

**NATIONAL TRANSPORTATION SAFETY BOARD**  
**Public Meeting of October 16, 2018**  
**(Information subject to editing)**

**Pickup Truck Centerline Crossover Collision With Medium-Size Bus on US Highway 83**  
**Concan, Texas**  
**March 29, 2017**  
**NTSB/HAR-19-XX**

This is a synopsis from the NTSB's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendations will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing to reflect changes adopted during the Board meeting.

## **Executive Summary**

On March 29, 2017, about 12:20 p.m., a 2007 Dodge Ram 3500 pickup truck, occupied by a 20-year-old driver, was traveling north on US Highway 83, near Concan, Texas, when it crossed into the southbound lane and collided with a medium-size bus. The crash occurred near milepost 553.4, near the end of a right-hand curve. The 2004 Ford E350 Turtle Top Van Terra medium-size bus was occupied by a 66-year-old driver and 13 passengers and operated by the First Baptist Church of New Braunfels, Texas. As a result of the crash, the bus driver and 12 passengers were fatally injured. The driver of the truck and one bus passenger were seriously injured.

This crash investigation identified the following safety issues:

- ***Drug-impaired driving:*** The truck driver's erratic operation of his vehicle was due to impairment from the combined use of marijuana and a prescription medication. To increase the effectiveness of law enforcement in deterring drug-impaired driving, officers need additional training in the detection of drivers under the influence of drugs and additional tools, such as roadside drug testing devices. The state of Texas has one of the highest rates of fatal crashes involving impaired drivers. Additional efforts are needed at both the state and national levels to identify best practices, effective science-based safety countermeasures, and drug testing protocols to reduce the fatalities, injuries, and crashes caused by drug-impaired drivers.
- ***Medium-size bus seat belt systems:*** The bus was equipped with lap belts in rows 1–4 behind the driver, though these seat belts are not required by federal regulation. All 12 bus passengers seated in these rows were restrained. Upper body flailing over the lap belts—which concentrated the load in the pelvis and abdomen—exacerbated the injuries to passengers seated outside of the intrusion area. Further contributing to injuries for the four occupants seated in the rear row of bench seats were the narrow

lap belt anchorage points, which resulted in additional forces on the pelvis and abdomen.

Most medium-size bus manufacturers offer passenger lap/shoulder belts as an option, but they are not required. Because lap/shoulder belts provide a greater level of protection, bus and seat manufacturers should move toward providing them as standard, rather than optional, equipment for all seating positions on medium-size buses.

## **Findings**

1. None of the following were factors in the crash: (1) bus or truck driver qualifications or familiarity with vehicles and roadway, (2) medical condition or fatigue of the bus driver, (3) bus driver cell phone distraction, (4) bus driver impairment by alcohol or other drugs, (5) mechanical condition of either vehicle, (6) highway condition, or (7) weather.
2. Considering the rural location of the crash, the emergency response efforts were timely and adequate.
3. The truck driver operated his vehicle erratically on US Highway 83 for more than 15 minutes, including extended periods of travel off the right road edgeline and multiple incursions across the highway centerline—which culminated in a head-on crash in the opposing lane of travel.
4. It is possible that the truck driver was glancing at or manipulating his cell phone at the time of the crash, but this action would not explain the prolonged and continuous erratic driving behavior seen in the witness video recording leading up to the crash.
5. The truck driver was not sleep deprived, impaired by a medical condition, or impaired by alcohol at the time of the crash.
6. The failure of the truck driver to maintain control of his vehicle was due to impairment stemming from his use of marijuana in combination with misuse of a prescribed medication, clonazepam.
7. To better detect drivers operating under the influence of drugs, law enforcement officers need advanced training to identify the signs and symptoms of impairment as well as additional tools, such as roadside drug screening devices.
8. Oral fluid drug screening devices can improve the ability of law enforcement officers to detect drug-impaired drivers.
9. The state of Texas needs increased safety-focused leadership at the governor and state legislature level, additional resources, and data-driven strategies to prevent tragedies such as the Concan crash and to reduce the number of fatalities and serious injuries caused by alcohol- and other drug-impaired drivers.
10. Because the use of legal and illicit drugs by drivers is increasing, national leadership is needed to help prevent drug-impaired driving crashes by identifying best practices, effective science-based safety countermeasures, and drug testing protocols.
11. The lap belts provided insufficient protection for the passengers seated in the rear of the bus.

12. The narrow anchorage points for the lap belts contributed to the severity of injuries to passengers seated in row 4 of the bus.
13. Because lap/shoulder belts provide a greater level of occupant protection than lap belts, they should be installed as standard equipment on medium-size buses.

## **Probable Cause**

The National Transportation Safety Board determines that the probable cause of the Concan, Texas, crash was the failure of the pickup truck driver to control his vehicle due to impairment stemming from his use of marijuana in combination with misuse of a prescribed medication, clonazepam. Contributing to the severity of the injuries was the insufficient occupant protection provided by the lap belts worn by passengers seated in the rear of the medium-size bus.

## **Recommendations**

### **New Recommendations**

The NTSB makes new safety recommendations to the National Highway Traffic Safety Administration (NHTSA), the state of Texas, the Texas Department of Transportation, several medium-size bus manufacturers, and two seating manufacturers. The NTSB also reiterates one safety recommendation to NHTSA.

#### **To the National Highway Traffic Safety Administration:**

1. Develop and disseminate best practices, identify model specifications, and create a conforming products list for oral fluid drug screening devices.
2. Evaluate best practices and countermeasures found to be the most effective in reducing fatalities, injuries, and crashes involving drug-impaired drivers and provide additional guidance to the states on drug-impaired driving in *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices*.
3. Amend Federal Motor Vehicle Safety Standard 210 to increase the minimum anchorage spacing for individual seat belt assemblies, taking into account the dynamic testing of seat belt designs, seat belt fit, and vehicle configuration.
4. ***One additional recommendation is being developed to address lap/shoulder belts on medium-size buses.***

#### **To the state of Texas:**

5. Conduct an executive-level review of your impaired-driving program and implement data-driven strategies that result in a downward trend in the number of fatalities, injuries, and crashes involving alcohol- and other drug-impaired drivers.

**To the Texas Department of Transportation:**

6. Promote the importance of attending drug-impaired driving enforcement training and increase training access to meet the demands of local and state law enforcement.

**To medium-size bus manufacturers ARBOC Specialty Vehicles, LLC; Coach & Equipment Manufacturing Corporation; REV Group, Inc.; Diamond Coach Corporation; Forest River, Inc.; Girardin Blue Bird; SVO Group, Inc.; and Thomas Built Buses:**

7. Install lap/shoulder belts in all seating positions as standard, rather than optional, equipment in all newly manufactured medium-size buses.

**To seat manufacturers Freedman Seating Company and HSM Transportation Solutions:**

8. Supply seating systems equipped with lap/shoulder belts as standard, rather than optional, equipment for medium-size buses.

**Previously Issued Recommendation Reiterated in This Report**

**To the National Highway Traffic Safety Administration:**

Develop and disseminate to appropriate state officials a common standard of practice for drug toxicology testing, including (1) the circumstances under which tests should be conducted, (2) a minimum set of drugs for which to test, and (3) cutoff values for reporting the results. (H-12-33)