



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

H-547E

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In reply refer to: H-90-38
and -39

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For many years, the National Transportation Safety Board has documented the major role played by alcohol and other drugs in causing accidents throughout the U.S. transportation system. The Safety Board has recently completed a safety study that focuses on such abuse and other human performance issues in accidents involving heavy trucks. A copy of the report, "Fatigue, Alcohol, Other Drugs, and Medical Factors in Fatal-to-the-Driver Heavy Truck Crashes (Volume 1)," is enclosed. A companion report, Volume 2, contains the case summaries of all of the truck accidents in the study.

The report discusses, in detail, the relevant safety issues and forms the basis for the recommendations issued by the Safety Board.

For a 1 year period, October 1, 1987 through September 30, 1988, the Safety Board investigated every accident in eight States in which a driver of a heavy truck was fatally injured. One hundred and eighty two accident investigations involving 186 heavy trucks were conducted in California, Colorado, Georgia, Maryland, New Jersey, North Carolina, Tennessee and Wisconsin.

From NTSB toxicological tests, the Safety Board found that 33 percent of the fatally injured drivers tested positive for alcohol and other drugs of abuse. The most prevalent drugs found were marijuana and alcohol (13 percent each), followed by cocaine (9 percent), methamphetamine/amphetamines (7 percent),

other stimulants (8 percent), and codeine and phencyclidine (PCP) (less than 1 percent each). Stimulants are the most frequently identified drug class among fatally injured truck drivers.

Fatigue and fatigue-drug interactions were involved in more fatalities in this study than alcohol and other drugs of abuse alone.

In addition, the study found that for the fatally injured drivers:

- o The most frequently cited accident probable cause was fatigue (57 drivers or 31 percent) followed by alcohol and other drug use impairment (53 drivers or 29 percent);
- o Of the 57 drivers who were fatigued, 19 were also impaired by alcohol and/or other drugs;
- o There is a strong association between violation of the Federal hours of service regulations and drug usage;
- o Drivers with at least one suspended or revoked license are more likely than other fatally injured drivers to have used drugs of abuse;
- o There is a significant relationship between a driver's prior alcohol and/or other drug offenses and a positive test for drugs of abuse in these accidents. This points up the need for thorough background checks and pre-employment drug tests;
- o There is a significant relationship between drug positive test results among professional drivers and a shipment deadline for the load being carried;
- o There is a significant relationship between drug positive test results and the type of trucking service provided, truckload (TL) vs. less-than-truckload (LTL). Nearly 42 percent of fatally injured TL carrier drivers tested positive compared with 14 percent of LTL carrier drivers;
- o There is a significant relationship between drug positive test results and the day of the week. Saturday, Sunday, and Monday are the days with the highest percentages of drug positive tests;
- o While time of day and drug positive tests are not significantly related, 70 percent of the drug positive tests occurred in the following times: 9:00-9:59 am; 1:00-3:59 pm; and 6:00 pm-1:59 am. 1988 FARS data indicates that 48 percent of truck fatal accidents occurred during these times;
- o A disproportionately high percentage of drivers who used drugs are single, separated or divorced;

- o The driver's medical condition caused or contributed to 10 percent of the accidents. Over 90 percent of medical condition related accidents involved some form of cardiac incident. This calls into question the effectiveness of the Federal program to assure the proper medical qualification of commercial vehicle drivers;
- o Older drivers are less likely to have tested positive for drugs, but are more likely to have had an incapacitating medical incident;
- o Occupant protection issues are the most frequently identified non-causal factors involved in a heavy truck fatal accident (68 of 185); and
- o In 115 of the 185 accident involved trucks (62 percent), some management deficiency in oversight of the driver or the proper condition of the vehicle was identified. Deficiencies in oversight of both the driver and the vehicle were identified in 32 of 185 (18 percent) accidents.

The study also reviews: the regulations and legislation governing commercial truck operations; previous relevant research in the field of alcohol and other drug abuse; and the highway accident databases now in existence. The study notes the limitations of those databases as a means with which to assess the scope of the alcohol and other drug abuse problem in heavy truck accidents.

Fatigue, drugs which are taken to counteract the symptoms of fatigue, and drugs which aggravate fatigue appear to be a major factor in accident causation. As evidenced by the 34 cases which were fatigue related, fatigue alone can be a significant factor in accidents fatal to the driver of a heavy truck. Its combination with alcohol and other drugs of abuse causes an especially severe situation.

Drug of abuse positive test results are significantly related to the day of the week. DOA positives as a percentage of accidents decreases from 38 percent on Monday to a low of 21 percent on Tuesday, but rises to 53 percent on Saturday and 83 percent on Sunday. Monday and the weekend have the highest percentage of alcohol involvement. While time of day and drug abuse were not significantly related, over 70 percent of the DOA positives occurred during one of three time periods: 9:00-9:59 am; 1:00-3:59 pm; and 6:00 pm-1:59 am. 1988 FARS data indicates that 58 percent of all fatal accidents and 48 percent of medium and heavy truck fatal accidents occur during these times. This may assist States in planning drug enforcement activities.

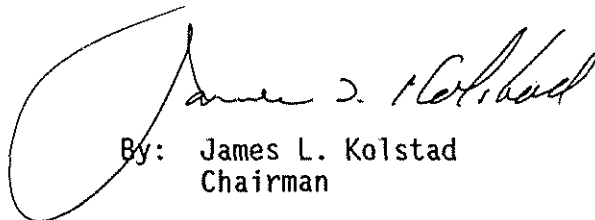
As a result of this safety study, the National Transportation Safety Board recommends that the International Association of Chiefs of Police, International Association of Directors of Law Enforcement Standards and Training, and the Commercial Vehicle Safety Alliance:

Disseminate to your members information regarding the prevalence of alcohol and other drug use/abuse and fatigue among professional commercial truck drivers. (Class II, Priority Action) (H-90-38)

Encourage your members to provide training in drug recognition for those personnel with commercial truck and truck driver enforcement and oversight responsibilities. (Class II, Priority Action) (H-90-39)

Also, as a result of this safety study, recommendations have been issued to the U.S. Department of Transportation, the National Highway Traffic Safety Administration, the Federal Highway Administration, the Department of Health and Human Services, Governors of the States, the National Governors' Association, trucking industry trade associations, the International Brotherhood of Teamsters, the National Home Study Council, the National Association of Trade and Technical Schools, and the Professional Truck Driver Institute of America.

KOLSTAD, Chairman, BURNETT, LAUBER, and DICKINSON, Members, concurred in these recommendations.



By: James L. Kolstad
Chairman