



NTSB National Transportation Safety Board

Managing Fatigue in Flight Operations: FRMP Commitment, Policy, and Procedures

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Board Member

A4A/CAA/NACA/RAA FRMP Symposium
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NTSB Most Wanted List


Critical changes needed to reduce transportation accidents and save lives.



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MOST WANTED LIST

A program to increase the public's awareness of, and support for, action to adopt safety steps that can help prevent accidents and save lives. The following are ten of the current issues.



Addressing Human Fatigue



General Aviation Safety



Safety Management Systems



Runway Safety



Bus Occupant Safety



Pilot & Air Traffic Controller Professionalism



Recorders



Teen Driver Safety



Addressing Alcohol-Impaired Driving



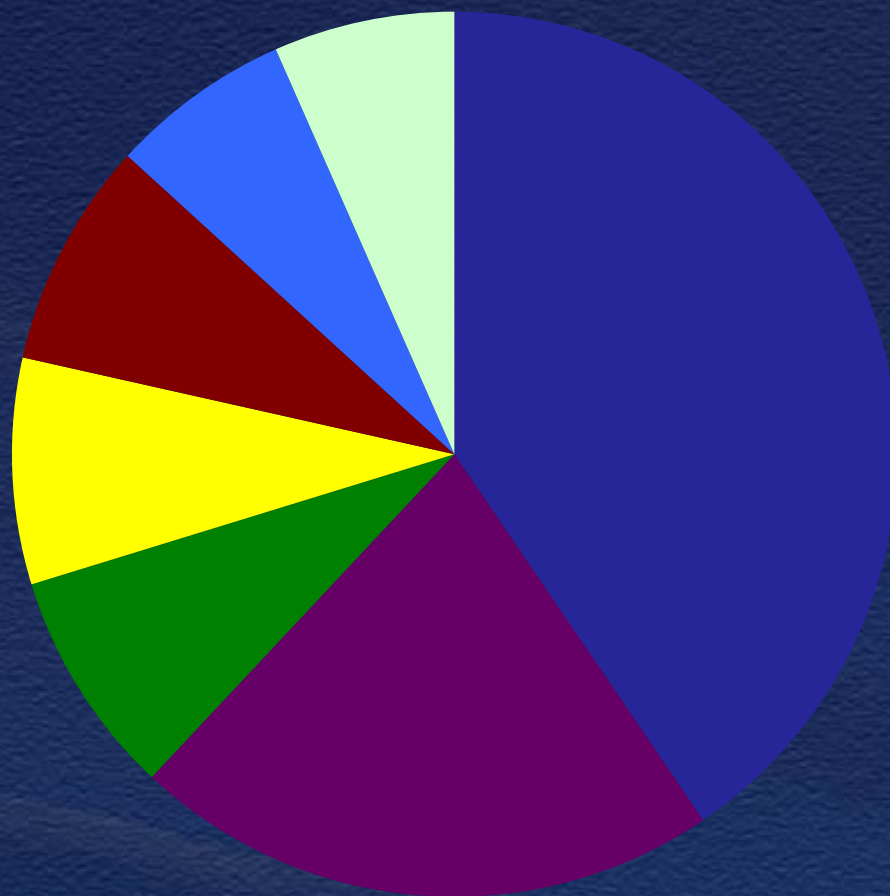
Motorcycle Safety



NTSB Recommendations

- MOST WANTED since 1990
- ~200 fatigue recommendations

Complex Issue: Requires Multiple Solutions



- Scheduling Policies and Practices
- Education
- Organizational Strategies
- Raising Awareness
- Healthy Sleep
- Vehicle and Environmental Strategies
- Research and Evaluation

Collision of Two Washington Metropolitan Area Transit
Authority Metrorail Trains Near Fort Totten Station
Washington, D.C.
June 22, 2009



Railroad Accident Report

NTSB/RAR-10/02
PB2010-916302



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9 fatalities, 52 to local hospitals

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Probable Cause/Contributing Factors

Contributing to the accident were:

(1) WMATA's lack of a safety culture . . .

.

(4) ineffective safety oversight by the
WMATA Board of Directors . . .

To the Board of Directors, Washington Metropolitan Area Transit Authority:

Elevate the safety oversight role of the Washington Metropolitan Area Transit Authority Board of Directors by (1) developing a policy statement to explicitly and publicly assume the responsibility for continual oversight of system safety, (2) implementing processes to exercise oversight of system safety, including appropriate proactive performance metrics . . . (R-10-7)

To the Washington Metropolitan Area Transit Authority:

Develop and implement a non-punitive safety reporting program to collect reports from employees in all divisions within your organization, and ensure that the safety department; representatives of the operations, maintenance, and engineering departments; and representatives of labor organizations regularly review these reports and share the results of those reviews across all divisions of your organization. (R-10-17)

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

1. Incorporate a letter from the Director of Operations level management acknowledging their commitment to managing and mitigating fatigue to improving flightcrew alertness.
 - Consider:
 - “Senior Level Management” authors
 - words vs. actions
 - shared responsibility
 - ongoing visibility/involvement

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

2. Establish and incorporate the air carrier's concept of a corporate "Just Culture" or "Safety Culture."

- Consider:
 - clear definition
 - clear defining actions
 - signs and symptoms
 - ongoing enhancement

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

3. Establish and incorporate an open communications policy for reporting fatigue-related issues.

- Consider:
 - implement policy
 - clear expectations
 - transparency
 - define purpose

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

4. Establish and incorporate a fatigue reporting system.

- Consider:
 - visibility
 - simplicity
 - early warning system
 - outcomes

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

5. The corporate policy should define how an event will be evaluated for potential fatigue involvement as well as define an overview of the methodology for conducting a detailed root cause analysis.

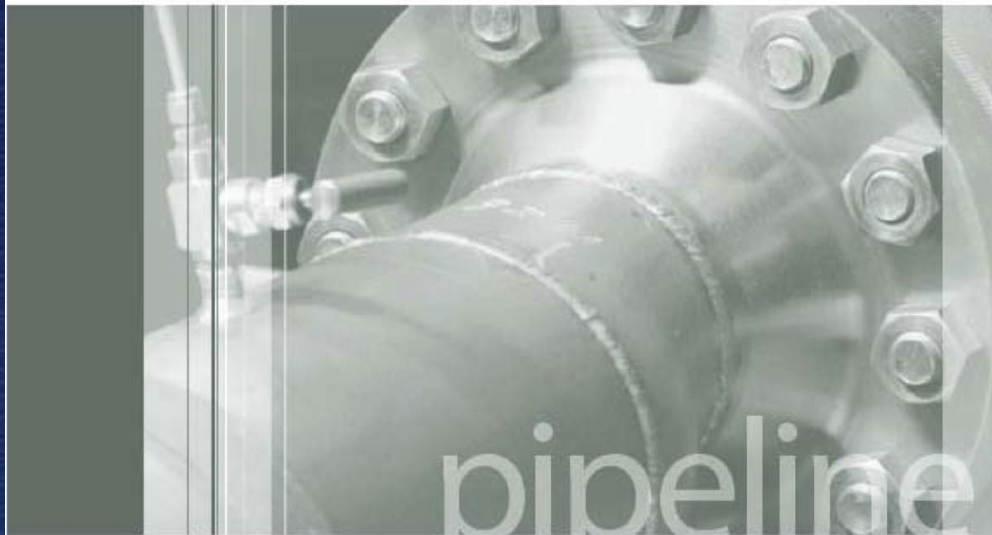
- Consider:
 - science based methodology
 - diverse participation
 - communication
 - outcomes to actions

(a) Senior Level Management Commitment to Reducing Fatigue and Improving Flightcrew Alertness

6. The corporate policy should provide for protection of privacy and methods to protect the employee from adverse actions that would discourage reports of fatigue. The air carrier will develop and implement a process for reviewing reports and the actions taken to reduce flightcrew fatigue exposure.

- Consider:
 - incentives
 - confidentiality
 - visible actions
 - evaluate outcomes

Pacific Gas and Electric Company
Natural Gas Transmission Pipeline Rupture and Fire
San Bruno, California
September 9, 2010



Accident Report

NTSB/PAR-11/01
PB2011-916501



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PG&E/San Bruno Gas Pipeline Explosion

- 8 fatalities
- 10 serious injuries
- 48 minor injuries



- 108 homes affected
 - 38 destroyed
 - 17 sev - mod damage
 - 53 minor damage

Probable Cause

(2) inadequate pipeline integrity management program, which failed to detect and repair or remove the defective pipe section

To the Pipeline and Hazardous Materials Safety Administration:

(1) Develop and implement standards for integrity management and other performance-based safety programs that require operators of all types of pipeline systems to regularly assess the effectiveness of their programs using clear and meaningful metrics, and to identify and then correct deficiencies; and (2) make those metrics available in a centralized database. (P-11-19)

(b) FRMP Scope and the Air carrier's Fatigue Management Policy and Procedures

1. Clearly describe each element of the FRMP.

- Consider:
 - clarity
 - simplicity
 - visibility

(b) FRMP Scope and the Air carrier's Fatigue Management Policy and Procedures

2. Define the scope and objectives of the air carrier's FRMP.

- Consider:
 - minimum standards
 - 'raise the bar'
 - metrics
 - evolution

(b) FRMP Scope and the Air carrier's Fatigue Management Policy and Procedures

3. Identify the kind of operations and the type of operations conducted by the air carrier. (InFO 10017)

- kind of operations

(e.g., domestic, flag, and supplemental)

- type of operations

(e.g., continuous duty overnights, night versus day operations, cargo versus passenger operations, short-haul versus long-haul, etc.)

(b) FRMP Scope and the Air carrier's Fatigue Management Policy and Procedures

4. Incorporate the air carrier's policies and procedures to mitigate and manage the effects of fatigue and improve flightcrew alertness.

- Consider:
 - specify actions
 - visibility
 - evaluation
 - ongoing improvement

(b) FRMP Scope and the Air carrier's Fatigue Management Policy and Procedures

5. Define safety objectives and expectations of the air carrier's FRMP.

- Consider:
 - specify success criteria
 - collect/analyze data
 - action/outcome based
 - shared responsibility
 - establish best practices
 - then 'raise the bar'

NTSB Recommendations: Fatigue Management Systems

- Develop guidance based on empirical and scientific evidence for operators to establish fatigue management systems
- Develop and use a methodology that will continually assess the effectiveness of fatigue management systems

Honorable John K. Lauber:

No Accident \neq
Safe Operation

Success requires . . .

A culture change that supports
different attitudes and behaviors

Changing Safety Culture

Safety goal . . .

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