10th International Conference
MANAGING FATIGUE
San Diego, CA / March 20-23, 2017

Fatigue Management and Sleep Dysfunction:

Planning for Success

Moderators:

STEVEN GARRISH, MBA, CDS, CTP
SVP, SAFETY & REGULATORY COMPLIANCE

D. ALAN LANKFORD, Ph.D, FAASM
CHIEF SCIENCE OFFICER

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Overview

- **Why is Fatigue Important?**
- **NAFMP**
- **Exploration of:**
  - Regulatory Perspective
  - Technology
  - Health & Wellness
  - Testing & Treatment
- **Myths & Misconceptions**
- **Regulations**
- **Q & A**
- **Moving Forward**

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Meet the Panel

Slaven Sjlivar

VP, Analytics at
SmartDrive Systems

- 20 years in the automotive and telematics industry
- Led early analytics initiatives at GM
- Degrees from MIT Sloan and Kettering University

Meet the Panel

Alere™ eScreen®

Angela Moore

VP, Workplace Solutions
Alere eScreen

- Began her career focused on developing compliant drug testing programs for DOT regulated industry
- Served as COO of eScreen

Meet the Panel

omnitracs
innovation. driven.

Drew Daly

Director, Data & Analytics
Omnitracs

- Logistics industry veteran
- Multiple degrees with advanced training in supply chain optimization, management and statistics

Meet the Panel

atticrrg
insure and steady.

Mark Pitcock

EVP of Member Safety & Risk Services
American Trucking and Transportation Insurance Company, a Risk Retention Group (Attic,RRG)

- 13 years in the transportation industry
- Tasked with member safety
- Responsible for updating members on new technologies and loss prevention procedures

Meet the Panel

Mike Fox

Highway Accident Investigator
National Transportation
Safety Board (NTSB)

- 13 years in trucking, air freight and logistics prior to becoming an investigator
- 11 years as a Special Agent with the FMCSA
- 4 years at the Board

Who is More Fatigued– Local vs OTR?

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Challenges for the Safety Manager

How can I get my hands around the importance of fatigue?

Looking beyond Hours of Service

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Challenges for the Safety Manager

What can a company do that goes beyond hours of service?

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Regulations

Mike Fox

Highway Accident Investigator
National Transportation
Safety Board (NTSB)

National Transportation Safety Board

Fatigue Management Program (FMP)

Mike Fox
NTSB Highway Accident Investigator

Overview

- Who is the NTSB?
- Highlight crash investigations
- Fatigue management program
    - Importance
    - Key elements

Who is the NTSB?

- Independent Federal Agency
- Aviation, Marine, Rail, and Highway
- Headquartered in Washington, DC
- About 400 staff nationwide

Most Wanted List

NTSB

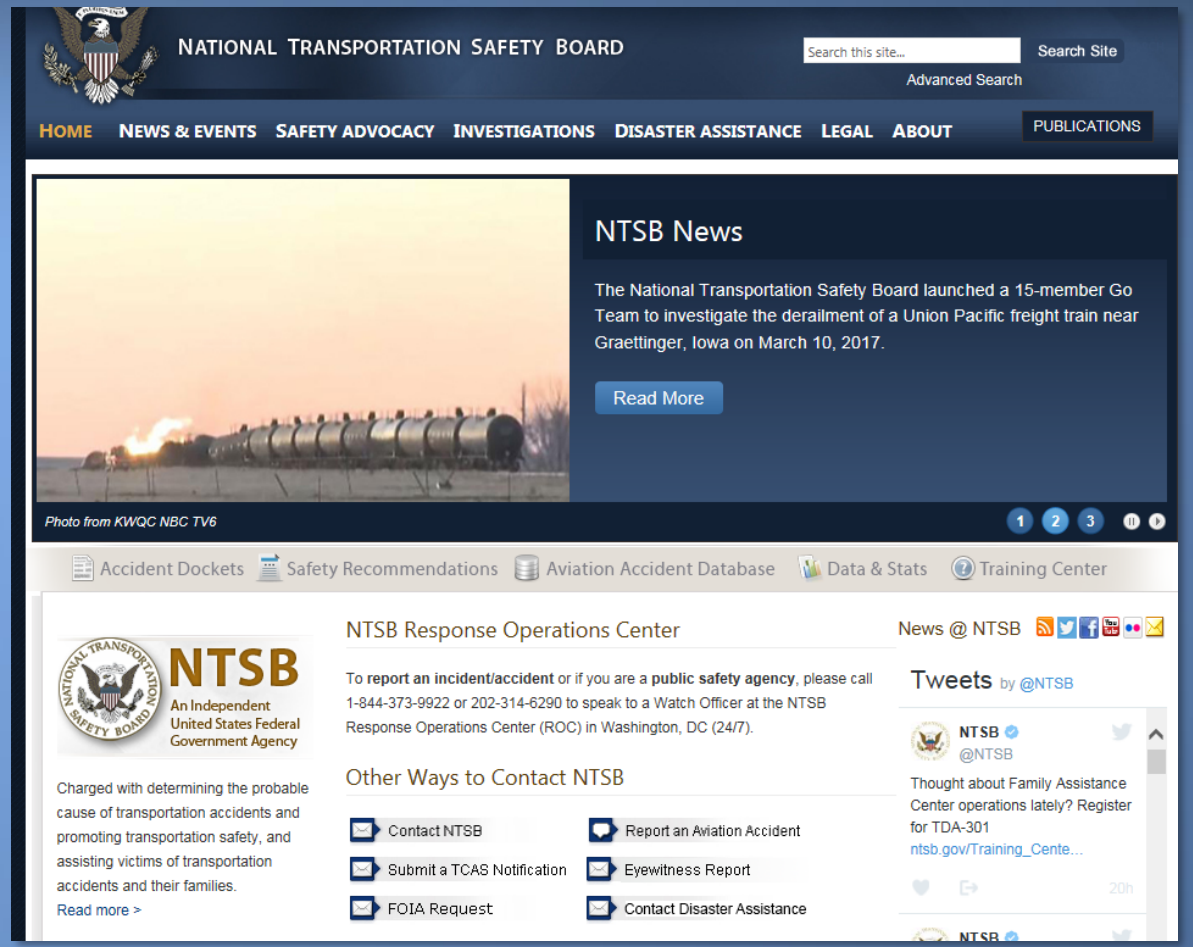
The Final Product

- Report Development
  - Follow-up trips
  - Testing / research
  - Report writing
- Report Types
  - Brief Report
  - Full Report Board Meeting

NTSB

www.ntsb.gov

- News & current events
- Accident database
- Recommendations
  > 200 fatigue recs



Doswell, Virginia – May 31, 2011

- 4:55 a.m.
- Greensboro, NC, to NYC
- 4 fatal, 14 injured
- Driver fell asleep
- Limited sleep opportunity

NTSB

Oxnard, CA – February 24, 2015

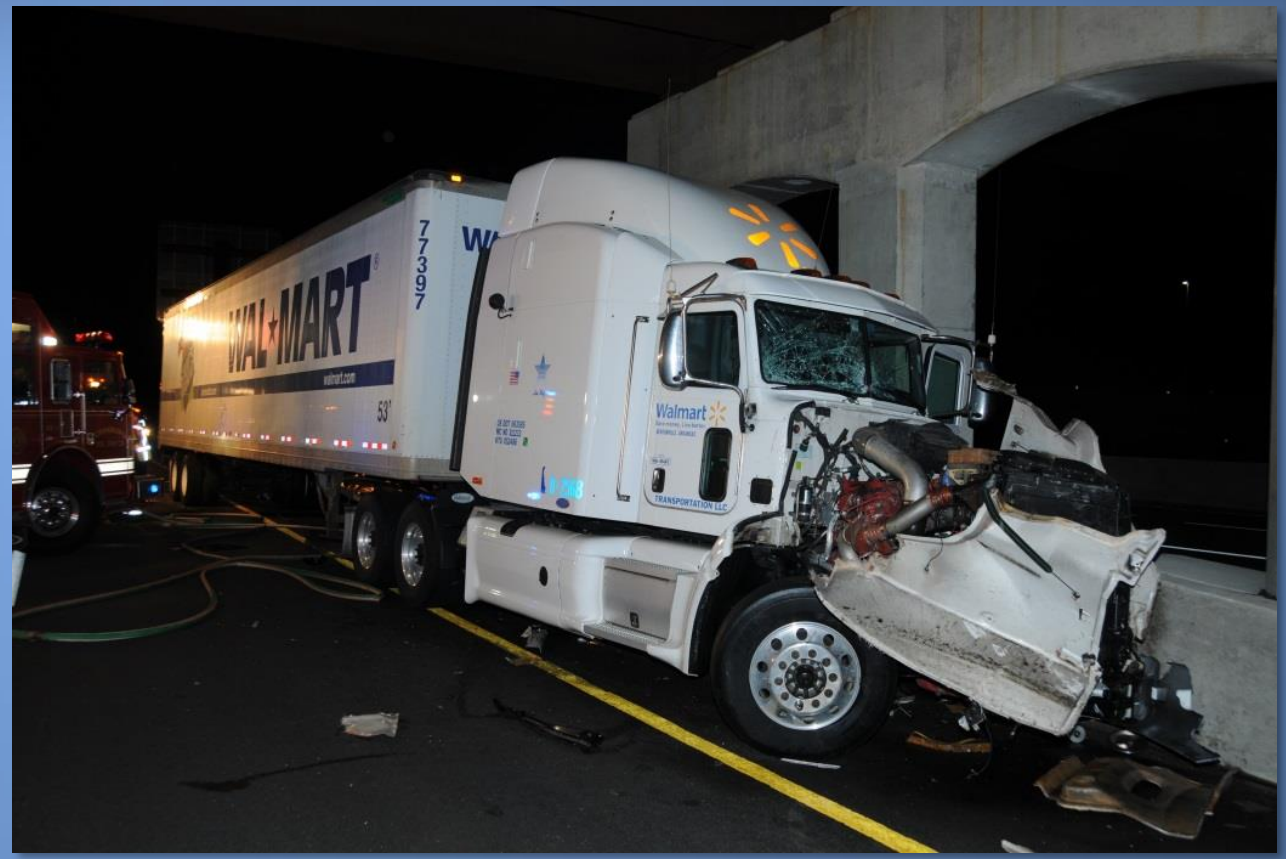
- 5:44 a.m.
- Ford F450 Truck towing trailer
- SB Metrolink Train
- 1 fatal, 31 injured
- On-duty 24 hours

Chattanooga, TN – June 25, 2015

- 7:10 p.m.
- KY- FL -KY
- Work zone
- 6 fatal, 4 injured
- 40-hour duty period prior

Cranbury, NJ - June 7, 2014

- 1:00 a.m.
- Work zone
- 1 fatal, 4 injured
- DE- GA -DE
- Awake 24 hours



Importance of FMP

- Failure to manage the risk can be deadly
- HOS compliance is not FMP
- People can’t work 24/7
- Fatigue causes poor decision-making, slowed response, risky behavior, and loss of situational awareness
- Drivers are most vulnerable

North American Fatigue Management Program (NAFMP)

- 4-year project (Canada & US)
- Collaboration between Government, carriers, insurers, and researchers
- Fatigue management education for drivers, families, managers, shippers, receivers, and dispatchers
- Website: www.nafmp.org

NAFMP
North American Fatigue Management Program

Home | About NAFMP | Getting Started | ROI Calculator | Online Courses | Downloads | Contact Us

Search

Online

We have 129 guests and no members online

Print | Email | Hits: 29488

Downloads

The following downloads are in English. To download these files in a different language, please select the appropriate website language.

The North American Fatigue Management Program offers its training in a number of formats, allowing users to select the one that best fits their individual needs. For the most comprehensive training experience, including online testing, you are encouraged to use the NAFMP Online Courses. Once there, you can register as a user of the system, free of charge, and work through the training at your own pace. Commercial truck and bus fleets can encourage their drivers and other personnel to register and complete the appropriate courses.

The PowerPoint versions below are formatted in PowerPoint version 2010. A free PowerPoint reader is available here if you do not currently have PowerPoint version 2010. If you experience problems downloading files, please use our alternate download site.

Powerpoint Versions (with audio narration)

This version of the NAFMP training allows users to view and hear the training but does not allow for knowledge testing and scoring. This option is best suited for users who simply want to step through the training at their computer without participation in any of the quizzes or other knowledge checks.

- Module 1 (MS Powerpoint)
- Module 2 (MS Powerpoint)
- Module 3 (MS Powerpoint)
- Module 4 (MS Powerpoint)
- Module 5 (MS Powerpoint)
- Module 6 (MS Powerpoint)
- Module 7 (MS Powerpoint)
- Module 8 (MS Powerpoint)
- Module 9 (MS Powerpoint)
- Module 10 (MS Powerpoint)

Language

Français English

Top 5 Most Read Pages

- Home Page
- Downloads
- Project History
- Introduction
- Contact Information

Send us your comments

Notice: A session had already been started - ignoring session_start() in **/home/nafmp12/public_html/modules/m** on line **20**

Are you human?

Complete Module Overview (Reference Only)

Module	Title	Target Audience	Estimated Duration
1	FMP Introduction and Overview	Motor Carrier Executives and Managers	45 minutes
2	Safety Culture and Management Practices	Motor Carrier Executives and Managers	1.5 hours
3	Driver Education	Commercial Drivers	3 hours
4	Driver Family Education	Driver Spouses and Family	45 minutes
5	Train-the-Trainer for Driver Education and Family Forum	Carrier Safety Managers and other Trainers	3.5 hours
6	Shippers and Receivers	Freight Shippers and Receivers	30 minutes
7	Motor Carrier Sleep Disorders Management	Carrier Executives and Managers	1.5 hours
8	Driver Sleep Disorders Management	Commercial Drivers	1.25 hours
9	Driver Scheduling and Tools	Dispatchers and Driver Managers	1 hour
10	Fatigue Monitoring and Management Technologies	Motor Carrier Executives and Managers	1 hour

Safety Culture

Policies and Procedures

- Written SOPs
- Fatigue policy
- Distance to terminal

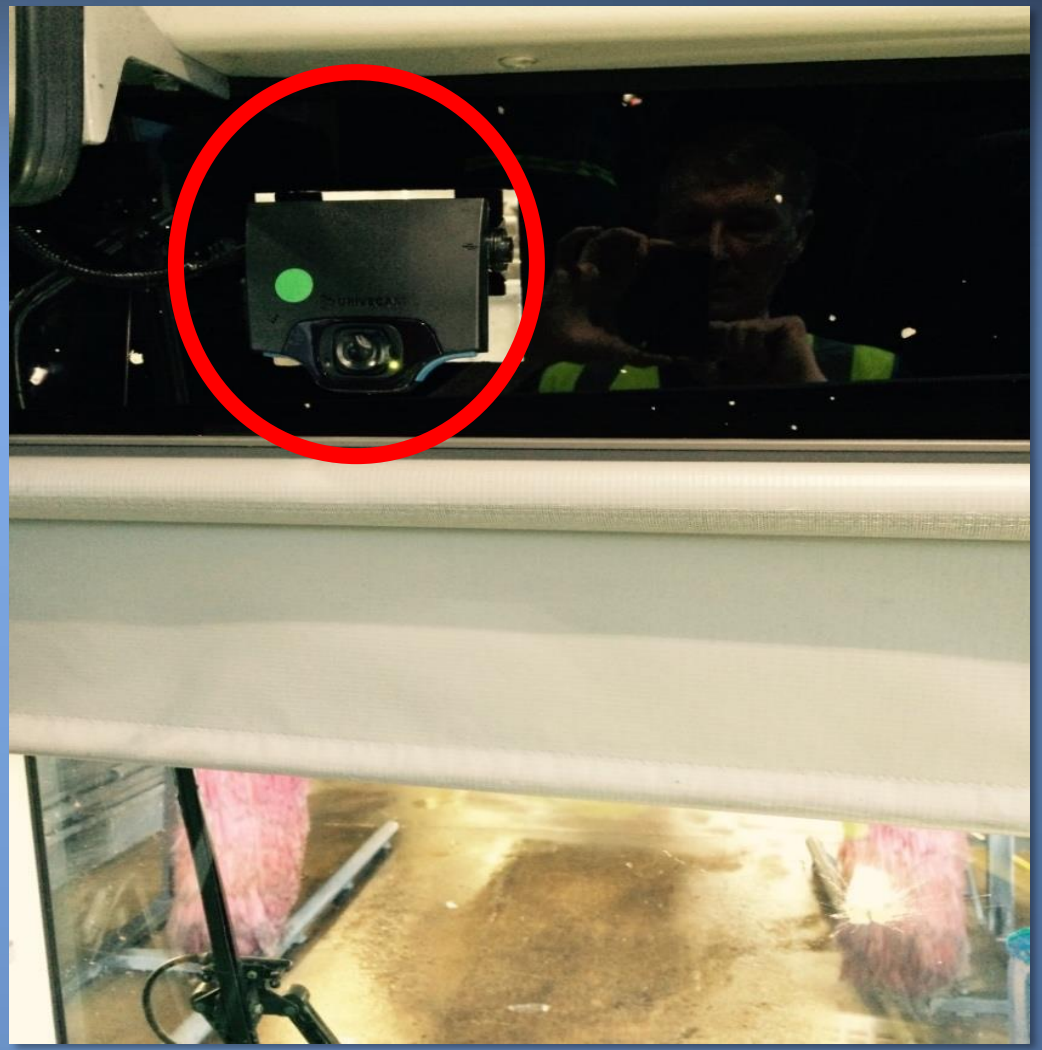
- Driver handbook
  - Adverse driving
  - Sleep apnea
  - Driver wellness

Training & Education

- Initial & recurrent
- Post-accident
- HOS compliance
- Off-duty hours
- Family members
- Vendor-managed
- Web-based
- Documented

Evaluation

- Accident register
- Loss runs
- Insurance
- Technology
  - Critical events
  - Analyze the data



Summary

- Fatigue should be on everyone's "Most Wanted List"
- North American Fatigue Management Program
- FMP – safety culture, polices / procedures, training, and evaluation

National Transportation Safety Board

michael.fox@ntsb.gov

Analytics, e-health and the Bottom Line

SLEEPSAFE DRIVERS®

SmartRecorder System

Slaven Sjlivar

VP, Analytics at
SmartDrive Systems

1. **Primary Camera**
   - Records video in front of the vehicle
   - GPS for location and speed
   - Large, manual activation button

2. **Driver Camera**
   - Records vehicle cabin
   - Infrared illumination for low-light conditions
   - Mounts separately or connected to the primary camera (as shown)

3. **SmartRecorder 3 Controller**
   - Intelligent safety monitoring and recording functions
   - Real time mobile/cellular communication
   - Vehicle CAN (J1939, J1708, OBD-II)
   - Over the air firmware upgrades

Driver Camera

Primary Camera (Road)

SmartRecorder Controller

Health-eScreen®

Alere™ eScreen®

Angela Moore

VP, Workplace Solutions

Alere eScreen

Omnitracs

Drew Daly

Director, Data & Analytics
Omnitracs

Custom Models

Accident Frequency

Driver Retention

Recruiting

Driver Fatigue

Industry Models

Accident Severity

ELD Driver Retention

2017 Solutions

- Active Driver Coaching
- Expanded Text Analytics
- CE Video Predictive Analytics
- Fleet Promoter Score

AtticRRG

atticrrg
insure and steady.

Mark Pitcock

EVP of Member Safety & Risk Services

American Trucking and Transportation Insurance Company, a Risk Retention Group (Attic,RRG)

Myths and Misinformation

I’m just tired

False positives

BMI not a valid measure

Sleep apnea does not exist

Referred by Med Examiner for no reason

Its just to make money

Study data is not objective

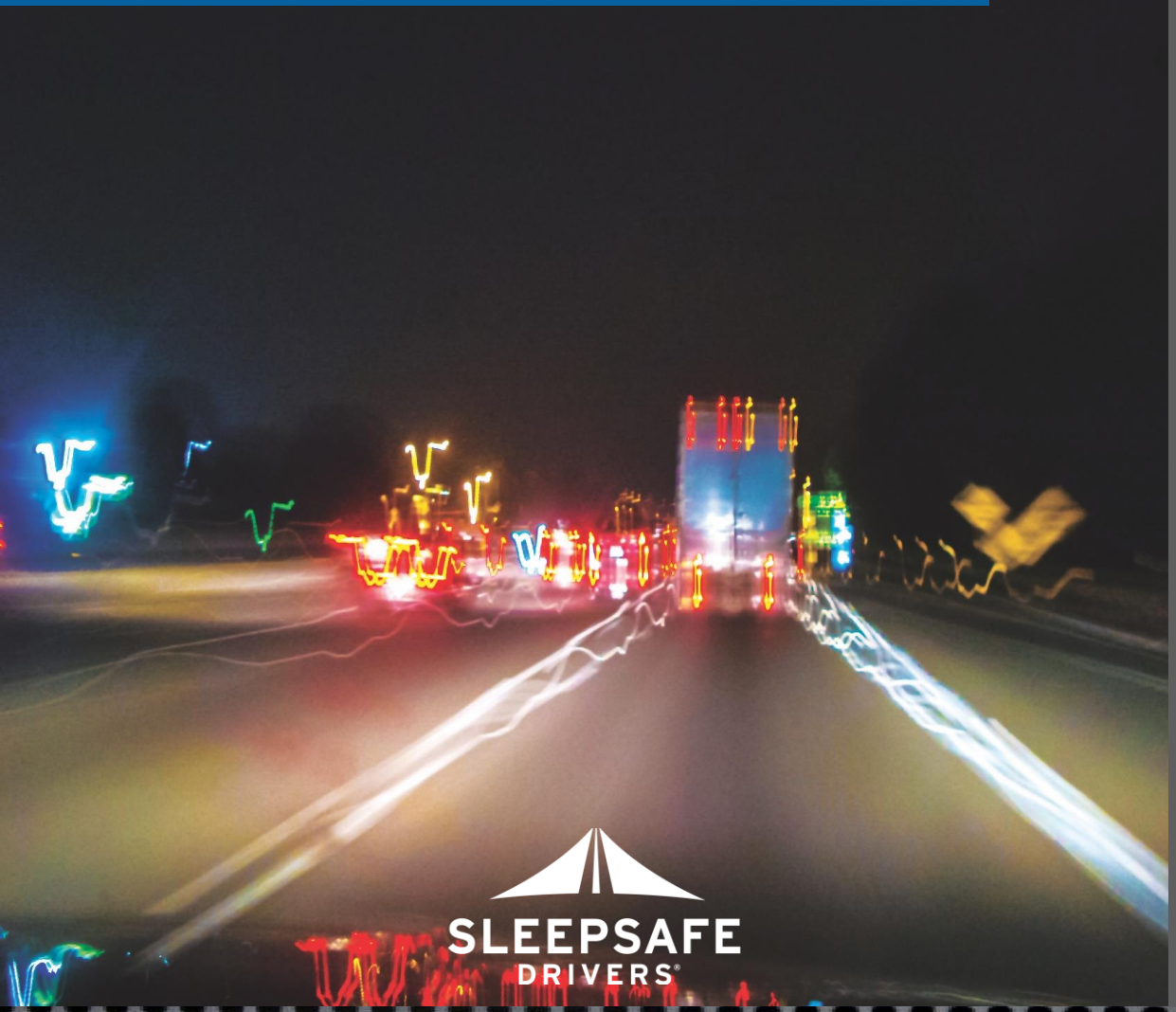
Snoring is no big deal

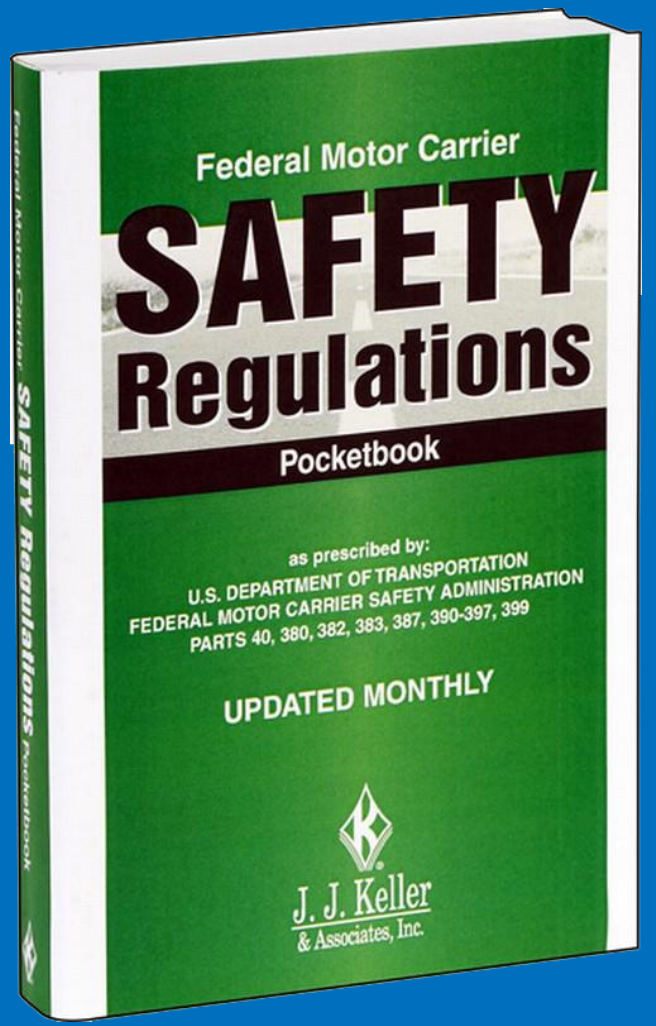
No correlation between fatigue and crashes

Sleep apnea does not increase crash risk

Its just to make money

Regulations





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Audience Q & A

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Thank You

SLEEPSAFE DRIVERS®

APPENDIX

Key Studies & Citations

- We are sometimes asked if there are direct links between untreated OSA and crashes. **The answer is yes.**
- There are **several studies that can be cited**.
- Here's a sample of **10 studies** to give you an idea of the overwhelming conclusion that crash frequency, injuries, lost time at work, turnover, healthcare costs, etc. are ***ALL*** adversely affected by untreated sleep apnea**.**

Key Studies & Citations

- Advanced Brain Monitoring. Sleep Diagnosis and Therapy. Vol 2, No.2. *Assessment of Obstructive Sleep Apnea Risk and Severity in Truck Drivers: Commentary on the Legal Implications for Ignoring a National Safety Concern.* April 2007. Carper and Levendowski. **"Accident avoidance or reduction can occur through diagnosis and treatment of OSA, which can be done in a cost effective way that reduces overall costs to the company, including liability for accidents and the costs of employee healthcare."**
- Harvard Medical School – *The Price of Fatigue: The surprising economic costs of unmanaged sleep apnea.* McKinsey & Company. December 2010. p.med.harvard.edu/what-we-do/public-policy-rh
- Journal of Clinical Sleep Medicine. *Systematic Review of Motor Vehicle Crash Risk in Persons with Sleep Apnea.* Ellen, Marshall, Palayew. 2006. [A review of multiple studies on crash risk and OSA] **"…using state or insurance driving records found a statistically significant association between sleep apnea and crashes…[in another study] cases were drivers who presented to the emergency room because of a motor vehicle crash and were compared with age and sex matched controls who presented to the emergency room for other reasons. The results showed that persons involved in crashes were 7.2 times more likely to have sleep apnea…"**www.aasmnet.org/jcsm/Articles/020214.pdf
- Journal of Clinical Sleep Medicine. *Commercial Motor Vehicle Driver Obstructive Sleep Apnea Screening and Treatment in the United States: An Update and Recommendation Overview.* Colvin and Collop. 2015. ***"When considering clinical assessment of OSA risk based on criteria that do not rely primarily on the CMV driver report, we focus on the physical examination and measurements obtained as part of this assessment"***

Key Studies & Citations

- National Safety Council. *Fatigue and worker safety.* February 26, 2017. ***"Several studies state that workers who have a sleeping disorder are more likely to be involved in a workplace safety incident."***
- NCBI. US National Library of Medicine National Institutes of Health. *Obesity is associated with the future risk of heavy truck crashes among newly recruited commercial drivers.* Anderson. 2012.
- NCBI. US National Library of Medicine National Institutes of Health. *The joint contribution of insomnia and obstructive sleep apnea on sickness absence.* Sivertsen. 2013. ***"Accumulated evidence has demonstrated that sleep problems are associated with subsequent sick leave and work disability…OSA has been shown to almost double the risk for subsequent sick leave and work disability."***
- SLEEP. Vol. 35, No. 4, 2012. *Assessing Sleepiness and Sleep Disorders in Truck Drivers.* Sharwood. "…***CMV drivers have an elevated risk of OSA [lifestyle challenges]…OSA increases the crash risk of motor vehicle drivers by 2 to 7 fold."***

Key Studies & Citations

- SLEEP. Vol. 27, No. 3, 2004. *Reducing Motor-Vehicle Collisions, Costs and Fatalities. Sassani.* 2004. (6 pages). ***"Drivers suffering from obstructive sleep apnea…have an increased risk for being involved in motor-vehicle collisions."***
- Transportation Research Board – *Research on the Health and Wellness of Commercial Truck and Bus Drivers.* Krueger, Rapporteur. November 2010 (145 pages)
- Virginia Tech. Virginia Tech Transportation Institute. *Truckers with sleep apnea who do not follow treatment have greater crash risk.* March 2016 "Truck drivers who have obstructive sleep apnea and who do not adhere to a mandated treatment program have a 5x increase in the risk of a severe crash…Drivers who did not follow [treatment] were retained only 1/3 as long as drivers who did adhere…as long as specific rigorous screening standards for obstructive sleep apnea are not in place, these drivers, if they remain untreated, are likely to remain a risk on the roadways." ***Key finding: "What we found is that, if we look at 1,000 truck drivers each working for a year, the drivers with obstructive sleep apnea who refuse treatment would have 70 preventable serious truck crashes, compared to 14 crashes experienced by both a control group and by drivers with sleep apnea who adhered to treatment."***