



WINTER 2005-2006

# TRANSPORT DANGEROUS GOODS NEWSLETTER

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## Editorial

Welcome to the Winter 2005-2006 edition of the newsletter. As we prepare yet for another year, I hope you will enjoy reading the articles we have included in this issue.

The feature article on page 4 covers the new editions of standards for highway and portable tanks which were introduced with Amendment No. 5 to the *Transportation of Dangerous Goods Regulations* published in the *Canada Gazette*, Part II on September 21, 2005. There is also an informative article on page 4 on bitumen-based products, commonly referred to as “tars” and “asphalts” and a summary table to guide you on the authorized containers for the transportation of these products.

On page 7, you will find an interesting article on the “Permits for Equivalent Level of Safety” and why we are proposing to replace the term by “Equivalency Certificates” in a future amendment to the *TDG Act*. On page 8, there is an article on the vent-and-burn emergency product removal technique; a research project developed in partnership with Transport Canada and industry.

Finally, as the new year begins, I would like to extend to all our readers my very best wishes for 2006! May you find peace and happiness always.

Enjoy your reading!

*Renée Major*

## Distribution of the Emergency Response Guidebook 2004 (ERG2004)

*by Michel Cloutier*

The Emergency Response Guide 2004 (ERG2004) was developed jointly by Transport Canada (TC), the U.S. Department of Transportation (US DOT), and the Secretariat of Transport and Communications of Mexico (SCT) with

the collaboration of CIQUIME (Centro de Información Química para Emergencias of Argentina).

It is primarily a guide to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident, and protecting themselves and the general public during the initial response phase of the incident.

The Guidebook should be made available to each fire, police and ambulance (emergency response) vehicle to promote public safety and harmonize dangerous goods initial response guidance.

In Canada, approximately 120,000 copies of the ERG2004 were printed by Transport Canada and given to the provincial/territorial coordinators for distribution. For a complete list of the distributors or to download a database version of the Guidebook (ERGO 2004), please visit CANUTEC at the following website: <http://www.tc.gc.ca/canutec/en/guidelergo/ergo.htm>.

In the United States, the Department of Transportation printed approximately 2,000,000 copies of the ERG2004 which have been distributed by representatives of State Agencies. For a complete list of these representatives, please visit the following website: <http://hazmat.dot.gov/pubs/erg/guidebook.htm>. As well, commercial printers are expected to publish more than 6,000,000 copies of the Guidebook to be sold to the trucking and rail industries as well as other transportation organizations.

Under the NAFTA initiative, the ERG2004 was published in English, French and Spanish for distribution within Canada, the United States and Mexico. With the assistance of CIQUIME and the Office for Foreign Disaster Agency in the United States, approximately 50,000 copies of the Spanish version were printed and distributed to sixteen countries in Latin America. For more information on CIQUIME, please visit the following website: <http://www.ciquime.org.ar/CIQUIME/index.htm>.

The Emergency Response Guidebook was also translated in other languages and is used in several countries around the world. Some of those languages include Hungarian, Dutch, German, Hebrew, Japanese, Russian, Italian, Polish, Korean, Chinese, Turkish, Portuguese and Thai.

# FEATURE

## New Editions of Standards for Highway Tanks and Portable Tanks

by Kevin Green

Amendment No. 5 to the *Transportation of Dangerous Goods Regulations* was published in the *Canada Gazette*, Part II on September 21, 2005. With this amendment, the *TDG Regulations* require compliance to the 2003 editions of the CSA B620, CAN/CSA B621 and CAN/CSA B622 standards on highway tanks and portable tanks. The 2003 editions replace the 1998 editions of these standards previously in force.

### Notable Changes

There are some significant changes, as well as minor changes such as technical corrections and new formats, to these standards. Below are some of these changes:

The new CSA format in these standards has resulted in the re-numbering of some sections and paragraphs. Tables have been moved to the end of their respective sections. The section on "Type 1, 2, and 3 Inter-modal Portable Tanks" (previously section 7 in CSA B620-98) has been deleted, as the use of those tanks was never prescribed by the Regulations. Because of this, the section on "Inspection, Testing and Maintenance of Tanks" was moved to section 7 (previously section 8), and the section on "Facility and Design, Engineer Registration, Marking, Documentation and Design Review Requirements" was moved to section 8 (previously section 9).

Two new TC tank specifications have been added; the TC11 portable tank for the transportation of certain refrigerated liquefied gases and the TC423 highway tank for the transportation of emulsion and water-gel explosives. The manufacture of TC423 tanks is now authorized, and the use of TC423 tanks will be prescribed in a future amendment to the CAN/CGSB 43.151 standard on packaging of explosives.

New inspection, test and marking requirements for hoses connected to and disconnected from the tank for loading or off-loading have been introduced. Annual visual inspections and pressure tests are now required, but the tester does not need to be registered with Transport Canada. A tank will not, however, pass its annual tank inspection if the hoses are deficient or if the markings are missing.

The valve requirements on TC 331 tanks have changed for inlets on new tanks and for 1-1/4" vapour lines on

existing tanks. Double backflow check valves instead of Internal Self Closing (ISC) valves are permitted on inlets of new tanks (to harmonize with B620-87 and US DOT requirements). Existing MC331 and TC331 tanks may continue to operate with excess flow valves and manual shut-offs instead of ISC valves on vapour lines of 1-1/4" and less.

New securement and damage protection clauses for portable tanks now require these tanks to be secured on the vehicle and be either contained within the vehicle length or be otherwise protected from damage to the tank and its accessories.

A tank design review and a Transport Canada Registration Number (TCRN) are now required for new portable pressure tanks. Under the previous edition of the CSA B620, the TCRN was required only for highway pressure tanks.

These are only some of the changes that have been introduced in the new B620-03 series of standards. Tank manufacturers and tank users should consult the standards carefully for new and modified requirements that may affect them. Appendix A to the CSA B620 includes transition provisions to recognize periodic testing and facility registration from the previous edition.

The CAN/CSA standards may be purchased directly from the Canadian Standards Association by contacting them at 1 800 463-6727 or by visiting their website at [www.csa.ca](http://www.csa.ca).

## Tanks for Tars and Asphalts

by Kevin Green and Zenon Lewycky

There are a variety of bitumen-based products transported in Canada that are commonly referred to as "tars" and "asphalts". These include products used for roofing, paving or repairing roads, binding aggregates, or sealing driveways and foundations of buildings. Tars and asphalts may be regulated under the *Transportation of Dangerous Goods Act* or not, depending on their

physical and chemical properties such as flammability, temperature, and viscosity.

A person consigning a product for transportation is responsible for determining if it is regulated and for properly classifying it according to its properties, using the criteria set out in Part 2 of the *Transportation of Dangerous Goods Regulations* (TDGR). An appropriate UN number, class, packing group (PG), and shipping name must be determined. The product manufacturer usually can be of assistance in performing the classification.

The possible classifications for tars and asphalts that are flammable, or flammable due to being hot include:

UN1999, Class 3, PG II, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs.

UN1999, Class 3, PG III, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs.

UN3256, Class 3, PG III, ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., with flash point above 60.5 °C, at or above its flash point.

Tars and asphalts that are hot but not flammable are not regulated under the *TDG Regulations*<sup>1</sup>. This includes most of the asphalt binder used to make the hot mix asphalt that will be rolled into road pavement and the molten asphalt used to make or repair built-up roofs. In addition, some flammable liquids that have a flash point above 38°C are exempt from the *TDG Regulations* when they are transported in containers of 450 L capacity or less (see below).

Requirements for containers used to transport dangerous goods are prescribed in Part 5 of the *TDG Regulations* according to the size of the container and mode of transport. These requirements apply equally to containers used as application equipment if they are also used for transporting the dangerous goods.

### Small Means of Containment (with capacities less than or equal to 450 L)

When transported in small containers, flammable liquids in Class 3, PG III, with flashpoints above 38°C, are exempt from the *TDG Regulations*<sup>2</sup>. Other products, such as UN1999, Tars Liquid, PG II, must be transported in UN specification drums or jerricans selected according to Standard CGSB43.150<sup>3</sup>, or in UN specification Intermediate Bulk Containers (IBCs) selected according to Standard CGSB 43.146.<sup>4</sup>

The requirements to use UN specification small containers came into force on 01 January 2003. Since UN specification transport containers suitable for use as application equipment for liquid tar are not readily available, you may apply for a Permit to authorize the continued use and manufacture of non-specification applicator tanks with capacities less than or equal to 450 L until appropriate provisions can be developed in the standards. An example of this Permit for small tar applicator tanks can be found at the following link: <http://www.tc.gc.ca/tdg/permits/8706.htm>.

### Large Means of Containment (with capacities greater than 450 L)

For tars and asphalts, the Regulations require the use of UN specification IBCs selected according to Standard CGSB 43.146, or TC406 and TC406 Crude<sup>5</sup> highway tanks selected according to Standard CSA B621<sup>6</sup>. A number of other equivalent or higher integrity specification highway tanks may be chosen according to CSA B621 as well.

Until 01 January 2010, Specific Requirement 5 (SR5) of CAN/CSA B621 authorizes continued use of existing non-specification tanks, provided they were manufactured before 01 January 2003. These tanks must have a “Non-specification Flammable Liquids Tank” nameplate installed by a TC registered facility and must be periodically inspected and tested according to CSA B620<sup>7</sup> as though they were TC406 tanks, except that the pressure test may be conducted at 21 kPa (3 psig) instead of 34.5 kPa (5 psig). These non-specification tanks are not authorized for Packing Group II, flammable liquids due to the 38 °C minimum flashpoint condition in SR5.

You may apply for a Permit to allow transport of UN1999, PG II and III in non-specification tanks until 01 January 2016. These non-specification tanks must be built before 01 January 2007, be no more than 15 years old, and continue to pass the periodic inspections and tests required for TC406 Crude tanks, except that the pressure test may be conducted at 21 kPa (3 psig) instead of 34.5 kPa (5 psig). These provisions will eventually be published in CAN/CSA B621 as a new Specific Requirement 23. Once CAN/CSA B621 is amended and adopted in the *TDG Regulations*, the Permits will no longer be required. An example of such a Permit for large tar tanks can be found at the following link: <http://www.tc.gc.ca/tdg/permits/8699.htm>.

All large tar and asphalt tanks built after 01 January 2007 must meet one of the prescribed standards.

1 See TDGR 2.43(b)(iii) at: <http://www.tc.gc.ca/tdg/clear/part2.htm>.

2 See TDGR 1.33 Class 3, Flammable Liquids: General Exemption, at: <http://www.tc.gc.ca/tdg/clear/part1.htm>.

3 CAN/CGSB 43.150-97 entitled “Performance Packagings for Transportation of Dangerous Goods”.

4 CAN/CGSB 43.146-2002 entitled “Intermediate Bulk Containers for the Transportation of Dangerous Goods”.

5 TC406 Crude is a variant of a TC406 petroleum tank with external valves and modified vents to accommodate viscous products.

6 CAN/CSA B621-03 entitled “Selection and Use of Highway Tanks, Portable Tanks, Cargo Compartments and Containers for the Transportation of Dangerous Goods, Classes 3, 4, 5, 6.1, 8, and 9”.

7 CSA B620-03 entitled “Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods”.

## Previously Issued Permits Allowing Non-Specification Tanks for Tars and Asphalts

Many Permits for Equivalent Level of Safety have been issued since 2003 for liquid tar and asphalt transport containers under 5000 L capacity. These Permits allow non-specification containers manufactured until 31 December 2005 to be used under certain conditions. An example of this Permit can be found at the following link: <http://www.tc.gc.ca/tdg/permits/8000.htm>. These previously issued Permits all expire on 31 December 2006 and will not be renewed in their previous form but you may

apply for one of the new Permits mentioned in this article, if you meet the conditions.

To obtain a copy of the CAN/CGSB standards, please call the Canadian General Standards Board at 1 800 665-2472, or to obtain a copy of the CAN/CSA standards, please call the Canadian Standards Association at 1 800 463-6727.

Below is a summary table of the authorized containers for tars and asphalts under the *TDG Regulations*. Please consult the applicable Standards or Permits for full details.

Summary Table, Tar and Asphalt Containers		
Dangerous Good Classification	Authorized Large Containers (greater than 450 L)	Sunset Dates
UN1999, Class 3, PG II, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs. (flash point between 23°C and 38°C)	TC406 and TC406 Crude highway tanks and the TC, MC, or DOT equivalent tanks prescribed in CAN/CSA B621-03.	None
	Non-spec flammable liquids tank built before 2007. Apply for a Permit. <a href="http://www.tc.gc.ca/tdg/permits/8699.htm">http://www.tc.gc.ca/tdg/permits/8699.htm</a>	01 Jan 2016
	UN31A IBCs and TC57 portable tanks as per CAN/CGSB 43.146-2002.	None
UN1999, Class 3, PG III, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs. (flash point between 38°C and 60.5°C)	Non-spec tank less than 5000 L pursuant to Permits similar to Permit SH8000. <a href="http://www.tc.gc.ca/tdg/permits/8000.htm">http://www.tc.gc.ca/tdg/permits/8000.htm</a>	31 Dec 2006
	TC406, TC406 Crude highway tanks and the TC, MC, or DOT equivalent tanks prescribed in CAN/CSA B621-03.	None
	Non-spec flammable liquids tank built before 2003 tested and marked as per CAN/CSA B621-03 SR5.	01 Jan 2010
UN3256, Class 3, PG III, ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., with flash point above 60.5 °C, at or above its flash point.	Non-spec flammable liquids tank built before 2007 tested and marked as per upcoming CAN/CSA B621-03 SR23. Apply for a Permit. <a href="http://www.tc.gc.ca/tdg/permits/8699.htm">http://www.tc.gc.ca/tdg/permits/8699.htm</a>	01 Jan 2016
	UN31A IBCs and TC57 portable tanks as per CAN/CGSB 43.146-2002.	None
	Non-spec tank less than 5000 L pursuant to Permits similar to SH8000. <a href="http://www.tc.gc.ca/tdg/permits/8000.htm">http://www.tc.gc.ca/tdg/permits/8000.htm</a>	31 Dec 2006
UN3256, Class 3, PG III, ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., with flash point above 60.5 °C, at or above its flash point.	TC406, TC406 Crude highway tanks and the TC, MC, or DOT equivalent tanks prescribed in CAN/CSA B621-03.	None
	Non-spec tank built before 2003 tested and marked as per CAN/CSA B621-03 SR5.	01 Jan 2010
	UN31A IBCs and TC57 portable tanks as per CAN/CGSB 43.146-2002.	None

Dangerous Good Classification	Authorized Small Containers (less than or equal to 450 L)	Sunset Dates
UN1999, Class 3, PG II, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs. (flash point between 23°C and 38°C)	UN31A IBCs and TC57 portable tanks as per CAN/CGSB 43.146-2002.  UN standard drums and jerricans as per CAN/CGSB 43.150-97.  Non-spec applicator tanks pursuant to Permits similar to SH8706. <a href="http://www.tc.gc.ca/tdg/permits/8706.htm">http://www.tc.gc.ca/tdg/permits/8706.htm</a>  Non-spec tank less than 5000 L pursuant to Permits similar to SH8000. <a href="http://www.tc.gc.ca/tdg/permits/8000.htm">http://www.tc.gc.ca/tdg/permits/8000.htm</a>	None  None  31 Dec 2006
UN1999, Class 3, PG III, TARS, LIQUID, including road asphalt and oils, bitumen and cut backs. (flash point between 38°C and 60.5°C)	Not regulated in small means of containment (capacity less than or equal to 450 L). See 1.33 of the <i>TDG Regulations</i> . <a href="http://www.tc.gc.ca/tdg/clear/part1.htm">http://www.tc.gc.ca/tdg/clear/part1.htm</a>	
UN3256, Class 3, PG III, ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., with flash point above 60.5 °C, at or above its flash point.	Not regulated in small means of containment (capacity less than or equal to 450 L). See 1.33 of the <i>TDG Regulations</i> . <a href="http://www.tc.gc.ca/tdg/clear/part1.htm">http://www.tc.gc.ca/tdg/clear/part1.htm</a>	

## “Permits for Equivalent Level of Safety” (PELS) Replaced by “Equivalency Certificates” (EC)

by Jacques Savard

The notion of the "Permit for Equivalent Level of Safety" (PELS) within the Act has brought many erroneous interpretations.

Some persons believe that a permit is required to comply with the Act. The general use of the word "permit" suggests an authorization to do, or permission not to do, something which is otherwise required by the law. This gives the impression that a permit must be obtained prior to shipping or transporting dangerous goods, or in the

alternate, that one may be exempted from the requirements of the regulations, upon request.

The PELS is not a business license. The *TDG Act* and *Regulations* do not require that a permit be obtained prior to transporting dangerous goods. All persons must comply with the Act, and consequently, all persons can benefit from its options without applying for a permit.

Others view the PELS as an exception granted, in a discretionary manner, to reduce the financial and economic burden caused by strict compliance to the regulatory requirements.

Thus, we are sometimes asked, through a permit application, that a product not be considered as a dangerous good in order to reduce transportation or insurance costs or to exempt means of containment from their standards because of the specifics of the industrial sector involved or because that sector was never regulated before. However, the PELS are not subjective exemptions to the Act. They exist to introduce flexibility in the application of the regulations while maintaining the level of safety guaranteed by the Act.

Because of this confusion with the meaning of the word "permit", the Transport Dangerous Goods Directorate is proposing to replace the term "Permit for Equivalent Level

of Safety" by "Equivalency Certificate" in a future amendment to the Act.

In practical terms, a PEELS officially states, in a legal document, that a given activity not complying with the words of the law is as safe as those activities described in the Regulations. This practice is thereby recognized as being legal. The word "Certificate" appears more appropriate and the term "Equivalency Certificate" better reflects the notion of equivalence in the level of safety.

## Chemical, Biological, Radiological, and Nuclear (CBRN) Program Update

*by Fred Scaffidi*

### Background Information

In April 2002, funding was provided to the Transport Dangerous Goods (TDG) Directorate to put in place a CBRN Response Program which would be part of the global Federal Government initiative on counter-terrorism. The program ensures that competent and capable hazardous materials response services are available following a CBRN incident. The program is modeled on the current Emergency Response Assistance Plan (ERAP) program. It is important to remember that such response would occur once all terrorist-related hazards were eliminated.

Since the inception of the program, the Minister of Public Safety and Emergency Preparedness, the Honourable Anne McLellan, presented in March 2005, a document entitled "The CBRN Strategy of the Government of Canada". This document defines the roles and responsibilities of the federal government departments in dealing with CBRN incidents and reiterates Transport Canada's responsibility in such incidents, namely to provide access to approved emergency response teams and technical information by CANUTEC. The document may be viewed at: <http://www.psepc.gc.ca/pol/em/cbrnstr-en.asp>.

### Program Update

Transport Canada has been consulting with major stakeholders who may be involved in this initiative. As part of its commitment to provide training for industrial responders willing to respond to emergencies involving CBRN agents, two Remedial Measures Specialists attended the "Intermediate Level Hazardous Materials" training course given by the

Canadian Emergency Preparedness College in Ottawa last September. The objective of the course was to better understand the training requirements of the first-responder community and to examine the possibility of developing a training course at Transport Canada to address the needs of industrial responders.

Transport Canada will continue discussions with government and industry partners to address several jurisdictional and liability questions that are integral to the success of this program.

Any comments, suggestions or proposals from interested parties concerning the CBRN Response Program may be forwarded to Fred Scaffidi, Remedial Measures Specialist (CBRN) at [scaffif@tc.gc.ca](mailto:scaffif@tc.gc.ca) or Kathleen Corriveau, Remedial Measures Specialist (CBRN) at [corrivk@tc.gc.ca](mailto:corrivk@tc.gc.ca).

## Vent & Burn: An Emergency Product Removal Technique

*by D.W. Dibble and Doug Kittle*

What is an emergency responder supposed to do at an accident site when faced with a damaged highway tanker of propane in which the valves are not accessible? This was the subject of a cooperative industry/government research project in which a special technique was tried on a previously damaged highway tanker filled with 28,000 litres of propane. It all started because of the difficulties and extensive time taken to empty a highway tanker of propane that had rolled down a steep incline in the mountains of British Columbia as a result of a severe accident.

The primary objective of this research project is to develop a procedure for using the vent-and-burn emergency product removal technique in highway tanker accidents. In severe accidents, highway tank trailers often become damaged in such a way as to make moving them an unacceptable risk. These tanks must be unloaded in place. In some cases, their valves may be inaccessible for emergency offloading. Hot or cold tapping the highway tank trailers are methods for controlled product removal. These may be used when the threat of imminent catastrophic tank failure is low. However, there have been instances in the past when conditions called for a fast reduction of internal tank pressure and commodity removal to prevent such an occurrence.

The use of explosives to penetrate highway tank trucks in this condition to allow the contents to flow out and be burned is known as vent-and-burn and has been done on several occasions on rail tank cars. It is usually considered

to be an emergency product removal technique of last choice and therefore is rarely used.

In essence, the technique involves using two separate sets of explosive charges placed on the highway tank trailer. One charge is placed at the highest point on the tank, over the vapour space. This charge is designed to safely relieve internal vapour pressure. The second charge is placed at the lowest point of the tank to allow the product to drain into a prepared containment pit. The product flowing out of the damaged tank is then ignited and burned in the pit away from the tanker. A time delay, to allow the internal pressure to be sufficiently reduced, is used between the detonation of the top and bottom charges. It is most often used to prevent a catastrophic tank failure with subsequent uncontrolled product release to the environment and to quickly end the emergency phase of an accident.

A Transport Canada-Industry partnership research project now under way involved a full-scale pressurized non-jacketed highway tank containing 28,000 litres of propane. The experiment was recorded and measured using pressure transducers, thermocouples and high-speed, video and digital cameras to record the response of the tank and its lading to the effect of the explosive charges. In addition, all the data will be used to produce an emergency response awareness video of the event. No other tests could be found in which such data were recorded.

Shaped charges, commonly used in the oil well perforation industry, were detonated on top of the tank that was over the vapour space resulting in a burning flare. This venting caused a decrease in tank pressure. Some minutes later the charges on the bottom of the tank were detonated. The tank was emptied of all propane in approximately 40 minutes. The sequence of events is illustrated in the following figures.

In this particular test, the shaped charges on the bottom of the tank were detonated when there was still a relatively high pressure in the tank. This resulted in a fairly large flow of liquid propane from the tank. This propane was ignited and consumed in the fire. Planning has now started for additional smaller scale tests to study such parameters as much longer vent times, different hole sizes, etc.

If the additional vent-and-burn demonstrations are as successful as this first one, the resulting data will be used to develop guidelines and related training documentation (including a video/CD) for use as awareness training for emergency responders and technical advisors to the propane gas industry across Canada.

The testing was conducted at Defence Research & Development Canada, Suffield, Alberta (DRDC Suffield) in August 2005.



**Figure 1. Initial Vent from Vapour Space**



**Figure 2. Initial Burning of Liquid Propane from Bottom of Tank**



**Figure 3. Diminishing Quantity of Propane in Tank**



**Figure 4. Tank Almost Empty of Propane**

This project was only possible due to the extensive degree of industry cooperation. Special thanks to LPG Emergency Response Corp; ELC Group of Companies; Husky Energy Marketing Inc.; Superior Pressure Vessels and Explosives Ltd. The participation of Defence Research & Development Canada – Suffield is also gratefully acknowledged.

## Updating the TDG Act, 1992

by Peter Coyles

In Canada, the transportation of dangerous goods is regulated under the *Transportation of Dangerous Goods Act, 1992*. The Act was designed to promote public safety in the transportation of dangerous goods. It received Royal Assent on June 23, 1992. At that time, there was a commitment to Parliament to begin a review of the Act after 10 years.

In 2002, the department began a review of the *TDG Act* looking at safety issues. In the summer of 2003, the review was expanded to include security.



In March 2004, the department began the public consultation process for the Review of the *TDG Act*. The review focused on several important areas of interest including: security (dealing with possible malicious use of dangerous goods); new concepts (new authorities that may be needed for these issues); existing concepts, (review of what we thought were already covered); technical corrections (words, definitions, references); policy issues; and issues outside the scope of the *TDG Act* (issues that pertain to other acts or regulations).

Public consultations were held in cities across Canada: St-John's, Halifax, Québec City, Montréal, Ottawa, Scarborough, Mississauga, Sudbury, Winnipeg, Regina, Calgary, Edmonton, Vancouver and Victoria. In the fall of 2004, the Transport Dangerous Goods Directorate of Transport Canada, along with the Federal-Provincial/Territorial TDG Task Force and representatives of various federal departments and agencies, also discussed these concepts and possible solutions.

We have completed the review of your comments received through the consultation process. The department is developing a Memorandum to Cabinet. It is expected the Bill will come before the House of Commons in the Spring 2006.

## Issues with Light Plastic/Metal Composite IBCs UN31HA1

by Linda Hume-Sastre and Zenon Lewycky

The so-called "light weight" Intermediate Bulk Containers (IBCs) composed of a plastic inner receptacle and tubular metal outer cage are increasing in popularity as a means of containment for liquid dangerous goods. These "light weight" IBCs bear the UN31HA1 marking code. They are manufactured in the United States and in Europe, but not in Canada.

The UN Sub-Committee of Experts on the Transport of Dangerous Goods (UNSCETDG) recently convened a working group to consider, among many other issues regarding the test protocols and acceptance criteria for IBCs, the integrity and robustness of these "light weight" IBCs. A meeting of the working group was held in Paris in October 2005. At that meeting, some of these discussions related to how these "light weight" IBCs conform to existing UN Recommendations, particularly in regard to their behaviour in the leak test conducted at 20 kPa gauge and in the hydrostatic pressure test conducted at the rated hydrostatic test pressure. The hydrostatic test pressure rating appears in the UN marking string, commonly 100 kPa gauge with these IBCs.

The UN Recommendations require that, at the hydrostatic test pressure, UN31HA1 IBCs must exhibit "no permanent deformation which would render the IBC unsafe for transport and no leakage". Users of IBCs in Canada are reminded that under the *Transportation of Dangerous Goods Regulations*, means of containment made outside Canada are accepted for use in Canada if they are in compliance with the

UN Recommendations and with the domestic regulations of the country of manufacture (section 5.6 of the *TDG Regulations*).

The UN working group is reporting its progress to the Sub-Committee at its November-December 2005 meeting in Geneva and will provide text for the IBC testing regime that illustrates how certain test protocols and acceptance criteria in the UN Recommendations could be improved. In addition, the working group will recommend to the Sub-Committee that a fixed frequency vibration test for IBCs be introduced into the UN Recommendations. UN IBCs manufactured in Canada are already subject to the vibration test. The United States and France have agreed to work together to develop the appropriate amendment for the Sub-Committee to consider next year.

We will report once again in this newsletter as the Sub-Committee pursues, over the next months, the issues raised by the working group.

## Non-Compliant Manufacture of Compressed Gas Cylinders Used in Paintball Guns

*by Nicole Noccey*

In September 2003, Global Composites International, Inc. (GCI) was granted a Permit for Equivalent Level of Safety by Transport Canada for the manufacture of composite wrapped cylinders at their San Dimas, California facility. These cylinders were designed for use in paintball guns and were to be manufactured in accordance with the design and testing requirements specified in the Permit, number SU 6146.

GCI moved their manufacturing facility to Ontario, California in April 2004 but did not provide Transport Canada with the information required to re-issue the Permit for cylinder manufacture at their new location. As specified in National Standard of Canada CAN/CSA-B339-2002 "Cylinders, Spheres and Tubes for the Transportation of Dangerous Goods", all registered cylinder designs must be requalified if the manufacturing location is changed.

Please be aware that any cylinders marked TC-SU 6146 with a date of manufacture of 01 April 2004 or later would not be in compliance with the terms of the Permit and must be taken out of service. GCI permanently closed its business on 01 August 2005. For more information, please contact Nicole Noccey at: [nocceyn@tc.gc.ca](mailto:nocceyn@tc.gc.ca).

## ICAO TI's 2005-2006



The ICAO Technical Instructions 2005/2006 edition was amended with the publication of the two Addenda and one Addendum/Corrigendum. Documents may be viewed on the following website:

<http://www.tc.gc.ca/CivilAviation/commerce/DangerousGoods/ICAOAmend/menu.htm>.

Number of Calls		<h1>CANUTEC</h1> <p>May 1, 2005 to October 31, 2005</p>	Emergency Calls by Location	
Technical	5 376		British Columbia	94
Regulatory	2 031	Alberta	64	
Information	5 759	Saskatchewan	23	
Other	4 286	Manitoba	15	
<b>Total</b>	<b>17 452</b>	Ontario	141	
<b>Emergency Calls</b>	<b>498</b>	Quebec	108	
		New Brunswick	13	
		Nova Scotia	11	
		Prince Edward Island	0	
		Newfoundland and Labrador	5	
		Northwest Territories	3	
		Yukon	0	
		Nunavut	0	
		United States	20	
		International	1	
Source of Emergency Calls		Emergency Calls by Class of Dangerous Goods*		
Shipper	10	Class 1 - Explosives	2	
Fire Department	132	Class 2 - Compressed Gas	112	
Police Department	30	Class 3 - Flammable Liquids	110	
Hazmat Contractor	8	Class 4 - Flammable Solids	12	
Consignee	3	Class 5 - Oxidizers and Organic Peroxides	44	
Carrier	151	Class 6 - Poisonous and Infectious Substances	36	
End User	40	Class 7 - Radioactives	5	
Manufacturing Facility	7	Class 8 - Corrosives	181	
Government	23	Class 9 - Miscellaneous	14	
Private Citizen	31	NR - Non-regulated	76	
Laboratory	1	Mixed Load -	4	
Emergency Centre	15	Unknown -	22	
Mutual Aid Group	2			
Ambulance Service	2			
Poison Control	11			
Distributor/Retail	10			
Medical Facility	14			
Others	8			
		* includes primary and subsidiary classes, and possibly multiple DGs per emergency.		
		Emergency Calls by Transport Mode		
		Road	122	
		Rail	121	
		Air	8	
		Marine	12	
		Pipeline	1	
		Non transport	234	
		Multimodal	0	