Tank Car Industry – Research and Development
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Union Tank Car Company
MARTS – Minneapolis, MN September 19, 2011

• Advanced Tank Car Collaborative Research Program
• NARS Response
• Tank Car Telematics
• Stub Sill Development
• End Platform Development
Tank Car Industry – Research and Development
ATCCRP - Safety & Security

Graniteville, SC - 2005

Minot, ND - 2002
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ATCCRP - Safety & Security

Railroad operating environment provides an equipment testing laboratory to extremes.

Innovation efforts must remain focused on Safety, Security and Productivity.
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ATCCRP

• Prioritizing TWP for Project Funding, such as:
  – Evaluating & Testing Composites & Steels
  – Defining & Modeling Test Impact Scenarios
  – Defining Performance Based Test Standards
  – Conditional Probability of Release (CPR)

• DHS/TSA Performing Security Testing

• Similar ATCCRP solutions may be applied to Crude/Ethanol (Flammable) and in future to Environmentally Sensitive Materials
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ATCCRP – Continuation of NGRTC
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ATCCRP – Need for Modeling
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- E:\6 X 6 Impactor.avi
- E:\05-RC South Tower (5 minutes).wmv
- E:\03-RA South Tower (5 minutes).wmv
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**NARS**

**Industry NARs Survey:**
- 80% NARS from Manway
- 80% of Manway NAR from improper tightening/gasket sealing

**Results of NARs:**
- Fines
- Loss revenue, i.e.: Shopping costs, late shipment, rejected commodity load
- Damage to Environment
- Safety
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New Manway Development
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DHS Security Grant

DHS Update:
• $15M in Grants
  • Preparedness
  • GPS
  • Training
• Several Builders Installing
• Several Shippers Installing
• Grant thru 2012
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Handbrake & Motion Sensor

Temperature & Pressure Sensor

Video, IR & Tampering Sensor

GPS, Satellite & Cellular Transceiver

Vapor & Leak Detection Sensor

Hatch Open Sensor

Vessel Corrosion Sensor

Bearing Condition Sensor

Valve Operation Sensor

Car Weighing Sensor

Accelerometers and Motion Sensors

Stress Detection Sensor
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Telematics
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Telematics
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1 Million Mile Stub Sill based on recent REPOS Data Set
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End Platform – Safety Appliance
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Thank You