



BUILDING AMERICA®

July 24, 2017

Oil Train Safety and ER Planning Session

Tim O'Brien

Director, Hazardous Materials
Management

First Responder Training



- TransCAER
 - Commodity
 - Preparedness assistance
- Security Emergency Response Training Center (SERTC)
- Public/Private Partnerships
 - Regional Training Centers
 - Joint Training Events
- Crude By Rail
 - On Line
 - Fire House
 - Hands On (SERTC)



Railroad Emergency Response Plans

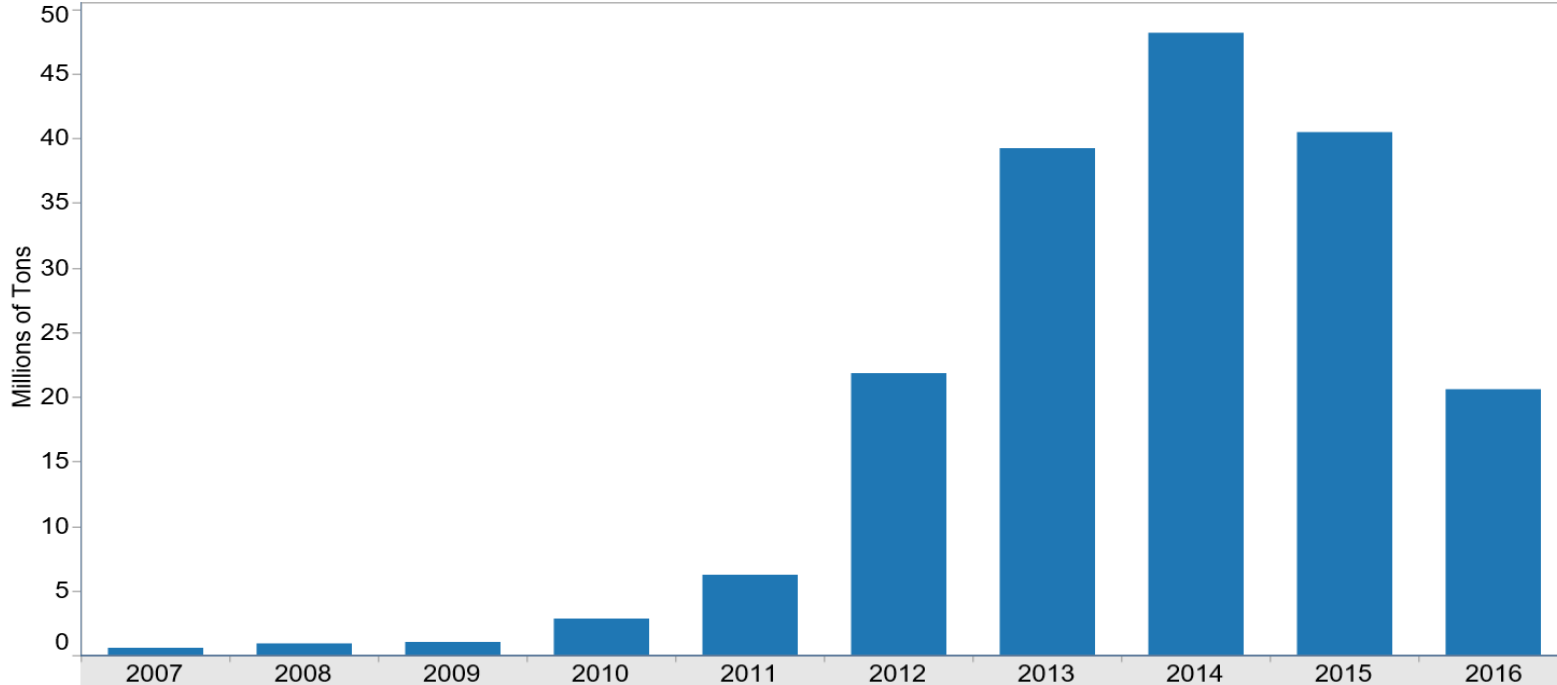


- Hazardous Materials ER Plan
 - Core plan
 - Cover system and facilities
 - Includes oil spill response
- OPA-90 Plans
 - Covers facilities which have > 1M gallons of oil storage
 - Specific drill requirements
- Geographic Response Plans
 - State Specific Response Plans
 - MN, CA, WA
 - Federal Oil Spill Response Plan (Awaiting Final Rule)
 - OPA-90 type drill requirements
 - State reporting of HHFT traffic

U.S. Crude Oil Movement Update



Tons Originated by U.S. Class I Railroads
Crude petroleum



Data include the U.S. operations of CN and CP.
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BNSF Hazardous Materials Safety

Justin Piper, CHMM

DIRECTOR, HAZARDOUS MATERIALS

7/24/2017



Rail Transports Hazardous Materials Safely



- Since 1980, railroads reduced rates for employee injuries, train accidents and grade crossing collisions by **80%**
- In 2016 BNSF moved hazardous materials **99.997%** of the time without an accidental release



Prevention: Reducing Risk

Human Factor

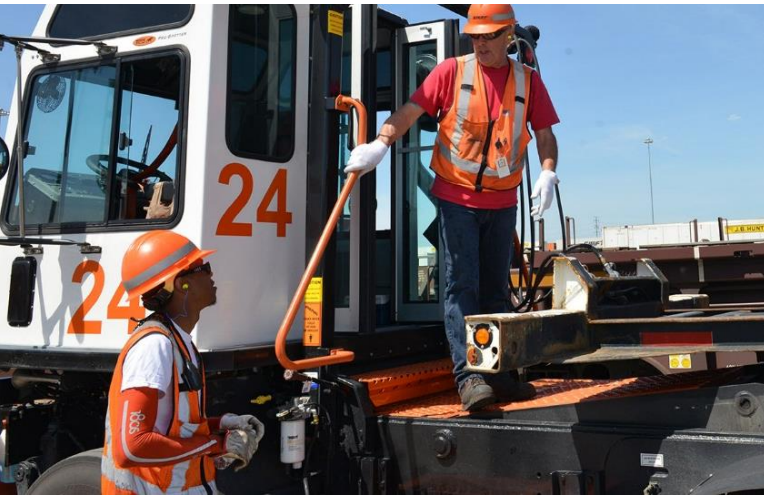
- Training
- Remote monitoring
- Positive Train Control
- Self reporting protocol

Equipment/Mechanical

- Ultrasonic inspection
- Detector network - dragging equipment
- Technology
 - Thermal/infrared scanning for warm bearing detection

Track/Signal

- Enhanced track inspection training
- Continued elimination of jointed rail
- Strong capital program for tie renewal
- Technology - ground penetrating radar and enhanced geometry testing



Our ongoing focus is on instilling a **culture of commitment and compliance** – a culture that is sensitive to exposure and risk.

Unmanned Aerial Vehicles (UAV's)

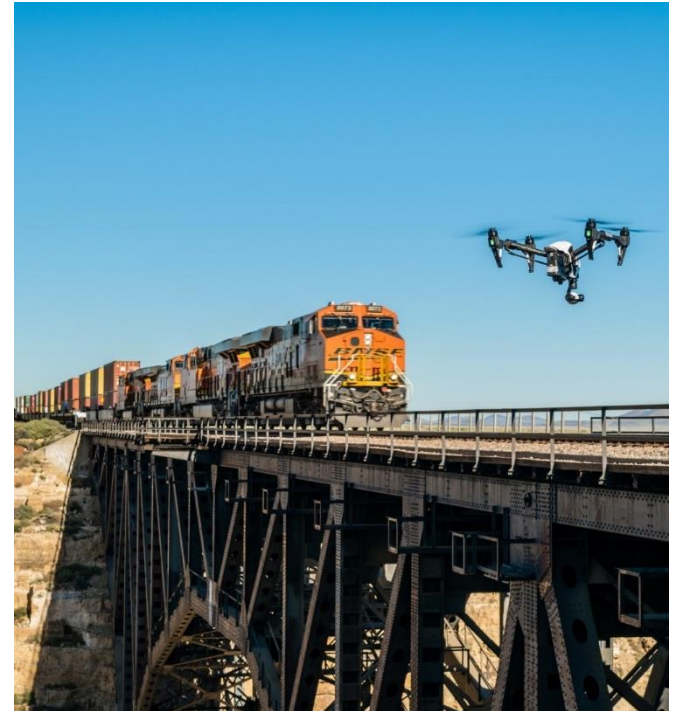
BNSF is one of only a few companies in the United States – and the first railroad – to take the lead in the use of Unmanned Aerial Vehicles (UAVs)

Supplemental track and structure inspection

- Small multi-rotor aircraft
- Operations governed by FAA Section 333 Exemption

Track integrity flights for key train operation

- Larger fixed wing aircraft
- Initially governed by FAA Research Agreement (CRDA)



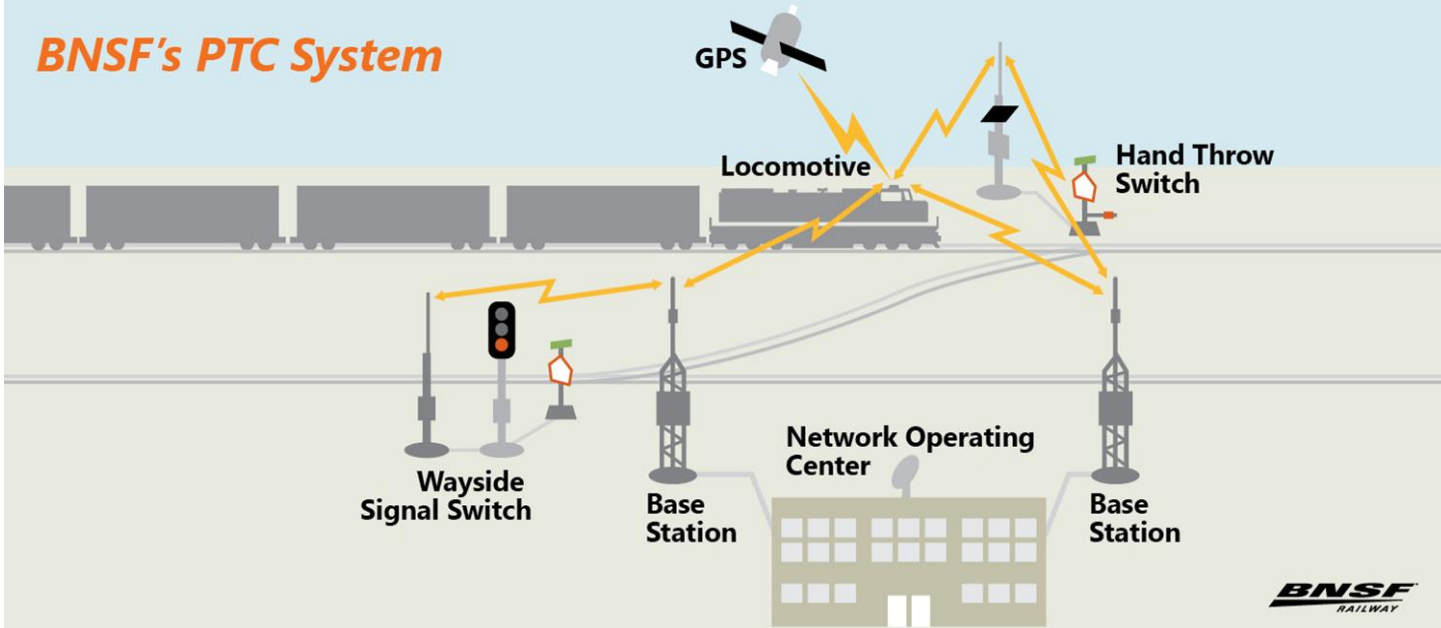
Prevention: Positive Train Control (PTC) Deployment Will Enhance Safety

PTC is a digital wireless communication technology



The Future

BNSF's PTC System



Mitigation: New Tank Car Standards



Mitigation: New Tank Car Standards

Tank Cars for High-Hazard Flammable Trains (HHFT)

New tank cars built after Oct. 1, 2015, must meet enhanced DOT 117 design or performance criteria for HHFT:

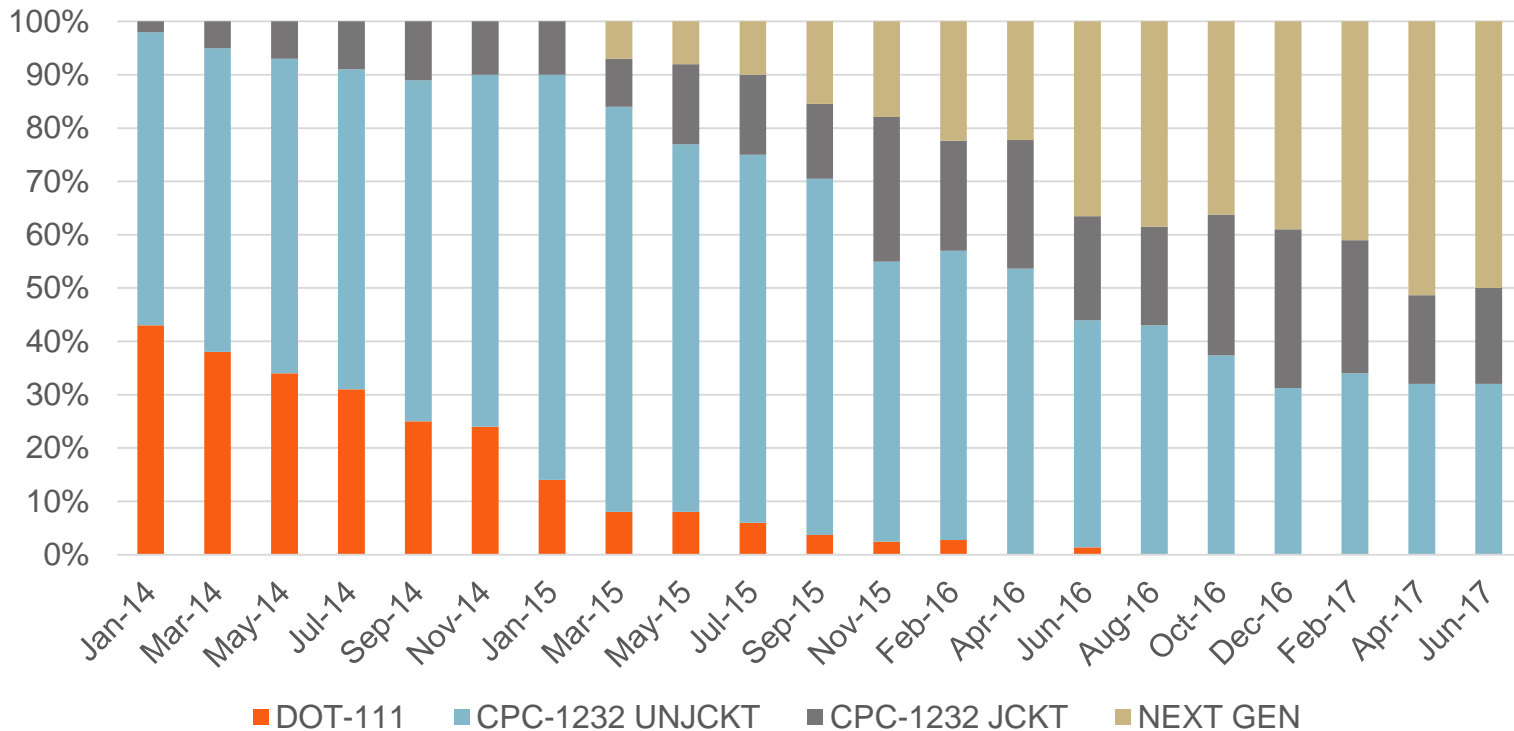
- Increased thickness from 7/16 inch to 9/16 inch steel
- Thermal protection required
- Jacketing with minimum 11-gauge steel and weather-tight
- Full-height Head Shield - 1/2-inch thick



Mitigation: New Tank Car Standards

| US-DOT | | | |
|--|------------------------------------|-------------------------------------|--|
| Material | Jacketed or Non-jacketed Tank Cars | DOT-111 not authorized on or after: | DOT-111 CPC-1232 not authorized on or after: |
| Unrefined petroleum products – Class 3, PG I (e.g., Crude Oil) | Non-jacketed | January 1, 2018 | April 1, 2020 |
| | Jacketed | March 1, 2018 | May 1, 2025 |
| Class 3, PG I (flammable liquid), other than refined petroleum products | Non-jacketed | May 1, 2025 | May 1, 2025 |
| | Jacketed | May 1, 2025 | May 1, 2025 |
| Unrefined petroleum product – Class 3, PG II OR PG III (flammable liquid) | Non-jacketed | January 1, 2018 | April 1, 2020 |
| | Jacketed | March 1, 2018 | May 1, 2025 |
| Ethanol | Non-jacketed | May 1, 2023 | July 1, 2023 |
| | Jacketed | May 1, 2023 | May 1, 2025 |
| Class 3, PG II or PG III (flammable liquid) other than unrefined petroleum products or ethanol (see above) | Non-jacketed | May 1, 2029 | May 1, 2029 |
| | Jacketed | May 1, 2029 | May 1, 2029 |

Tank Cars in Crude-by-Rail Service on BNSF



Geographical Response Plans (GRP's)

- Region 10 RRT/NWAC— Responsible for Plan Development

- 38 Current Public GRP's

- BNSF GRP Development

- Upper Deschutes River (OR - draft)
- Lake Pend Oreille (ID)
- Kootenai River (ID/MT)
- Lake Almanor/Feather River (CA)
- Middle Fork Flathead River (MT)
- Wind River (WY)
- Upper Mississippi River (MN)
- Upper Colorado River (CO)

Emergency Contact Sheet
Pend Oreille Subbasin Geographical Response
BNSF Railway Company

Required Notifications for Oil Spills and Hazardous Substances Re

BNSF Notification – Resource Operations Center
BNSF Notification – Services Interruption Desk (forth)
Federal Notification – National Response Center (U.S. Spill Reporting)
Federal Notification – USEPA Region 10 Spill Response – Idaho
State Notification – Idaho State Communications Center

BNSF FEDERAL/STATE/TRIBAL CONTACTS

| BNSF/STATE/TRIBAL CONTACTS | TRIBAL/COUNTY/CI |
|--|-----------------------------------|
| Director Hazard, Special Ops 317-621-1225 | Tribe Headquarters |
| Pub. Affs. | Planning & Public Work |
| Hazard Manager – Justin Eyer 202-552-9832 | Public Water Director |
| Mgr. Hazard Planning – No. Winslow 408-252-8051 | Utilities Supervisor |
| Dir. – Hazard Mgr. – Rocco Murrin 408-250-1025 | Local Government/Co. |
| Looking Glass | Local Public Services |
| Dir. Engineer – Keith Murehead 603-590-1002 | Bonner County Depart |
| Roadmaster – David Dixon 703-520-2034 | Emergency Management |
| Roadmaster – Anna Olson 202-297-4913 | Bonner County Public |
| Env. Operations – Mike Perron 408-290-9883 | Bonner County |
| Env. Remediation – Mark Enochs 202-492-5029 | Local Government/Co. |
| U.S. Forest Service Region 3 202-253-6001 | Local Government/Co. |
| Sandpoint R.D. 202-766-7230 | Clark, Felt, ID |
| U.S. Forest Service Idaho Panhandle 202-766-7230 | Ponderay, ID |
| National Forest Headquarters 202-379-5040 | Scandia, ID |
| U.S. Fish Wildlife Service – Boise, ID 202-379-5040 | Sandpoint, ID |
| U.S. Fish Wildlife Service – Soda Lake 909-561-6939 | Trane, ID |
| U.S. Coast Guard – Pacific Shore Team 408-242-2511 | Pratt River, ID |
| U.S. Army Corp Of Engineers 202-704-3000 | |
| U.S. Army Corps of Engineers 202-427-3123 | |
| State of Idaho | |
| Idaho Department of Fish and Game 202-399-1414 | |
| Idaho Department of Water Resources 408-442-1272 | |
| Idaho Bureau of Homeland Security 408-431-0014* | |
| Idaho Department of Environmental Quality 605-947-3777* | |
| Idaho Health Department Office 607-463-4057 | |
| Panhandle Health District 202-292-5190 | |
| Idaho State Police 202-884-7000* | |
| Idaho DOI – Boise 202-324-9000 | |

Miscellaneous Contacts

| Miscellaneous Contacts | Utilities |
|--|---|
| Boone (Forest Inspector) 202-253-1441 | Idaho Power (ID) 800-354-6141 |
| Living Services | Washington State Spill Reporting (as warranted) |
| J.C. Williams Service 509-441-2000 | Washington Emergency Management 800-280-5555 |
| Carbon Hill/Bozeman 202-292-9271 | Division for spills that may impact Washington state |
| Northern In 202-207-4059 | Washington State Dept. of Ecology (for spills that may impact Washington state) 800-326-3535 |
| Idaho Hydrologist Services 803-964-9201 | |
| Orange Aviation 202-253-9102 | |

*Contact numbers started 24 hours per day.

Draft Pend Oreille Subbasin Geographical Response Plan June 2016
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Northwest Area Committee

LOWER DESCHUTES RIVER GEOGRAPHIC RESPONSE PLAN (GRP)





HazMat By Rail Plan

Government | Industry | Community



Ordo Ex Chaos

Need for a Columbia County Plan

- 11 EHS sites
- 51 miles of mainline railroad
- 65 miles of State Highway 30
- 7 multi-use Ports and industrial parks



Ordo Ex Chaos

Hazardous Materials Emergency Preparedness Grant Program

Public – Private Partnership through LEPC



State of Oregon
Department of
Environmental
Quality



Ordo Ex Chaos

Continuous Improvement

- Engage your citizens, public sector, and industry partners through your LEPC.
- Exercise.
- Stay abreast of the evolving threats, hazards, and industry safety enhancements.
- Update your plan.



Ordo Ex Chaos

For More Information

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Columbia County Office of Emergency Management

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Ordo Ex Chaos

Pacific Northwest Disaster Resilience Symposium PNWER Annual Summit

Panel: Oil Train and Emergency Response Planning

Portland, Oregon – July 24, 2017

Marc Grignon

Regional Director, Surface, Pacific Region, Transport Canada



CANADA 150



Timely, Effective and Harmonized Regulatory and Legislative Process/Instruments implemented

Following the tragic train derailment in Lac-Mégantic, Québec, on July 6, 2013, Transport Canada quickly implemented the following:

Within a month of the incident:

- Issued an [Emergency Directive](#) requiring the securing of unattended locomotives and number of crew for trains carrying dangerous goods

Within six months of the incident:

- Issued **Protective Directions 31 and 32**
- [Engaged technical and industry experts](#) to make recommendations
- Approved updated [Canadian Rail Operating Rules](#)
- Published proposed **regulatory changes** to [adopt new standards for DOT-111 tank cars](#)



Within a year of the incident:

- Completed **stakeholder consultations** on a [comprehensive review of the liability and compensation regime](#) for Rail
- Issued an [Emergency Directive](#) requiring railway companies to immediately implement key operating practices
- Issued **Protective Directions 33 and 34**
- Announced a [TDG Emergency Response Task Force](#)
- **Published amendments** to the *Transportation of Dangerous Goods Act* that [update the DOT-111 tank car standard](#)

Tailored Approach

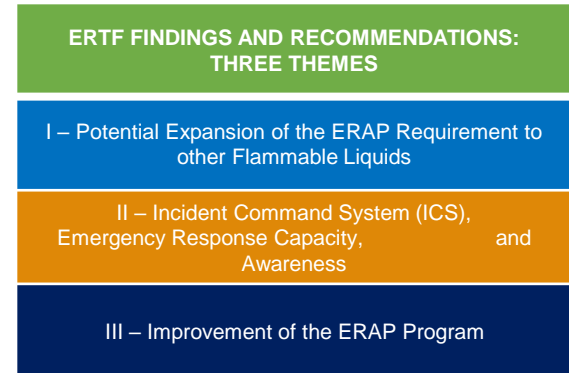
Public: Focus on safe people and safe operations, knowing who is regulated and who is moving what types of dangerous goods and where.

- Protective Direction [36](#)
- [Reporting – Part 8 of the Transportation of Dangerous Goods Regulations](#)
- [Consultations](#)
- Consultation tool – [Let's Talk Transportation of Dangerous Goods](#)

First Responders/Communities: Focus on minimizing damages and responding effectively in case of a spill. Activities include measures to reduce impacts of incidents and support firefighters and first responders' need for information, communication, and coordination.

- [Emergency Response Assistance Plans](#) (ERAP)
- [Emergency Response Task Force](#) (ERTF)
- Steering Committee on First Responders Training
- GPAC Sub-committee on Emergency Response
- Exercises [Vulcan](#) & [Athéna](#)
- [2016 Emergency Response Guidebook](#) (published every 4 years)
- [Video: Overview of the Emergency Response Guidebook](#)
- Videos aimed at First Responders
- [CANUTEC](#) – The Canadian Transport Emergency Centre

[Safety Awareness Materials and FAQ](#)



Harmonization



Engaging Internationally

- The United Nations Sub-Committee of Experts on the Transport of Dangerous Goods (UNSCETDG)
- The International Civil Aviation Organization (ICAO) Dangerous Goods Panel (DGP)
- The International Maritime Organization (IMO) Sub-Committee on Carriage of Cargoes and Containers (CCC)
- The International Atomic Energy Agency (IAEA) Transport safety Standards Committee (TRANSSC)

Canada/U.S. Collaborations

- Canada-U.S. Regulatory Cooperation Council (RCC)
- [TC-117 standard](#)
- [Protective Direction 37](#)

Safety Research and Analysis

- Crude Oil Sampling and Analysis
- Expanded Crude Oil Sampling and Analysis
- Behaviour of Tank Cars Carrying Crude Oil and other Flammable Liquids Exposed to Fire Conditions
- Risk Evaluation of Tank Car Breach: Focus on Top Fittings Protection



Future Outlook

Transportation of Dangerous Goods Regulations (TDGR)

- [Regulations Amending the Transportation of Dangerous Goods Regulations \(Marine Provisions – Part 11\)](#)
- [Canadian Update \(including Parts 2 & 5\)](#)
- [Emergency Response Assistance Plans – Part 7](#)
- Training – Part 6

Rail Safety

- *Railway Safety Act* Review launched on April 26, 2017
- Mandating Voice and Video Recorders on Locomotive Cabs

[Canada's Oceans Protection Plan](#)