# *Emerging Issues in Rail Transportation*

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**Canadian Transport Lawyers Association**
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# OVERVIEW

I. Background on HAZMAT Rail Traffic

II. Pre/Post Lac-Mégantic Regulatory Developments

III. Stakeholder Responses: Risks/Liabilities

# I. Background on HAZMAT Rail Traffic

Class I railroads originate approximately 30 million carloads annually:

Intermodal:
12.3 million trailers and containers

Food products:
1.6 million carloads

Lumber, paper & other forest products:
1.0 million carloads

Farm products:
1.6 million carloads

Plastics, fertilizers and other chemicals:
2.2 million carloads

Sand, stone & gravel:
1.3 million carloads

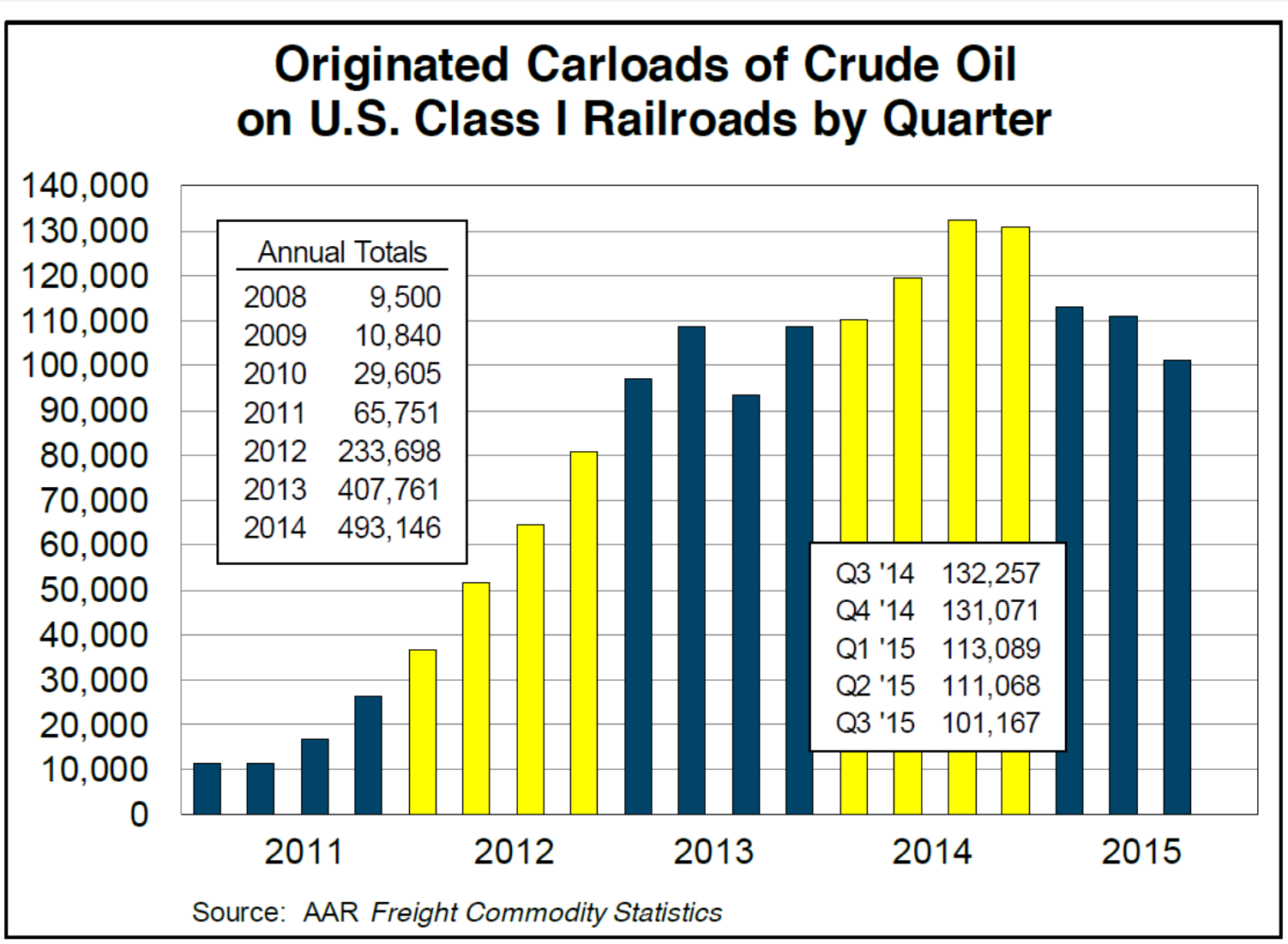
Transportation equipment:
1.4 million carloads

Coal:
6.3 million carloads

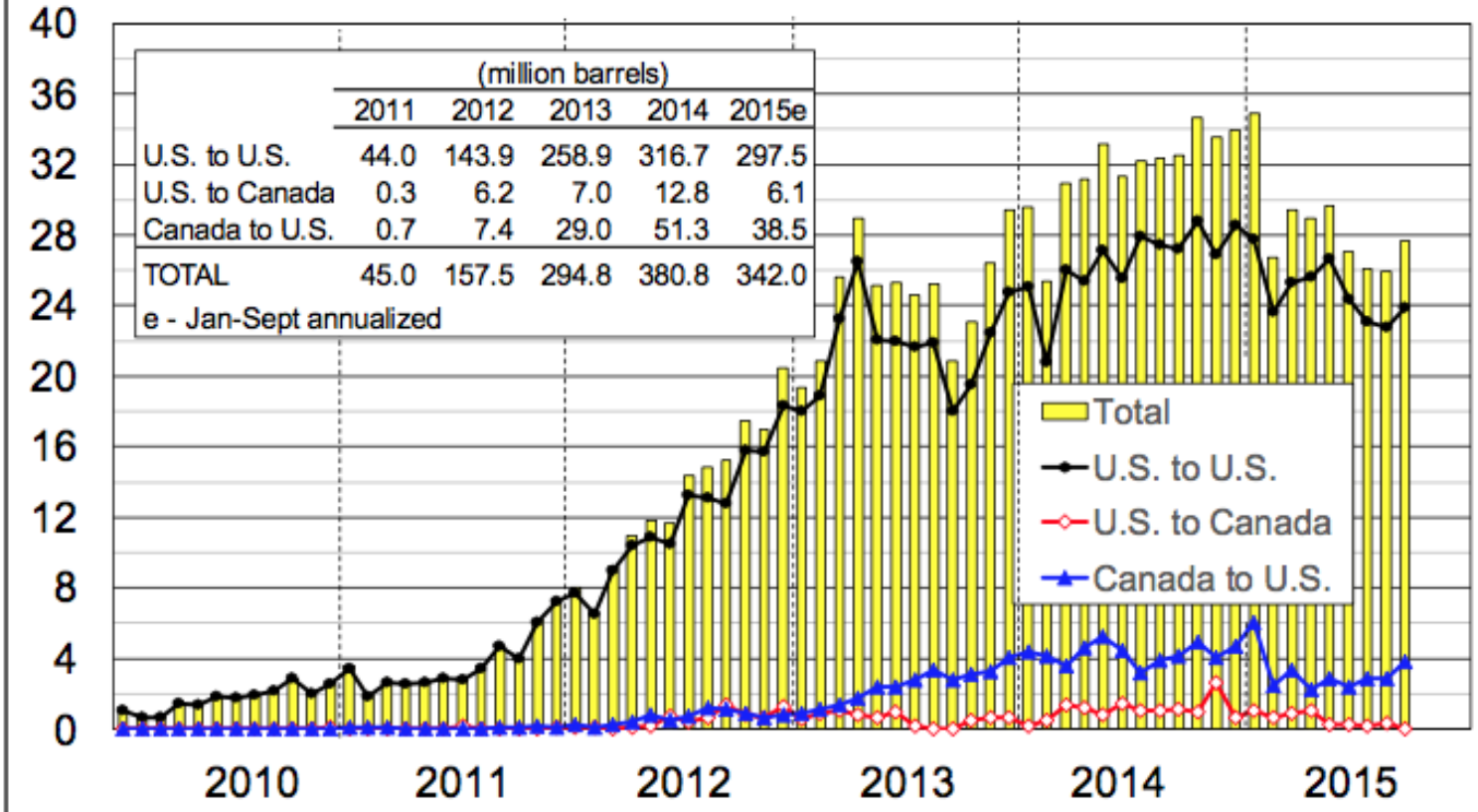
**And much more!**

*Figures are 2012.*

- U.S. railroads haul approximately 2 million shipments of HAZMAT materials annually
- Most of these shipments are made in tank cars supplied by the customer
- 100,000 carloads of this HAZMAT traffic are TIH materials
- HAZMAT shipments by rail have risen appreciably in recent years, driven by non-TIH traffic . . .


Originated Carloads of Crude Oil
on U.S. Class I Railroads by Quarter
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Annual Totals
2008 9,500
2009 10,840
2010 29,605
2011 65,751
2012 233,698
2013 407,761
2014 493,146
Q3 '14 132,257
Q4 '14 131,071
Q1 '15 113,089
Q2 '15 111,068
Q3 '15 101,167
2011
2012
2013
2014
2015
Source: AAR Freight Commodity Statistics

# U.S. Crude Oil by Rail: Jan. 2010 - Sept. 2015
## (million barrels)

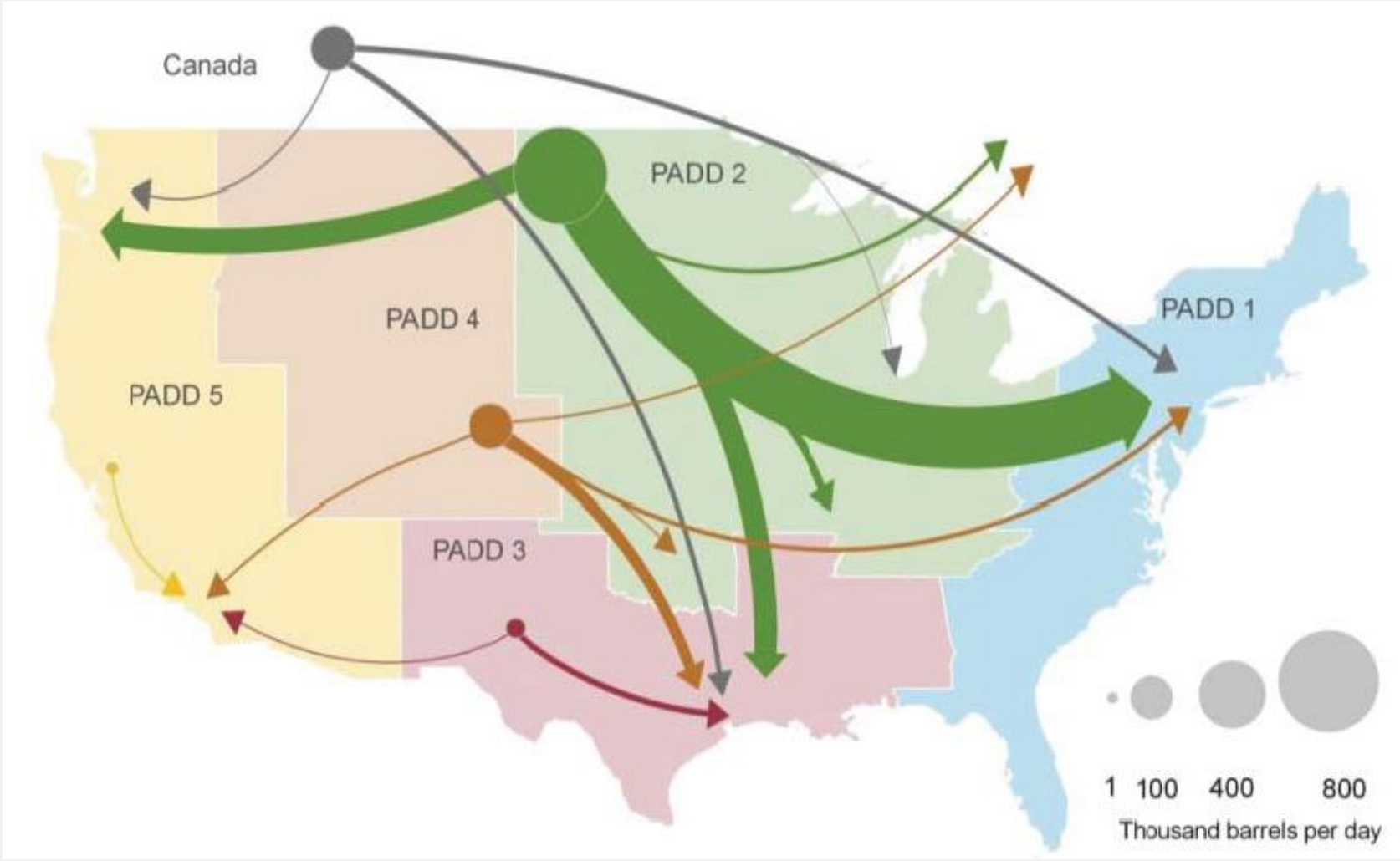



| (million barrels) | 2011 | 2012 | 2013 | 2014 | 2015e |
|---|---|---|---|---|---|
| U.S. to U.S. | 44.0 | 143.9 | 258.9 | 316.7 | 297.5 |
| U.S. to Canada | 0.3 | 6.2 | 7.0 | 12.8 | 6.1 |
| Canada to U.S. | 0.7 | 7.4 | 29.0 | 51.3 | 38.5 |
| TOTAL | 45.0 | 157.5 | 294.8 | 380.8 | 342.0 |

e - Jan-Sept annualized

Data are from a different source than the rail carload figures noted elsewhere.
Source: Energy Information Administration

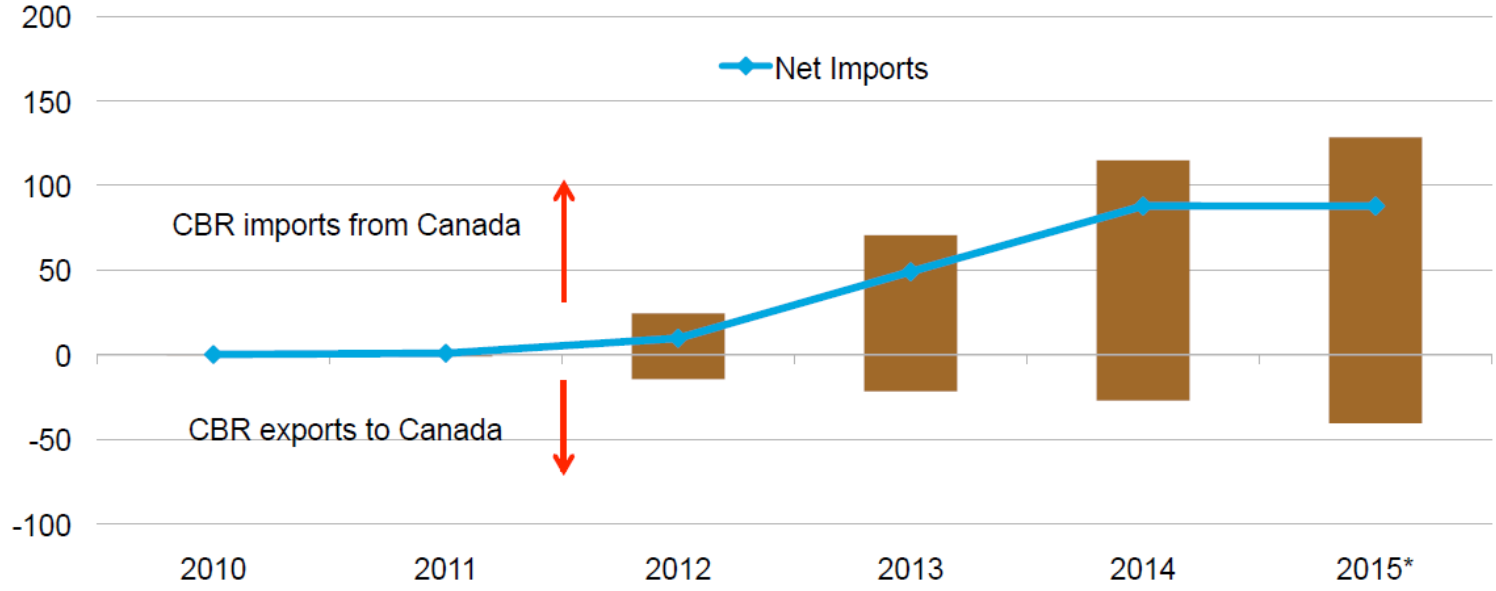
# Crude-By-Rail flows, 2014




Source: EIA, (PADD= Petroleum Administration for Defense Districts)

# Canada-U.S CBR trade is still modest in both directions

Crude-by rail movements between the U.S. and Canada
thousand barrels per day




** 2015 data are averaged through March*
*Source: EIA estimates based on data from the Surface Transportation Board and other information*

# II. Pre/Post Lac-Mégantic Regulatory Developments

## A. U.S. Federal Government Response (Pre Lac-Mégantic)

**Traffic Control Systems**

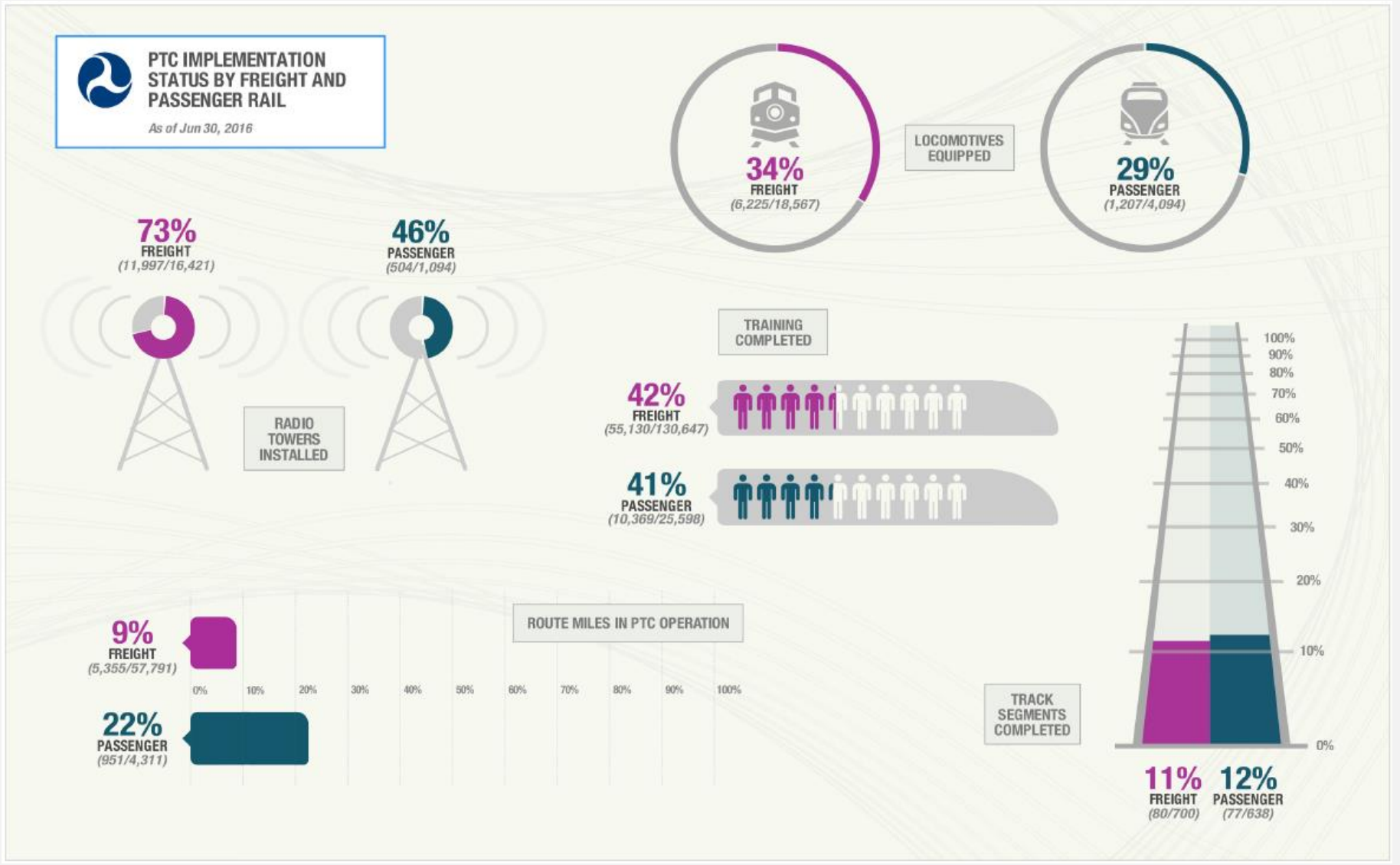
PTC – Integrated technologies capable of automatically controlling train speeds and movements

- Implemented by Rail Safety Improvement Act of 2008; FRA issues final rules in 2010
- Designed to supplement existing train control systems
- Required to be installed on Class I RR main lines with

  (i) > 5 million gross tons of TIH shipments; or

  (ii) any railroad's main lines over which regularly scheduled intercity passenger or commuter operations are operated
- Approx. 62,000 route miles and 22,000 locomotives to be equipped with interoperable PTC technology
- Implementation due date: end of 2018 (Congressional extension)
- Implementation costs estimated by Railroads to exceed $8 billion


PTC STATUTORY TIMELINE
As of Jun 30, 2016
OCT 16, 2008
Railroad Safety Improvement Act of 2008 Enacted: Sets December 31, 2015 Deadline
Several collisions, including a 2008 collision between a Metrolink passenger train and a Union Pacific freight train, led Congress to require Positive Train Control (PTC) be installed on a majority of the US Railroad network by December 31, 2015.
OCT 29, 2015
Congress Extends PTC deadline by at least three years
Congress extends the PTC deadline by at least three years to December 31, 2018, with the opportunity for an additional two years if certain conditions are met.
DEC 31, 2015
Original PTC Implementation Deadline
JAN 26, 2016
Revised Implementation Plan Deadline
FRA currently uses the schedules and key installation milestones reported in Railroads' revised PTCIP as the basis for tracking and enforcing PTC implementation progress.
DEC 31, 2018
Extended PTC Implementation Deadline
Based on revised PTC Implementation Plans submitted to FRA in January 2016, a majority of Railroads (81%) are projected to have PTC installed by the end of 2018. The remaining Railroads are projected to reach full implementation by December 31, 2020.
DEC 31, 2020
Potential deadline if railroads meet certain conditions
Congress has allowed railroads to apply for up to a two-year extension to achieve full PTC implementation if certain criteria are met. The railroad must have all spectrum acquired and hardware installation completed by the end of 2018 for an alternative schedule to be considered.


PTC IMPLEMENTATION STATUS BY FREIGHT AND PASSENGER RAIL
As of Jun 30, 2016
34%
FREIGHT
(6,225/18,567)
LOCOMOTIVES EQUIPPED
29%
PASSENGER
(1,207/4,094)
73%
FREIGHT
(11,997/16,421)
46%
PASSENGER
(504/1,094)
RADIO TOWERS INSTALLED
TRAINING COMPLETED
42%
FREIGHT
(55,130/130,647)
41%
PASSENGER
(10,369/25,598)
ROUTE MILES IN PTC OPERATION
9%
FREIGHT
(5,355/57,791)
22%
PASSENGER
(951/4,311)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
TRACK SEGMENTS COMPLETED
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
11%
FREIGHT
(80/700)
12%
PASSENGER
(77/638)

## B. U.S. Federal Government Response (Post Lac-Mégantic)

**Equipment/Operations**:

FRA/PHMSA issue final tank car rules in May 2015, codified/revised by Congress in FAST Act

- New Tank Cars are required to meet enhanced DOT Specification 117 design/performance criteria for use in a High Hazard Flammable Train ("HHFT")
- Existing tank cars must be retrofitted/retired in accordance with the DOT-prescribed standards for use in a HHFT
  - New brake requirements (ECP brakes); revised as part of FAST Act, now subject to a cost-benefit requirement
- Benefits: Improved puncture resistance; increased thermal survivability; enhanced protection of top fittings
- Retrofit Costs (PHMSA Estimated): $1B+
- Retrofits must be completed based on a prescriptive retrofit schedule focused on two risk factors, the packing group/commodity and car type
- Reduced Operating Speeds: 50-mph for HHFTs
- Rail Routing – Risk Assessment Plans/Reporting for HHFTs (train routings based on safety/security factors)

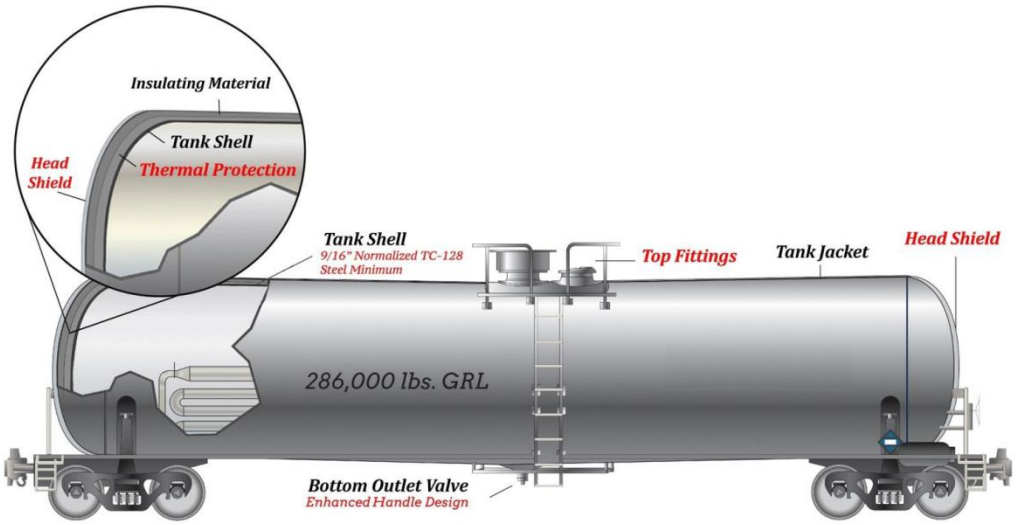
# Crude & Ethanol Tank Cars:

| Table 6: Estimated Quantity of DOT-111 Tank Cars in Need of Retrofit | |
|---|---|
| **Tank Car Type / Service** | **Fleet Size** |
| Non-Jacketed DOT-111 tank cars in PG I service | 11,637 |
| Non-Jacketed DOT-111 tank cars in PG II service | 18,493 |
| Jacketed DOT-111 tank cars in PG I and PG II service | 2,356 |
| Non-Jacketed CPC-1232 tank cars in PG I and PG II service | 15,895 |
| Jacketed CPC-1232 tank cars in PG I, PG II service, and all remaining tank cars carrying PG III materials in an HHFT (pressure relief valve and valve handles). | 24,933 |
| **Total** | 73,314 |

# Other Flammable Liquid Tank Cars:

| Table 8: PHMSA Projected Flammable Liquids Tank Car Fleet Used for FAST Act Cost Determination | |
|---|---|
| Sub-Fleet | Other Flammable Liquids |
| Non-jacketed DOT-111s | 16,577 |
| Jacketed DOT-111s | 6,294 |
| Non-jacketed CPC-1232s | 1,969 |
| Jacketed CPC-1232s | 1,321 |
| Total | 26,161 |

## DOT 117 Specification Car




Safety enhancements of DOT Specification 117 Tank Car:

Full-height ½ inch thick head shield
Tank shell thickness increased to 9/16 inch minimum TC-128 Grade B, normalized steel
Thermal protection
Minimum 11-gauge jacket
Top fittings protection
Enhanced bottom outlet handle design to prevent unintended actuation during a train accident

# *Compare* (1) Original Rulemaking/Canada Deadlines

| Timeline for the Retrofit of Affected Tank Cars for Use in North American HHFTs | | | |
|---|---|---|---|
| **Tank Car Type / Service** | **US Retrofit Deadline*** | **Tank Car Type / Service** | **TC Retrofit Deadline** |
| Non Jacketed DOT-111 tank cars in PG I service | ***(January 1, 2017)[2] January 1, 2018*** | Non Jacketed DOT-111 tank cars in Crude Oil service | ***May 1, 2017*** |
| Jacketed DOT-111 tank cars in PG I | ***March 1, 2018*** | Jacketed DOT-111 tank cars in Crude Oil service | ***March 1, 2018*** |
| Non Jacketed CPC-1232 tank cars in PG I service | ***April 1, 2020*** | Non Jacketed CPC-1232 tank cars in Crude Oil service | ***April 1, 2020*** |
| Non Jacketed DOT-111 tank cars in PG II service | ***May 1, 2023*** | Non Jacketed DOT-111 tank cars in Ethanol service | ***May 1, 2023*** |
| Jacketed DOT-111 tank cars in PG II service | ***May 1, 2023*** | Jacketed DOT-111 tank cars in Ethanol service | ***May 1, 2023*** |
| Non Jacketed CPC-1232 tank cars in PG II service | ***July 1, 2023*** | Non Jacketed CPC-1232 tank cars in Ethanol service | ***July 1, 2023*** |
| Jacketed CPC-1232 tank cars in PG I and PG II service and all remaining tank cars carrying PG III materials in an HHFT (pressure relief valve and valve handles). | ***May 1, 2025*** | Jacketed CPC-1232 tank cars in in Crude and Ethanol service and all remaining tank cars carrying PG III materials in an HHFT (pressure relief valve and valve handles). | ***May 1, 2025*** |

[2] *The January 1, 2017 date would trigger a reporting requirement, and shippers would have to report to DOT the number of tank cars that they own or lease that have been retrofitted, and the number that have not yet been retrofitted.*

**Note:** On July 25, 2016, Transport Canada directed the accelerated phase out of all DOT-111s in crude oil service to **Nov. 1, 2016** (Protective Direction 38)

## *with . . .* (2) Fast Act Deadlines

| Table 1: Comparison of HM-251 Tank Car Phase-out Schedule vs. FAST Act Phase-out Schedule (Tank Cars in Class 3 Flammable Liquid Service) | | |
|---|---|---|
| **Tank Car Type / Service** | **HM-251 Phase-out Deadline[4]** | **FAST Act Phase-out Deadline[5]** |
| **Non-jacketed DOT-111s** | PG I – January 1, 2018[6]<br>PG II – May 1, 2023<br>PG III – May 1, 2025 | Crude[7] – January 1, 2018<br>Ethanol – May 1, 2023<br>Flammable PG I – May 1, 2025**<br>Flammable PG II/III – May 1, 2029* |
| **Jacketed DOT-111s** | PG I – March 1, 2018<br>PG II – May 1, 2023<br>PG III – May 1, 2025 | Crude – March 1, 2018<br>Ethanol – May 1, 2023<br>Flammable PG I – May 1, 2025**<br>Flammable PG II/III – May 1, 2029* |
| **Non-jacketed CPC-1232s** | PG I – April 1, 2020<br>PG II – July 1, 2023<br>PG III – May 1, 2025 | Crude – April 1, 2020<br>Ethanol – July 1, 2023<br>Flammable PG I – May 1, 2025**<br>Flammable PG II/III – May 1, 2029* |
| **Jacketed CPC-1232s** | May 1, 2025 | Crude oil – May 1, 2025<br>Ethanol – May 1, 2025<br>Flammable PG I – May 1, 2025**<br>Flammable PG II/III – May 1, 2029* |
| **Extendable up to May 1, 2027, if the Secretary finds that insufficient retrofitting shop capacity will prevent the phase-out of tank cars not meeting the DOT–117, DOT–117P, or DOT–117R by the deadline. | | |
| *Extendable up to May 1, 2031, if the Secretary finds that insufficient retrofitting shop capacity will prevent the phase-out of tank cars not meeting the DOT–117, DOT–117P, or DOT–117R by the deadline. | | |

# III. Stakeholder Responses

## A. Carrier Initiatives; Several Notable STB proceedings:

- Railroad Common Carrier Obligation to Move HAZMATs (FD 35527, *E. Strohmeyer and J. Riffin – Acquisition and Operation Application – Valstir Industrial Track in Middlesex and Union Counties, NJ*)
- Railroad Indemnity/Liability Tariffs (FD 35504, *UP – Petition for Declaratory Order*; NOR 42145, *Agrium Inc. v. Canadian Pacific Ry.*)
- Tariffs Addressing Operations (*e.g.*, use of dedicated trains, special notification requirements, reduced train speeds) (NOR 42129, *American Chemistry Council et al. v. Alabama Gulf Coast Ry.*)
- Railroad "Short Haul" Interchange/Routing Cases (NOR 42131, *Canexus Chemicals Canada L.P. v. BNSF Ry.*)
- Railroad Surcharges for Use of DOT-111s in Crude Oil Service (NOR 42146, *Am. Fuel & Petrochemical Mfrs. V. BNSF Ry.)*

- Many interested stakeholders and their trade associations involved
- Railroads: TIH shipments constitute a "bet the business" proposition
- Hazmat shippers: initiatives constitute unreasonable practices/ improper attempts to undermine the common carrier obligation

# B. State/Local Initiatives -- Federal Preemption?

U.S. NEWS

## Cities Grapple With Oil-Train Safety

*Recent Derailments Raise Concerns Over North Dakota Crude Traveling by Rail Through Cities*

By RUSSELL GOLD and LYNN COOK

Jan. 14, 2014 11:02 p.m. ET

A train carrying crude oil collided with another train and caught fire on Dec. 30 near Casselton, N.D. *The Forum/Associated Press*

Every day, a train more than a mile long travels alongside a highway in Albany, N.Y., a half-mile from the state capitol building and even closer to houses. Its cargo is crude oil from North Dakota, which federal regulators and railroads fear is more explosive than other oils.

In the past year, Albany has become an unlikely hub for the U.S. oil business, taking in ... and sending them out by ship down the Hudson River to refineries. ... to speed on how to handle a potential oil-train accident ... Orleans.

Railroad ...

... many large cities because of ... as pipelines on rails, tanker cars full of oil ... St. Louis, Kansas City and Houston, among others.

## Five U.S. Mayors Propose Federal Fee for Oil-by-Rail Shipments

Mayors from Wisconsin, Missouri and Illinois also joined Emanuel in supporting the proposals. Revenue generated from any fee, they say, could be dedicated to improving the country's aging infrastructure.

Pennsylvania Gov. Tom Corbett, though, has cautioned against any "knee-jerk reactions" that could hinder the additional business refineries in Philadelphia have seen as of late.

## C. Train Accidents: Personal Injury Liability

- A number of federal laws apply to common carrier railroads
  - First, railroad transportation is subject to fairly comprehensive federal statutes and rules (*e.g.* FRSA, HMTA) governing safety and transportation.
  - Second, the issue of liability for injury to persons or property for railroad accidents occurring en route is not subject to federal law; instead, such liability normally is determined pursuant to common law tort principles
- Generally, personal injury cases have been based on state common law legal theories of strict liability and negligence (or for railway workers, FELA)
- Claims of this nature have been brought against railroads, shippers, receivers, and product distributors/manufacturers; railcar owners and lessors; railcar manufacturers; railcar maintenance businesses – virtually anyone that is in any way connected with the involved shipment, property, or facilities
- The Supremacy Clause/Express Preemption provisions of FRSA may preempt state tort law actions; in the event that preemption is found to apply to individual claims, then the claims are dismissed

# Thank You

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