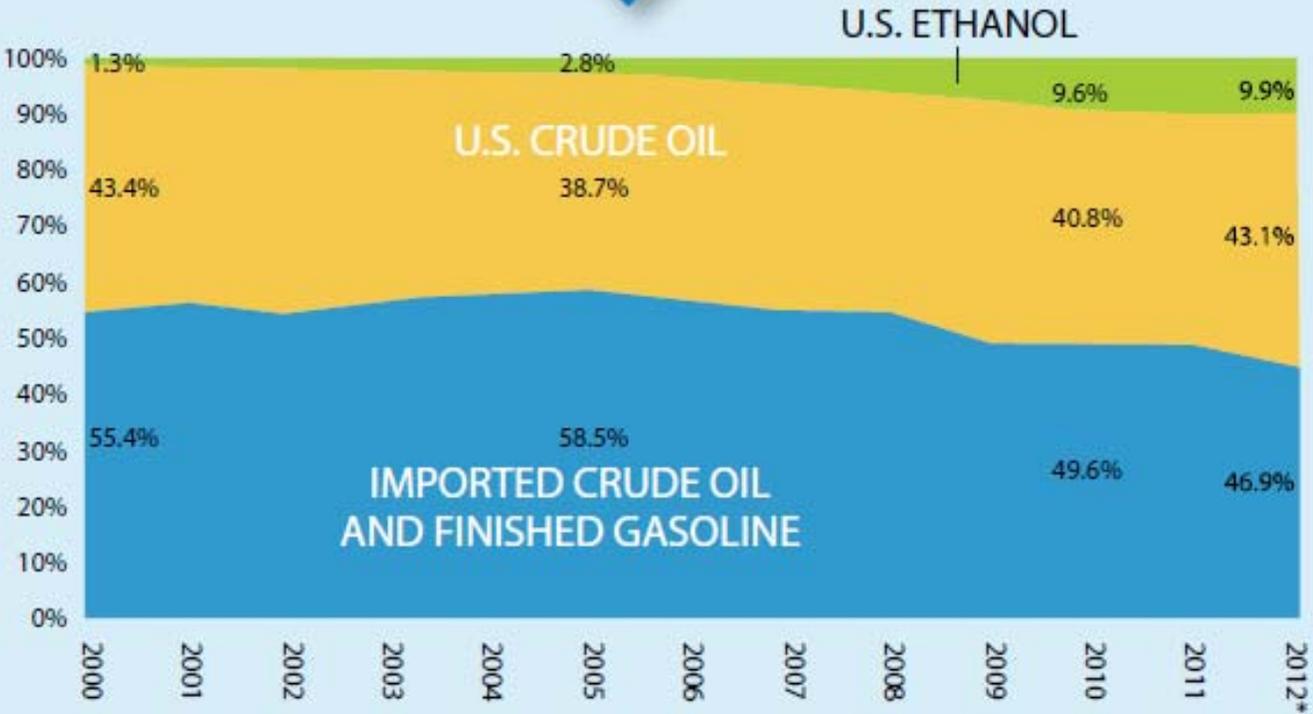

NTSB Rail Safety Forum: Transportation of Crude Oil and Ethanol

April 22-23, 2014



Bob Dinneen
President & CEO

SOURCES OF U.S. GASOLINE SUPPLY (BY VOLUME), 2000-2012



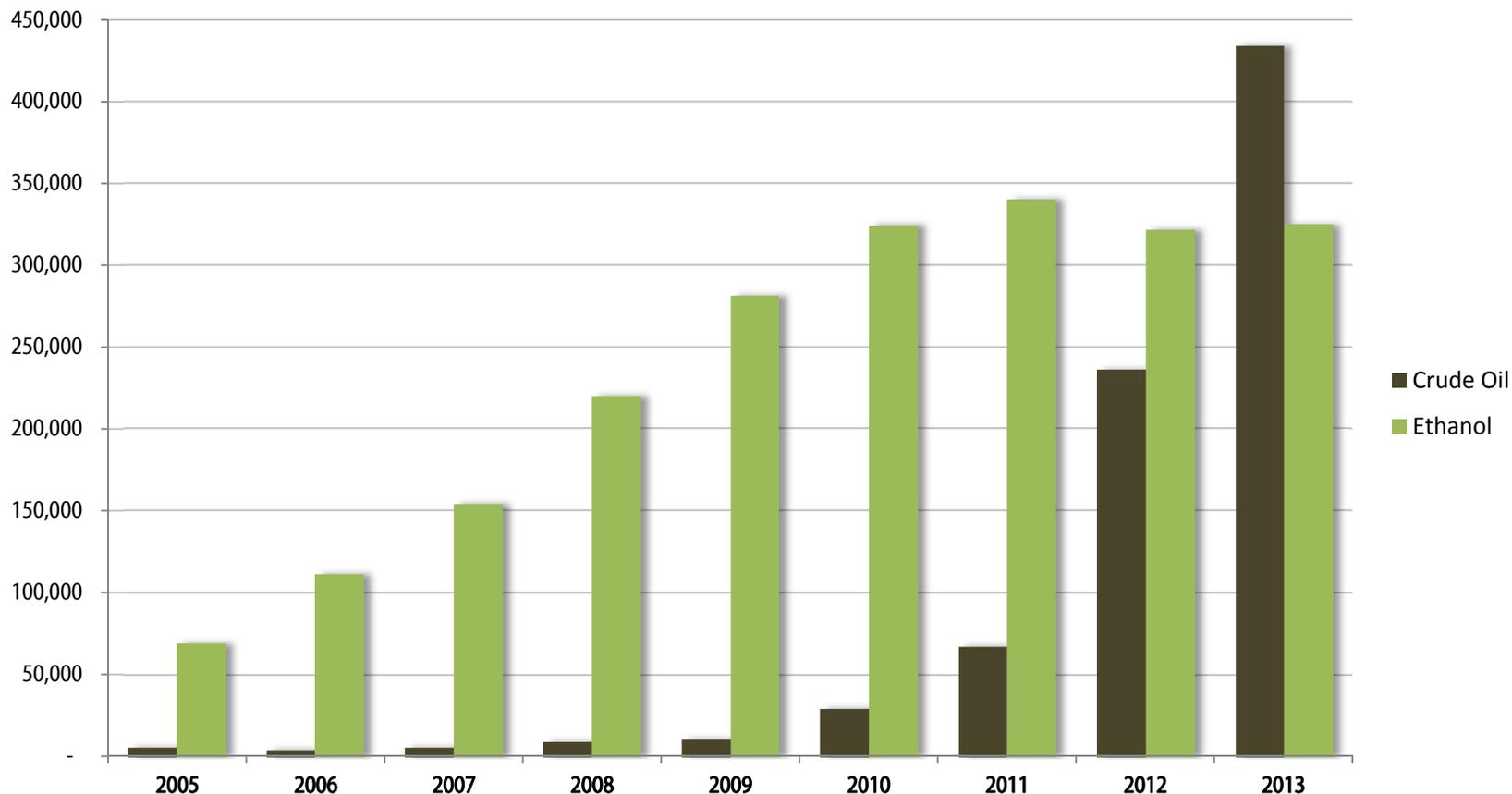
Source: Energy Information Administration and RFA

*Estimated

Rail shipments of ethanol have stabilized over past four years

Shipments of crude oil have increased 1363% since 2010

U.S. Rail Carloads of Crude Oil vs. Ethanol



Source: AAR

DOT-111A Railcar

Non-Pressure Cars Transporting Packing Group I and II Materials

- “Virtual Pipeline”
- Used Safely for Ethanol for Over 30 Years
- Most cars owned by shippers and lessors
- Ethanol producers ship 320,000 – 340,000 cars annually
- 70% of ethanol travels to the marketplace by rail
- On average, 85% of ethanol rail fleet is less than 9 years old
- 29,000 cars in ethanol service
- Each car expected 50 year length of service per AAR



Ethanol Shipments by Rail Have had an Enviably Safe Record

- Railroads have a strong safety record for moving hazardous materials; in 2012, 99.997% of the carloads of hazardous materials shipped successfully reaching their final destination without a release caused by an accident
- From 2006 – 2013 ethanol had just over 2 million total shipments, only 226 cars derailed with 91 releasing product
- The major causes of the incidents were; track integrity, switching failures, inspection errors, maintenance problems, or human error; lack of communication between train crews

Ethanol Properties Distinguish it from Other Volatile Commodities

- Highly refined quality product that can go directly to consumers gas tanks
- Consistent known composition
- Always classified properly as PGII
- Vapor pressure of Denatured Fuel Ethanol is 3 – 4 psi
- Recently reconfirmed physical and chemical properties

RFA is Committed to Rail Safety



- Our Plant and Employee Safety Committee is active developing resources and best practices
- RFA is also a national sponsor of TRANSCAER®, which is a voluntary national outreach effort that focuses on assisting communities to prepare for and to respond to possible hazardous materials transportation incidents.
- RFA has successfully held over 100 safety seminars spanning 21 states since December 2010

RFA is Committed to Rail Safety



- The Ethanol Emergency Response Coalition (EERC) was founded by RFA to enhance the knowledge, capability and readiness of operational emergency response agencies, helping them to effectively respond to fires, spills and other emergencies involving ethanol and ethanol blended fuels.
- Updated training guide and DVD for ethanol emergency responses distributed to thousands of emergency response personnel, police, EMTs and environmental clean up contractors

**Industry continues to support
Petition P-1577 or CPC-1232 cars
“Good Faith Cars” built since October 2011**

- AAR Tank Car Committee **approved by consensus**
- PHMSA did not codify the Petition
- Expected to be over 50,000 in service by end of 2015
- The TCC did not call for modifications to the existing fleet in 2011, in large part because the billions of dollars it will cost to modify the cars could not be justified. We feel this still holds true for ethanol today.

Further Changes to Tank Car Design must be Governed by a Cost / Benefit Analysis

- RFA still supports the consensus position for new tank car construction for ethanol PG II service;
 - ✓ Head and shell thickness must be 1/2" non-jacketed cars and 7/16" for jacketed cars; 1/2" half-head shields; top fittings must be protected by a protective structure as tall as the tallest fitting; re-closing pressure relief valve
- Some are now calling for modifications to the current legacy fleet, requiring DOT 111A cars to be retrofitted to meet the new car standard.
- Retrofitting the entire legacy fleet would require an additional investment of over \$3.1 billion from the ethanol industry

Focus on Keeping the Cars on the Tracks; Address Root Cause

- Root cause major causes of the incidents were substandard track integrity, switching failures, inspection errors, maintenance problems or lack of communication between train crews.
- Broken rails and welds of the tracks have resulted in approximately 670 derailments between 2001 and 2010, which far exceeds the annual average of 89 derailments for all other causes
- Rather than focusing exclusively on railcar design, a more prudent approach would be to invest in initiatives that address these root causes and keep the railcars on the tracks.

Solutions and Recommendations

- RFA strongly believes that DOT, FRA and PHMSA need to address the root cause of the recent train derailments in a swift and comprehensive manner. Such initiatives should include;
 - ✓ improvements in inspection and track maintenance protocols;
 - ✓ utilizing available technology to assist in reducing human error (e.g., Positive Train Control); and,
 - ✓ improved communication systems for rail operations

Solutions and Recommendations

With regard to tank car safety, the RFA makes the following suggestions;

- We support The P-1577 car (CPC-1232 railcar) for new car builds,
- Cars built in good faith should stay in service without retrofit for their useful lives,
- RFA does not support a rulemaking on retrofits or phase-outs for the current fleet of tank cars built prior to the implementation of AAR-TCC P-1577 unless there is a data driven solution that supports the need for such retrofits or phase-outs.¹
- Rigorous study and risk modeling similar to level of due diligence taken in the original T87.5 and T97.6 is needed to support any change to the tank car fleet. Any change must have a meaningful safety improvement, be data driven and be based on an integrated risk assessment,
- Conduct a collaborative integrated risk assessment that looks at the risks to people, assets and the environment at each stage of transport of crude oil and ethanol by rail (at the well-head/manufacturing plant, packaging selection, during loading, during transport, and during unloading).

¹ It may be that the characteristics of highly volatile crude oil being shipped by rail necessitates separate standard