

# *Shoulder Belt Usage by Commercial Motor Vehicle Drivers - Executive Summary*

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Final Report  
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## Executive Summary

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### *Introduction*

In 2005, 5,212 drivers and occupants of commercial motor vehicles (CMV) were killed in crashes. Most crashes that are fatal to truck drivers involve running off the road and rolling over or hitting a large stationary object (e.g., tree, bridge abutment, culvert). Many of the drivers killed in these types of crashes died because they failed to wear their shoulder belts and were ejected from the CMV.

The Federal Motor Carrier Safety Administration (FMCSA) developed the *Be Ready, Be Buckled* program to promote safety belt usage among commercial motor vehicle occupants. By 2008, FMCSA aims to increase shoulder belt use among CMV drivers and to reduce the total number of CMV-related fatalities to 1.65 per 100 million CMV miles traveled. Surveys of safety belt usage among truck Class 7 and Class 8 drivers were conducted in 2002 and in 2005. These surveys provided FMCSA with data to assess progress in increased shoulder belt use and to determine how best to allocate its resources to help reduce

fatalities. This report provides the results of the 2006 survey, and compares current safety belt use rates for heavy vehicle operators with the results from 2005.

The research approach used in the 2002, 2005, and 2006 studies is a sample-based survey of shoulder belt usage by CMV drivers (of Class 7 and Class 8 vehicles) throughout the United States. Vehicle Classes 4 through 6 with a gross vehicle weight of less than 26,000 lb were not observed. The procedures used in each survey provide comparable data. Post collection reviews point to a number of issues that should be addressed to improve validity and feedback for strategic program planners.

### *Methodology*

Sites were selected using a three-step process resulting in 12 primary sampling units (PSUs). Approximately 10 sites were selected within each PSU. During the 2006 collection period, observations were made at a total of 117 locations on interstate exit/entrance ramps, near trucks stops, and at signalized intersections.

The process of collecting the data was exactly the same as was used in 2005. Observers were stationed at the selected sites and captured site, vehicle, and driver characteristics for those vehicles identified as either Class 7 or 8 vehicles. To maximize observation quality, observers used SUVs to provide a somewhat higher vantage point. Using specially-designed forms and binoculars (for cases where close proximity to the passing vehicles was not possible or ideal), the observers captured data for approximately one hour per site. Observers worked alone to complete the sites in a PSU with completion of a PSU in one to two days. Their ability to capture all aspects of the vehicle and driver shoulder belt condition was quite good, capturing over 300 observations within each PSU.

### *Results*

In 2006, a total of 5,106 trucks were observed. Of these, 39 were ineligible vehicles, 4 included misused restraints, and 86 were unknown restraint types. Records with incorrect or unknown belt use were excluded, resulting in a total of 4,977 vehicles used in the analyses. The 2005 overall shoulder belt usage rate for all Class 7 and 8 trucks combined was 54%, with a statistically significant increase in 2006 to 59% ( $p = .01$ ). The 2005 usage rate for drivers of those units where the truck was identified as a major regional or national fleet was 63%, versus 41% for independent or local fleets. The usage rate increased significantly to 75% in 2006 for the major national or regional fleets ( $p < .0001$ ). Usage among independents also increased to 44%. While not statistically significant this suggests that owner-operators are getting the message and joining their long-haul counterparts in increased safety belt usage. Also, it may

suggest that they are more likely to have lap belts (referred to as Type 1 restraints in federal regulation) than shoulder belts (i.e., Type 2) and were, thus, less likely to be observed as users.

Among cargo types, the highest usage rates again were observed among the drivers of single tankers (83%) and HAZMAT tractor-trailer combinations (84%) . And similar to 2005, the lowest rates among truck types were observed in single dump trucks and bobtails. In 2005 the drivers of tractors pulling trailers with a HAZMAT placard displayed had the highest usage rate of any of the various categories observed and tied for highest usage rate with single tankers. There were increases in usage rates between 2005 and 2006 for single vans, single tankers, and single dump trucks, but they were all statistically insignificant. The increase for the All Others vehicle type was significant (47% to 54%,  $p=.04$ ). Usage rates for all Class 7 operators increased, but again the changes could not be shown to be statistically significant. The usage rate for Class 8 operators increased with statistical significance from 54% to 59%, ( $p=.01$ ). Non-HAZMAT Class 8 also showed increased usage from 54% to 58%, ( $p=.02$ ). The 2005 to 2006 changes for double trailers and bobtails were not statistically significant, although usage among bobtail operators dropped in 2006.

In 2006, the usage rate among commercial vehicles was observed to be higher on weekdays (60%) than on weekends (57%). This represents a statistically significant increase for weekday use of 7% ( $p<.01$ ). Weekend usage dropped by 2 percentage points, which is not statistically significant ( $p<.6$ ). In 2005 the reverse was observed. However, it is possible that these differences in weekday and weekend usage are a result of which states were observed on weekends in the two study periods since the day of week variable was not collected in a way that allowed it to be independently assessed with respect to the state.

A number of recommendations are provided for implementation of future survey installments. The recommendations focus on improving the sample and clarifying vehicle classifications. Two recommendations are made for the sample. The first recommendation is to select new sites either through drawing a probability sample or using the National Occupant Protection Use Survey sites. The second recommendation is to expand the sample to observe all CMVs which fall under FMCSA's purview (i.e., CMVs over 10,000 lb, interstate, and/or HAZMAT). Additionally, the vehicle classifications should be modified to be more clearly defined and follow industry standards.

**To obtain a copy of the 2006 Shoulder Belt Usage by Commercial Motor Vehicle Drivers Final Report**, contact Janet Kumer, FMCSA Safety Belt Program Manager, at (202) 493-0538 or [janet.kumer@dot.gov](mailto:janet.kumer@dot.gov).