



U.S. Department of Transportation
Federal Motor Carrier Safety Administration

FMCSA Research Activities: Update on FAST ACT Projects, Planned Research and NAS Recommendations



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Office of Research and Information Technology

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Agenda

- 1. Fixing America's Surface Transportation Act (FAST Act) Projects**
- 2. Strategic Objectives (FY17)**
 - Produce Safer Drivers
 - Improve Safety of Commercial Motor Vehicles (CMVs)
 - Produce Safer Carriers
 - Advance Safety through Information-Based Initiatives
 - Enable and Motivate Internal Excellence
- 3. National Academy of Sciences CMV Driver Fatigue Recommendations**

Research Portfolio

- Published Research:
<https://www.fmcsa.dot.gov/safety/research-and-analysis/publications>
- Active Research Projects:
<https://www.fmcsa.dot.gov/safety/research-and-analysis/active-research-projects>
- Planned Research Projects—FY17

FAST Act Projects

Section	Project	Current Status
Section 5221	Compliance, Safety, Accountability and Safety Measurement System Study (“Correlation Study”)	National Academy of Sciences commissioned in February 2016 to conduct the study. Three committee meetings have been held.
Section 5306	Working Group to Consider New Post-Accident Crash Data Elements for Tow-Away Crashes	The Advisory Committee has completed their work and provided recommendations to the Department for review.
Section 5404	Military Under-21 CMV Driver Pilot Program	Federal Register Notice announcing project intent published in August of 2016.

FAST Act Projects (continued)

Section	Project	Current Status
Section 5506	Commercial Driver's License Skills Test Delays	State contacts are being gathered for survey distribution after information collection approval.
Section 5515	Study on CMV Driver Commuting	Project awarded in August of 2016; OMB approval in process.
Section 5510	Safety Study Regarding Double-Decker Motorcoaches	Project awarded in June 2016. Testing in January 2017.

Current Research and Technology Projects (Selected)

Project	Current Status
Flexible Sleeper Berth Pilot Program <ul style="list-style-type: none">Pilot study to demonstrate how split-sleep in conjunction with the North American Fatigue Management Program could be used to improve driver rest and alertness.	Project awarded in 2015; Federal Register Notice announcing the pilot program/ seeking comments is in development.
Wireless Roadside Inspection Program <ul style="list-style-type: none">Improve safety and operations of trucks and buses by developing, testing, and evaluating a wireless inspection system designed to conduct electronic inspections at roadway speeds.	Phase 3 (field operational test) currently underway, with over 60 carriers, 750 vehicles, and 1,000 vehicles participating as of January 4.
Motor Carrier Safety Research Analysis Committee <ul style="list-style-type: none">Establish a panel of nationally recognized experts in transportation-related research and technology fields who can provide professional analysis to FMCSA on its research work.	Committee met in December 2016; committee charge is to develop recommendations for gathering and evaluating driver crash factor data.
Commercial Driver Individual Differences Study <ul style="list-style-type: none">Identify and prioritize CMV driver individual differences with respect to crash risk from 21,000 drivers and over 3,000 crashes.	Data analysis will be complete this month; report to be published within the next year.

FY17 Planned Research

Strategic Objective	Select Projects
Produce Safer Drivers	<ul style="list-style-type: none">• CMV Driver Crash Factors• CMVs Involved in Crashes• CMV and Personal Vehicle Crash Analysis• Crash Risk by Medical Condition• Crash Risk by CMV Driver Schedules, Phase II• Crime Prevention for Truckers• Large and Small Carrier Health and Wellness Program Assessment• Research on Variations in State Hours-of-Service Rules
Produce Safer Carriers	<ul style="list-style-type: none">• Additional Implications of HM in a CMV Crash• Civil Fines and Motor Carrier Safety• Effectiveness of the Inspection Selection System (ISS)• Effectiveness of Weigh Station Pre-Clearance/e-Screening Systems• New Entrant Training Pilot Study• Stopping at Railroad Grade Crossings

FY17 Planned Research, continued

Strategic Objective	Planned Projects
Improve Safety of CMVs	<ul style="list-style-type: none">• CMV Automated Research• Development of a Second-Generation Performance Brake Tester• Dynamic Onboard Brake Assessment (DOBBA) Technology• Hydraulic-Hybrid Commercial Vehicle Safety• Motorcoach Tire Study• Study of Truck Side Guards to Reduce Pedestrian Fatalities• Updates to FMCSRs and FMCSA Systems Due to NHTSA's Impending Electronic Stability Control (ESC) Mandate
Advance Safety through Information-Based Initiatives	<ul style="list-style-type: none">• Data Repository (Naturalistic Driving and Other Datasets)• Multi-Modal Driver Distraction and Fatigue Detection and Warning System - Phase 2
Enable and Motivate Internal Excellence	<ul style="list-style-type: none">• TRB Activities & Motor Carrier Safety Research Analysis Committee• National Surface Transportation Safety Center for Excellence FMCSA Contribution to USDOT Multimodal Center for Climate Change and Environmental Forecasting

NAS Recommendations

- FMCSA charged the National Academy of Sciences' Committee on National Statistics (CNSTAT) to assemble a panel to investigate research methods and statistical approaches for understanding driver fatigue in motor carrier safety and driver health.
- Experts in a variety of fields met six times over a 2-year period:
 - Presentations from experts; internal discussion.
- Panel developed 13 recommendations, available in the published report at: <http://www.nap.edu/catalog/21921/commercial-motor-vehicle-driver-fatigue-long-term-health-and-highway-safety>.

NAS Recommendations / Agency Actions

NAS Recommendation	Agency Response
<p>1. Enlist the National Institute of Occupational Safety and Health to design/conduct a survey every 5–10 years to better understand CMV drivers’ demographics and employment circumstances.</p>	<p>Established an IAA Agreement with NIOSH</p>
<p>2. Conduct an evaluation to determine whether use of electronic on-board recorders (EOBRs) correlates with reduced hours-of-service (HOS) violations and crashes.</p>	<p>FMCSA is exploring additional research.</p>
<p>3. FMCSA has proposed that the use of EOBR data once systems are mandated. Given the potential research benefits of such data, the proposed rule should be modified to allow for research use of the data thus captured in a manner that protects individualized confidential data from disclosure.</p>	<p>Agency agrees with recommendation; brought this to the attention of GAO.</p>
<p>4. EOBR-equipped CMVs are involved in serious crashes and have data related to the functioning of the driver or vehicle, the relevant data should be made available to investigators and safety researchers.</p>	<p>FMCSA and NTSB have access to some of this data; greater access could be beneficial.</p>
<p>5. Incentivize entities that capture driver performance data to increase the availability of those data relevant to research issues of operator fatigue, HOS, and highway safety.</p>	<p>Agency is currently collecting data from fleets and will increase recruiting additional carriers</p>
<p>6. Support research aimed at better understanding the factors associated with driver behavior related to fatigue and sleep deficiency (e.g., what motivates drivers to continue driving when fatigued?).</p>	<p>Regulations indicating that a driver has the option not to drive if fatigued.</p>

NAS Recommendations / Agency Actions

NAS Recommendation	Agency Response
<p>8. Using a human-systems integration framework, develop evaluation guidelines/protocols for third-party testing to evaluate new technologies that claim to reduce the impact of fatigue on driver safety (NHTSA, CDC, and NIH).</p>	<p>FMCSA has conducted several research projects on fatigue-related technologies. Some research is currently being conducted.</p>
<p>9. Make greater use of independent peer review in crafting requests for proposals, making decisions regarding awards, and monitoring the progress of projects (including design and analysis stages).</p>	<p>FMCSA's current peer review processes include independent peer review of study design/methodology and final report.</p>
<p>10. The DHHS and DOT should fund, design, and conduct an ongoing survey that will allow longitudinal comparisons of CMV drivers to enable tracking of changes in their health status, and the factors likely to be associated with those changes, over time.</p>	<p>Established an IAA Agreement with NIOSH</p>
<p>11. Encourage all individuals in the National Registry of Certified Medical Examiners to follow current best practices for identifying drivers for additional sleep malady testing and in making determinations about CDL renewal extensions.</p>	<p>For National Registry/Medical Division review.</p>
<p>12. Support peer-reviewed research on obstructive sleep apnea (OSA) and CMV drivers throughout all the research stages, from the drafting of requests for proposals through analysis of data.</p>	<p>FMCSA has research ongoing to support rulemaking on OSA.</p>
<p>13. Carry out a research program on driver fatigue management and training.</p>	<p>Two proposed projects currently under review; FMCSA is planning a project to evaluate the effectiveness of new education programs including OSA..</p>