



## **FHWA Talking Freight Webinar Series** **Freight and Hazardous Materials: Fueling Our Economy**

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## Topics

- **FMCSA HM Division Mission and Enforcement Activities**
- **Special Permits**
- **Safety Permits**
- **Tank Vehicle Definition and Examples**
- **Cargo Tanks and Cargo Tank Facility Reviews**
  - Top violations
- **Entry Level Driver Training**
- **NTSB Recommendations and Related Cargo Tank Research**
  - Human Factors in Cargo Tank Rollovers
  - “TankFax”, Registered Inspector Qualifications, and Roadside ID





# Hazardous Materials





**CORROSIVE**  
Batteries  
Drain Cleaners  
Oven Cleaners



**TOXIC**  
Pesticides  
Rat Poison  
Pharmaceuticals



**REACTIVE**  
Pool Chemicals  
Ammonia  
Bleach  
Aerosols



**FLAMMABLE**  
Paints, Solvents  
Oils, Gasoline  
BBQ Starter  
Propane Cylinders





## HM Division Mission

Reduce the number of serious highway incidents and fatalities that involve hazardous materials; and to develop programs that enhance safety and security.



# HM Enforcement Activities

- HM Safety Permit
- HM Special Permit
- CDC Carrier Vetting
- HM Route Registry
- Food Safety
- Carrier Investigations
- Cargo Tank Manufacturing and Testing Facilities Oversight
- Roadside Inspections
- Cargo Tank Rollover Prevention
- Outreach and Training
- Public Inquiries / Interpretations
- Research



## The HAZARDOUS MATERIALS SAFETY PERMIT PROGRAM

Since January 1, 2005, interstate, interstate, and foreign motor carriers transporting certain types and amounts of hazardous materials (HM) are required to hold a Federal Hazardous Materials Safety Permit (HMSP) issued by the Federal Motor Carrier Safety Administration (FMCSA).



U.S. Department of Transportation  
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**AS CFI 1110 TRAINING REQUIREMENTS FOR ALL HM EMPLOYEES**  
 Authority, Conflicting, Writing, Testing and Inspecting, Employment, An experience

1. General, written certification
2. Specific, written certification
3. Specific, written certification

**Other training as required**

1. Revised, written testing, if a new duty place is required.
2. Other training for new material employees who are operating a commercial motor vehicle, if you take the CDSP or other training.
3. General, written training, if entering the cargo tank.

**HAZARDOUS MATERIALS TRANSPORTED ON TRAINING MODULES:**  
 Write down names and quantities of materials being used in training.

**DEFINITIONAL QUALIFICATIONS**  
 The Federal Authority, Inspection, Conflicting, Cargo tank safety, Conflicting, Conflicting, Registered Inspector and Permit as defined in 49 CFR 393.118.

**REGISTERED INSPECTOR EXPERIENCE**  
 Having a minimum knowledge of DOT inspection cargo tanks in a job position of a Registered Inspector. When a person tests and inspects DOT inspection cargo tanks, they must be able to do so. The test is to be conducted in the presence of a DOT Permit. No other person can be a Registered Inspector unless they are a Registered Inspector with DOT Permit. Cargo tanks and their use and inspection in the presence of a Registered Inspector. The Registered Inspector must be able to inspect cargo tanks and their use and inspection in the presence of a Registered Inspector.

**REGISTRATION REQUIREMENTS FOR AUTHORIZED INSPECTORS AND AUTHORIZED INSPECTION AGENCIES**  
 The Registered Inspector must be a U.S. citizen and must be at least 21 years old. The Registered Inspector must be a U.S. citizen and must be at least 21 years old.

FMCSA/DOJ-1110-11  
 May 2011

**DOT SPECIFICATION CARGO TANK PROGRAM**  
 Test and Inspection Facilities

**Keep the Load on the Road**  
 A Driver's Guide to Cargo Tank Truck Rollover Prevention

U.S. Department of Transportation  
 Federal Motor Carrier Safety Administration

**Safe and Secure Transportation of Food**

**What's Your Role?**

U.S. Department of Transportation  
 Federal Motor Carrier Safety Administration





# **Special Permits (49 CFR Part 107)**





# Special Permits

Fiberglass Reinforced Plastic (FRP) Cargo Tank: Built per Special Permit





# Special Permits

- FMCSA reviews Special Permits for Highway:
  - Requests for Emergency Processing;
  - Requests for Technical Review (mostly involving cargo tank SP's); and
  - Requests for new, renewal or party-to SP's for INTERSTATE motor carriers and/or INTRASTATE motor carriers holding a Hazardous Materials Safety Permit (HMSP) or when a carrier is applying for a Special Permit pertaining to the transportation of Ebola-Related Medical Wastes.
- Review may be desk-top audit (1 year performance), or sent to FMCSA field for comprehensive investigation.





# **Hazardous Materials Safety Permits (49 CFR Part 385 Subpart E)**



# Hazardous Materials Safety Permits

1. Highway Route Controlled Class 7;
2. >55 lbs net.: 1.1, 1.2 or 1.3 Explosives, or Placarded 1.5;
3. PIH Zone A - >1liter / package;
4. PIH Zone B – Bulk Package >119 gal.;
5. PIH Zones C or D – Bulk Package  $\geq$  3,500 gal.; or
6. Compressed or Refrigerated Liquefied Methane, Liquefied Natural Gas, or Other Liquefied Gas with a Methane Content of at least 85 percent – Bulk Package  $\geq$  3,500 gal.

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Administration





- HRCQ: Radioactive wastes from powerplants
- PIH: Poison Inhalation Hazards, such as Chlorine, Nitric Acid Red Fuming, and Anhydrous Ammonia when shipped internationally.
- High Methane Content, such as Compressed Natural Gas





## HMSP Enhanced Oversight

- The carrier meets or exceeds the following thresholds is designated for a Comprehensive Review within 6-months of meeting prescribed condition.
  - HMSP carrier with the HM BASIC over threshold (2 consecutive months)
  - HMSP carrier with any 2 or more BASICs  $\geq$  the HM Threshold, other than the HM BASIC (2 consecutive months)
  - 48 months insufficient data (<3 roadside inspections with violations) AND a Safety Rating  $\geq$  4 years.





**Commercial Drivers License  
Endorsements for Tank Vehicle  
and  
Hazardous Materials  
(49 CFR Part 383)**





# CDL HM Endorsement

- 383.5 (Definitions)
  - *Hazardous materials* means any material that has been designated as hazardous under 49 U.S.C. 5103 and is **required to be placarded** under subpart F of 49 CFR part 172 or any quantity of a material listed as a select agent or toxin in 42 CFR part 73.
- 383.93(a)
  - b) *Endorsement descriptions*. An operator must obtain State-issued endorsements to his/her CDL to operate commercial motor vehicles which are:
    - (4) Used to transport hazardous materials **as defined in §383.5**





## Tank Vehicle – Definition and Guidance

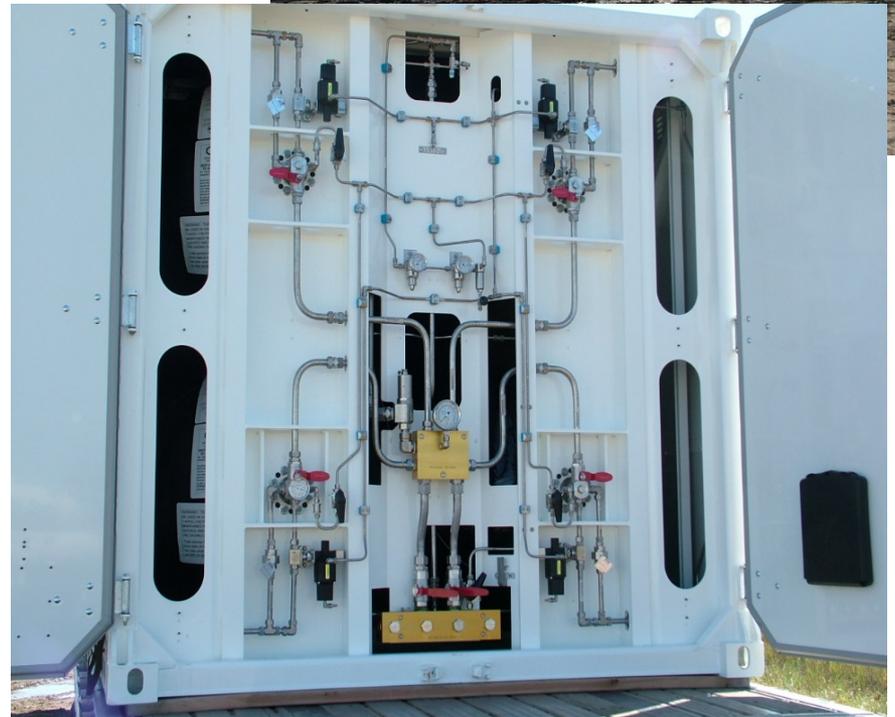
383.5 Definitions: *Tank vehicle* means -

- commercial motor vehicle
- designed to **transport any liquid or gaseous materials**
- **within a tank or tanks having an individual rated capacity of more than 119 gallons and an aggregate rated capacity of 1,000 gallons or more**
- that is either **permanently or temporarily attached to the vehicle or the chassis.**
- A commercial motor vehicle transporting an empty storage container tank, not designed for transportation, with a rated capacity of 1,000 gallons or more that is temporarily attached to a flatbed trailer **is not considered a tank vehicle.**





# Tank Vehicles





# Entry Level Driver Training





# Entry-Level Driver Training

- **Final Rule and Effective Date: March 21, 2017**
- **Mandatory Compliance Date: February 7, 2020**
- **Website:**  
<https://www.fmcsa.dot.gov/registration/commercial-drivers-license/eldt>
- **Applicability: Entry-level operators of CMVs who are required to possess a Class A or Class B commercial driver's license (CDL) or a hazardous materials (H), passenger (P), or school bus (S) endorsement for their license for the first time.**





# Entry-Level Driver Training

- **49 CFR Part 380 Subparts E – G**
  - **E: Entry Level Driver Training Requirements Before February 7, 2020.**
  - **F: Entry Level Driver Training Requirements On and After February 7, 2020.**
  - **G: Registry of Entry Level Driver Training Providers.**
  - **Appendix A – F: Specific Training Curriculum**





# Cargo Tank Resources

Cargo Tank Truck Rollover x

Secure | https://www.fmcsa.dot.gov/rolloverprevention

United States Department of Transportation

About DOT | Our Activities | Areas of Focus

**FMCSA**  
Federal Motor Carrier Safety Administration

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Home > Regulations > Hazardous Materials

Hazardous Materials

Cargo Tanks

Cargo Tank Safety

Cargo Tank Safety Advisory Notices

Cargo Tank Registration and Resources

**Rollover Prevention**

General HM Safety Advisory Notices

Safety Permit

## Cargo Tank Truck Rollover Prevention



*Related Links*

- Other Cargo Tank Safety Resources
- Hazardous Materials Reports
- Hazardous Materials Brochures

*Contact Us*

**Federal Motor Carrier Safety Administration** **Submit Feedback >**

Hazardous Materials Division

The Federal Motor Carrier Safety Administration (FMCSA) is associated with the

10:42 AM 11/1/2018





**Top 5 Violations:**  
**Cargo Tank Manufacturers**  
**Cargo Tank Test and Repair Facilities**  
**Hazmat Roadside Inspections**





## Top 5 Cargo Tank Manufacturer Violations

PART NO	SECTION	DESCRIPTION
172	704(a)	Training requirements: General awareness/familiarization, Function-specific, Safety and or Security awareness training; No HM employee training as required
172	704(d)	Recordkeeping: Insufficient training records or no training records
171	8	Design Certifying Engineer: Unqualified Design Certifying Engineers
171	8	Registered Inspector: Unqualified Registered Inspectors
178	345-8 (c)(1)	Accident damage protection: Failing to meet applicable specifications, such as the overturn protection not meeting the required strength





## Top 5 Cargo Tank Facility Violations

PART NO	SECTION	DESCRIPTION
172	704(d)	Failing To Keep Training Records For 90 Days After Termination.
172	704(c)(2)	Failing To Retrain Hazmat Employees Every Three Years.
180	407(h)	Failing To Perform Leakage Test As Prescribed.
180	407(d)	Failing To Perform An External Visual Inspection As Prescribed.
172	704(a)	Failing To Train HM Employees As Required.





## Top 5 HM Roadside Violations

<b>Violation Code</b>	<b>Violation Description</b>	<b># of Inspections</b>	<b># of Violations</b>	<b>% of Total Violations</b>
177.834(a)	Package not secure in vehicle	3705	3851	10.03%
107.620(b)	No Copy Of US Dot Hazardous Materials Registration Number	2739	2739	7.13%
177.817(e)	Shipping paper accessibility	2415	2429	6.33%
177.817(a)	No or improper shipping papers (carrier)	1968	2026	5.28%
172.516(c)(6)	Placard damaged, deteriorated, or obscured	1882	1979	5.15%





# **National Transportation Safety Board (NTSB) Recommendations**





# The Crash – Stroud Alabama





# The Recommendations to FMCSA

**Safety Recommendation H-18-001:** “Implement a compliance program for cargo tank facilities to enhance enforcement of the cargo tank requalification procedures specified by Title 49 *Code of Federal Regulations* Part 180, subpart E.”

**Safety Recommendation H-18-002:** “Work with the Pipeline and Hazardous Materials Safety Administration to incorporate by reference the registered inspector training requirements of the existing industry cargo tank inspection code into the Hazardous Materials Regulations.”





# Cargo Tank Research





## Research: Rollover Prevention Human Factors

- Focus is on best practices for prevention – not “why did the crash occur”
- Phase I wrapped up in September
- Phase II to follow: Best practices document to be produced





## Research: Triple Issues Study

- The issues:
  - Roadside Identification of Cargo Tank Facilities
  - Cargo Tank VIN's for Tracking
  - Adequacy of Mobile Testing Facilities





## Research: CTAG Members

- American Trucking Associations
- Burch Tank
- ConleyComm
- Essential Factor
- Exosent Engineering
- Federal Motor Carrier Safety Administration HM Program Managers
- Great West Casualty Company
- National Tank Truck Carriers
- National Tank Services
- Pipeline and Hazardous Materials Safety Administration
- Truck Trailer Manufacturers Association
- Transport Canada, Transportation of Dangerous Goods (TDG)
- Treadway
- Trimac Transportation
- Wabash National





# Triple Issues Study - Recommendations

- Develop a systematic data collection system for cargo tank facilities
- Improve data collection on life cycles of cargo tanks (TankFax)
- Create risk prioritization model for cargo tank facilities
- Better identify and limit mobile facilities functions
- Improve internal FMCSA chain-of-command for HM Enforcement
- Improve training for enforcement personnel
- Develop and conduct a pilot program for TankFax





## Thanks, and What'd he say?

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