



NTSB National Transportation Safety Board

Managing Fatigue Risks to Enhance Transportation Safety: Issues and Opportunities

Mark R. Rosekind, Ph.D.
Board Member

Closing Remarks
TRB Modeling Workshop
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Workshop Closing Remarks

1. Outcomes

- need to specify outcomes:
 - accidents? performance based? other?
- specify meaning of relative risk:
 - define in operational terms/outcomes
- validation?!
 - what are criteria for validation?
 - validated against what?
 - need consistent methodology

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1. Outcomes

- data: needs/quality/share
- 'bright lines' vs. comparisons:
potential regulatory use
alcohol .08 parallel
- acknowledge unintended use!
establish regulatory standard?
modeling as the 'magic bullet'

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1. Outcomes

- empirically determine other relevant factors
e.g., workload, sleep disorders
- inputs: diverse factors used
- cumulative effects: monthly/annual
- scheduled vs. actual operation?
overtime
emergency situations
‘unforeseen circumstances’

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2. Comprehensive/Integrated Activities

- comprehensive FRMS:
 - required vs. recommended
 - model is tool . . . how to integrate?
 - data to justify FRMS HOS exceptions?
- need for increased communication:
 - modelers . . . users . . . Govt
- need consistency: application, output, etc.

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2. Comprehensive/Integrated Activities

- HOS changes/NPRM activity:
 - every mode? either out or in progress!
- generalization issues:
 - across modes? within industry? operations?
 - what are the issues?
 - what can or can not be generalized?
- within industry: baseline vs. benchmark
database needs

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2. Comprehensive/Integrated Activities

- education:

 - foundation for all FRMS activities
 - critical for effective model use

- learn from International experience!

 - 10 years of development opportunity

 - 10 years of application/operational use

 - successes, failures and many cautions

 - opportunity to create different future . . .

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- Challenges
 - coordination
 - communication
 - integration
- Significant needs and opportunities exist!
- Critical: science-based and data-driven



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