

**Remarks of Bill Bronrott**  
**FMCSA Deputy Administrator**  
**Panel Session: Driving Transportation Policy with Naturalistic Data**  
**Wednesday, September 1, 2010, 1:30 – 3:00 p.m.**

***FMCSA Uses of Naturalistic Driving Data***

First, I would like to recognize our outstanding FMCSA research team that is represented here today. Research division chief Martin Walker, Terry Hallquist and Olu Ajayi. It is also an honor to participate in this panel presentation with RITA Administrator Peter Appel, NHTSA Deputy Administrator Ron Medford, and Virginia Delegate Joe May.

Four months ago, when I stepped down from my seat in the Maryland General Assembly to step up to becoming Deputy Administrator of FMCSA, some asked if I was crazy to give up elective office, and my answer was simply: Yes, I am.

It can be traced back to 1980 when I learned about an infant girl from Maryland named Laura Lamb who, at the age of six months, became the nation's youngest quadriplegic in a crash caused by a multiple repeat offender drunk driver.

Quick research into the drunk driving problem showed me that what happened to Laura Lamb was not an isolated incident – it was happening in epidemic proportions across the nation – with far too little being done about it. So, as a young congressional aide, I decided to take on this issue, for starters, by bringing together Laura's mom from Maryland and a drunk driving victim's mom from California at the US Capitol to launch the nationwide MADD movement and war on drunk driving.

While I am relatively new to FMCSA, I have been heavily engaged in highway and vehicle safety for 30 years at every level of government. I'm not sure if this is equivalent to a Ph.D. or a Purple Heart, but I do know that that much of the success over these past three decades is correlated to the degree to which we've had solid research and analysis to ensure that safety solutions were data-driven.

There is no better example of how data and research drove a public policy decision than when the Maryland General Assembly debated legislation to strengthen the state's Graduated Driver's Licensing laws.

Legislation that I had sponsored had repeatedly stalled in spite of valiant efforts by police, parents and safety advocates who pointed to statistics and personal tragedies to urge the General Assembly to act.

But, something changed in 2005:

- First, a rash of deaths involving high school-aged drivers.
- Followed by the release of a new study out of NIH on the immature brain.
- The final straw: A new naturalistic study clearly showing that novice teen drivers are all too often dangerously distracted and disproportionately at risk on our roads. The moving pictures were worth a thousand words, and moved my colleagues in the General Assembly to adopt five pieces

of legislation to dramatically improve our GDL laws. Since then, traffic deaths involving teen drivers have decreased.

I want to thank Delegate May for his leadership here in Virginia. Having elected representatives on both sides of the aisle working on common ground issues like this underscores the fact that dying on our highways is not a partisan experience. And, they are rarely unique to urban, suburban or rural areas or to just one state.

Given my legislative experience and enthusiasm for naturalistic driving data, I was very pleased to find that for years FMCSA has actively embraced the development of technology to collect and analyze naturalistic driving data.

FMCSA has sponsored numerous of individual studies to collect naturalistic driving data, including studies of Short-Haul Operations, Sleeper Berth Use, and the Drowsy Driver Warning System.

Our agency has leveraged data collected from these studies to create the largest naturalistic driving database of commercial motor vehicle drivers: Over 3 million miles of driving data with over 190k hours of sleep watch or actigraphy data. As you may know, an actigraph is a device worn on the wrist and looks like a wrist-watch. It is a valid and reliable, yet unobtrusive, approach to measuring the quantity and quality of sleep.

FMCSA has been the primary benefactor of this data as we have used naturalistic driving data to:

- Gain a better understanding of crashes and developing crash counter measures;
- Develop driver training and outreach materials;
- Support the development of federal motor carrier safety regulations;
- Develop new safety practices, such as onboard monitoring;
- Develop new safety systems for monitoring driver fatigue; and,
- In the near future, test new onboard safety systems in the new FAST DASH program.

One of the catalysts for FMCSA's naturalistic driving program was the Large Truck Crash Causation Study, or LTCCS, which showed us that most crashes are not caused by defects in vehicles or road conditions. They are caused by poor driver performance or human error.

In fact, driver factors were up to 10 times more prevalent than vehicle or environmental factors in events that led to crashes involving one truck and one passenger vehicle.

These research findings were so compelling that they led us to shift our safety focus to drivers. The message the LTTCS gave us was clear: drivers are the most important element in maintaining safety on our Nation's roadways. Naturalistic driving data have provided one of the best means of answering questions related to driver behavior and have given us information critical to helping us achieve our safety mission. Let me give you a few examples.

## **Crashes and Development of Crash Countermeasures**

### **Car/Truck Interactions**

In order to gain a clearer understanding of car/truck interactions, FMCSA asked Virginia Tech Transportation Institute (VTTI) to conduct an in-depth analysis of naturalistic driving data to investigate car /truck interactions.

The results were very revealing. Incidents attributed to car drivers were more than three times higher than those attributed to truck drivers. In addition, analysis of the data showed that the types of incidents differed between the two types of vehicles.

The results confirmed what truck drivers had stated in focus groups as part of this study—that they were often “cut off” by car drivers and that they didn’t leave enough gap between them and the truck.

For truck drivers the incidents related more to driving techniques such as entering and backing into roadways and late braking for stopped traffic.

These findings underscore the importance of the FMCSA “Share the Road” program. They also confirm that FMCSA alone cannot solve the truck safety problem. We must work with our safety partners at NHTSA to modify the behavior of car drivers, in particular, aggressive driving.

The critical area that needs improvement for truck drivers involves driving skills and techniques and a primary focus for truck driver training programs should be defensive driving skills.

This does not discount the importance of continuing to ramp up our work on driver fatigue, driver health and wellness, nor is it meant to downplay the importance of vehicle safety standards and maintenance, such as stability control, rollover prevention, and well-maintained brake systems.

## **Driver Outreach & Training**

### **CMV Web-Based Driving Tips**

FMCSA undertook a research project with the purpose of creating a supplemental defensive driving tips training program that would be accessible to the public and based on naturalistic driving data.

The Internet was an ideal medium for this project because it provides a means to share large amounts of information with the targeted audience—commercial motor vehicle (CMV) drivers and fleet managers. In addition, the use of the Internet allows the audience greater flexibility to access it at their own pace and whenever convenient.

The CMV Web-Based Driving Tips can be accessed on the FMCSA website in the Facts and Research section by clicking on Research. This web-based training tool provides behavioral “do’s” and “don’ts” (driving tips) for CMV drivers which are demonstrated in video segments of actual safety-critical events captured in naturalistic driving studies. The “don’ts” represent video segments demonstrating safety-critical events, and the “do’s” represent preventive measures (driving tips) in the form of text appearing alongside the videos.

The real-world examples of safety-critical events, and the behaviors that lead up to them, provide a useful learning tool to motivate CMV drivers to avoid making these mistakes themselves.

These web-based defensive driving tips fill in the gaps in existing training programs by providing supplemental, widely accessible training information to CMV drivers and fleet managers. In 2009, the first year the CMV driving tips were posted on FMCSA's website, they were viewed by nearly 100,000 individuals.

### **Driver Distraction Rulemaking**

We are currently using VTTI's Driver Distraction in Commercial Vehicle Operations Study to support our driver distraction rulemaking efforts. This study showed that driving while distracted with complex tasks was dangerous. Texting while driving, interacting with a dispatch device and dialing a cell phone lead to a significant increase in safety risk.

Studies by other US DOT modes showed similar risks from driver distraction, prompting Secretary LaHood to take the lead on addressing distracted driving and to host a Distracted Driving Summit in Washington last September. A second Summit is scheduled for September 21<sup>st</sup>.

As a result of the first Summit, the Obama Administration immediately enacted an Executive Order banning all text messaging by four million federal employees while they're driving government-owned vehicles, while driving any

vehicle on official government business, or using mobile devices issued by the government while behind the wheel.

Additionally, FMCSA has been working on multiple Driver Distraction rulemakings. The first proposed rule will ban texting while driving a commercial motor vehicle and will impose sanctions such as civil penalties and disqualification of drivers who do not comply with the rule. It is on a fast track because of the urgency of the issue and the Final Rule is expected to be completed in September.

FMCSA also is in the process of drafting a Notice of Proposed Rulemaking regarding cell phone use by truck and bus drivers.

## **Safety System Development**

### ***Driver Fatigue, Distraction, and Alerting System, SBIR Phase II***

FMCSA has taken on the challenge to develop and test a prototype fatigue monitoring system that unobtrusively detects and alerts drowsy drivers to avoid this potentially hazardous condition.

The improved underlying data acquisition system used for collecting naturalistic driving data has led to the development of a viable fatigue monitoring system. The system uses machine vision to do facial mapping and incorporates a multi-measure algorithm based on driver, vehicle, and environmental factors that can measure driver drowsiness in real time.

FMCSA is currently funding the second phase of a Small Business Innovative Research project by Transecurities to complete the development, testing, and commercialization of this onboard safety system.



Transecurities is a small business designed to commercially market products developed and licensed by VTTI.

The impact of this drowsy driver monitoring system on fleet management, safety supervisors, and drivers will be assessed and reported during this phase of the research. The goal is to develop and commercialize the multi-measure fatigue monitoring and warning system by the end of 2013.

## **Safety System Testing**

### **FMCSA New FASTDASH Program**

FMCSA is funding a new program known as FAST-DASH – the FMCSA Advanced System Testing utilizing a Data Acquisition System on the Highways Program – that will move promising safety technologies from the design stage to implementation and ultimate deployment.

FASTDASH will assure quick-turnaround, independent evaluation of promising safety technologies.

To accomplish this, FMCSA has partnered with the National Surface Transportation Safety Center for Excellence here at VTTI which develops and disseminates advanced transportation safety techniques and innovations. Each year, NSTSCE will post a request in its website for original equipment manufacturers and/or technology vendors to submit promising safety technologies for testing and evaluation. Technologies with the highest potential safety benefits will be selected for testing.

FMCSA's vision is that individual test and evaluation programs could be completed in 6 – 12 months, thus greatly reducing both the time and the resources required to test and independently evaluate potentially life-saving safety technologies.

### **A Look Toward the Future and the 270 Truck NDD Study**

FMCSA believes the use of naturalistic driving data will have an increased role in supporting its safety mission. In fact, we are promoting naturalistic driving data collection through an innovative research concept that will evaluate an onboard monitoring system with greater monitoring capabilities.

FMCSA has leveraged a number of key partnerships that include NSTSCE, VTTI, the University of Washington and Transecurities to develop a large scale field operational test of a system that integrates a number of safety functions.

The system measures hard braking, hard steering, lane position and departures, driver fatigue and alertness, hours of service compliance, safety behaviors such as use of safety belts, turn signals, and alcohol.

The affect on driver safety performance will be evaluated and naturalistic driving data will be continuously collected on 270 commercial trucks from three different motor carriers in different types of operations. Data will be collected for a total of 18 months and will yield about 40 million miles of driving data making this the largest naturalistic driving database of CMV operations ever produced.

That's exciting news, but what's even more exciting is the expected return on investment of this study. The \$3.5m cost of this field operational test and naturalistic driving data collection is a small fraction of the cost of other similar-sized field operational tests, yet the amount of useful data it will generate is unprecedented.

## **Conclusion**

I want to acknowledge the great research partnership FMCSA has had with VTTI over the last decade working to develop naturalistic driving data.

We are excited about the next generation of naturalistic driving data collections because we know that they will help us save lives on our Nation's roadways by identifying and intervening on dangerous CMV driving techniques.

After all, this critically important research is a means to an end. In the end, your dedicated efforts are not just academic exercises. They are about practical applications that will lead our nation "Toward Zero Deaths."

It's also about helping government officials at the federal, state and local levels make solid, data-driven decisions on policies and budgets that are both socially responsible and fiscally prudent.

On behalf of FMCSA Administrator Anne Ferro and my FMCSA colleagues here today, thank you for your leadership and partnership. I am looking forward to our continuing collaborations on naturalistic research projects to help save lives. Thank you all very much.

# # #