Automated Vehicles & State Law Enforcement: Roles, Needs & Resources - National Guidance Documents

September 10, 2019
Safety by the Numbers

- **39,141** people lost their lives on all modes of our transportation system in 2017. The vast majority—37,133 deaths—were from motor vehicle crashes.\(^*\)

- **94 percent** of all serious motor vehicle crashes involve driver-related factors, such as impaired driving, distraction, and speeding or illegal maneuvers. In 2017:
  - Nearly **11,000** fatalities involved drinking and driving.\(^{a}\)
  - Speeding was a factor in nearly **10,000** highway fatalities.\(^{a}\)
  - Nearly **3,500** fatal crashes involved distracted drivers.\(^{a}\)

- **13 percent** of annual roadway fatalities occur in crashes involving large trucks.\(^{a}\)

- In 2017, **82 percent** of victims in fatal large truck crashes were road users who were not an occupant of the truck(s) involved.\(^{b}\)

- Professional Drivers: Professional drivers are **ten times** more likely to be killed on the job, and nearly nine times more likely to be injured on the job compared to the average worker.\(^{c}\)

- **5,977** pedestrians were killed by motor vehicles in 2017, representing 16 percent of all motor vehicle fatalities.\(^{a}\)

- Highway-Rail Grade Crossings: Over the past decade, highway rail grade crossing fatalities averaged **253** per year, representing about one-third of total railroad-related fatalities.\(^{a}\)

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**Sources:**
A. U.S. Department of Transportation, Bureau of Transportation Statistics, special tabulation, September 6, 2019
B. NHTSA 2017 Fatal Motor Vehicle Crashes: Overview (DOT HS 812 662)

\(^{a}\) This number is likely underreported.
Current State of Technology Testing and Deployment
Released October 2018
- New multimodal safety guidance
- Clarifies policy and roles
- Outlines how to work with U.S. DOT as automation technology evolves
U.S. DOT Automation Principles

U.S. DOT has established a clear and consistent Federal approach to shaping policy based on the following six principles.

1. We will prioritize safety.
2. We will remain technology neutral.
3. We will modernize regulations.
4. We will encourage a consistent regulatory and operational environment.
5. We will prepare proactively for automation.
6. We will protect and enhance the freedoms enjoyed by Americans.
### ADS 2.0 (incorporated into 3.0)

- Released September 2017.
- Voluntary guidance on design, testing, and safe deployment of ADS remains central to U.S. DOT’s Approach.
- Encourages companies to consider and document their approach to 12 safety elements.

### Company VSSA Disclosures

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Published VSSAs can be viewed on NHTSA’s Index at https://www.nhtsa.gov/automated-driving-systems/voluntary-safety-self-assessment

As of 9/10/2019
Motor vehicles and motor vehicle equipment:

- Subject to existing FMVSS
- Subject to the agency’s authority related to safety defects

- Requires recall of vehicles or equipment containing defects that pose an unreasonable risk to safety
- Applies to current and emerging vehicle technologies including systems not covered by FMVSS
State, local, and Tribal governments hold clearly defined roles in ensuring the safety and mobility of road users in their jurisdictions and are encouraged to consider the following in preparation for automated vehicles:

1) Review laws and regulations
2) Adapt policies and procedures
3) Assess infrastructure elements
4) Provide guidance, information, and training
AV 3.0 identified new insights for State Legislatures in addition to the ones already identified in ADS 2.0: *A Vision for Safety*:

1. Engage U.S. DOT on legislative technical assistance.
2. Adopt terminology defined through voluntary technical standards.
3. Assess State roadway readiness.

**ADS 2.0 included:**

1. Provide a “technology-neutral” environment
2. Provide licensing and registration procedures
3. Provide reporting and communications methods for Public Safety Officials
4. Review traffic laws and regulations that may serve as barriers to operation of ADSs
AV 3.0 identified new insights for State Highway Safety Officials in addition to the ones already identified in the A Vision for Safety 2.0:

1. Consider test driver training and licensing procedures for test vehicles
2. Recognize issues unique to entities offering automated mobility as a service

ADS 2.0 included:
1. Administrative (establishment of lead agency for ADS oversight)
2. Application for Entities to Test ADSs on Public Roadways
3. Permission for Entities to Test ADS on Public Roadways
4. Specific Considerations for ADS Test Drivers and Operations
5. Considerations for Registration and Titling
6. Working with Public Safety Officials
7. Liability and Insurance
Considerations for Local Governments

AV 3.0 suggests that local governments may wish to consider the following topics as they formulate local policies.

1. Facilitate safe testing and operation of automated vehicles on local streets.
2. Understand the near-term opportunities that automation may provide.
3. Consider how land use, including curb space, will be affected.
4. Consider the potential for increased congestion, and how it might be managed.
5. Engage with citizens
Critical areas where the private sector’s role will be significant:

1. Demonstrate the safety of ADS for public acceptance and adoption. Voluntary Safety Self-Assessments disclosures continue to be encouraged.

2. Engage Public Safety Officials

3. Consider Surface Transportation Conditions and Infrastructure

4. Contribute in Development of Voluntary Technical Standards
The Department and NHTSA have put its six automation principles into action through these five automation implementation strategies. Stakeholders will be engaged throughout the process.

1. Engage stakeholders and the public
2. Provide best practices and policy considerations to support stakeholders
3. Support voluntary technical standards
4. Conduct targeted technical research
5. Modernize regulations
U.S. DOT’s Automation research focuses on three key areas:

1. Removing barriers to innovation
2. Evaluating impacts of technology, particularly with regard to safety
3. Addressing market failures and other compelling public needs
NHTSA Vehicle and Equipment Safety Research

• Support Updating and Modernizing Regulations (removing assumption of a driver from current regs)
• Vehicle Safety Evaluation Framework (tests, test methods, safety performance metrics)
• Functional Safety Analyses and ADS Component Testing
• Human Factors (signaling, telltales, disabled user needs)
• Occupant Protection (alternative cabin configurations)
• Update Exemption Process

• Removing Barriers & Assuring Safety
  – ANPRM, comment period ended August 28th

• Safety Principles for ADSs: New (2019 Spring Agenda)

• Passenger Safety for ADSs: New (2019 Spring Agenda)

• Considerations for Telltales and Indicators: New (2019 Spring Agenda)

• Automated Driving Systems Pilot

See https://www.transportation.gov/regulations/report-on-significant-rulemakings
Public Awareness and Communication

• Public Awareness and Confidence

• Understanding Roles

• Safe Road Users Education
Public Notification of Petitions

RFCs on 2 petitions for exemption (closed May 20, 2019)

• GM
• Nuro
Public Safety Panel: July 18, 2019
“Steps Toward Putting Public Safety Community at Ease with Advanced Vehicle Technologies”

Key Discussion Topics Included:

• Discussion with the public safety community (Fire, EMS, Law Enforcement) regarding safe testing and operation of advanced vehicle technologies, specifically related to the safety of on-scene first-responders.

• Speakers included ADS technology companies and local public safety representatives.

• Explored what processes are needed and what lessons can be learned from current and past experiences.

See https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety
MassDOT and the City of Boston (Mayor’s Office of New Urban Mechanics), in collaboration with Optimus Ride and nuTonomy (an Aptiv company), will facilitate workshops about advanced driver assistance systems and Automated Driving Systems (i.e. “autonomous vehicles”) on September 25th and 26th, 2019.

- The 4-5 hour workshop is intended for representatives of police, fire, and emergency medical services, in addition to lead/supporting staff within the participating municipalities, and other relevant parties.

- Its purpose is to introduce staff to connected and automated vehicle technologies, share information about autonomous vehicle testing in Massachusetts and across the US, and walk through the Commonwealth’s application and permitting process.

- Additionally, nuTonomy and Optimus Ride will share information about their respective vehicles and testing programs, including the first responder interaction plan, a component of the Commonwealth’s application package.
Thank you!

For More Information:

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