

Crashes and Related Fatalities to Occupants of 15-Passenger Vans - Calendar Year 2008

Summary

This paper presents 2008 fatality and crash data for 15-passenger vans as collected in the federal "Fatality Analysis Reporting System" (FARS) and reported by the National Highway Transportation Safety Administration (NHTSA).

The purpose of this paper is to help increase public awareness of the propensity and type of crashes with 15-passenger vans and to offer recommendations to reduce the number of crashes and related fatalities.

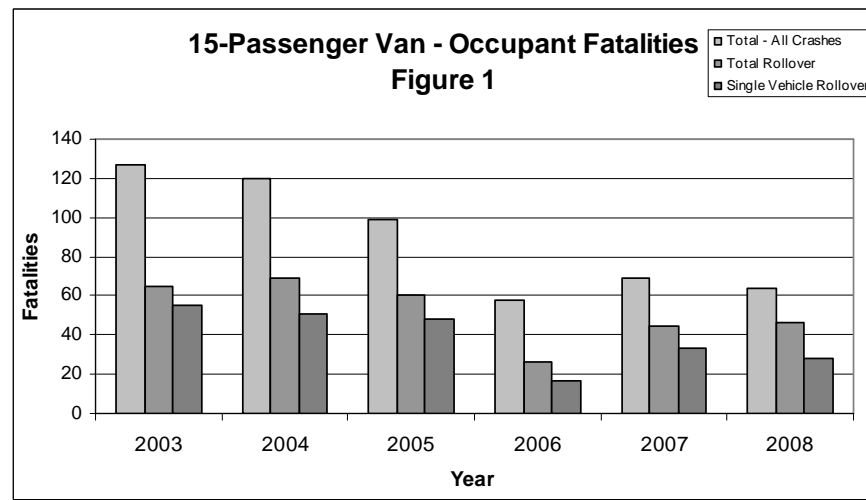
Since 2003 the total number of 15-passenger van occupant fatalities have declined approximately 50%. Unfortunately, since 2006 the total number of fatalities per year seem to have "plateaued" or even increased somewhat. Indeed, the number of fatalities in rollover crashes have increased significantly since 2006. In 2006 there were 26 fatalities in 15-passenger van rollover crashes. In 2008 there were 46 fatalities in 15-passenger van rollover crashes ... and increase of approximately 77%.

Although it is important to follow all the safety guidelines when operating or riding in a 15-passenger van, the 2008 data seems to indicate two areas where, if safety improvements can be made, then the number of fatal crashes and related fatalities could be reduced.

- In 2008, approximately 45% of all the 15-passenger van single vehicle rollover crashes had tires as a related factor. This is far higher than has been previously reported for other types of passenger vehicles. If tire safety for 15-passenger vans can be improved then it should follow that the number of single vehicle rollover crashes and related fatalities will be reduced. Ways must be found to improve tire safety with 15-passenger vans.
- In 2008, approximately 72% of all 15-passenger van occupant fatalities occurred in rollover crashes. A major contributor to this extremely high rate is likely attributed to the apparent low use of seatbelt restraints in 15-passenger vans. In 2007, only 22% of the fatally injured occupants in 15-passenger van crashes that rolled over were restrained. In fact, during that same year only 31% of all the occupants in 15-passenger van crashes that rolled over were restrained. During that same year seatbelt use in all passenger vehicles was estimated at 82%. If seatbelt usage in 15-passenger vans can be increased, then it should follow that the number of fatalities in crashes involving rollover will be reduced. Ways must be found to increase the use of seatbelts in 15-passenger vans.

Data & Analysis

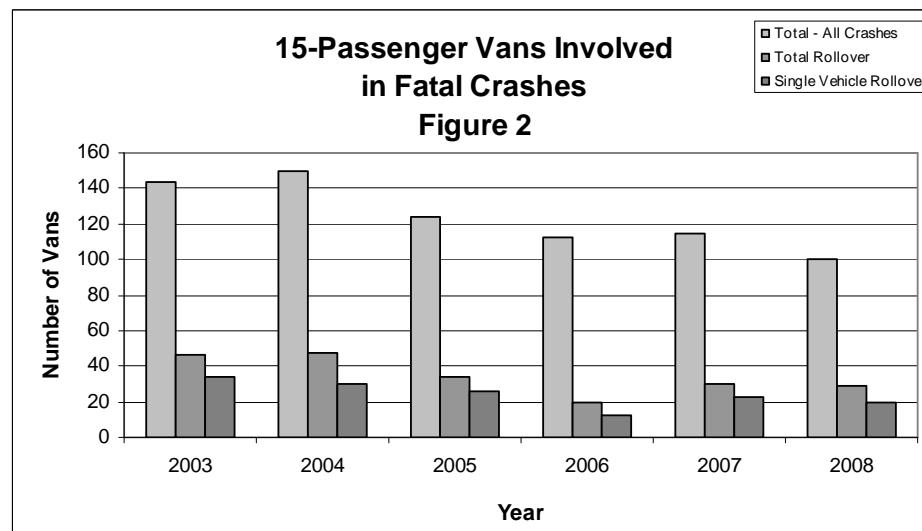
Figure 1 depicts fatalities to occupants of 15-passenger vans involved in all fatal crashes, and in those fatal crashes where the van rolled over. Note that from 2003 through 2006 there was a downward trend in total fatalities. That trend was interrupted in 2007 when the total number of fatalities increased from 58 in 2006 to 69 in 2007... an increase of 19%. During that same year, the fatalities in 15-passenger van rollover accidents increased from 26 in 2006 to 45 in 2007... an increase of 73%¹.



In 2008, there was a slight decrease in total fatalities from 69 in 2007 to 64 in 2008 ... a decrease of 7% ... but still above the 2006 total of 58 fatalities. The fatalities in rollovers increased slightly from 45 in 2007 to 46 in 2008 ... an increase of 2% ... still far above the 2006 total of 26 fatalities in 15-passenger vans that rolled over².

Figure 2 shows the number of 15-passenger vans involved in fatal crashes and those fatal crashes where the van rolled over.

From 2004 through 2006 there was a downward trend in total 15-passenger van fatal crashes. As with fatalities, that trend was interrupted in 2007 when the total number of vans in fatal crashes increased from 113 in 2006 to 115 in 2007... an increase of 2%. The number of 15-passenger vans involved in fatal rollover accidents also increased from 20 in 2006 to 30 in 2007... an increase of 50%³.



In 2008, there was a decrease in the number of 15-passenger vans involved in fatal crashes from 115 in 2007 to 100 in 2008 ... a decrease of 13%. The number of 15-passenger vans involved in

¹ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 12/7/09.

² id.

³ id.

fatal rollover crashes also decreased slightly from 30 in 2007 to 29 in 2008 ... an decrease of 3% ... but, still well above the 2006 total of 20 15-passenger vans in fatal accidents that rolled over⁴.

Over the same time period, the number of occupants killed in all passenger vehicle types had a year by year downward trend from a total of 33,627 in 2003 to a total of 26,689 in 2008 as shown in Figure 3⁵. This is a decrease of approximately 21%. During this same six year period the total number of 15-passenger van occupants killed in fatal accidents decreased from 127 in 2003 to 64 in 2008 ... a decrease of approximately 50%. Thus, on a percentage basis over that six year period, the decrease in total occupant fatalities in 15-passenger vans outpaced the decrease in occupant fatalities in all passenger vehicles by a margin of more than two to one. However, having said that, we must also now be mindful of the fact that rollover crashes and fatalities for 15-passenger vans have increased dramatically since 2006. This appears to be the area where the most impact can be made to further reduce the number of fatal 15-passenger van crashes and related fatalities.



The impact of rollovers on fatalities can be seen by looking at the fatalities in vans that rolled over as a percentage of the total 15-passenger van fatalities. In 2008, 29% of all the passenger vans involved in fatal crashes rolled over ... those rollover crashes accounted for 72% of all the 15-passenger van fatalities⁶. This percentage is significantly higher than for any other type of passenger vehicle. Table 1 shows the percentage of total occupant fatalities that occurred in rollover crashes, by vehicle type for 2008^{7 8}.

Table 1
Occupant Fatalities in Rollover Crashes as a Percent of Total Occupant Fatalities - 2008

Vehicle Type	% of Total Fatalities
15-pass Vans	72%
SUVs	58%
Pickup Trucks	48%
All Vans	35%
Passenger Cars	25%

⁴ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 12/7/09.
⁵ NHTSA report DOT HS 811 170 "Traffic Safety Facts 2008" early edition - page 18, Table 4.
⁶ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 12/7/09.
⁷ NHTSA report DOT HS 811 170 "Traffic Safety Facts 2008" early edition - page 126, Table 90.
⁸ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 12/7/09.

The impact of rollovers on fatalities can further be emphasized by looking at single vehicle crashes.

Occupant Fatalities in Single Vehicle Rollover Crashes as a Percent of Fatalities in all Single Vehicle Crashes 2008	
Table 2	
Vehicle Type	% of All Single Vehicle Fatalities
15-pass Vans	80%
SUVs	72%
Pickup Trucks	61%
All Vans	53%
Passenger Cars	45%

Table 2 shows that for 15-passenger vans, 80% of single vehicle crash fatalities occurred when the single vehicle crash involves a rollover. For comparison the single vehicle rollover fatality rates for all other passenger vehicles are shown^{9 10}.

One possible cause of 15-passenger van single vehicle rollover accidents is tire failure. It has been reported that 45% of all fatal 15-passenger van single vehicle rollovers had tires as a related factor¹¹. It thus follows that if tire safety can be improved then the number of single vehicle rollovers and related fatalities should be reduced.

Relating to fatality rates, in a report issued in 2009¹², it was shown that in 2007 only 22% of the fatally injured occupants of 15-passenger vans, involved in a rollover crash, were restrained. In fact, that same report showed that only 31% of the all the occupants of 15-passenger vans, involved in fatal rollover crashes, were restrained. For that same year it was reported that overall seatbelt/restraint use in all passenger vehicles was 82%¹³. The 31% seatbelt/restraint usage by all occupants of 15-passenger vans, involved in fatal rollover crashes, may not be totally representative of seatbelt/restraint use by all occupants in all 15-passenger vans, but it certainly indicates a much lower use than the national average for all vehicles. There seems to be a complacency or reluctance towards seatbelt/restraint use in 15-passenger vans.

Recommendations

1. Implement an awareness program to stress the importance of tire safety to owners/operators of 15-passenger vans. Emphasize the importance of the following ...
 - Be sure all tires are the proper size and load rating for the van. Consult the owner's manual and/or a reputable tire expert for information.
 - Inspect the tires before each use. Check for adequate tread depth, uneven wear, cracks, and/or other damage. Replace any worn or damaged tires before using the van.
 - Check tire pressure before each use. Inflate to the manufacturer's specified pressure. See the owner's manual or the placard on the driver's side doorsill.
 - Check the age of all tires. Replace all tires that are six or more years old, regardless of tread depth.

⁹ Data taken from E-mail from Lorenzo Daniels (NHTSA) to R. Koehler dated 8/12/09.

¹⁰ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 3/5/10.

¹¹ Data taken from E-mail from Rajesh Subramanian (NHTSA) to R. Koehler dated 12/7/09.

¹² NHTSA report DOT HS 811 143 "Fatalities to Occupants of 15-Passenger Vans, 2003-2007", Table 8.

¹³ NHTSA report DOT HS 811 036 "Seat Belt Use in 2008 - Overall Results", page 2.

2. Develop and implement an awareness program stressing the importance of seatbelt/restraint use in 15-passenger vans. Emphasize the following ...
 - Require all passengers and the driver to engage their seatbelt/restraint whenever the van is in motion.
 - If the van does not have 3-point lap/shoulder belts for each occupant position, do not use that van for any highway trips or other highway speed use. Use only on local residential or low speed rural streets and roads.
 - Inspect the seatbelts regularly ... replace any missing, broken or damaged belts and/or buckles and latches.
3. Whenever operating or riding in a 15-passenger van follow all of the safety guidelines found on the American Center for Van and Tire Safety website (www.acfvats.org) under "Van Facts - Van Safety Guidelines".
4. A way to communicate these recommendations to all those that own, operate or simply ride in 15-passenger vans must be developed and implemented.

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