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**INTEROFFICE MEMORANDUM**

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**TO:** JOHN STARLING, PHIL WORTH, BOBBY GRICE, NANCY BUNGO, CHERYL HARRISON – LEE, RENE RODRIGUEZ, HARRY REED

**FROM:** ROBERT E. WESTBROOK

**SUBJECT:** 15 PASSENGER VAN ROLLOVER

**DATE:** 2/15/02

**CC:** MARION HART JR., ED COVEN, MIKE JOHNSON, LIZ STUTTS, PAUL JOHNSON, RICHARD DREYER, JAN PARHAM, FRAN THEBERGE, RICHARD SHINE, JAMES DRIGGERS, GWEN PRA, KATHY RUDD, WALTER CADWELL, TOBY WRIGHT, KAREN ADAMSON, AKHTAR MAHMOOD, ELBA LOPEZ

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On November 28, 2001, the Central Office issued a memo to the districts concerning the operation of 15-passenger vans. The memo was based on a NHTSA report concerning increased rollover risk under certain conditions. As a funding source for these vehicles we are responsible for making sure that all safety and operating policies are followed and to make appropriate judgment calls in the interest of safety. This memo is to provide additional clarification on this issue.

15 passenger vans provide a convenient and economical means of transportation for the Public Transportation Provider, particularly for those agencies providing commuter services. Although the FDOT has not mandated the elimination of these vans, we believe it is imperative that the agencies operating them become aware of the advisory and that each agency establishes a safety awareness program specific to the 15-passenger van. In the interest of public safety we do recommend withholding vehicle funding if the agency fails to implement such a program.

It is our recommendation that the agencies' safety program include the following minimum guidelines:

- The driver must be experienced with five or more years of driving and possess a valid driver's license.
- The driver must complete a pre-trip inspection of the van to assure that it is in a safe condition. Do not operate the van if any mechanical or equipment defects are found. This is already a requirement under rule 14-90.
- The driver and occupants must wear seat belts while the van is being operated. The agency is ultimately responsible for seeing that this is enforced.

- The driver must be trained in the operating characteristics of the van, especially the handling characteristics related to its length, width and weight. Operator training should include at a minimum the following:
  1. *Consideration of weight:* The weight of the van, particularly when fully occupied, requires additional stopping distance. It also causes the center of gravity to shift rearward and upward increasing the likelihood of rollover. This shift in gravity will also increase the potential for loss of control in panic maneuvers.
  2. *Consideration of width:* The width of the van allows for less lane room. Be aware that the shoulder is often soft and can give way underneath you causing the van to roll.
  3. *Consideration of length:* The length increases distances needed for making turns, changing lanes and backing.

In an effort to provide technical assistance with this issue, we will develop a training program that will cover the subjects listed above. When complete it will be available to all agencies' that are interested. We will send out a notice next week advising as to when this will be available.

Meanwhile we highly recommend that the agencies try to limit the seating to 10 passengers. With these types of vehicles the center of gravity tends to shift rearward and upward. Based on this, it is also highly recommended that the passengers utilize the forward seats when the vehicle is not under full load. Keeping the gas tank as full as possible also helps with lowering the center of gravity. The NHTSA report indicated the rollover ratio is highest with 10 or more passengers. The report stated the rollover ratio for this group is 3 times higher.

The report was not clear on the degree of severity between the passenger occupancy of 10 through 15. This can be argued several different ways. The consensus from around the country however remained the same; place the maximum occupancy level at 10, make the drivers aware of the handling characteristics of the vehicle, implement some type of ongoing training program, and always front load the vehicle.

In the actual S.E.A. report they used fiftieth percentile male dummies in every seating position plus ballast (simulated luggage) in the rear cargo space. This does not replicate typical transit environment since we do not haul luggage. In the S.E.A. test 65% of the weight was riding on the rear axle. By front loading the vehicle and removing the rear ballast weight, the longitudinal center of gravity moves forward. This change in the center of gravity is still being investigated, yet gives us reason for placing the recommended maximum occupancy level at 10.

In an effort to determine the severity of the van report, we also examined roll over reports on Sport Utility Vehicles and Pickup trucks. We compared them to the van reports and found the vans less likely to rollover – unless the vans are fully loaded.

All of the above information was based on reports and information submitted by the following sources:

- NHTSA report (attached)
- US DOT
- Society of Automotive Engineers
- Associated Press
- Naval Safety Center
- University of North Carolina
- The Denver Post
- University of Georgia

We could have continued to obtain information on the subject but all sources contained similar information. In addition to obtaining reports we had verbal conversations with other state DOT offices and several transportation providers, both in and out of state. Other suggestions included removing the rear row of seats, changing to low profile tires along with suspension modifications, and procuring vehicles with no more than 10 seats.

Attached you will find the NHTSA report. You can also go online and perform a search on *(15 passenger van rollover)*. You will find all of the reports listed above as well as numerous other sources. If you have suggestions on other ways to address this issue please let us know.