

Federal Motor Carrier Safety Administration

Panel Session: Driving Transportation
Policy with Naturalistic Data

FMCSA Uses of Naturalistic Driving Data

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U.S. Department of Transportation

Federal Motor Carrier Safety Administration

Maryland Legislature

- **Importance of Naturalistic Driving Data**

100-Car Naturalistic Driving Study



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Car/Truck Interactions

- A total of 142 car/truck interaction-critical incidents
- Car drivers initiated 117 (82.4%) incidents; truck drivers initiated 25 (17.6%) incidents
- Incidents attributable to car drivers:
 - lane change without sufficient gap
 - entering a roadway
 - left turn without clearance
- Incidents attributable to truck drivers:
 - insufficient clearance entering a roadway
 - backing in roadway in presence of traffic
 - late braking for stopped/stopping traffic
 - wide turn into adjacent lane
- Improved driver behavior for car drivers and increasing defensive driving techniques needed for truck drivers



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CMV Web-Based Driving Tips

- CMV Web-Based Driving Tips are supported by naturalistic driving video
- Video clips show examples of driver errors meant to motivate CMV drivers to become safer drivers
- As a training exercise, each video clip is followed by a set of questions to encourage discussion regarding a driver's behavior



The screenshot displays the FMCSA website interface. At the top, it features the U.S. Department of Transportation logo and navigation links for Keyword Links, Contact Us, and Español. The main header identifies the Federal Motor Carrier Safety Administration. A secondary navigation bar includes links for Home, Rules & Regulations, Registration & Licensing, Forms, Safety & Security, Facts & Research, Cross Border, and About FMCSA. Below this, a breadcrumb trail shows the path: Home > Facts & Research > CMV Web-Based Driving Tips Home Page. A search bar is also present.

The main content area is titled "CMV Web-Based Driving Tips Home Page". It contains the following text:

Even the most well-trained, safety-conscious Commercial Motor Vehicle (CMV) driver is at risk of engaging in driving behaviors that could lead to a crash on today's crowded highways. Weather conditions or road conditions change and suddenly "driving too fast for conditions" becomes a risk factor. Failing to look or looking and not seeing, impaired performance because of fatigue, inattention or daydreaming or an unexpected external distraction can all lead to a truck crash.

This website was developed to raise the consciousness of CMV drivers about common driving errors and to provide valuable driving tips through an easily accessible tool, the Internet. Fleet safety managers can also use this website for their driver training programs. These tips offer preventive measures that CMV drivers can take to help avoid crashes.

The driving tips, ideas and suggestions on this website are supported with real-world video clips (25- to 30-second video clips) recorded in a naturalistic (open roadway, non-test track) driving study conducted by the Virginia Tech Transportation Institute (VTTI). The video clips show examples of driver errors that will serve to motivate CMV drivers to become safer drivers and thereby avoid dangerous driving situations. Also, as a training exercise, each video clip is followed by a set of questions to help encourage you to think about and examine the driver's behavior.

Please click on any of the error categories (left navigation bar) under the "Driving Tips" section. Under each category you will find driving tips, interesting facts, video clips, a video description, and the training exercise questions.

The left navigation bar includes a "Facts & Research" section with a "CMV Driving Tips" sub-section. Under "CMV Driving Tips", the following categories are listed: Project Background, Too Fast for Conditions, Unfamiliar Roadway, Inadequate Surveillance, Driver Fatigue, Driver Distraction, Following Too Closely, Inadequate Evasive Action, Documents, and References.

The bottom of the page features the Virginia Tech Transportation Institute logo and footer information: Feedback | Privacy Policy | USA.gov | Freedom of Information Act (FOIA) | Accessibility | OIG Hotline | Web Policies and Important Links | Site Map | Plug-ins. Contact information for the Federal Motor Carrier Safety Administration is provided: 1200 New Jersey Avenue SE, Washington, DC 20590 • 1-800-632-5660 • TTY: 1-800-877-8339. A Field Office Roster link is also present.



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Driver Distraction Rulemaking

CVO Driver Distraction Study

- Study investigated the prevalence of driver distraction in CMV safety-critical events recorded in a naturalistic data
- Data included over 200 truck drivers and data from 3 million miles of operation
- Odds ratios (OR) were calculated to identify tasks that were high risk

Risks Associated with Secondary Tasks

Task	Odds Ratio	LCL	UCL	Frequency of Safety-Critical Events	Frequency of Baselines
Text message on cell phone	23.24	9.69	55.73	31	6
Interact with/look at dispatching device	9.93	7.49	13.16	155	72
Write on pad, notebook, etc.	8.98	4.73	17.08	28	14
Use calculator	8.21	3.03	22.21	11	6
Look at map	7.02	4.62	10.69	56	36
Dial cell phone	5.93	4.57	7.69	132	102
Talk or listen to hand-held phone	1.04	0.89	1.22	195	837
Talk or listen to hands-free phone	0.44	0.35	0.55	91	901
Talk or listen to CB radio	0.55	0.41	0.75	50	399



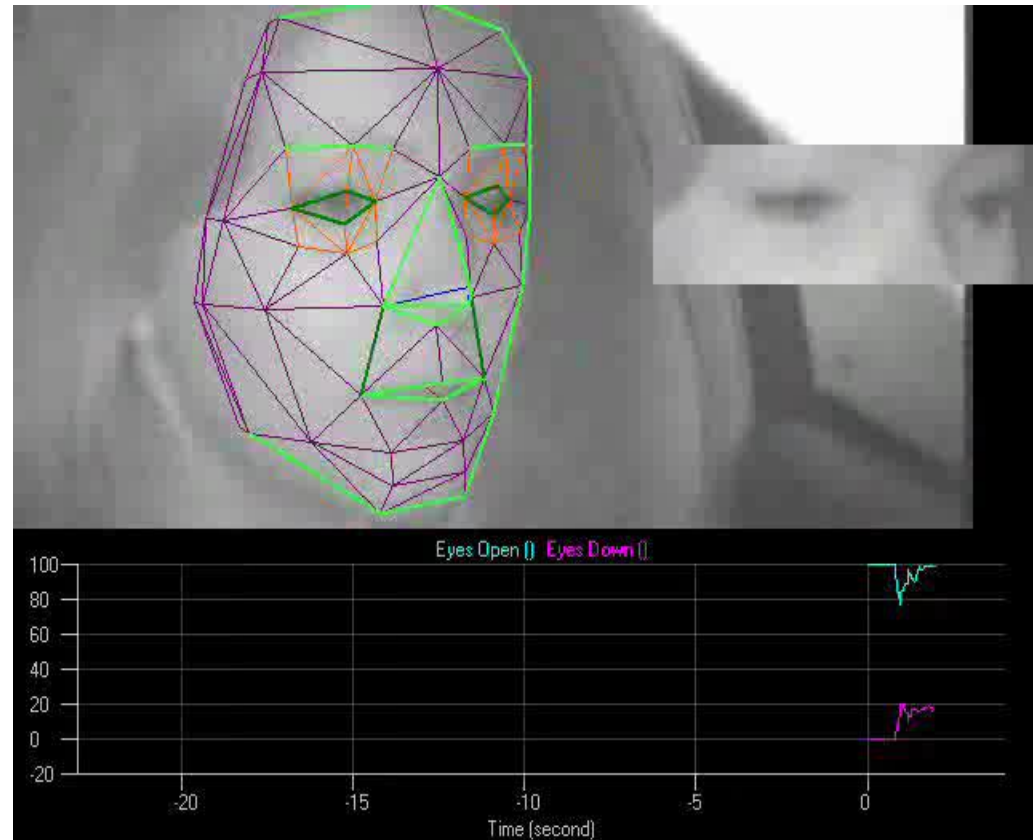
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Safety System Development

Driver Fatigue Warning System (SBIR)

- Develop and test prototype system that unobtrusively detects and alerts drowsy drivers to avoid hazardous conditions
- Goal: to develop and commercialize a multi-measure fatigue monitoring and warning system in 2013.



Safety System Testing

FAST DASH - FMCSA Advanced System Testing utilizing a Data Acquisition System on the Highways

- Conduct fast-turnaround and independent evaluation of promising safety technologies
- FMCSA will request, via its website, that original equipment technology vendors submit promising safety technologies for testing and evaluation



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Onboard Monitoring FOT

- Driver performance parameters monitored by OBM:
 - Hard Braking
 - Lane Departures
 - Driver Fatigue
 - Hard Steering
 - Lane Position
 - Driver Alertness
 - Safety Belt Use
 - Hours of Service
 - Turn Signal Use
- Experimental Plan:
 - 3 fleets participating (2 L/SH and Long Haul).
 - 270 instrumented CMV & include more than 750 CMV drivers.
 - 18 months of continuous data collection.
 - Collected naturalistic driving data for nearly 40 million miles of driving data.

