NTSB Rail Investigations and Safety Recommendations

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NTSB

• Independent, fact based investigations

• Single focus is safety

• Determine probable cause

• Safety recommendations and advocacy
NTSB is **Not**

- A regulatory agency
- An emergency response agency
- Part of the Department of Transportation
- Does not issue fines and penalties
- Does not assign fault or blame
Railroad Accident Investigation
Crude Oil Transport
Hazardous Materials on Rail

• Railroads are integral part of hazardous materials transportation
  ▪ 28.5% of total ton-miles of all hazardous materials (2007)*
  ▪ Average miles per shipment - 808 miles (2012)

• Total Loaded Tank Car Originations in 2013**:
  ▪ All Hazardous Commodities: 1,611,325
  ▪ TIH Commodities: 56,049


Crude Oil and Ethanol Rail Carloads

AAR 2013: “Moving Crude Oil by Rail”; “Railroads and Ethanol”
Ethanol carloads estimated from RFA data for 2012 and 2013

Thousands of Carloads

- Crude Oil
- Ethanol

2005 2006 2007 2008 2009 2010 2011 2012 2013
Significant Crude Oil and Ethanol Accidents

- October 2006
  New Brighton, PA
- August 2008
  Luther, OK
- October 2007
  Painesville, OH
- June 2009
  Cherry Valley, IL
- February 2011
  Arcadia, OH
- October 2011
  Tiskilwa, IL

- 2007
- 2008
- 2009
- 2010
- 2011

Ethanol
Crude Oil
Significant Crude Oil and Ethanol Accidents

- March 2013
  Parkers Prairie, MN

- July 2013
  Lac-Mégantic, QC

- December 2013
  Casselton, ND

- January 2014
  Plaster Rock, NB

- April 2014
  Lynchburg, VA

- February 2014
  Vandergrift, PA

- January 2014
  New Augusta, MS

- November 2013
  Aliceville, AL

- April 2013
  Bremner, ON

- March 2013
  Parkers Prairie, MN

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- November 2013
  Aliceville, AL

- April 2013
  Bremner, ON
Significant Crude Oil and Ethanol Accidents

February 2015
Waupeton, IA

March 2015
Gogama-2, ON

March 2015
Galena, IL

February 2015
Gogama-1, ON

February 2015
Mt. Carbon, WV

E  C  C  C

Ethanol  Crude Oil
Crude Oil and Ethanol Accidents

- 24 significant accidents since 2006
  - 16 crude oil
  - 8 ethanol
- 48 fatalities
- 412 DOT-111 tank cars derailed
- 4.1 million* gallons crude oil released
- 2.1 million gallons ethanol released
- Fires and environmental damage

*estimated
Rail Hazmat Safety Issues

• “Unit trains” transporting large numbers of crude oil and ethanol flammable liquid tank cars

• General service tank cars (DOT-111) breach at high frequency in derailments

• Concerns regarding newer industry standard cars (CPC-1232)
Rail Hazmat Safety Issues

• Tank car accident performance
  ▪ Puncture resistance
  ▪ Thermal resistance
  ▪ Fittings protection
Rail Hazmat Safety Issues

• Emergency response
  ▪ Community awareness and emergency response planning
  ▪ First responder notification
  ▪ First responder training
Rail Hazmat Safety Issues

• Railroad operations
  ▪ Route planning and route selection
  ▪ Hazardous materials classification
  ▪ Speed restrictions
  ▪ Track inspection frequency
  ▪ Enhanced braking
  ▪ Oil spill planning
Positive Train Control

• PTC monitors and controls train movements
• Prevents derailments and train-to-train collisions
• Slows or stops trains not complying signals or speed limits
Positive Train Control Accidents

- 1969 – Darien, CT.
- More than 140 accidents since
  - 300 fatalities
  - 6,500 injuries
- Dec. 1, 2013, Bronx
- May 12, 2015, Philadelphia
Philadelphia Amtrak
May 12, 2015
Positive Train Control

- Rail Safety Improvement Act of 2008 (RSIA)
- Chatsworth, CA/Graniteville, SC
- Requires PTC by Dec. 31, 2015
- Urge Congress not to extend PTC deadline
Crude Oil and Flammable Materials
Recommendations

- Improved tank car design
- Comprehensive oil spill response plans for worst case discharges
- Hazard communications for emergency responders