



# National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

H-547C

Date: April 4, 1990

In reply refer to: H-90-33 through 34

Honorable Louis W. Sullivan  
Secretary  
U.S. Department of Health and Human Services  
Hubert H. Humphrey Building  
200 Independence Avenue, S.W.  
Washington, D.C. 20201

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.

The National Transportation Safety Board is especially indebted to the National Institute on Drug Abuse, Division of Applied Research, for professional assistance and toxicological test support in conducting this study.

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.

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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.

Until recently, the drugs for which tests were performed and drug testing techniques have varied greatly both between States and within States. The Department of Health and Human Services now requires certification of laboratories participating in employee drug testing programs. DHHS certification promotes uniform collection, preservation, handling, screening, and confirmation of biological samples. As a result, drug testing, conformation, and reporting of results have the potential of becoming reliable statistics in future analyses of fatally injured drivers. However, significant inconsistencies are evident when applying DHHS employee drug testing standards to postaccident testing in transportation.

The number of drugs for which a toxicological test is performed in certain States depends upon the tests requested. The most frequently requested test is for alcohol (ethanol). Differences in toxicological testing occur not only from State to State, but also within States. Screening tests may be used alone or in combination with confirmation tests which quantify the drug concentration in the specimen. Therefore, the Safety Board noted the need for a standardized national set of procedures for conducting alcohol and other drug tests when a fatal heavy truck accident takes place.

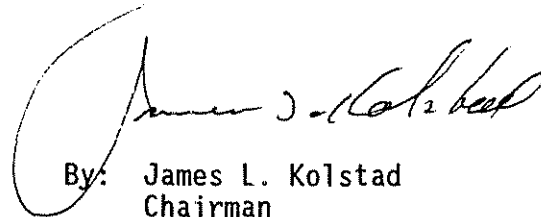
As a result of this safety study, the National Transportation Safety Board recommends that the U.S. Department of Health and Human Services:

Assist the Department of Transportation, the States, the American Academy of Forensic Sciences, the National Safety Council Committee on Alcohol and Drugs, and other organizations as appropriate, in standardizing procedures for postaccident toxicological specimen collection, chain of custody, testing, and reporting among the States for accidents involving medium and heavy trucks. (Class II, Priority Action) (H-90-33)

Establish, with the Department of Transportation and other organizations as appropriate, a postaccident alcohol and other drug analytic test plan for tests to be conducted on a wide range of impairing drugs with results reported at state-of-the-art sensitivity levels. (Class II, Priority Action) (H-90-34)

Also, as a result of this safety study, recommendations have been issued to: the Department of Transportation, the National Highway Traffic Safety Administration, the Federal Highway Administration, Governors of the States, the National Governors Association, trucking industry trade associations, the International Brotherhood of Teamsters, law enforcement associations, 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