

NTSB MOST WANTED LIST

CRITICAL CHANGES NEEDED TO REDUCE TRANSPORTATION ACCIDENTS AND SAVE LIVES

2014

PROMOTE OPERATIONAL SAFETY IN RAIL MASS TRANSIT

What is the Problem?

Public mass transit is a vital part of the nation's transportation infrastructure. Every day, it affects the lives of millions of people—taking them to and from work, school, and other daily activities. According to the American Public Transportation Association's 2011 Public Transportation Fact Book, public mass transit passengers took 10.4 billion trips, covering 55.2 billion miles. An efficient, reliable, and safe mass transit system clearly is vital to our economy.

Given the integral role that mass transit has in our society, mass transit accidents and incidents, especially those occurring on railroads, often have catastrophic consequences. For example, a 2008 collision between a commuter train and freight train in Chatsworth, California, resulted in 25 deaths, 102 people injured, and an estimated \$12 million in damages. Following the derailment and collision of two Metro-North trains near Bridgeport, Connecticut, in 2013, 48 passengers, 2 engineers, and a conductor were transported to local hospitals. Metro-North estimated there were about 250 passengers on each train at the time of the accident.

The National Transportation Safety Board (NTSB) has investigated many mass transit accidents and, much too frequently, has found that the accidents stem from human issues, ranging from lapses in train operator's judgment, through slow decision-making to inspect or repair track, to poor leadership by senior management to prioritize safety over operational timeliness. The NTSB describes these causal and contributing human factors in terms of organizational safety culture.

What can be done?

Rail mass transit is comprised of light rail, commuter rail, and subways. Although each system has unique equipment, operating environments, and challenges, all can benefit from strengthening their organizational safety cultures.

Mass transit agencies should work to identify, define, prioritize, and mitigate the safety risks that threaten their operations and, therefore, threaten public safety. It is important to ensure efficient and effective



Photo of two Metro North Railroad passenger trains after their collision on May 17, 2013 in Bridgeport, Connecticut.

communications and coordination among all stakeholders (for example, top and middle management, line supervisors, workers, unions, and support contractors) who are responsible for the design, maintenance, operation, and safety of the system. Moreover, it is important to ensure that system safety trends are identified accurately and that improvements are implemented rapidly with appropriate consideration given to the affected system elements (training, maintenance/inspection schedules).

Mass transit agencies also need to continually improve their understanding of the role of human error in accidents and near-accident scenarios. The improved knowledge should be put to work by refining and strengthening operational policies, practices, and procedures to manage and mitigate the safety risks. Some known successful management practices include train crew resource management, fatigue management systems, and confidential close-call reporting systems. Future practices are likely to involve technology advancement for railroad maintenance and operations, positive train control, autonomous track inspection, and in-cab video recorders. Agencies will need to ensure that these technologies are properly and safely integrated into their railroad systems.

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National
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What can be done? *con't...*

Another critical element to promoting operational safety in mass transit is oversight. The most recent transportation reauthorization bill (Moving Ahead for Progress in the 21st Century or MAP-21) gives the Federal Transit Administration (FTA) critical authority to set and enforce new safety standards and conduct investigations. The FTA should consider the elements of safety culture, crew resource management, fatigue risk management, and technology, as well as lessons learned from the rail industry, as it moves forward with this new authority. Identifying and implementing these will be key to saving lives and preventing injuries.

What is the NTSB doing?

In its 45-year history, the NTSB has investigated a number of accidents and incidents involving rail mass transit systems. Recent investigations include the September 2008 collision in Chatsworth, California; the June 2009 collision of two Washington Metropolitan Area Transit Authority Metrorail trains in Washington, DC, in which nine people were killed, 52 people were injured, and \$12 million in damages were incurred; and the May 2009 collision of two Massachusetts Bay Transportation Authority light rail passenger trains in Boston, Massachusetts, which injured 68 passengers and crewmembers and caused an estimated \$9.6 million in damages. Our findings and conclusions from these accident investigations in part contributed to the MAP-21 provisions expanding the FTA's authority.

The NTSB has also examined operational safety in rail mass transit through special NTSB events. In September 2013, the NTSB held a Safety Culture Forum to identify key elements that are needed to improve transportation safety, including rail mass transit. In October 2013, the NTSB held an investigative hearing regarding two recent Metro-North rail accidents in Connecticut.

**Critical changes
needed to reduce
transportation
accidents
and save lives**



National
Transportation
Safety Board

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.

