



## **15-PASSENGER VANS REDUCING THE RISK OF ROLLOVER CRASHES**

Fifteen passenger vans make up about 0.25 percent of the passenger vehicle fleet in the United States. They are frequently used to transport school sports teams, van pools, church groups, and other groups. Although they are involved in a proportionate number of fatal accidents compared to their percentage in the fleet, they are involved in a higher number of single-vehicle rollover accidents. Various factors have been associated with 15 passenger van rollovers, particularly occupancy levels and vehicle speed. Because these vans are designed to carry no more than 15 passengers, Risk Management Services is particularly concerned about occupancy levels and resulting rollovers. Fully or nearly full loading a 15 passenger van causes the center of gravity to shift rearward and upward. This increases the vehicle's propensity to rollover, and could increase the potential for driver loss of control when engaging in emergency maneuvers.

The tests used to examine this propensity include measurements of:

- Static stability factors
- Lateral acceleration
- Oversteer / Understeer properties
- Road edge recovery maneuvers
- Center of gravity, and
- Reverse steer maneuvers

*(For details of these tests, please refer to the US DOT National Highway Traffic Safety Administration [NHSTA] website and the accompanying materials)*

In light of the potential for personal injury, RMS discourages the purchase and use of 15 passenger vans. If you have one or anticipate purchasing one, the following guidelines are recommended:

- Remove the last two rows of seats to limit passenger loads to eight.
- Do not carry cargo on the roof.
- Do not tow a trailer.
- Include a tire pressure measurement in each pre-trip inspection.
- Load forward seats first.
- Require all passengers and the driver to wear proper safety restraints.

- Limit drivers to those with training and experience in operating 15 passenger vans. A Commercial Driver's License is desirable.
- Be mindful of weather conditions.
- Do not allow the use of alcohol.
- Travel with headlights on, day or night.
- Require the driver to be properly rested.
- Speeds should be limited to the legal speed limit or slower, depending on conditions.
- Driver training should include safe recovery techniques to maintain control if wheels leave the roadway (in other words, understand the road edge recovery maneuver).
- Since this van is substantially longer and wider than a car, allow more space and rely on side view mirrors.
- Realize the need for additional braking time and distance.
- Keep the fuel tank full to lower the center of gravity.
- Equip the van with dual tandem rear tires.

Technological systems exist that may help control stability problems. As of this writing, all are not currently available. However, attempt to include:

- Traction control
- Electronic stability control
- Tire pressure monitoring system
- Lane departure systems
- Antilock brakes, and/or
- All wheel drive.

It is our recommendation that a "mini-bus" style of vehicle be used in place of a 15-passenger van. These vehicles have a more stable center of gravity and are not subject to rollover.

Risk Management Services wishes to emphasize that these guidelines are presented as loss control tools and should not be used as a substitute for engineering analysis or opinion. This is not a legal document and, therefore, should not be considered or substituted for legal advice.

For additional information contact risk management services at **1- 800-228-0986** and select "**safety and risk control**" from the available options.

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