

SP-20  
Log H-452

**NATIONAL TRANSPORTATION SAFETY BOARD**  
WASHINGTON, D.C.

ISSUED: November 15, 1985

Forwarded to:

Mr. Kenneth L. Pierson  
Director  
Bureau of Motor Carrier Safety  
Federal Highway Administration  
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

H-85-31 through -35

About 4:48 a.m., m.d.t., on August 1, 1984, a tractor-semitrailer combination operated by Riss International Corporation (Riss) of Kansas City, Missouri, was traveling south on Interstate 25 (I-25) in Denver, Colorado. The flatbed semitrailer was loaded with six torpedoes, Class A explosives, which were being shipped from a U.S. Navy base in Keyport, Washington, to a Navy facility in Groton, Connecticut. The driver intended to turn east onto Interstate 70 (I-70) and was being guided by signs when she steered the vehicle to the right onto the ramp connecting I-25 to I-70. The driver then made a quick turn to the left and the trailer whipped. She applied the footbrake, saw that she had to make a left turn at the bottom of the ramp, and then released the brake and tried to steer through the curve. The tractor-semitrailer overturned onto its right side and into the center lane of I-70, slid 62 feet on its side, struck a 48-inch-high concrete safety-shape barrier, bounced off the barrier, and after sliding another 45 feet came to rest. The driver had not seen a left-turn sign and 25-mph advisory speed plate located on the right side of the exit ramp. It was cracked, glazed, and partially hidden from the approaching driver's view by tree foliage and a lamppost. 1/

The circumstance which separates any hazardous materials transportation accident from other accidents is the immediate need for specialized information, expertise, and equipment. No matter how extensive the Federal or State response network may be, it always will be the local emergency response network that must deal initially with the uncertainties of the threat. Local emergency personnel must be able to assess quickly the threat posed to public safety by the materials involved, to acquire the appropriate resources to mitigate the threat, and to have confidence in the information being received and in the ability of those who have a responsibility to assist throughout the emergency. Furthermore, local emergency response personnel perceive military explosive shipments as different qualitatively and quantitatively than civilian shipments, which influences action they take to identify the hazards presented by the cargo and to mitigate the threats.

1/ For more detailed information read Hazardous Materials Accident Report--"Overturn of a Tractor-Semitrailer Transporting Torpedoes, Denver, Colorado, August 1, 1984" (NTSB/HZM-85/02).

In this accident, the local emergency response organizations were unable to obtain authoritative information and expertise on the threat posed to the community in a timely manner. When emergency response personnel called the U.S. Department of Defense (DOD) at two telephone numbers listed on the shipping paper, about 5:15 a.m., neither telephone was answered. (Subsequent to the accident, the DOD directed that 24-hour telephone numbers be entered on shipping documents.) The fire department was also unsuccessful in contacting a local military installation and Riss; therefore, it called the Chemical Transportation Emergency Center (CHEMTREC) of the Chemical Manufacturers Association, was connected telephonically to the Naval Sea Systems Command in Washington, D.C., and a DOD emergency response was initiated. Although Riss had an emergency telephone number, local emergency responders were not aware of it. Had the Riss emergency telephone number been entered on the shipping paper, local emergency response personnel probably would have been able to reach Riss personnel as early as 5:21 a.m.

Federal Motor Carrier Safety Regulation (FMCSR) 49 CFR 397.19 requires that a motor carrier which transports Class A or B explosives furnish the driver a document containing precautions to be taken and the telephone numbers of persons to be contacted in case of an accident; however, the regulations do not explicitly require a 24-hour telephone number. Following the accident on August 1, 1984, the Secretary of Transportation stated in a letter to the mayor of Denver that,

It is implicit that any telephone number provided to meet the requirement be a manned, working number which can be used to activate the identified emergency contact person(s) at any time while the truck is en route to its destination with its explosive cargo, i.e., the regulations already require 24-hour/day telephone coverage.

The FMCSR should be amended to require explicitly that the explosives carrier have an effective 24-hour emergency telephone number.

In March 1984, the driver and her brother (the codriver of the accident vehicle) enrolled in the Professional Driving Academy (PDA) in Kansas City, Kansas; both graduated from the academy on May 11, 1984. The driver started driving for Riss on May 14, 1984. She had no previous truckdriving experience. To the time of the accident the driver had accumulated a total of 8,227 miles driving for Riss, of which 3,659 miles involved the transportation of Class A and B explosives.

After 4 weeks of the 7-week truckdriving school, the driver's instructor reported that she still did not read traffic conditions well and make adjustments promptly while driving a tractor-semitrailer, i.e., she waited too long to begin slowing down. The codriver recognized her limited experience and specifically drove from Rawlins, Wyoming, to Fort Collins, Colorado, so that the driver would operate the truck on a highway with fewer curves. Her lack of truckdriving experience contributed to her failure to recognize the hazards at the interchange ramp for the vehicle she was operating, and to her failure to slow the vehicle sufficiently to safely negotiate the curve at the end of the ramp.

While in this accident driver inexperience was the major factor, other factors must be considered in the selection of drivers. In an accident involving a tractor-semitrailer loaded with Class A explosives, on April 9, 1984, near Farewell Bend, Oregon, the driver failed to control the vehicle while negotiating a steep grade and curve. The vehicle traveled through the air for 84 feet before landing upside-down. According to

the Bureau of Motor Carrier Safety (BMCS) accident investigation, the driver held chauffeur licenses from two States, and discrepancies were disclosed between his employment application and information provided by previous employers. For example, his employment application stated that he had driven for a trucking company for 18 months; the BMCS accident investigation disclosed that he had worked there only 28 days and was terminated after his involvement in a major truck accident. The codriver was on his first interstate trip after completing a "truck-trailer instruction course" from a truckdriving school on April 2, 1984, only 7 days before the accident. The codriver in that case had been convicted previously of driving while intoxicated and speeding which resulted in his license being revoked for 1 year. While his license was revoked, he was convicted of careless and imprudent driving and his license was revoked for another year. After his license was reinstated, he was convicted of speeding.

Additionally, the Safety Board investigated an accident on December 2, 1982, involving a tractor-semitrailer loaded with 18 surface-to-air missiles near Los Banos, California. The truckdriver admitted to drinking alcoholic beverages prior to the accident, and he pleaded guilty to a charge of "reckless driving with alcohol involvement." He had been convicted of 14 previous traffic violations--9 for speeding, 1 for driving while intoxicated, 1 for reckless driving, 1 for fleeing a police officer, 1 for running a red light, and 1 for having a fictitious license. In June 1976, the driver was convicted of one count of burglary and two counts of theft of property. He was 17 years old at the time. He was later convicted of public intoxication, possession of a firearm, minor in possession of beer, theft of gasoline, and consuming alcohol after hours. At the time of the accident, robbery charges were pending. Following the accident the DOD's Military Traffic Management Command (MTMC) amended carrier agreements to prohibit carriers transporting Class A or B explosives from using drivers with "a record of criminal violation or other incident of unsafe driving including driving while intoxicated (DWI)." However, following motor carrier objections, the restriction was substantially relaxed to prohibit only the use of a driver disqualified in accordance with U.S. Department of Transportation (DOT) regulations (49 CFR 391.15).

Following the investigation of the Los Banos accident and 15 other accidents investigated by the Safety Board, 2/ involving trucks transporting hazardous materials in bulk where driver error or deficiency was a causal factor, the Safety Board issued Safety Recommendation H-83-31 on July 8, 1983, to the American Association of Motor Vehicle Administrators (AAMVA):

Develop recommended criteria for use by the States in requiring and issuing a special license or an endorsement on a commercial truckdriver license to operate trucks transporting hazardous materials. Parameters should include, but not be limited to: the minimum qualification level of operational experience and disqualifying factors, such as the number of traffic accidents, number and type of traffic violation convictions, and number of driver license suspensions.

In the recommendation letter, the Safety Board stated that it believed "if employees' driver license records and levels of operational experience were reviewed more carefully and more stringent standards were established for licensing and employment, the number of truck accidents involving hazardous materials resulting from errors by drivers could be

2/ These accidents involved overturns, jackknifings, and collisions with trains, and collectively resulted in 61 fatalities and 283 injuries, most of which were caused by the release of hazardous materials.

decreased." The Board also addressed the need to collect data for use in determining the minimum level of operational experience for a special license or certification to transport hazardous materials. In its reply on November 9, 1983, the AAMVA agreed that it was the logical organization to develop and implement such a program, and stated that it would seek Federal funding to develop the recommendation. No substantive action has been taken since that date. Safety Recommendation H-83-31 is classified as "Open-- Acceptable Action."

In a special study of railroad/highway grade crossing accidents involving trucks transporting hazardous materials, <sup>3/</sup> the Safety Board found that, while some carriers are selective in hiring drivers for hazardous materials trucks, others are not. For example, one hazardous materials carrier required its drivers to have at least 2 years of accident-free driving on semitrailer units, no driver license suspension within the last 3 years, and no convictions of a major chargeable offense, such as driving while intoxicated. The carrier would not consider for employment a driver who failed to meet these standards. Conversely, in a North Carolina accident investigated by the Board, the driver had been employed by the carrier for only 16 months, during which time he had had two speeding convictions, one exceeding the safe speed conviction, and a 2-month driver license suspension. Furthermore, at the time of his employment, his driving record showed that he had a record of 11 motor vehicle traffic violation convictions, 1 license suspension, and 4 accidents, all occurring within a 6 1/2-year span.

In its study, the Safety Board also found that many of the drivers involved in accidents had worked for carriers less than 2 years. A review of the 1981 accident data collected by the BMCS indicated that 46.7 percent of all accidents involving hazardous materials involved drivers who had been with their carrier 2 years or less.

As a result of the study, the Safety Board issued Safety Recommendation H-81-76 on October 6, 1981, to the Federal Highway Administration (FHWA):

Study the feasibility of requiring drivers to have an additional national or State license or endorsement to drive trucks used to transport bulk hazardous materials. The study should establish criteria for prior driving record and training in handling hazardous materials and in emergency procedures.

The FHWA agreed with the recommendation; it stated that the matter was of significant importance and would be considered for future funding. On February 14, 1985, the FHWA advised the Board that the study had been approved for the 1985 research program. Beyond approval for the research program, no substantive action has been taken.

Effective July 1, 1985, the State of California began requiring drivers who transport hazardous materials to obtain a special hazardous materials certificate before transporting that freight. Although the new law applies only to drivers who hold a California driver license, it requires the drivers to demonstrate a knowledge and understanding of the Federal and State laws and safe driving practices relating to the transportation of hazardous materials. Drivers who are subsequently convicted of "high risk driving offenses" are then subject to "immediate intervention by the issuing agency."

<sup>3/</sup> Special Study--"Railroad/Highway Grade Crossing Accidents Involving Trucks Transporting Bulk Hazardous Materials," September 1981 (NTSB-HZM-81-2).

On December 31, 1984, the DOD petitioned the DOT (FHWA) to amend the driver qualification regulations to require that a driver attain at least 12 months' experience operating motor vehicle equipment of a similar type (such as a tractor-semitrailer) before being qualified to transport Class A or B explosives and Class A or B poisons. The DOD requested this action to ensure that each motor vehicle operator gained experience with lower risk cargo before being allowed to transport explosives or poisons, and that the proposed requirement should be further considered for all hazardous materials.

The Motor Carrier Safety Act of 1984 (Public Law 98-554, 98 Stat. 2829) was enacted by the Congress to enhance commercial motor vehicle safety and to reduce highway fatalities, injuries, and property damage. In accordance with directives in the act, the DOT issued an Advance Notice of Proposed Rulemaking (ANPRM) BMCS Docket No. MC-114 (50 FR 2998, January 23, 1985) requesting comments on various subjects or provisions of the FMCSR that are being considered for amendment or reissue. Several respondents commented on the need for more stringent qualification criteria for truckdrivers, specific training requirements, and the establishment of safe driving experience before allowing drivers to transport certain hazardous materials.

After the torpedoes were loaded onto the trailer and before leaving Keyport, the codriver called the Riss dispatcher in Kansas City, Missouri, and received highway routing instructions. The routing instructions directed the driver to take Interstate 5 south (to Portland, Oregon), Interstate 84 east (to Ogden, Utah), Interstate 80 east (to Laramie, Wyoming), U.S. Route 287 south (to Fort Collins), Colorado State Route 14 east to I-25, I-25 south (to Denver), and then I-70 east.

One of the reasons stated by the Riss safety supervisor for selecting I-70 was the locations of safe havens. The FMCSR (49 CFR 397.5) requires that "a motor vehicle which contains Class A or B explosives must be attended at all times by its driver or a qualified representative of the motor carrier . . . [unless] the vehicle is located on the property of a motor carrier, on the property of a shipper or consignee of the explosives, [or] in a safe haven. . . ." Although the BMCS requires that a safe haven be approved by local, State, or Federal authorities, it has not issued any minimum standards or guidelines that should be followed when designating an area as a safe haven. Safe havens usually are truck stops, sometimes in congested areas, and according to the DOD, they rarely meet voluntary guidelines set by the National Fire Protection Association.

The FMCSR (49 CFR 397.9) prohibits motor carriers from operating vehicles containing hazardous materials through heavily populated areas, but the interstate system generally connects major cities. The DOT published an interpretation of 49 CFR 397.9 in the Federal Register (42 FR 60078, November 23, 1977) which states that when "a vehicle is passing through a populated or congested area, use of a beltway or other bypass would be considered the appropriate route." Riss was not aware of the interpretation prior to this accident and did not route the vehicle over Interstate 270, a bypass through a less congested area. However, the DOT has also stated that "mere failure to use the beltway would not necessarily constitute a violation." Because motor carriers, States, and local jurisdictions rely upon the DOT for regulatory guidance when determining routes, the BMCS has a responsibility to clearly define its regulatory requirements. It is unclear whether Riss violated any Federal regulations by routing the vehicles through the I-25/I-70 interchange instead of over an existing bypass. During the Safety Board's hearing the BMCS itself could not identify a single enforcement action it had ever taken for violation of its routing regulations.

The DOD requires its shipping facilities to perform safety inspections of motor carrier equipment before tendering explosive shipments, but it relies primarily upon the Interstate Commerce Commission (ICC) and the BMCS to determine if carriers meet minimum Federal safety standards. However, at a congressional hearing on September 6, 1984, regarding "Protecting the Integrity of the Department of Transportation's Truck Safety Audits," the General Accounting Office (GAO) reported that the BMCS may "revise a carrier's safety rating to show that carrier compliance had improved without another safety audit being performed. As a result, motor carrier ratings can improve even though compliance with the safety regulations may not necessarily have improved." The GAO found that the BMCS "has changed a carrier's conditional or unsatisfactory rating based on the carrier's sending a letter to the BMCS explaining correction of violations and improved compliance. The changes in overall ratings were made without audit verification," and the GAO reported to the Congress that changing carrier safety ratings without an audit has a possible impact in carrier audit selection, ICC modifications in licensing authority, and the use of ratings by insurers and shippers selecting carriers to transport goods.

During the investigation of this accident, Safety Board investigators identified an instance in which BMCS headquarters changed the safety rating of a motor carrier without audit verification to determine if there was improved regulatory compliance. The carrier was the first carrier called by the Navy to transport the torpedoes that were involved in the accident; however, it was not able to furnish equipment for this load. On October 24, 1984, a BMCS field office (Office of Motor Carrier Safety) conducted an audit on the carrier. The field staff auditor assigned a "conditional" rating and noted that the president of the carrier "would not commit himself to any changes he would make to effect compliance." Subsequently, on November 19, 1984, the BMCS headquarters assigned a "conditional" rating. On November 26, 1984, the carrier's safety director wrote to the BMCS field office and appealed the "conditional" rating noting that "As a result of this rating, we have been restricted from transporting Department of Defense shipments."

On December 7, 1984, the carrier submitted to the BMCS field office a summary report of corrective actions made since the audit, and again appealed the "conditional" rating. On December 10, 1984, the field officer-in-charge met with the carrier's safety director and recommended to the regional office that the carrier's rating be changed to "satisfactory." The carrier was not reaudited, but explained actions taken to increase compliance. On December 11, 1984, the safety rating was changed to "satisfactory," and the MTMC was advised of the improved rating.

Therefore, the National Transportation Safety Board recommends that the Bureau of Motor Carrier Safety of the Federal Highway Administration:

Amend Federal Motor Carrier Safety Regulation 49 CFR 397.19 to require explicitly that the explosives carrier have an effective 24-hour emergency telephone number. (Class II, Priority Action) (H-85-31)

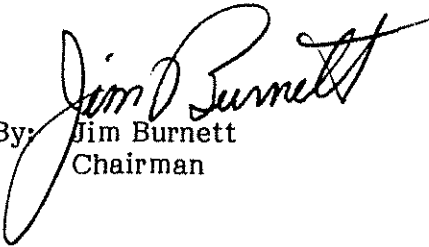
Expedite the portion of the current rulemaking dealing with more stringent standards for driver qualifications and training for drivers who transport hazardous materials. (Class II, Priority Action) (H-85-32)

Establish and incorporate into the Federal Motor Carrier Safety Regulations minimum standards for designation of safe havens for trucks transporting explosive materials. (Class II, Priority Action) (H-85-33)

Amend Federal Motor Carrier Safety Regulation 49 CFR 397.9 to eliminate ambiguities in the routing requirements for vehicles transporting hazardous materials. (Class II, Priority Action) (H-85-34)

Require an audit verification before revising a carrier's safety rating to indicate improved regulatory safety compliance. (Class II, Priority Action) (H-85-35)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in these recommendations.

  
By: Jim Burnett  
Chairman

