# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

**Date:** April 27, 2005

**In reply refer to:** H-05-02 through -05

Honorable Annette M. Sandberg
Administrator
Federal Motor Carrier Safety Administration
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At 10:50 a.m. on October 13, 2003, a 1992 Neoplan USA Corporation 49-passenger motorcoach, owned and operated by the First Baptist Church of Eldorado, Texas, was traveling eastbound on Interstate 20 near Tallulah, Louisiana. The motorcoach, carrying 14 passengers, was en route from Shreveport, Louisiana, to Tuscaloosa, Alabama, as part of a multicity sightseeing tour that had originated in Eldorado. As the motorcoach approached milepost 168, it drifted rightward from the travel lanes and onto the shoulder, where it struck the rear of a 1988 Peterbilt tractor semitrailer operated by Alpha Trucking, Inc., which was stopped on the shoulder at milepost 167.9. As both vehicles moved forward, the motorcoach rotated clockwise slightly and the semitrailer rotated counter-clockwise slightly; the vehicles remained together. They traveled approximately 62 feet and came to rest, still oriented to the east, adjacent to the right side of the interstate on the outside shoulder. Eight motorcoach passengers sustained fatal injuries, the motorcoach driver and six passengers received serious injuries, and the Peterbilt driver was not injured.[1]

The National Transportation Safety Board determined that the probable cause of the accident was the motorcoach driver's operation of the motorcoach in a reduced state of alertness due to fatigue as a result of his chronic insomnia and poor quality sleep. Further contributing to the accident was the failure of Alpha Trucking, Inc., to perform vehicle maintenance and to provide safety management controls, which resulted in the accident tractor semitrailer being parked on the interstate shoulder. Contributing to the severity of the injuries was the failure of the motorcoach seat anchorages.

After the accident, when the Federal Motor Carrier Safety Administration (FMCSA) conducted a compliance review of the First Baptist Church of Eldorado, it issued the church a U.S. Department of Transportation (USDOT) number and a safety rating of "Unsatisfactory" because of the church's failure to adhere to the Federal Motor Carrier Safety Regulations (FMCSRs). According to the church, it had been unaware before the accident that its motorcoach

[1] For additional information read National Transportation Safety Board, *Motorcoach Run-Off-The-Road Accident, Tallulah, Louisiana, October 13, 2003*, Highway Accident Report NTSB/HAR-05/01 (Washington, DC: 2005).

was defined by the Federal regulations as a commercial vehicle. Furthermore, the church said it had been unaware of the FMCSA, of the need to obtain a USDOT number for its motorcoach, and of the FMCSRs that applied to its motorcoach and drivers. When the church applied for title, registration, and license plates from the State of Texas, the State classified the vehicle as a "private bus," and the church thought its motorcoach was not a commercial vehicle. Information about the Federal definition of a commercial vehicle, which would have indicated that the church's accident motorcoach was a commercial vehicle, did not appear on the Texas title or registration application forms.

All vehicle owners must apply for a State title, registration, and license plates if they wish to operate their vehicle on public roads. Given that all vehicle owners in every State are subject to this rule, the application process provides an opportunity to educate all vehicle owners on whether their vehicle is a commercial vehicle by Federal definition and to give them guidance on how to contact the appropriate officials. Including specific guidance concerning the Federal definition of a commercial vehicle on State applications would ensure that all vehicle owners have access to this important information. It could help prevent the type of misunderstanding alleged to have occurred in this accident, in which the church was unaware of its standing as a commercial vehicle operator and of the need to adhere to Federal safety regulations affecting its vehicle and drivers.

Because many State applications do not provide any information on the FMCSA and the Federal rules for commercial vehicles, some motorcoach and bus owners may not be aware of the need to contact the FMCSA for guidance. As a result, not only are these owners not registered with the FMCSA, they may also be unwittingly operating unsafely as commercial motor carriers on the Nation's highways and not abiding by the Federal safety regulations that pertain to commercial vehicles and drivers. The Safety Board concluded that the Texas vehicle title and registration applications, which classified the accident motorcoach as a private bus, did not inform the vehicle's owner of its Texas or Federal classification as a commercial vehicle and the requirement to meet Federal safety regulations for this classification.

As you know, the FMCSA hosts a page on its Web site called "Safe Transportation of Passengers by Motorcoach - and What It Means to You." It provides access to educational and outreach information on issues such as bus and truck driver wellness programs, sharing the road safely, and the FMCSA National Training Center. In addition, the FMCSA has created a link to a Web page that provides detailed information on passenger carrier safety and on the FMCSA and its mission. It also provides information to assist users in evaluating the safety practices of interstate motorcoach companies before chartering a company. Topics such as driver qualifications, limitations on driving, vehicle standards, subcontracting agreements, insurance requirements, requesting carrier operating authority information, and researching carrier insurance and safety information are covered as well. The site contains FMCSA contact information.

This FMCSA Web page could also provide valuable information to commercial vehicle owners unfamiliar with the requirements they must meet when transporting passengers. Churches, colleges, charter schools, associations, and other groups may not be aware of all the regulations to which they must adhere as providers of passenger transportation via commercial vehicles. The Safety Board concluded that the FMCSA's Web page "Safe Transportation of

Passengers by Motorcoach - and What It Means to You" is an educational outreach mechanism well suited to provide information to commercial vehicle owners unfamiliar with the FMCSA and the Federal regulations that apply to transporting passengers safely on commercial vehicles. The Safety Board believes the FMCSA should develop and distribute educational materials for nontraditional commercial vehicle owners, such as church groups, on how to comply with the FMCSRs; at a minimum, the materials should be posted on the FMCSA Web site.

The postaccident mechanical inspection of the motorcoach by Safety Board investigators did not reveal any mechanical conditions that would have contributed to the accident. However, during the vehicle inspection, investigators discovered that the motorcoach had been equipped with speed-limited tires. The restricted speed information was clearly visible on the tires' outer sidewalls. The tires were designed for use at speeds not to exceed 55 mph; the motorcoach was being operated on the interstate at speeds exceeding 55 mph at the time of the accident. According to the manufacturer, the tires' speed restriction was dictated by their construction. They were designed to provide high-load capacity and durability and are normally (and appropriately) used on inner city transit-bus-type vehicles, which typically do not exceed speeds of 55 mph. The use of speed-limited tires on vehicles that routinely operate at higher speeds is not an industry-recommended practice because of the propensity of this type of tire to generate excessive heat, which is the leading cause of abrupt tire failures.

The First Baptist Church of Eldorado had the tires installed on the accident motorcoach in February 2002 and, on June 26, 2003, the motorcoach passed a State of Texas inspection. The inspection of motor vehicles (including motorcoaches) in Texas is conducted in approved, privately owned and operated garages and repair facilities, which are designated by the Texas Department of Public Safety. A review of the State inspection manual revealed that the inspection procedures do not include instructions concerning the identification and proper use of speed-limited tires. The Safety Board also reviewed additional State and Federal regulatory and vehicle inspection guidelines.[2] Information concerning the identification of, or the procedures for ensuring the proper use of, speed-limited tires does not appear in any of these State and Federal inspection guidelines or regulations for private or commercial vehicles.

If a speed-restricted tire is used in service at speeds above 55 mph for extended periods, a catastrophic failure can result. Consequently, when passenger-carrying vehicles are equipped with such tires, the vehicles must not be used for highway travel. Without specific inspection criteria addressing this issue, these tires can escape inspectors' scrutiny and be permitted to remain on passenger vehicles intended for prolonged use at speeds above 55 mph, which would cause an unsafe situation. The Safety Board concluded that because the commercial vehicle inspection criteria used by the State of Texas, the CVSA, the FMCSA, and the AAMVA do not address the identification and appropriate use of speed-limited tires, they overlook an important vehicle safety factor and can result in commercial vehicles intended for highway use being operated with tires not suited for highway speeds. The Safety Board believes the FMCSA should revise the FMCSRs appendix G to subchapter B, *Minimum Periodic Inspection Standards,*

[2] The guidance documents reviewed included 49 *Code of Federal Regulations* Part 393; the FMCSRs appendix G to subchapter B, *Minimum Periodic Inspection Standards*; the Commercial Vehicle Safety Alliance (CVSA) *North American Standard Out-of-Service Criteria*; and the American Association of Motor Vehicle Administrators (AAMVA) *Vehicle Inspection Handbook*: *Trucks, Buses, and Trailers.*

Part 10: "Tires," Sections A(5) and B(7), to include inspection criteria and specific language to address a tire's speed rating to ensure that it is appropriate for a vehicle's intended use.

The FMCSA and Mississippi, the State in which Alpha Trucking was headquartered, allow motor carriers to self-inspect and certify their own vehicles as a means of complying with the annual inspection requirements of the FMCSRs, provided the inspector is qualified and certified. Alpha Trucking's owner/president carried out the annual inspections and maintenance of the commercial vehicles owned and operated by his company. Alpha Trucking did not have any of the required documentation of the owner's certification or qualifications to perform annual inspections or maintenance of commercial vehicles.

The Safety Board's postaccident inspection of the Alpha Trucking tractor and semitrailer revealed numerous brake conditions that contributed to the vehicle's mechanical problems on the day of the accident, which led to its being on the shoulder of the interstate when the accident motorcoach approached. The accident tractor and semitrailer were being operated in a serious state of disrepair, as evidenced by the extensive brake problems identified, including the right front and right rear brake assemblies being inoperative, the brake linings being covered in debris and worn down to the fasteners, the friction surfaces being contaminated with dirt and grease, and the S-cam bushing measurements exceeding adjustment and replacement measurements.

Investigators found evidence that Alpha Trucking's maintenance of its vehicles was consistently deficient. The significant degree of wear and grease contamination, affecting most of the foundation brake components, discovered during postaccident inspection of the tractor semitrailer would normally have been addressed by an effective maintenance program. The smoke from the semitrailer that the Alpha Trucking tractor semitrailer driver said caused him to pull to the shoulder on the day of the accident was almost certainly caused by worn and contaminated brakes that Alpha Trucking had failed to maintain properly. The numerous recorded defects and violations listed by the Federal Motor Carrier Safety Assistance Program (MCSAP) inspectors in their roadside inspection reports in the months before the accident also indicated routine poor maintenance practices on Alpha Trucking's part. Therefore, the Safety Board concluded that the smoking brakes on the Alpha Trucking tractor semitrailer resulted from mechanical problems that were caused by habitual and progressive mechanical neglect.

Further, the company apparently did not conduct its self-inspection program in accordance with Federal and State requirements. MCSAP inspectors cited numerous roadside inspection violations for this accident vehicle over a period of several months preceding the accident, and some of these violations were probably present when the company's president signed and issued the vehicle's annual inspection certificate in March 2003. Moreover, according to its records, Alpha Trucking carried out its annual inspection for the accident vehicle before conducting a complete brake repair job and replacing belts and hoses, as well as the torque rods and bushings, on the tractor. According to Alpha Trucking's records, all this essential work took place within a month after the issuance of the annual self-inspection certificate, indicating that when the company president certified the vehicle in March 2003, it actually still required considerable repair and maintenance.[3]

[3] The Safety Board has no evidence, beyond Alpha Trucking's own records, that the company conducted any of the maintenance it claimed to have done in the months preceding the accident.

The company's self-inspection and certification procedures are suspect in other areas. For example, Alpha Trucking's Inspection, Repair, and Maintenance Record for the accident tractor does not correspond with the repairs certified by the company as having been conducted following the May 28 and June 3, 2003, roadside inspections. Further, Alpha Trucking could not produce the Annual Inspection Record or the required Inspection, Repair, and Maintenance Record for the accident semitrailer.

The company's failures to provide proof of qualification for the inspector performing the vehicle self-inspections (the owner), to schedule or perform proper maintenance and repair of vehicles, to complete necessary repairs before issuing certifications, and to maintain vehicle inspection and repair records all indicate that Alpha Trucking did not meet the intent of self-inspection program requirements. Therefore, the Safety Board concluded that Alpha Trucking misused the motor carrier vehicle self-inspection program by failing to employ the services of a qualified inspector and by misrepresenting the completion of vehicle repairs, thereby compromising the safety of the traveling public.

In the case of Alpha Trucking, the motor carrier vehicle self-inspection and repair certification process permitted by the State of Mississippi and by the FMCSRs failed. This motor carrier used the self-inspection and repair certification procedure to circumvent measures intended to ensure safety, thereby reducing the program's adequacy and effectiveness. Nothing currently prevents other motor carriers from similarly abusing the system. The Safety Board is unaware of any studies designed to measure the safety effectiveness of the self-inspection process that the FMCSA has performed as part of its oversight duties. Therefore, the Safety Board concluded that the current method of motor carrier vehicle annual self-inspection and certification accepted by the State of Mississippi and the FMCSA does not ensure that safety defects are repaired and can result in unsafe conditions for the traveling public. The Safety Board believes the FMCSA should conduct a study on the safety effectiveness of the self-inspection and certification process used by motor carriers to comply with annual vehicle inspection requirements and take corrective action, as necessary.

During the Tallulah crash sequence, many passenger seats did not remain secure in their original positions in the passenger compartment, even in the space outside the intrusion area. Intrusion was limited to the first several rows on the right (passenger) side; nevertheless, the passengers seated outside the intrusion area sustained serious and fatal injuries. On the passenger side, all the passengers in the first seven rows sustained fatal injuries. On the driver side, the vehicle sustained no intrusion damage to the passenger compartment; however, two passengers seated on this side sustained fatal injuries, and five sustained serious injuries.

Emergency personnel said that when they arrived on scene, they found the seats "piled up" near the front of the coach and passengers trapped among and underneath the seats. The failure of the seat anchorages, which occurred when the unrestrained passengers struck the seats during the accident sequence, caused entire seat frames to move forward. As the seats moved forward, passengers were pinned between them, which increased the severity of their injuries.

One reason the seats did not remain in their original positions during the accident was that several of the T-bolts that fastened the seats to the stainless-steel floor track had been incorrectly installed. The T-bolts were designed so that they could only be inserted into the track

when the bolt head was positioned parallel to the track. Turning the bolts slightly less than 90°, so that the head of the bolt was nearly perpendicular in the track, locked them into place and prevented the bolt and seat pedestal from "lifting" out. Of the 32 T-bolts in the 16 seat frames found outside the motorcoach, 7 T-bolts had not been properly secured to the track in the perpendicular direction.

Shortly before the accident, the motorcoach had passed a State inspection and received a valid inspection certificate. As has been noted, the Safety Board's postaccident inspection of the motorcoach revealed that some of the seats had not been properly secured into place, allowing these seats to come loose. In reviewing the State of Texas inspection procedures; the FMCSRs appendix G to subchapter B, *Minimum Periodic Inspection Standards*; and the AAMVA *Vehicle Inspection Handbook: Trucks, Buses, and Trailers*, the Safety Board found that they contain no procedures or criteria for the inspection of seat anchorage securement in motorcoaches. The Safety Board concluded that improperly secured motorcoach passenger seats are not likely to be identified during commercial vehicle inspections because no criteria or procedures are available for the inspection of motorcoach passenger seating anchorage systems. Therefore, the Safety Board believes that the FMCSA should develop a method for inspecting motorcoach passenger seat mounting anchorages and revise the FMCSRs appendix G to subchapter B, *Minimum Periodic Inspection Standards*, to require inspection of these anchorages.

Therefore, the National Transportation Safety Board makes the following safety recommendations to the Federal Motor Carrier Safety Administration:

> Develop and distribute educational materials for nontraditional commercial vehicle owners, such as church groups, on how to comply with the Federal Motor Carrier Safety Regulations; at a minimum, the materials should be posted on the Federal Motor Carrier Safety Administration Web site. (H-05-02)
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> Revise the Federal Motor Carrier Safety Regulations appendix G to subchapter B, *Minimum Periodic Inspection Standards,* Part 10: "Tires," Sections A(5) and B(7), to include inspection criteria and specific language to address a tire's speed rating to ensure that it is appropriate for a vehicle's intended use. (H-05-03)
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> Conduct a study on the safety effectiveness of the self-inspection and certification process used by motor carriers to comply with annual vehicle inspection requirements and take corrective action, as necessary. (H-05-04)
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> Develop a method for inspecting motorcoach passenger seat mounting anchorages and revise the Federal Motor Carrier Safety Regulations appendix G to subchapter B, *Minimum Periodic Inspection Standards*, to require inspection of these anchorages. (H-05-05)

The Safety Board also issued safety recommendations to the National Highway Traffic Safety Administration, the American Association of Motor Vehicle Administrators, the Commercial Vehicle Safety Alliance, and Neoplan USA Corporation.

Please refer to Safety Recommendations H-05-02 through -05 in your reply. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HEALING, and HERSMAN concurred in these recommendations.

*Original Signed*

By: Mark V. Rosenker
Acting Chairman