PHMSA's Decision Making Process

2013

ADVANCE NOTICE OF PROPOSED RULEMAKING (ANPRM)
Issued: Sept. 2013
Comment Period: Closed Dec. 2013

2014

NOTICE OF PROPOSED RULEMAKING (NPRM)
Issued: July 2014
Comment Period: Closed Sept. 2014
(Over 180,000 individual comments)

2015

FINAL RULE
Published: May 8, 2015
(Effective July 7, 2015)
Administrative Appeal, Litigation or Legislation Ongoing
(Six administrative appeals, five individual court petitions will be consolidated into one case and seven separate bills in Congress)

Source: GBX Internal
GREENBRIER HELPED SHAPE DOT/TC RULEMAKING

Leveraged Elite Earned & Paid Media

Hosted Events with Key Influencers

Influenced State and National Politicians

Commissioned Study on Retrofit Capacity

Source: GBX Internal
LEVERAGED EARNED MEDIA

FEBRUARY 20, 2015
“The West Virginia explosion should be a reminder that the Obama administration, the railroad industry and the oil producers all need to find answers, as quickly as possible, to an increasingly serious problem.”

The New York Times

FEBRUARY 19, 2015
“Accidents have become too frequent and are potentially too catastrophic. It’s unfortunate that the safety of rail freight wasn’t improved earlier, but now that the business is booming, the country needs to catch up.”

The Washington Post

MAY 24, 2014
“On behalf of the public and the environment, government regulators must insist that top-notch transport and equipment be used in the process. They are not close to achieving that goal, and consequences could be disastrous.”

Poughkeepsie Journal

JANUARY 31, 2015
“The DOT apparently is weighing the need for safer cars against a more comprehensive approach that includes train speeds, rail maintenance, etc. While those things are important, the one specific thing that will make our communities safer are substantially better designed and built tank cars.”

The Modesto Bee
modbee.com
THE U.S. GOVERNMENT REQUIRES RAILROADS TO HAUL HAZARDOUS MATERIALS IN TANK CARS. ITS OWN SAFETY EXPERTS SAY THEY ARE UNSAFE. THAT’S WRONG – WE NEED SAFER TANK CARS NOW.

THE U.S. GOVERNMENT NEEDS TO:

• Immediately set new and safer design standards for tank cars hauling hazardous materials
• Require retrofits to existing cars for any sustained time in service, using sequencing. Cars in service can be made better through important safety enhancements
• Keep it simple – forget about electronic braking for now
• Rapid phase-out, retrofit or retirement of cars which do not meet these standards

Support U.S. Department of Transportation Rulemaking

WE NEED SAFER TANK CARS NOW

For more than 20 years, the U.S. National Transportation Safety Board (NTSB) has warned of the “high incidence of failure” of using cars designed decades ago to carry crude oil and ethanol. Railroads are the safest way to haul large volumes of any freight, including hazardous materials. But to do this, railroads need the right railcar. Unfortunately, tank cars being used today were designed in the 1960s. They do not measure up to today’s traffic volumes or operating realities. Railroads have no choice: they own few tank cars. These cars ride the rails because U.S. law requires railroads to accept them. The result: large volumes of flammable materials are moving in tank cars that are not as safe as they should be. Railroads and shippers have tried to improve tank car safety. In 2011, the industry put in service an improved CPC-1232 car. The jacketed version of that car absorbs stress and forces better than its unjacketed “slick” version, yet nobody seems to understand the difference but engineers. Greenbrier’s Tank Car of the Future is six to eight times safer than legacy DOT-111 cars and substantially safer than any CPC-1232 car, especially the unjacketed CPC-1232 designs. After more than 20 years, it’s time for the U.S. and Canadian Governments to heed the NTSB’s warnings and require safer tank cars.

ABOUT GREENBRIER

Greenbrier (NYSE-GBX) engineers and builds new railroad freight cars at six manufacturing facilities in North America, Europe and Brazil. Greenbrier also sells railcar parts, reconditioned railcar wheels and provides wheel services at 14 locations throughout the U.S. Greenbrier has a 50/50 partnership with Watco Companies, LLC in GBW Railcar Services, LLC which repairs and refurbishes freight cars at 39 locations across North America, including 14 tank car repair and maintenance facilities certified by the Association of American Railroads. Greenbrier owns railcars, leases railcars, and performs management services for approximately 240,000 railcars in North America.
HOSTED EVENTS WITH KEY INFLUENCERS

APRIL 15-16, 2015

Houston, TX

Greenbrier hosted a tour of GBW's Hockley facility and Watco's Greens Port facility with a delegation from the NTSB, including Chairman Christopher Hart. National and local media, in addition to trade publications, attended to cover the event. Media coverage of Hart's visit showcased Greenbrier's Tank Car of the Future and GBW's ability to retrofit tank cars in a timely and cost effective manner.
INFLUENCED STATE AND NATIONAL POLITICIANS

FEBRUARY 3, 2015
Greg Saxton, Sr., Vice President and Chief Engineer at the Greenbrier Companies addresses Congress

MARCH 12, 2015
Roundtable with Acting PHMSA Administrator Tim Butters and Rep. Peter DeFazio (D-OR) — Ranking Member, House T&I Committee

APRIL 29, 2015
Op-ed by Former NTSB Chairman, Jim Hall appears on thehill.com
## Greenbrier’s Spring Offensive Produces Results

<table>
<thead>
<tr>
<th>Tank Car Type / Service</th>
<th>Retrofit timeline in the original final rule submitted to OMB/OIRA&lt;sup&gt;1&lt;/sup&gt; in February 2015</th>
<th>Retrofit timeline in the final rule published in the Federal Register on May 8, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacketed DOT-111 tank cars in PG I service</td>
<td>November 30, 2020</td>
<td>March 1, 2018</td>
</tr>
<tr>
<td>Non Jacketed CPC-1232 tank cars in PG I service</td>
<td>June 30, 2023</td>
<td>April 1, 2020</td>
</tr>
</tbody>
</table>

<sup>1</sup> Assumes an April 1, 2015 publication date. Actual dates will vary depending on publication date.
GREENBRIER VISITS WITH DEPARTMENT OF TRANSPORTATION OFFICIALS

APRIL 14, 2014
Meeting with Secretary Foxx

MAY 21, 2015
Visit with Federal Railroad Administrator
• Aggressive retrofit timelines for crude and ethanol are achievable. Using the assumptions in the RSI analysis, the retrofit process for unjacketed cars can be completed in the first 6 years, and the entire fleet in 6.7 years according to Cambridge Systematics, Inc.

• Per Greenbrier’s recommendation, final rule prioritizes unjacketed cars, starting with DOT-111s, followed by CPC-1232s to remove risk as quickly as possible from tank cars in high mileage flammable liquids service

• The combination of new build, retrofit capacity, and standard retirement rates do not support claims of impending shortfalls
All new HHFT cars built after October 1, 2015 are required to meet **DOT-117 specification** (below), while older cars are required to meet **DOT-117R (Retrofit) specification** (same as DOT-117 except but 7/16" tank shell permitted) on a prescribed 2-10 year schedule.

- **GBX and GBW Railcar Services support this option**
  - 1. 9/16 inch steel tank shell
  - 2. Minimum 11-gauge steel jacket
  - 3. Ceramic Insulation
  - 4. Top Fittings Protection
  - 5. High-Flow Pressure Relief Valve
  - 6. Full height ½-inch-thick head shields on both ends
  - 7. Detachable bottom outlet valve handle

**Est. New Car Cost:** $160-$180k per car  
**Est. Retrofit Cost:** $60-$80k per car
OTHER RULE DETAILS

Speeds, Commodity Classification and Rail Operations

- **SPEEDS**
  - 50 MPH and 40 MPH in Certain Urban Areas

- **OPERATIONS**
  - Track Integrity, Securement, Engineer and Conductor Certification, Crew Size

- **CLASSIFICATION**
  - Unrefined Petroleum-Based Products
  - Sampling and Documentation

- **ROUTING**
  - Rail Routing Risk Assessment

- **NOTIFICATION**
  - Rail Routing Information Access

Source: DOT PHMSA
## KEY TANK CAR DIFFERENCES

<table>
<thead>
<tr>
<th>TANK TYPE</th>
<th>PRE-PETITION</th>
<th>PETITION</th>
<th>FINAL RULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>DOT-111</td>
<td>CPC-1232</td>
<td>DOT-117</td>
</tr>
<tr>
<td>Effective Date (new cars)</td>
<td>Nov-71</td>
<td>Oct-11</td>
<td>May-15</td>
</tr>
<tr>
<td>Max Gross Rail Load</td>
<td>263,000</td>
<td>286,000</td>
<td>286,000</td>
</tr>
<tr>
<td>Normalized Steel Heads &amp; Shells</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Half-Inch Head Shields</td>
<td>No</td>
<td>Half or Full Height</td>
<td>Full Height</td>
</tr>
<tr>
<td>Head &amp; Shell Thickness</td>
<td>7/16 inch</td>
<td>7/16 to 1/2 inch*</td>
<td>9/16 inch*</td>
</tr>
<tr>
<td>Top Fittings Protection</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Half-Inch Ceramic Insulation</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Steel Jackets</td>
<td>Some</td>
<td>Some</td>
<td>Yes</td>
</tr>
<tr>
<td>High Flow Pressure Relief Valve</td>
<td>No</td>
<td>Some</td>
<td>Yes</td>
</tr>
<tr>
<td>Improved BOV Handle</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>ECP Brakes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Depends on jacketing

*7/16 inch for retrofitted — DOT-117R

Pre-petition cars reflect the current government tank car standards (initially adopted in 1971).

Petition cars refer to the P-1577 standards that were adopted by AAR circular CPC-1232 for all cars ordered after October 1, 2011 (also known as “Good Faith” cars).

Post-petition cars reflect the new government standards released in May of 2015.

Source: GBX Internal
## N.A. Flammable Liquids Fleet

*(Estimated as of end of 2015)*

<table>
<thead>
<tr>
<th></th>
<th>Crude (Estimated as of end of 2015)</th>
<th>Ethanol (Estimated as of end of 2015)</th>
<th>Other Flammable (Estimated as of end of 2015)</th>
<th>Total (Estimated as of end of 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT-111 Non-Jacketed</strong></td>
<td>23,000</td>
<td>27,000</td>
<td>25,000</td>
<td>75,000</td>
</tr>
<tr>
<td><strong>DOT-111 Jacketed</strong></td>
<td>7,000</td>
<td>0</td>
<td>9,500</td>
<td>16,500</td>
</tr>
<tr>
<td><strong>DOT-111 Total</strong></td>
<td>30,000</td>
<td>27,000</td>
<td>34,000</td>
<td>91,500</td>
</tr>
<tr>
<td><strong>CPC-1232 Non-Jacketed</strong></td>
<td>22,000</td>
<td>1,000</td>
<td>3,000</td>
<td>25,500</td>
</tr>
<tr>
<td><strong>CPC-1232 Jacketed</strong></td>
<td>35,000</td>
<td>0</td>
<td>2,000</td>
<td>37,500</td>
</tr>
<tr>
<td><strong>CPC-1232 Total</strong></td>
<td>57,500</td>
<td>1,000</td>
<td>5,000</td>
<td>63,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>87,500</td>
<td>28,000</td>
<td>39,000</td>
<td>154,500</td>
</tr>
</tbody>
</table>

*Source: Brattle Group 2014*
ESTIMATED RETROFIT / PHASE-OUT TIMELINE

GBX ANNUAL MFG. CAPACITY: 7,000–8,000 tank cars
GBW ANNUAL RETROFIT CAPACITY: 2,000–3,000 tank cars

SERVICE IMPACTED CARS
- Crude: 87,500
- Ethanol: 28,000
- Other Flammable: 39,000
- Total: 154,500

CAR TYPE:
- Jacketed
- CPC-1232
- DOT-111

FLAMMABLE MATERIAL:
- Crude
- Ethanol
- Other Flammable

*Fleet counts per Brattle Group end of 2015 estimates. Assumes all cars part of HHFT.

Source: Brattle Group 2014, DOT PHMSA