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Box Truck Centerline Crossover Collision with Bus

Louisville, New York
January 28, 2023

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Crash Overview

Michael Fox
Investigator-in-Charge

Crash Information and Location

- January 28, 2023
- LBFNY company bus
  Westbound SR-37
  - ~53-54 mph
- Aero Global Logistics box truck
  Eastbound SR-37
  - ~59 mph
- Roadway was wet, lane markings visible, light snow

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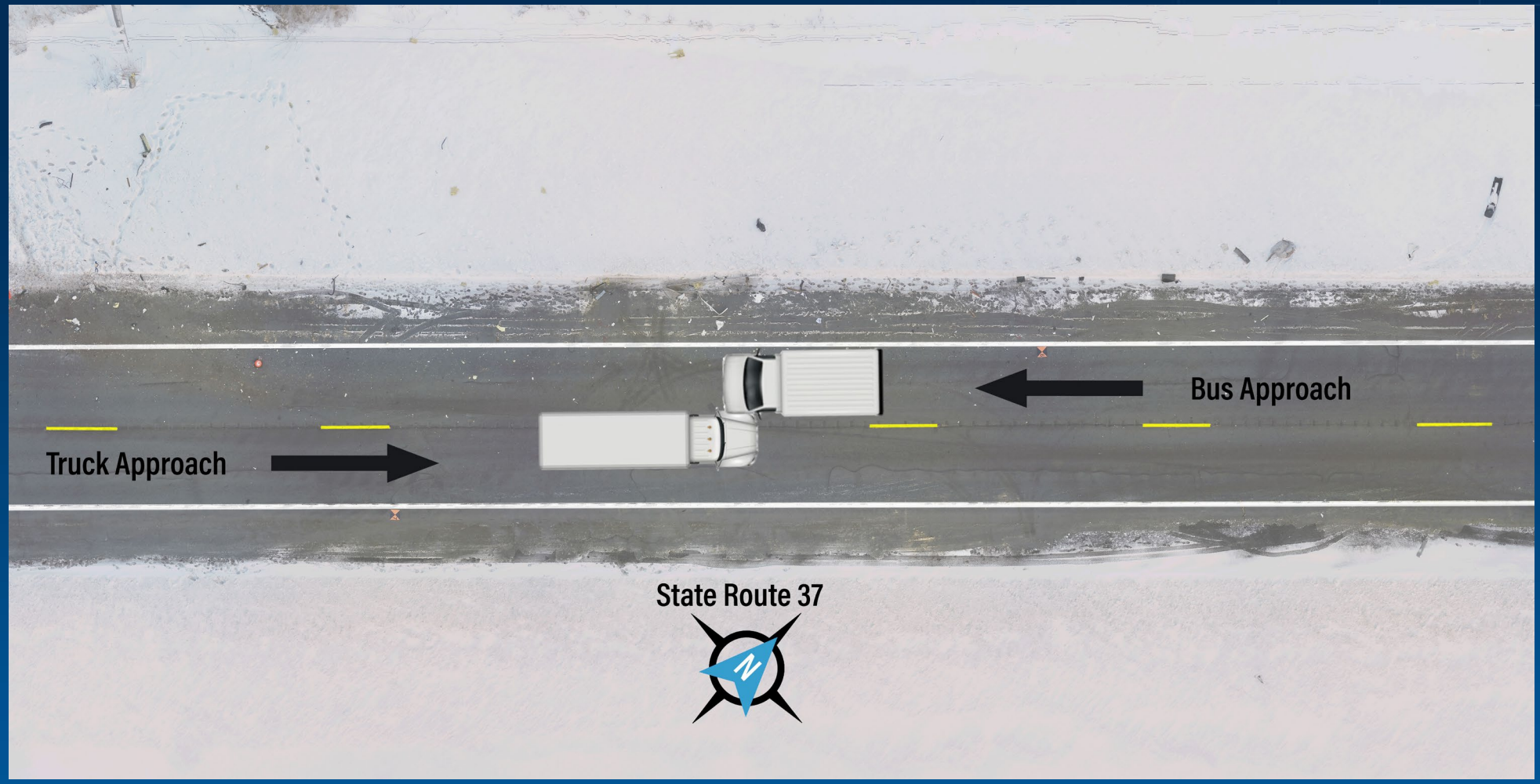
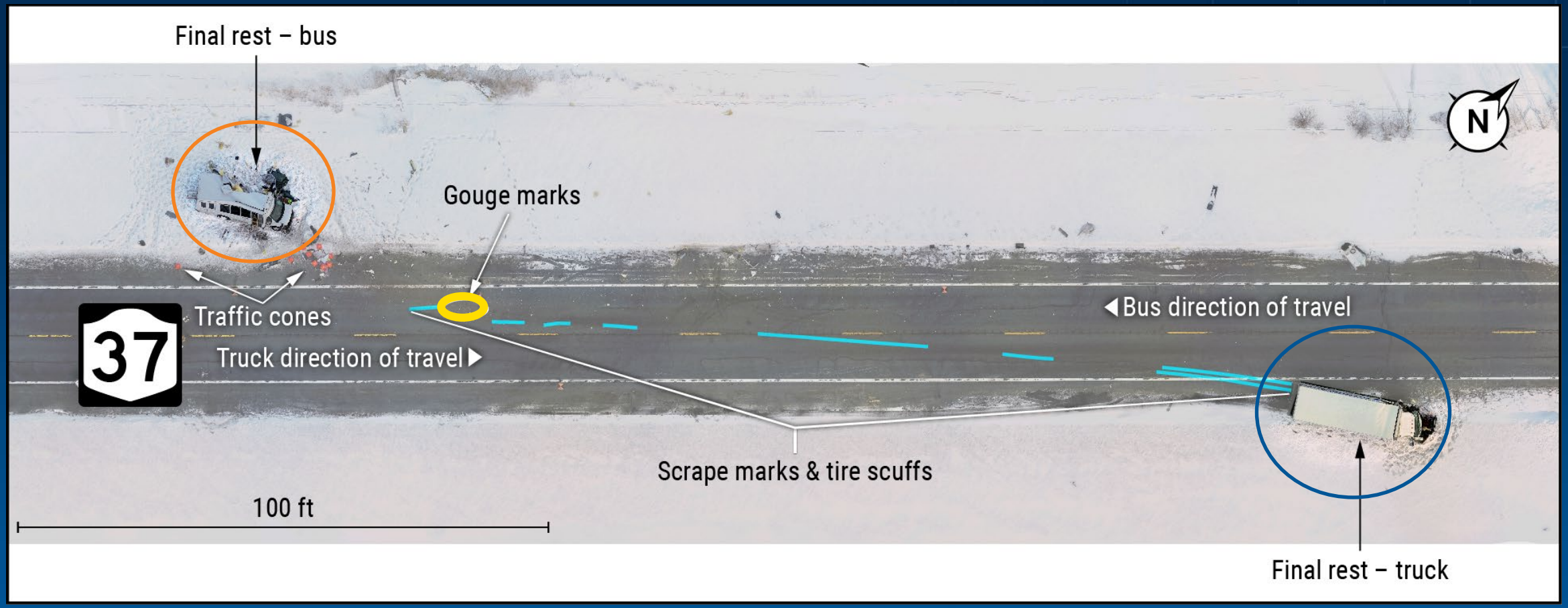
Crash Sequence



Crash Sequence (Continued)



Roadway Evidence

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Crash Vehicles

LBFNY Bus

AGL Leased Box Truck

Excluded Factors

- Mechanical condition of either vehicle, highway condition, familiarity with vehicles and roadway, cell phone use, alcohol or other drugs, medical conditions for either driver, or bus driver fatigue
- Emergency response was timely and adequate
- Bus driver did not meet qualifications to operate a commercial motor vehicle (and should not have been operating the bus), but no action by the bus driver could have been taken to avoid the crash

Safety Issues

- Crash event and occupant protection
- Safety practices for managing fatigue-related crash risk
- Federal oversight of motor carrier operations (trucking)
- Federal oversight of motor carrier operations (passenger-carrying)

Parties to the Investigation

- Federal Motor Carrier Safety Administration (FMCSA)
- New York State Police (NYSP)
- New York State Department of Transportation – Motor Carrier Compliance Bureau (NYSDOT)

On-Scene and Investigative Staff

• Michael Fox	Investigator-In-Charge / Motor Carrier
• Ronald Kaminski	Survival Factors
• John Humm, PhD	Survival Factors
• Rafael Marshall, PhD	Human Performance
• Jason Zeitler	Vehicle Factors
• David Pereira	Vehicle Factors
• Dan Walsh, PE	Highway Factors

On-Scene and Investigative Staff (Continued)

• Michael Richards	Meteorology
• Deven Chen	Recorders
• Max Green	TDA Specialist

Report Development Staff

• Donald Karol	Project Manager
• Meg Sweeney, PhD	Project Management Support
• Michael Brokos	Writer/Editor
• Christy Spangler	Report Graphics
• Jennifer Beatty	Report Graphics
• Jesús Cudemus	Report Graphics
• Julie Perrot	Safety Recommendations
• Sarah Sulick	Media Relations

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Injuries and Occupant Protection

Ron Kaminski
Survival Factors Group Chair

Injuries and Occupant Protection - Overview

- Occupant injuries, seat belt availability and usage in this crash
- LBFNY's lack of accessible seat belts and company use policy
- Importance of wearing seat belts to reduce injuries, prevent ejections
- New York State seat belt law

2021 Freightliner Box Truck Deformation

AGL Leased Box Truck

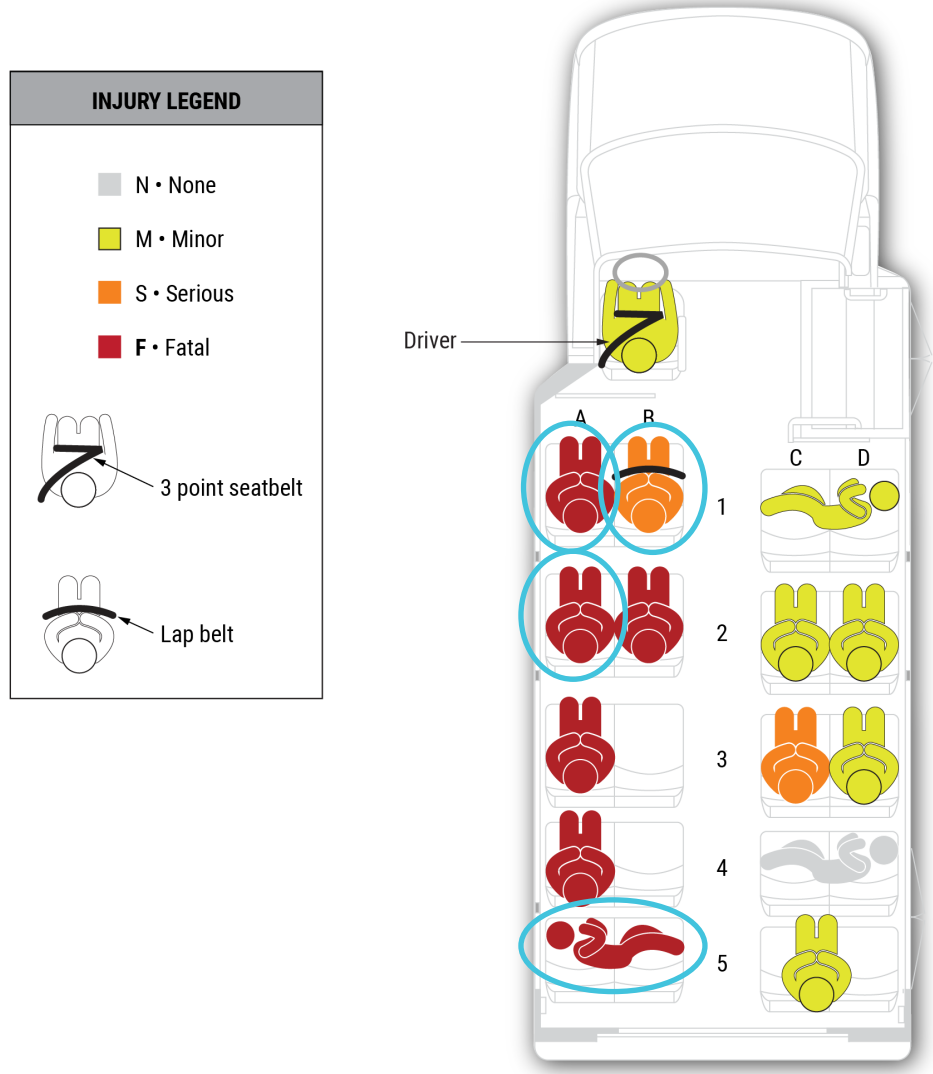
Bus Intrusion and Integrity Loss

Exemplar 2013 Chevrolet Express bus

Crash-involved 2013 Chevrolet Express bus

Bus Injuries

- Restrained driver – minor injuries
- Restrained passenger – serious head trauma
- Six fatalities
- Three unbelted ejected
- Multiple unbelted bus passengers displaced from their seats



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Interior Modifications

Originally installed seats with lap belts

Seats without lap belts installed by LBFNY

Seat Belt Accessibility

Original seats with lap belts wrapped around seat frame

New York State Seat Belt Law

- New York State primary enforcement law requires all vehicle passengers to wear seat belts
- Taxis, limousines included
- Buses excluded except for charter buses

What We Found: *Lack of Seat Belt Use and Availability*

- LBFNY bus passengers thrown from seats, sustained injuries because seat belts were inaccessible and unused
- LBFNY did not have seat belt use or accessibility policies or pretrip briefings
- New York seat belt law addresses bus passenger belt use only for charter bus operations

What we propose:

- Two recommendations to LBFNY
- Reiterate H-15-42 to the state of New York

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Managing Fatigue and Crash Risk

Rafael Marshall, PhD
Human Performance Group Chair

Overview

- Truck driver background
- Truck driver fatigue
- Fatigue management program
- Technologies to prevent or mitigate fatigue-related crashes

Truck Driver Background

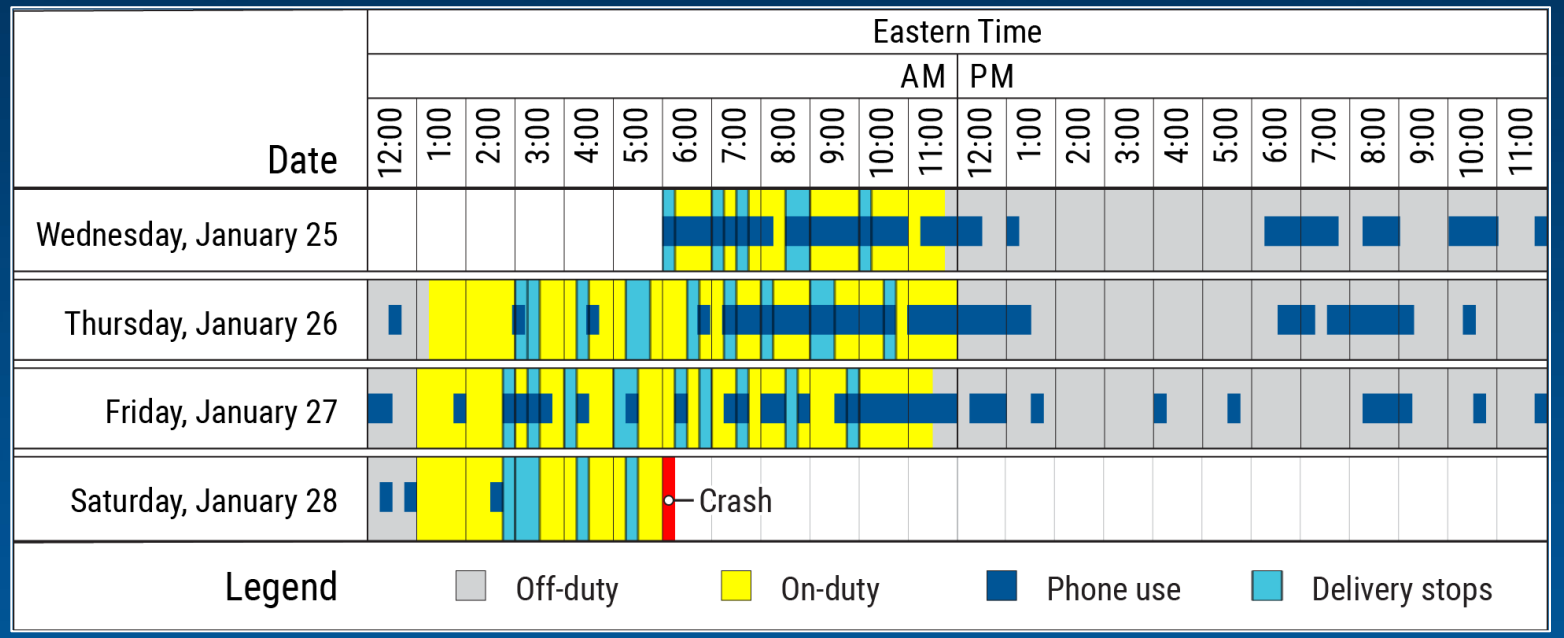
- Drove trucks professionally since 2018
- Valid license and medical certificate
- No medical conditions or prescription drug use
- Postcrash toxicology negative for alcohol and drugs

Truck Driver Fatigue

- Employed with Aero Global Logistics (AGL) for less than 3 weeks
- Worked nightshifts from 1:00 a.m. until 11:30 a.m.
- Crash occurred on his fifth consecutive overnight shift
- Night shifts can interfere with the quality and quantity of sleep, leading to feelings of sleepiness, reduced vigilance, and increased reaction time
- Poor adjustment to night shifts can result in sleep loss that accumulates over successive days, increasing feelings of fatigue

Truck Driver Fatigue (Continued)

- Obtained 5 hours or less of uninterrupted sleep opportunity each of the 3 days before the crash
- Fragmented sleep opportunity on night before crash suggests poor sleep quality



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What We Found: *Truck Driver Fatigue*

- Truck driver's centerline crossover into the bus's travel lane likely due to fatigue caused by:
  - Limited, fragmented sleep
  - Circadian disruption associated with shift-work schedule

What We Found: *AGL Lacked Fatigue Mitigation*

- AGL did not have policies to manage fatigue risks
- North American Fatigue Management Program (NAFMP)
  - Free fatigue management education, available to everyone, provides information on sleep disorders and treatment practices

- **What we propose:**
  - One recommendation each to Aero Global Logistics, the American Trucking Associations, the Owner-Operator Independent Drivers Association, and the National Private Truck Council

Driver Monitoring System (DMS)

- Alerts motor carrier to unsafe driver actions
- Tracks vehicle operation
- Monitors driver for signs of impairment
- Shown to reduce unsafe events by more than half when paired with coaching
- AGL lacked policies and procedures to monitor performance, coach drivers, and improve operational safety

Active Lane Departure Prevention (LDP) System

- Warns a driver of an unintentional lane departure and can actively return the vehicle to its intended lane of travel
- Crash-involved truck was not equipped with an active LDP system
- NTSB previously recommended that National Highway Traffic Safety Administration (NHTSA) require all newly manufactured commercial vehicles with a gross vehicle weight rating above 10,000 pounds to be equipped with LDP systems

What We Found: *Technologies Help Prevent Fatigue-Related Crashes*

- Lack of DMS in crash-involved truck prevented AGL from monitoring driver performance, providing coaching, and improving company safety
- AGL lacked policies, procedures for DMS-equipped trucks in its fleet
- Had an active LDP system been installed in the truck, it may have helped prevent or mitigate the crash
- **What we propose:**
  - One recommendation to Aero Global Logistics
  - Reiterate H-21-1 to the National Highway Traffic Safety Administration

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Motor Carrier Operations and Regulatory Oversight

Michael Fox
Motor Carrier Factors Group Chair

Motor Carrier Operations and Oversight

- FMCSA New Entrant Safety Assurance Program
- FMCSA compliance review process
- LBFNY bus operations, out-of-state registration, and inspections of buses while in passenger-carrying operation

Overview: New Entrant Safety Assurance Program

- FMCSA New Entrant Safety Assurance Program (New Entrant Program)
- FMCSA's failure to consider AGL's prior safety record
- More stringent performance requirements needed for new entrant carriers

FMCSA New Entrant Program

- Program began in 2003: Title 49 *Code of Federal Regulations* 385, Subpart D
- Before beginning operations, motor carriers must obtain USDOT # and operating authority
- 18-month safety monitoring period; roadside inspection data evaluated
- Safety audit within the first 12 months to evaluate compliance with federal regulations
- “Pass” or “Fail” determination (Fail = corrective action plan required)

Aero Global Logistics

- New Entrant October 2013
- Safety Audit May 2014
  - 60 CDL drivers, 59 truck-tractors, 65 semitrailers
- “Pass” on Safety Audit
  - Failed “Accidents” factor
- First 7 months, 6 recordable crashes
- FMCSA allowable crash rate = 1.5
  - AGL crash rate was 2.53
- Carrier profile history of hours-of-service violations

AGL Leased Box Truck

What We Found: *FMCSA Oversight Issues*

- FMCSA applicant screening tool for prior affiliated motor carriers
- FMCSA may issue an out-of-service order if an affiliated carrier is trying to disguise poor compliance history or avoid penalties
- AGL continuation of Chopper DDS Inc. not documented in safety audit
- Unsafe Driving and Crash Indicator Behavior Analysis and Safety Improvement Category (BASIC) scores did not extend to new company
- FMCSA did not affiliate AGL with Chopper DDS, a motor carrier with prior poor safety record

What We Found: *Inadequate Oversight*

- FMCSA failed to recognize AGL's prior safety record, resulting in an inaccurate assessment of company safety controls, regulation compliance
- Stronger safety performance requirements needed for new entrant motor carriers
- Ensure carriers cannot graduate New Entrant Safety Assurance Program if on-road data show a pattern of unsafe operation, high crash rate
- **What we propose:**
  - One recommendation to the Federal Motor Carrier Safety Administration

What We Found: *New Entrant Program Issues*

- NTSB investigation of crash in Randolph, NH, identified deficiencies with FMCSA's New Entrant Safety Assurance Program
- NTSB recommended FMCSA establish additional layer of oversight of New Entrant Safety Assurance Program graduates with lower tolerance for unsafe carrier operations
- Louisville, NY, crash another example of deficiencies with FMCSA's oversight of new entrant carriers
- **What we propose:**
  - Reiterate H-20-34 to FMCSA and classify Open–Unacceptable Response

Overview: FMCSA Compliance Review (CR) Process

FMCSA CR Process

- Safety ratings
- AGLs CR history

FMCSA Safety Fitness Determination (SFD)

- Current SFD rulemaking efforts
- On-road performance data should be part of SFD

FMCSA Oversight Challenges

- Over 813,000 registered, for-hire interstate motor carriers in US
- Approximately 3 million roadside inspections annually
- Inspections document violations for both drivers and vehicles
- Roadside data sent to FMCSA generate scores in BASICs
  - Safety Measurement System (SMS) quantifies on-road performance with BASICs
- For carriers that exceed BASIC scores, SMS generates a Warning Letter or compliance review (CR)
- FMCSA has 325 investigators

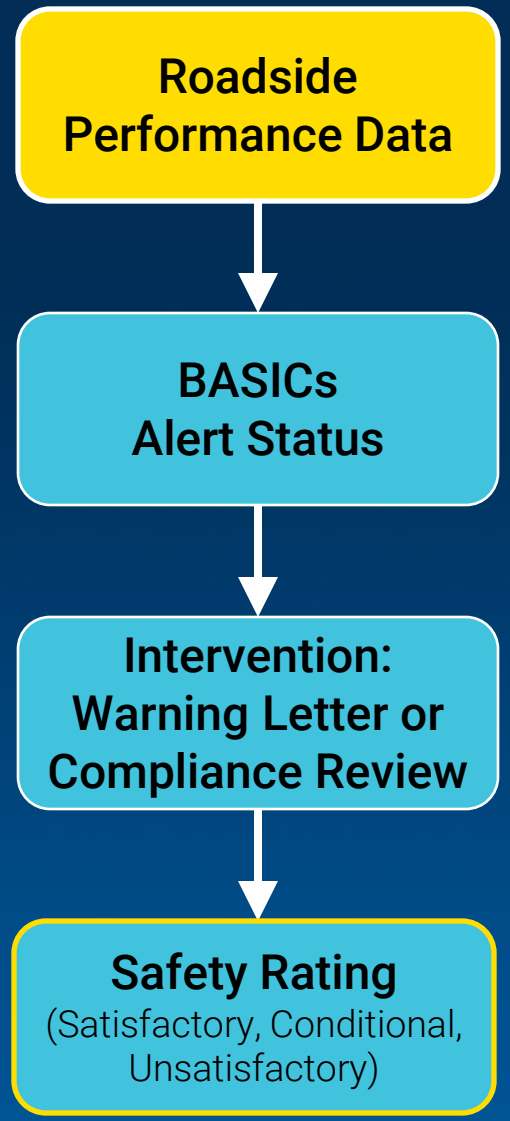
Compliance Review (CR) Process

- On-site review of carrier operations: insurance, driver qualification files, DOT drug testing, hours of service, maintenance records, crashes
- Sample sizes of drivers and vehicles reviewed for compliance
- Critical or acute violations of Federal Motor Carrier Safety Regulations impact scoring
- One acute or 10% or more of critical violation affects safety rating
- Current safety ratings: Satisfactory, Conditional, or Unsatisfactory
- Safety ratings may be upgraded with a corrective action plan
- On-road safety performance is **not** included in a CR

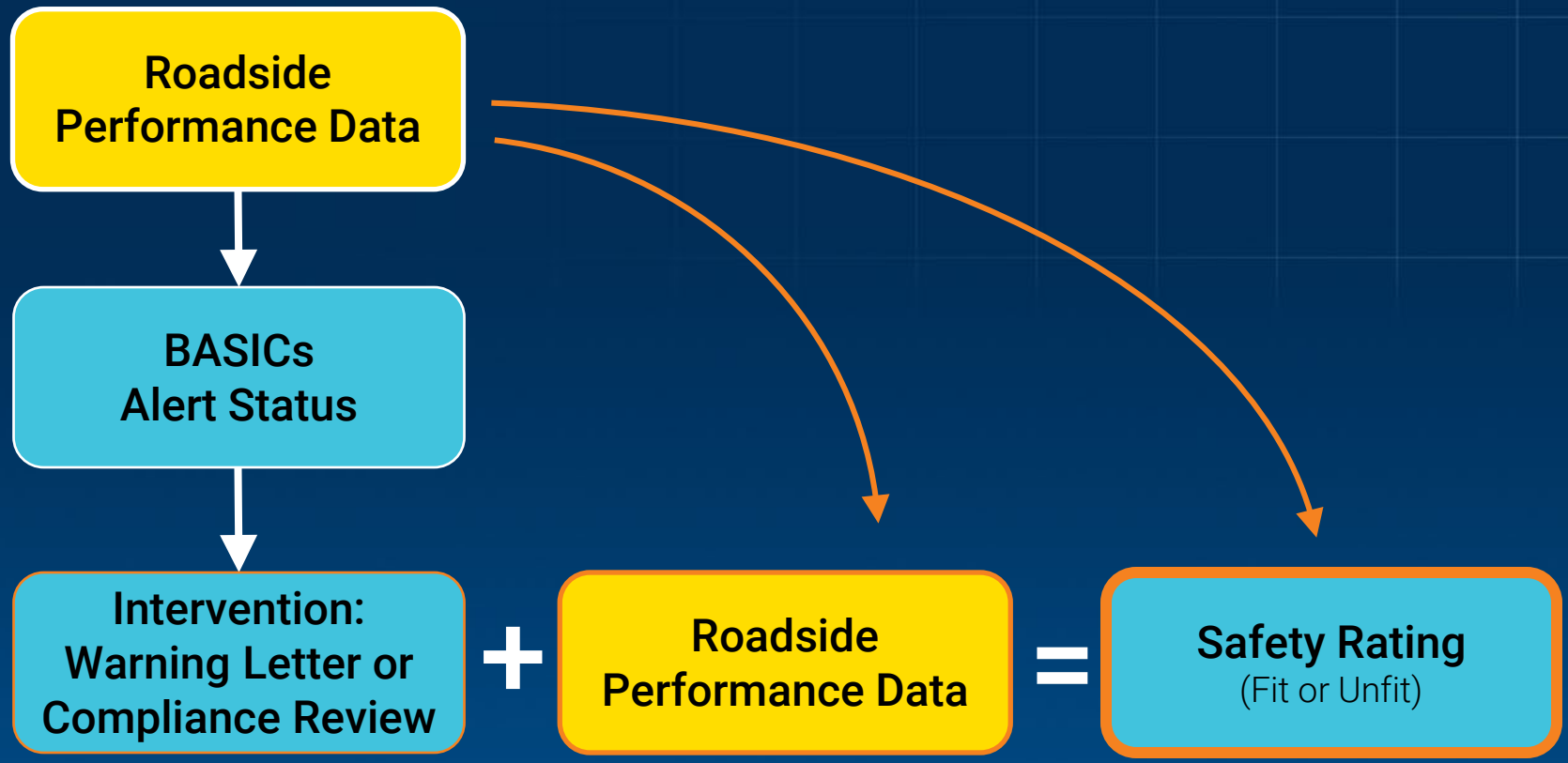
Current Rulemaking for SFD

- 2023 Advance Notice of Proposed Rulemaking to revise SFD
- NTSB has long supported roadside data to be part of SFD
- Roadside data, CR, or combination result in rating of Fit or Unfit
- Little progress by FMCSA to revamp SFD

Current SFD Process



ANPRM Potential Use of SMS Methodology in SFD



AGL Roadside Data vs. Compliance Review

February 2020

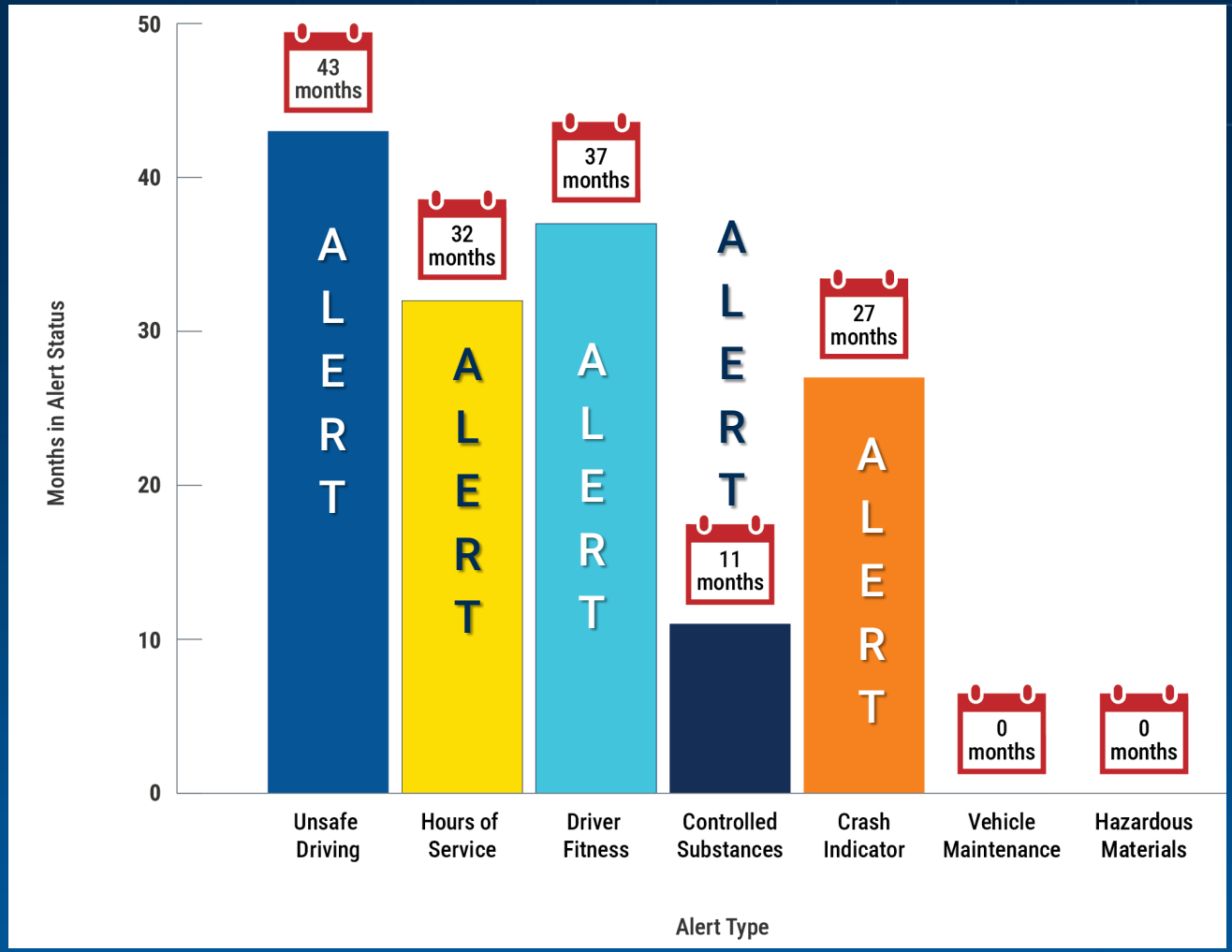
- SMS data = Moderate-Risk
- CR = Satisfactory safety rating

April 2021

- SMS data = Moderate-Risk
- CR = Unrated

June 2022

- SMS data = Risk
- CR = Satisfactory safety rating



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What We Found: *Need to Strengthen SFD Process*

- FMCSA was aware of AGL's safety deficiencies, but its interventions and oversight did not prevent AGL's unsafe operation
- Motor carrier safety rating would be better represented if SMS on-road performance data were included in FMCSA's SFD process
- **What we propose:**
  - Classify H-12-17 Closed–Superseded
  - One recommendation to Federal Motor Carrier Safety Administration

Overview: Bus Operations, Registration, Inspections

LBFNY operations

- Federal oversight
- Postcrash CR

LBFNY out-of-state bus registration

- Montana license plates

Roadside inspections of buses

- Limitations of roadside inspections
- Difficult to detect unsafe carriers

LBFNY Exemplar Bus

LBFNY Operations and Federal Oversight

- Installed solar panels on farms in NY, ME, CT, RI, and PA
- Owned 15 buses, one 15-passenger van; employed 15 drivers
- Obtained USDOT number in December 2021
- Enrolled in FMCSA New Entrant Safety Assurance Program
- April 2022: LBFNY refused FMCSA Safety Audit, authority revoked
  - FMCSA issued a federal out-of-service order
- FMCSA's public website displays federal out-of-service status
  - LBFNY would have displayed as "inactive"

Montana Bus Registration

- November 2021: Buses registered in New York
- January 2022: NYSDOT inspected buses
  - Violations not corrected
  - Registrations suspended; company fined $10,000
- April 2022: LBFNY paid fines
  - NYSDOT lifted suspensions
- June 2022: LBFNY registered its buses in Montana
  - Montana registered the vehicles despite LBFNY's federal out-of-service order

Montana license plate on crash-involved bus

LBFNY Safety Management Controls

- LBFNY lacked safety policies
- Failed to produce driver qualification files, medical certificates, DOT drug testing, HOS compliance, and maintenance files
- Bus driver did not have required commercial driver's license or medical certificate
- FMCSA postcrash CR found 16 violations
  - Resulted in Unsatisfactory rating
  - Enforcement action of $32,320
- LBFNY paid fine, submitted a corrective action plan to FMCSA
  - Safety rating upgraded to Conditional

What We Found: *Lack of Safeguards*

- April 2022: LBFNY became LLC, registered fleet in June 2022 in MT
- LBFNY under a federal out-of-service order
  - Montana Vehicle Services Bureau did *not* check the database on status of motor carrier's operating authority
  - Issued Montana registration, license plates
- Montana allowed LBFNY to register its vehicle fleet, continue operations in an unsafe manner
- **What we propose:**
  - One recommendation to the state of Montana

What We Propose

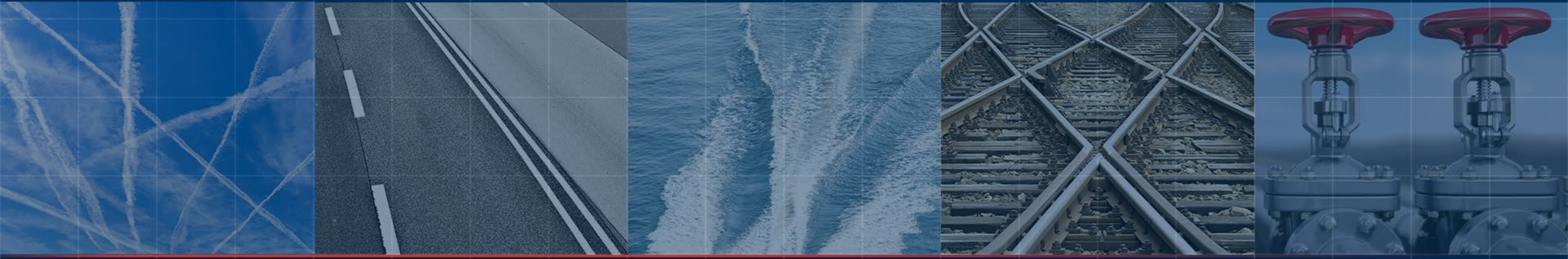
- AAMVA develops model programs in motor vehicle administration for law enforcement and highway safety, with state reciprocity
- Provides technology, network services to share driver, vehicle data
- Develop procedures to identify improper CMV registration for carriers under out-of-service orders
- **What we propose**:
  - One recommendation to the American Association of Motor Vehicle Administrators
  - One recommendation to the Federal Motor Carrier Safety Administration

Inspections of Passenger-Carrying Motor Carriers

- LBFNY operated in violation of a federal out-of-service order for 7 months
- With few exceptions, buses not inspected at roadside due to safety issues
- Roadside inspections of buses
  - Critical for FMCSA's compliance program
  - Generate BASICs and can detect out-of-service carriers
  - Initiate CRs, enforcement actions for out-of-service carriers

What We Found: *Limited Bus Inspections*

- LBFNY operated without safety management controls in place
- Passenger-carrying operators have amplified risks
  - Number of passengers in buses
  - Potential for higher risk of injury, loss of life
- SFD rulemaking should strengthen oversight of passenger carriers
  - More frequent CRs
  - Increased compliance monitoring
- **What we propose:**
  - One recommendation to the Federal Motor Carrier Safety Administration



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