National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: OCT 1, 1999
In Reply Refer to: H-99-70

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President and Chief Executive Officer
American Petroleum Institute
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On August 9, 1998, about 12:53 a.m., a Premium Tank Lines, Inc., (Premium) truckdriver was transferring gasoline from a cargo tank to the underground storage tanks at a Fast Lane gasoline station-convenience store in Biloxi, Mississippi, when an underground storage tank containing gasoline overflowed. An estimated 550 gallons of gasoline flowed from the storage tank, across the station lot into the adjacent highway, and through a nearby intersection. The gasoline ignited, and fire engulfed three vehicles near the intersection, which ultimately resulted in the deaths of five occupants and the serious injury of one. Damages were estimated at $55,000.[1]

From its investigation, the National Transportation Safety Board identified deficiencies in Premium's management oversight, including the failure of carrier officials to follow established company procedures in the hiring and disciplining new truckdrivers, the lack of effective dispatch procedures, and the lack of written instructions related to loading and unloading gasoline in employee operating manuals.

The truckdriver in this accident was a military veteran who had retired from the Navy in 1997. Although a significant factor in Premium's hiring the truckdriver was his military background, the safety director did not attempt to request the driver's military records, which contained useful information for determining his medical fitness and ability to operate heavy equipment.

Premium's officials might have been able to determine the truckdriver's fitness for duty had they conducted a 3-year background check as required by Federal regulations (49 *Code of Federal Regulations* 391.23). The safety director, who was the hiring official, verified the truckdriver's employment only with the driver's previous civilian employer.

[1] For more information, read *Overflow of Gasoline and Fire at a Service Station-Convenience Store, Biloxi, Mississippi, August 9, 1998*, Hazardous Materials Accident Report, NTSB/HMZ-99/02 (Washington, D.C.: National Transportation Safety Board, 1999).

The safety director told the Safety Board that he did not think that he would be able to obtain background information from the Navy.

What is disturbing to the Safety Board in this case is that Premium officials did not even attempt to obtain Navy records in order to fully comply with Federal requirements for vehicle operator background checks. If Premium had made the information request, it may have obtained documents showing the truckdriver's medical history before the accident occurred, which may have alerted company officials that the truckdriver had a medical condition that could affect his skills and abilities.

According to a Premium operating manual, the driver-trainer with whom a new employee is teamed has the final determination on the length of a driver's initial training and on whether the new hire should be advanced to the status of qualified driver. In the course of this truckdriver's on-the-job training, his driver-trainer recommended letting him go. Instead of taking the driver-trainer's advice, the safety director told the driver-trainer to spend another day of training with the truckdriver. The next time that the truckdriver was at work, his driver-trainer happened to be off duty. Because a delivery person was needed, Premium officials allowed the ill prepared truckdriver to work alone. The truckdriver completed his assigned deliveries that day without incident. Company officials later instructed the driver-trainer to backdate the certificate showing that the truckdriver had successfully completed his training, which allowed the truckdriver to continue working alone.

During his employment at Premium, the truckdriver showed a regular pattern of Federal hours-of-service violations. Although a Premium operating manual states that suspension is the consequence of failing to comply with these Federal regulations, company officials merely continued to issue the truckdriver written warnings as a disciplinary measure, rather than suspending him.

The Safety Board's investigation also found that Premium's lack of adequate procedures for dispatching delivery drivers to customer facilities was causal in this accident.

Premium's truckdrivers obtain their assignments by telephoning the company dispatcher and orally receiving a list of delivery locations and the number of gallons to be delivered to each site. Premium had no procedures for ensuring that a truckdriver recorded the correct information. In the case of the Biloxi accident, the truckdriver wrote down the wrong station number for one facility, which resulted in his making a delivery to the wrong location. Since this overfill, Premium has changed the company's dispatch functions. Whenever possible, the dispatcher gives drivers instructions concerning products, amounts, customer location, and so forth in written form. When the dispatcher cannot provide written instructions to a driver, he must give oral instructions to the driver at least twice and then require the driver to repeat the instructions to ensure they have been clearly communicated.

Despite the miscommunication between the dispatcher and the truckdriver in the dispatch assignments, the overfill at the incorrect Fast Lane station might have been avoided if the truckdriver had followed safe unloading procedures. However, the driver made a number of operating errors when he arrived at the station. He did not determine the quantity of gasoline in the underground storage tanks, and he did not calculate the amount of gasoline that could safely be transferred from the cargo tank to the station storage tanks. After sticking the underground storage tanks through the direct fill ports, he failed to use the measurement that he obtained to calculate the available space for gasoline in the storage tank. He then failed to close the lids of the direct fill ports before beginning the gasoline transfer through the remote fill ports. Having both the remote and the direct fill port lids open rendered the tank system's pressure-controlled safety device ineffective and resulted in gas overflowing the direct fill port of the regular unleaded gasoline storage tank. Finally, the truckdriver did not properly monitor the gasoline transfer. He left the cargo tank truck while gasoline was being transferred into the underground tanks, which was contrary to company procedures.

Interviews with experienced Premium drivers and the truckdriver involved in the Biloxi accident revealed that the employees' knowledge about company policies and procedures concerning loading and unloading gasoline varied widely. The Safety Board therefore looked at the reference materials and instructions Premium provided to its new hires concerning gasoline transfers.

The driver's manual given to Premium's new hires and the trainer's manual and the checksheet used by its driver-trainers were very general in nature and addressed few safety topics other than those concerning over-the-road transport. The manuals contained minimal instructions addressing gasoline transfers; the checksheet lacked detailed items under the category "Loading and Unloading." Although the driver-trainer said that he explained and demonstrated specific unloading procedures to the truckdriver, the truckdriver's personal notes taken during training list only very general steps and contain few safety considerations. The Safety Board therefore concluded that Premium's operating manuals for its new employees and its driver-trainers lacked the specificity that employees need to ensure that they practice correct and safe cargo unloading procedures.

When addressing operational considerations with serious safety implications, oral instructions are not sufficient. Oral instructions can be misinterpreted. Even when driver-trainers follow up their oral instructions by watching the drivers perform a function, there is no guarantee that the drivers understand the safety implications of the procedures they are following. Further, over time many trainees will forget instructions on procedures that they are not required to perform frequently. All drivers of cargo tank trucks need specific written job procedures if they are to operate safely. In the case of new employees, in particular, well-written loading and unloading procedures can establish desired work patterns before bad habits are learned.

The National Transportation Safety Board therefore recommends that the American Petroleum Institute:

> Inform your members having cargo tank motor carrier operations of the facts and circumstances of the August 9, 1998, accident in Biloxi, Mississippi, and urge them to review the adequacy of their procedures for hiring and training truckdrivers and their written procedures for loading and unloading hazardous materials. (H-99-70)

Also, the Safety Board issued safety recommendations to the Federal Highway Administration, the Research and Special Programs Administration, the Environmental Protection Agency, Premium Tank Lines, Inc., R.R. Morrison and Son, Inc., the National Tank Truck Carriers, the National Association of Convenience Stores, the National Association of Truck Stop Operators, the Petroleum Marketers Association of America, the Service Station Dealers of America, and the Society of Independent Gasoline Marketers of America.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation H-99-70 in your reply. If you have any questions, you may call (202) 314-6678.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

Original Signed

By: Jim Hall
Chairman