National Transportation Safety Board
Safety Forum on Transportation of Crude Oil and Ethanol

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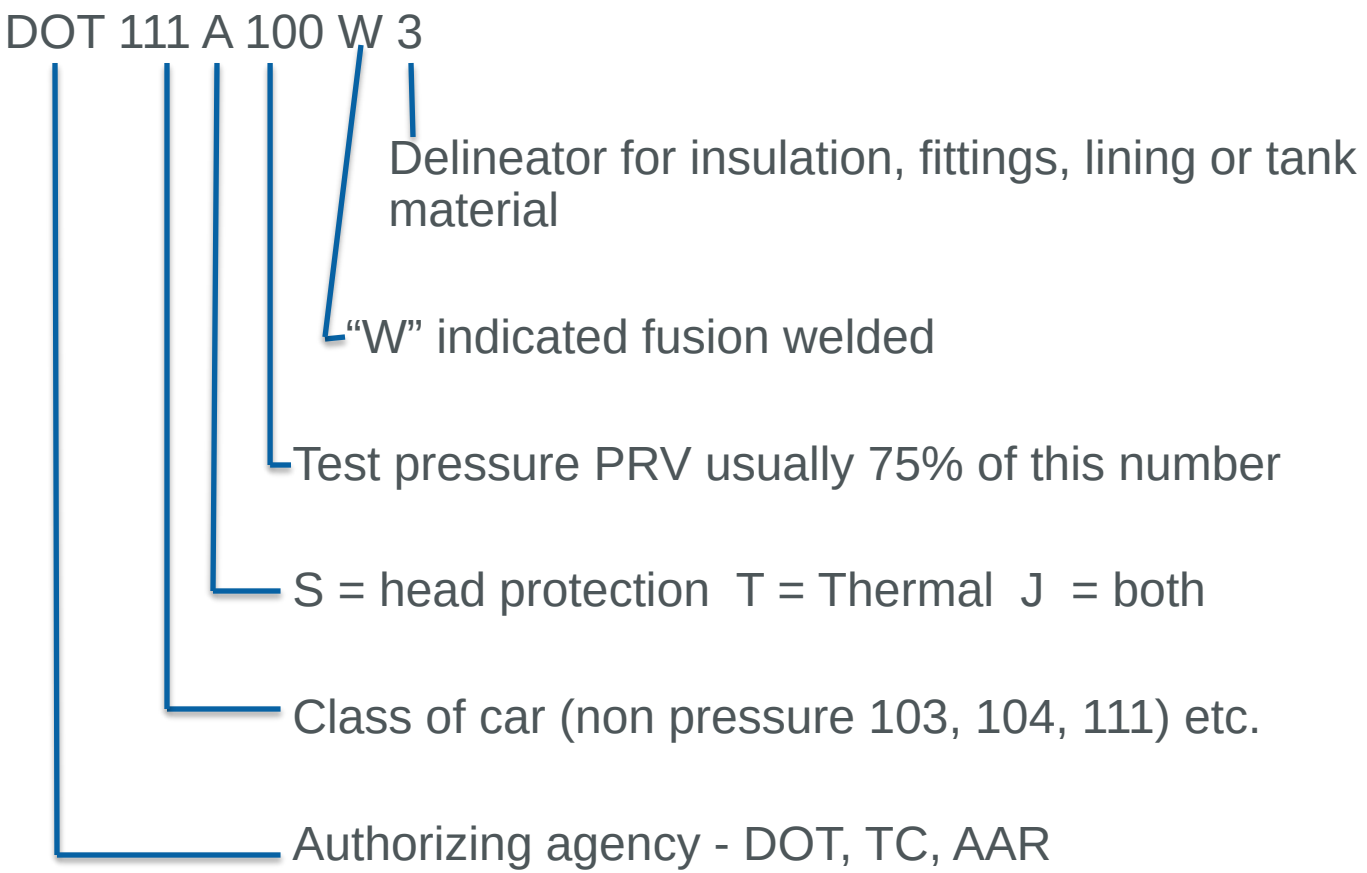
Outline

1. History of Tank Car Standards
2. What Role does AAR Play visa-vi PHMSA – FRA
3. Role of the Tank Car Committee
4. Tank Car Characteristics
5. Fleet Statistics
6. Life of a Tank Car
7. Population Change over Time
8. AAR Position on Crude Oil and Ethanol TC's
9. Retrofits

History

- Recommended Practices for Tank Cars first appeared in 1903 – Master Car Builder's Association – Tank Car Committee formed
- 1910 RP's adopted as standards
- July 1, 1925 – Interstate Commerce Commission issued specifications
- 1927 ICC required design approval by TCC
- April 1,1967 became DOT regulations

Classification System for Tank Cars



AAR's Role in Tank Car Standards

- DOT/TC regulations dictate
- AAR standards exceed DOT/TC regulations
- AAR has delegated authority to:
  - approve applications for construction, alteration, repair or conversion of tank cars
  - certify and register facilities engaged in; fabrication, alteration, conversion, repair and qualification of tank cars; manufacture, reconditioning, repair or test of service equipment; removal and replacement of service equipment and gaskets; installation, qualification and repair of interior linings and coatings for materials corrosive to the tank

Role of the Tank Car Committee

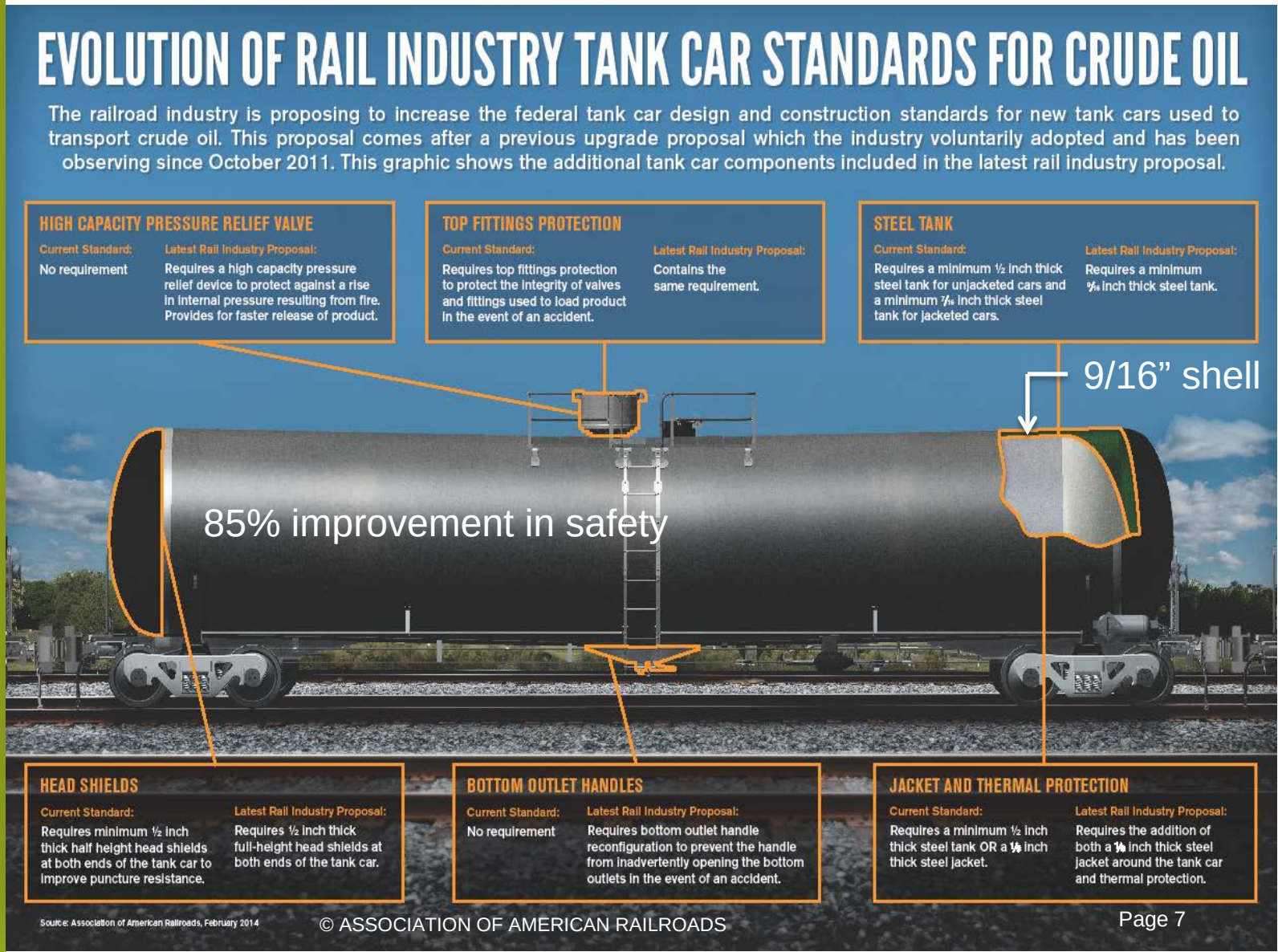
- Considers and approves (subject to conformance with DOT and Transport Canada regulations) all proposed revisions to the AAR Specifications for Tank Cars (M-1002)
- Monitors tank car performance trends through close coordination with shipper/car owner interests, and initiates responsive actions such as Circular Letters, Maintenance Advisories, and Early Warnings letters to address potential problems, as necessary

North American Tank Car Fleet

	Crude Oil	Ethanol	Other FL's	Total
Total number of tank cars in North America				334,869
Total number of DOT-111's				228,036
Non Jacketed DOT-111's	22,821	29,202	26,595	66,526
Jacketed DOT-111's	5,545	102	9,358	13,927
Non Jacketed CPC-1232's	9,402	481	2,373	11,703
Jacketed CPC-1232's	4,843	0	1,487	5,588
Total	42,611	29,785	39,813	97,744

1. Including cars making at least one loaded shipment in 2012-2013
2. Some cars transported more than one type of commodity in the study period so column totals are not additive

Important Characteristics of Tank Cars



AAR Position on Crude Oil and Ethanol

- Crude oil: 9/16” shell, jacket thermal protection, top fittings protection, bottom outlet handle protection with appropriately sized pressure relief device
- Ethanol: Minimum 7/16” shell, jacket, thermal protection, top fittings protection and bottom outlet handle protection with appropriately sized pressure relief device

Other Issues

- Service life of a tank car – 50 years max – 30 to 40 economic life
- Expected future demand – crude oil growth will continue to increase the size of the tank car fleet
- Retrofits – AAR would like to see an aggressive retrofit/phase out program which factors in current shop capacity

Thank You

Questions?

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