



**National
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Safety Board**

Commercial Truck Collision with Stopped Vehicles on Interstate 88, Naperville, Illinois January 27, 2014



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Collision with Stopped Vehicles Naperville, Illinois

Jennifer Morrison
Investigator-in-Charge

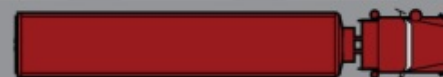
Crash Location



Crash Overview

Interstate 88 Eastbound at Mile Marker 122

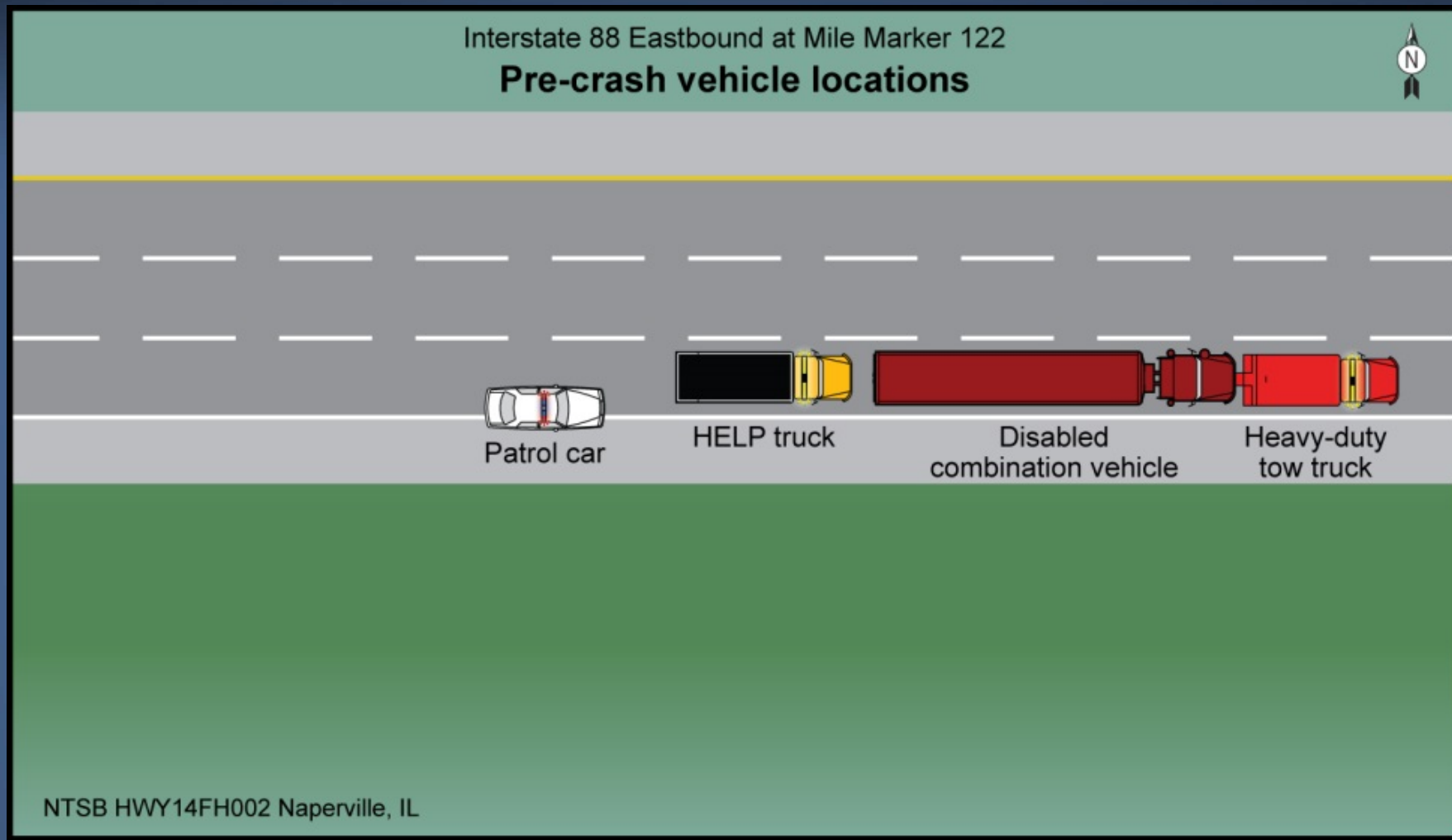
Pre-crash vehicle locations



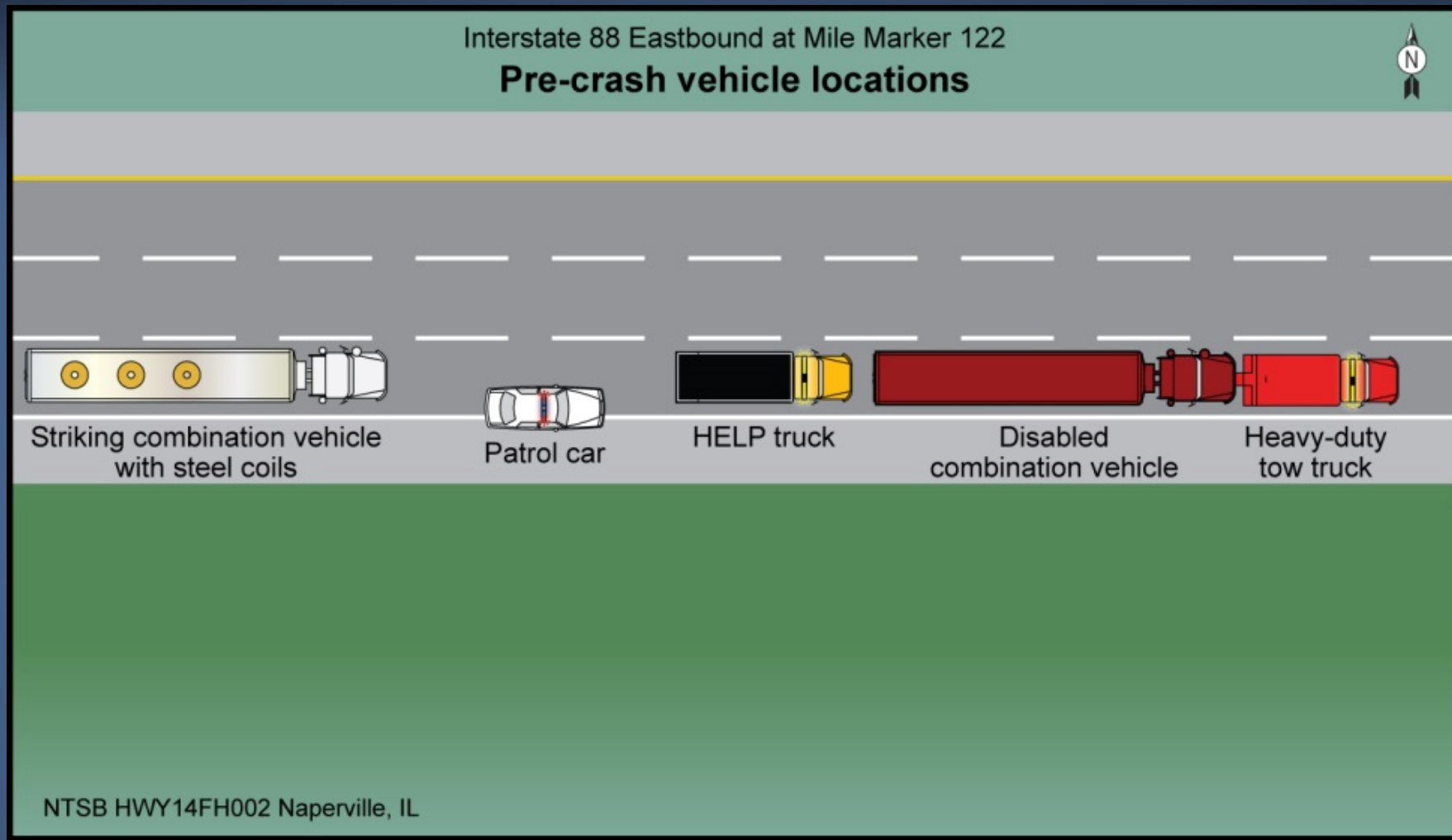
Disabled
combination vehicle

NTSB HWY14FH002 Naperville, IL

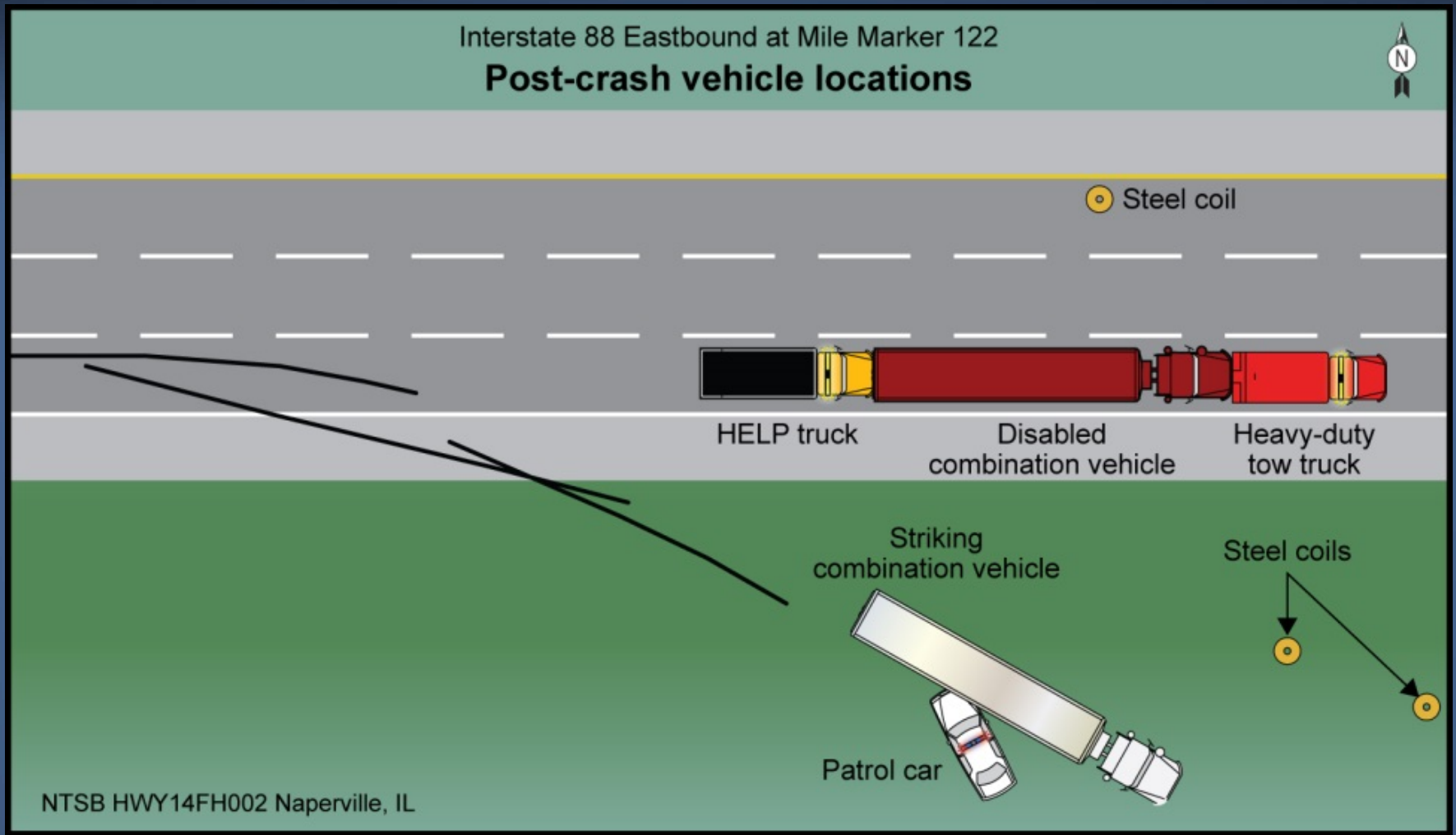
Crash Overview



Crash Overview



Crash Overview



Crash Scene



Scene Photograph: Illinois State Police

Crash Scene



Scene Photograph: Illinois State Police

On-Scene Staff

- Jennifer Morrison, Investigator-in-Charge
- Mike Fox, Motor Carrier Factors
- Gary Van Etten, Motor Carrier Factors
- Ben Hsu, Records Specialist

Report Development Staff

- Gwynne O'Reagan, Writer-Editor
- Julie Perrot, Safety Recommendations
- Ben Allen, Legal Counsel
- Ivan Cheung, PhD, Mapping
- Christy Spangler, Graphics

Parties to the Investigation

- Federal Motor Carrier Safety Administration (FMCSA)
- Illinois State Police

Safety Issues

- Commercial driver fatigue and logbook falsification
- Inadequacy of FMCSA efforts to address the safety deficiencies of high-risk carriers or prioritize action to halt their operations



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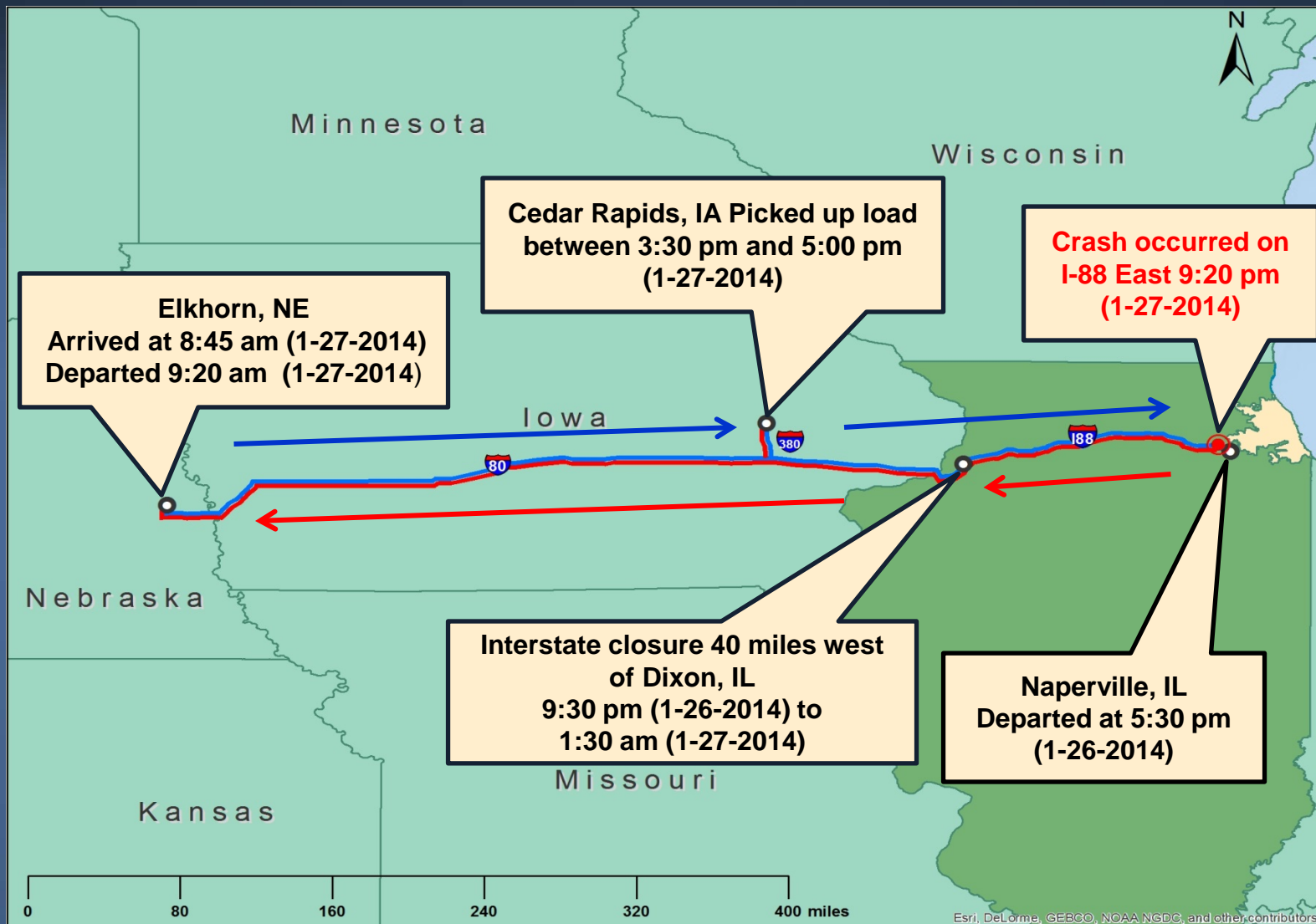
DND Driver's Fatigue and Carrier Overviews

Mike Fox

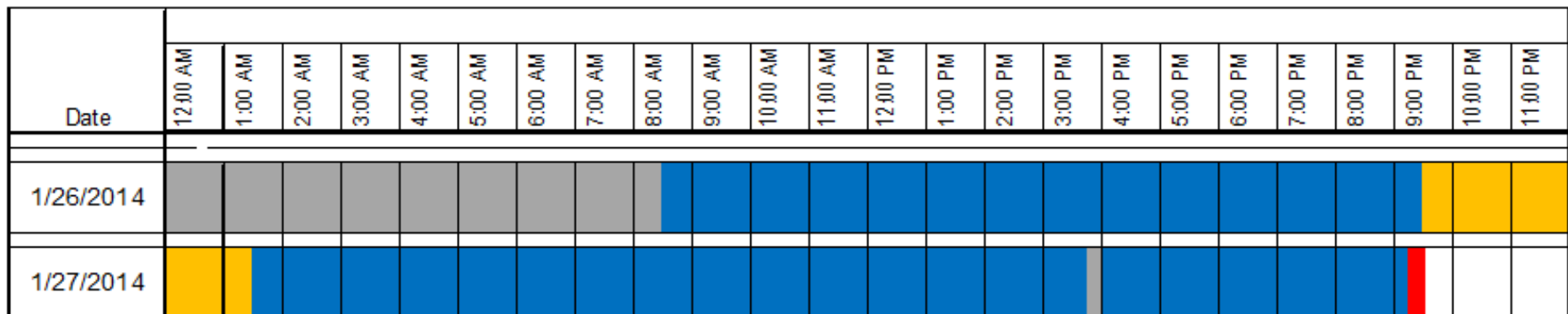
Presentation Overview

- Crash trip overview
- DND driver's fatigue and logbook falsification
- DND's hours-of-service (HOS) oversight
- Issues identified with operations at Michael's Cartage

Crash Trip



Sleep Opportunities



Legend ■ Driver reports being awake ■ Driver reports sleeping in truck on I-88 ■ Driver sleep opportunity ■ Naperville crash

DND Driver's Logbook Falsification

Month	False Count	Falsification Rate
August 2013	13 of 31	41.9%
September 2013	7 of 30	23.3%
October 2013	7 of 31	22.5%
November 2013	10 of 30	33.3%
December 2013	7 of 31	22.5%
January 2014	11 of 27	40.7%
Total	55 of 149	36.9%

DND's HOS Oversight

- 4 additional drivers were selected
- Toll data revealed 74 of 461 logs to be false, or a falsification rate of 16%
- Evident that DND management was not monitoring drivers' HOS

Postcrash Events for DND

- Postcrash compliance review
 - March 21, 2014 — “Conditional”
- Imminent hazard order
 - Issued April 1, 2014
 - Rescinded April 16, 2014
- DND out of business due to raised insurance rate

Michael's Cartage Issues

- Invalid CDL
- History of logbook falsifications
 - 54.4% falsification rate
- False log at the time of the crash
- Preexisting vehicle defects
 - Vehicle would have been put Out-of-Service if inspected prior to the crash

Postcrash Events for Michael's Cartage

- Postcrash compliance review
 - May 28, 2014 – “Unsatisfactory”
- Rating upgraded
 - June 30, 2014 – “Conditional”
- Current rating
 - December 9, 2015 – “Satisfactory”



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FMCSA Oversight of High-Risk Carriers

Jennifer Morrison

Presentation Overview

- FMCSA's current oversight system
- Definition of a high-risk carrier
- DND and Michael's Cartage were both high-risk carriers at the time of the crash
- Oversight of high-risk carriers

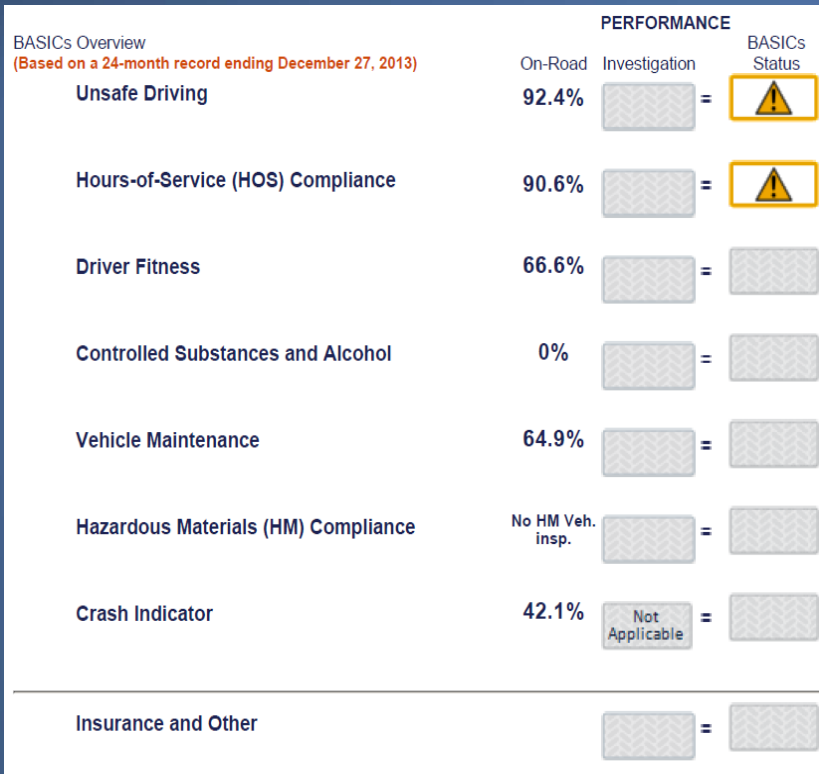
FMCSA Oversight

- Compliance review (CR)
- 2010 Compliance Safety Accountability program (CSA)
- Carrier Safety Measurement System (CSMS)
- Behavior Analysis and Safety Improvement Categories (BASICS):

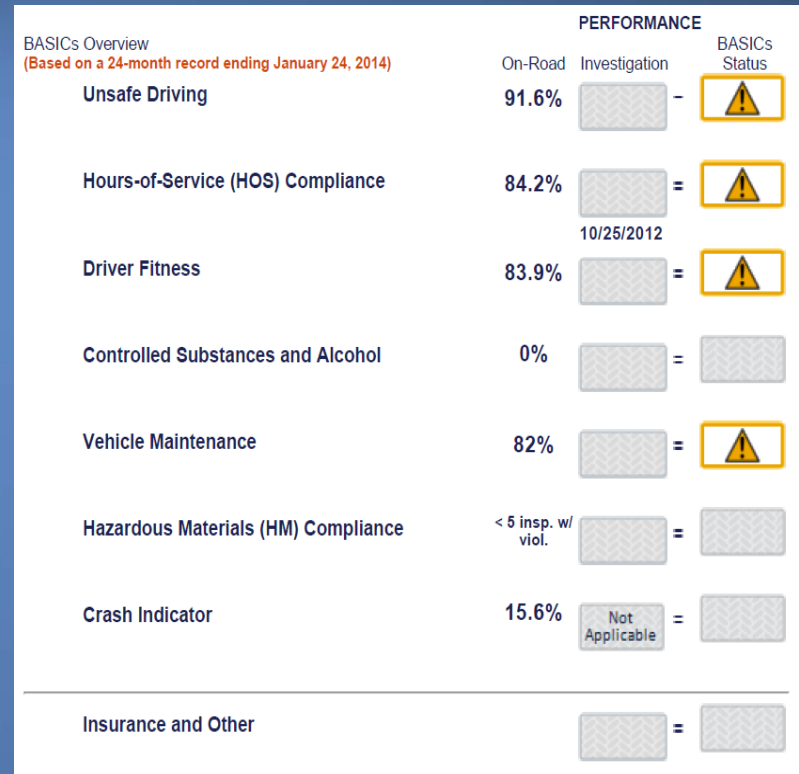


CSMS Profiles at the Time of the Crash

DND – 2 Alerts



Michael's Cartage – 4 Alerts



Definition of a High-Risk Carrier

Crash OR HOS OR Unsafe \geq
85
+
1 other BASIC at or above the
“all other” motor carrier
threshold

OR

Any 4 or more BASICs at or
above the “all other” motor
carrier threshold

DND – CSMS History

Month	Unsafe Driving	Hours-of-Service	Driver Fitness	Crash Indicator
January 2014	92.4%	90.6%		
December 2013	92.8 %	88.8%		
November 2013	94.5%	89.6%		
October 2013	94.5%	89.6%		
September 2013	93.4%	85.5%		
August 2013	93.9%	86.8%		
July 2013	92.8%	88.4%		
June 2013	92.6%	89.3%		
May 2013	94.1%	90.4%		
April 2013	92.8%	88.1%		
March 2013	93.5%	85.9%		
February 2013	89.7%	82%		
January 2013	91%	82.2%		
December 2012	89.2%	87.4%		66.8%
November 2012	87.3%	82.1%	86%	66.3%
October 2012	90.5%	83.4%	85.9%	71.2%
September 2012	91.9%	87.6%	86%	77.2%
August 2012	93.4%	89.4%	78.5%	66.8%
July 2012	92%	92.7%	80.5%	66.9%
June 2012	91.8%	93.8%	83.6%	
May 2012	90.3%	92.3%		
April 2012	96.1%	93%		74.1%
March 2012	95.7%	90.9%		
February 2012	95%	91.8%		
January 2012	95.5%	94.1%		

Michael's Cartage – CSMS History

Month	Unsafe Driving	Hours-of-Service	Driver Fitness	Vehicle Maintenance
January 2014	91.6%	84.2%	83.9%	82%
December 2013	91%	78.8%	89.3%	80.2%
November 2013	93.1%	75.6%	89.1%	82.2%
October 2013	93%	75.2%	89.8%	85.1%
September 2013	91.9%	75.2%	81.8%	89.5%
August 2013	92.7%	68%	86.1%	89.6%
July 2013	74.2%	64.4%	87.1%	88.5%
June 2013	70.8%	72.4%	76.7%	89.2%
May 2013	73%	73%	65.9%	88.5%
April 2013	71.3%	75.1%	67.3%	90.1%
March 2013	70.7%	79.3%	65.3%	89.1%
February 2013	71.3%	76.3%	78.8%	87.6%
January 2013	72.3%	75.9%	77.7%	87.3%
December 2012	75%	78.7%	81.4%	88.8%
November 2012	73.9%	79.4%	81%	87.8%
October 2012	72.2%	79.5%	79.6%	75%
September 2012	74.5%	81.9%		77.3%
August 2012	82.9%	77.9%	75.2%	
July 2012	84.3%	78.2%		
June 2012	80.4%	80.1%		75%
May 2012	74.5%	76.8%		77.9%
April 2012	74.5%	78.3%		76.9%
March 2012	68.2%	76.8%		78.3%
February 2012	68%	76.6%		76.8%
January 2012	67.2%	77.8%		76%

CSMS Effectiveness Test Study

- February 2014 study
 - Unsafe Driving, HOS Compliance, Vehicle Maintenance, and Crash Indicator BASICs most accurate predictors of risk
 - 65–93% higher future crash rate

# of BASICs in Alert	# of Carriers	Crash Rate (Crashes per 100 PU)
0 BASICs	235,276	2.69
1 BASIC	30,440	4.26
2 BASICs	8,572	5.77
3 to 4 BASICs	3,746	6.24
5+ BASICs	284	7.17

Source: FMCSA/Volpe CSMS Effectiveness Test, February 2014

Summary

- Both of the carriers had long histories of noncompliance
- FMCSA was aware of noncompliance through CSMS data and CR results
- Yet both carriers continued to operate up to this fatal crash
- FMCSA unable to effectively intervene before or after this crash



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Intervention Strategies for High-Risk Carriers

Mike Fox

Overview

- FMCSA industry oversight
- Current tools used by the FMCSA
- New strategies for high-risk carriers
- Recent developments and rulemaking

FMCSA Industry Oversight

- Over 539,000 interstate carriers
- 10.6 million trucks
- 764,000 buses
- 5.6 million commercial drivers
- 369 federal investigators
- 500 state investigators
- 14,900 CRs ~ 2.8% industry

Main FMCSA Oversight Methods

- Compliance reviews
 - At the carrier's principal place of business
 - Labor-intensive
- Imminent hazard orders
 - Resource-intensive
 - Subject to judicial review

Insurance Notification

- For-hire carriers must have minimum level of insurance
- FMCSA interventions did not stop DND; insurance cost put DND out of business
- Develop a program to notify insurance companies when a carrier is “high risk”

Fit, Willing, and Able

- For carriers who fail to demonstrate willingness and ability to comply
- Only 9 cases in 2 service centers
- Use for carriers with 5 or more BASICs in alert

Independent Review Team (IRT)

- Found CRs did not generate the intended results
- FMCSA needs to develop new approaches
- Disconnect between regulations and the new CSA system
- SFD rulemaking needed to complete the system

Safety Fitness Determination (SFD)

- Will be able to shut down unsafe carriers with roadside data alone
- FMCSA needs additional tools to remove high-risk carriers

ELD Rulemaking

- December 16, 2015—FMCSA published a final rule on electronic logging devices (ELD)
- Safety Recommendation H-07-41
- ELDs should prevent HOS falsification and violations

Summary of Interventions

- DND driver was fatigued at the time of the crash
- DND failed to provide adequate oversight of their drivers
- FMCSA was aware that DND was a high-risk carrier but could not remove it or change its behavior

Summary of Interventions

- Staff is proposing recommendations to provide the FMCSA additional tools to address high-risk carriers
- FMCSA is working to address its oversight issues (ELD, SFD, IRT)



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