NTSB National Transportation Safety Board

Managing Fatigue Risks to Enhance Transportation Safety: Issues and Opportunities

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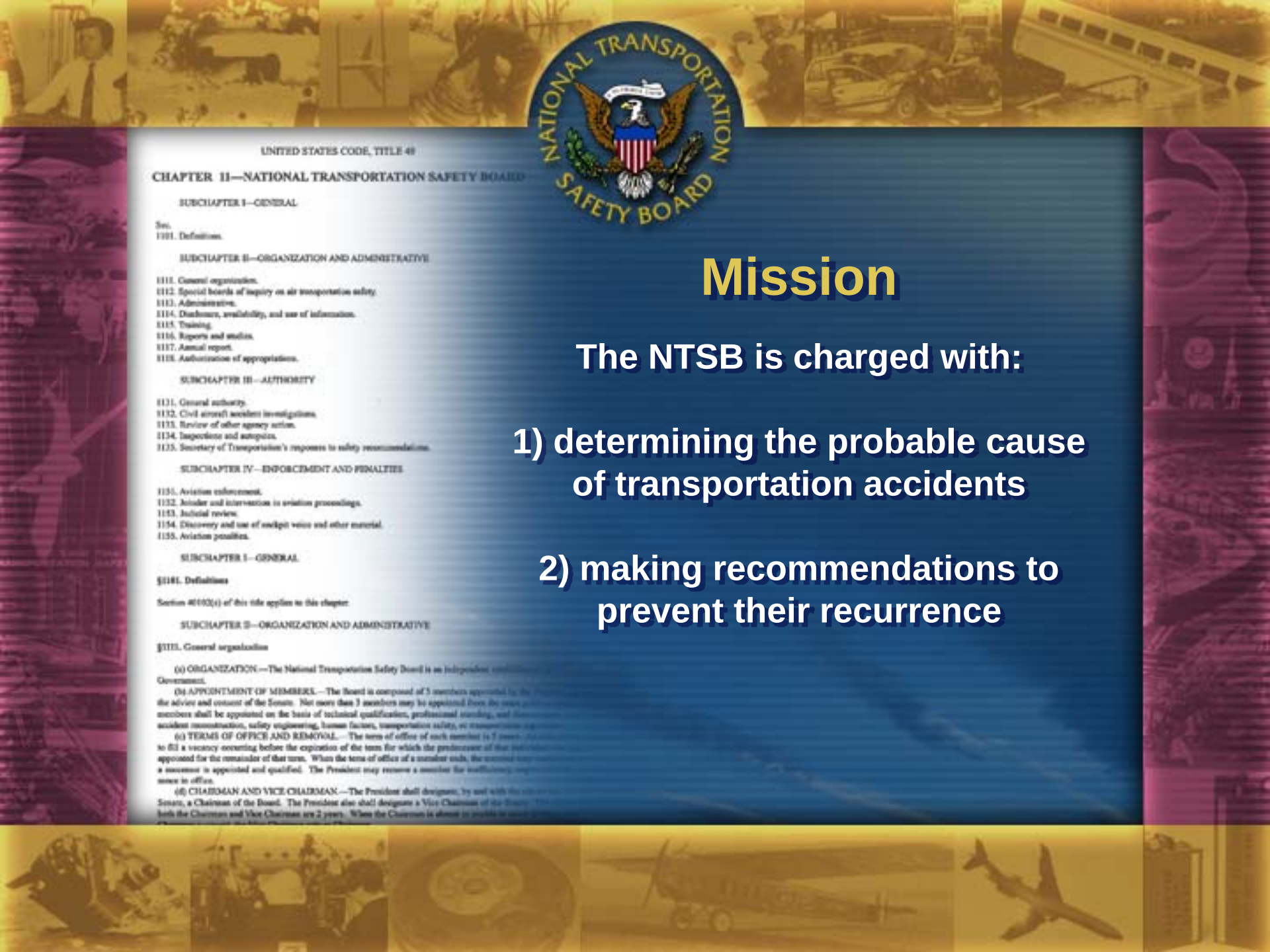
Board Member

Opening Remarks
TRB Modeling Workshop
January 23, 2011



Mission

The NTSB is charged with:

1) determining the probable cause of transportation accidents

2) making recommendations to prevent their recurrence

The NTSB is Responsible for Investigating:

Aviation, highway, rail, marine, pipeline, and hazardous material accidents

- 130,000+ accident investigations
- 13,000+ safety recommendations
- 82% acceptance rate

Guantanamo Bay Cuba

First NTSB aviation accident to cite fatigue as probable cause

- acute sleep loss, sleep debt, circadian disruption

NTSB

Accident Investigation: Fatigue Factors

- Acute sleep loss/cumulative sleep debt
- Continuous hours of wakefulness
- Time of day/circadian effects
- Sleep disorders

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Uncontrolled In-Flight Collision with Terrain
AIA Flight 808, Douglas DC-8-61, N814CK
U.S. NAS, Guantanamo Bay, Cuba, August 18, 1993

Probable cause:

"The National Transportation Safety Board determines that the probable causes of this accident were the impaired judgment, decision making, and flying abilities of the captain and flightcrew due to the effects of fatigue…"

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Continental Connection (Colgan Air) Buffalo NY (February 12, 2009)

- 50 fatalities; commuting, acute sleep loss

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Crew Fatigue Factors

- Captain
  - acute sleep loss (lounge, interrupted)
  - cumulative sleep debt (6 – 12 hrs)
  - awake at least 15 hrs
  - landing at normal bedtime

- First Officer
  - commuted overnight from Seattle
  - 8.5 hrs sleep in previous 34 hrs
    (in-flight, crew room)

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THE BAHAMAS

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Fatal Airline Accidents (fatigue cited)

- 8/97 Guam: 228 fatalities
- 6/99 Little Rock AK: 11 fatal
- 10/04 Kirksville MO: 11 fatalities
- 8/06 Lexington KY: 49 fatalities
- 2/09 Buffalo NY: 49 fatalities

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Go! Flight 1002

- early starts, multiple segment days, sleep apnea

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Honorable John K. Lauber:

No Accident ≠

Safe Operation

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NTSB Recommendations

- MOST WANTED since 1990
- 150+ fatigue recommendations

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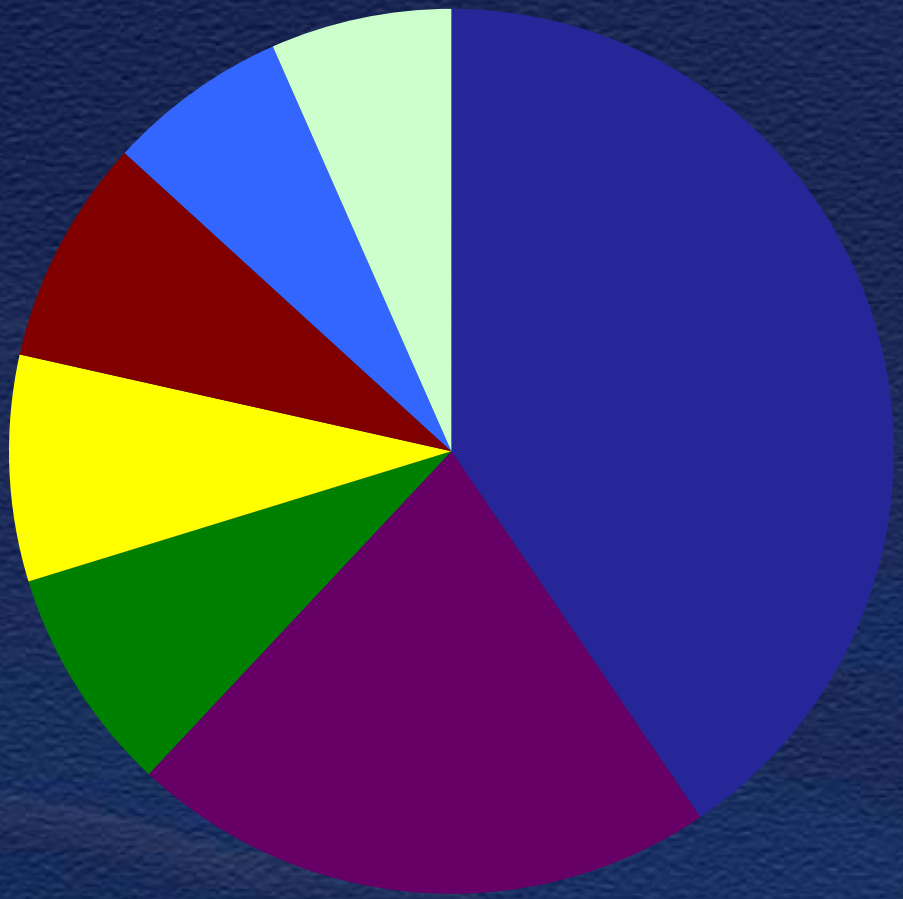
Complex Issue: Requires Multiple Solutions



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

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Modeling: Issues/Opportunities

- Technology advances = revolution
- Tremendous societal needs
- Integrate ‘fatigue’ management into daily operations/activities
- Strengths vs. limitations
- Outcomes and expectations
- Development/evolution plan
- Science-based/data-driven

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