NTSB National Transportation Safety Board

Understanding the Critical Role of Leadership in Preventing Organizational Accidents

Lessons Learned from Investigating Major Rail Accidents

Robert L. Sumwalt

July 28, 2011

What is Leadership?

"Leadership is about influence. Nothing more. Nothing less."

- John Maxwell

As a leader …

- You can negatively influence safety.
- You can positively influence safety.

Which influence will you provide?

Negatively influencing safety

WARNING: DO NOT TRY THIS AT WORK!

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NTSB report of Washington, DC Metro subway accident

- " … the accident did not result from the actions of an individual but from the 'accumulation of latent conditions within the maintenance, managerial and organizational spheres' making it an example of a 'quintessential organizational accident.'"

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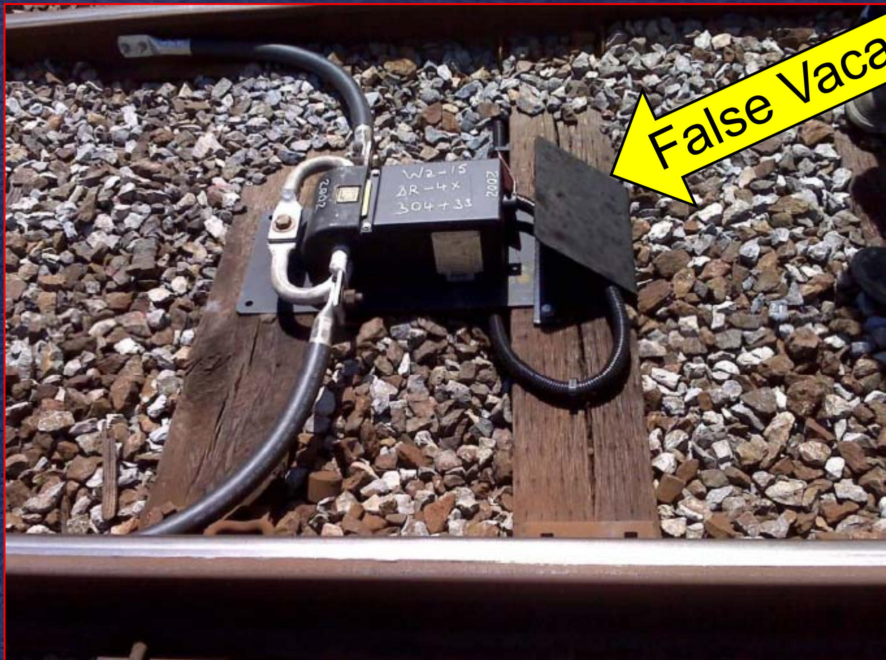
Two types of accidents

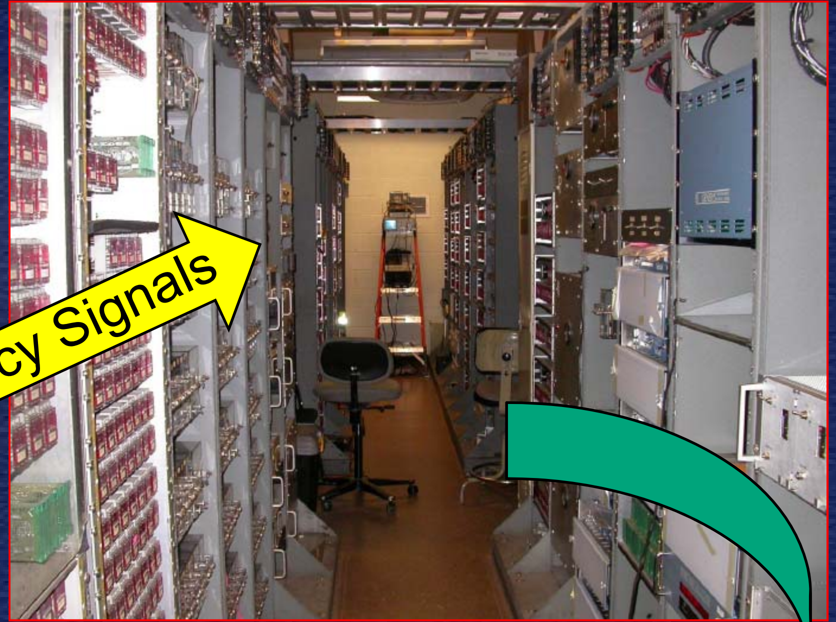
- Individual accidents – those resulting from the actions/inactions of people.
  - i.e., An individual, following properly established procedures, loses balance and falls of ladder
- Organizational accidents – those resulting largely from actions/inactions of companies/organizations.
  - i.e., A train runs into back of another train, claiming multiple lives
    - Employees develop work-arounds instead of following procedures
    - Organization does not learn from prior events and precursors
    - Senior management is focused on finances and customer service
    - Organization uses wrong metrics to gauge safety
    - Regulatory oversight is not sufficient

Washington DC Subway (WMATA)

Technical failure



False Vacancy Signals



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Probable Cause

- Failure of the track circuit modules that caused the automatic train control system to lose detection of the first train and thus transmit speed commands to second train up the point of impact

- WMATA’s failure to ensure that an enhanced track circuit verification test was institutionalized and used system-wide after a 2005 precursor event (near-collisions), which would have identified the faulty track circuit before this accident

Contributing to the Accident

- WMATA's lack of a safety culture
- WMATA's failure to effectively maintain and monitor performance of the ATC system
- GRS/Alstom failure to provide a maintenance plan to detect spurious signals that could cause a malfunction
- Ineffective oversight by WMATA Board of Directors
- Ineffective oversight by State Safety Oversight agency and its lack of safety oversight authority
- FTA's lack of statutory authority to provide Federal safety oversight

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How leaders influence safety

"The safety behaviors and attitudes of individuals are influenced by their perceptions and expectations about safety in their work environment,

How leaders influence safety

"The safety behaviors and attitudes of individuals are influenced by their perceptions and expectations about safety in their work environment, and they pattern their safety behaviors to meet demonstrated priorities of organizational leaders, regardless of stated policies."

– D. Zohar, as cited in NTSB report of WMATA accident

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What did employees perceive?

"the mentality now is move trains"

Post-accident statements made by the supervisor of the construction, installation, and testing crew were indicative of an emphasis on maintaining operations over safety.

The environment at WMATA

- Punitive culture – employees feared retribution from management and co-workers for reporting safety-related problems
- FTA audit found WMATA managers were reactive rather than proactive in assessing and addressing the agency's most serious safety hazards
- WMATA did not learn from prior events
  - A loss of shunt detection procedure – one that could have detected the track circuit problem – was never institutionalized
- Widespread procedural non-compliance

NTSB finding

"The low priority that WMATA Metrorail managers placed on addressing malfunctions in the train control system before the accident likely influenced the inadequate response to such malfunctions by automatic train control technicians, operations control center controllers, and train operators."

Board of Directors

- Viewed themselves solely as a “policy board”
- Relied on the General Manager to bring safety-related information to them
- Used the wrong metrics to gauge rail safety
  - Rail passenger injuries, escalator injuries, derailments, smoke and fire event, crime
- Did not insist in following-up on prior audit findings, despite a requirement to do so
- Placed much of the blame for causing and much of the responsibility for preventing accidents on frontline personnel

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Conflicting goals

- Customer Services, Operations, and Safety Committee

NTSB finding

"The WMATA Board of Directors did not exercise oversight responsibility for the system safety of the WMATA system."

NTSB finding

"Before the accident, the WMATA Board of Directors did not seek adequate information about, nor did it demonstrate adequate oversight to address, the number of open corrective action plans from previous Tri-State Oversight Committee and Federal Transit Administration safety audits of WMATA."

Where was safety?

WMATA mission statement:

- “Metro provides the nation’s best transit service to our customers and improves the quality of life in the Washington metropolitan area.”

WMATA Board of Directors By Laws

- “…determines agency policy and provides oversight for the funding, operation and expansion of transit service …”

Positively influencing safety

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Instill a culture that focuses on safety

"Safety culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment."

Source: US Nuclear Regulatory Commission

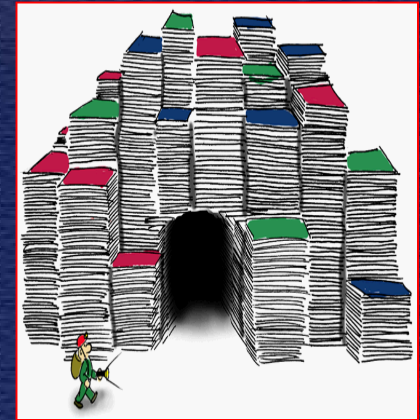
Safety Culture

- “Safety culture a set of established attitudes, values, beliefs, norms, and practices where safety is revered, promoted and treated as an overriding priority.
  - It begins at the top of an organization and permeates throughout the organization.”

Source: US Nuclear Regulatory Commission

Be informed, stay informed

- Collect and analyze "the right kind of data" to stay informed of the safety health of the organization
  - Create a safety information system that collects, analyzes and disseminates information on incidents and near-misses, as well as proactive safety checks.



How do you stay informed?

- Internal safety audits
- External safety audits
- Confidential incident reporting systems
- Employee feedback
- In-cab audio and image recordings (with appropriate protections)

Open lines for reporting

- Employees are open and encouraged to report safety problems
  - Assurance that information will be acted upon
  - Confidentiality will be maintained or the data are de-identified
  - Assurance they will not be punished or ridiculed for reporting
    - Non-reprisal policy signed by CEO

Non Reprisal Policy
December 2005

SCANA Aviation Department is committed to the safest flight operation possible. Therefore, it is imperative that we have uninhibited good faith reporting of any hazard, occurrence or other information that in any way could enhance the safety and efficiency of our operations. It is each employee's responsibility to communicate any information that may affect the integrity of flight safety.

We will not use this reporting system to initiate disciplinary proceedings against an employee who discloses in good faith a hazard or occurrence involving safety which is the result of conduct which is inadvertent, unintentional or not deliberate.

We urge all employees to use this program to help this Department be a leader in providing our passengers and our employees with the highest level of flight safety.

William B. Timmerman
Chief Executive Officer

Robert L. Sumwalt, III
Manager – Aviation

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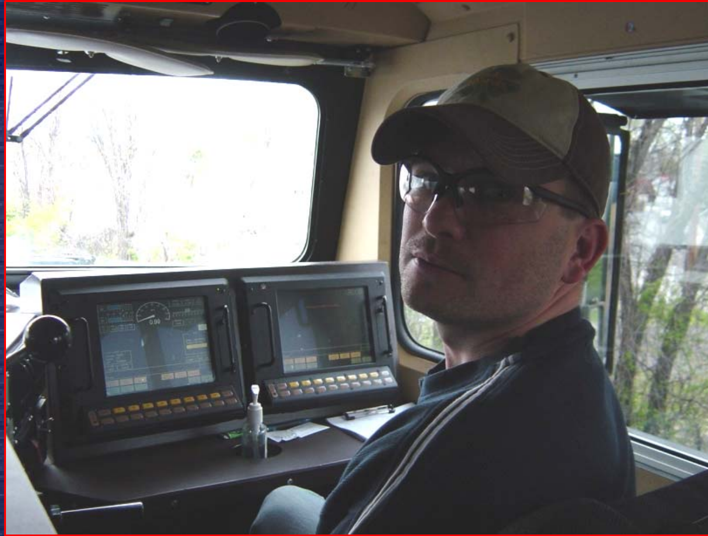
Staying informed

1. How do you keep your finger on the pulse of your operations?

2. Are you taking proactive measures?

3. Do you have multiple data sources?

Employees



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Create a "Just" Culture

- Basically, this means that employees realize they will be treated fairly
  - Not all errors and unsafe acts will be punished (if the error was unintentional)
  - Those who act recklessly or take deliberate and unjustifiable risks will be punished

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Just Culture

- “An atmosphere of trust in which people are encouraged (even rewarded) for providing safety-related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behavior.”

Source: James Reason

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Properly investigate safety events

- Don't stop at the obvious human error/ mechanical problem.
- Always attempt to understand the behaviors, conditions, circumstances behind the error or unsafe condition.
- Only then can you actually correct the underlying issues.

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