Federal Motor Carrier Safety Administration

Panel Session: Driving Transportation Policy with Naturalistic Data

FMCSA Uses of Naturalistic Driving Data

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- **Importance of Naturalistic Driving Data**

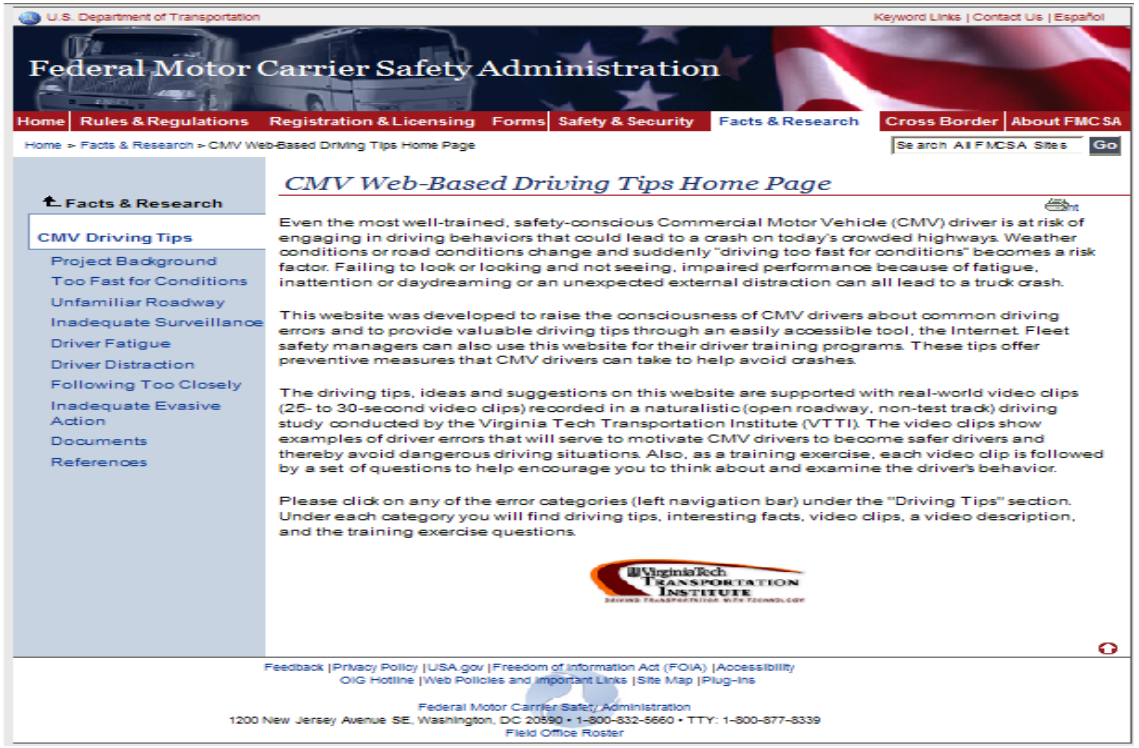
100-Car Naturalistic Driving Study

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

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



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

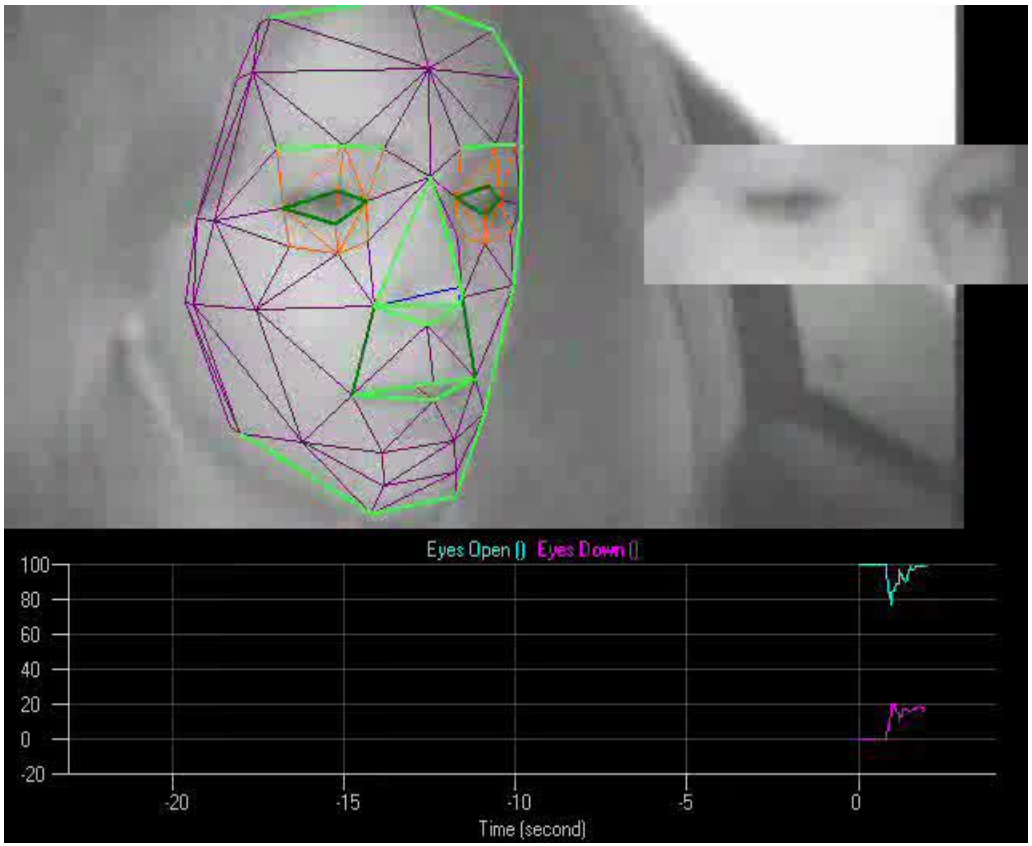
Risks Associated with Secondary Tasks

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

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

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.