

***SPEED LIMITERS SAVE MONEY AND FUEL WITHOUT SIGNIFICANT PRODUCTIVITY LOSS***

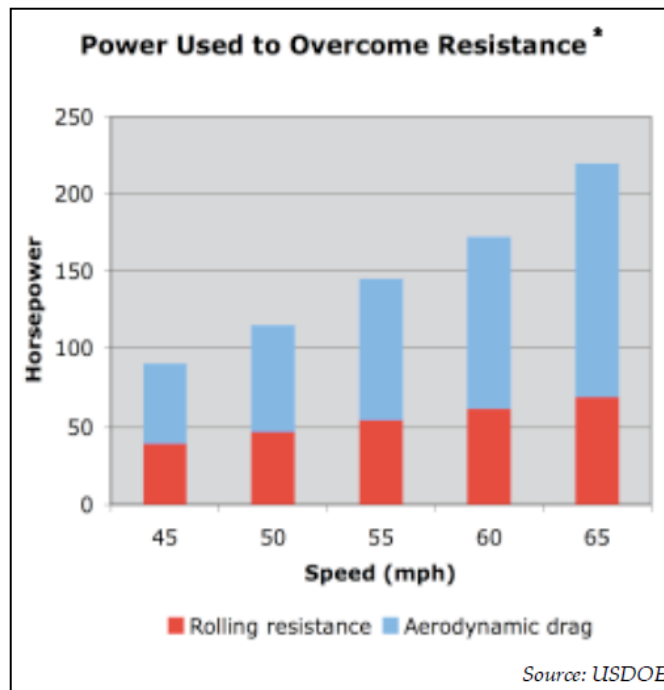
**Summary Statement**

In this report, the effects on limiting the road speed of heavy duty vehicles will be explored. It is common knowledge that the faster a truck is propelled, the more energy it requires to accelerate to the desired speed as well as to maintain that speed. Reducing speed saves fuel and at most times only adds minutes to the travel time. Slower speed requires less work from the powertrain, decreasing vehicle maintenance as well. In today’s modern vehicles, the top speed can easily be limited through the engine’s electronic control module (ECM).

Although a perceived loss of productivity associated with reduced travel speed has been a concern, four major US fleets have reported no significant loss of productivity on 98% of their freight shipments after limiting their truck’s speeds. Of the shipments that were affected, the difference was measured in minutes per day. With this in mind, the overall reduction of road speed does not seem to have an adverse effect on productivity.

**Technical Summary**

The faster a vehicle travels the more fuel it must use. Outside forces, such as wind resistance and drag, rolling resistance at the road surface and mechanical friction in the powertrain, increase as the speed goes up. As the U.S. Department of Energy (DOE) chart explains below, the power required overcoming rolling resistance and aerodynamic drag becomes very significant at higher speeds. Consequently, fuel consumption increases at an exponential rate due to these factors.



On today's modern engines, maximum propelled vehicle speed, both controlled by the driver's pedal and cruise control, can be set through a laptop computer linked to the vehicle's ECM at most repair facilities and dealerships. Parameters can be set and password protected to prevent unwanted changes to these settings. For instance in some cases the top speed can be programmed to be set higher if cruise is activated.

Care must be taken to select a top speed that operates within the truck's "sweet spot," in other words the RPM range in which the engine is most efficient. Careful vehicle specification can customize your new truck to operate in that range where the desired speed matches peak efficiency. A retrofitted rear differential gear ratio will accomplish the same objective on a truck already in use.

### **Economics**

According to the ATA's Technology & Maintenance Council (TMC), fuel consumption is reduced on average by 0.1 MPG for every MPH speed increase above 55 MPH.. Providing the specified gear ratios are correct, the difference between 55 & 65 MPH can be up to a full 1 MPG.

Additionally, there is a reduction of 1% in tire tread life for every 1 MPH over 55 MPH on average. On most occasions, travel time is only elongated by a matter of minutes thus no significant loss in productivity is realized.

### **Existing Practices**

The European Union has limited the speed of heavy duty trucks and buses to 62 MPH since 1994. Australia limits the speed of their large trucks to 62 MPH since 1990 with the exception being "road trains" that are limited to 56 MPH. Both the EU and Australia claim economic benefit from these actions.

Most recently, Japan and the Canadian provinces of Quebec and Ontario have enacted a mandate of speed limiters. Japan has limited their trucks to 56 MPH while Canada's limit is set to 65 MPH.

### **Real World Application**

Several large trucking companies have adopted speed limitation with success and have proven savings in fuel economy. A brief list of some companies that have adopted this practice: Conway, Schneider National, Werner, PepsiAmericas, Coca-Cola Enterprises, and Kraft Foods.

### **Safety Concerns**

Safety aspects of using speed limiters can suggest both positives, and negatives. It is true that a decreased speed equates to a shorter stopping distance and improved

collision avoidance, and an overall decrease in severity of damage if an impact does occur. However some industry members suggest that a vehicle going below the speed of traffic flow can be a safety hazard. A slower moving vehicle can create a traffic obstruction and may lead to risk.

### **Government / Regulatory issues**

There are no known obstacles in the U.S. Federal operating territories or states that would prohibit adoption/use of this technology. In fact, organizations such as the American Trucking Association as well as an organization called “Road Safe America” along with nine motor carriers had petitioned the NHTSA (National Highway Safety Administration) in 2006 asking that all trucks over 26,000 pounds (Class 7 & 8) be limited to 68 MPH. In 2009, the FMCSA commissioned a study into the effect of such a ruling and is still gathering data. Finally, in early 2011, the NHTSA responded to the ATAs request to limit speed, stating the petitions merit further consideration through the agency’s rulemaking process. The NHTSA stated it would consider a rule requiring speed limiters to be installed by truck manufacturers limiting speed to 68 MPH as soon as 2012.

### **Want more information?**

The North American Council for Freight Efficiency is a Non-profit organization dedicated to doubling the freight efficiency of North American goods movement. We pursue this goal in two ways: Improving the quality and reliability of Information and Highlighting the success of high efficiency technologies. These Executive Reports are the most general level information that the Council creates in delivering to this mission. This information is directional in nature and limited in scope to an analysis of a few US fleet operators. Performance results and costs will vary depending on specifications, duty cycle, geography and other criteria. The information contained in this report and the underlying data supportive of the report are intended for the benefit of NACFE members and their fleets. Contact the Council at [contact@nacfe.org](mailto:contact@nacfe.org) for more information or simply to comment on this report.