

SP-20
Log R-556A

National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: August 13, 1986

In reply refer to: R-86-34 through -40

Honorable Ralph L. Stanley
 Administrator
 Urban Mass Transportation Administration
 Washington, D.C. 20590

The National Transportation Safety Board is concerned about the use of alcohol and drugs by operating employees in all modes of public transportation. In four rail rapid transit accidents ^{1/} investigated over a 9-year period by the Safety Board, the question of drug use (licit or illicit) was raised. In these accidents 15 persons were killed, more than 350 persons were injured, and more than \$5 million in property damage was reported. In two of the accidents, the operators of the transit trains had indications of illicit drugs such as cocaine and/or marijuana. In two of the accidents, the rail rapid transit employees had taken legal prescription drugs that may have affected their performance. In one of the accidents, the operator was taking a number of prescription drugs, but evidence did not indicate his performance was affected. The Safety Board remains concerned that the public and rail rapid transit employees are being placed in life-threatening situations by rail rapid transit employees who may be affected by licit or illicit drug use.

About 11:35 p.m. on June 26, 1985, Metro-Dade Transportation Administration (MDTA) nonrevenue test train No. 172-171 struck the rear of MDTA revenue train, No. 141-142, which was stopped on track No. 2 about 1,927 feet south of the Northside Station interlocking in Miami, Florida. Neither train was derailed. Test train No. 172-171 was returning northbound after completing a southbound test run. Twelve passengers and four MDTA employees were taken to nearby hospitals where they were treated and released. The MDTA estimated the damage to be \$1.6 million.

^{1/} See Railroad Accident Reports--"Rear End Collision of Two Chicago Transit Authority Trains, Chicago, Illinois, February 4, 1977" (NTSB/RAR-77/10); "Rear End Collision of Two Chicago Transit Authority Trains near the Montrose Avenue Station, Chicago, Illinois, August 17, 1984" (NTSB/RAR-85/11); "Metropolitan Atlanta Rapid Transit Authority, Atlanta, Georgia, December 3, 1984" (ATL-85-FR004); and "Rear End Collision of Metro Dade Transportation Administration Train Numbers 172-171, 141-142, Miami, Florida, June 26, 1985" (NTSB/RAR-86/03)

Although the rail attendant denied having taken any medication or drugs before or after the accident, the results of the laboratory tests indicated the presence of a metabolite of Valium in his blood and traces of benzoylecgonine (cocaine) and THC (marijuana) in his urine. The findings were verified by two separate and independent laboratories. Based on these independent findings, the Safety Board concludes that the rail attendant had used cocaine and marijuana within the 24 hours before the urine sample was taken, and that he had taken Valium within the 48 hours before the blood sample was taken. Since the samples were taken about 15 1/2 hours after the accident, the rail attendant could have consumed cocaine and/or marijuana anytime from 8 1/2 hours before to 15 1/2 hours after the accident. Any such use of drugs would have been in violation of Rule 1037.

The toxicological results from gas chromatography-mass spectrometry showed a 240 ng/ml concentration of THC metabolites in the rail attendant's urine (equivalent to a reading of 350 to 750 ng/ml by the EMIT technique), indicating a heavy use of marijuana. Experimentally, it has been shown that the urine of a subject who smokes one marijuana cigarette does not reach a THC concentration of 100 ng/ml as measured by the EMIT technique. How frequently or extensively the rail attendant used drugs, either licit or illicit, is not known; the laboratory test results only confirmed that he had taken or used a variety of drugs sometime before or after the accident.

Although the Board sees the use of illicit drugs, such as marijuana and cocaine, to be a major safety problem, it also has investigated accidents in which the operator's performance may have been affected by prescription drugs apparently being taken in compliance with physicians' orders.

On December 3, 1984, in Atlanta, Georgia, Metropolitan Atlanta Rapid Transit Authority (MARTA) train No. 103, consisting of four multiple-car units, ran off the end of the track, approximately 1,000 feet west of MARTA'S Hightower Station. The lead car traveled at approximately 25 mph through a sandpile placed at the end of the track to stop runaway trains. As a result of this accident, two cars derailed. Fortunately, all of the passengers on the train had disembarked at Hightower Station. Property damage was estimated at \$420,000. The operator of MARTA train No. 103 had evidence of dimetane, a prescription drug that should not be taken when operating machinery or vehicles.

On August 17, 1984, in Chicago, Illinois, southbound Chicago Transit Authority's (CTA) eight-car "A" train No. 135 struck CTA train No. 143. The motorman had stopped train No. 135 on a 3.1-percent grade and stepped out of the cab into a car. While the motorman was out of the cab, the train began to roll backward down the grade. The motorman reentered the cab and attempted to stop the train, but his efforts failed, and train No. 135, moving at about 20 mph, struck train No. 143. One passenger was killed, and 46 passengers and 3 crewmembers were injured. For a period of time prior to the accident, the operator of CTA train No. 135 had been given a combination of chemotherapy agents under the care of a physician, including vincristine, prednisone, cytoxan, and tagamet. The Safety Board concluded that "the medications the motorman of train 135 was taking for his illness had side effects that could have adversely affected his ability to perform his duties." The Safety Board further concluded that evidence does not indicate that this occurred.

The Safety Board believes that the findings of both licit and illicit drug involvement in these and other accidents indicate the need for prompt action by the rail rapid transit industry, labor unions, and government to evaluate licit drug use and to curb substance abuse by rail rapid transit operating employees.

The investigators of human performance aspects for rail rapid transit accidents are hampered because toxicological tests for drug use (licit or illicit) are not made immediately after serious rail rapid transit accidents in which the operator is not fatally injured. For example, the operator of MDTA train No. 172-171 was not tested for drugs until nearly 15 1/2 hours after the accident. The Safety Board believes that rail rapid transit safety would be improved if employees knew that toxicological tests would be administered immediately after an accident that involved (1) a fatality, (2) an injury, or (3) any property damage. Results of such toxicological tests could be reported to the Urban Mass Transportation Administration (UMTA), and disciplinary action could then be taken by the involved transit property.

On August 2, 1985, the Federal Railroad Administration (FRA) issued rules prohibiting substance abuse by railroad employees. Six areas, as listed below, are addressed in the FRA rules ^{2/} and may be useful as a guide for developing regulations appropriate to the rail rapid transit industry. These areas provide a useful starting point for the rail rapid transit industry in their development of regulations; however, the regulations developed for rail rapid transit should eliminate the loopholes found in the FRA's rules that exclude from testing employees involved in accidents because of arbitrary monetary damage reporting thresholds.

- o Prohibit employees from reporting to work when they are impaired by alcohol or drugs and prohibit on-the-job alcohol or drug use.
- o Mandate post-accident toxicological testing for the more significant accidents.
- o Authorize the railroads to test employees for alcohol or drug impairment where there is reasonable suspicion.
- o Require improved accident reporting.
- o Mandate pre-employment drug screening.
- o Require policies to promote early identification of problem drinkers or drug users.

Currently, there are no Federal or uniform State requirements for toxicological tests in the event of a rail rapid transit accident. UMTA has not taken any action to develop requirements for the transit industry. The sister agencies of UMTA, which include the FRA, the Federal Aviation Administration, and the Federal Highway Administration's Bureau of Motor Carrier Safety, have developed regulations and programs addressing substance abuse in their respective industries. Additionally, the United States Coast Guard has recently issued an advance notice of proposed rulemaking (recreational boating operations) and a notice of proposed rulemaking (commercial marine operations) to address substance abuse in the marine transportation mode. ^{3/}

^{2/} Title 49 Code of Federal Regulations Part 219--Control of Alcohol and Drug Use, August 2, 1985.

^{3/} U.S Coast Guard Dockets CG-D-099A and 099 entitled "Operations of a Vessel While Intoxicated," issued in 51 FR 18900 to 18913 on May 23, 1985.

The use of pre-employment drug screening may be useful for applicants for rail rapid transit safety-sensitive ^{4/} positions. This precaution would prevent the employment of some people with illicit drug problems, or others using licit drugs which may affect their ability to perform their duties safely. The Safety Board is aware through informal discussion that pre-employment screening has been used by one large transit system and results have indicated that 6 of 10 applicants for the first half of 1984, have tested positive for substance abuse. Pre-employment screening can also work with alcohol abuse problems. Although simple medical tests are not available, driver records can be checked for evidence of alcohol abuse. The Safety Board believes that rail rapid transit systems should check with their State Department of Motor Vehicles to obtain driver record information as a pre-employment screen for alcohol abuse. Further, the National Driver Register (NDR), maintained by the National Highway Traffic Safety Administration, can provide additional driver records; however, information from this system can be made available to transit systems only through the individual applicant's request to the NDR for such information. The applicant would then provide the transit system with the NDR report.

As a result of the August 17, 1984, accident in Chicago, the Safety Board issued Safety Recommendation R-85-90 to the CTA:

Require the medical department to evaluate the types and dosages of prescribed medications taken by its operating personnel.

The Safety Board is persuaded that this recommendation should be applied to all rail rapid transit systems. Employees in safety-sensitive positions should be removed from critical safety tasks while under medication that can adversely affect their performance.

The Safety Board also believes that UMTA should take the lead in developing and implementing regulations to address the growing concerns about drug use (licit and illicit) by rail rapid transit operating employees. The Safety Board supports a substantially increased effort by UMTA to improve its oversight of rail rapid transit systems. The American Public Transit Association (APTA) appears to be vitally concerned about the problem of substance abuse and should be willing to work closely with UMTA in developing uniform safety regulations that can be incorporated nationwide for all transit systems. Compliance with the safety regulations could then be the responsibility of individual transit systems, with UMTA monitoring implementation. The framework for the control of alcohol and drug use has already been developed in the FRA's regulations and, with certain appropriate modifications, may be made applicable to rail rapid transit systems. Further, UMTA should assist APTA and rail rapid transit properties in developing procedures and requirements to inform rail rapid transit employees of the potential deleterious effects of licit over-the-counter and prescription drugs on work performance. Such procedures and requirements should include, but not be limited to, the development of adequate medical records and systems for the dissemination of information on such effects to rail rapid transit operating employees. Finally, the Safety Board believes that every rail rapid transit property should have an effective employee assistance program (EAP). In a special survey for the APTA Personnel Committee, entitled "Employee Assistance Programs," completed on May 15, 1985, it was documented that seven of the heavy rail rapid transit systems had such programs; four had no program; and one did not report. The Safety Board believes that UMTA and APTA should encourage the implementation of such programs for all rail rapid transit systems, with appropriate training of supervisors to detect substance abuse.

^{4/} Positions charging the incumbent with the safety of traveling public based on his/her response to job functions and the discharge of duty thereto.

When the accident occurred, the brake technician on test train No. 172-171 used a portable radio to contact the rail traffic controller and report the collision. The controller immediately notified emergency response forces via the 911 emergency number. Shortly after the brake technician had reported the accident, the rail attendant on the Budd test train (No. 189-190) on track No. 2, who had overheard some of the radio conversations relative to the accident at Northside Station, called the controller and reported that her train had not been involved in an accident and that the call was obviously a hoax. Based on this report, the controller was preparing to cancel the emergency call, but a rail supervisor, who was operating southbound train No. 104-103 on track No. 1, arrived at the accident site opposite the wrecked trains moments after the accident occurred and confirmed to the controller that there had been an accident. As a result, the 911 call was completed and emergency forces began arriving at the accident site by 11:48 p.m.

The MDTA's radio rules and procedures do not address specific uses of radio communications. The guidelines provided are general and the occurrences or situations that should be reported by radio are left to the discretion of the employees based on their interpretation of a general rule. Employees are expected to exercise their judgment as to what constitutes an emergency and requires a radio report to central control. The Safety Board believes that the MDTA should issue and enforce radio rules and procedures that provide specific guidance as to when and how the radio should be used. For example, since radio is the principal means of communication between a train and central control, all communications should be made by radio so a record can be maintained, and not by a face-to-face communication such as occurred at Dadeland South Station between the controller and the rail attendant. UMTA should require that rail rapid transit companies equip with operable radios all trains operating in revenue service.

The rail attendant of the Budd test train (No. 189-190) mistakenly believed that the accident report she heard on the radio referred to her train, and, therefore, she reported that her train was not involved in an accident. This caused confusion and could have caused an unacceptable delay in the controller's calling for the assistance of emergency forces. The MDTA should instruct its employees in proper radio discipline. UMTA should develop and promulgate a Uniform Code of Radio Operating Rules and Procedures for use by the rail rapid transit industry.

Therefore, the National Transportation Safety Board recommends that the Urban Mass Transportation Administration:

Require that all employees involved in a rail rapid transit accident with a fatality, injury, or property damage be tested in a timely manner for alcohol and drugs. (Class II, Priority Action) (R-86-34)

Require rail rapid transit systems to screen for drug and alcohol abuse all prospective and transferred employees prior to employment in safety-sensitive positions. (Class II, Priority Action) (R-86-35)

Require rail rapid transit systems to institute procedures and information systems to inform employees of the deleterious effects on work performance of some over-the-counter and prescription drugs on work performance. (Class II, Priority Action) (R-86-36)

Require the removal of employees from safety-sensitive positions if the rail rapid transit medical department determines that the employees' use of a prescription drug will affect their work performance. (Class II, Priority Action) (R-86-37)

Encourage the creation of effective employee assistance programs to detect and treat substance abuse among rail rapid transit employees in safety-sensitive positions. (Class II, Priority Action) (R-86-38)

Require that rail rapid transit companies equip with operable radios all trains operating in revenue service. (Class II, Priority Action) (R-86-39)

Develop and promulgate a Uniform Code of Radio Operating Rules and Procedures for use by the rail rapid transit industry. (Class II, Priority Action) (R-86-40)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER and NALL, Members, concurred in these recommendations.


By: Jim Burnett
Chairman