

Managing Larger Passenger Van Operations to Reduce Rollovers and Other Accidents

A large passenger van handles significantly different than other vehicles. Allowing an inexperienced, untrained driver to operate one can be dangerous.



Organizations which operate large passenger vans should be aware of safety concerns related to utilizing them and ensure controls are in place to minimize accidents. For the purposes of this article a large passenger van is a van that seats 12 or more passengers, including the driver. The primary concerns related to large passenger vans include their:

- Large blind spots, which make it more difficult to back and change lanes
- Increased stopping distance due to size and weight
- Increased rollover propensity as discussed below

Rollovers

Large passenger vans have a higher propensity to roll over due to:

- A higher center of gravity, which moves higher as more passengers and cargo are loaded
- Width of stance (length-to-width ratio)
- Seating configurations that place excess weight on the left rear tire (due to walkway to the rear seats being on right side), contributing to instability
- Flat sides contributing to instability in crosswinds

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Tire inspection and proper inflation are critical in preventing rollovers. NHTSA found 15-passenger van tires to be mis-inflated by 25% or more in 74% of cases.²

In 2004 the National Highway Transportation Administration (NHTSA) published a study highlighting major concerns regarding 15-passenger van roll-overs.¹ The following were identified as major factors that increased the rollover propensity and resulting injury:

- Tire inflation, age and wear issues
- Over-correcting when driving off the pavement
- Speed
- Overloading (over 10 passengers); Generally speaking, stability factors and dynamic rollover resistance of the vans degraded as the number of occupants increased
- Loading cargo on roofs
- Pulling trailers
- Inexperienced drivers
- Driver fatigue
- Occupants not using seatbelts

This study resulted in states banning 15-passenger vans for use in school transportation, mandated design changes to vans, and some manufacturers discontinued production. While the study focused on 15-passenger vans, 12-passenger vans have many of the same characteristics.

Newer Vans

All 15-passenger vans model year 2006 and newer have Electronic Stability Control (ECS) and around the same time, electronic tire air pressure monitoring became a standard feature. While these features and other design changes have made large passenger vans inherently safer, NHTSA has not done a follow-up to its rollover study to determine the effectiveness of these features. Nationwide, as well as many other organizations, believe large passenger vans still pose a higher rollover risk than other vehicles and organizations should manage this risk appropriately.

Large Passenger Van Safety Practices

- Vehicles
 - Remove pre-2006 large passenger vans from passenger service
 - Consider changing operations so that large passenger vans are not required
 - Use smaller vehicles when transporting fewer passengers
 - Do not overload large passenger vans; Pre-2006 vans should not be loaded with more than 10 passengers, this is a best practice for any model year
 - Purchase vans with advanced driver assist systems (ADAS) such as automatic emergency braking, adaptive cruise control, lane change collision warning and backing aids

¹ Analysis of Crashes Involving 15-Passenger Vans, National Highway Transportation Administration, DOT HS 809 735, May 2004

² 12 & 15 Passenger Vans Tire Pressure Study: Preliminary Results, National Highway Transportation Administration, DOT HS 809 846, May 2005

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■ Drivers

- Establish special qualification criteria for drivers of large passenger vans
 - Require drivers to have at least five years of driving experience, including two years of operating large passenger vans; If a driver does not have the two years of large van experience more thorough training and supervision are required
 - Prefer a chauffeur's license
 - Require more stringent motor vehicle record criteria (MVR); No more than two minor violations or accidents in the past three years and no more than one in the last 12 months; No major violations in three years and no drug or alcohol violations in five years
 - Pre-employment, random, post-accident and reasonable suspicion drug and alcohol testing
 - DOT-type physical every two years
 - Road-test every driver to ensure they are capable of handling the van and understand its unique characteristics
- Training requirements
 - Large passenger van training should be required for new drivers and at least annually for all drivers
 - Training topics should include:
 - Basic defensive driving techniques including proper following distance and use of ADAS
 - Distracted driving prevention, fatigue management and alcohol and drug use
 - Unique handling characteristics with emphasis on roll-overs, lane changes and backing
 - Policies as outlined below
- Supervision
 - Conduct at least quarterly documented ride-alongs with drivers to evaluate their driving practices, offer coaching suggestions, etc.
 - Conduct at least quarterly documented road observation reports – observing drivers without them knowing it to ensure they are driving safely
 - Utilize telematics to identify unsafe driving: speeding, hard brakes, harsh acceleration and harsh cornering
 - Review MVRs at least annually. Consider continuous monitoring
 - Establish a client complaint process for clients to report unsafe driving



Even experienced drivers need evaluations and refresher training periodically to ensure they have not developed bad habits.

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Require seatbelts for drivers, aids and all clients. NHTSA found that 77 percent of fatally injured van occupants in rollovers were not restrained.³

■ Policies and Procedures

- Require seatbelts for drivers, aids and all clients
- Absolute prohibition against smartphone use of any kind when vehicle is in motion or on roadway. No hands-free use
- Navigation systems set-up while parked and not interacted with when vehicle in motion.
- Prohibition against other distracting activities: eating, smoking, reading, reaching for objects, etc.
- Importance of obeying speed limit
- Daily documented pre- and post-trip vehicle inspection with special emphasis on tires
- No pulling trailers or loading cargo on rooftops
- Pre-2006 vans should not be loaded with more than 10 passengers; a best practice for any model year
- Provide aid to assist driver based on passenger special needs
- Set maximum driving shifts to limit fatigue
- Wheelchair securement requirements, if applicable
- Prohibition against modifying or disengaging vehicle ADAS

■ Vehicle Maintenance

- Adhere to a scheduled inspection and maintenance program
- Process for taking vehicles out of service for safety defects
- Daily driver documented inspections. Weekly supervisor inspections
- Special emphasis on tire condition and inflation
- Inspect spare tires at least annually. Replace spares when replacing other tires

■ Route Safety Plan

- Evaluate routes to identify potential high-rollover areas: high speeds, minimal shoulders, ramps, curves, etc.; Re-route to eliminate hazard or educate drivers to operate more cautiously
- For regularly scheduled routes or frequent destinations, establish priority safe loading/parking areas that allow for front pull-away; If front pull-away areas are not available identify spots which allow for safer backing
- Create a route-specific safety guide which identifies hazards along the route that drivers should be cognizant of, outlines safe loading and unloading areas, etc.; Route-specific guides are helpful during driver orientation and for temporary route drivers

³ Fatalities to Occupants of 15-Passenger Vans, 2003-2007 National Highway Transportation Administration. DOT HS 811 143, May 2009

Resources - General

- [FMCSA – 9-15 Passenger Van Regulations](#)
- [NHTSA 15 Passenger Van Website](#)
- [Health and Human Services Vehicle Selection Guide](#)

Resources - Backing:

- [Preventing Large Van Backing Accidents](#)
- [Preventing Large Van Backing Accidents Poster 11x17 \(new 8/20\)](#)
- [Preventing Large Van Backing Accidents Infographic 8.5x11 \(new 8/20\)](#)

Resources - Rollover:

- [Driving Large Passenger Vans: Rollovers](#)
- [Preventing Large Passenger Van Rollover Accidents - Infographic](#)
- [NHTSA's Top Safety Recommendations for 15-Passenger Van Use](#)



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