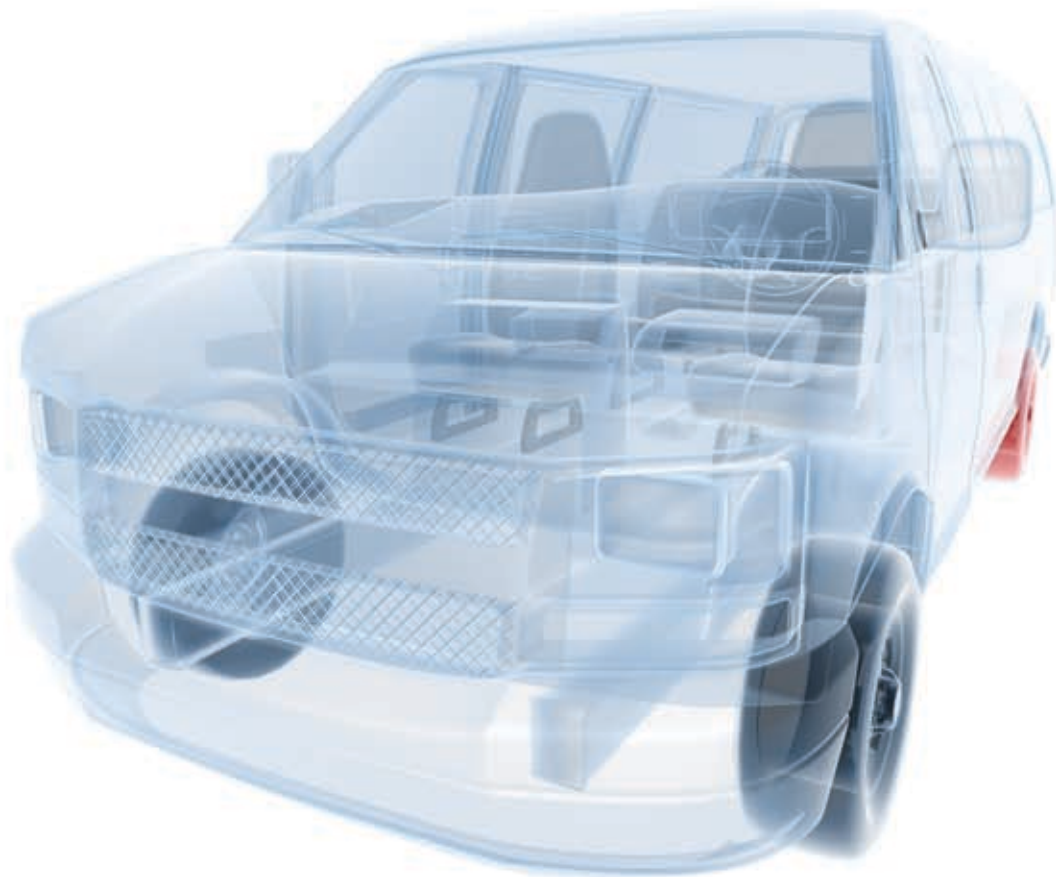


15-Passenger Van Safety White Paper



A whitepaper by:

BrightFleet[™]

www.brightfleet.com

This report is provided as general information that may not be applicable to your particular circumstances. The author and the publisher disclaim all representations, warranties, obligations and liabilities concerning this report or the information contained herein. Nothing in this report is provided as legal, financial or other professional advice and no professional advisory relationship is or will be created between you and the writer or publisher by virtue of your receipt or reading of this report. You are advised to seek competent professional advice concerning the particular circumstances of your situation before taking any action or refraining from taking any action based on the contents of this report.

BrightFleet, BrightFleet.com, and the BrightFleet logo are either registered trademarks or trademarks of Compendium Software Systems, LLC in the United States and / or other countries.

© 2013 Compendium Software Systems, LLC – All Rights Reserved

Compendium Software Systems, LLC

110 West First Street

Sanford, FL 32771

407-545-2200 / 866-706-2499

<http://www.CompendiumUSA.com>

<http://www.BrightFleet.com>

Introduction

The 15-passenger van has been the subject of many studies over the years. It has been scrutinized and closely examined for safety issues and its inability to handle certain situations and road conditions. Due to its design, it has been deemed one of the most unstable, most dangerous vehicles on the road. It is important to understand the dynamics of the 15-passenger van and what makes it a greater risk than most vehicles for accidents. Knowing is the first step in prevention.

A Brief History of the 15-Passenger Van

Fifteen passenger vans were first developed in the 1970's as an alternative to buses so that small groups of people could travel together. Rather than using buses to cart around smaller groups, many types of businesses turned to these larger vans for transporting their patrons. For businesses like day-cares, churches, airports, nursing homes, schools, even the US Army, 15-passenger vans are convenient. However, their convenience was soon questioned when it was realized that they posed serious dangers. Over time, issues with tire performance and propensity to roll over in an accident became a big safety concern.

15-Passenger Vans and Roll-Over Accidents

Accidents related to the 15-passenger van are recorded with the National Transportation Safety Board (NTSB). Records show that between 1994 and 2004, the NTSB recorded 1,512 fatalities related to the 15-passenger van. Of those, 642 of the accidents were single-vehicle crashes, 515 of the accidents involved rollovers, and 120 of the deaths occurred in 2004, alone. A National Highway Traffic and Safety Administration (NHTSA) analysis found that between 1997 and 2006, 1,090 people were killed in 15-passenger van crashes. Of those fatalities, 63 percent of deaths occurred in rollover accidents.

Fifteen passenger van accidents happen more often than they should. Every year there are accidents reported involving 15-passenger vans, many of the crashes ending with serious injuries and even fatalities.

One such accident occurred on May 8, 2001 in Henrietta, Texas when a 1993 Dodge Ram 15-passenger van carrying 12 passengers and heading eastbound on U.S. Route 82, experienced tread separation on the left rear tire. It was calculated that the van was traveling between 61 and 67 mph when the tire blew out. The van subsequently left the road due to lack of control and rolled over at least twice in the median. The rollover caused 7 of the 12 passengers to be ejected from the van. The driver and 3 of the passengers, who were ejected, sustained fatal injuries. The other 8 passengers sustained serious injuries.

January 2008 was a tragic month when a 15-passenger van lost control after the driver allowed the van to leave its lane and the tires hit the shoulder of the road, causing the driver to lose control. Officials said that the stadium-style seating

(where the rear row of seating sits higher than the rest) caused a shift in weight in the van. Once the van's tires hit the shoulder, it went out of control and collided with a transport truck, killing 8 passengers - 7 basketball players from a high school and the coach's wife.

More recently, in September 2010 in New York State, an accident involving a 1997 15-passenger van left 8 injured while killing 6 others when their 15-passenger van experienced a tire blowout. When the tire blew, the van swerved. This caused the driver to lose control. In an attempt to regain control, the driver over-corrected the van, causing the van to roll over several times. The rollover ejected 9 of its passengers before ultimately landing upside down and crushing in the van's roof. In this case, the passengers, allegedly, were not wearing seatbelts.

On October 03, 2010, a 15-passenger van carrying passengers lost the tread from one of its rear tires. The loss of tread caused the driver to lose control of the van and ultimately, the van rolled over several times, crashed, and killed a young girl.

Design Problems of 12 and 15-Passenger Vans

Fifteen passenger vans are significantly longer than regular vans which allows for carrying a larger group of people without having to rely on a bus; it was soon realized that the design of these vans had a high potential of fishtailing and rolling over during an accident. The more people and cargo the van carries, the more the center of gravity shifts upwards and rearwards, causing the van to become "top and tail heavy."

When the vehicle becomes top heavy, there is a greater risk for a rollover in an accident. Rollover crashes are very dangerous; they can throw passengers from the van, and a rollover can cause the roof of the van to cave in and get crushed, causing serious injury or death to the passengers.

When a 15-passenger van is fully loaded, it handles much differently from when only a few passengers or a lighter load is on-board. Added weight in the back of the van increases the risk of fishtailing. Fishtailing in such a large vehicle causes loss of control and ultimately may cause a rollover if the driver over-corrects. For this reason extra care needs to be given when driving a 15-passenger van that is fully loaded with passengers, or at its weight limit.



Something as simple as improperly inflated tires can lead to an accident in large vans. Rear tire pressure is different than front tire pressure on most larger vans, something that can be easily overlooked by drivers who mistakenly think of these vehicles as larger version of the family mini-van. Always check the manufacturers recommended tire type and tire-pressure for specific guidance. Under-inflated rear tires can overheat, leading to tire failure and a loss of control.

Due to the popular 3-3-4 (12-passenger) and 3-3-3-4 (15-passenger) seating designs for large vans which allows a small passageway along the right side of the van for loading passengers, the left rear tire is loaded more heavily than the others. If the left rear tire is under-inflated, it will generate heat as it's driven, potentially causing a tire failure and leading to a loss of control.

Engineers recognized problems with the stability of the larger vans early on. Their recommendations included expanding the wheel base to add dual-based rear tires for better stability. Experts knew that dual rear tires would significantly reduce the risk of fishtailing, which would give the vehicle greater control and stability. Dual rear tires would also help to lower the risk of rollovers. Although one auto-maker did expand the wheel base on its 15-passenger van, the recommendations were ultimately ignored by most auto-makers.

The NHTSA voiced its concern about the risks these vans can pose and the precautions that should be considered when riding in or operating one. Although significant changes were not made to the vans, van operators can still help lower the risks of accidents by learning about them. The more you know and understand about 15-passenger vans, the safer your passengers will be.

Organization-Level Safety Policies for 12 and 15-Passenger Vans

Safety precautions in any automobile are important, but in a 15-passenger van, these safety precautions are crucial. Creating a written Vehicle Policy that covers general best-practices can help your company protect both your drivers and passengers, as well as your organization. Some generally practiced policies for operators of 15-Passenger vans include:

- **Everyone Must Wear a Seatbelt at All Times. Period.** - Seatbelts can help prevent passengers and drivers from being thrown from the vehicle, especially during an accident involving a rollover. Seatbelts are important for any vehicle, but they become even more important when riding in a vehicle that is known for increased risks of rollovers. All passengers must wear their seatbelts at all times. Shoulder belts need to be worn correctly; they should be pulled taut over the shoulder, and not worn under the arm or behind the back. Do not over-load the van with more passengers than it has seat-belts.
- **Driver Training Program** - A driver training program for any vehicle that is commercially owned and operated is important. For drivers that transport people, it is even more crucial they receive initial training, followed by regular re-training intervals to keep their skills and knowledge current in handling their

vehicle. There are a variety of training programs; both online and in a classroom. Brightfleet.com offers high-quality online training specifically designed for improving 15-passenger van safety. (<http://www.BrightFleet.com>)

- **Driver Fitness** - Drivers should receive annual physical fitness exams. This should include eye exams as well as physical exams. Making sure your drivers are in the best physical shape to handle the vehicle should be required before they drive is crucial. This is important because 15-passenger vans are larger vehicles and could require more detailed maneuvering and a greater level of attention. (You should make it a standard requirement that your drivers are physically fit.)
- **Driver Experience** - 15-passenger vans do not require that a driver carry a commercial driver's license; however, buses designed to carry 16 passengers or more do. Despite not needing a CDL to operate a 15-passenger van, drivers should still be properly trained with the 15-passenger van. They should still be required to take the proper courses regarding safety issues, preferably courses that are specifically tailored to safe operation of 15-passenger vans, how they perform in emergencies, and how to handle them.

Routine Maintenance is Critical for 15-Passenger Vans

All automobiles require maintenance and upkeep, but with a 15-passenger van it is of utmost importance to make sure that certain maintenance procedures are followed in order to reduce the risk of an accident.

1. **Tires and Tire Pressure** - Proper tire load-rating and tire pressure is crucial for the safe operation of any vehicle, but can be critically important for loaded 12 and 15-passenger vans. Many owners don't realize that the manufacturers recommended tire pressure is often different between the front and rear tires in these large vans due to their high-load carrying capacity, with some recommendations again different between a loaded and unloaded van.

Always be sure to check tire pressure during pre-trip inspections, using a reliable commercial-quality tire-pressure gauge that is known to be accurate. Refer to the vehicle manufacturers tire-pressure and load-rating specifications that are marked on the vehicle information placard on the driver's door frame, or in the owners guide. If in doubt, call the manufacturer with your VIN number, make and model year to get current recommended settings, and be sure you tires are properly inflated. Check tire pressure before every trip.

The load-rating (LT means Light Truck), age and condition of the tires should always be inspected. The tread should always be examined and new tires placed if the tread is worn. Spare tires should always be unused when placing it on your van, and their tire pressure should be checked on a regular schedule.

If you operate a fleet that includes 12 and 15-passenger vans, you need to create a culture of safety for all drivers and shop workers to constantly evaluate the condition and pressure of those tires.



2. **Brakes** - The brakes should be checked and maintained regularly. Special care should be given to the brake pads; making sure they are not worn down below the manufacturer's recommended, normal wear. Also check for any noted brake fluid leaks. Fluid leaks should be taken care of immediately. The emergency brake should also be checked regularly and should always be in fine working condition before each use of the van.
3. **Check Fluid Levels** - Low fluid levels can make a big difference in how your van performs. It can mean the difference between your van operating efficiently or not; such as a breakdown, or overheating on the side of the road and causing damage to the engine. Make sure all fluid levels are where the manufacturer recommends.
4. **Wipers** - Even something that seems trivial, like windshield wipers, can make a big difference in how you drive and ultimately keep your passengers safe. Making sure your wipers work properly, including the wiper blades - (they should be like new, not old and worn) and should keep your vision clear when driving in the rain. If your vision is distorted, this opens the gate for a higher risk of an accident.

Driver Training Can Help Reduce The Risks

Besides diligent tire condition and pressure maintenance, there are additional steps that any organization can take to help reduce the risks associated with 15-passenger vans. The NHTSA's study on The Rollover Propensity of Fifteen-Passenger Vans urges all van drivers obtain specific training on the handling and operation of these vehicles due to their inherent lack of stability when loaded to the level for which they were designed.

Driver Training Can Help Reduce The Risks

Besides diligent tire condition and pressure maintenance, there are additional steps that any organization can take to help reduce the risks associated with 15-passenger vans. The NHTSA's study on The Rollover Propensity of Fifteen-Passenger Vans urges all van drivers obtain specific training on the handling and operation of these vehicles due to their inherent lack of stability when loaded to the level for which they were designed.

The NTSB determined that the probable cause of two fatal 2001 van rollover crashes was tire failure, the drivers response to that failure, and the drivers' inability to maintain control of their vans. They noted that both drivers were familiar with their vans, but lacked any special training on how to react to a tire failure, and probably over-corrected after the blowout because they did not understand the potential instability problems associated with 15-passenger vans.

The letter goes on to state "the drivers' lack of training on their vehicles' operating and handling characteristics, particularly in emergency situations, put them at a disadvantage in reacting to the blowout."

With the availability of specifically designed online 15-Passenger Van Training, training can be provided very easily and at surprisingly little cost. Training programs may be repeated every six months or yearly, to help keep the lessons learned fresh in the minds of the drivers. Additional hazard perception evaluations and specific training programs can be added to create a comprehensive driver training program for organizations and companies of any size.



Summary

Whether you operate a fleet of two or two thousand, understanding the design limits and maintain proper manufacturers specifications and tire pressure is important.

Equally important is properly preparing and training your drivers to safely operate large 12 and 15-passenger vans. Trained and experienced drivers who know what to do to avoid emergency situations, and will help reduce the risks and ensure each journey ends safely at it's destination instead of as a statistic in a NTSB report.

References and Additional Reading:

NTSB Letter Regarding 12 and 15 Passenger Van Safety

http://www.nts.gov/recs/letters/2003/H03_19_20.pdf

NHTSA Consumer Advisory Regarding 15 Passenger Van Safety

<http://www.nhtsa.gov/CA/10-14-2010>

SaferCar.gov – Large Passenger Van Safety Guidelines

<http://www.safercar.gov/Vehicle+Shoppers/Passenger+Van+Safety>

Q&As: 15-Passenger Vans – Insurance Institute for Highway Safety

http://www.iihs.org/research/qanda/fifteen_passenger.html

CBS 60-Minutes News Article "Rollover"

<http://www.cbsnews.com/stories/2002/04/17/60ll/main506479.shtml>

About BrightFleet.com

BrightFleet.com provides a comprehensive fleet driver training package for fleets of any size. With our one of a kind Hazard Perception Evaluation and specific, targeted training mandules, BrightFleet.com delivers the industry-standard turn-key computer-based training program that was previously available only to the largest fleet operators in the world.

Our specialized 15-passenger van program provides drivers with the basic skills to safely operate these large vans and the documentation to help clients reduce the possibility of negligent entrustment claims. The program works for all sizes of organizations, and is affordable for even the smallest church or group who operates these vans within their organization.

We have two training modules specifically designed for large van safety.

- **Van Safety 1** - This module focuses on the correct driving techniques to employ when driving a large passenger van. Key learning includes: how to properly use your seatbelt to reduce serious injury, our 5-step process for lane changing and essential tips to remember when backing up.
- **Van Safety 2** - This module follows 'Van Safety 1' and focuses on correct driving techniques to employ when driving a large passenger van. Key learning includes: why large vans are prone to rollovers, how to reduce the risk of a rollover and some common distractions faced by drivers

For more information about these programs, or to learn about our comprehensive driver training and fleet risk mitigation programs,

please visit <http://www.BrightFleet.com>

or call us at **866.706.2499**