

Transportation of Dangerous Goods (TDG) Directorate



Emergency Response Assistance Plan (ERAP) Updates

Presentation to the Canadian Explosives Industry Association (CEAEC)
Annual Meeting

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Presented by: Monique Lavoie, Remedial Measures Specialist at Transport Canada
(TC)



TDG ERAP Update

- **ERAP Program Update**

- ERAPs for Class 1 dangerous goods using the Marine and Air modes of transport;
 - Need to discuss the context and possible impacts of air and marine not included in [7.2 (1)(d)] of the TDG Regulations;
- Awareness materials for first responders; and
- Ammonium Nitrate and Fuel Oil (ANFO) bags: compliance questions when bags are ripped on worksite.

ERAPs for Class 1 Dangerous Goods (DGs) Marine and Air

- Part 7 of the *Transportation of Dangerous Goods Regulations* (TDGR) doesn't include the air or marine modes of transport from the ERAP requirements [7.2(1)(d)]
 - **7.2 (1)** For the purposes of subsection 7(1) of the Act, an approved ERAP is required for
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 - **(d)** dangerous goods, in a road vehicle or a railway vehicle, that are included in Class 1, Explosives, and that are contained in one or more means of containment, if the total quantity of those dangerous goods exceeds the ERAP index in column 7 of Schedule 1 for the explosives with the lowest index number in that column;

ERAPs for Class 1 DG's (Air)

Air transport of explosives requiring ERAPs

- ERAPs covering Class 1 dangerous goods shipments by air have been approved.
- Why is there a disconnect between what we see and what is written in Part 7?
- Part 12 of the TDGR:
 - Forbidden explosives from Part 3, Ch.2 of ICAO can be shipped by air if they are part of the list found in 12.5(1)(b).

ERAPs for Class 1 DG's (Air)

- 12.5(1)(b);

- (i) UN0030, DETONATORS, ELECTRIC for blasting;
- (ii) UN0042, BOOSTERS without detonator;
- (iii) UN0059, CHARGES, SHAPED without detonator;
- (iv) UN0065, CORD, DETONATING, flexible;
- (v) UN0081, EXPLOSIVE, BLASTING, TYPE A;
- (vi) UN0082, EXPLOSIVE, BLASTING, TYPE B;
- (vii) UN0083, EXPLOSIVE, BLASTING, TYPE C;
- (viii) UN0084, EXPLOSIVE, BLASTING, TYPE D;
- (ix) UN0241, EXPLOSIVE, BLASTING, TYPE E;
- (x) UN0331, EXPLOSIVE, BLASTING, TYPE B; or AGENT, BLASTING, TYPE B;
- (xi) UN0332, EXPLOSIVE, BLASTING TYPE E; or AGENT, BLASTING, TYPE E; or
- (xii) UN0360, DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting.

ERAPs for Class 1 DG's (Air)

- There are 15 ERAPs approved by Transport Canada for air transport of 11 different Class 1 explosives
 - UN0029, UN0030, UN0042, UN0065, UN0081, UN0082, UN0241, UN0331, UN0332, UN0360 and UN0442
- Most approved ERAPs respect 12.5(1)(b) of the TDGR
- Except for
 - UN0029 (DETONATORS, NON-ELECTRIC for blasting) and
 - UN0442 (CHARGES, EXPLOSIVE, COMMERCIAL without detonator)
 - These entries could be problematic
 - Are they really shipped by air in ERAP quantities?
 - ERAP indexes:
 - UN0029: 5000
 - UN0442: 75

ERAPs for Class 1 DG's (Marine)

- Marine transport of explosives requiring ERAPs
 - ERAPs covering Class 1 dangerous goods shipments by marine have been approved.
 - Why is there a disconnect between what we see (approved ERAPs) and what is written in Part 7?
 - Part 11 of the TDGR:
 - Shippers must use TDG if they don't meet the requirements to use IMDG (most inland voyages off the Canadian coastline, within 120 nautical miles will fall under TDG, as per 11.2 TDGR); and
 - *Canada Shipping Act (2001)* also applies, and contains the *Cargo, Fumigation and Tackle Regulations* which apply restrictions on shipping explosives (Division 5, section 155).

ERAPs for Class 1 DG's (Marine)

- Why was the marine mode not included in Part 7 when establishing ERAP requirements (7.2(1)(b))?
- More research to be done:
 - How do you ship by marine?
 - Barge?
 - Dedicated dangerous goods trips on ferries?
 - Do you ever go over the ERAP threshold?

ANFO Bags: Leftovers and Compliance

Context:

- Discussed at the last CEAEC / TC quarterly meeting;
- Issue being the leftover ANFO bags from small jobs need to be re-sealed and transported back to the storage magazine. TC TDG inspectors saw these during a blitz and questioned the compliance with Part 5 of the TDGR; and
- NRCan's guidance is essential, so we brought the matter to them to clear any confusion.

Awareness Materials for First Responders



FIRST RESPONDERS AIDE-MEMOIRE

CLASS 1 - EXPLOSIVES

This guidance document outlines safety measures, grouped in a series of five steps, to be considered during emergency planning and response to a transport incident.

INITIAL CONSIDERATIONS

- **Safety** of responders and the public is paramount.
- **Non-intervention** may be the preferred course of action when dealing with explosive materials until more information and qualified personnel are available to provide assistance.
- When explosives are **directly involved** in a **fire**, **non-intervention** and **isolating** the area are the priorities: any other response actions would greatly endanger responders and public safety.
- **Energy isolation** (e.g., fuel sources, ignition sources) is of primary importance.
- Response actions must be carefully **planned** with personnel present on scene, at risk of making a situation worse.

CANUTEC can provide information and assistance during any step of an incident and can be reached at
613-996-6666, 1-888-CAN-UTEC (226-8832) or *666 from a cell phone (in Canada)

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STEP 1: DO NOT RUSH

PROTECT FIRST RESPONDERS AND THE PUBLIC

- ☐ **Keep** personnel and vehicles at a safe distance from the scene: use Emergency Response Guidebook (ERG) – GUIDE 112 until the explosive has been identified
- ☐ When approaching the scene of an incident, **do so** from uphill and upwind (be aware of the field topography)
- ☐ **Stay clear** of vapours, fumes, smoke, spills and physical hazards
- ☐ **Wear** appropriate personal protective equipment (PPE)
- ☐ **Eliminate** all ignition sources

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STEP 2: SECURE THE SCENE

ISOLATE THE AREA AND SECURE THE PERIMETER

- ☐ **Contact** local authorities to secure the scene
- ☐ In the case of rail incidents, **contact** the rail traffic control centre to ensure shut down of the rail line

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STEP 3: IDENTIFY THE HAZARDS AND ASSESS THE SITUATION

FROM A SAFE DISTANCE, IDENTIFY THE HAZARDS AND THE DANGEROUS GOODS (DG)

- ☐ **Assess** for fire, smoke, fumes, vapours, leaks, spills, particulates, container damage, possible rupture and other classes of DG (e.g., corrosive, toxic, flammable DG)
- ☐ **Assess** for physical hazards (e.g., electrical lines, pipelines, bent rails)
- ☐ **Determine** all the DG involved and their UN numbers, by:
 - ☐ **Identifying** the types of means of containment and the safety marks (refer to ERG), or
 - ☐ **Requesting** the shipping document from the carrier (for rail, train consist can be obtained through rail crew, CANUTEC or AskRail app)
- ☐ **Monitor** any changes in the situation

CONFIRM THE ISOLATION ZONES FOLLOWING SITE AND HAZARDS IDENTIFICATION

- ☐ Once all the UN numbers are identified, **refer** to the specific **Orange ERG GUIDE** for each UN number to **confirm** isolation and evacuation zones

If the orange page of the ERG guide has this information, the product may require ERAP (see next page for additional details)



In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping document and/or the ERAP Program Section (page 391).

Awareness Materials for First Responders

- Possibility for development of the Aide-Mémoire for Class 1 dangerous goods based on recent training exercises (NRCan) and incidents (Havelock, Ontario (2021)).
 - Is the Aide-Mémoire clear enough? Is it accessible?
 - Is the awareness materials and ERG 2020 clear enough and accessible?
 - Is there a need to collaborate (TC, Natural Resources Canada (NRCan), CEAEC) on more or better awareness materials?

Conclusion

- There may be a need to have some working groups in order to gather data on air and marine shipments of explosives. This will help us understand how explosives are actually shipped in air and marine modes of transport.
- We may need to update the ERAPs that contain the two UN numbers that are not allowed for air transport (UN0029 and UN0442).

Conclusion (con't)

- Need to establish why the TDGR were written in a manner which does not include marine and air modes of transport in 7.2(1)(b).
 - Perhaps other regulations have evolved without coordination with the TDGR.
 - Result: looks like some misalignment between the TDGR and these legislations.
- Can TC work with NRCan and CEAEC members to further develop existing awareness materials for first responders, or create new material? Also need to figure out a better way to actually get the materials to the first responders.

Thank you for your time!



monique.lavoie@tc.gc.ca