



NATIONAL TRANSPORTATION SAFETY BOARD  
**Investigative Hearing**

Washington Metropolitan Area Transit Authority Metrorail train 302 that encountered heavy smoke in the tunnel between the L'Enfant Plaza Station and the Potomac River Bridge on January 12, 2015

<b>GROUP</b>	
<b>EXHIBIT</b>	

Agency / Organization

Title

**WMATA'S SAFETY ACHIEVEMENTS: 2010 to PRESENT**

**Instituted a Culture of Safety Throughout the Organization:**

- Established a Safety and Security Committee on the Board of Directors as of September 30, 2010.
- Hired a Chief Safety Officer who reports directly to the Chief Executive Officer/General Manager.
- Enacted reforms based on results from a comprehensive survey taken by 98 percent of WMATA employees that sought information on safety issues and ways of remediating potentially unsafe conditions. Accordingly, WMATA:
  - Initiated a safety hotline that includes an anonymous, web-based reporting application that runs 24/7 and that also provides employees with the option of connecting immediately to a live, on-call safety officer.
  - Gave employees the right to challenge their safety on the job through a “Good Faith Challenge” in the Roadway Worker Protection (RWP) program.
  - Deployed safety officers geographically based on problems identified.
  - Strengthened the whistleblower policy, making it non-punitive.
- Developed the Vital Signs Report, a publicly available quarterly report that monitors safety metrics and provides the latest information on customer and passenger injury rates, as well as crime rates, on-time performance and other key indicators of WMATA’s successes.
- Updated the Board’s Safety Policy Statement to define roles, strengthen internal safety committees on all levels, bolster oversight and improve reporting relationships.
- Revised completely the System Safety Program Plan, a document required by both FTA Title 49 CFR Part 659 and the Tristate Oversight Committee’s (TOC) Program Standards and Procedures. The Plan now focuses on hazard identification and management, regulatory compliance and other matters and governs how WMATA implements its overall system safety programs. The document is approved by the WMATA Board and TOC and is communicated across all WMATA departments with the goal of ensuring that WMATA is fully compliant with all FTA and OSHA federal requirements.
- Reviewed the System Security and Emergency Preparedness Plan to focus on ensuring a secure transit system while preparing for both unplanned and planned events, including crime prevention and security.

- Initiated a program called Managing and Enforcing Transit Related Offenses (MetroStat) in 2010 that has changed Metro Transit Police's policing strategy from a traditional, reactive policing strategy to a more statistics-driven and objective-based approach. The new strategy includes a regular analysis of crime statistics and system disorder and provides an overview of when, where, how, and by whom crime is occurring. Based on this analysis, personnel and resources are strategically deployed to more effectively combat crime in identified hot spots. These actions are then followed by analysis of results of crime reduction strategies.
- Created the annual "Champions of Safety" program to recognize employees who maintain safe work practices.
- Implemented and continue periodic employee survey designed to gain critical feedback from employees in a number of areas including safety.
- Hired hundreds of new operations employees (rail bus operators, mechanics and technicians) and trained them in ways to protect and look out for their fellow employees. By increasing the ranks of employees, WMATA has taken steps to decrease the threat of worker fatigue. WMATA has also continued developing a Fatigue Risk Management System.
- Received several awards; including a National Safety Council award for 2013's CEOs Who Get It, which was bestowed on General Manager Richard Sarles as a leader of a national organization who understands "that safety is not only the right thing to do, but that creating a culture of safety also is a business imperative" and APTA awards in 2012, Innovation Award – Paratransit; 2013 Certificate of Merit for Safety and the 2014 Rail Safety & Security Excellence Award.

**Adopted New Safety Management Practices:**

- Established a safety measurement system (SMS) database that functions as an umbrella system that pulls together and consolidates information from various data systems within WMATA, including: central control, maintenance and human resources. The system is a single data entry input for personnel to enter new events and permits authorized users to track, update and close out actions through workflow processes. This one-stop, single source database allows the Safety Department to have a central repository of all incidents and accidents with all documentation and actions – including any analysis, reviews and reports – taken to resolve issues. The centralized system will lead to greater overall efficiency in managing and resolving safety matters across all modes.
- Instituted incident and accident investigation policy and procedures that establish notification, response, investigation, documentation and follow-up protocols in order to avoid the recurrence of unsafe practices. The new policy defines staff roles depending on the severity of the accident/incident and recognizes the Safety Department as the lead department in investigating major accidents.

- Reorganized Engineering and Maintenance groups and re-focused efforts on coordination with operational teams.
- Developed computer-based training modules to help employees comply with EPA requirements governing storm water, spill prevention and recycling matters.
- Adopted Military Standard 882 as part of WMATA's hazard management procedures. This standard helps WMATA prioritize and rate hazards using a science-based, industry-accepted framework to rate the severity and probability of a hazard.
- Began conducting thrice-daily computerized tests of track circuits.
- Implemented General Orders Track Rights System (GOTRS) to better manage access to track and rights of way.
- Adopted applications that allow rail supervisors to provide real-time information to other managers on the performance of train operators and station managers.
- Began implementation of a new asset management system.
- Improved and revised the process to report/monitor deficiencies with fire/life safety systems. Conducting thorough fire assessment of all facilities to ensure compliance and identify deficiencies.
- Created an information web portal for station managers to ensure they receive critical updates, information needed to perform daily duties and important resources.
- Adopted a zero tolerance policy resulting in immediate dismissal of any WMATA employee caught using a cell phone while operating a WMATA vehicle.
- Awarded a contract for the external review of the safety and security of WMATA's IT systems.
- Required all employees with IT network access to complete IT security training and awareness classes and commenced refresher classes as part of this requirement.
- Developed and implemented of a Confidential Close Call Reporting System similar to the Federal Railroad Administration's (FRA) Confidential Close Call Reporting System (C3RS).
- Initiated SafeStat program, a management tool for trending and analysis that will provide information to safety managers to allocate resources and mitigate hazards. Similar to MetroStat

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used by Transit Police, this program provides a more statistics-driven and objective-based approach. Based on this analysis, personnel and resources are strategically deployed to more effectively identified hot spots.

**Worked with Safety Oversight Entities to Address and Resolve Numerous Outstanding Issues:**

- Improved relationship with the Tristate Oversight Committee (TOC):
  - Signed a Memorandum of Understanding (MOU) to redefine and bolster the relationship between WMATA and TOC. The MOU has led to a partnership focused on resolving major issues.
  - Began quarterly briefings by the TOC to the Board's Safety and Security Committee regarding all open and pending matters.
  - Continue audits to monitor safety progress.
  - Continue to review current practices and look for ways to improve overall safety.
- Closed 25 of 29 National Transportation Safety Board Recommendations. The remaining are longer term activities such as replacement of the 1000 series railcars.
- Close all 10 recommendations from the 2010 FTA State Safety Oversight Audit.

**Reduced Employee and Passenger Injury Rates and Safety Hazards:**

- Reduced employee injuries by 28% when compared to calendar year 2010. The CY2014 rate is 4.20 injuries per 200,000 hours worked. Fourth consecutive year of reduced injuries for employees.
- Reduced customer injuries by 6% when compared to calendar year 2010. The customer injury rate is 1.96 injuries per 1,000,000 passenger trips.
- The overall trend over the last five years has been declining for both customer and employee injuries.
- Cut gaps in third rail access to allow mechanics to better access drainage pumping stations.
- Installed work platforms around heating and air conditioner equipment to reduce the need for fall protection.
- Provided classes on lifting and handling materials for new employees.

**Improved Communications with Employees and Customers about Safety Matters:**

- Launched weekly employee online communications concerning safety issues.
- Began Health and Safety Awareness Fairs at various bus divisions.
- Strengthened and in some cases re-established local safety committees, departmental safety committees and the executive safety committee and relied on these committees to provide feedback and create a communications “loop” on identified issues.
- Included a safety-related item within each of the General Manager’s personal weekly emails to employees.
- Distributed “Lessons Learned” circular to all affected employees regarding potential safety hazards.
- Increased the frequency of safety messages on the public address system and improved ways of addressing passengers while they’re on the system.
- Launched an innovative multi-phase campaign that stresses proper safety practices by appealing to employees’ sense of personal responsibility, community, family and leadership.

**Bolstered the Size and Scope of the Safety Department:**

- Increased the number of full-time employees to 61 and ensured they reflected an even greater depth and breadth of experience. The number of employees is now nearly double the number of safety employees WMATA had in 2010 and more than seven times what WMATA had in 1997, when WMATA had only eight safety officials. WMATA’s safety team is now the second largest safety department in the industry.
  - Over 50 percent of WMATA’s safety staff has earned Transit Safety and Security certification by the U.S. Department of Transportation’s Transit Safety Institute (TSI), which instructs transit staff in key topics. Six staff members have passed the American Society of Quality’s (ASQ) certification and two have passed proficiency exams – two earned the Certified Safety Professional designee. WMATA now has more TSI-trained staff than any other transit property.
  - The average safety team member has over 20 years of transit experience, over 15 years of WMATA experience (and the corresponding institutional memory), and 10 years of safety experience.
- Hired WMATA’s first-ever Fire Marshall.

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- Launched the “Train the Trainer” program with larger construction firms so firms can coordinate, administer and provide Roadway Worker Protection training.
- Began policy of having at least two safety officers on call 24/7.
- Stressed the importance of having a true partnership between safety officials and front-line personnel.
- Required the presence of safety officers at major weekend shut-downs.

#### **Investigated Worker Fatigue and Advanced a Worker Fatigue Management Program:**

- Discovered areas of concern in a June 2011 study that was conducted and prepared with TOC and resulted in a November 2011 report. Among the issues raised:
  - The absence of hours of service requirements throughout WMATA and the industry.
  - The availability of training and resources that many employees nonetheless do not take advantage of.
  - The presence of scheduling and overtime issues that could hamper employee rest periods.
  - The lack of “quiet” rooms in many facilities where bus and rail operators can rest.
- Implemented the following procedures and actions after the TOC report:
  - A pilot program to limit pre-planned overtime work to 14 hours on specific job codes.
  - Accelerated Fatigue Awareness Training for all supervisors for select safety critical positions.
  - Began cross-referencing accident data with hours worked to find possible links to fatigue.
- Began moving towards a Fatigue Risk Management System with a focus on safety-critical (WMATA defined) occupations within bus, rail and Metro Access. Implemented the Hours of Service policy (HoS) for safety sensitive/critical positions.

#### **Improved Training and Safety Education:**

- Revised training protocols across all modes, increased field evaluations, stepped up rail yard supervision, issued new standard operating procedures, and stressed accountability, retraining and termination of employment when warranted.
- Instituted Roadway Worker Protection Training (RWP) to educate employees on how to establish a safe work zone and mitigate the risks associated with working on, and maintaining,

WMATA's Roadway through implementation of a program of graduated qualifications for roadway access. Provided RWP training to TOC members and their subcontractors.

- The course focuses on key components of safety, compliance and operator/employee awareness. The program is based on industry best practices and is modeled on a Federal Railroad Administration program (even though FRA doesn't oversee WMATA).
  - WMATA's RWP is recognized as a model for the industry, and the training includes track workers, train operators, nearly everyone who works in rail operations and construction area, and even WMATA's GM/CEO. Because safety requires constant vigilance, WMATA offers a refresher course for new hires and contractors.
  - Revised the RWP Manual in May 2012, two years ahead of a three-year deadline that WMATA imposed on itself.
- Distributed to custodial workers a lifting device intended to minimize back injuries.
  - Ensured supervisors are better trained in helping employees minimize injuries.
  - Completed safety certification activities for the Silver Line extension.
  - Conducted a safety review of 1,900 job descriptions, then grouped, analyzed and developed training profiles for positions in regards to required occupational safety.
  - Initiated field training to reach employees, all shifts in lieu of only classroom training.

**Invested in Critical Rail Infrastructure:**

- Continued with a \$5 billion, 6-year capital improvement program, with the first \$1 billion dedicated to improving the safety of rail infrastructure, passenger facilities and rail vehicles, including planning for delivery of the 7000-series rail cars, which has a new crashworthy design. This increased investment will begin to address the serious deterioration that occurred in the past due to inadequate funding and inattention.
- Launched a comprehensive analysis and monitoring system of Automatic Train Control (ATC), including testing specifications that model FRA requirements and starting ATC "Summit" meetings.
- Completed the base contract for the Red Line Train Control Generation II Module replacement.
- Took delivery of a Track Geometry Vehicle, a specialized railcar equipped with advanced technology that analyzes rail conditions and alerts WMATA to potential defects.

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- Took delivery of Metrorail's first Mobile Command Center.
- Completed installation of a state-of-the-art Rail Operations Control Center to safely manage rail operation and response to incidents. Equipped the Jackson Graham Building (WMATA headquarters) as a back-up operations control center.
- Co-located WMATA's Maintenance Operations Center (MOC) and Escalator and Elevators (ELES) Operations Control Center (EOCC) with the ROCC to improve responsiveness and to better address escalator and elevator issues.

**Improved Bus Safety:**

- Installed a DriveCam on all 1,500 buses and added 636 multi-camera systems, which has increased driver awareness, decreased the overall number of accidents and reduced the number of life-threatening passenger injuries.
- Continuously perform bus vehicle audits and took corrective actions to improve mean distance between service failures, which improves vehicle reliability and the quality of comfort provided to customers.
- Improved the ability to track where accidents occur and thus implement follow-up procedures that reduce the likelihood of future incidents at those accident sites.
- Experienced an overall reduction in employee and passenger injuries.
- Reduced the number of accident-prone employees in the workforce and improved the performance of others through better coaching and mentoring.

**Improved MetroAccess Safety:**

- Acquired nearly 600 new vehicles with advanced safety features.
- Conducted an audit of private contractor's performance running MetroAccess.
- Initiated a comprehensive safety campaign that led to an overall reduction in injuries.
- Redesigned deployment procedures to minimize or eliminate the need for drivers to perform backing maneuvers.
- Implemented fatigue management procedures for MetroAccess drivers.
- Enhanced requirements for driver credentials and background checks.

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- Implemented “Avatar” Driver Safety Training Program with state-of-the-art training techniques and expanded adult learning training modules.
- Implemented individual certification programs for key safety-related personnel (driving instructors and road supervisors).
- Augmented post-incident coaching through the use a DriveCam system, which was first installed in 2006.

**Improved Escalator Safety:**

- Incorporated the re-surfacing of escalator landing plates into the station rehabilitation program in order to prevent slips and falls.
- Increased supervision of and resources available for escalator maintenance, which has resulted in improvements in preventive maintenance compliance from 40 percent to 80 percent.
- Improved signage near escalators at stations system-wide, which has served to improve customers’ awareness of efforts they can take to ensure their safety while riding escalators as well as better inform customers about WMATA’s escalator rehabilitation efforts.

**Improved Safety at Stations:**

- Upgraded the public address system at Union Station and also installed a new uninterruptible power system.
- Installed new bumpy tiles at many stations, and rehabilitated platforms, structures and paver tiles.