

**The Role of Speed Governors in Truck  
Safety  
Industry Speed Governor Use Survey**

**Preliminary Analysis**

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## **Background**

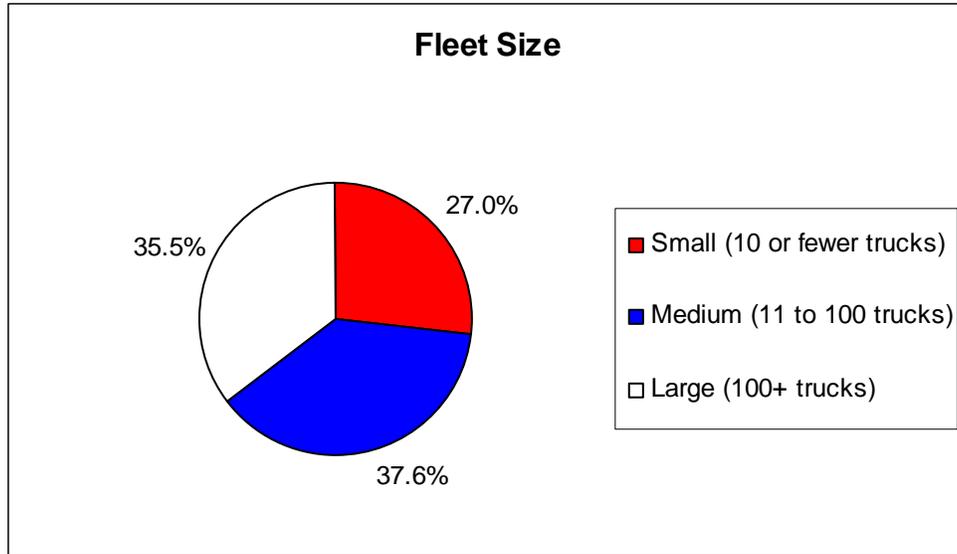
Over the past few years, automatic speed governors have become an increasingly common, yet sometimes controversial, addition to trucking industry assets. Today, nearly all engine manufacturers offer some form of speed governor and, likewise, the majority of motor carriers and drivers are familiar with speed governors, either through firsthand experience or communication with others in the industry.

As part of its larger initiative to examine the safety impact of speed differentials in the trucking industry, ATRI has begun a study focusing on the safety consequences of speed differentials caused by the use of truck speed governors. Other research components include analyzing the effect of posted speed differentials and naturalistic speed differentials that exist between cars during normal and inclement-weather conditions. The analysis will also look at “ideal speeds” for maximizing different operating objectives such as productivity, safety, and fuel-efficiency. Ultimately the data will be modeled to calculate crash exposure levels, requisite counter-measures and speed-operating objective matrices.

## **Speed Governors: Respondent Demographics**

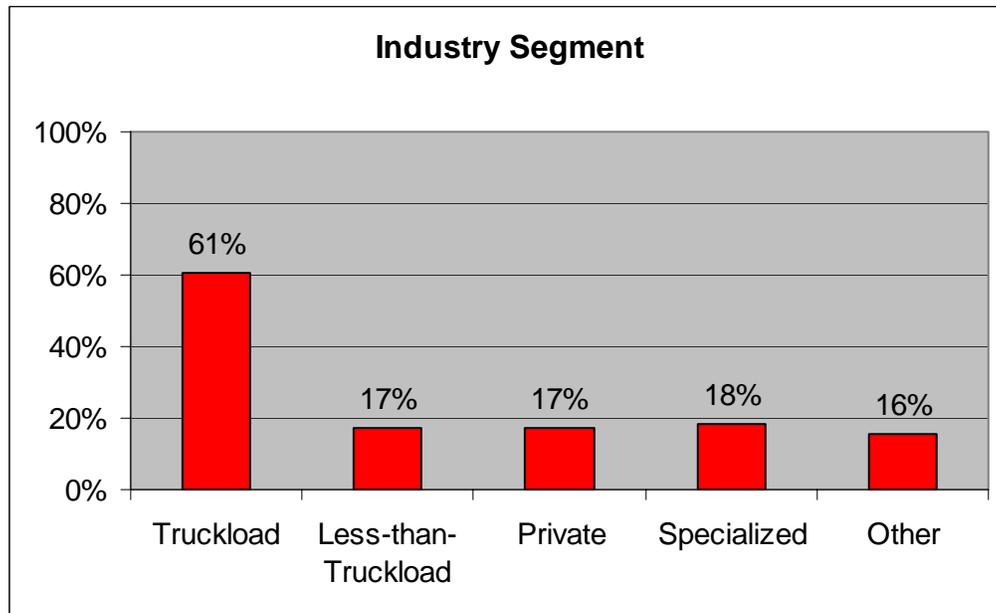
In February 2007, ATRI began soliciting carriers and drivers to provide input on the use of speed governors through an online survey. The respondents, ranging from single-truck owner-operators to carriers with a fleet size of over 27,000 trucks, are representative of trucking industry diversity in terms of fleet size and operating segment. Responses were received from traditional dry-van freight companies, auto carriers, expedited delivery firms, tank haulers, and several driver training institutions. At the time of this analysis, 148 discrete responses had been received.

Respondents were asked to indicate the number of vehicles operated (fleet size) for which the mean and median responses were 805 and 46 trucks, respectively. Nine percent of respondents operated a single vehicle, primarily owner-operators. Figure 1 shows the breakdown of all respondents by fleet size.



**Figure 1**

Figure 2, details the industry segment within which respondents reported operating.



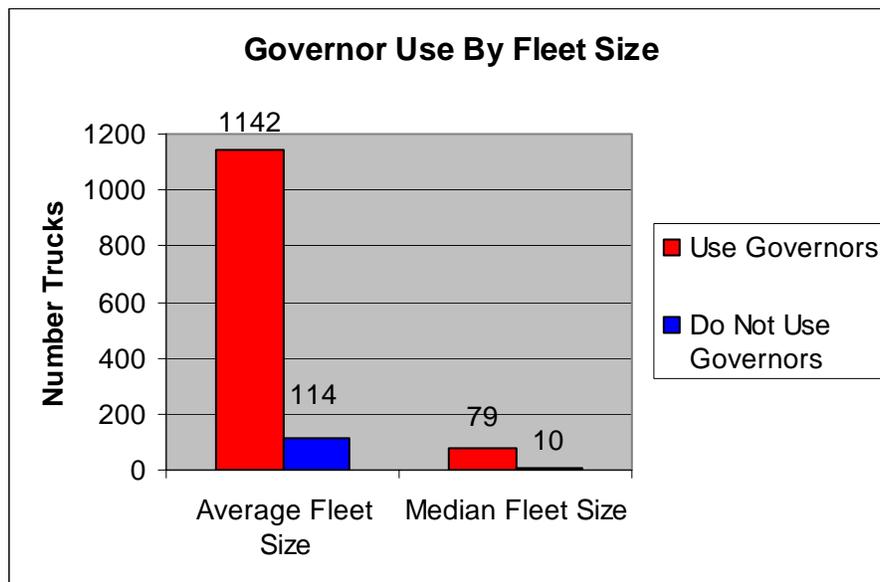
\*Respondents could choose more than one industry segment.

**Figure 2**

## Speed Governor Prevalence

When asked about the use of speed governors, 69 percent of respondents reported using governors on at least some fleet vehicles. Of the respondents who use governors, 69 percent do so on all fleet vehicles and 81 percent utilize governors on at least 90 percent of fleet vehicles. No significant statistical relationships were seen between industry segment and the use or non-use of speed governors.

While there is too little respondent data at this point in the survey to make a strong statistical claim about the relationship between fleet size and governor use, important differences in fleet size were observed. The mean average fleet size of carriers not using governors was 114 trucks, compared to an average fleet size of 1,142 vehicles among carriers utilizing governors. Similarly, the median fleet size among carriers that did not use governors was 10, while the median size among carriers that did use governors was 79.



**Figure 3**

Respondents were queried on the average trip length for trucks on which governors are installed and the percent of those miles logged on the interstate (versus secondary and arterial roads). The mean average response was 741 miles, with 73.6 percent of those miles logged on the interstate.

The vast majority (96%) of carriers incorporating governors into fleet operations used the standard OEM-installed governor, although one respondent claimed to use a computer system that could dynamically govern truck engines from the

company's headquarters. Several respondents who did not use governors reported examining the potential for this type of system for managing vehicle speed.

Of carriers that utilize owner-operators, 24.5 percent require these drivers to utilize speed governors. Among this group of carriers, all but one require that owner-operators govern their trucks at the same speed as the company-owned fleet.

### **Reasons for Not Using Speed Governors**

Respondents who did not use speed governors were asked the reason for not using the technology. Safety concerns were most commonly cited, with 40.5 percent of respondents reporting the belief that safety was compromised through the use of governors as a result of the car-truck speed differential created and its impact on traffic flow. Other common responses included the assertion that owner-operators leased by the company refused to utilize governors (18.2%) and the strain placed on company/driver relationships (6.8%) as a result of governor use.

### **Governor Speed Settings**

Carriers that used speed governors were asked to identify the speed at which governors were set. The respondents reported a broad range of speeds, with variance based on such factors as the geographic range of operation (intrastate or interstate), operating segments of the truck (local or over-the-road), age of the truck (new purchase or older equipment) and employment relationship between the driver and carrier (company-employed or leased owner-operator). In cases where a range of speeds was provided by the carrier, the average speed in the range was used for between-carrier comparisons.

The speeds at which speed governors were set ranged from 60 mph to 85 mph, with a standard deviation of 4.13 mph. Mean and median speeds were both 69 mph, with 70 mph the most commonly cited response.

A statistically significant inverse correlation was seen between governor speed settings and fleet size, indicating that larger carriers are more likely to use a lower speed governor setting than smaller carriers. For instance, while 33.3 percent of small carriers and 34.2 percent of medium sized carriers set governor speeds higher than 70 mph, only 15 percent of larger carriers chose to do so. Likewise, 32.5 percent of large carriers chose a speed setting of 65 mph or lower while 27.6 percent of small carriers and 15.8 percent of medium sized carriers chose this setting. No significant relationships were found between the industry segment in which carriers operate and speed governor settings.

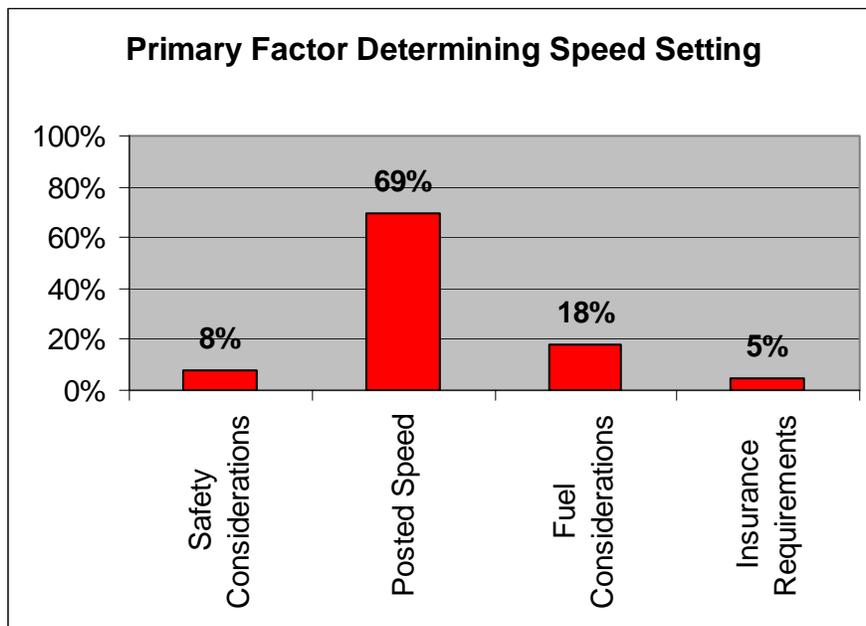
## Cruise Control Settings

Carriers were asked to detail the differences, if any, between maximum allowable governed cruise control speed settings and maximum allowable on-pedal speed governor settings. Responses indicated that 37.8 percent of carriers set the maximum allowable cruise control speed at a different setting than the maximum on-pedal governor allowed speed. Of carriers that use different speeds for cruise and on-pedal, 61 percent use a higher setting for on-pedal while 39 percent use a lower speed.

All carriers indicated the different speed settings being utilized to increase driver safety or to improve fuel performance. Carriers opting for higher on-pedal speeds typically indicated a desire to provide drivers with the ability to pass when necessary whereas carriers allowing higher cruise speeds do so to encourage the use of cruise control for greater fuel efficiency.

## Speed Setting Determination

Carriers were asked the rationale for determining speed governor settings. The responses are summarized in Figure 4 below.



**Figure 4**

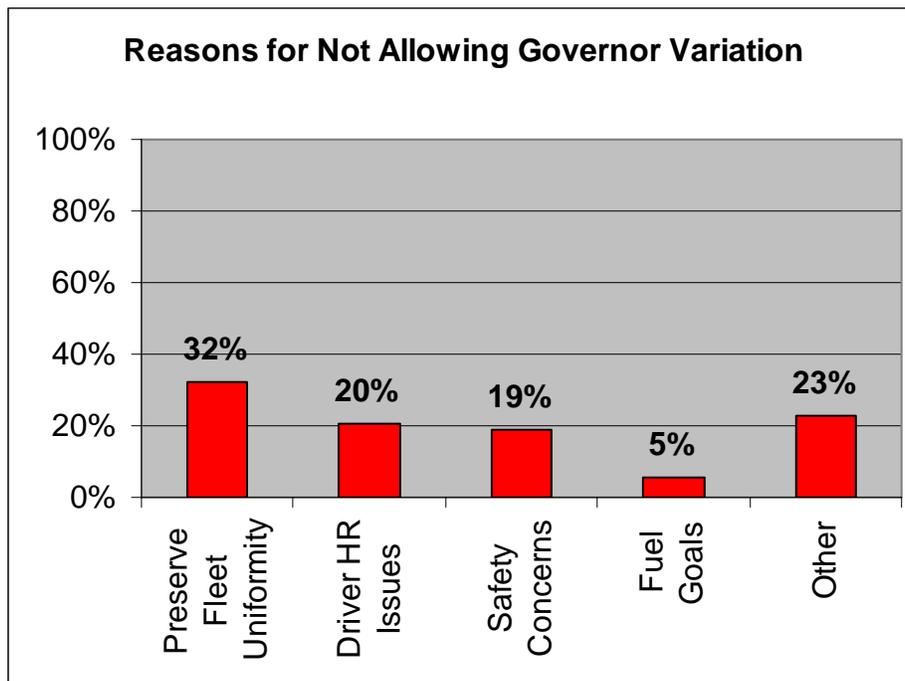
As Figure 4 demonstrates, the majority (69.4%) of carriers base speed governor settings on the highest posted highway speeds in the areas of operation. The

qualitative responses indicate that many carriers also believe the posted speed limit is the safe speed at which to operate. No significant relationships were observed between industry segment or fleet size and the basis for determining speed governor settings.

**Speed Setting Variations**

Carriers were asked whether variation in the speed at which the speed governor is set is allowed, based either on past driver behavior or other factors; 15.4 percent of respondents indicated yes. Of carriers that allowed speed setting variations, 64.3 percent used the variation as an incentive to encourage drivers to adhere to company policies. For example, a driver who met certain mpg targets or logged a certain number of miles without an accident was allowed to have the speed governor setting increased. The remaining companies used the governor as a disincentive, lowering the speed for drivers who had violated company policies in some way.

For the 84.6 percent of carriers that did not allow between-driver variations in speed governor settings, the reasons for this position were more complex. Figure 5 details the reasons provided.



**Figure 5**

## **Driver Tampering with Speed Governors**

Respondents were asked whether or not driver tampering with speed governor settings was an issue; 30.2 percent of respondents indicated yes. Regardless of whether tampering had occurred within their company, 78.1 percent of respondents indicated that there were consequences for any driver that tampered with governor settings. Nearly all carriers indicated that the consequence for tampering would be immediate termination.

## **Safety Performance with Speed Governors**

The ability to meaningfully compare fleet safety data before and after speed governor installation was limited due to the low number of respondents that provided safety data for both variables. More responses will be necessary before safety data can be meaningfully analyzed.

## **Carrier Assessment of Optimal Speed for Safety, Fuel Savings, and Productivity**

Carrier opinions were solicited on the optimal speed setting for increased safety, fuel savings and productivity. For safety, the mean speed indicated was 62 mph and the median was 65 mph. The optimal speed for fuel savings trended higher with a mean and median of 67 mph. For increasing productivity, the mean optimal speed was 69 mph and the median was 68 mph.

## **Next Steps**

This report details the preliminary analysis of ATRI's survey on speed governor use. This survey is part of a much larger ATRI research initiative to analyze the impacts of speed on safety and carrier operations. Carriers who have not done so yet are encouraged to complete the survey, available online at [www.atri-online.org](http://www.atri-online.org). Also available online is a more detailed description of ATRI's research on this subject.