Transport Canada | Transports Canada

TP 2711 E

Transportation of Dangerous Goods

NEWSLETTER

2017 | Vol.37 No.1 | TP 2711E | 06/2017 | ISSN 0828-5039

INSIDE

A representative chlorine release trial showing the toxic release cloud and testing environment.

TRANSPORTATION OF DANGEROUS GOODS RESEARCH: "JACK RABBIT II" PROGRAM UPDATE

By Tagenine Alladin, Alison Butko, and Peter Mirtchev

Chlorine is an essential chemical in today's world. Some use it as a disinfectant in water purification, while others use it in the manufacture of important products. It is often transported in very large quantities, such as the 81 tonnes (90 tons) carried by a single rail tank car. Chlorine is a toxic gas that can present a serious risk to public safety if released from its means of containment. It is the second most transported toxic – inhalation hazard (TIH) gas in North America.

Canada

Cette publication est aussi disponible en français sous le titre *Transport des marchandises dangereuses – Nouvelles*.

Subscriptions are free of charge and available to anyone on request by visiting the TDG website at: www.tc.gc.ca/eng/tdg/newsletter-menu-268.htm

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This newsletter is also available at the same internet address. Please address comments and inquiries regarding additional information or publications to:

The Editor,
Transportation of Dangerous Goods Newsletter
Transportation of Dangerous Goods Directorate
Transport Canada
330 Sparks Street, Tower C, 9th floor-ASDB
Ottawa, Ontario, Canada
K1A 0N5

Contacts

Transportation of Dangerous Goods Directorate
Director General
Nicole Girard
(Nicole.Girard@tc.gc.ca)
TDG-TMD@tc.gc.ca

CANUTEC
Information: 613-992-4624
Emergency: 613-996-6666 Fax: 613-954-5101
1-888-CAN-UTEC (226-8832)

Atlantic Region
Dartmouth: 902-426-9461 Fax: 902-426-6921
St. John's: 709-772-3994 Fax: 709-772-5127
Moncton: 1 866-814-1477 Fax: 506-851-7042
E-mail: TDG-TMDAtlantic@tc.gc.ca

Quebec Region
514-283-5722 Fax: 514-283-8234
E-mail: TMD-TDG.Quebec@tc.gc.ca

Ontario Region
416-973-1868 Fax: 416-973-9907
E-mail: TDG-TMDOntario@tc.gc.ca

Prairie and Northern Region
Winnipeg: 204-983-5969 Fax: 204-983-8992
Saskatoon: 306-975-5105 Fax: 306-975-4555
E-mail: TDG-TMDPNR@tc.gc.ca

Pacific Region
New Westminster: 604-666-2955 Fax: 604-666-7747
Kelowna: 250-491-3712 Fax: 250-491-3710
E-mail: TDGpacific-TMDpacifique@tc.gc.ca

WRITERS/CONTRIBUTORS TO THIS ISSUE

- **Nicole Girard**
  Director General
  TDG Directorate
- **Alison Butko**
  Acting Manager, CANUTEC Research and Publishing Services
  TDG Directorate
- **Tagenine Alladin**
  Scientific Research Advisor
  Research, Evaluation and Systems, TDG Directorate
- **Peter Mirtchev**
  Scientific Project Officer
  Research, Evaluation and Systems, TDG Directorate
- **Chris Powers**
  Chair of the Steering Committee on First Responder Training
  TDG Directorate
- **Peter Coyles**
  Special Advisor to the Director General
  TDG Directorate
- **Anne-Marie Noël**
  Acting Chief, Inspection Standards & Safety Awareness
  Compliance and Response Branch, TDG Directorate
- **Jean-Philippe Morency**
  Junior Emergency Response Advisor, CANUTEC
  TDG Directorate
- **Rui Hao (Leo) Wang**
  Emergency Response Advisor, CANUTEC
  TDG Directorate
- **Natacha Paquette**
  Emergency Response Advisor, CANUTEC
  TDG Directorate
- **Julie Laurendeau**
  Remedial Measures Specialist
  Compliance and Response Branch, TDG Directorate
- **Monique Lavoie**
  Remedial Measures Specialist
  Compliance and Response Branch, TDG Directorate
- **Roberto Bruni**
  TDG Inspector/Instructor
  Compliance and Response Branch, TDG Directorate
- **Lindsay Jones**
  Safety Policy Analyst
  Research, Evaluation and Systems, TDG Directorate

Researchers world-wide know that current computer models used in emergency planning and response have been inconsistent with real-life large-scale chlorine releases. This is why they agree there is a need for additional testing to fill in critical knowledge gaps. There is a particular need to look at large-scale scenarios, such as rail car, tanker truck or storage tank releases, which have never been experimentally validated.

To address these concerns, the U.S. Department of Homeland Security Chemical Security Analysis Centre (DHS CSAC) and the U.S. Defense Threat Reduction Agency (DTRA) initiated a multi-year, multi-million dollar TIH research program, called Jack Rabbit (JR) in 2010. The Transportation of Dangerous Goods (TDG) Directorate has been participating in this project since 2013. The Jack Rabbit program was divided into two parts, Jack Rabbit I (JRI), and Jack Rabbit II (JRII).

Building on JRI project data, which involved 1 and 2 tonne (1 and 2 ton) field releases of chlorine and ammonia, JRII included large-scale chlorine releases of up to 18 tonnes (20 tons). This represented the largest and most comprehensive study of a TIH's chemical release behaviour. The goals of the JR program include developing:

- More efficient and effective emergency response measures;
- More accurate chemical hazard modeling and risk assessment;
- Better planning and resiliency for release incidents; and
- Better ways to reduce the impact of TIH releases to affected populations and infrastructure.

As part of JRII, project experts conducted release trials at the Dugway Proving Ground in Utah.

In 2015, they:

- Built a mock urban environment to simulate buildings and obstacles in the path of the chlorine cloud;
- Placed chemical detection sensors at regular intervals of up to 11 km from the release source to measure chlorine concentrations to help validate downwind currently-used initial isolation and protective-action distances; and
- Completed five successful release trials ranging from 4.5 to 8 tonnes (5 to 9 tons).

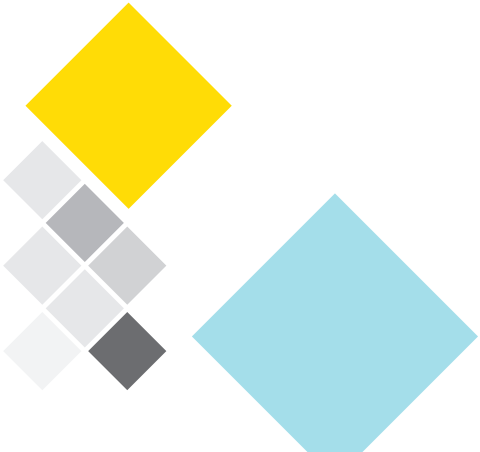
In 2016, they completed five trials of up to 18 tonnes (20 tons). These trial series allowed the project team to:

- Study the different chlorine dispersion patterns between the mock urban and unobstructed environments.
- Study chlorine's effects on soil, vegetation, and internal combustion engines from an emergency preparedness point of view.
- Observe that:
  - Wind is the dominant factor affecting dispersion;
  - Being inside a structure is initially better than being outside;
  - Infiltration into structures increases over time, the rate of which depends on the tightness of the seal of the structure;
  - Moving to higher areas in the building is an effective protective option, especially when dealing with denser-than-air gas releases (e.g., chlorine);
  - The vapor sometimes moves upwind in low wind conditions; and
  - Chlorine clouds have no apparent effects on internal combustion engines, indicating vehicles could possibly drive through it unaffected.

Next Steps

In an effort to further quantify the impacts of chlorine removal by interaction with soil and vegetation, the TDG Directorate has sponsored continuing chlorine release research as part of the JR program. This work, funded by the Defence Research Development Canada Targeted Investment initiative, will use a specially built chamber to test chlorine's reactivity with specific soil and tree species in a laboratory setting. These types of organic matter may prove to be an important way to remove chlorine clouds in case of a release along transport routes or next to fixed facilities. This research will continue throughout 2017.

If you have any questions about the Jack Rabbit research program, please contact TDG's Scientific Research group at TDG-RD-TMD@tc.gc.ca.



WORD FROM THE DIRECTOR GENERAL

By Nicole Girard

I am proud to introduce this spring 2017 edition of the Transportation of Dangerous Goods (TDG) Newsletter, which covers the latest updates pertaining to emergency response.

With an oversight capacity that has steadily grown since 2013, the TDG Directorate developed many initiatives that have enhanced the response capacity should dangerous goods incidents occur. This newsletter paints a portrait of the work we are pursuing in this regard, ensuring Canadians' safety through thorough mitigations of incidents involving the transportation of dangerous goods. Here are a few of the outstanding projects covered in this current edition.

Vulcan and Athéna Exercises

On March 12-13, 2016, Transport Canada – in collaboration with the Defense Research and Development Canada Canadian Safety and Security Program (DRDC CSS) – led a field exercise in Maple Ridge, British Columbia (Exercise Vulcan) as part of several federal efforts to improve Canada's response capabilities in the event of an incident involving a train transporting flammable liquids, in particular crude oil.

Another train derailment exercise, Exercise Athéna, was held on February 25-26, 2017 at the *Institut Maritime du Québec* in Lévis, Quebec. Hosted once again in partnership with DRDC CSS, the exercise's goal was to assess gaps and identify areas for improvement when first responders are dealing with incidents involving flammable liquids transported by rail.

Both exercises provided first responders with the opportunity to gain awareness and understanding of the industry resources, tactics, and techniques available to them when dealing with such emergencies. TDG experts also had the opportunity to assess areas for improvement, and to identify aspects that could be the focus of future initiatives.

Steering Committee on First Responder Training

Another initiative worth underlining is the Steering Committee on First Responder Training, established on December 14, 2016 in response to the Emergency Response Task Force's recommendation for Transport Canada to provide assistance in the development of a national training curriculum for first responders.

Participating stakeholders include contributors representing industry associations, emergency response contractors, training schools, modal carriers, Indigenous communities, municipalities, and fire marshals and commissionaires.

Based on the competency guidelines for first responder training that were announced by the Minister in April 2016, the Steering Committee is one of the platforms through which first responders can enhance their knowledge and expertise on rail incidents involving flammable liquids.

Safety Awareness Kits

It should also be noted that this past February, Transport Canada announced the publication of four separate Safety Awareness Kits aimed at targeted audiences, namely First Responders, Communities/Municipalities, Industry and the General Public. These kits contain valuable information on the Transportation of Dangerous Goods, and are available online on the Transportation of Dangerous Goods Safety Awareness Materials and FAQ webpage. This project is the sum of TDG's efforts in reaching out to Canadians involved in the transport of dangerous goods, and to enrich their level of awareness in this regard.

Finally, let me reiterate that all the initiatives mentioned in this TDG newsletter were developed with the common goal of enhancing the safe transportation of dangerous goods; while emphasis should remain on the *Transportation of Dangerous Goods Act*, its regulations and standards, we must also focus on first responders as a crucial part of the equation, keeping Canadians safe in the event of an incident. With such continued collaborative efforts in this regard, we will ensure that our program remains ahead of the curve when it comes to the safe transportation of dangerous goods.

FLAMMABLE LIQUIDS TRAINING FOR FIRST RESPONDERS

By Chris Powers

Exercise Vulcan at JIBC, March 2016.

The Minister of Transport established the Emergency Response Task Force (ERTF) in 2014 as a result of the tragic rail incident in Lac-Mégantic, Quebec. Its main focus was to improve public safety at dangerous goods incidents involving flammable liquids transported by rail. The ERTF completed its mandate in March 2016 and made 40 recommendations to the Transportation of Dangerous Goods (TDG) Director General, Nicole Girard. Transport Canada has been actively working on addressing these recommendations with a number already instituted.

A critical issue the Task Force identified early on is first responders' lack of capacity to handle flammable liquids spills or fires. This is due, in part, to a lack of knowledge and training. Another problem is the limited capacity of small or remote communities to fund the resources and training needed to respond to an incident involving flammable liquids.

The ERTF established Subgroup 5 to assess how best to address the gaps in Canada's current training program for first responders. Part of its mandate was to identify key components of an educational program that would reflect Canadian context. ERTF Recommendation 24 suggested that Transport Canada support the concept of a Canadian "Flammable Liquids in Transport Training Program".

Appropriate training is crucial to the safety of first responders and the public during transportation incidents involving flammable liquids. Local emergency responders, many of them volunteers, play a significant role in these responses across Canada. For example, they are expected to initiate the critical steps of assessment and perimeter containment, based on their knowledge and expertise. In this role, familiarity with rail equipment and the risks associated with the bulk transportation of dangerous goods is key.

The response from local fire services is an essential part of a safe and effective implementation of an Emergency Response Assistance Plan (ERAP). First responders need to:

- be aware an ERAP exists for a product;
- know the resources that could be made available to them; and
- be trained to make immediate and appropriate decisions.

What is an ERAP? An ERAP is a plan that describes what is to be done in the event of a transportation incident involving certain higher risk dangerous goods. The ERAP is required by the TDG Regulations for dangerous goods that require special expertise and response equipment to respond to an incident.

To learn more about ERAP, read our December 2015 Newsletter available at https://www.tc.gc.ca/media/documents/tdg-eng/Newsletter_Vol35_EN_2015_FINAL_R12.pdf.

An important part of this training would be to make first responders aware of not only "What to Do" at an incident, but just as importantly, "What Not to Do". The size of these incidents and the danger they present require a very different approach and strategy than most fires municipal firefighters are trained to deal with. This is why the specialized resources available from the ERAP holder and railways must **always** be part of any response to an incident.

In September 2016, the TDG Directorate established the Steering Committee on First Responder Training to develop a training curriculum based on the ERTF document *Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains*. The Committee will also consider other industry programs and information available, including the recommendations from the March 2016 Exercise Vulcan held at the Justice Institute of British Columbia. On December 14, 2016, the Committee held its first meeting and was honoured to have Minister of Transport Marc Garneau speak and emphasize the importance he places on its work.

The Committee will work with a third party provider to:

- Develop the curriculum content;
- Identify various course delivery options including on-line learning, hands-on and live fire exercises; and
- Identify appropriate locations across Canada for conducting full-scale field exercises.

The continued participation of industry including railways, shippers and ERAP contractors in helping provide first responders with opportunities to undertake various levels of training is an important component of this initiative. The Committee hopes to complete its work by the fall of 2017.

PROTECTIVE DIRECTION 36: DANGEROUS GOODS INFORMATION TO CONDUCT RISK ASSESSMENTS AND EMERGENCY PLANNING ACTIVITIES

By Peter Coyles

Municipalities, first nation communities and first responders are seeking more information about the dangerous goods moving through their areas by rail, as a way to improve:

- Risk assessments;
- Emergency planning; and
- First responder training.

On April 28, 2016, Transport Canada issued Protective Direction 36, which requires:

Canadian Class I Railways (Canadian National (CN) Rail and Canadian Pacific (CP) Rail) to provide yearly and interim (6 month) reports to the designated emergency planner for the jurisdiction (can be from the municipality, first responder or first nation community) in the official language(s) of their choice, on the volume and nature of dangerous goods moving through their jurisdiction by rail (transition to quarterly reports in April 2018).

These reports should include:

- Information on the number of unit trains;
- Percentage of railway cars transporting dangerous goods through a jurisdiction;
- On request, information broken down by rail line where a jurisdiction has two rail lines from the same Canadian Class I railway operating in the jurisdiction;
- Notice of any new unit train that has not been transported through a jurisdiction over the last 4 quarters;
- Jurisdiction-specific public information (a top ten list) they can use publicly as they see fit including posting it on their website;
- Provincial public information (a top ten list) posted on the railway website for dangerous goods transported through a province for which the Canadian Class I Railway operates;
- Public information (a top ten list) they can use in interactions with the public; and
- Clarifying how jurisdictions can share confidential dangerous goods information internally and with a neighbouring municipality, where a joint emergency response and planning agreement is in place.

All other railway operators to provide the designated emergency planner for the jurisdiction with:

- A yearly dangerous goods report on the volume and nature of the dangerous goods transported through a jurisdiction;
- Notice of any significant change in the transport of dangerous goods through their areas; and
- Public information (a top ten list) they can use in interactions with the public.

Emergency planners are now able to access important accurate dangerous goods information to conduct its risk assessment and emergency planning activities. To gain access to Protective Direction 36 information, an emergency planner designated by the jurisdiction must register by emailing their request to TC.ProtectiveDirection-OrdrePreventif.TC@tc.gc.ca; or by writing to:

Canadian Transport Emergency Centre (CANUTEC)
Place de Ville, Tower C
330 Sparks Street, 14th Floor,
Ottawa, Ontario, K1A 0N5
Attention: Director of CANUTEC

The public rail shipment data by **Province or Territory** is available online. You can visit:

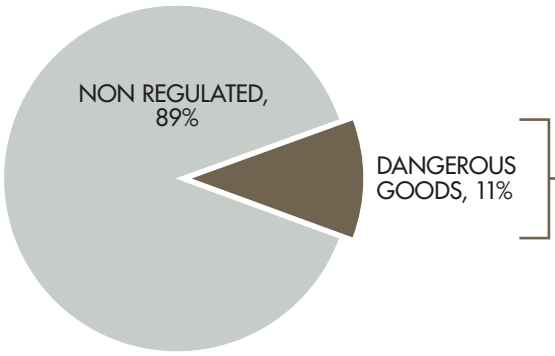
- CN Rail's website, at: https://www.cn.ca/en/delivering-responsibly/safety/process/transportation-of-dangerous-goods.
- CP Rail's website, at: http://www.cpr.ca/en/safety-site/Documents/PD-36-QC-en.pdf.

The following example shows how provincial information can improve emergency planning.

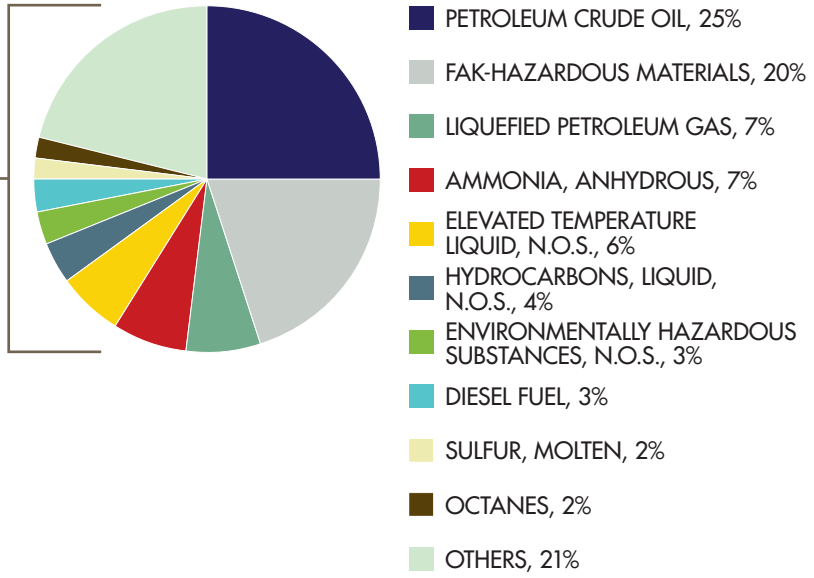
PUBLIC INFORMATION EXAMPLE

Only 11% of loaded shipments are regulated dangerous goods. The remaining 89% of loaded shipments are non-regulated products.

Rail Shipments in Canada 2015



Dangerous Goods – Breakdown of the 11%



2015 Dangerous Goods Shipments in: Province A

These top 10 products comprise 79% of the dangerous goods shipments in Province A.
The remaining 21% are many different products, each comprising less than 2% of the total.

	PROPER SHIPPING NAME	% OF DG SHIPMENTS LOCALLY
1	PETROLEUM CRUDE OIL	25%
2	FAK-HAZARDOUS MATERIALS	20%
3	LIQUEFIED PETROLEUM GAS	7%
4	AMMONIA, ANHYDROUS	7%
5	ELEVATED TEMPERATURE LIQUID, N.O.S.	6%
6	HYDROCARBONS, LIQUID, N.O.S.	4%
7	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, N.O.S.	3%
8	DIESEL FUEL	3%
9	SULFUR, MOLTEN	2%
10	OCTANES	2%
11	OTHERS	21%

SAFETY AWARENESS KITS

By Anne-Marie Noël

The Minister of Transport created the Emergency Response Task Force (ERTF) to review, assess and provide recommendations on the Emergency Response Assistance Plan (ERAP) program. By the end of its two-year mandate, the Task Force made 40 recommendations on how to improve the Transportation of Dangerous Goods (TDG) program, and by extension, increase the safety of all Canadians. All **40** recommendations were adopted by the TDG Directorate.

ERTF Recommendation 13 suggested increasing awareness and education for stakeholders such as first responders. This is why the TDG Directorate developed safety awareness kits for four specific audiences: first responders, communities/municipalities, industry and the general public. December 2016 saw the Safety Awareness team reach a milestone when these safety awareness kits were made available via the TDG website. These kits include information on:

- Emergency preparedness and response;
- Incident Command System (ICS);
- Roles and responsibilities of TDG Remedial Measures Specialists and inspectors;
- Protective Direction 36, which related to the information sharing between municipalities and railway companies;
- Safety Advisories (e.g., lithium batteries);
- Bulletins;
- CANUTEC, etc.

So far in 2017, the Safety Awareness team has:

- Distributed 1,710 paper copies to communities/ municipalities located along Canadian railways;
- Distributed first responder kits to provincial coordinators responsible for the distribution of the Emergency Response Guidebook (ERG); and
- Emailed first responders located along the rail corridor to inform them the kits are available on the TDG website.

These kits are not static. They will be updated when there is a change to regulatory requirements, clarification of regulations or when new material is available. To ensure you have the most up to date information, visit the website online at http://www.tc.gc.ca/eng/tdg/awareness-materials-and-faq-1159.html or register for updates by emailing your request to TC.TDGSafetyAwareness-sensibilisationalasecuriteduTMD.TC@tc.gc.ca.

This is the start of a new journey for the Safety Awareness team. They will work towards improving these kits by adding new material for the four targeted audiences. So, please watch for our videos on the ERG, ERAP program, and on flammable liquids, as well as the emergency preparedness template titled "You're not Alone!"

CANUTEC'S CONTRIBUTION TO EMERGENCY PREPAREDNESS AND TRAINING

By Jean-Philippe Morency

> CANUTEC advisor: "CANUTEC bonjour, how may I help you?"
>
> Incoming caller: "Hi, we have an acetone tote leaking from the back of a truck…"
>
> CANUTEC advisor: "Okay. Do you know what volume has been spilled?"
>
> Incoming caller: "What?"
>
> CANUTEC advisor: "Do you know the volume of acetone in the tote?"
>
> Incoming caller: "No, I don't know."

Responding to and managing a dangerous goods incident is never easy. Information first responders need to respond to an incident is often unavailable or limited. This is why it is crucial for them to collect as much data as quickly as possible to develop an action plan that suits the dangerous goods, and is safe for the public, the responders and the environment.

To prepare for a dangerous goods incident **after** it happens is obviously too late. First responders **must** be aware of the resources available to them **before** an emergency occurs.

A good way for them to become familiar with these resources is to simulate an emergency and to practice their response tactics. These scenarios may be carried out in a classroom setting and/or in the field.

Every year, CANUTEC participates in more than 400 emergency incident simulations. They can range from a single first responder placing one phone call, to inter-agency national-scale field scenarios. The advisors at CANUTEC are available 24/7 to answer calls relating to simulation exercises and real emergencies.

Some emergency services and government agencies call CANUTEC **beforehand** so advisors can help them plan simulations that will be as realistic and informative as possible for trainees. For example, CANUTEC can help ensure the scenario involves dangerous goods (e.g., flammable liquids, compressed or toxic gases, or corrosive liquids) commonly transported in the nearby region in realistic quantities. CANUTEC can also make sure the planned simulation will include either:

- Elements similar to those first responders face in real emergency situations; or
- Unusual chemicals, for which the intervention will require seldom-used protective equipment or detection devices.

The TDG Directorate considers simulations to be an important part of developing and understanding an emergency plan for dangerous goods incidents. Not every first responder has the opportunity to receive formal training on the transportation of dangerous goods (or "HazMat"). For some fire departments, in-house training and exercises are essential to make sure responders really understand the risks related to incidents involving dangerous goods. These exercises help identify areas of response that may need more focus, whether it's knowledge, resources or procedures. Based on these varied levels of formal training, CANUTEC advisors will answer all types of questions during simulations, but can also adapt the advice delivered based on the caller's level of knowledge and understanding.

Simulation exercises help first responders gain valuable experience by being exposed to the same questions CANUTEC advisors ask during a real emergency. These questions include:

- What substance is involved?
- Is there a fire?
- Has the pressure relief valve activated?
- What is the local weather (wind, rain)?
- Are there injuries? Are people contaminated?
- What products are available to neutralize the substance?

During a real emergency, first responders must be ready to:

- Ask the right questions, e.g., what is a safe perimeter distance for this product?
- Access the right resources, e.g., what type of personal protective equipment should I be wearing? and
- Answer certain questions about the details of the incident, e.g., how many containers are involved, are they damaged?

During an emergency situation, stress and chaos may hinder the thought process and communication. Simulating dangerous goods incidents helps train and prepare first responders to ask and answer questions as clearly as possible and to effectively use the data they receive, **before** needing these skills in a real incident.

As a general rule, CANUTEC accepts all requests to participate in a simulation. Only real-life emergencies will displace simulation calls. It is important to note that this offer applies not only to first responders, but also to members of the industry, carriers, municipalities' emergency planning officers, and to governmental organisations. To learn more about CANUTEC and simulation exercises, you may contact CANUTEC by email at canutec@tc.gc.ca or by calling our information line at 613-992-4624.

TRANSPORT CANADA'S INVOLVEMENT IN FEDERAL EMERGENCY PREPAREDNESS AND RESPONSE

By Rui Hao (Leo) Wang and Natacha Paquette

The Emergency Management Act makes the Minister of Public Safety the primary federal Minister responsible for emergency management. As part of this responsibility, Public Safety Canada developed the Federal Emergency Response Plan (FERP), which lays out how all levels of government share this important role.

In the event of an emergency, the FERP details pre-established processes and mechanisms for joint response and communication. Each federal government institution, including Transport Canada (TC), must develop emergency management plans relating to their areas of responsibility.

The FERP sets out 13 Emergency Support Functions (ESF), based on the federal resources and capabilities most frequently used during a national response to emergencies. The first ESF is transportation, and TC is the responsible federal department. Other ESF include telecommunications (Industry Canada), law enforcement (RCMP) and public health and essential human services (Public Health Agency of Canada and Health Canada). Each ESF is the responsibility of one federal government institution. Depending on the nature and scope of the emergency, responsible departments may need to activate their ESF.

As the department responsible for the transportation ESF, TC plays a pivotal role in many different types of emergencies. This is why TC makes contingency plans for, and responds to, any emergency that affects, or requires the use of, Canada's transportation system. Two groups at TC headquarters work with Federal/Provincial/Territorial agencies, as well as private industry to promote and demonstrate a coordinated response during emergencies involving the Canadian transportation system:

1. **Emergency Preparedness (EP)**

   To help communication and liaison with other groups during emergency situations, EP operates the Transport Canada Situation Centre (TCSC, or "SitCen"). The TCSC:

   - Operates 24 hours a day.
   - Is the main point of contact for TC response to an emergency involving the Canadian transportation system, no matter the mode (road, rail, air and marine).
   - Provides a centralized point of contact for liaison with TC senior management, other government departments, other countries and the North Atlantic Treaty Organization (NATO).
   - Communicates directly with the Government Operations Centre (GOC), a 24-hour emergency contact centre operated by Public Safety Canada. The GOC provides the all-hazards federal response to emergency events in Canada.

2. **Transportation of Dangerous Goods (TDG) Directorate**

   The TDG Directorate promotes public safety during transportation of dangerous goods in Canada. Within TDG, CANUTEC (the Canadian Transport Emergency Centre) is the main point of contact for transportation emergencies that involve dangerous goods. Physically co-located with the TCSC, it:

   - Provides timely technical advice to first responders and stakeholders during a dangerous goods emergency on a 24/7 basis;
   - Coordinates with TDG Remedial Measures Specialists on site when technical input is required at a dangerous goods incident;
   - Serves as the liaison between TDG staff at headquarters and those in the regions across Canada during emergencies.

The TCSC and CANUTEC coordinate communication when required during emergencies through pre-established notification criteria, to ensure the correct stakeholders always have the latest information.

In support of these roles, TC participates in large-scale, multi-agency exercises. For example, in 2016, TC:

- Hosted Exercise Vulcan. This was a large-scale simulation of a rail incident involving flammable liquids. The exercise involved 41 volunteer firefighters from the Fraser Valley Regional District, 20 different industry players, communities, and government institutions along with representatives from CANUTEC and the TDG Compliance and Response Branch.
- Participated in Public Safety Canada's Pacific Quake, a simulation of a large earthquake, with other groups involved in earthquake response, or those involved with the aftermath of such an earthquake.

Participation in multilevel exercises provides critical information on key points to improve emergency response capabilities. This also allows TDG and TC to recognize their role(s) in responding to and mitigating large-scale national emergencies that affect the transportation system.

THE TDG DIRECTORATE'S SAFETY AWARENESS PRESENTATIONS TO FIRST RESPONDERS

By Natacha Paquette

One of the TDG Directorate's many services to help with emergency preparedness and planning, is to provide outreach presentations to first responders or emergency planners, to:

- Explain the TDG Directorate's resources; and
- Discuss and promote the Emergency Response Guidebook (ERG).

In 2016, the TDG Directorate, through its safety awareness program, delivered many presentations during symposiums and conferences all across Canada. These presentations are important for both the Directorate and for first responders. Why? When first responders are familiar with the Directorate's resources, they are more likely to include the Directorate in their emergency response actions.

These presentations are often divided into two parts:

- **Part One** gives detailed background information about the TDG Directorate. This lets first responders know who we are, how we can help during a dangerous goods incident or training exercise, and the type of information we can provide. For example, first responders will learn they can call CANUTEC during an emergency or a simulation exercise involving dangerous goods to get feedback on action plans and advice on:
  - The dangers of a product (chemical properties or toxicity characteristics);
  - What level of chemical protective clothing responders need;
  - The decontamination solutions and process to clean the area and equipment; and
  - The proper personal protective equipment to use during a dangerous goods incident.

Knowing the TDG Directorate can help with these technical aspects of a dangerous goods incident will help first responders in dangerous goods emergency planning and incident response, because they will be prepared to access scientific support 24/7.

- **Part Two** presents the 2016 ERG's many different sections in detail. This information is important for first responders who:
  - Have never used the ERG;
  - Are not familiar with recent changes and additions to the 2016 edition; and/or
  - Want an ERG refresher course.

During the last section of Part Two, participants look at and discuss different scenarios to make sure they know how to use the ERG. This knowledge is very important when responding properly in the initial phase of a dangerous goods incident. First responders must be familiar with the ERG **before** needing to use it during an incident.

These outreach presentations are valuable for **all** first responders. Presentations can be provided for other stakeholders and presenters can adjust the content according to the audience's knowledge and use the sessions to:

- Explain the many changes that occur within the transportation of dangerous goods program with respect to regulations or the ERG; and
- Answer questions from the group.

If your organization is interested in hosting one of these valuable TDG Directorate presentations, please contact the TDG Safety and Awareness team by email at TC.TDGSafetyAwareness-SensibilisationalasecuriteduTMD.TC@tc.gc.ca.

VULCAN AND ATHÉNA EXERCISES: RESPONDING TO RAIL INCIDENTS INVOLVING FLAMMABLE LIQUIDS

By Julie Laurendeau

Responding to a rail car on fire (prop) at Athéna.

Background

After the tragic derailment in Lac-Mégantic, Quebec, in July 2013, Transport Canada's (TC) Transportation of Dangerous Goods (TDG) Directorate underwent regulatory and operational changes to better respond to incidents involving flammable liquids. For example, when transporting certain flammable liquids by rail, such as crude oil, shippers must now have an approved response assistance plan under TC's Emergency Response Assistance Plan (ERAP) program.

The TDG Directorate also committed to establishing and promoting the best practices of the industry and government organizations involved with TDG incidents. To fulfill this commitment, the Minister of Transport created the Emergency Response Task Force (ERTF) who brought stakeholders together from various organizations. Members met over a two-year period and presented the TDG Directorate with 40 recommendations. Specifically, Recommendations 2, 15 and 18 speak to:

- Improve response capabilities and knowledge in the event of a train derailment involving the transportation of flammable liquids;
- Increase first responders' knowledge of the ERAP program; and
- Develop response exercises to this effect.

The Exercises and Objectives

TC, in partnership with Defence Research and Development Canada's Centre for Security Science (DRDC CSS),[1] designed an exercise program to fulfill these recommendations. The program aimed at promoting awareness for first responders located in small communities, whose capacities are exceeded when incidents involving large quantities of flammable liquids occur. Moreover, this type of response is often complex and considerably exceeds their normal response framework, as it involves a dangerous goods fire.

The main goals of the exercise program were to:

- Raise the awareness level of first responders on the risks and complexities involved with the response when such incidents occur;
- Increase their knowledge of TC's ERAP program, the access to specialized resources and industry capabilities that are available under this program, and the expertise available from the industry and TC; and
- Support the development of a future national training program for first responders.

Suncor presentation of the properties of flammable liquids at Athéna.

Organizers evaluated the exercises to measure the **increase in knowledge, not individual performance**. Pre- and post-exercise surveys, feedback forms, and feedback sessions provided important information from the participants. In addition to the observations from evaluators and the partners throughout the exercises, all the data collected was used in identifying the training's strengths and shortcomings.

A basic online introductory awareness course supported by the Canadian Association of Petroleum Producers (CAPP), and the Canadian Fuels Association in consultation with ERTF stakeholders titled, "Emergency Preparedness for Rail Incidents Involving Flammable Liquids

1 The exercises were funded through the Canadian Safety and Security Program (CSSP), a federal program led by DRDC CSS, in partnership with Public Safety Canada. The program's mandate is to strengthen Canada's ability to respond to serious incidents, natural disasters, and terrorist and criminal acts through the convergence of science and technology.

in Canada" was also tested.[2] First responders completed this module before the exercises to ensure they had some basic knowledge.

The Vulcan and Athéna Exercises

The first series of exercises, named Vulcan, took place in November 2015 and March 2016 in British Columbia. The second series of exercises were held in Quebec, in French. Using the same format as Vulcan, the Athéna exercises took place in December 2016 and February 2017.

In each series, the tabletop exercise, which was designed for fire chiefs from small communities, was followed by a full-scale field exercise for the volunteer firefighters in those same communities.

The full-scale field exercises included one day of classroom awareness training and technical demonstrations outside, as well as one day of hands-on experience based on scenario management. The scenarios allowed the first responders to apply two critical aspects of response: performing a comprehensive site assessment of a derailment and responding to a tank car prop on fire, under the supervision of industry experts.

The Athéna series of exercises benefited from the lessons learned from the Vulcan exercises. For example, organizers were able to:

- Polish the training program and exercise scenarios;
- Test and validate new response tools, which will become available as training resources for response to rail incidents involving flammable liquids. These tools include:
  - The Incident Response Guide, Class 3 – Rail, which is a checklist for use both during a response and for emergency preparedness in communities; and
  - A virtual prototype, which allows first responders to experiment with the comprehensive approach to assessing the scene of a derailment.

Partial zoom view with the virtual prototype used for site assessment at Athéna.

The Results

Overall, the exercises were a unique opportunity for stakeholders to meet, share knowledge and learn. Stakeholders demonstrated a great interest, from coast to coast, in response training for rail incidents involving flammable liquids. The exercises assessed the first responders' overall level of knowledge and showed how essential it is to continue awareness training, notably in terms of:

- the risks and complexities of a response to flammable liquids incident when large quantities are involved;
- TC's ERAP program;

2 This training is available in both English and French and can be found at, http://rail.capp.ca/ as well as on *École nationale des pompiers du Québec*'s website.

Establishing an action plan with industry in the Command Post trailer at Athéna.

Gathering information during site assessment at Vulcan.

- the expertise of various industry and government stakeholders, and their roles during a response;
- the coordination of all organizations' efforts under an organized command structure.

First responders that participated in the exercises showed a great interest and felt privileged to be part of such an experience. At Athéna, as a result from Vulcan, new tools such as the Incident Response Guide and the virtual prototype were particularly appreciated. The online awareness training was deemed valuable. The practical component involving live fire on the rail tank car prop offered a unique opportunity for hands-on training. As part of the continuing efforts after Lac-Mégantic, these exercises showed the importance of training and collaboration, as well as highlighted the fact that each stakeholder has a critical role during such incidents. First responders gained a better knowledge of the risks involved and the appropriate strategies.

Information gathered from the exercises will support the development of a national training program for first responders. The overall evaluation results from the exercises indicate an enhanced awareness of the importance of not rushing into dangerous goods fires and of gathering all required information and resources before establishing an action plan. Ultimately, first responders are not alone when such incidents occur. Combining awareness, knowledge and collaboration assures the main priority of any response: the safety of the public and first responders.

A Valuable Partnership!

The Vulcan and Athéna exercises were made possible by a valuable partnership between industry and government. Several organizations provided considerable support in their development and execution.

The main partners for **Vulcan** were: TC, DRDC CSS, CN Rail, CP Rail, the Railway Association of Canada (RAC), Shell, Specialized Response Solutions (SRS), Alberta Office of the Fire Commissioner (OFC), Manitoba OFC, New Brunswick Office of the Fire Marshal (OFM), Ontario OFM and Emergency Management, and International Safety Research Inc. (ISR). Other organizations also contributed, including: Quantum Murray, RAM Environmental Response Ltd., NUCOR Environmental Solutions Ltd., GHD and Tervita. The Vulcan full-scale field exercise took place at the Justice Institute of British Columbia (JIBC), in Maple Ridge, British Columbia.

The main partners for **Athéna** were: TC, DRDC CSS, CN Rail, Genesee & Wyoming (G&W), RAC, CP Rail, Suncor, Emergency Response Assistance Canada (ERAC-AIUC), MD-UN and ISR. Other organizations that also contributed were: the *École nationale des pompiers du Québec*, GHD, and Williams Fire and Hazard Control Inc. The Athéna full-scale field exercise took place at the *Institut maritime du Québec*, in Lévis, Quebec.

INCIDENT COMMAND SYSTEM AND EMERGENCY PREPAREDNESS

By Monique Lavoie

Emergency preparedness: Structure is required during emergencies

Section 4 of the *Emergency Management Act* makes the Government of Canada, namely Public Safety Canada, responsible for protecting the safety and security of Canadians.[3] A common structure, such as the Incident Command System (ICS), allows federal government departments, private industry and other stakeholders to respond to an unplanned disaster in a coordinated and efficient manner. An ICS helps protect lives, stabilize the incident, share information, maintain communications and protect the property and the environment by ensuring a seamless and effective response.

What is ICS and where did the idea come from?

An ICS provides a common approach for managing incidents. It guides responders in an orderly and practical way, whether the incident is a small local emergency or a national disaster requiring multi-agency resources.

ICS was originally established in the U.S. in the 1970s following a series of wildfires in California. The fires crossed into multiple jurisdictions and the response was difficult to coordinate, resulting in response delays. The fires resulted in 722 homes destroyed, 576,508 acres burned and 16 deaths.[4]

How does an ICS structure work?

A disaster can easily overwhelm local first responders and resources. ICS is an all-hazards approach that provides a common language and establishes a chain of command and formal communication relationships. This is crucial to successfully manage the incident in order to avoid duplication of effort. It also ensures that everyone reports

3 Public Works and Government Services Canada / Translation Bureau. Emergency management vocabulary, 2012.

4 DD Rowley. The fires that created an incident management system, 2007.

to one leader and has a very strict span of control of 3–7 people per leader, ensuring clear communications, making it easier to meet objectives.

The ICS structure usually contains five major functional areas,[5] but can change based on the emergency:

- Command
- Operations
- Planning
- Logistics
- Finance and administration

The ICS provides one leader, the Incident Commander (IC), unless a unified command structure (UCS) is in place, where more than one IC is in charge, usually from different jurisdictions operating together. There is usually a delegation of authority in place in the jurisdiction which allows the IC, through the various functional positions mentioned above, to make the decisions required for bringing the incident under control. The IC is the leader that establishes the ICS structure and incident objectives that will protect the safety of the responders, citizens and help control the spread of damage. In short, the ICS answers the questions "Who's in Charge?" and "What's my Job?" When all players understand their roles and who to report to, the resulting emergency response is more effective.

In an ICS structure, the IC must:

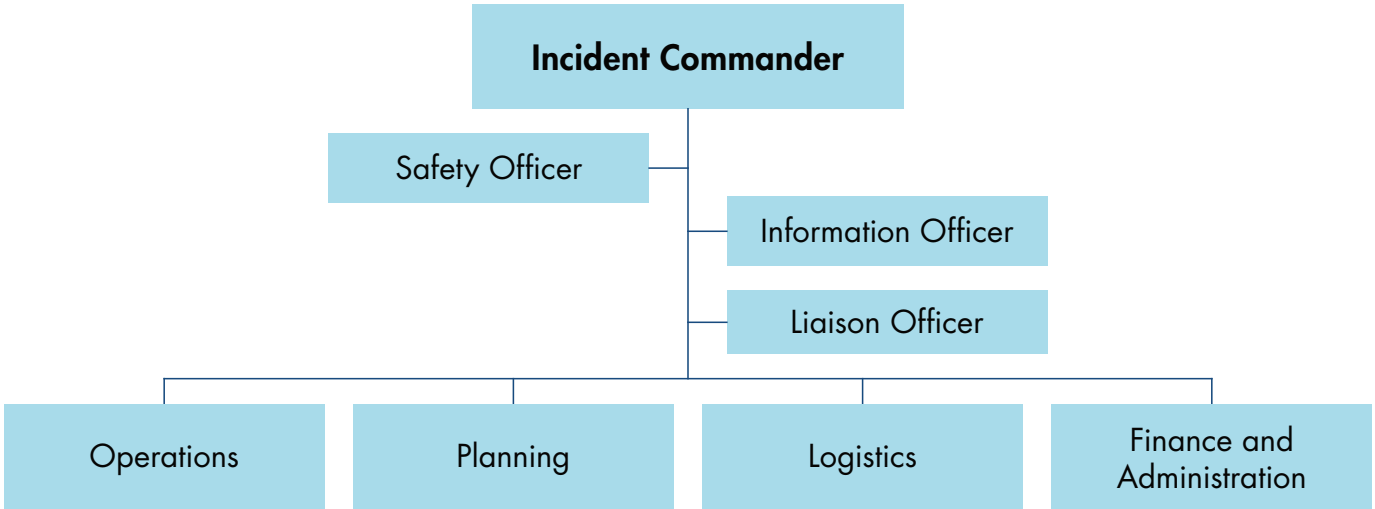
1. Set **PRIORITIES**, even though they remain constant and guide the setting of objectives.
2. Identify **PROBLEMS** as statements of what is known.
3. Formulate SMART **OBJECTIVES**: Specific, Measureable, Action oriented, Realistic and Time sensitive.
4. Put **STRATEGIES** in place as the methods for achieving objectives.
5. Specify **TACTICS** for how to use the strategies, including deployment and resource management.

This 5-step cycle **(PPOST)** replays until the IC downgrades the event and demobilizes the resources.

Why are there ICS forms to fill out during emergencies?

Emergency responders, private companies and government departments using the ICS, fill out specific forms to ensure proper objectives, strategies, tactics and resources are sourced out. These forms can be used to manage simple events such as a water main pipe breaking, or a complex event such as the Fort McMurray, Alberta wildfires in the summer of 2016. Each ICS form has a function attached to it, whether it be sourcing resources or formulating the Incident Action Plan (IAP).

When used properly, these forms help the command staff navigate an emergency in a fair and accountable manner. When an emergency is under control, a UCS may be downgraded to a single command, as jurisdictions demobilize. There is a transfer of command as the incident downgrades, and the IC terminates command once the incident is formally concluded.



5 In some jurisdictions such as the province of Quebec, there is also an Intelligence & Investigations function integrated in the Command Structure

How is ICS implemented in Canada?

British Columbia was the first province to use the ICS in the mid 1990's through its B.C. Emergency Response System, followed by the Canadian Interagency Forest Fire Centre (CIFFC). CIFFC has since adapted materials from the U.S. to offer a standardized ICS in Canada. This resulted in the "ICS Canada" standard, which is recognized by most Authorities Having Jurisdiction (AHJ) in Canada. Other AHJ may not utilize "ICS Canada" specifically, however, they do use a very similar form of ICS.

For more information on ICS, please visit http://www.icscanada.ca.

ROLES AND RESPONSIBILITIES OF TDG INSPECTORS & RMS

By Roberto Bruni

The primary mandate of the Transportation of Dangerous Goods (TDG) Act and Regulations is to promote public safety during the transportation of dangerous goods. When a dangerous goods incident occurs, and depending on how serious it is, Transport Canada (TC) may send a TDG Remedial Measures Specialist (RMS) or a TDG inspector on site. Their priority is to keep the public safe by monitoring responders' efforts to limit the effects of the incident.

WHEN WOULD TC ATTEND THE SITE OF A DANGEROUS GOODS INCIDENT?

The conditions TC considers include:

- Proximity to populated or sensitive areas;
- Quantity and type of dangerous goods involved;
- Condition of the means of containment; and
- Whether an Emergency Response Assistance Plan (ERAP) has, or should have been activated.

TC **will generally attend** incidents that require a response of more than 24 hours, such as a major train derailment involving tank cars transporting poisonous or flammable gases.

TC **may attend** incidents that require shorter response times, or incidents where an ERAP is not required, in order to:

- Monitor response activities;
- Conduct a compliance inspection or investigation; and/or
- Obtain information on the condition of the means of containment and the behaviour of the dangerous goods.

TC **may also attend** incidents at the request of local authorities if its representative can arrive in a reasonable time.

ROLES OF THE TDG INSPECTOR DURING INCIDENT RESPONSE

TC **may** assign a TDG inspector or RMS to monitor and/or attend an incident. Once **assigned** to an incident, the TDG inspector or RMS will (without going to the incident site):

- Collect information to:
  - Understand the nature of the incident, the dangerous goods, the means of containment involved and the damage to the means of containment;
  - Gather information on the dangerous goods and their behaviour during an incident from Safety Data Sheets and advisors at CANUTEC, RMS, industry, etc.; and
  - Communicate the facts to their region and address information requests.
- Monitor responders to ensure they take reasonable measures to reduce the risk to public safety;
- Monitor compliance and intervene when necessary using powers granted under the TDG Act;
- Provide guidance on appropriate remedial measures related to public safety and on compliance with the TDG Act;
- Act as a liaison for local authorities/first responders and the person who has charge, management or control of the means of containment; and
- If applicable, promote the ERAP program to people at the incident who may not fully understand its purpose.

A TDG inspector or RMS **attends the site** of a dangerous goods incident to fulfill the same responsibilities listed above, **in person**.

They also:

- Ensure responders are taking reasonable measures to reduce the risk to public safety;
- Participate in site meetings;
- Gather first-hand information on site activities;
- Assess the effectiveness and suitability of remedial measures being taken at the site;
- Comply with site safety requirements and all TC safety procedures; and
- If required, use powers granted under the TDG Act.

ROLES OF THE TDG RMS DURING INCIDENT RESPONSE

A RMS, as well as being designated as a TDG inspector under the TDG Act, is a scientist who:

- Works for the TDG Directorate;
- Attends dangerous goods incident sites;
- Is an ERAP specialist; and
- Is a trained emergency response specialist.

The RMS, in addition to their role as a TDG inspector, may receive requests to:

- Perform an incident assessment, through discussions with CANUTEC and the TDG inspector, to determine if the response actions are appropriate;
- Provide information and advice on response capabilities, remedial measures, safe practices and standards, approved ERAP and chemical-specific knowledge;
- Assess the effectiveness of an ERAP in action;
- Monitor the progress of the incident response by identifying and analyzing any problems that may arise;
- Monitor compliance and intervene using powers granted under the TDG Act, when warranted; and
- Attend an incident in their region, or another region, when their expertise is needed.

AT A DANGEROUS GOODS INCIDENT SITE, THE RMS WILL:

- Provide advice on response capabilities, remedial measures, safe practices and chemical-specific knowledge.
- Monitor and assess industry's response (carriers, consignors/shippers, ERAP holder and response contractors).
- Conduct a site assessment and report to the Incident Commander and to TC.
- Monitor how responders follow an activated ERAP, to ensure its effectiveness.

Each year, more and more dangerous goods move across Canada by road, rail, water and air. These shipments range from industrial chemicals to manufactured goods and, while vital to our modern way of life, they can pose a threat to public safety if not handled safely.

This is why TC, through the TDG Directorate, promotes and ensures compliance with the TDG Act and Regulations. For more information and to get the latest news on the TDG Program, consult our website at www.tc.gc.ca/tdg.

WHAT'S THE ROLE OF TDG AT A DANGEROUS GOOD INCIDENT SITE?

- Participate in site meetings
- Make recommendations to the Incident Commander in an Incident Command System (ICS)
- Ensure that appropriate actions are taken to protect the public
- Advise First Responders on issues related to TDG Act & Regulations and assess the effectiveness of the remedial measures taken
- Remove or detain dangerous goods or a means of containment and monitor compliance with the TDG Act & Regulations
- Direct or stop actions if required to protect public safety and personnel on site or intervene to prevent a release of dangerous goods
- Communicate relevant incident information to TC through CANUTEC

TDG'S CONTRIBUTION TO NFPA FLAMMABLE LIQUIDS INCIDENT COMMANDER FIELD GUIDE

By Chris Powers

When the Emergency Response Task Force (ERTF) began its work in June 2014, it was important to ensure key stakeholders were present during consultations. One organization that was contacted was the National Fire Protection Association (NFPA). This global non-profit organization devotes itself to eliminating death, injury, property and economic loss due to fire and related hazards. Established well over a century ago, the NFPA delivers information and knowledge through codes and standards, research, training, education, outreach and advocacy.

The NFPA is a leader of fire and life safety standards development in North America. In fact, the Canadian fire services use its standards as the basis for most of their fire training and professional qualification programs.

Mr. Shayne Mintz, the NFPA's Canadian Regional Director and Tom McGowan, Sr. Specialist, Emergency Services, worked with the ERTF to review standards and develop the *Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains.* This document is now the basis for developing a Canadian training curriculum for first responders.

Since both Canada and the U.S. face unique and complex challenges when responding to these types of incidents, the NFPA Fire Protection Research Foundation received a grant from the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) to develop additional guidance material for first responders.

The NFPA Research Foundation formed a Technical Panel to work on developing the *High Hazard Flammable Trains (HHFT) On-Scene Incident Commander Field Guide*. Because of the ERTF's work and contributions, the Research Foundation asked that they send two experts to serve on the Technical Panel with ten from across the U.S. Chris Powers, Chair of the ERTF and Benoit LaRoche, a member representing the *École Nationale des pompiers du Québec*, agreed to participate in this project.

Members met via conference calls, freely sharing information and documents to help develop the Incident Commander Field Guide. Published in July 2016, this guide came with an application for smartphones – *NFPA Hazmat FLIC (Flammable Liquids Incident Command)*. Transport Canada TDG also translated sections of the application to French for Canadian users.

In November 2016, the NFPA held a workshop on this project at their headquarters in Quincy, Massachusetts. Invited guests/presenters included Nicole Girard, Director General, TDG, Louis Marcotte, Chief of Response and Chris Powers, Past Chair of the ERTF. Both the NFPA and Transport Canada agree on the fact that they benefited from working together to improve response to dangerous goods incidents.

Helpful Links:

1. **NFPA FLIC App:**

   https://itunes.apple.com/ca/app/hazmat-flic/id1157625832?mt=8

   https://play.google.com/store/apps/details?id=com.thunkable.android.nfpa.FLIC&hl=en

2. **HHFT Report:**

   http://www.nfpa.org/news-and-research/fire-statistics-and-reports/research-reports/for-emergency-responders/fireground-operations/high-hazard-flammable-trains-on-scene-incident-commander-field-guide

COMPETENCY GUIDELINES

By Lindsay Jones

Recent years have brought a rise in flammable liquids moving by rail, or High-Hazard Flammable Trains (HHFT), going through Canadian communities. HHFT incidents increase risks for first responders and the public and require special fire control tactics and equipment. Firefighters are more familiar with handling structural fires (buildings), and they may not have the experience, training or equipment to handle large scale flammable liquid incidents.

Firefighting Training Standards

Currently in North America, a specific comprehensive firefighting training standard does not exist to safely and effectively mitigate these large scale incidents.

In December 2015, the Emergency Response Task Force (ERTF) Secretariat conducted a national survey on firefighters' training that confirmed current training programs in Canada are based on NFPA Standards 1001 and 472:

- *NFPA 1001: Standard for Fire Fighter Professional Qualifications* includes qualifications firefighters need to safely and effectively deal with structural fires. It addresses flammable liquids fire control, but it is limited in scope, and does not address HHFT incidents; and
- *NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents* is used by emergency responders to understand what competencies are required at dangerous goods incidents. However, it is a generalized standard and is not intended to be specific to individual dangerous goods.

Identifying Gaps and Working Together

The ERTF identified challenges that first responders face in responding to large scale rail incidents involving flammable liquids, such as:

- The risks of a multiple tank car release;
- Fire control tactics;
- Firefighting foam application; and
- A general understanding of how to operate specialized equipment brought to an incident.

Since these challenges are not addressed in current standards, the ERTF highlighted the need for a standardized qualification reference to address gaps and to help train responders to better mitigate these types of incidents safely. Therefore, in January 2015, the ERTF sent the NFPA a submission proposal to address the lack of specialized training on flammable liquids.

The NFPA Standard Council voted to seek public comments, and directed its Technical Committee on Hazardous Materials Response Personnel to review the new project request and submit comments to the Standard Council. This ongoing process may take up to two years if revisions to the NFPA standard are accepted. However, an immediate need for guidance on training and curriculum development remained.

In March 2015, the NFPA sponsored a workshop to conduct a gap analysis in training standards and to identify key competencies responders would need to respond to an incident involving flammable liquids by rail.

The ERTF worked together with the NFPA, the Justice Institute of British Columbia, the Canadian Association of Fire Chiefs (CAFC), the *École nationale des pompiers du Québec*, and with funding from the Defence Research and Development Canada Centre for Security Science to develop the *Competency Guidelines for Responders to Incidents of Flammable Liquids in Transport, High-Hazard Flammable Trains* (Competency Guidelines). Transport Canada published the Competency Guidelines in March 2016.

Purpose of the Competency Guidelines

The Competency Guidelines were designed to enhance first responder safety during an HHFT. Key competencies provide a standardized approach and ensure a consistent understanding of training requirements across the country.

The Competency Guidelines provide information that will increase responder and public safety during HHFT incidents and prevent exposure to dangers that could cause serious injuries or death. Unlike NFPA Standard 472, the Competency Guidelines address product and incident specific competencies for response to HHFT incidents.

The Competency Guidelines describe the basic competency levels suggested for responders to incidents involving HHFT for each level of response:

- Awareness level response;
- Operations level response;
- Incident Command level response;
- Specialist Employee C level response;
- Specialist Employee B level response; and
- Specialist Employee A level response.

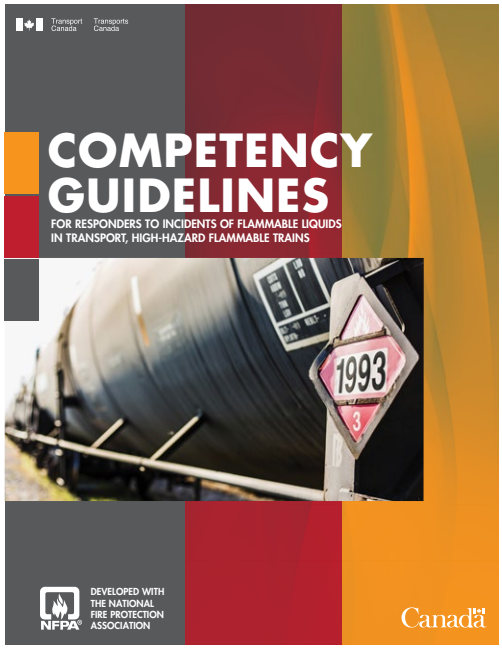
They apply to individuals, organizations or agencies that respond to an HHFT incident and are intended for use in any risk-based response. The Competency Guidelines can also be used to design training.

Final Product

Developing the Competency Guidelines was a big undertaking and the collaboration was vital to creating an effective product.

The ERTF stated in its final report[6] that it hoped the CAFC, the Council of Canadian Fire Marshals and Fire Commissioners, as well as the provinces, territories, and municipalities would endorse the Competency Guidelines, which they can then use as a national basis for developing their respective first responder training curricula. Further work and funding requests for future first responder training program development depend on such an endorsement.

You can download a copy of the Competency Guidelines at http://www.tc.gc.ca/eng/tdg/publications-menu-240.htm.



Specialist Employee C could be an advisor reached by phone who can provide advice remotely.

Specialist Employee B could provide additional onsite assessments or requirements.

Specialist Employee A could be response personnel who can enter the hot zone and initiate/supervise suppression activities.

6 http://www.tc.gc.ca/media/documents/tdg-eng/ERTF-Report-eng.pdf

EMERGENCY RESPONSE TASK FORCE FINAL REPORT

By Lindsay Jones

In April 2014, Canada's Minister of Transport announced the creation of the Emergency Response Task Force (ERTF). Its tasks were to research, assess, evaluate the Emergency Response Assistance Program, and suggest ways to make it better.

For nearly two years, over 90 ERTF members worked to recommend ways to improve responder and public safety at rail incidents involving flammable liquids. These members represented the first responder community, emergency response contractors, railways, petroleum and ethanol industries, municipalities, provincial and territorial governments, and federal government departments (including Transport Canada).

Beginning in July 2014, ERTF members from across Canada and the United States met monthly in Ottawa, Ontario. Every two weeks, they also attended subgroup meetings that focused on specific topics relating to their mandate, including incident management and first responder training. The ERTF submitted its final report to the Director General, Transportation of Dangerous Goods (TDG) Directorate in July 2016. It was published in December 2016 and can be found online at http://www.tc.gc.ca/media/documents/tdg-eng/ERTF-Report-eng.pdf.

The final report describes ERTF initiatives, discussions and the vast amount of work that was completed. It also presents 40 recommendations for improving emergency response assistance to rail incidents involving flammable liquids, under three themes:

1. Improve the Emergency Response Assistance Plan (ERAP) Program.
2. Expand ERAP requirements to other flammable liquids.
3. Enhance emergency response, preparedness and training.

Key Recommendations for Enhancing Emergency Planning and Preparedness

Canadian communities want to be better prepared to respond to, and reduce the impact of, a rail incident involving flammable liquids. From day one, ERTF members were committed to improving local emergency response planning for communities and first responders alike. They examined case studies, conducted surveys, and reviewed documentation to better understand the challenges first responders and municipalities face. As a result, several of their recommendations focused on the information and data that emergency planners and coordinators need to prepare for, and successfully reduce the impact of, an incident in their communities.

ERTF members identified the importance of adopting a standardized approach to managing large scale incidents using a Unified Command Structure within a standard Incident Command System. They recommended that Transport Canada support this concept as the best way to improve planning and coordination so response teams can effectively manage any potential incident.

ERTF members also identified the need for emergency planners to use dangerous goods information from Transport Canada's Protective Direction 32 and 36 and the rail carriers' emergency response and preparedness information.

During meetings, members shared their sectors' best practices, guidance material and information tools, such as an Emergency Planning and Response Cycle Chart, Railway Dangerous Goods Incidents – Roles and Responsibilities Table and Chart, and a Disciplined Approach Chart. You can find all of these documents in annexes to the ERTF final report. Members also:

- Worked together to build upon these products to benefit emergency planners and coordinators, as well as first responders; and
- Recommended that Transport Canada complete and publish guidance documents to better support emergency planning and preparedness.

Dedication and Achievement

Transport Canada's TDG Directorate has already begun acting on most ERTF recommendations. The TDG Directorate recognizes the incredible contributions from ERTF members and thanks them for their dedication and willingness to share and partner with them.

The ERTF held its final meeting in March 2016. While it had an extensive mandate, its members were able to deliver on everything they were tasked to do in a relatively short period of time. They repeatedly showed their commitment and transparency with a view of helping Canadians. In the end, members built successful partnerships and developed a network that will outlast the ERTF's mandate and hopefully continue for years to come.

YOU'RE NOT ALONE!

By Anne-Marie Noël

By publishing the Transportation of Dangerous Goods (TDG) Safety Awareness Kits titled "You're not Alone!" and the soon-to-be released template for emergency planners with the same title, Transport Canada wants to reassure communities/municipalities that, in the event of an incident, they have access to many resources able to provide help and give guidance to respond to such events.

This new template for emergency planners aims at giving them valuable information about emergency preparedness, especially for those where flammable liquids are being transported through or near their city limits. In terms of planning and preparedness, basic principles will be covered such as:

- Pre-planning;
- Planning;
- Preparedness; and
- Elements to take into consideration.

Since the focus of this template is the transportation of flammable liquids by rail, a section on flammable liquids properties and initial response was added. This will provide important information on how flammable liquids behave, their properties and how to respond and mitigate the hazards these products present. Since this template was created to prepare for a dangerous goods incident, a section was included on incident management principles and more importantly, on incident command. In this section, both the Incident Command System (ICS) and the Unified Command Structure (UCS) are addressed. Transport Canada strongly recommends everyone involved in incident response adopt these systems. When everyone works in a similar response system, it makes organizing the response easier if all speak the same language.

While preparing for an event like this is key, it is important to know there are tools, partners and services available to the municipalities and first responders. In essence, the template will:

- Introduce tools emergency planners may require to put in place their all-hazard emergency response plan.
- Introduce tools that could be of help during an incident as well as in the recovery phase.
- Provide information on public or private partners that can help during an incident, such as the federal government, response team, etc. **Note:** The template includes a section on roles and responsibilities for different entities to explain their presence at an incident site.

As the regulator of the transportation of dangerous goods in Canada, the TDG Directorate develops and enforces safety standards to reduce the risks of a dangerous incident to the maximum extent. However, since the risks cannot be fully eliminated, we need to be prepared to respond to an incident. This template will help municipalities and their emergency planners develop an effective all-hazard emergency response plan.

IN MEMORIAM – ANGELO BOCCANFUSO

It is with great sadness that TDG announces the passing of Angelo Boccanfuso on November 3, 2016. Angelo served as the Director of CANUTEC from 2013 to 2016. Angelo will be truly missed by all his Transport Canada colleagues and the wider emergency response community. His contributions to TDG, both professionally and personally, will not be forgotten. Angelo took pride in TDG and CANUTEC and worked hard to promote CANUTEC's name on a national and international stage. One of Angelo's last contributions as Director of CANUTEC was the creation of the International Emergency Center Alliance (IECA). This Alliance enabled CANUTEC and other international signatories to share knowledge and information regarding emergency centers' operational best practices and information technology in order to remain at the forefront of emergency response communications. Angelo will also be remembered for his sense of humour and fun nature. Whether it was taking part in United Way fundraisers or attending TDG Christmas parties, Angelo made the most of his time with his colleagues and always had a smile on his face.