



# National Tank Truck Carriers Safety and Security Council

June 22, 2017

Nashville, TN

Cargo Tank Issues





# Topics

- **Regulated Industry and FMCSA Mission**
- **Investigations and Safety Alerts**
- **Top 20 Cargo Tank Facility Violations**
- **Top 25 Cargo Tank Manufacturing Violations**
- **Research**
- **FMCSA Future Plans**





# Regulated Industry and FMCSA Mission





# 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.

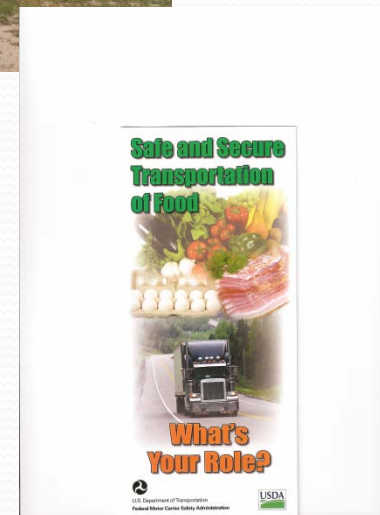
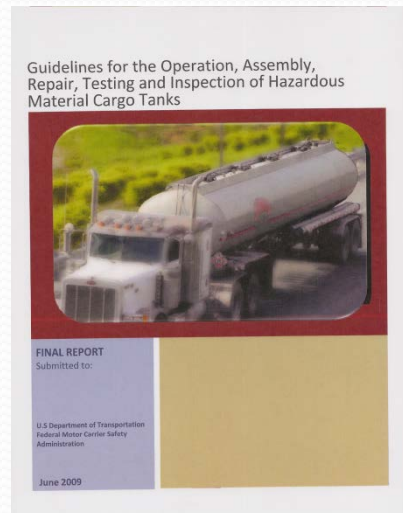






# HM Enforcement Activities

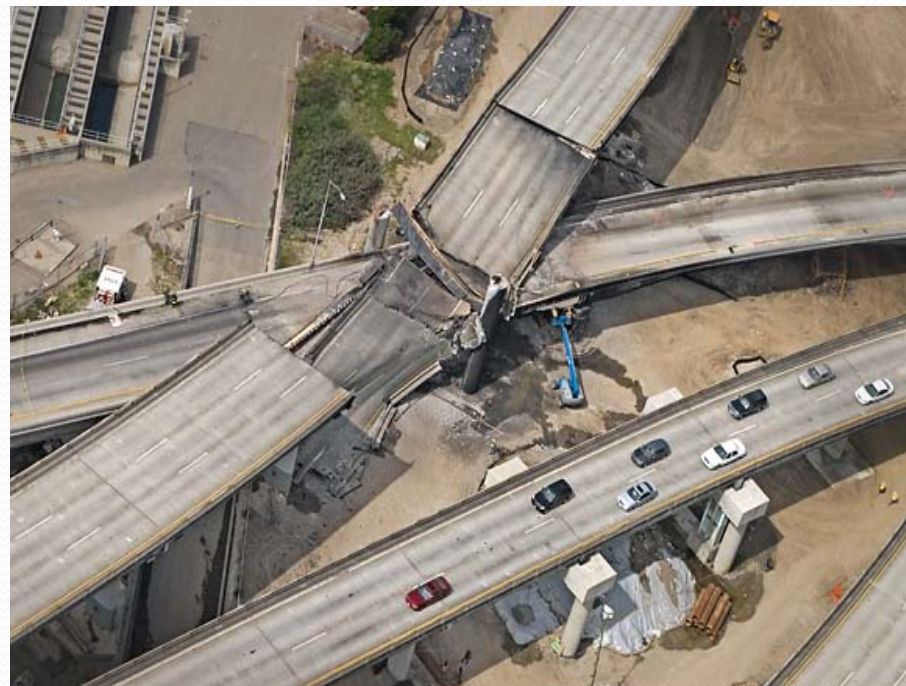
- HM Safety Permit
- HM Special Permit
- CDC Carrier Vetting
- HM Route Registry
- Carrier Investigations
- Cargo Tank Manufacturing and Testing Facilities Oversight
- Roadside Inspections
- Cargo Tank Rollover Prevention
- Outreach and Training
- Public Inquiries / Interpretations





# Hazardous Materials Enforcement

- FMCSA HQ staff
- FMCSA HazMat Program Managers
- FMCSA HazMat Specialists
- State Motor Carrier Safety Assistance Program Inspectors



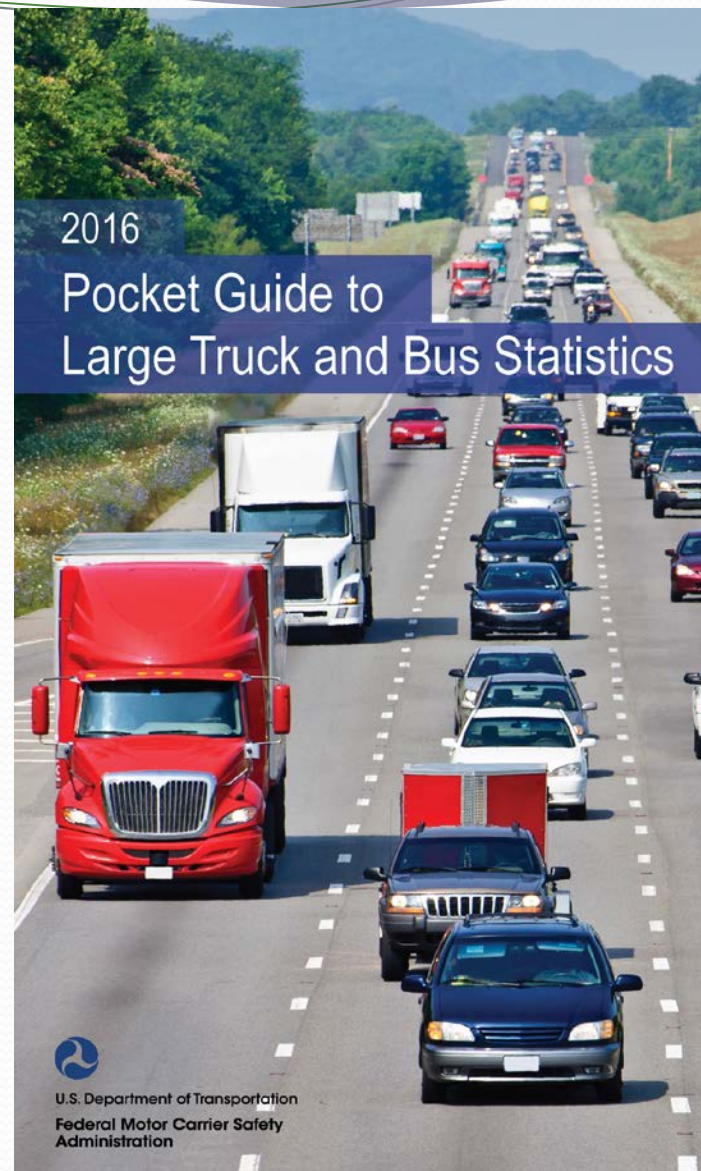
Special to the Chronicle / Robert Campbell





# HM Entities

- All Carriers: >550,000
- Intrastate HM Carriers: 16,628
- Interstate HM Carriers: 68,113
- HMSP Carriers: 1,394
- CT / Bulk Carriers: 21,300
- CT Facilities: 3,200







# Investigations and Safety Alerts





- **Notice to Canadian Cargo Tank Facilities:** FMCSA issued this safety advisory as a reminder of the registration requirements for Canadian cargo tank facilities and persons engaged in the manufacture, assembly, certification, inspection or repair of a USDOT specification cargo tank or cargo tank motor vehicle used for the transportation of hazardous materials (HM) in the United States.
  - [https://cms.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Registration%20of%20Canadian%20Cargo%20Tank%20Facilities\\_March\\_2017.pdf](https://cms.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Registration%20of%20Canadian%20Cargo%20Tank%20Facilities_March_2017.pdf)
- **EPA Method 27 Test:** FMCSA issued this safety advisory to provide notice to owners, operators and Registered Inspectors of Cargo Tank Motor Vehicles (CTMVs) concerning the limitations on the EPA Method 27 Test when used in lieu of the Leakage Test on DOT Specification CTMVs. The EPA Method 27 Test may be used only on CTMVs with vapor recovery equipment and in dedicated petroleum distillate service.
  - [https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Use%20of%20EPA%20Method%2027%20Test\\_Final\\_11302016.pdf](https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/Use%20of%20EPA%20Method%2027%20Test_Final_11302016.pdf)



- **Recall of Certain Keith Huber Incorporated Cargo Tanks:**  
FMCSA issued this safety advisory to provide notice to owners and operators of DOT407 and DOT412 specification cargo tank motor vehicles (CTMVs) manufactured by Keith Huber Incorporated. These CTMVs do not comply with the Federal Hazardous Materials Regulations (HMR) and do **NOT** meet DOT specification requirements in Title 49 of the Code of Federal Regulations. This safety advisory is for CTMVs manufactured by Keith Huber Incorporated **prior to May 1, 2013.**
  - [https://cms.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/KHI%20Safety%20Advisory\\_Final.pdf](https://cms.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/KHI%20Safety%20Advisory_Final.pdf)





- **E-Cigarettes:** notice and information to owners and operators of CMVs concerning incidents that have occurred relating to the possession and use of battery-powered portable electronic smoking devices
  - <https://www.fmcsa.dot.gov/regulations/hazardous-materials/possession-or-use-battery-powered-portable-electronic-smoking>
- **Fatalities Associated with Hot Work on Tankers:** Recognizing and understanding the job/hazards and the following of safe work practices can prevent potential fires, explosions, and health hazards,
  - <https://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/HotWork%20Hazard%20Alert%20Final%209-28-16.pdf>





- **Fisher PRD Safety Recall:** pressure relief devices (PRD) that were not manufactured or intended for use on cargo tank motor vehicles. PRDs are an integral part of the safety mechanisms for U.S. Department of Transportation (DOT) specification cargo tank motor vehicles and are vital to ensuring the safety of hazardous materials transportation by highway.
  - <https://cms.fmcsa.dot.gov/safety/fisher-prd-recall-safety-notice>
- **Immediate Testing and Repair of Certain TYTAL Cargo Tanks:** provides notice to owners and operators of TYTAL cargo tank motor vehicles (CTMVs) with a capacity of 8,400, 8,717 and 10,500 gallons and primarily used for the transportation of Petroleum Crude Oil, UN1267. These CTMVs are not in compliance with the Federal Hazardous Materials Regulations (HMRs) and do NOT meet the DOT 407.
  - <https://cms.fmcsa.dot.gov/regulations/hazardous-materials/immediate-repair-and-retesting-tytal-cargo-tanks>







- **Immediate Re-inspection and Retesting of Certain Cargo Tank Motor Vehicles Required:** to provide notice to owners and operators of certain cargo tanks that they have been improperly inspected and tested, and must be re-inspected and retested before being used in Hazardous Materials specification tank service. The tanks in question were tested by H&W Tank Testing, CT#8083, Ohatchee, Alabama, and Christopher Humphries, CT#13131, Jacksonville, Alabama. Cargo tanks that have been inspected and/or tested by either company from April 2011 through March 2016, must be re-inspected and/or retested in accordance with 49 CFR § 180.407 immediately by a cargo tank facility registered with FMCSA.
  - <https://cms.fmcsa.dot.gov/safety/immediate-re-inspection-and-retesting-certain-cargo-tank-motor-vehicles-required>





# Top 20 Cargo Tank Violations



- 180 417(b) Failing To Include All Required Information On Test/Inspection Report.
- 180 407(g) Failing To Perform A Pressure Retest As Prescribed.
- 172 704(c)(2) Failing To Retrain Hazmat Employees Every Three Years.
- 172 704(d) Training requirements - Failing to keep training records for 90 days after termination
- 180 409 Failing To Meet The Minimum Qualifications For Inspectors Of Cargo Tanks.
- 107 504(d)(1) Failing To Notify Within 30 Days Of Changes To Reg. Information.
- 172 704(a)(2) Failing To Train HM Employee In Function Specific Training.
- 180 407(d) Requirements for test and inspection of specification cargo tanks - Failing to perform an external visual inspection as prescribed
- 107 504(e) Failing To Maintain Current Copy Of Registration Info.
- 172 704(a) Training requirements - Failing To Train HM Employees As Required.





- 107 503(a) Failing To Include All Required Info In Registration Statement.
- 171 2(g) Cargo tank does not comply with HM Regulations.
- 180 407(h) Requirements for test and inspection of specification cargo tanks - Failing to perform leakage test as prescribed
- 107 502(b) General registration requirements - Manufacturing/assembling/etc. spec tank without registering.
- 180 407 (e) Failing To Perform Internal Visual Inspection
- 180 407(h)(5) Failing To Record Results Of Leakage Test
- 178 345(3)(f)(3) Except as prescribed in paragraphs (f)(1) and (f)(2) of this section, the welding of any appurtenance to the cargo tank wall must be made by attachment of a mounting pad.
- 180 407(g)(7) Requirements for test and inspection of specification cargo tanks - Failing to record results of pressure test
- 180 413(a) Any repair, modification, stretching, rebarrelling, or mounting of a cargo tank must be performed in conformance with the requirements of this section.
- 180 415 Failing To Mark Test Date On Cargo Tank







**Top 25 Cargo Tank  
Manufacturing Facility  
Violations**



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

178.345-8 (b) (1) Accident damage protection: Rear-end protection not rated at 155,000 lbs. when the piping is located in the lower 1/3 circumference of the tank

178.345-8 (c) Accident damage protection: Items extending outside of the overturn protection

178.345-8 (d)(2)(ii) Accident damage protection: Tanks with split rear end protection not having the required sacrificial device outboard of a shut-off valve



178.345-8 (a)(3) Accident damage protection: Improper methods of attachment of the accident damage protection devices

178.345-8 (d)(1) Accident damage protection: The rear-end cargo tank protection device was not designed to deflect at least 6 inches horizontally

178.345-3(f)(3), § 178.337-3(f)(3), and § 178.3338-3(f)(3), Not using mounting pads when welding appurtenances to the wall of the cargo tank and or pnot extending at least 2 inches in each direction from any point of the appurtenance or attachment

178.337-3(a)(1), 178.345-3(a)(1) and 178.338-3(a)(1): Structural integrity, general requirements and acceptance criteria: Not manufacturing to a design margin of 4:1 as required. The maximum calculated design stress at any point in the cargo tank wall may not exceed the maximum allowable stress value prescribed in Section VIII of the ASME Code (IBR, see §171.7 of this subchapter), or 25 percent of the tensile strength of the material used at design conditions.





178.345-15 (b)(1) and (c)(1) Certification: Not designed or signed by a Design Certifying Engineer (DCE)

178.345-1 General requirements: Not constructed and certified in conformance with the ASME Code:

178.345-4 Joints: Welds not in conformance with Section VIII of the ASME Code:  
Insufficient weld material, Welding on contaminated (dirt, rust, etc.) material

178.345-10 Pressure Relief and Venting: Insufficient venting per surface area

178.337-9(b)(6) Piping, Valves, Hose, and Fittings: Cargo tank manufacturers and fabricators failed to demonstrate that all piping, valves, and fittings on a cargo tank are free from leaks.

178.345-5 Manhole Assemblies: Not meeting labeling and or certification requirements.

178.346-5 Pressure and leakage tests: Incorrectly performing hydrostatic or pneumatic test







178.337-4(b), § 178.338-4 Joints: Welding procedure and or welder performance not in accordance with Section IX of the ASME Code

178.338-16 Inspection and testing: The welder and or the welding procedure are not qualified or followed in accordance with Section IX of ASME

178.320(b) General requirements applicable to all DOT specification cargo tank motor vehicles

178.345-14 Marking: (b) name plate and (c) specification plate – incorrect or missing required information

178.345-7(c) Circumferential reinforcements: Not in conformance when using baffles or baffle attachments as part of reinforcement

178.345-7 (d) Circumferential reinforcements: ring stiffener used as a circumferential reinforcement member not continuous around the circumference of the cargo tank shell





# Cargo Tank Research



# Human Factors in CT Rollover

## Prevention:

- Inter-agency agreement with PHMSA
- Conducted by Volpe Center
- Follow-up to PHMSA's current research
- Focus will be on best practices for prevention – not “why did the crash occur”
- Began in April 2017
- Will be looking for industry participation





# Triple Issues Study:

- The issues:
  - Roadside Identification of Cargo Tank Facilities
  - Cargo Tank VIN's for Tracking
  - Adequacy of Mobile Testing Facilities
- Kick-off meeting occurred on October 17
- Oversight panel composed of industry representatives
- Looking for additional industry participation





# Questions/Discussion

**Thanks for your attention. I will take questions at this time.**

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