



Northwestern University Transportation Center
Business Advisory Council
4/21/15 Meeting

Robert S. Hulick
MEM 86
EVP – Chief Mechanical Officer
TrinityRail



Built to Deliver®

CLASS 3 FLAMMABLE LIQUIDS ELEMENTS FOR SAFE TRANSPORTATION BY RAIL

“Holistic Approach”

- Prevention – Railroad, Tank Car Focus**
- Mitigation – Railroad, Tank Car, Shipper Focus**
- Response – Railroad, Emergency Responders, Shipper, Tank Car Focus**

“Transition From Hazardous Materials in Trains to Hazardous Material Trains”

PREVENTION

— Infrastructure



— Inspection



PREVENTION (Cont.)

— Maintenance

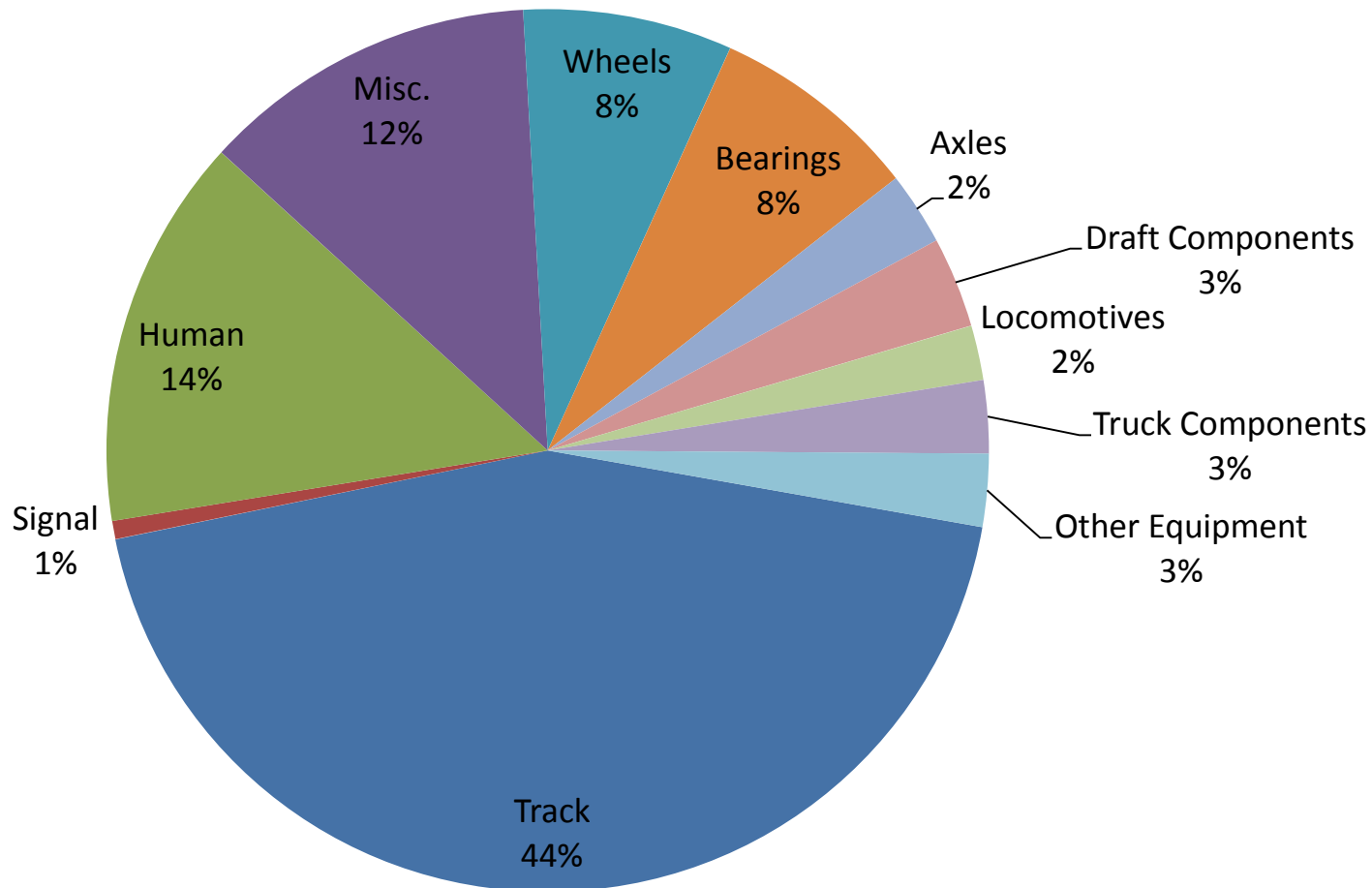


— Detectors



PREVENTION (Cont.)

Mainline Derailment Causes



MITIGATION

— Operating Requirements

Increased Track Inspections

- At least one additional internal rail inspection each year above Federal Railroad Administration (FRA) requirements on crude oil routes **Effective: March 25, 2014**
- At least two Geometry Car inspections each year on crude oil routes **Effective: March 25, 2014**
- BNSF-SPECIFIC ACTION: increasing rail detection testing frequencies along critical waterways (BNSF currently at 2x FRA frequency; going to 2.5x with this change) **Effective: April 1, 2015**

Increased Trackside Safety Technology

- Additional Hot Bearing Detectors (HBD) on crude oil routes (max 40 mile spacing) **Effective: July 1, 2014**
- BNSF-SPECIFIC ACTION: HBD spacing of 10 miles on crude routes that parallel critical waterways
- BNSF-SPECIFIC ACTION: Key Train stopped by HBD must set-out the indicated car
- BNSF-SPECIFIC ACTION: KEY trains with Level II Wheel Impact Load Detector (WILD) defect (120 – 140 Kilopound (Kips)) will be handled as a LEVEL I defect (immediate set-out). **Effective: March 25, 2015**

Rail Risk-Based Traffic Routing Technology

- Use of Rail Corridor Risk Management System (RCRMS) to determine the most safe and secure routes for crude trains of 20 or more loaded cars **Effective: July 1, 2014**

Lower Speeds

- Implemented nationwide speed restriction: 50 mph for all Key Trains (20 or more cars hazmat; one car Toxic Inhalation Hazard/Poisonous Inhalation Hazard (TIH/PIH)) **Effective: July 1, 2014**
- Municipal speed restriction: 40 mph for crude oil trains with Department of Transportation (DOT-111) tank cars moving through High Threat Urban Areas (HTUA) **Effective: July 1, 2014**
- BNSF-SPECIFIC ACTION: 35 mph for all shale crude oil trains through municipalities of 100k or larger **Effective: March 25, 2015**

— Routing



MITIGATION (Cont.)

– Product Containment Performance (Tank Car)



– Thermal Performance (Tank Car)



MITIGATION (Cont.)

– Product Characteristics



RESPONSE

— Training



— Equipment



RESPONSE

– Community Outreach



– Train Information



AUTHORITIES

— Regulations

- U.S. Department of Transportation (DOT) 
 - Pipeline and Hazardous Materials Safety Administration (PHMSA)
 - Federal Railroad Administration (FRA)
- Transport Canada (TC) 
 - Transportation of Dangerous Goods Directorate (TDG)
- Secretariat of Communications and Transportation - Federal Government of Mexico 

— Industry Standards

- Association of American Railroads (AAR) 
- Railway Association of Canada (RAC) 

AUTHORITIES (Continued)

— Recommendations

- National Transportation Safety Board (NTSB)
- Transportation Safety Board Canada (TSB)



“Harmonization is Key for a North American Interchange Rail System”

TANK CAR REGULATORY STATUS

- **US DOT / PHMSA Final Rule Under Review by Office of Information and Regulatory Affairs (OIRA) Office of Management and Budget (OMB). Scheduled Release May 12, 2015**
- **Transport Canada in “Consultative Period” Regulatory Update Provided March 11, 2015 Final Rule Release Expected to Coincide with US DOT / PHMSA**

TANK CAR REGULATORY STATUS (Cont.)

- **Harmonization of Technical Requirements for Newly Constructed Tank Cars and Modified Tank Cars Expected**
- **Scope of Regulatory Action Differs**
 - **PHMSA Product and Operations Oriented, TC Product Oriented**
 - **Timeline for Existing Tank Car Compliance Differs**

“Regulatory Certainty Necessary to Proceed”

TANK CAR 101

— Shell



— Ceramic Fiber Blanket



TANK CAR 101 (Cont.)

- Insulation
- Jacket



TANK CAR 101 (Cont.)

— Head Shields

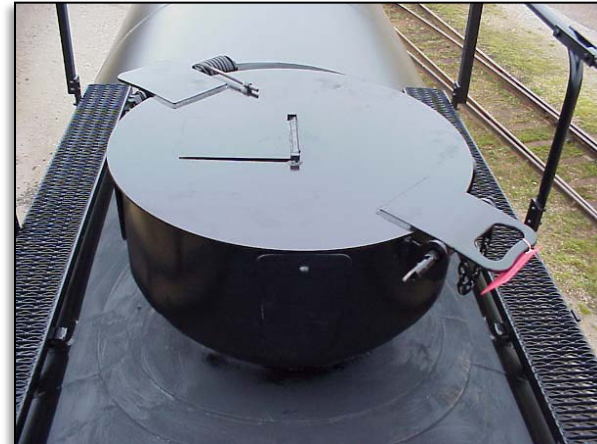


— Manway



TANK CAR 101 (Cont.)

– Multi – Housing



– Bottom Outlet Valve



DOT-117 TANK CAR (Anticipated)

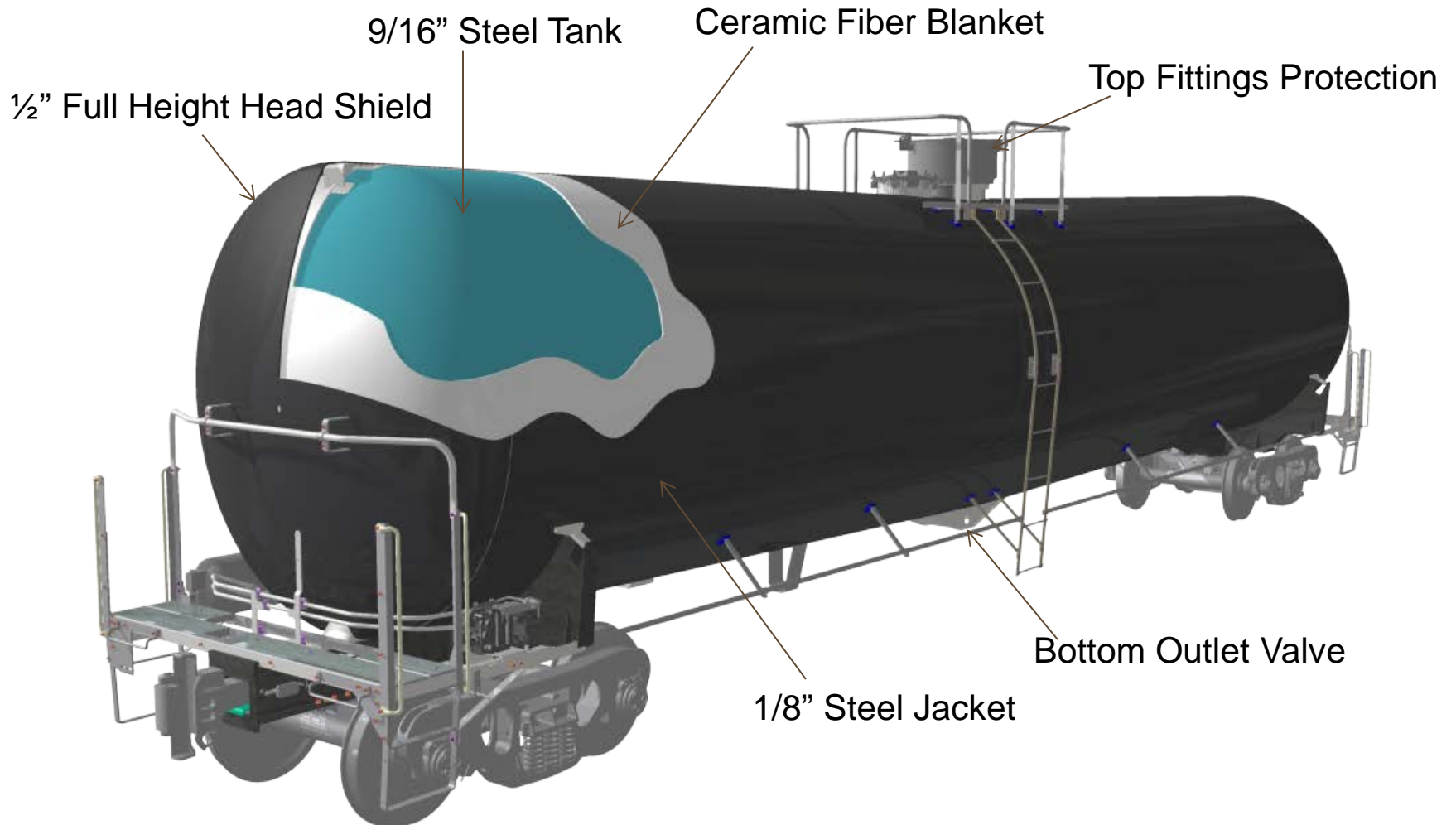
— Product Containment Performance

- **9/16” Thick Normalized Steel Tank**
- **1/8” Steel Jacket, 1/2” Full Height Head Shields**
- **Top Fittings Protection**
- **Positive Engagement Bottom Outlet Valve Handle**

— Thermal Performance

- **1/8” Steel Jacket and Head Shields**
- **Ceramic Fiber Blanket**
- **Pressure Relief Valve**

DOT – 117 TANK CAR (Anticipated)



DOT-117R MODIFIED TANK CAR (Anticipated)

— Product Containment Performance

- Existing 7/16” or 1/2” Steel Tank
- 1/8” Steel Jacket, 1/2” Full Height Head Shields
- Enhanced Fittings Protection
- Positive Engagement Bottom Outlet Valve Handle

— Thermal Performance

- 1/8” Steel Jacket and Head Shields
- Ceramic Fiber Blanket
- Pressure Relief Valve

TRINITYRAIL READINESS

- Active Participant in Regulatory Process in USA and Canada – Railway Supply Institute
- Design, Prototype, Production of New Tank Cars in Compliance with Expected DOT-117 Regulations
- Design, Prototype, Production of Eight Variants of Modifications for Three Classes of Existing Tank Cars. Focused on Possible DOT-117R Regulations
- Expanding New Tank Car and Modification Facilities

“Achieve Premier Performance in Support of Our Customers”



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