ECUs have been installed in most heavy trucks since 1999.

Additionally, a number of older vehicles are equipped with mechanical speed limiting devices. Accordingly, in order to realize the benefits associated with limiting heavy vehicles' speed in a shorter timeframe without imposing any additional equipment costs, the agencies request comment on whether to require that the speed limiting devices in these older CMVs be set to a speed not greater than a maximum specified set speed.

#### B. Lead Time

If the proposed FMVSS is established, NHTSA is proposing a compliance date of the first September 1 three years after publication of a final rule. For illustration purposes, the proposed regulatory text uses the date of September 1, 2020. We believe that this lead time is appropriate as some design, testing, and development will be necessary to certify compliance to the new requirements. Three years is also consistent with the MCSAP time period for States to adopt regulations consistent with FMCSA standards.

### **X. Overview of Benefits and Costs**

Based on our review of the available data, if heavy vehicles were limited, it would reduce the severity of crashes involving these vehicles and reduce the resulting fatalities and injuries. The proposed rules would require that each vehicle, as manufactured and sold, have its speed limiting device set to a speed not greater than a maximum specified set speed, and that motor carriers maintain the set speed at a speed not greater than the maximum specified set speed. We expect that, as a result of this joint rulemaking, virtually all of these vehicles would be limited to that speed. In order to explore the benefits and costs of requiring speed limiters to be set at a variety of speeds, we have estimated the benefits and costs assuming that the affected vehicles are limited to speeds no greater than 60 mph, 65 mph, and 68 mph.

#### A. Benefits

## 1. Safety Benefits

As explained above, most studies examining the relationship between travel speed and crash severity have concluded that the severity of a crash increases with increased travel speed.<sup>57</sup> The relationship between travel speed and avoiding crashes is less certain, as described in detail in NHTSA's 1991 Report to Congress<sup>58</sup> and as indicated by the differing opinions of commenters who responded to the 2007 Request for Comments. The FMCSA study cited above showed a reduced crash risk with speed limiting devices. However, the lack of adequate exposure data, in terms of miles driven, makes it difficult to estimate the safety benefits of crashes avoided.

Commenters who opposed the ATA and Road Safe petitions contend that the creation of speed differentials between cars and heavy vehicles would increase crash risk. There have been a number of studies conducted on the impact of speed differentials between cars and heavy vehicles and whether differential speeds increase vehicle interactions and crash risk. Two studies, one conducted by the Virginia Transportation Research Council (VTRC) and disseminated under sponsorship of the U.S. Department of Transportation, and the other conducted by the University of Idaho, observed no consistent safety effects of differential speed limits compared to uniform speed limits.<sup>59</sup> Other studies have found an increased crash risk when vehicles deviate from the mean speed, though those studies' conclusions differed as to the

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<sup>57</sup> Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).

<sup>58</sup> NHTSA, Commercial Motor Vehicle Speed Control Safety, DOT HS 807 725 (May 1991).

<sup>59</sup> VTRC, The Safety Impacts of Differential Speed Limits on Rural Interstate Highways, FHWA-HRT-04-156, September 2004; Idaho Transportation Department Planning Division. Evaluation of the Impacts of Reducing Truck Speeds on Interstate Highways in Idaho, -Phase III, Final Report Dec., 2000, National Institute for Advanced Transportation Technology University of Idaho.

magnitude of the deviation from the mean speed that was associated with an increased crash risk. A full discussion of these studies can be found in the PRIA.

After considering this research and the difficulty in estimating the effect of speed limiting devices on crash risk, the agencies have chosen not to include an estimate of crashes avoided in the PRIA and to only estimate the benefits of reducing crash severity. Although this approach is conservative and the agencies believe that speed limiting devices will likely reduce both the severity and risk of crashes, the agencies have greater confidence that the estimated benefits described below will be fully realized because, by focusing on crash severity, the agencies are able to isolate more effectively the effects of speed reduction on safety. We invite public comment on these determinations and any additional information or studies related to the impact of speed limiting devices on crash avoidance that we should consider in estimating the effect of this rulemaking.

Using Fatality Analysis Reporting System (FARS) and National Automotive Sampling System General Estimates System (NASS GES) crash data over the 10-year period between 2004 and 2013, the agencies examined crashes involving heavy vehicles (i.e., vehicles with a GVWR of over 11,793.4 kg (26,000 pounds)) on roads with posted speed limits of 55 mph or above. The agency focused on crashes in which the speed of the heavy vehicle likely contributed to the severity of the crash (e.g., single vehicle crashes, crashes in which the heavy vehicle was the striking vehicle). The agencies estimated that these crashes resulted in 10,440 fatalities<sup>60</sup> from 2004 to 2013 (approximately 1,044 annually).

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<sup>60</sup> The fatality numbers were also adjusted to reflect the effect of new heavy vehicle requirements that have been adopted by NHTSA within the last several years (e.g., the final rule adopting seat belt requirements for passenger

Among the 10,440 fatalities, 9,747 resulted from crashes involving combination trucks, 442 resulted from crashes involving single unit trucks and the remaining 251 resulted from crashes involving buses.

In order to estimate the safety benefits,<sup>61</sup> we calculated the risk that a heavy vehicle will be involved in a crash that results in a fatality versus a crash that results in an injury or property damage on roads with posted speed limits of 55 mph and higher, which we refer to as the “vehicle-based model.”<sup>62</sup> Similarly, we calculated the risk that a person would suffer fatal injury in a crash involving a heavy vehicle versus a crash that would involve nonfatal injury or property damage only on roads with posted speed limits of 55 mph or higher, which we refer to as the “person-based model.” We then used the probability of fatal crash (or odds ratio) to derive the percent reduction in the fatal crash rate that would result from reducing the travel speed of heavy vehicles traveling at speeds above a set speed to the set speed (i.e., how would the probability of a heavy vehicle crash being fatal change if the vehicles were limited to a set speed?). Using this method, we estimate that limiting heavy vehicles to 68 mph would save 27 to 96 lives annually, limiting heavy vehicles to 65 mph would save 63 to 214 lives annually, and limiting heavy vehicles to 60 mph would save 162 to 498 lives annually.<sup>63</sup> Although we believe that the 60

seats in buses (78 FR 70415 (Nov. 25, 2013), the final rule to adopt electronic stability control requirements for heavy vehicles (80 FR 36049 (June 23, 2015)).

<sup>61</sup> For a full discussion of the agency’s safety benefits methodology, please consult the PRIA.

<sup>62</sup> The fatal crash rate represents the ratio of the number of vehicles involved in fatal crashes to the total number of vehicles involved in all police-reported crashes. This value is calculated using the crash data from the FARS & GES databases. For example, if there are 100 vehicles involved in police-reported crashes, and 10 of those vehicles are involved in fatal crashes, the fatal crash rate is 1/10 or 0.1.

<sup>63</sup> The number of lives saved for each category of crashes is rounded to the nearest integer, while the total lives saved is calculated using the unrounded estimates of lives saved for each category of crashes. This creates a slight discrepancy between the total lives saved and the sum of the rounded estimates of lives saved for each crash category.

mph alternative would result in additional safety benefits, we are not able to quantify the 60 mph alternative with the same confidence as the 65 mph and 68 mph alternatives.

We have estimated the number of injuries that would be prevented using the ratio of fatalities to injuries resulting from certain crashes involving combination trucks.<sup>64</sup> This method uses the number of lives saved to estimate the corresponding number of injuries prevented.

Based on range of fatalities prevented, this rulemaking would prevent 179 to 551 serious injuries<sup>65</sup> and 3,356 to 10,306 minor injuries with a maximum set speed of 60 mph, 70 to 236 serious injuries and 1,299 to 4,535 minor injuries with a maximum set speed of 65 mph, and 30 to 106 serious injuries and 560 to 1,987 minor injuries with a maximum set speed of 68 mph.

Fatality and injury benefits are monetized in two parts. The first part is based on the value of a statistical life (VSL). Value-of-life measurements inherently include a value for lost quality of life plus a valuation of lost material consumption that is represented by measuring consumers' after-tax lost productivity. Additionally, there are costs to society incurred as a result of an injury or fatality that are separate from the value of the life saved/injury prevented. Benefits occur from reducing these economic costs of crashes by reducing the number of people injured or killed. These items include: reducing costs for medical care, emergency services, insurance administrative costs, workplace costs, and legal costs. These monetized benefits are

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<sup>64</sup> Specifically, the agencies relied on data from crashes involving combination trucks striking other vehicles from behind to determine the fatality-to-injury ratio. The agencies used this data because the agencies believe that these are the types of crashes (and injuries) that are most likely to be affected by the proposed speed-limiting requirements. As discussed throughout the notice, combination truck crashes make up the vast majority of the target population, and the agency believes that those crashes in which a heavy vehicle hits another vehicle from behind are the most common type that would be affected by this rulemaking.

<sup>65</sup> The fatality-to-injury ratios for AIS 3, AIS 4, and AIS 5 injuries coincidentally add up to 1. Accordingly, the number of serious injuries prevented (AIS 3-5) is estimated to be equivalent to the number of fatalities. Please consult the PRIA for additional discussion on how the agencies estimated the injuries prevented.

reflected in Table 7 below. In addition to the safety benefits, this rule would result in reduced property damage as a result of making crashes less severe.

Table 6  
Annual Fatalities Prevented Speed Limiting Devices for  
Combination Trucks, Single Unit Trucks and Buses

Type	60 mph		65 mph		68 mph	
	Low	High	Low	High	Low	High
Combination trucks	159	472	62	204	27	92
Single-unit trucks	3	14	1	5	0	2
Buses	0	12	0	5	0	2
Total lives saved	162	498	63	214	27	96

\* The numbers were rounded to the nearest integer.

Table 7  
Benefits from Reduced Fatalities, Injuries, and Property Damage Savings, 7% Discount  
(in millions of 2013 dollars)

Benefits	60 mph		65 mph		68 mph	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Combination Trucks	\$1,819	\$5,382	\$706	\$2,322	\$304	\$1,048
Single-unit trucks	\$30	\$155	\$10	\$53	\$4	\$21
Buses	\$0	\$139	\$0	\$58	\$0	\$24
Total	\$1,849	\$5,676	\$716	\$2,433	\$308	\$1,093

## 2. Fuel Saving Benefits



In addition to the safety benefits, the proposed rules would result in a reduction in fuel consumption due to increased fuel efficiency. To determine the fuel savings, the agencies used NASS GES and FARS data to estimate VMT on different types of roads (e.g., 55 mph roads, 60 mph roads, etc.) and State data to estimate the actual travel speeds of heavy vehicles on those roads. The agencies separately calculated fuel savings based on current regulatory requirements and the proposed phase 2 medium- and heavy-duty fuel efficiency rules.<sup>66</sup> The agencies only estimated fuel savings for 65 mph and 68 mph speed limiters. The fuel savings for 60 mph speed limiters are assumed to be equal to the fuel savings from 65 mph speed limiters. The medium- and heavy-duty fuel efficiency program accounts for speed limiters set to speeds less than 65 mph in assessing compliance with the fuel economy standards.<sup>67</sup>

The agencies predictions for fuel savings and total benefits, including greenhouse gas (GHG) emissions reduction.<sup>68</sup>

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<sup>66</sup> See 80 FR 40,137 (July 13, 2015).

<sup>67</sup> The agency has considered the effect of the medium- and heavy-vehicle fuel efficiency program on the fuel savings estimates for this proposal to ensure that the agency does not include fuel savings already accounted for in the heavy vehicle fuel efficiency final rule if manufacturers use speed limiting systems that satisfy the requirements of both rules. This issue is fully addressed below in the agencies' discussion of the Unfunded Mandates Reform Act. The agency has also adjusted the baseline fuel economy to account for the improvements to fuel economy as a result of the medium- and heavy-vehicle fuel efficiency program. The agency has also considered the effects of improvement in fuel economy as a result of the medium- and heavy-duty fuel efficiency program and has taken account of them in fuel savings estimates. These issues are discussed in detail in the PRIA.

<sup>68</sup> To determine the benefits of reduced GHG emissions, the agencies estimated the benefits associated with four different values of a one metric ton carbon dioxide reduction (model average at 2.5% discount rate, 3%, and 5%; 95<sup>th</sup> percentile at 3%). These values were developed by an interagency working group to allow agencies to incorporate the social benefits of reducing carbon dioxide emissions into their cost-benefit analyses. See, Interagency Working Group on Social Cost of Carbon, United States Government, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (rev. Nov. 2013), available at, <http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>. The agencies have used the 3 percent discount rate value, which the interagency group deemed as the central value, in the primary cost-benefit analysis. For internal consistency, the annual benefits are discounted back to net present value using the same discount rate as the social cost of carbon estimate (3 percent) rather than 3 percent and 7 percent. A complete list of values for the four estimates (model average at 2.5% discount rate, 3%, and 5%; 95<sup>th</sup> percentile at 3%) is included in the PRIA.

Table 8  
Summary of Fuel Savings Speed Limiting Devices  
(in millions)\*

	Vehicle type	Fuel saved, 65 mph (in millions of gallons)	Monetized Fuel Savings, 65 mph (in millions of 2013 dollars)	Fuel saved, 68 mph (in millions of gallons)	Monetized Fuel Savings, 68 mph (in millions of 2013 dollars)
Estimate Based on Current Regulatory Requirements	Combination Trucks	377	\$1,220	169	\$545
	Single Unit Trucks	36	\$113	15	\$48
	Buses	9	\$30	4	\$12
	total	423	\$1,363	188	\$605
Estimate Based on Proposed Phase 2 Medium- and Heavy-Duty Fuel Efficiency Program Requirements	Combination Trucks	304	\$984	136	\$440
	Single Unit Trucks	32	\$98	13	\$41
	Buses	8	\$26	3	\$11
	total	344	\$1,108	153	\$492

\* The numbers were rounded to the nearest integer.

Table 9  
Annual Total Benefits, 7% Discount  
(in millions of 2013 dollars\*)

Benefits	60 mph		65 mph		68 mph	
	Low Estimate	High Estimate	Low Estimate	High Estimate	Low Estimate	High Estimate
Combination Trucks	\$2,571	\$6,134	\$1,458	\$3,074	\$640	\$1,384
Single-unit trucks	\$105	\$230	\$85	\$128	\$36	\$53
Buses	\$20	\$159	\$21	\$79	\$8	\$32
Total	\$2,695	\$6,522	\$1,564	\$3,281	\$684	\$1,469

\* Numbers were rounded to the nearest integer.

## B. Costs

### 1. Heavy Vehicle Manufacturers

For manufacturers, NHTSA expects the costs associated with the proposed FMVSS to be insignificant for new heavy vehicles because these vehicles already use ECUs for engine control. Regarding compliance test costs, truck manufacturers can use any appropriate method to certify to the performance requirements, including engineering analysis/calculation, computer simulation, and track testing. The agency believes that manufacturers will not need any tests additional to those they and their suppliers are currently conducting to verify the performance specifications.

### 2. Societal Costs Associated with the Operation of Heavy Vehicles

This joint rulemaking would impose societal costs since the proposed speed setting will decrease the travel speed for trucks currently traveling faster than the maximum specified set speed (the same work will be done, but it will take longer to do it). This will result in increased travel time and potentially longer delivery times and a loss of a national resource. We have also

accounted for a loss of value of goods as a result of increased travel time. In order to compensate for the increased travel time, trucking and bus companies would need to require current operators drive longer hours (within hours of service limits), hire additional operators, and use team driving strategies in some cases. We estimate the cost of this added time to be \$1,534 million annually for 60 mph speed limiters, \$514 million annually for 65 mph speed limiters, and \$206 million annually for 68 mph speed limiters assuming a 7 percent discount rate. However, the estimated fuel savings offset these costs. In other words, even without considering the safety benefits, this joint rulemaking would be cost beneficial.<sup>69</sup>

### 3. Impacts on Small Trucking and Motorcoach Businesses:

Although the proposed rules would apply to all heavy vehicles, the agencies' analysis indicates that this joint rulemaking could put owner-operators and small fleet owners, particularly those not using team driving strategies, at a disadvantage in some circumstances. Currently, there are transport jobs that small trucking companies could bid on and arrive one day sooner compared to a firm that already voluntarily uses a speed limiting device, if the small trucking company drives at 75 mph, which is the speed limit on some roads. Thus, it is likely that there are some jobs where there is an apparent competitive advantage to being able to drive faster. Some small businesses currently traveling at higher speeds might not be able to expand quickly enough to make the extra trips necessary to compensate for the increased travel times

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<sup>69</sup> Additionally, although the purpose of this rulemaking is to reduce the severity of heavy vehicle crashes and not to enforce posted speed limits, limiting heavy vehicle speed would likely drastically reduce the amount of speeding citations received by heavy vehicle operators on roads with posted speed limits of 65 mph and greater. These citations involve a number of economic effects on operators, including the fine assessed against the operator and the reduction in productivity from being pulled over to the side of the road. Additionally, commercial vehicle operators face additional potential costs because they can be disqualified from operating a commercial motor vehicle after two or more excessive speeding citations (49 CFR 383.51), which could result in a loss of income during the suspension period. Accordingly, the reduced number of traffic citations would offset some of the costs to operators from speed limiting heavy vehicles.

resulting from limiting their speed. Instead of these small independent trucking companies buying new trucks and/or hiring additional drivers, we expect that large trucking companies would absorb the additional cargo with their reserve capacity of trucks and drivers.

Although the agencies do not expect additional costs to the trucking industry as a whole in the near future from this rulemaking, small trucking companies, especially independent owner-operators, would be less profitable with speed limiting devices set. We have very limited data to predict how the affected owner-operators would deal with the increase in delivery times. We expect that some of the affected owner-operators would work for trucking companies as independent contractors. If all of the affected owner-operators worked for trucking companies as independent contractors, they would lose \$54 million in labor income. Our data is even more limited for entities that operate buses, but we expect that some small motorcoach companies may have to hire additional drivers to compensate for the increased travel times resulting from speed limiting devices.

We request comment on the agencies' assumptions regarding how this rulemaking would affect small heavy vehicle operators, and we request comment on the type and magnitude of that effect.

Although this rulemaking is expected to result in large fuel savings to the trucking industry as a whole, the agencies have limited data on the travel speeds of and vehicle miles traveled (VMT) by trucks operated by small companies as compared to trucks operated by large companies. Accordingly, it is difficult to estimate the relative fuel savings for small companies. However, we have anecdotal evidence suggesting that the VMT by trucks operated by small companies is 30 percent of the total VMT by all commercial vehicles. Assuming that there is no difference in travel speed between trucks operated by small companies and trucks operated by

large companies, 30 percent of the fuel savings resulting from the proposed rule would be realized by small trucking companies. In order to improve our estimate, which, as mentioned above, is based on limited data and certain assumptions, the agencies request comments on VMT and vehicle travel speed for different sizes of truck carriers and bus companies.

**C. Net Impact**

These proposed rules are cost beneficial. Combining the value of the ELS, the property savings, and the fuel savings, the total benefits are greater than the estimated cost, even assuming that the proposed rule would result in the low benefits estimate.

Table 11  
Overall Net Benefits to Heavy Vehicle Industries  
Associated with Speed Limiters, 7% Discount  
(in millions, 2013 dollars)\*

Vehicle	60 mph		65 mph		68 mph	
	Min.	Max.	Min.	Max.	Min.	Max.
Total Benefits	\$2,695	\$6,522	\$1,564	\$3,281	\$684	\$1,469
Total Costs	\$1,561	\$1,561	\$523	\$523	\$209	\$209
Net Benefit	\$1,136	\$4,964	\$1,039	\$2,757	\$475	\$1,260

\* The estimates may not add up precisely due to rounding

For further explanation of the estimated benefits and costs, see the PRIA provided in the docket for this proposal.

**XI. Public Participation**

**How do I prepare and submit comments?**

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long (49 CFR 553.21). We established this limit to encourage you to write your primary comments in a concise fashion. However, you

may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Comments may be submitted to the docket electronically by logging onto the Docket Management System website at <http://www.regulations.gov>. Follow the online instructions for submitting comments.

You may also submit two copies of your comments, including the attachments, to Docket Management at the address given above under ADDRESSES.

Please note that pursuant to the Data Quality Act, in order for substantive data to be relied upon and used by the agency, it must meet the information quality standards set forth in the OMB and DOT Data Quality Act guidelines. Accordingly, we encourage you to consult the guidelines in preparing your comments. OMB's guidelines may be accessed at

<http://www.whitehouse.gov/omb/fedreg/reproducible.html>. DOT's guidelines may be accessed at

[http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/subject\\_areas/statistical\\_policy\\_and\\_research/data\\_quality\\_guidelines/index.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/subject_areas/statistical_policy_and_research/data_quality_guidelines/index.html).

#### **How can I be sure that my comments were received?**

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

#### **How do I submit confidential business information?**

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given above under FOR

FURTHER INFORMATION CONTACT. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above under ADDRESSES. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR Part 512.)

**Will NHTSA and FMCSA consider late comments?**

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under DATES. To the extent possible, we will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider in developing a final rule (assuming that one is issued), we will consider that comment as an informal suggestion for future rulemaking action.

**How can I read the comments submitted by other people?**

You may read the comments received by Docket Management at the address given above under ADDRESSES. The hours of the Docket are indicated above in the same location. You may also see the comments on the Internet. To read the comments on the Internet, go to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets.

Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material.

**XII. Rulemaking Analyses**



## A. Executive Orders 12866 and 13563 and DOT Regulatory Policies and Procedures

Executive Order 12866, Executive Order 13563, and the Department of Transportation's regulatory policies require the agencies to make determinations as to whether a regulatory action is "significant" and therefore subject to OMB review and the requirements of the aforementioned Executive Orders. Executive Order 12866 defines a "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

We have considered the potential impact of this proposal under Executive Order 12866, Executive Order 13563, and the Department of Transportation's regulatory policies and procedures. This joint rulemaking is economically significant because it is likely to have an annual effect on the economy of \$100 million or more. Thus it was reviewed by the Office of Management and Budget under E.O. 12866 and E.O. 13563. The rulemaking action has also been determined to be significant under the Department's regulatory policies and procedures. The Preliminary Regulatory Impact Analysis (PRIA) fully discusses the estimated costs and

benefits of this joint rulemaking action. The costs and benefits are also summarized in Section X of this preamble.

## B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, Pub. L. 96-354, 94 Stat. 1164 (5 U.S.C. 601 et seq., as amended), whenever an agency is required to publish an NPRM or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR Part 121 define a small business, in part, as a business entity "which operates primarily within the United States." (13 CFR 121.105(a)). No regulatory flexibility analysis is required if the head of an agency certifies the proposal will not have a significant economic impact on a substantial number of small entities. The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a proposal will not have a significant economic impact on a substantial number of small entities.

The agencies believe that the proposed rules will affect small businesses, and may have a significant economic impact on a substantial number of small businesses. Accordingly, we have included an initial regulatory flexibility analysis in the PRIA detailing these effects and summarized these effects in Section X.B. of this preamble. We summarize the initial regulatory flexibility analysis below.

Agencies are required to prepare and make available for public comment an initial regulatory flexibility analysis (IRFA) describing the impact of proposed rules on small entities if

the agency determines that the rule may have a significant economic impact on a substantial number of small entities. Each IRFA must contain:

- (1) A description of the reasons why action by the agency is being considered;
- (2) A succinct statement of the objectives of, and legal basis for, the proposed rule;
- (3) A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- (4) A description of the projected reporting, record keeping and other compliance requirements of a proposed rule including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- (5) An identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule;
- (6) Each initial regulatory flexibility analysis shall also contain a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities

#### **Description of the reasons why action by the agency is being considered**

As described in greater detail above, studies examining the relationship between travel speed and crash severity have confirmed the common-sense conclusion that the severity of a crash increases with increased travel speed.<sup>70</sup> In 2006, NHTSA received a petition from the

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<sup>70</sup> Johnson, Steven L. & Pawar, Naveen, Mack-Blackwell Rural Transportation Center, College of Engineering, University of Arkansas, Cost-Benefit Evaluation of Large Truck-Automobile Speed Limits Differentials on Rural Interstate Highways, MBTC 2048 (Nov. 2005).

American Trucking Associations (ATA) to initiate a rulemaking to amend the Federal Motor Vehicle Safety Standards (FMVSS) to require vehicle manufacturers to limit the speed of trucks with a Gross Vehicle Weight Rating (GVWR) greater than 26,000 pounds to no more than 68 miles per hour (mph). Concurrently, the ATA petitioned the FMCSA to amend the Federal Motor Carrier Safety Regulations (FMCSR) to prohibit owners and operators from adjusting the speed limiting devices in affected vehicles above 68 mph. That same year, FMCSA received a petition from Road Safe America to initiate a rulemaking to amend the FMCSRs to require that all trucks manufactured after 1990 with a GVWR greater than 26,000 pounds be equipped with electronic speed limiting systems set at not more than 68 mph. NHTSA published a notice in 2011 granting the petitions.

After conducting an analysis of crash data and data on heavy vehicle travel speeds, the agencies have determined that reducing heavy vehicle travel speed would reduce the severity of crashes involving these vehicles and reduce the number of resulting fatalities. After analyzing several set speeds, including 60 mph, 65 mph, and 68 mph, NHTSA is proposing to heavy vehicles to be equipped with a speed limiting system. As manufactured and sold, each of these vehicles would be required by NHTSA to have a speed limiting device to set a particular speed.

FMCSA is proposing a complementary Federal motor carrier safety regulation (FMCSR) requiring multipurpose passenger vehicles, trucks, and buses and school buses with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting system meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting systems for the service life of the vehicle.

**Objectives of, and legal basis for, the proposal or final rule**

The objectives of the proposed rule are to reduce the severity of crashes involving heavy vehicles and reduce the number of fatalities. Since this NPRM would apply both to vehicle manufacturers and motor carriers that purchase and operate these vehicles, this joint rulemaking is based on the authority of both NHTSA and FMCSA. The legal authorities for NHTSA and FMCSA are described in Section II, above.

**Description and estimate of the number of small entities to which the proposal or final rule will apply**

The proposed FMVSS would apply to manufacturers of multipurpose passenger vehicles, trucks, and buses, with a GVWR of more than 11,793.4 kilograms (26,000 pounds). The proposed FMCSR would apply to motor carriers operating such vehicles in interstate commerce.

Vehicle Manufacturers

We believe there are very few manufacturers of heavy trucks in the United States which can be considered small businesses. The heavy truck industry is highly concentrated with large manufacturers, including Daimler Trucks North America (Freightliner, Western Star), Navistar International, Mack Trucks Inc., PACCAR (Peterbilt and Kenworth) and Volvo Trucks North America, accounting for more than 99% of the annual production. We believe that the remaining trucks (less than 1 percent) are finished by final stage manufacturers. With production volume of less than 1 percent annually, these remaining heavy truck manufacturers are most likely small businesses.

NHTSA believes there are approximately 37 bus manufacturers in the United States. Of these, 10 manufacturers are believed to be small businesses: Advanced Bus Industries, Ebus Inc., Enova Systems, Gillig Corporation, Krystal Coach Inc., Liberty Bus, Sunliner Coach Group LLC, TMC Group Inc., Transportation Collaborative, Inc., Van-Con, Inc.

## Motor Carriers

The motor carriers regulated by FMCSA operate in many different industries. Most for-hire property carriers fall under North American Industrial Classification System (NAICS) subsector 484, Truck Transportation, and most for-hire passenger transportation carriers fall under NAICS subsector 485, Transit and Ground Passenger Transportation. The SBA size standard for NAICS subsector 484 is currently \$25.5 million in revenue per year, and the SBA size standard for NAICS subsector 485 is currently \$14 million in revenue per year.

Because the agencies do not have direct revenue figures for all carriers, power units (PUs) serve as a proxy to determine the carrier size that would qualify as a small business given the SBA's revenue threshold. In order to produce this estimate, it is necessary to determine the average revenue generated by a PU unit.

With regard to truck PUs, FMCSA determined in the Electronic On-Board Recorders and Hours-of-Service Supporting Documents Rulemaking RIA<sup>71</sup> that a PU produces about \$172,000 in revenue annually. According to the SBA, motor carriers of property with annual revenue of \$25.5 million are considered small businesses.<sup>72</sup> This equates to 148 power units ( $148.26 = 25,500,000 / 172,000$ ). Thus, FMCSA considers motor carriers of property with 148 PUs or fewer to be small businesses for purposes of this analysis. FMCSA then looked at the number and percentage of property carriers with recent activity that would fall under that definition (of having 148 power units or fewer). The results show that over 99 percent of all interstate property

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<sup>71</sup> FMCSA Regulatory Analysis, "Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations," Final Rule (68 FR 22456, April 23, 2003).

<sup>72</sup>U.S. Small Business Administration Table of Small Business Size Standards matched to North American Industry Classification (NAIC) System codes, effective July 22, 2013. See NAIC subsector 484, Truck Transportation.

carriers with recent activity have 148 PUs or fewer, which amounts to about 493,000 carriers.<sup>73</sup> Therefore, the overwhelming majority of interstate carriers of property would be considered small entities.

With regard to passenger-carrying vehicles, FMCSA conducted a preliminary analysis to estimate the average number of PUs for a small entity earning \$14 million annually,<sup>74</sup> based on an assumption that passenger carriers generate annual revenues of \$150,000 per PU. This estimate compares reasonably to the estimated average annual revenue per power unit for the trucking industry (\$172,000). A lower estimate was used because passenger-carrying commercial motor vehicles (CMVs) generally do not accumulate as many vehicle miles traveled (VMT) per year as trucks, and it is therefore assumed that they would generate less revenue per PU on average. The analysis concluded that passenger carriers with 93 PUs or fewer ( $\$14,000,000$  divided by  $\$150,000/\text{PU} = 93.3 \text{ PU}$ ) would be considered small entities. FMCSA then looked at the number and percentage of passenger carriers registered with FMCSA that have no more than 93 PUs. The results show that about 98% of active passenger carriers have 93 PUs or less, which is about 10,000 carriers. Therefore, the overwhelming majority of passenger carriers to which this NPRM would apply would be considered small entities.

Regarding bus companies, we believe that the companies most likely to be affected would be those that operate motorcoaches, which tend to be larger buses that are used for traveling longer distances. FMCSA data indicates that there are approximately 4,168 authorized motorcoach carriers, 813 of which own or lease only one motorcoach. The median number of

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<sup>73</sup> FMCSA MCMIS Data, dated 2011.

<sup>74</sup> Motor carriers of passengers with an annual revenue of \$14 million are considered small businesses. *See id.*, subsector 485, Transit and Ground Passenger Transportation.

motorcoaches owned or leased by these companies is 3. Accordingly, we estimate that most of the 4,168 motorcoach companies are small entities with annual revenues of less than \$14 million per year.

The agencies request comments on the percentage of small carrier business that might be affected by the proposed speed limiting device requirements.

**Description of the projected reporting, record keeping and other compliance requirements for small entities.**

Vehicle Manufacturers

The impact on manufacturers of heavy vehicles, whether they are large or small businesses, would be minimal, because these vehicles are already equipped with electronic engine controls that include the capability to limit the speed of the vehicle.

Motor Carriers

FMCSA is proposing a complementary Federal motor carrier safety regulation (FMCSR) requiring multipurpose passenger vehicles, trucks, and buses with a GVWR of more than 11,793.4 kilograms (26,000 pounds) to be equipped with a speed limiting system meeting the requirements of the proposed FMVSS applicable to the vehicle at the time of manufacture,. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting systems for the service life of the vehicle.

The impact on small carriers could be significant from a competitive perspective. Regarding small trucking companies, the agencies predict that a speed limiting device might take away certain competitive advantages that small carriers might have over large trucking firms that already utilize speed limiting devices, but we have very limited knowledge of knowing whether that impact is 10 percent of their business, or more or less. We estimated that independent



owner-operators of combination trucks and single unit trucks would drive 33,675 million miles annually out of 112,249 million miles traveled by these vehicles on rural and urban interstate highways. With the estimated average wage of \$0.32/mile, the total annual revenue would be \$10,776 million. As described in detail earlier in the PRIA, unlike large trucking companies, small carriers with limited resources may not be able to increase the number of drivers to overcome the delay in delivery time. However, the competitive impacts are difficult to estimate. For example, with 65 mph speed limiting devices, we estimated that owner-operators would lose \$50 million annually. Accordingly, owner-operators would lose not more than 1% of their labor revenue. However, we note that the estimates were made based on very limited data. The agencies request comment on how large the economic impact might be on owner-operators.

Regarding small motorcoach companies, we have even more limited data to predict how affected small motorcoach companies would compensate for the delay in delivery time or to quantify the effect on those businesses. Like small trucking companies, small motorcoach companies might need additional drivers to cover the same routes with a speed limiting device if the speed limiting device reduces the distance they can travel within their maximum hours of service. If those companies were unable to hire additional drivers, they would likely lose market share to larger companies that could afford additional drivers.

The agencies believe that the proposed rule will affect small businesses, as discussed above; and may have a significant economic impact on a substantial number of small businesses. We request comment on the agencies' assumptions regarding how this rulemaking would affect small heavy vehicle operators, and we request comment on the type and magnitude of that effect

#### **Duplication with other Federal rules**

Although the heavy vehicle fuel efficiency program allows speed limiting devices as a compliance option for vehicle manufacturers, it does not require the devices.<sup>75</sup> If a manufacturer chooses to use a speed limiting device for compliance with that program, the speed limiting device must meet certain requirements. These requirements are not identical to the proposed FMVSS requirements. Specifically, the fuel efficiency program requirements permit speed limiting devices to have a soft top (i.e., a higher maximum speed than the set speed for a limited amount of time), which would not be permitted under the proposed FMVSS requirements. The fuel efficiency program also specifies certain tamper-proofing requirements that would not be required by the proposed FMVSS. Finally, the proposed FMVSS includes a requirement that there be a means of reading the last two speed setting modifications and the time and date of those modifications, which is not required for speed limiting devices under the fuel efficiency program.

Although the proposed speed limiting device requirements are different than those for speed limiting devices under the fuel efficiency program, the requirements are not incompatible, and manufacturers would be able to design speed limiting devices that satisfy the requirements of the proposed FMVSS and the requirements necessary for the devices to be used for compliance with the fuel efficiency program. Manufacturers that choose to use speed limiting systems as a means of compliance with the fuel efficiency program would need to design a system that meets the requirements of both the program and the proposed FMVSS, i.e., a speed limiting system with an initial speed setting no greater than 65 mph that cannot be adjusted above the speed used for compliance under the fuel efficiency program. Although the proposed FMVSS would not

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<sup>75</sup> See 40 CFR 1037.640.

prohibit a “soft top” feature, in order to meet the proposed requirements, the highest achievable speed using this feature would have to be initially set to a speed no greater than 65 mph.

**Description of any significant alternatives to the rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities**

The agencies examined the expected benefits and costs of alternative speed limiting requirements, including different maximum speed settings, various tamper resistance requirements, and alternative compliance test procedures. The agencies are also requesting comment on the potential alternative of tying set speed to the speed limit of the road using GPS, vision, or vehicle-to-infrastructure based technologies.

When speed limiters are required to set speeds at a particular speed, the requirement potentially imposes costs on CMV operators, including the small operators. A higher proposed speed setting would reduce the costs resulting from additional travel time. As explained in detail in the Unfunded Mandates Reform Act analysis, NHTSA and FMCSA carefully explored the initial speed setting. The benefits estimate showed that limiting vehicles to a speed of 65 mph would save substantially more lives than the slightly higher speed setting of 68 mph. This speed setting would also harmonize U.S. requirements with those of Ontario and Quebec.

The agencies requests comment on how the rule will impact small businesses and alternatives that would accomplish the objectives of the rulemaking while minimizing the impacts to small businesses.

C. Executive Order 13132 (Federalism)

NHTSA and FMCSA have examined today’s NPRM pursuant to Executive Order 13132 (64 FR 43255, August 10, 1999) and concluded that no additional consultation with States, local

governments or their representatives is mandated beyond the rulemaking process. The agencies have concluded that the rulemaking would not have sufficient federalism implications to warrant consultation with State and local officials or the preparation of a federalism summary impact statement. The proposed rule would not have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

NHTSA rules can have preemptive effect in two ways. First, the National Traffic and Motor Vehicle Safety Act contains an express preemption provision:

When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter.

49 U.S.C. § 30103(b)(1). It is this statutory command by Congress that preempts any non-identical State legislative and administrative law<sup>76</sup> addressing the same aspect of performance.

The proposed FMVSS would preempt State laws or regulations addressing heavy vehicle speed limiting devices. However, the proposed FMVSS would not affect the States’ ability to set maximum speed limits for public roads and highways, even if the posted speed limits for heavy vehicles are different than the set speed mandated when the vehicles are manufactured and sold.

The express preemption provision described above is subject to a savings clause under which “[c]ompliance with a motor vehicle safety standard prescribed under this chapter does not exempt a person from liability at common law.” 49 U.S.C. § 30103(e) Pursuant to this

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<sup>76</sup> The issue of whether there is any potential for preemption of state tort law is addressed in the immediately following paragraph discussing the operation of implied preemption.

provision, State common law tort causes of action against motor vehicle manufacturers that might otherwise be preempted by the express preemption provision are generally preserved. However, the Supreme Court has recognized the possibility, in some instances, of implied preemption of State common law tort causes of action by virtue of NHTSA's rules—even if not expressly preempted.

This second way that NHTSA rules can preempt is dependent upon the existence of an actual conflict between an FMVSS and the higher standard that would effectively be imposed on motor vehicle manufacturers if someone obtained a State common law tort judgment against the manufacturer—notwithstanding the manufacturer's compliance with the NHTSA standard. Because most NHTSA standards established by an FMVSS are minimum standards, a State common law tort cause of action that seeks to impose a higher standard on motor vehicle manufacturers will generally not be preempted. However, if and when such a conflict does exist—for example, when the standard at issue is both a minimum and a maximum standard—the State common law tort cause of action is impliedly preempted. See Geier v. American Honda Motor Co., 529 U.S. 861 (2000).

Pursuant to Executive Order 13132, NHTSA has considered whether this rule could or should preempt State common law causes of action. The agency's ability to announce its conclusion regarding the preemptive effect of one of its rules reduces the likelihood that preemption will be an issue in any subsequent tort litigation.

To this end, NHTSA has examined the nature (e.g., the language and structure of the regulatory text) and objectives of today's proposal and finds that this proposal, like many NHTSA rules, prescribes only a minimum safety standard. Accordingly, NHTSA does not intend that this proposal preempt state tort law that would effectively impose a higher standard

on motor vehicle manufacturers than that established by today's proposal. Establishment of a higher standard by means of State tort law would not conflict with the minimum standard established in this document. Without any conflict, there could not be any implied preemption of a State common law tort cause of action.

With a few exceptions not applicable here, FMCSA regulations do not have preemptive effect. However, States that accept MCSAP grant funds – currently all 50 States and the District of Columbia – must adopt regulations “compatible” with many provisions of the FMCSRs. Pursuant to MCSAP, participating States would be required to adopt and enforce, within 3 years of the effective date of a final rule, State laws or regulations applicable both to interstate and intrastate commerce that have the same effect as proposed 49 CFR 393.85. In other words, States would have to prohibit even motor carriers operating entirely in intrastate commerce from re-setting their speed limiting devices to speeds above the maximum specified set speed. Because State participation in MCSAP is voluntary, the program does not have federalism implications.

We solicit the comments of the States and other interested parties on this assessment of issues relevant to E.O. 13132.

#### D. Executive Order 12988 (Civil Justice Reform)

When promulgating a regulation, Executive Order 12988 specifically requires that the agency must make every reasonable effort to ensure that the regulation, as appropriate: (1) specifies in clear language the preemptive effect; (2) specifies in clear language the effect on existing Federal law or regulation, including all provisions repealed, circumscribed, displaced, impaired, or modified; (3) provides a clear legal standard for affected conduct rather than a general standard, while promoting simplification and burden reduction; (4) specifies in clear

language the retroactive effect; (5) specifies whether administrative proceedings are to be required before parties may file suit in court; (6) explicitly or implicitly defines key terms; and (7) addresses other important issues affecting clarity and general draftsmanship of regulations.

Pursuant to this Order, NHTSA and FMCSA note as follows. The preemptive effect of this proposal is discussed above in connection with Executive Order 13132. NHTSA and FMCSA note further that there is no requirement that individuals submit a petition for reconsideration or pursue other administrative proceeding before they may file suit in court.

#### E. Executive Order 13609 (Promoting International Regulatory Cooperation)

The policy statement in section 1 of Executive Order 13609 provides, in part:

The regulatory approaches taken by foreign governments may differ from those taken by U.S. regulatory agencies to address similar issues. In some cases, the differences between the regulatory approaches of U.S. agencies and those of their foreign counterparts might not be necessary and might impair the ability of American businesses to export and compete internationally. In meeting shared challenges involving health, safety, labor, security, environmental, and other issues, international regulatory cooperation can identify approaches that are at least as protective as those that are or would be adopted in the absence of such cooperation. International regulatory cooperation can also reduce, eliminate, or prevent unnecessary differences in regulatory requirements.

The regulatory approaches to speed limiting devices taken by certain foreign governments are discussed in Section V above. The proposed FMVSS adopts an approach that is similar to the widely used UNECE regulation. Specifically, NHTSA is proposing a test procedure substantially patterned after UNECE R89, which is described above. NHTSA requests public comment on whether (a) the “regulatory approaches taken by foreign governments” concerning the subject matter of this rulemaking and (b) the above policy statement have any implications for this rulemaking.

#### F. Executive Order 12630 (Taking of Private Property)

This rulemaking would not effect a taking of private property or otherwise have takings implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

G. Executive Order 12372 (Intergovernmental Review)

The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this action.

H. Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

We analyzed this rulemaking under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, and determined that it does not have a substantial effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

I. Executive Order 13045 (Protection of Children)

We analyzed this action under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. We determined that this NPRM would not pose an environmental risk to health or safety that might affect children disproportionately.

J. Executive Order 13211 (Energy Effects)

FMCSA analyzed this action under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have determined that it is not a “significant energy action” under that Executive Order because while this is an economically significant rulemaking it is not likely to have an adverse effect on the supply, distribution, or use of energy. In fact, this rulemaking would have a positive impact on the energy supply.



#### K. National Technology Transfer and Advancement Act

Under the National Technology Transfer and Advancement Act of 1995 (NTTAA) (Public Law 104-113) (15 U.S.C. § 3701 note), “all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.” Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as SAE International (SAE). The NTTAA directs agencies to provide Congress, through OMB, explanations when they decide not to use available and applicable voluntary consensus standards.

NHTSA and FMCSA are not aware of any voluntary consensus standards related to the proposed speed limiting device requirements that are available at this time. However, we will consider any such standards as they become available and seek comment on whether any such standards exist.

#### L. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually (adjusted for inflation with base year of 1995). In 2013 dollars, this threshold is \$141 million. This joint rulemaking is not expected to result in the expenditure by State, local, or tribal governments, in the aggregate, of more than \$141 million annually, but the proposed rules could result in the expenditure of that magnitude by the private sector.

As noted previously, the agencies have prepared a detailed economic assessment in the PRIA. That assessment analyzes the benefits and costs of the proposed speed limiting device requirements for multipurpose passenger vehicles, trucks, buses, and school buses with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds). The agencies' preliminary analysis indicates that although the proposed rule would result in minimal costs to vehicle manufacturers, it could result in expenditures by CMV operators of \$1,534 million annually for 60 mph speed limiters, \$514 million annually for 65 mph speed limiters, and \$206 million annually for 68 mph speed limiters assuming a 7 percent discount rate. . This is because limiting vehicles to speeds will increased travel time.

The PRIA also analyzes the expected benefits and costs of alternative speed limiting requirements, including different speed settings, various tamper resistance requirements, and alternative compliance test procedures. The proposed speed setting is the requirement that potentially imposes costs on CMV operators. As explained in detail in the PRIA and Section VIII of the preamble for this proposal, NHTSA and FMCSA carefully explored alternative requirements for the initial speed setting. The benefits estimate showed that limiting vehicles to a speed of 65 mph would save substantially more lives than the higher petitioned speed setting of 68 mph. Some additional safety benefits may be realized with a lower speed setting of 60 mph. A 65 mph set speed requirement would harmonize U.S. requirements with those of Ontario and Quebec.

Additionally, as described in Section X.A.2, above, the agencies estimate that the proposal would result in substantial fuel savings. The fuel savings would offset the costs to CMV operators resulting from increased travel time. Assuming that vehicle manufacturers design their speed limiting devices so that the devices also meet the necessary requirements to be used for

compliance with the medium- and heavy-duty vehicle fuel efficiency program (which the agencies expect they will),<sup>77</sup> the fuel savings resulting from this rulemaking would be maximized with a set speed of 65 mph because the additional fuel savings for set speeds below 65 mph were accounted for in the heavy vehicle fuel efficiency program final rule.<sup>78</sup>

Specifically, under the medium- and heavy-duty vehicle fuel efficiency program, heavy vehicle drive cycles are evaluated at a maximum speed of 65 mph,<sup>79</sup> and a speed limiting device with a setting at or above 65 mph will show no fuel savings.<sup>80</sup> Thus, any fuel savings associated with speed settings of 65 mph and above were not estimated in the fuel efficiency program rulemaking. However, fuel efficiency evaluation under the program would reflect the difference in fuel consumption between the 65 mph baseline and a speed limiting device with a set speed below 65 mph,<sup>81</sup> and the heavy-duty vehicle fuel efficiency final rule has already accounted for the fuel savings resulting from this difference. Accordingly, no additional fuel savings from a set speed below 65 mph could be attributed to this rulemaking without double counting the benefits of the heavy-duty vehicle fuel efficiency program.

Comparing the costs and fuel savings of the various speed setting alternatives, which are discussed in detail in the PRIA, the agencies estimate that limiting heavy vehicles to 68 mph would result in \$209 million in costs (assuming a 7 percent discount rate) from increased travel times, as compared to \$523 million in costs associated with limiting vehicles to 65 mph.

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<sup>77</sup> 40 CFR 1037.640.

<sup>78</sup> 76 FR 57106 (Sep. 15, 2011).

<sup>79</sup> 76 FR 57182; Final Rulemaking to Establish Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, Regulatory Impact Analysis, Section 4.2.4, EPA-420-R-11-901 (August 2011), available at <http://www.nhtsa.gov/fuel-economy>.

<sup>80</sup> 75 FR at 57155.

<sup>81</sup> Id.

However, the cost difference would be offset by additional fuel savings that would be realized with a 65 mph speed setting versus a 68 mph speed.

The agencies estimate that limiting heavy vehicles to 60 mph would result in \$1,561 million in costs (assuming a 7 percent discount rate) from increased travel times, i.e., an increase in costs of \$1,038 million compared to the costs of a 65 mph speed setting. However, as explained above, assuming that vehicle manufacturers design their speed limiting devices so that the devices also meet the necessary requirements to be used for compliance with the heavy-duty vehicle fuel efficiency program, no additional fuel savings from limiting vehicles to 60 mph versus 65 mph could be attributed to this rulemaking without double counting the benefits already accounted for in the medium- and heavy-duty vehicle fuel efficiency program rulemaking.

#### M. National Environmental Policy Act

NHTSA and FMCSA have analyzed this NPRM for the purpose of the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 et seq.) and determined that this action may have an impact on the quality of the human environment. Concurrently with this NPRM, the agencies are releasing a Draft Environmental Assessment (Draft EA), pursuant to NEPA and implementing regulations and procedures issued by the Council on Environmental Quality (CEQ) (40 CFR Parts 1500–1508), NHTSA (49 CFR Part 520), and FMCSA (Order 5610.1, issued March 1, 2004 [69 FR 9680]). The agencies prepared the Draft EA to analyze the potential environmental impacts of the proposal to require installation of speed limiters in new heavy vehicles and maintenance of a maximum speed setting by motor carriers operating affected vehicles. The Draft Environmental Assessment, which informs this NPRM, is available for inspection or copying in the Regulations.gov website listed under ADDRESSES.

The Draft EA analyzes the possible environmental impacts of heavy vehicles driving at slower speeds due to the use of vehicle speed limiters set at three alternative maximum speeds: 60 mph, 65 mph, and 68 mph. The Draft EA also analyzes and compares these action alternatives to a “No Action Alternative” based on current driving behavior. The resource areas that may be affected by the proposed action include air quality, public health and safety, and solid waste and hazardous materials. In addition, the Draft EA addresses the agencies’ analysis required by Section 176(c) of the Clean Air Act.

NHTSA and FMCSA have reviewed the information presented in the Draft EA and conclude that the proposed action would have an overall positive impact on the quality of the human environment. In particular, the agencies anticipate reductions in most harmful air pollutant emissions, benefits from reduced fuel use (including reductions in carbon dioxide emissions), and reductions in releases of solid waste and hazardous materials corresponding to reductions in crash severity. The Draft EA shows anticipated increases in some harmful air pollutant emissions. The degree of impacts for each alternative correlate with the degree of speed reduction anticipated under that alternative. Overall, these impacts are not anticipated to be great in intensity, and they will occur so far into the future (as a result of slow fleet turnover where new vehicles subject to the requirements make up only a small percentage of on-road vehicles in the short term) that they are subject to considerable uncertainty. Still, for each action alternative, the environmental impacts of the proposed action are expected to be beneficial when taken together and are not expected to rise to a level of significance that necessitates the preparation of an Environmental Impact Statement.

The Draft EA is open for public comment. The agencies will consider all comments received in preparing and reviewing the Final EA. At this time, based on the information in the

Draft EA and assuming no additional information or changed circumstances, the agencies expect to issue a Finding of No Significant Impact. A FONSI, if appropriate, would be issued concurrent with the Final EA. However, any such finding will not be made before careful review of all comments.

#### N. Environmental Justice

We evaluated the environmental effects of this NPRM in accordance with E.O. 12898 and determined that there are neither environmental justice issues associated with its provisions nor any collective environmental impact resulting from its promulgation. Environmental justice issues would be raised if there were a “disproportionate” and “high and adverse impact” on minority or low-income populations. None of the alternatives analyzed in FMCSA or NHTSA’s deliberations would result in high and adverse environmental justice impacts.

#### O. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, et seq.), Federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct, sponsor, or require through regulations. This rulemaking would not establish any new information collection requirements.

#### P. Plain Language

Executive Order 12866 requires each agency to write all rules in plain language.

Application of the principles of plain language includes consideration of the following questions:

- Have we organized the material to suit the public's needs?
- Are the requirements in the rule clearly stated?
- Does the rule contain technical language or jargon that isn't clear?

- Would a different format (grouping and order of sections, use of headings, paragraphing) make the rule easier to understand?
- Would more (but shorter) sections be better?
- Could we improve clarity by adding tables, lists, or diagrams?
- What else could we do to make the rule easier to understand?

If you have any responses to these questions, please include them in your comments on this proposal.

#### Q. Privacy Impact Assessment

Section 522 of Title I of Division H of the Consolidated Appropriations Act, 2005, enacted December 8, 2004 (Pub. L. 108-447, 118 Stat. 2809, 3268, 5 U.S.C. 552a note), requires the agencies to conduct a privacy impact assessment (PIA) of a proposed regulation that will affect the privacy of individuals. This joint rulemaking would not require the collection of any personally identifiable information or otherwise affect the privacy of individuals, and thus no PIA is required.

#### R. Regulation Identifier Number (RIN)

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the NHTSA and FMCSA RINs contained in the heading at the beginning of this document to find this action in the Unified Agenda.

Proposed Regulatory Text

#### **List of Subjects**

#### **49 CFR Part 393**

Highways and roads, Incorporation by reference, Motor carriers, Motor vehicle equipment, Motor vehicle safety.

#### **49 CFR Part 571**

Imports, Motor vehicle safety, Reporting and recordkeeping requirements, Tires.

In consideration of the foregoing, FMCSA and NHTSA propose to amend 49 CFR Parts 393 and 571, respectively, as follows:

### **PART 393 – PARTS AND ACCESSORIES NECESSARY FOR SAFE OPERATION**

1. The authority citation for Part 393 of title 49 continues to read as follows:

Authority: 49 U.S.C. 31136, 31151, and 31502; sec. 1041(b) of Pub. L. 102-240, 105 Stat. 1914, 1993 (1991); and 49 CFR 1.87.

2. Amend § 393.5 to include, in alphabetical order, a definition of “speed limiting device.”

#### **§ 393.5 Definitions**

*Speed limiting device* means a device or function in a vehicle capable of limiting the maximum motive power-controlled speed at which the vehicle may operate.

3 Add § 393.85 to read as follows:

#### **§ 393.85 Speed Limiting Devices.**

(a) Requirements. Each multipurpose passenger vehicle, truck, bus and school bus with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds) manufactured on or after September 1, 2020, shall be equipped with a device that limits its speed to [a speed to be specified in a final rule] as required by Federal Motor Vehicle Safety Standard No. 140 (49 CFR 571.140).



## **PART 571 – FEDERAL MOTOR VEHICLE SAFETY STANDARDS**

4. The authority citation for Part 571 of Title 49 continues to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.95.

5. Add § 571.140 to subpart B to read as follows:

### **§ 571.140 Standard No. 140; Speed limiting devices.**

S1. Scope. This standard specifies performance requirements for vehicle speed limiting functionality used to limit the road speed of motor vehicles.

S2. Purpose. The purpose of this standard is to reduce the number of deaths and injuries that occur in crashes when heavy vehicles are traveling at high speeds.

S3. Application. This standard applies to multipurpose passenger vehicles, trucks, buses, and school buses with a gross vehicle weight rating of more than 11,793.4 kilograms (26,000 pounds).

S4. Definitions.

Maximum Speed ( $V_{max}$ ) means the maximum speed reached by the vehicle.

Set speed ( $V_{set}$ ) means the intended mean vehicle speed when operating in a stabilized condition.

Speed determination parameters are the vehicle parameters used by the speed limiting device to calculate the vehicle's speed including tire size and gear ratios.

Speed limiting device means a device or function in a vehicle capable of limiting the maximum motive power-controlled speed at which the vehicle may operate.

Stabilized speed ( $V_{stab}$ ) means the average vehicle speed as limited by the vehicle speed limiting device calculated according to S7.4.

S5. Requirements. Each vehicle manufactured on or after September 1, 2020, shall be equipped with a speed limiting device and meet the requirements specified in this section.

S5.1 Equipment Requirements. The speed limiting device shall meet the requirements in paragraphs S5.1.1 through S5.1.2.

S5.1.1 Readable Information. The information specified in paragraphs S5.1.1.1 through S5.1.1.3 shall be readable by means of a connector meeting the requirements of 40 CFR 86.010-18.

S5.1.1.1 Current Settings. The current set speed ( $V_{set}$ ) and current speed determination parameters.

S5.1.1.2 Previous  $V_{set}$ .

(a) If the  $V_{set}$  has changed once, the previous  $V_{set}$  value and the time and date of the  $V_{set}$  change.

(b) If the  $V_{set}$  has changed two or more times, the two most recent  $V_{set}$  values set prior to the current  $V_{set}$  value and the time and date of the two most recent  $V_{set}$  changes.

S5.1.1.3 Previous Speed Determination Parameter Values. For each speed determination parameter that has changed, the following information:

(a) If the speed determination parameter has changed once, the previous value for each changed parameter and the time and date of the parameter change.

(b) If the speed determination parameter has changed two or more times, the two most recent values for the parameter set prior to the current parameter value and the time and date of the two most recent changes to the parameter.

S5.1.2 Modification. A means shall be provided to modify the speed determination parameters.

S5.2 Performance Requirements. When tested according to S6 and S7, the vehicle shall perform as follows:

S5.2.1 The set speed ( $V_{\text{set}}$ ) shall be no greater than [a speed to be specified in a final rule].

S5.2.2 After the vehicle speed has reached 95% of  $V_{\text{set}}$  for the first time,  $V_{\text{max}}$  shall not exceed  $V_{\text{stab}}$  by more than 5%.

S5.2.3 Ten seconds after the vehicle first reaches 95% of  $V_{\text{set}}$  and beyond:

S5.2.3.1 The vehicle speed shall not vary by more than  $\pm 2\%$  of  $V_{\text{stab}}$ , and

S5.2.3.2  $V_{\text{stab}}$  as calculated according to S7.4 shall be no greater than  $V_{\text{set}}$ .

S5.3 The speed limiting device may allow normal acceleration control for the purpose of gear changing.

S6. Test Conditions.

S6.1 Ambient conditions.

S6.1.1 The ambient temperature is between 7° C (45° F) and 40° C (105° F).

S6.1.2 The wind speed is less than 5m/s (11 mph).

S6.2 Road test surface.

S6.2.1 The test track is suitable to enable a stabilization speed to be maintained and the test surface is solid-paved, uniform, without irregularities, undulations, dips or large cracks.

Gradients do not exceed 2% and do not vary by more than 1% excluding camber effects.

S6.2.2 The test surface is free from standing water, snow, or ice.

S6.3 Vehicle conditions

S6.3.1 Tires. The vehicle is tested with the tires installed on the vehicle at the time of initial vehicle sale. The tires are inflated to the vehicle manufacturer's recommended cold tire inflation pressure(s).

S6.3.2 The vehicle is tested in an unloaded condition with a single operator and necessary test equipment.

S6.3.3 A truck tractor is tested without a trailer.

#### S6.4 Test equipment

S6.4.1 The speed measurement is independent of the vehicle speedometer and is accurate within plus or minus 1%.

#### S7. Running the test

S7.1 The vehicle, running at a speed which is 10 km/h below the set speed, is accelerated at a smooth and progressive rate using a full positive action on the accelerator control.

S7.2 This action is maintained at least 30 seconds after the vehicle speed has reached 95% of  $V_{set}$ .

S7.3 The instantaneous vehicle speed is recorded at a frequency of at least 100 Hz during the testing in order to establish the speed versus time plot as shown in Figure 1.

S7.4  $V_{stab}$  is the average vehicle speed starting ten seconds after the vehicle first reaches a speed equal to 95% of  $V_{set}$  measured over a duration of at least 20 seconds.

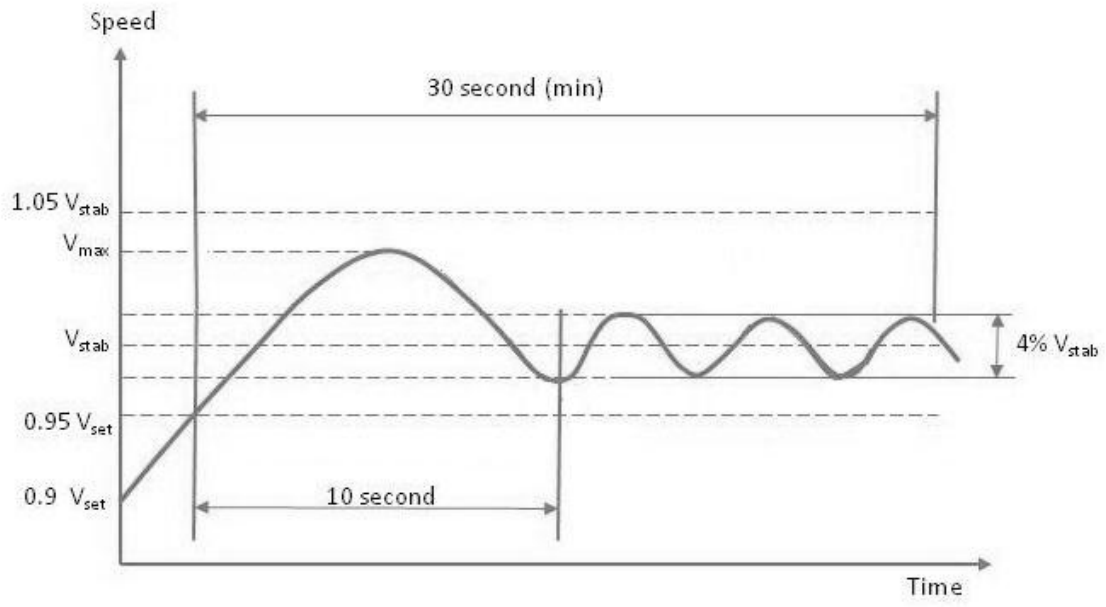


FIGURE 1

Issued under the authority delegated in 49 CFR 1.87 on:

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T.F. Scott Darling, III  
Administrator

Issued under the authority delegated in 49 CFR 1.95 on:

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Mark R. Rosekind, Ph.D.  
Administrator

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[Signature page for NPRM; Heavy Vehicle Speed Limiting devices]