



FMCSA Office of Truck &  
Bus Standards & Operations:

Current Activities



# Work in Progress

CMV Technology Diagnostics and  
Performance Enhancement Program

ABS Malfunction Lamps

PBBT Field Study

Driver Medical Program Activities

# CMV Technology Diagnostics and Performance Enhancement Program

Task Order 1: Identify candidate research projects: Complete

Task Order 2: In-depth assessment of candidate projects: Complete

Task Order 3: On-board sensors for brake system performance: Complete, report available.

# CMV Technology Diagnostics and Performance Enhancement Program

Task Order 4 (J1939 high-speed data bus): Testing in progress

Task Order 5 (Tire Pressure Sensors): Complete - complete, report available

Task Order 6 (Crosscutting analysis): Dynamic Alignment report complete.

# CMV Technology Diagnostics and Performance Enhancement Program

Task Order 7 (Vehicle Data Recording, Notification, and Feedback): In progress

Task Order 8 (Tire Pressure Monitoring and Management): In progress - testing began 12/2004.

Additional Task Orders planned - will address brake and tire sensor applications

## Task Order #3: Brake Sensors

Strain gauged anchor pins

Brake chamber stroke sensors - internal and external

Deceleration vs. pressure measurement system

Brake lining thermocouples

ABS wheel speed sensors (wheel slip calculation)

Pressure transducers

... all were useful; accuracy, fault-detection properties varied considerably

## Task Order #5: Tire Pressure

Over 6,087 CMVs and 35,000 tires.

Only 44% of all tires were within +/- 5 psi of target pressure

20 % underinflation: 7.3% of all tires; at least 1 tire on 20% of trucks; 4 or more tires on 3% of trucks

Opportunities to improve safety, fuel economy, tire life, productivity!

## Task Order #4: J1939 Network

Electronic "spinal cord" of today's CMVs.

There are no public-domain reports comparing published spec's with real-world performance

Objective: Test-load a laboratory-simulated network to assess signal-handling performance (integrity, accuracy, speed).

Status: Testing nearly complete, report begun.



# J1939 Test Bed Setup



# Task Order 7: Vehicle Data Recording, Notification, Feedback

Comprehensive assessment of technical, cost, and operational issues related to vehicle data recorders.

To include both safety and productivity applications: crash event data recorders (EDRs) and operational/productivity data loggers (VDRs)

Draft report in progress

# Task Order 8: Tire Pressure Maintenance and Management

Objective: Test, evaluate various on-board sensors and systems in a comparative "round robin" setting

10 systems selected for testing (6 direct monitoring - valve stem, wheel, tire mounted; 6 pressure management - 2 equalizing, 2 central inflation)

Testing began December 2004

# ABS Malfunction Lamp Study

Develop a protocol to inspect ABS indicator status at roadside

Arrange for inspections in 3-5 States, inspect 800-1000 vehicles

Analyze data, prepare report, recommend future data-gathering and educational activities.

Status: In progress, complete mid-2005

# PBBT Field Study

Conduct PBBT compliance tests

Review CMV axle-by-axle and wheel-by-wheel brake performance data from a previous study (1000 CMVs)

Assess adequacy of current functional specifications for PBBTs

Assess the adequacy of the current performance testing requirements of 49 CFR 393.52, especially § 393.52(d)

Status: work plan approved

# CMV Driver Health Program & Research Activities

## National Registry of Certified Medical Examiners

Role Delineation Study (Feb 2005)

Public Meeting (March 2005)

Curriculum Development, Training, Testing (2005-07)

## Medical Review Board

Permanent National Scientific Advisory Board (June 2005)

First Proceedings (Summer 2005)

## Medical Exemption Program Evaluation

Vision (Feb 2005); Diabetes (TBD)

Special Research Topics (e.g. renal disease)

# Any questions?

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Thank you very much!



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