



FMCSA Safety and Security Accomplishments



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U.S. Department of Transportation

Federal Motor Carrier Safety Administration



Hazardous Materials Division Highlights

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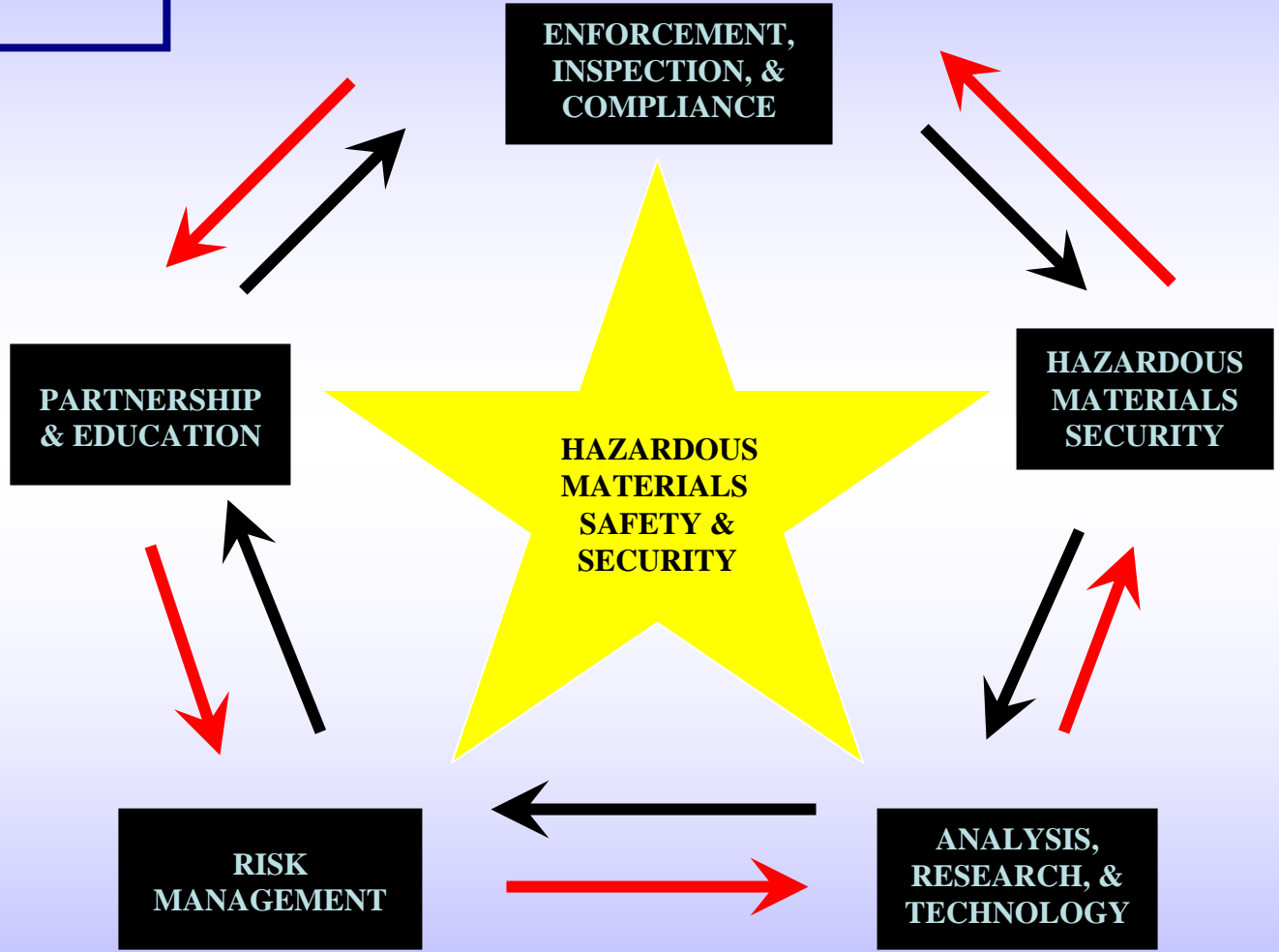


- ◆ FMCSA
- ◆ Hazardous Materials Research Programs
- ◆ Summary



The FMCSA mission is accomplished by...

- ◆ Hazardous Materials Compliance Reviews
- ◆ Hazardous Materials Package Inspections
- ◆ **Hazardous Materials Research**
- ◆ Other Hazardous Materials-related activities





Research Projects

- ◆ Overall, FMCSA conducted 6 research projects in FY 2005
- ◆ FMCSA will conduct 3 research projects in FY 2006



- ◆ Cargo Tank Rollover Force Verification
- ◆ Cargo Tank Roll Stability
- ◆ Radiation Detection Equipment





Cargo Tank Rollover Force Verification

Purpose

Verify results of previous dynamic simulations performed in previous overturn studies



History

- ◆ Cargo Tank regulations require “a rollover damage protection device. . . to withstand. . . **twice the weight** of the loaded. . . vehicle.”

49 CFR 178.345-8(c)(1)

- ◆ NTSB request
- ◆ DOT response
 - Simulations
 - Full-scale cargo tank rollovers for verification



Results

The experimentally measured roll rates were within the range of those predicted in the UMTRI simulation for the corresponding crashes



Benefits to Highway Safety

- ◆ Analysis of these rollovers will yield a family of impact energies
- ◆ Data will help validate a finite-element model, leading to
 - Benefit-cost analysis
 - Design guidelines in revised regulations



Cargo Tank Roll Stability

Purpose

Improve the roll stability performance of cargo tanks



Methodology

- ◆ Improve the design to lower the center of gravity
- ◆ Remove of regulatory barriers
- ◆ Identify operational characteristics
- ◆ Update highway design and warning systems
- ◆ Introduce technologies to manage drivers' actions to reduce rollovers
- ◆ Improve driver training



Radiation Detection Equipment at Weight Stations

Purpose

Identify hidden HM shipments

Results

Beta-tested detection of HM and assist
States in inspection process



Radiation Detection Equipment at Weigh Stations

- ◆ Safeguards the public from hidden shipments of HM
- ◆ Technology has been implemented in Tennessee, and will be used in other States





Projects for FISCAL YEAR 2006

- ◆ Service Life of Cargo Tanks
- ◆ Hazardous Materials Carrier Survey
- ◆ Hazardous Material Routing Safety and Security Risk Analysis





Cargo Tank Service Life

Purpose

Study affects of external factors that affect the life of a cargo tank



Cargo Tank Service Life

- ◆ External factors
 - Level of maintenance
 - Quality of maintenance
 - Type of HM service
 - Design of cargo tank
 - Inspection intervals
 - Severe weather conditions



Cargo Tank Service Life

Objective

Develop recommended inspection and safety standards to improve the safety of older cargo tanks



Hazardous Materials Routing

◆ Safety and Security Risk Analysis

- Comprehensive analysis of safety and security concerns related to hazardous materials routing
- Guidance documents and tools to identify and mitigate security vulnerabilities
- Evaluation of current routing activities
- Best management practices recommendations to state governments
- Expected results include safer and more secure hazardous materials routes



Hazardous Materials Carrier Survey

- ◆ Develop and compile essential, basic metrics concerning the HM carrier industry
- ◆ Focus on HM carriers to determine the various aspect of the HM industry
- ◆ Evaluate current routing
- ◆ Evaluate the import/export commodity flows with Canada and Mexico



For more information

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