New Regulations for Tank Car Construction
Where Are We Today

- **Canada – Emergency Directive**
  - Ban unmodified pre CPC-1232 tank cars from rails by May 1, 2017
  - Remove all AAR tank cars from service by May 24, 2014

- **USA**
  - April 18, 2014 - PHMSA/DOT has submitted proposal to Office of Management & Budget (OMB). There is something in writing!
  - July 31, 2014 - OMB Review and back to PHMSA
  - September 1, 2014 - PHMSA Notice of Proposed Rulemaking Issued – 60 Day Comment Period?
  - PHMSA review of comments – 60 to 90 days (est.)
  - Final Rule most likely 1Q15
# New Tank Car Proposal

## All Other

<table>
<thead>
<tr>
<th>Feature</th>
<th>Pre CPC 1232</th>
<th>CPC 1232</th>
<th>CPC 1232</th>
<th>AAR/Railroads</th>
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<tr>
<td></td>
<td>7/16”</td>
<td>1/2”</td>
<td>7/16”</td>
<td>9/16”</td>
<td>9/16”</td>
</tr>
<tr>
<td>Head Shields</td>
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<td>Half Height</td>
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<td>Yes</td>
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<tr>
<td>Jacket &amp; Thermal Protection</td>
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<td>None</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BOV Handle</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<td>Kelso Klincher®</td>
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## Legacy Tank Car Retrofit Proposal

**Rail Supply Institute (RSI)**

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<tr>
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# New Tank Car Construction Proposals - Rail Supply Institute (RSI)

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<th>New Cars</th>
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<th>Cars on Order</th>
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EVOLUTION OF RAIL INDUSTRY TANK CAR STANDARDS FOR CRUDE OIL

The railroad industry is proposing to increase the federal tank car design and construction standards for new tank cars used to transport crude oil. This proposal comes after a previous upgrade proposal which the industry voluntarily adopted and has been observing since October 2011. This graphic shows the additional tank car components included in the latest rail industry proposal.

**HIGH CAPACITY PRESSURE RELIEF VALVE**
- Current Standard: No requirement
- Latest Rail Industry Proposal: Requires a high capacity pressure relief device to protect against a rise in internal pressure resulting from fire. Provides for faster release of product.

**TOP FITTINGS PROTECTION**
- Current Standard: Requires top fittings protection to protect the integrity of valves and fittings used to load product in the event of an accident.
- Latest Rail Industry Proposal: Contains the same requirement.

**STEEL TANK**
- Current Standard: Requires a minimum ¼ inch thick steel tank for unjacketed cars and a minimum ⅛ inch thick steel tank for jacketed cars.
- Latest Rail Industry Proposal: Requires a minimum ⅛ inch thick steel tank.

**HEAD SHIELDS**
- Current Standard: Requires minimum ½ inch thick half height head shields at both ends of the tank car to improve puncture resistance.
- Latest Rail Industry Proposal: Requires ⅛ inch thick full-height head shields at both ends of the tank car.

**BOTTOM OUTLET HANDLES**
- Current Standard: No requirement
- Latest Rail Industry Proposal: Requires bottom outlet handle reconfiguration to prevent the handle from inadvertently opening the bottom outlets in the event of an accident.

**JACKET AND THERMAL PROTECTION**
- Current Standard: Requires the addition of both ⅛ inch thick steel jacket around the tank car and thermal protection.
- Latest Rail Industry Proposal: Requires the addition of both ⅛ inch thick steel jacket around the tank car.
**BNSF Tank Car**

1. **Reinforced hull**
   Thicker steel plates make them more puncture-resistant.

2. **Breakaway handles**
   Valve handles on the bottom of the car snap off in a crash, keeping them from opening.

3. **Protective cap**
   Reinforced fittings prevent oil from spilling in a rollover.

4. **Pressure relief valve**
   Gas can escape, rather than build up, if the car heats up in a fire.

5. **Protective shields**
   Steel plates stop the car from crumpling in a collision.

*Illustration by Chris Philpot; Graphic by Bloomberg Businessweek*
Another Consideration
Flash Point of Crude Oil

- Up until 1989, flash point testing was required to determine the need to ship commodity in pressure tank car
- Requirement dropped in 1989, no one remembers why this was dropped
- Being considered for classifying crude oil and need to use pressure car design – DOT 112 with Bottom Outlet Valve?
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Illustration by Chris Philpot; Graphic by Bloomberg Businessweek
Kelso State-of-the-Art Products

**KELSO DUAL RANGE PRESSURE RELIEF VALVE**

**KELSO KLINCHER® MANWAY SECUREMENT SYSTEM**