CN Overview

CN transports a wide range of products across its 23,000 mile network

- CN handles $250 Billion of goods each year, serving exporters, importers, retailers and manufacturers
- Backbone of the economy - essential to growth, trade, and communities across Canada and the United States
Safety Culture

- 5 dimensions of safety culture identified by work group
- CN developed process to measure safety culture - both objectively and subjectively
- Engaged labour participation through Policy and local H&S Committees
Preventing MT Accidents – Lines of Defense

- CN detector network best in class for wayside detectors on core MT and wheel impact load detectors
- Actively using rail and track inspection technologies
- Adding detectors and technologies through special capital fund
- Technology work group benchmarking to identify further opportunities

- 3 layers of audits:
  • Local Testing
  • Function/Region audits
  • System integrated audits

- Data management:
  • Predictive data management for bearings etc.
  • Integrated in North America for WILD, Hunting
  • Several data management initiatives in process

- CN Campus training program - state of the art
- Several initiatives to strengthen inspections
- Driving compliance and culture

➤ Multiple lines of defence - mitigating risk of main track accidents
Safety Processes and Planning

Comprehensive safety plans based on:

- Safety analysis – understanding local root causes and contributing factors
- Comprehensive plans – consistent with SMS Regulations
- Risk Assessment
- Audit plan
- Safety culture and employee engagement

Compliance assessed through Integrated Audits

Integrating safety into daily operations – SMS is a platform for exceeding regulatory requirements
Driving Train & Track Reliability with Technology

Track
- Rail integrity
- Rail structure/geometry
- Ties
- Natural hazards
- Rail Flaw Detection (RFD)
- Track Evaluation System (TEST)
- Rock and snow slide fences
- Extreme weather / earthquake alerts
- Implementing new technologies
- Major increase in investments 2015

Rolling Stock
- Wheels, bearing, brakes
- Hose and brake rigging
- Over or imbalance loading
- Wayside Inspection System (WIS)
  - Hot bearing detectors
  - Hot wheel detectors
  - Dragging equipment detectors
- Wheel Impact Load Detectors
- Hunting detectors
- Machine vision technology

In-Train Forces
- Train handling
- Train marshalling rules
- Distributed power
- Marshalling rules
- Witronix
- LEPP – train handling

Safe train movements depend on multiple components all working together reliably
DGs in our Society
Indispensable to our Way of Life

Chlorine
• To purify our water
• To make PVC, into a diverse range of products

Propane
• Barbecues
• Heating

Propylene
• Eyeglasses
• Water cooler bottles

Butadiene and Styrene
• Tires
• Shoes

Sodium Hydroxide
• In paper production
• In soaps
• In paint
The Need for Community Outreach

- Lac-Mégantic has created concern about dangerous goods on rail – our objectives:

  - Communicate CN’s commitment to safety and strong safety performance coupled with the rail industry having a solid success rate for transporting DG carloads in North America
  - Demystify the importance and value of dangerous goods to the economy and Canadians’ daily lives
  - Establish/continue relationships with community leaders and provide an opportunity to discuss dangerous goods movements through and for their communities
  - Review opportunities of “mutual aid” (between CN and municipalities and between municipalities) and resources available within the community
  - Communicate our structured approach to emergency response
  - Offer training for community emergency response personnel to assist them in the event of a DG incident involving rail
Outreach Programs

• Railway Emergency Response Course
• TransCAER® / Training Car or Training Trailer
• **Structured Community Engagement Program**
• CN Sponsored Tank Car Specialist Week for Fire Departments in Pueblo, CO
• CN Sponsored Crude-By-Rail course for Fire Departments in Pueblo, CO
• CN Sponsored Advanced Tank Car Specialist for ER Contractors in Pueblo, CO

Since 1988, CN has participated in 3,670 TransCAER® events, reaching 83,019 first responders
Scope of Outreach

1,098 municipalities along our right of way in Canada

<table>
<thead>
<tr>
<th>Category</th>
<th>BC</th>
<th>AB</th>
<th>SK</th>
<th>MB</th>
<th>ON</th>
<th>QC</th>
<th>NS</th>
<th>NB</th>
<th>NWT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>35</td>
<td>12</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>62</td>
</tr>
<tr>
<td>Category 2</td>
<td>18</td>
<td>26</td>
<td>6</td>
<td>6</td>
<td>35</td>
<td>19</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>117</td>
</tr>
<tr>
<td>Category 3</td>
<td>62</td>
<td>55</td>
<td>41</td>
<td>26</td>
<td>62</td>
<td>156</td>
<td>10</td>
<td>44</td>
<td>1</td>
<td>457</td>
</tr>
<tr>
<td>Category 4</td>
<td>70</td>
<td>47</td>
<td>196</td>
<td>23</td>
<td>25</td>
<td>68</td>
<td>1</td>
<td>29</td>
<td>3</td>
<td>462</td>
</tr>
<tr>
<td>Total</td>
<td>152</td>
<td>135</td>
<td>244</td>
<td>58</td>
<td>157</td>
<td>254</td>
<td>12</td>
<td>82</td>
<td>4</td>
<td>1,098</td>
</tr>
</tbody>
</table>
Information for “S.C.E.P.” Meetings

Subjects discussed:

1. CN Safety, Company Overview and CN in Your Community
2. DGs in our society
3. Emergency Preparedness
   • DG movements specific to community
   • CN Emergency Response Plan
   • TRANSCAER® and suggested training
Prevention Initiatives

- Speed restriction of 50 mph for all “Key Trains” in Canada (later became regulatory requirement)

- **Speed restriction of 35 mph for all “High Hazard Flammable Trains” (Key Trains)** through all population centers over 100,000 (later became regulatory requirement at 40 mph)

- Conducted Route Risk Assessments on all key routes and important feeder lines (later became regulatory requirement)

- Implemented handbrake table based on grade and tonnage to provide increased securement of equipment (later became regulatory requirement)

- Accelerated removal of CN owned DOT111 tank car fleet
Types of dangerous commodities

Flammable Materials: 86%
- Propane used for home heating and BBQ bottles
- Gasoline and Diesel Fuel as well as Crude Oil for refineries

Poisonous Materials: 3%
- Chlorine used to purify water supply and in household products such as bleach and disinfectant
- Anhydrous Ammonia used for fertilizer, refrigerants and in household cleaning products

Other Dangerous Goods: 11%
- Asphalt used for roads and construction
- Ammonium nitrate used in agriculture as a fertilizer

Corrosives: 0%
- Sodium Hydroxide used in soap manufacturing, pharmaceutical, mining and soft drink industries
- Batteries for vehicles
- Acetic acid used for vinegar, food preservative as well as industrial applications
AskRail App

Equipment ID is a set of letters (up to 4) and numbers (up to 6) on the side of every freight car. See the example below.

RAIX 1102
Individual Car Number Display

Equipment Details

ID: UTLX 202713
LD/MTY: RESIDUE
UN/NA ID: UN1170
PSN: ETHANOL
Hazard Class: 3
Railroad: CN
Railroad Phone: (800) 465-9239

Train Details

> 50 ETTX 909384 LOADED
> 51 SP 517423 LOADED
> 52 CHTT 101274 LOADED
> 53 UP 961529 LOADED
> 54 GATX 212028 LOADED
> 55 NYC 221137 LOADED
> 56 NKCR 65424 LOADED
> 57 AOK 19207 LOADED
> 58 MP 269821 LOADED
> 59 CHTT 101297 LOADED
> 60 TEIX 7810 EMPTY

UN/NA ID: UN1170
PSN: ETHANOL
Hazard Class: 3
Railroad: CN
Railroad Phone: (800) 465-9239

> 32 UTLX 202713 RESIDUE
> 33 TTGX 941789 LOADED
> 34 TTGX 700766 LOADED
> 35 TTGX 986723 LOADED
> 36 TTGX 981746 LOADED
> 37 TTGX 970100 LOADED
CN Emergency Response Plan

- Emergency Notification
- Plan Activation
- Assessment
- Joint Resource Allocation
- Access Control
- Unified Incident Command

March 2013
Active on a Number of Fronts

- TC Minister’s Emergency Response Task Force
  - Incident Management
  - Emergency Response Process
  - ERAP Activation
  - Emergency Responder Training

- Industry Working Groups
  - TransCAER

- Stake Holder Engagement
Delivering Safely & Responsibly

Investing in training and embedding a safety culture

Risk assessment and mitigation, root cause analysis

$2.25 billion capital spending in 2014
$2.6 planned in 2015

Employing a wide range of inspection and detection technologies