NATIONAL TRANSPORTATION SAFETY BOARD

An independent federal agency

The Honorable Christopher Hart
Acting Chairman

Before the

Subcommittee on Government Operations
Committee on Oversight and Government Reform
United States House of Representatives

Hearing on

Planes, Trains and Automobiles: Operating While Stoned

Washington, DC
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Good morning Chairman Mica, Ranking Member Connolly, and Members of the Subcommittee.

Thank you for the invitation to appear before you today to discuss important safety issues resulting from the National Transportation Safety Board's (NTSB) efforts in investigating and studying the role played by marijuana usage in accidents across all modes of transportation.

The Role of the NTSB in Transportation Safety

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

Since our inception, we have investigated more than 140,500 aviation accidents and thousands of surface transportation accidents. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and internationally to investigate significant accidents and develop factual records and safety recommendations with one aim—to ensure that such accidents never happen again. The NTSB's annual Most Wanted List highlights safety-critical actions that the US Department of Transportation (DOT) modal administrations, the Coast Guard, and others need to take to help prevent accidents and save lives.

To date, we have issued over 14,000 safety recommendations to nearly 2,300 recipients. Because we have no formal authority to regulate the transportation industry, our effectiveness depends on our reputation for conducting thorough, accurate, and independent investigations and for producing timely, well-considered recommendations to enhance transportation safety.

Drug Use and Transportation

Throughout its history, the NTSB has investigated, studied, and documented the profound and tragic impacts of impairment by legal and illegal drugs on transportation safety. The appendix to my testimony discusses NTSB studies on impairment, NTSB findings of inconsistencies on drug policies, and NTSB accident investigations in which impairment by drugs was cited as causal. Currently, across the transportation modes, commercial operators are generally subject to pre-employment, periodic, random, reasonable cause, and postaccident testing for alcohol and 11 other legal and illegal potentially impairing substances, including marijuana. Regulations specify the maximum allowable drug and alcohol concentration levels, testing intervals, postaccident testing procedures, and reporting guidelines. Yet, despite the commitment of vast resources and intensive efforts over many decades in our country to address the many societal issues surrounding the use and abuse of drugs, their impact on the safety of the traveling public is still a major concern, and we still have a long way to go.

The Subcommittee's continuing focus on Federal marijuana policies is timely, particularly in light of recent developments across the United States. [1] First, many states have decriminalized or legalized the use of marijuana. Currently 20 states and the District of Columbia have authorized medical marijuana programs. Two states, Colorado and Washington, have decriminalized recreational use of the drug. Second, there is growing evidence of drug use by drivers. For example, the National Highway Traffic Safety Administration (NHTSA) 2007 Roadside Survey involved over 13,000 randomly selected vehicles at 300 locations across the country. That survey analyzed biological (breath, oral fluid, and/or blood) samples for alcohol and 20 groupings of legal and illegal drugs. 11% of daytime drivers and 14.4% of nighttime drivers tested positive for at least one drug, and marijuana was the most commonly found drug for both groups. Third, there is evidence that among teenage drivers, marijuana use is rising, and their perceived risk of marijuana use is falling. In one recent survey, 12.7 percent of young adults aged 18-25 reported drug use while driving.[2]

As you will hear today from NHTSA and the Substance Abuse and Mental Health Services Administration (SAMHSA), the incidence of driving after using illegal, prescription, and the over-the counter (OTC) drugs remains a persistent problem. According to NHTSA Fatality Analysis Reporting System, in 2009, 3,952 fatally-injured drivers tested positive for drugs. In addition SAMHSA's National Survey on Drug Use and Health reported that in 2012 roughly 10.3 million people admitted to driving under the influence of illicit drugs in the past. The rate had declined steadily between 2002 and 2011, from 4.7 to 3.7 percent, before increasing to 3.9 percent in 2012. Similarly, the Office of National Drug Control Policy, in its report entitled "Drug Testing and Drug-Involved Driving of Fatality Injured Driving in the United States, 2005-2009," concluded

- In 2009, 21,978 drivers were killed in motor vehicle crashes nationwide, and 12,087 of these drivers were successfully tested (i.e., the results are known) for the presence of drugs.
- Of those fatally injured drivers for whom the results are known, 3,952 tested positive for drugs, representing 18 percent of all fatally injured drivers, and 33 percent of drivers with known drug test results.
- This 33 percent of fatally injured drivers with positive drug tests in 2009 is an increase from 28 percent in 2005.

The NTSB recognizes that the mere presence of a drug may not equate to impairment. Nonetheless, in recognition of the relationship between increasing drug use, the potential for impairment, and crash risk, the NTSB recently made a significant modification to its annual Most Wanted List of the NTSB's top advocacy priorities for addressing the most critical changes needed to reduce transportation accidents and save lives. Since 1990, the NTSB has included alcohol impaired driving, in one form or another, in its annual most wanted list; however, starting in November 2012, the NTSB broadened the topic to include "Eliminate Substance-Impaired Driving."

[1] Included as an Appendix to this Statement is a summary of other accidents and recommendations with significant toxicological issues.
[2] http://www.samhsa.gov/data/NSDUH/2k10Results/Web/PDFW/2k10Results.pdf

The NTSB's increased attention to substance-impaired driving was due, in part, to the information provided at an agency-sponsored a public forum in May 2012 entitled "Reaching Zero: Actions to Eliminate Substance-Impaired Driving." The purpose of the forum was to identify the most effective, scientifically-based actions needed to "reach zero" accidents resulting from substance-impaired driving. Numerous impaired driving countermeasures were discussed at the forum, including laws, enforcement strategies, adjudication programs, substance treatment programs, ignition interlocks, and educational campaigns. One problem area identified and discussed at the forum is that limitations on state data collection and reporting continue to limit regulators' and law enforcement agencies' ability to understand and address the problem of impaired driving and to measure the effectiveness of countermeasures. In addition, states vary widely in how many drivers get tested, what drugs are tested for, and what amounts of drug constitute a positive finding. This significantly limits the ability to make generalizations about national data and prohibits state-to-state comparisons. Among the factors that create variability are different laws, policies, practices, test types, concentration thresholds for reporting, refusals, contamination, police accident reports, and the availability of appropriately-credentialed laboratories. Of note, when they test drivers, most states test for marijuana but the exact tests, laboratory cutoffs for a positive result, and reporting standards vary.

As a result of the Reaching Zero Forum, in November 2012, the NTSB issued two recommendations to NHTSA. One of the recommendations addresses data limitations and inconsistencies regarding drug impaired driving. It reads as follows:

> Develop and disseminate to appropriate state officials a common standard of practice for drug toxicology testing, including (1) the circumstances under which tests should be conducted, (2) a minimum set of drugs for which to test, and (3) cutoff values for reporting the results. (H-12-33)

NHTSA responded to this recommendation in early 2013 and indicated it is: working with the ONDCP to develop an effective drug impairment testing program; and evaluating the workplace drug testing program currently used by the states as a framework for an expanded program for driver testing.

In that November 2012 recommendation letter, the NTSB also called for better tracking of place of last drink data, and we made recommendations to the states and International Association of Chiefs of Police and the National Sheriffs' Association accordingly.

In December 2012, the NTSB held a board meeting on wrong-way driving collisions, during which the NTSB called on NHTSA and the Automotive Coalition for Traffic Safety, Inc. to accelerate implementation of the Driver Alcohol Detection System for Safety (DADSS). DADSS refers to passive vehicle-based systems that would identify driver alcohol use by touch or by measuring a driver's exhaled breath; it then would prevent vehicle operation by driver above the legal limit. We have also recommended that all states mandate the use of interlocks for all first time driving while intoxicated offenders.

This year-long review culminated in a May 2013 safety report to promote the following elements to achieve meaningful reductions in alcohol-impaired driving crashes: stronger laws, improved enforcement strategies, innovative adjudication programs, and accelerated development of new in-vehicle alcohol detection technologies. The report recognizes the need for states to identify specific and measureable goals for reducing impaired driving fatalities and injuries, and to evaluate the effectiveness of implemented coutermeasures on an ongoing basis. In total, the NTSB issued 19 new recommendations during the year-long review.

Progress has been made in aviation regarding standardizing postaccident toxicology testing, partly as a result of the crash of Central Airlines Flight 27 on March 30, 1983. The airplane, a Gates Learjet model 25, crashed while landing at Newark International Airport, Newark, New Jersey. Flight 27 was operating as a nonscheduled cancelled bank check courier under 14 CFR Part 135. The airplane was destroyed on impact and the two pilots died as a result of the accident. Various toxicology tests were performed by the medical examiner, the Civil Aerospace Medical Institute (CAMI), and the Armed Forces Institute of Pathology. Evidence indicated recent use or inhalation of marijuana by both pilots in the 12 to 24 hours before the accident, but more specific determinations could not be made. The NTSB determined that the probable cause of the accident was: a) loss of control following ground contact; b) an unstabilized approach; and c) likely impairment of the flight crew's judgment, decision making, and flying abilities by a combination of physiological and psychological factors.

In August 1984, the NTSB issued the following safety recommendation to the Federal Aviation Administration (FAA):

> Establish at the Civil Aeromedical Institute the capability to perform state-of-the-art toxicological tests on the blood, urine, and tissue of pilots involved in fatal accidents to determine the levels of both licit and illicit drugs at both therapeutic and abnormal levels. (A-84-93)

Over the next several years, the FAA improved the quality and completeness of toxicology testing and in 1990 established the Forensic Toxicology Laboratory at the CAMI. The lab currently performs toxicology testing for fatally injured flight crew in all civil aviation accidents in the US and can identify more than 1300 different drugs using standardized techniques and accepted forensic laboratory processes.

In 1992, the NTSB published a safety study, *Alcohol and Other Drug Involvement in Fatal General Aviation Accidents, 1983 through 1988.* There were only a small number of fatal general aviation accidents during the study period—35—in which the NTSB cited drugs as a cause or factor. Multiple drug use was identified in 15 (43 percent) of the 35 accidents. Of the drugs detected in toxicological tests, cocaine and marijuana were the most frequently identified (12 and 9 accidents, respectively). The study noted, however, that due to quality control problems at the laboratory used by the NTSB to test for drugs of abuse, few conclusive toxicological tests for drugs were obtained by the agency and test results from the years of the study period were less reliable than test results from the latter years of the study period. Since 1990, those issues have been resolved.

Forthcoming Safety Study on Drug Use Trends in Aviation

Staff work is now underway at the NTSB to complete a safety study that examines trends in the prevalence of OTC, prescription, and illicit drugs identified by toxicology testing of fatally injured airmen between 1990 and 2012. The study is analyzing data from the toxicological database and the NTSB accident database and assessing evidence of fatally injured pilots' drug use prior to flying and the associated potential for impairment. We plan to hold a public meeting in September for the NTSB to consider this study and issue potential recommendations based on the study's findings. We will be pleased to share the results of this study and brief the Subcommittee on our findings and safety recommendations.

Postaccident Toxicological Testing of US Coast Guard Military and Civilian Personnel

Merchant mariners are subject to Coast Guard regulations for postaccident toxicological testing, which were originally adopted in 1989 (drugs) and 1994 (alcohol). These regulations specify the maximum allowable drug and alcohol concentration levels, testing intervals, postaccident testing procedures, and reporting guidelines. In 2006, the regulations were improved in part as the outcome of an NTSB special investigation report.[3] The report, which studied 28 marine accident investigations, resulted in 11 recommendations to the Coast Guard.

Although merchant mariners are subject to the revised Coast Guard regulations for postaccident toxicological testing, Coast Guard personnel are not. The Coast Guard has different and weaker sets of standards for testing its own personnel. For example, the timeframe for testing Coast Guard military personnel is not defined; instead, Coast Guard policy merely states that these personnel should be tested "as soon as possible" after a mishap. Moreover, with respect to alcohol testing of Coast Guard military personnel, Coast Guard policy does not address whether blood or breath samples should be collected, nor associated custody procedures. In addition, Coast Guard policy is not specific as to which Coast Guard personnel should be toxicologically tested after a mishap—different standards apply to Coast Guard military personnel than to Coast Guard civilian personnel. By contrast, regulations addressing merchant mariners clearly specify which mariners are subject to postaccident toxicological testing.

As a result of 5 serious marine accidents investigated by the NTSB between 2007 and 2011, in November 2012, we issued safety recommendations to the Coast Guard to align its standards for postaccident toxicological testing of Coast Guard personnel with the requirements specified for merchant mariners and to disseminate internal guidance so that commanding officers have unambiguous instruction detailing the requirements for timely drug and alcohol testing of Coast Guard military and civilian personnel whose work performance may be connected to a serious marine incident.

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[3] *Postaccident Testing for Alcohol and Other Drugs in the Marine Industry and the Ramming of the Portland-South Portland (Million Dollar) Bridge at Portland, Maine, by the Liberian Tankship* Julie N *on September 27, 1996*, Special Investigation Report NTSB/SIR-98/02 (Washington, D.C.: National Transportation Safety Board, 1998).

Earlier this year, Coast Guard provided its concurrence in these safety recommendations and advised it would amend its drug and alcohol testing policies. We will continue to follow its efforts to update its regulations.

Conclusion

The issues discussed today are a reminder that there is much to be done to eliminate safety risks due to the presence of substance impaired operators in our transportation systems. Eliminating substance-impaired driving—Reaching Zero—remains a battle that is far from over. Eradicating impairment by drug use across all modes of transportation is an even loftier goal. An ongoing critical first step is improving the standardization of data. We look forward to helping with this important effort to improve transportation safety.

Mr. Chairman, this completes my statement, and I will be happy to respond to any questions you may have.

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APPENDIX

OTHER TOXICOLOGY ISSUES IN ACCIDENTS INVESTIGATED BY THE NATIONAL TRANSPORTATION SAFETY BOARD

Highway

Safety Study on Commercial Motor Vehicle Accidents Involving Drugs and Alcohol

In 1990, the NTSB published a safety study that focused on the role of fatigue, drugs, alcohol, and medical factors in fatal-to-the driver heavy truck crashes.[1] One hundred and eighty-two accidents involving 186 trucks were included in the study. From the toxicological tests, the NTSB found that 33 percent of the fatally injured drivers tested positive for alcohol and other drugs of abuse. The most prevalent drugs found in drivers who had tested positive were marihuana and alcohol (13 percent each), followed by cocaine (9 percent), methamphetamine/amphetamines (7 percent), other stimulants (5 percent), and codeine and phencyclidine (PCP) (less than 1 percent each). Stimulants (for example cocaine and amphetamines) were the most frequently identified drug class among fatally injured drivers. As a result of the study, the NTSB made several safety recommendations pertaining to drug screening and testing procedures to all levels of government, trucking associations, and the trucking industry.

Motorcoach Run-off-the-Road Accident

On May 9, 1999, about 9:00 a.m., a 1997 Motor Coach Industries 55-passenger motorcoach was traveling eastbound on Interstate 610 in New Orleans, Louisiana. The bus, carrying 43 passengers, was en route to a casino. The bus departed the right side of the highway, crossed the shoulder, and went onto the grassy side slope alongside the shoulder. The bus continued on the side slope, struck the terminal end of a guardrail, traveled through a chain-link fence, vaulted over a paved golf cart path, collided with the far side of a dirt embankment, and then bounced and slid forward upright to its final resting position. Twenty-two passengers were killed, the bus driver and 15 passengers received serious injuries, and 6 passengers received minor injuries.

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[1] National Transportation Safety Board, *Fatigue, Alcohol, Other Drugs, and Medical Factors in Fatal-to-the Driver Heavy Truck Crashes*, Safety Study, NTSB/SS-90/01 (Washington, DC: NTSB, 1990), 2 Vols.

The ensuing investigation established that the motorcoach driver possessed a current commercial driver's license and medical certificate, but suffered from several life-threatening medical conditions of the kidneys and heart. The NTSB determined that small amounts of tetrahydrocannabinol (THC, the active substance in marijuana) and larger amounts of tetrahydrocannabinol carboxylic acid were detected in the driver's blood collected more than an hour after the accident. The agency also determined that the probable cause of this accident was the driver's incapacitation due to his severe medical conditions and the failure of the medical certification process to detect and remove the driver from service. Other factors that may have had a role in the accident were the driver's fatigue and his use of marijuana and a sedating antihistamine.[2]

15-Passenger Child Care Van Run-off-the Road Incident

On April 4, 2002, a 15-passenger van, driven by a 27- year-old driver and transporting six children to school, was southbound in the left lane of Interstate 240 in Memphis, Tennessee. The van was owned and operated by a private child care center. A witness driving behind the van stated that the vehicle was traveling about 65 mph when it drifted from the left lane, across two other lanes, and off the right side of the roadway. The van then overrode the guardrail and continued to travel along the dirt and grass embankment until the front of the van collided with the back of the guardrail and a light pole. The rear of the van rotated counterclockwise and the front and right side of the van struck the bridge abutment at an overpass before coming to rest. The driver was ejected through the windshield and sustained fatal injuries. Four of the children sustained fatal injuries and two were seriously injured.

The NTSB determined the driver consumed marijuana on the morning of the accident and was under the influence of the drug at the time of the crash and had drug testing been conducted, the driver's drug use would likely have been detected and he may have been prohibited from transporting children. As a result of the investigation, the NTSB made numerous safety recommendations, including two to child care transportation oversight agencies in the 50 States and the District of Columbia to implement an oversight program for child care transportation that includes preemployment, random, postaccident, and "for cause" drug testing for all transportation providers and the prohibition of anyone who tests positive for drugs from transporting children.[3]

Medical Oversight of Noncommercial Drivers

As the result of its investigation of six noncommercial vehicle accidents from 2001-2003 in which a driver's medical condition played a role, and a March 2003 public hearing at which the factors that contribute to medically related accidents were discussed, the NTSB prepared a

[2] National Transportation Safety Board, *Motorcoach Run-off-the-Road Accident, New Orleans, Louisiana, May 9, 1998,* Highway Accident Report, NTSB/HAR-01/01 (Washington, DC: NTSB, 2001).
[3] National Transportation Safety Board, *15-Passenger Child Care Van Run-off-the Road Accident, Memphis, Tennessee, April 4, 2002,* Highway Accident Report, NTSB/HAR-04/02 (Washington, DC: NTSB, 2004).

special investigative report to examine these issues.[4] The special investigative report pointed out that certain medical conditions can negatively affect driving activities, thereby increasing the safety risk of drivers who suffer from them. The extent of the overall impact of medically impaired drivers is not known because data are not available on the number of licensed drivers with particular medical conditions or (except for data on alcohol-related accidents) on the number of accidents where a driver's medical condition was a contributory factor. However, in order to offer some perspective on the medical oversight issues that State licensing agencies face the report identified the number of Americans with one or more of the following medical conditions:

- Epilepsy: 2.5 million (180,000 new diagnosed cases each year).[3]
- Diabetes: 18.2 million (1 million new cases diagnosed each year in those over 20 years of age).
- Sleep Disorders: 50 to 70 million.
- Cardiovascular Disease: 23.5million(41.7 million additionalhave hypertension).
- Alzheimer's Disease: 4.5 million (10 percent of those over 65 years and nearly 50 percent of those over 85 years suffer from the disease).

As a result of its accident investigations and discussions stemming from the public hearing, the NTSB identified the following safety issues:

- Need for more data on the extent to which medical conditions contribute to the cause of accident.
- Need for improved awareness and training for healthcare professionals, law enforcement, and the public regarding State medical oversight laws and practices.
- Existence of barriers to the reporting of medically impaired drivers.
- Lack of uniform medical assessment and oversight standards throughout the states.
- Deficiencies in alternative transportation options for those who should not drive.

In the special investigative report, the NTSB made numerous safety recommendations to US Department of Transportation, the National Highway Traffic Safety Administration, the National Committee on Uniform Traffic Laws and Ordinances, the American Association of Motor Vehicle Administrators, the Commission on Accreditation for Law Enforcement Agencies, the Liaison Committee on Medical Education, the American Osteopathic Association, the Association of American medical Colleges, and the Federation of State Medical Boards.

[4] National Transportation Safety Board, *Medical Oversight of Noncommercial Drivers*, Highway Special Investigative Report, NTSB/SIR-04/01 (Washington, DC: NTSB, 2004).

Aviation

Asiana Flight 214 and Postaccident Toxicological Testing

As part of its accident investigation, the NTSB reviewed post-accident flight crew testing following the Asiana Flight 214 crash at San Francisco International Airport on July 6, 2013. Current FAA regulatory requirements for drug and alcohol testing programs apply to U.S operators but not foreign air carriers. Therefore, the Asiana flight crew was not subject to postaccident testing in the U.S. The NTSB's counterpart agency in Korea, the Republic of Korea Aviation and Railway Accident Investigation Board, collected scalp hair samples from the two pilots nearly a month after the crash and submitted them to the Korea National Forensic Service for toxicological tests. No evidence of drug use was found. However, the case highlighted the complexities of postaccident toxicology testing involving foreign air carriers and international flight crew.

During the 38th session of the ICAO Assembly held last year, the United States presented a paper, authored by the FAA, proposing that ICAO develop an international standard on postaccident drug and alcohol testing of flight crewmembers. ICAO agreed to review existing standards, recommended practices, and guidance material to determine the need for a specific international standard to address postaccident drug and alcohol testing of flight crewmembers.

We will be happy to inform the Subcommittee of further ICAO developments as it considers developing and implementing postaccident drug and alcohol testing for flight crewmembers.

Marine

Investigation of Marine Allision Involving a Recreational Boat

On April 12, 2009, a 22.5-foot recreational boat carrying 14 persons collided with a 25.9-foot push boat (a type of towboat) moored near Ponte Vedra Beach in St. Johns County, Florida. An hour earlier, the recreational boat had departed a marina/restaurant in Jacksonville Beach, on route to St. Augustine, after refueling at the marina's fuel dock and after personal effects and beverages (including liquor, beer, and drink mixers) were loaded on board. After reaching St. Augustine, the boat passengers began the return trip to Jacksonville Beach. At this point, the regular boat operator showed signs of alcohol impairment and several group members objected to his operating the boat. The operator agreed to allow one of the passengers to take his place. As the boat proceeded north in the Intercoastal Waterway, two witnesses saw it run aground on a shoal. Approximately 45 minutes later, the boat struck the push boat, which was moored to a barge. Five persons on the boat died at the accident scene. The remaining nine persons were injured, seven seriously.

Although Florida law permits consumption of alcoholic beverages on recreational vessels by anyone at least 21 years old, it is a violation of Florida law to operate a vessel while impaired

by alcohol or drugs. Vessel operators are presumed to be impaired and under the influence of alcohol if their blood alcohol content (BAC) or breath alcohol content (BrAC) is 0.08 or above. For persons under 21 years of age, it is a violation of Florida law to have a BrAC of 0.02 or higher and to operate or be in physical control of a vessel. Postaccident drug and alcohol tests results revealed that 11 of the boat's occupants, including the regular operator, had a BAC above 0.08 (the regular operator's BAC was 0.204). The BAC of the designated operator, who died in the accident, was 0.035. Three occupants tested positive for marijuana, including the regular operator, and four others tested positive for cocaine. Other drugs such as benzodiazepine were also detected. A small amount of marijuana was found in the boat after the accident.

The NTSB determined that the probable cause of the collision of the recreational boat with the push boat was the inattention of the boat operators, most likely the result of alcohol impairment on the part of the regular operator and inexperience on the part of the designated operator. No specific safety recommendations or conclusions were listed in the marine accident brief.[5]

Rail

Rear-end Collision of Passenger Train and Freight Train

On January 4, 1987, a northbound Conrail train departed the rail yard at Baltimore, Maryland on track 1. Almost simultaneously, a northbound Amtrak train departed Pennsylvania Station in Baltimore on track 2. After the Conrail train entered track 2 without authorization, the signal indication on track 2 changed from *clear* to *stop*. The engineer for the Amtrak train saw the stop signal and placed his train into emergency braking but could not stop before colliding with the Conrail train. At the time of the collision, the speed of the Amtrak train was estimated at 108 miles per hour. Among the Amtrak passengers, there were 16 fatalities (including the Amtrak engineer), 10 serious injuries, 15 moderate injuries, and 149 minor injuries.

On January 6, 1987, Amtrak's general manager informed the NTSB that the dispatcher and the surviving Amtrak train crewmembers had not been required to submit to toxicological testing. Toxicology testing of the specimens obtained from the Conrail engineer and brakeman indicated the presence of marijuana metabolites in sufficiently high levels to show that they were heavy or frequent users of marijuana and may have used marijuana within 24 hours before the time they provided specimens.[6]

The NTSB determined that the probable cause of this accident was the failure, as a result of impairment from marijuana, of the engineer of the Conrail train to stop his train in compliance with the wayside signal and the failure of the Federal Railroad Administration (FRA) and Amtrak to require, and Conrail to use, automatic safety backup devices on all trains on the Northeast Corridor.[7] As a result of its investigation, the NTSB issued 17 safety

[5] National Transportation Safety Board, Marine Accident Brief, NTSB/MAB-10/01 (Washington, DC: NTSB, February 24, 2010).

[6] The engineer was charged with manslaughter by locomotive under Maryland law and sentenced to five years in state prison and one year of probation.

[7] National Transportation Safety Board, *Rear-end Collision of Amtrak Passenger Train 94, The Colonial,*

recommendations, including recommendations to Amtrak and Conrail regarding improved methods of identifying employees who abuse alcohol and/or drugs and to the FRA to expand and intensify oversight of Amtrak's operating practices and compliance with Federal safety regulations (including the requirements for post-accident toxicological testing).

and Consolidated Rail Corporation Freight Train ENS-121, on the Northeast Corridor Highway Accident Report, NTSB/HAR-04/02 (Washington, DC: NTSB, 2004).