

TRI-STATE OVERSIGHT COMMITTEE



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DRPT



Fatigue Management in Metrorail Operations & Maintenance

Methods, Process & Findings

Safety Department, Washington Metropolitan Area Transit Authority (SAFE)

&

Tri-State Oversight Committee (TOC)

November 17, 2011



General Background

- No federal hours-of-service (HOS) standards for rail transit
- NTSB issued multiple recommendations on this topic, including to FTA
- APTA HOS standard begins in 2014, only applies to train operators
- Employee fatigue generally recognized as a hazard across modes
- WMATA experienced one major accident (2004 Woodley park) which NTSB attributed, in significant part, to employee fatigue
- Most scholarship and research attention primarily focused on operator fatigue rather than that of other safety-critical employees



Genesis of the Fatigue Management Study

- Discussion between WMATA Board, staff and TOC at public meeting in June 2011 initiated the process
- Study's intent: Examine current WMATA policy and practice for safety-sensitive employee hours of service and fatigue management
- Joint approach rather than outside investigation, ensuring buy-in from all stakeholders
- Defining the problem before presenting solutions



Scope of Evaluation

- Includes Safety-Critical Metrorail functional areas, as defined by 49 CFR §655.3 or Metro's internal authority
- Review of hours-of-service and overtime rules, bargaining agreements and policies
- Discussion of secondary employment policies and practice
- Medical review and clearance
- Fatigue awareness management training
- Employee work and overtime scheduling practices



By The Numbers

- Nine-person review team included TOC staff, contractor support and WMATA SAFE
- Over 60 hours of interviews with more than 90 frontline employees, supervisors, managers and support staff
- Over 62,000 employee hours-worked data points included in quantitative analysis
- Seven Metrorail operating groups interviewed over 11 weeks



Functional Areas Evaluated

- CMNT (Railcar Maintenance)
- TRST (Track & Structures Maintenance)
- ATC (Signals/Automated Train Control)
- RTRA (Rail Transportation)
- ROCC (Operations Control Center)
- POWR (Electrical Power)
- ELES (Elevator/Escalator Maintenance)



Evaluation Methodologies

- Structured interviews with front-line employees, supervisors/dispatchers and managers using a jointly-vetted, standardized interview form
- Quantitative review, analysis of 28-day shift data sample (July 3-31, 2011) as well as staffing and vacancy data
- Informal interviews with support offices (human resources, medical)
- Review of computer-based training modules
- Review by senior WMATA and TOC leadership



Overall Operating Environment

- 318 vacancies/open safety-sensitive positions within depts evaluated
- Demanding operational tempo of infrastructure renewal and capital projects, including high priorities like NTSB-recommended upgrades
- Reported lack of qualified applicants for technical positions (e.g. ATC)
- Limited financial resources to expand workforce
- Minimal time available for track access due to revenue service hours



General Findings of Fact: Hours-of-Service & Scheduling

- Labor agreement (Section 215) creates a *de facto* 16-hour daily limit for Metrorail employees
- Statistical review shows work hours in excess of 16-hour limit are rare, but do occur
- No current limits on consecutive days without a day off (cumulative fatigue)
- Overtime practices (weekly caps, “skips”) vary by department, are informal
- Some overtime assignments can add significant time to employee commutes
- Interviews with employees, managers and supervisors indicated widespread belief that these rules and practices did not adequately control fatigue
- Shift assignments/hours not reviewed for fatigue potential

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General Findings of Fact: Hours-of-Service & Scheduling (cont'd)

- Current labor agreement provides incentive to work overtime during the highest-earning years of employment (improved retirement benefits)
- Employees who sign the overtime board have little flexibility in the assignments they receive; required to work “any and all” shifts assigned
- Employees will try to “pull the weight” for a fatigued co-worker, many see a choice between personal responsibilities and financial incentives
- Some supervisors try to accommodate fatigued employees (encouraging them to skip an OT shift, ignoring a brief nap) but fear accusations of favoritism/special treatment



General Findings of Fact: Secondary Employment

- Rule 1.63: "*Employees shall not engage in outside employment, instructional courses or other activities that are competitive with, interfere with or adversely affect the performance of duties, or deprive the employee of having at least eight (8) consecutive hours off in every 24 consecutive hour period.*"
- Puts the onus on employees to determine potential conflicts and report
- Generally regarded by supervisors and managers as vague and unenforceable in its present form



General Findings of Fact: Medical Review & Fitness for Duty

- WMATA Medical conducts Certifying Medical Exams (CMEs) for rail operators, including screening for sleep disorders
- CME process comparable to Commercial Driver's License (CDL) process for bus operators
- CMEs designed to result in referrals for medical sleep evaluations as needed
- CME not required of other safety-critical employees (ATC, railcar maintenance, OCC controllers, power technicians)



General Findings of Fact: Fatigue Recognition & Training

- Review team's assessment of current fatigue awareness training (computer-based training) was positive
- Employees who had taken the training gave mostly positive feedback
- Many safety-critical groups were not aware of the training, nor that it was reportedly mandatory
- Supervisors have the authority to send employees for medical exams based on "observed behavior and performance" but no training on fatigue recognition was provided at the time of the review



Concluding Comments

- Study demonstrated the benefits of a joint TOC/Wmata approach
- Wmata exhibited transparency and willingness to support the goals and needs of the study
- Current fatigue environment reflects a complex mix of factors affecting the agency's resources, mission, workforce and capital projects/goals
- Building a strong safety culture requires careful assessments of areas for improvement, such as fatigue management
- Wmata leadership have outlined concrete steps to address these findings and stated their goal of leading the transit industry in managing fatigue