



NTSB National Transportation Safety Board

**Most Wanted:
Eliminating Fatigue Related
Accidents and Incidents**

2009 International Conference on
Fatigue Management in Transportation Operations
Member Deborah A. P. Hersman

NTSB

- Independent federal agency
- 5-member board
- 400 staff
- Investigates accidents and conducts studies in all modes of transportation
- Determines probable cause and issues recommendations

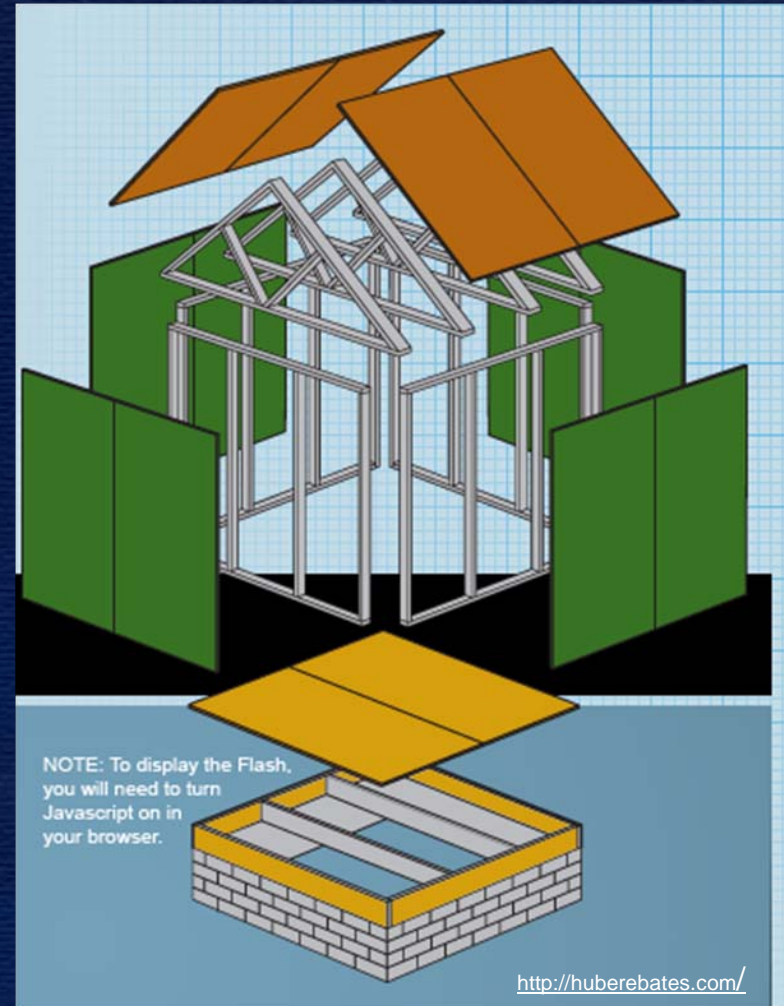
NTSB Recommendations

- 113 recommendations
- MOST WANTED since 1990
- Begins with research



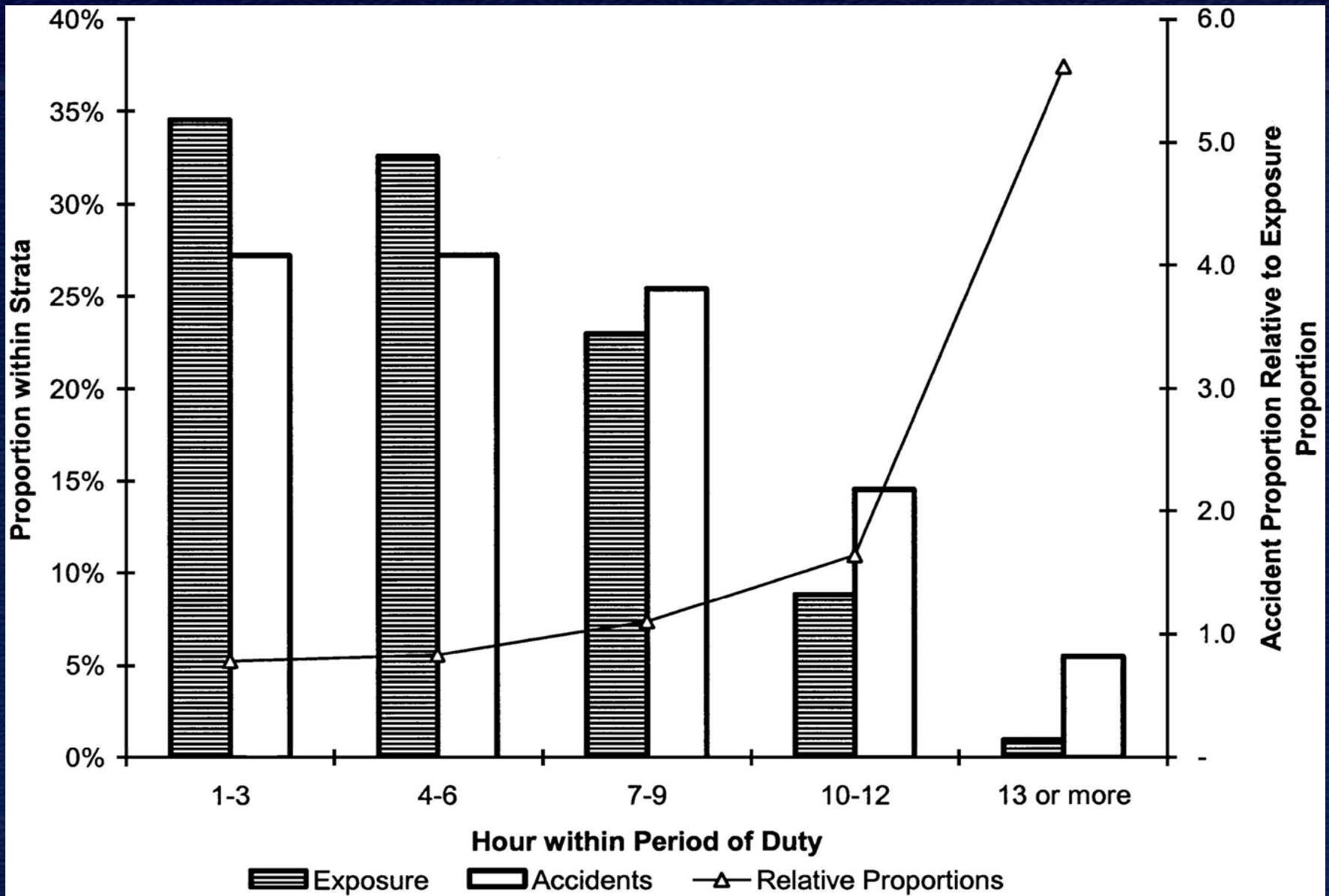
House of Fatigue Management

- Scheduling Practices = Framework
- Hours of Service = Foundation





Kirksville, Missouri, October 19, 2004



Hours of Service / Scheduling

- Science-based hours of service
- Allow for at least 8 hours of uninterrupted sleep
- Reduce schedule irregularity and unpredictability

Go! Flight 1002



NTSB



Cosco Busan allision San Francisco Bay Bridge



Health Related Recommendations

- Develop a standard medical exam to screen for sleep disorders and require its use
- Educate companies and individuals about sleep disorder detection and treatment, and the sedating effects of certain drugs
- Establish a system to track prescription and OTC drug use of operators

Shuttle America Flight 6448





Organizational Policies

- Allow workers to call in fatigued
- Have written policies
- Address administrative implications of fatigue calls
- On-duty mitigation strategies
- Off-duty rest

Truck-Tractor Semitrailer Rollover: Osseo, WI 10/16/05



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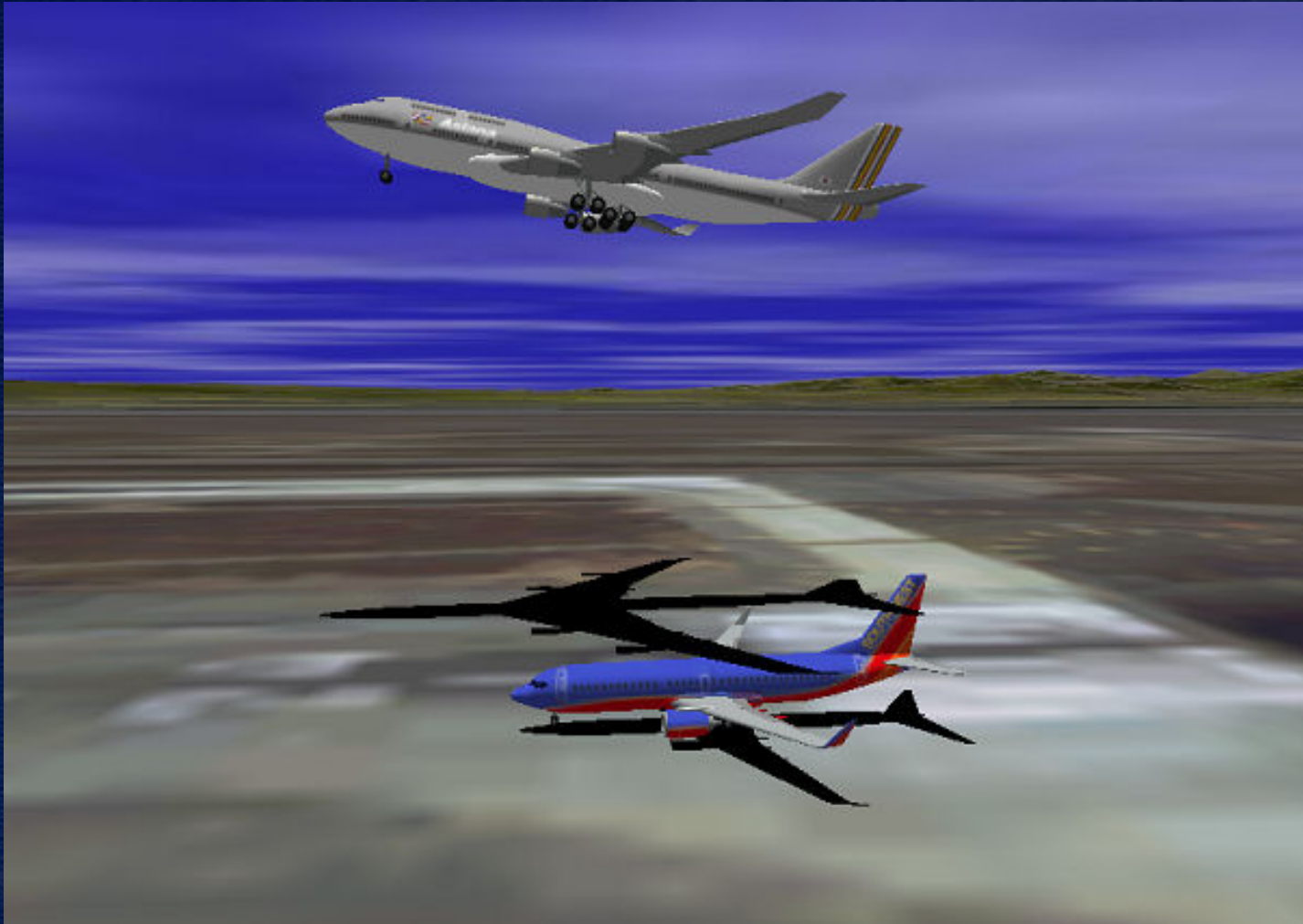
Truck/Motorcoach accident at Osseo, WI



Vehicle/Environmental Countermeasures

- In-vehicle technologies to reduce fatigue-related accidents
- Electronic on-board recorders
- Use of rumble strips near work zones
- Adequate rest areas and sleeping facilities

Runway Incursion at LAX



NTSB





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National Transportation Safety Board

Runway Incursion between Asiana B747-400 and Southwest B737

Los Angeles International Airport
Los Angeles, California

August 19, 2004

Education

- Develop a fatigue awareness and countermeasures training program
- Educate both operators and schedulers
- Include information on use of duty time, naps, and caffeine

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

NTSB Continuing Fatigue Efforts

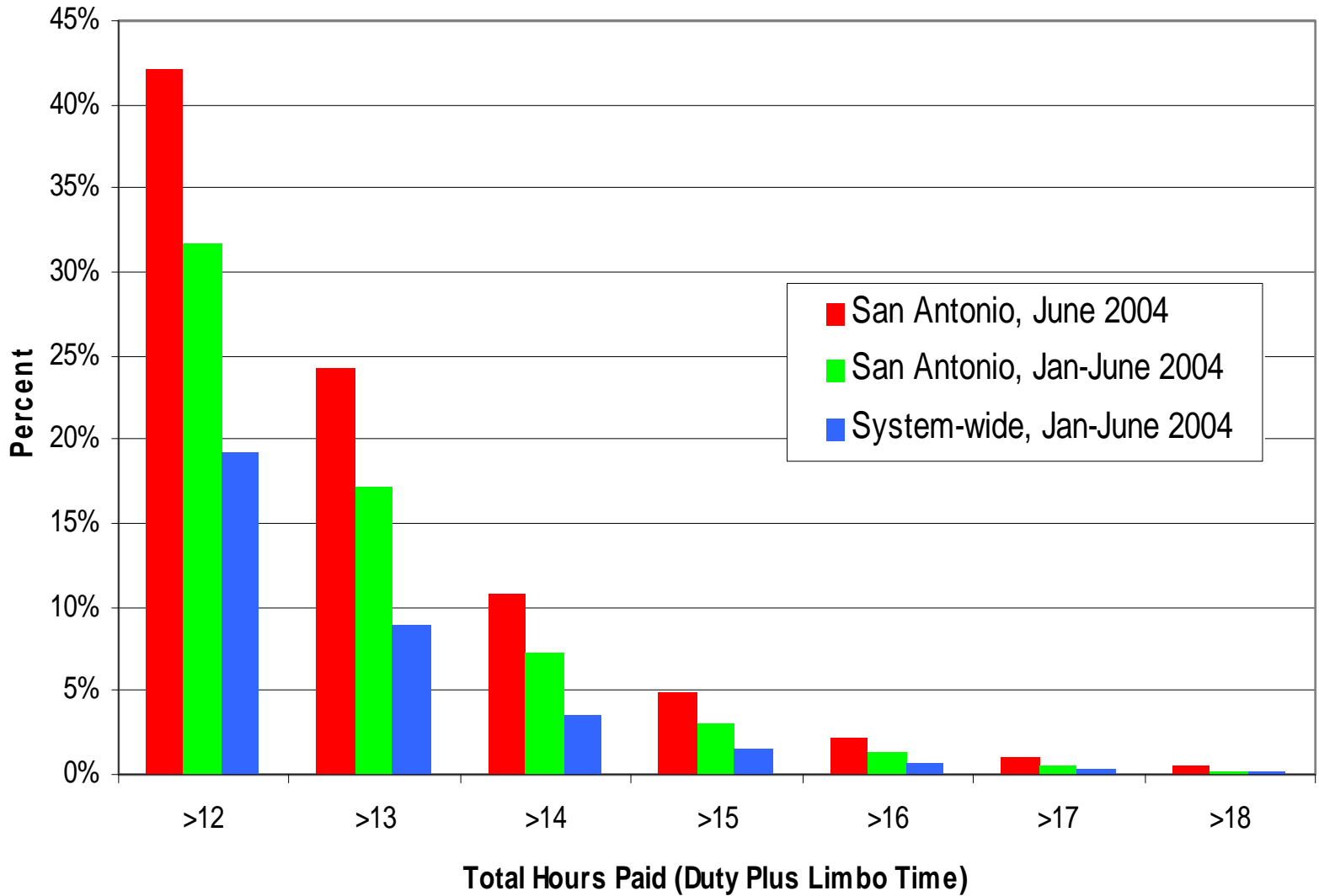
- Studies
 - Fatigue Investigation Methodology Study
- Outreach
 - Training Center Course on Investigating Human Fatigue Factors
- Recommendations and Advocacy
- Most Wanted List

Macdona, Texas

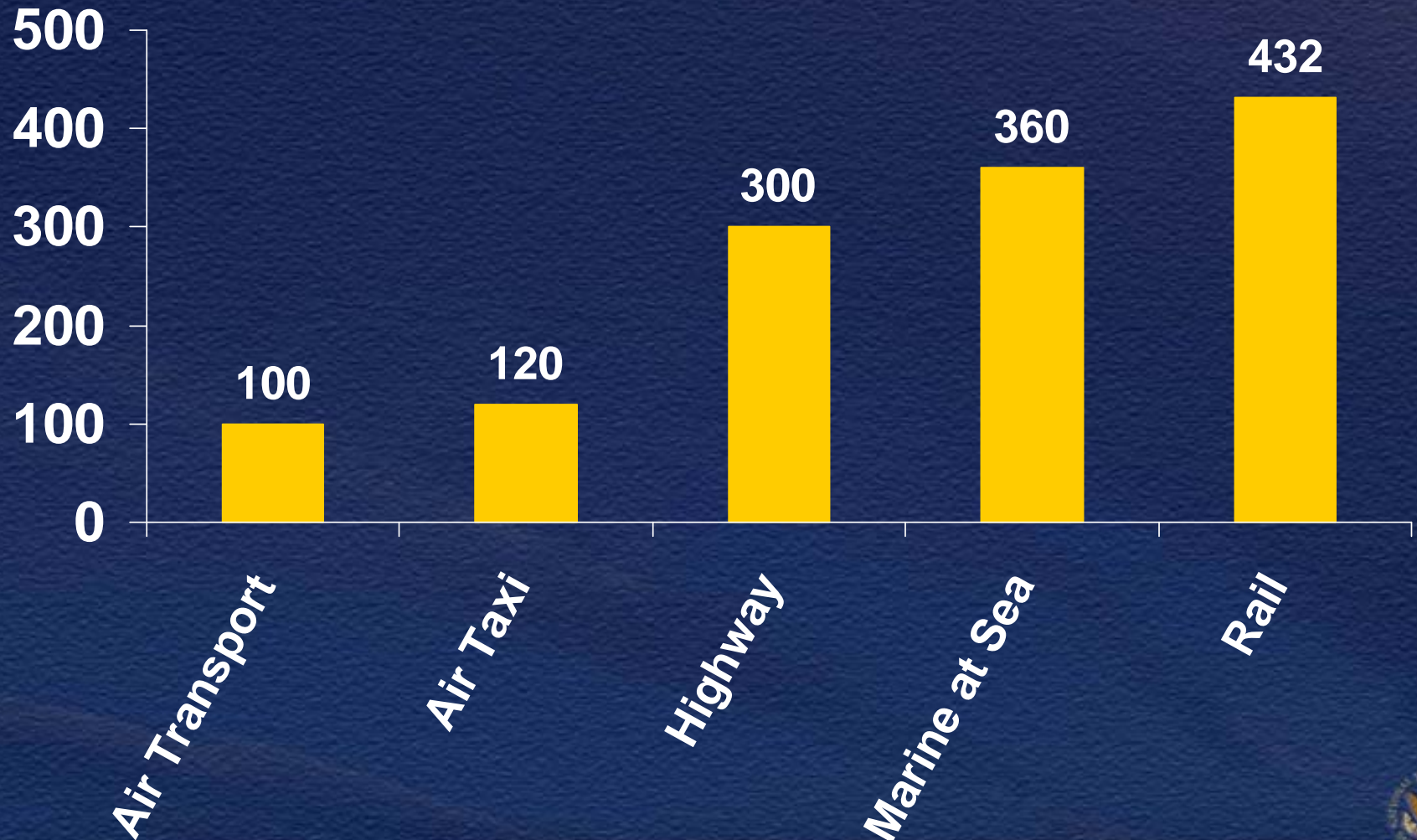


Union Pacific Railroad

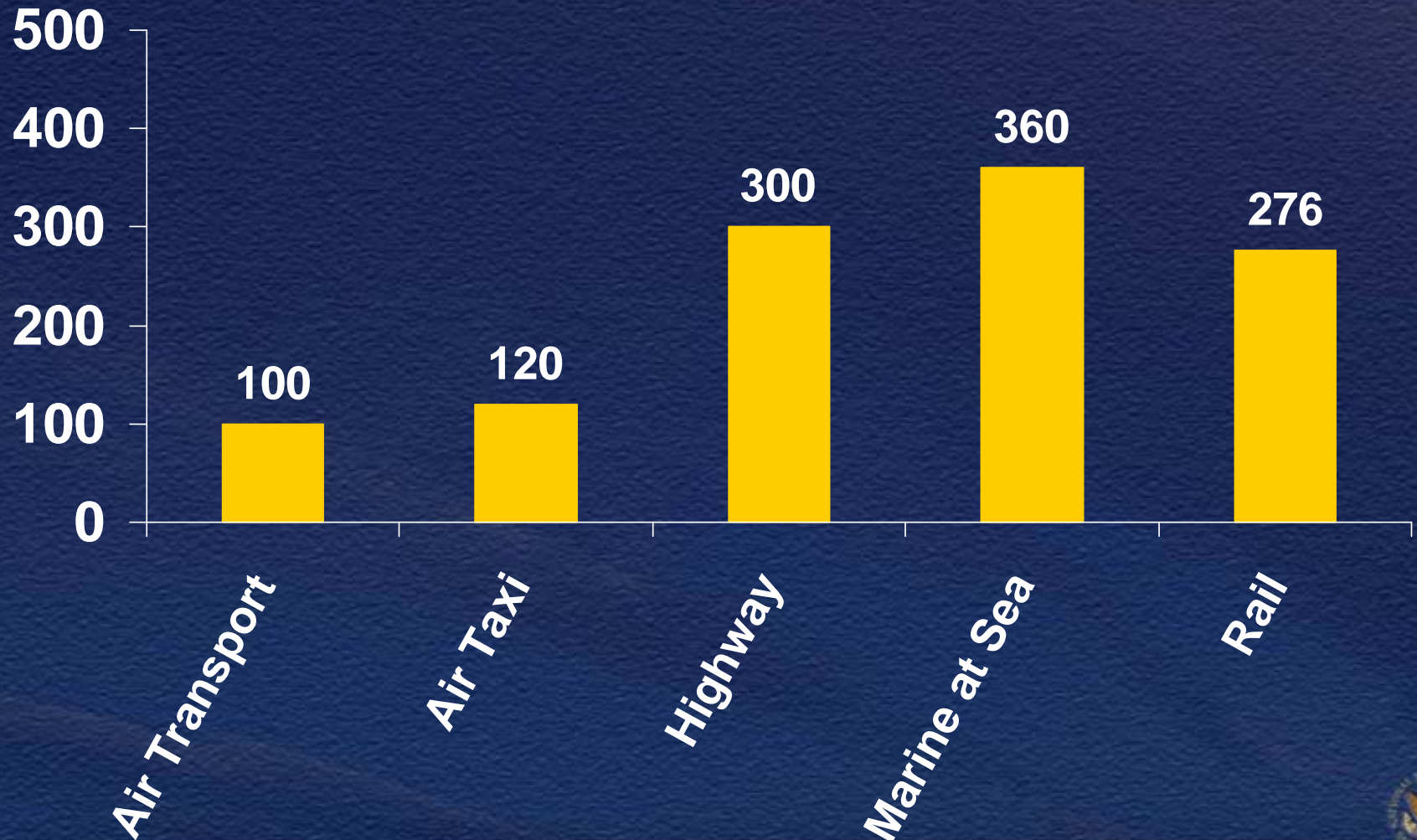
Percent of Time Train Crews in Extended Pay Status



Maximum Hours per Month by Mode



Maximum Hours per Month by Mode





Kev Brockschmidt, Illustrator

NTSB Recommendations

- Hours of service/scheduling
- Organizational policies
- Sleep disorders screening
- OTC and prescription drugs
- Vehicle/environmental countermeasures
- Education
- Fatigue management systems





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