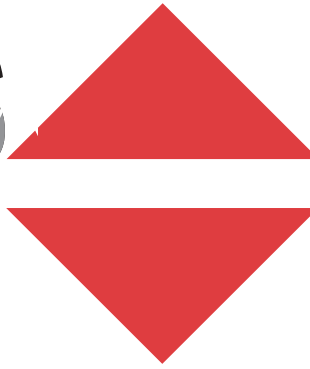


Dangerous Goods



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Transport Canada Transports Canada



Canada 

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We welcome news, comments or highlights of transportation of dangerous goods activities, announcements of meetings, conferences or workshops. The **Newsletter** carries signed articles from various sources. Such articles do not necessarily represent the views of the Directorate, nor does publishing them imply any endorsement. Material from the **Newsletter** may be used freely with customary credit.

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Editorial

Welcome to the first edition of the newsletter for the year 2002. May I extend to all our readers my very best wishes for the new year!

As you know, last year was very productive with the publication of the new TDG clear language regulations in the *Canada Gazette*, Part II. The process of rewriting the regulations took longer than expected but I am sure you will agree that the delay was worthwhile.



The new regulations will come into force on August 15, 2002 which means that the persons affected by these regulations will have to be well prepared before then.

For more information, you may visit the TDG Web site at: www.tc.gc.ca/tdg/menu.htm. For assistance, you may click on the Clear Language Interpretations File which was developed to answer questions or clarify meaning on specific issues. You may also leave a message on the dedicated information telephone line at 1-888-758-9999 and someone will contact you. There are also awareness sessions being planned in the five regions of Transport Canada. You will find more details on page 8 and on the TDG Web site.

In addition, the first technical amendment to the new regulations will be published in the *Canada Gazette*, Part I and you will be invited to send comments on the proposed amendment. Please visit the Web site for more details.

In this edition of the newsletter, you will find informative articles on the new regulations and other interesting topics. Please remember to look at page 24, as we invite authors to submit papers for the *International Symposium on Protection of Dangerous Goods Tanks in Fire* which will be held in Ottawa on October 22-23, 2002.

As you may realize, the year 2002 will continue to bring new challenges as we look forward to the coming into force of the new clear language regulations. As always, we invite you to send us your comments and suggestions on these articles or on future articles you would like to see included.

Enjoy your reading!

Renée Major

Radiation Protection Program Requirements are Coming!

by Marisa Devine

On May 31, 2000, the Canadian Nuclear Safety Commission's transport regulations, the *Packaging and Transport of Nuclear Substances Regulations (PTNS)* under the Nuclear Safety and Control Act came into force. These regulations introduced a new requirement for a Radiation Protection Program for transport workers. Section 18 of the PTNS regulations requires carriers, consignors and consignees to maintain and apply a written radiation protection program for the transport of radioactive materials. This requirement is subject to a temporary exemption that delays its coming into force until June 1, 2002.

On June 1, 2002, employers of transport workers will be responsible for having a radiation protection program. The program will have to implement operational controls to keep radiation exposures low and to ensure that the dose limits for transport workers and the public are not exceeded. Depending on the potential exposure associated with the transport activity, a graded approach will be needed with efforts commensurate with the likelihood and magnitude of exposure. Some workers may need to be monitored for exposure. If there is a reasonable probability that the worker may receive a dose of radiation that is greater than the prescribed limit for the general public, the worker needs to be designated a nuclear energy worker.

For further information, contact Mr. Sylvain Faille of the Canadian Nuclear Safety Commission, Transport Section. He can be reached at (613) 995-2476 or E-mail to failles@cnsccsn.gc.ca

FEATURE



The Clear Language Regulations Packaging and Intermediate Bulk Containers (IBCs)

by Dave Westman

Do you ship **Class 3** (flammable liquids), **Class 4** (flammable solids, spontaneously combustible, dangerous when wet), **Class 5** (oxidizers and organic peroxides), **Class 6.1** (toxic), **Class 8** (corrosives) or **Class 9** (other regulated material) by road, rail or domestic marine transport?

There are changes to the regulations for packaging and IBCs used for the transportation of these goods, as a result of the Clear Language Amendment to the TDG Regulations. The new requirements however do not apply to "Special Cases" (see Part 1 of the new regulations). Here are some highlights:

Small Means of Containment (≤ 450L)

- Beginning in 2003, these classes of dangerous goods must be transported in a UN standard small container (subsection 5.12(1) of the new regulations);
- Beginning in 2003, when these goods are to be transported in a used plastic drum over 150L in capacity, the drum must be reconditioned before it is reused (subsection 5.12(2) of the new regulations);
- Gasoline in a container of 30L capacity or less and marked "Ltd. Qty." is exempt from the regulations (subsections 1.17(1) and (2) of the new regulations);
- Diesel fuel transported in a small container continues to be exempt from the TDG Regulations (section 1.33 of the new regulations).

A UN standard means of containment must comply with the requirements of standard CAN/CGSB 43.150-97 "Performance Packaging for the Transportation of Dangerous Goods" or CAN/CGSB 43.146 "Intermediate Bulk Containers for the Trans-



portation of Dangerous Goods". For copies, contact the Canadian General Standards Board at 1-800-665-2472.

Large Portable Means of Containment (> 450L ≤ 3,000L)

- Beginning in 2003, diesel fuel transported in a large portable container will no longer be exempt from the container requirements of the regulations and must be in compliance with CAN/CGSB 43.146 "Intermediate Bulk Containers for the Transportation of Dangerous Goods" (section 5.15 of the new regulations).

Mobile Intermediate Bulk Containers (Portable Refueling Tanks or Slip Tanks)

Under the new regulations, all petroleum products (diesel, gasoline, aviation fuel, naphtha, kerosene), when

transported in a large portable container, must be in compliance with CAN/CGSB 43.146 “*Intermediate Bulk Containers for the Transportation of Dangerous Goods*”.

The current CAN/CGSB 43.146, however, does not specifically address the use of a container that is intended to remain on a vehicle, such as a mobile refueling tank. A revision to the standard is expected to be published shortly to introduce requirements for the design, manufacture and use of large portable refueling tanks (called a mobile IBC in the revised standard). Transport Canada will be proposing the adoption of this revised version of CAN/CGSB 43.146.

The revised standard specifies that a mobile IBC used to transport petroleum products must:

- be a steel or aluminum UN standard mobile IBC;
- not be loaded to more than 95% of its capacity;
- be grounded during loading and unloading;
- as of January 2003, have been inspected at a Transport Canada registered inspection facility within the previous five years.

A UN standard mobile IBC has certain test requirements in addition to those for a steel or aluminum UN standard IBC, although provisions have been made for the use of certain alternative types of containers:

- A TC, CTC or DOT specification 57 portable tank, a UN code 31A IBC built before 2003, or a UN code 31B IBC built before 2003 may be substituted for a UN standard mobile IBC;
- Until 2010, a portable refueling tank built before 2003 that is certified as conforming to ULC ORD-C142.13-1997 may be substituted for a UN standard mobile IBC;
- Until 2003, a non-specification metal tank built before 1996 may be substituted for a UN standard mobile IBC.

These new requirements for mobile IBCs would mean that every large portable refueling tank built after 2002 must be a UN standard mobile IBC; large non-specification refueling tanks will be taken out of service by 2003; and the use of other non-UN tanks will be phased out.

The revised standard is expected to be available early in 2002. For information on the design requirements for the new UN standard mobile IBC or Transport Canada registration to inspect mobile IBCs, a request to Dave Westman may be sent by facsimile at (613) 993-5925 or by E-mail to westmad@tc.gc.ca. A copy of the new clear language regulations is available on the TDG Web site at: <http://www.tc.gc.ca/tdg/menu.htm>

2001 North American Inspector's Championship

by Louis Trépanier

Mrs. Kerri Wirachowsky, Transportation Enforcement Officer with the Ontario Ministry of Transportation, Kitchener, Ontario won the Grand Champion honors at the Ninth Annual North American Inspector's Championship held August 21-25 in Minneapolis, Minnesota.

The event formerly known as “challenge” is held every year to recognize the contribution of roadside inspectors to the commercial safety program in North America. Inspectors representing provinces, states and territories across North America compete in three areas:

- 1) level 1 roadside inspections;
- 2) dangerous goods/highway tank inspections; and
- 3) motor coach inspections.

The theme for this year's championship sponsored by the Commercial Vehicle Safety Alliance and the State of Minnesota was “Education, Performance and Uniformity”. Fifty-three commercial vehicle inspectors from Canada, the U.S. and Mexico took part in the Championship including representatives from six Canadian provinces; British Columbia, Alberta, Saskatchewan, Ontario, Quebec and Prince Edward Island.

Congratulations to all the participants!

More information on the championship can be found on the CVSA Web site at: <http://www.cvsa.org/>



The Clear Language Regulations and the Shipment of Dangerous Goods by Air

by Roger Lessard

Introduction

The Transportation of Dangerous Goods Regulations have recently undergone an extensive review and revision. This process, called the “Clear Language Project”, has resulted in the development of new Regulations that will affect those who handle, offer for transport, transport or import dangerous goods by all modes of transport, including air.

These Regulations were published on August 15, 2001 in the *Canada Gazette*, Part II and will come into force on August 15, 2002.

Scope

For those of you who are responsible for the handling, offering for transport, transporting or importing into Canada of dangerous goods by air, please note that Part 12 of the Regulations encompasses all of the relevant air requirements and is divided into the following sections:

Background

There are many air carriers who delegate to third parties some of the duties that are assigned to them in the ICAO Technical Instructions and in this Part.

There is nothing in these Regulations that hinders this practice but it should be noted by air carriers that delegating responsibility for certain duties does not include delegating liability for those duties. This means that if an air carrier contracts a third party to provide, for example, cargo handling, acceptance or loading activities, the approval programme for training mandated by the ICAO Technical Instructions and carried out by the Civil Aviation Directorate, Transport Canada, applies to those third party activities.

International and Domestic Transport by Aircraft

Section 12.1 - General Requirements

- International and Domestic Transport of

Dangerous Goods by air will continue to be subject mainly to the International Civil Aviation Organization *Technical Instructions* (ICAO TI's).

Section 12.2 - Shipping Document

- The format of the Shipper's Declaration from the International Air Transport Association (IATA) Dangerous Goods Regulations continues to be prescribed for the air dangerous goods transport document.

Section 12.3 - Information to Pilot-in-Command

- A dedicated form for the Notification to Pilot-in-Command (NOTOC) continues to be required.

Domestic Transport by Aircraft

Section 12.4 - Explosives, Class 1.4S

- Cartridges; UN0012, UN0014, UN0055, UN0323 and UN0405 may be transported in accordance with the provisions of this section.

Section 12.5 - Forbidden Explosives

- Specific Explosives identified in the ICAO TI's, Table 3-1, Dangerous Goods List, (Columns 9 to 12), as 'Forbidden' may be transported in accordance with the provisions of this section.

Section 12.6 - Handling and Transporting of Toxic and Infectious Substances

- Toxic or infectious substances may be stowed adjacent to foodstuffs or animals in accordance with the provisions of this section.

Section 12.7 - Infectious Substances: General

- The risk group of an Infectious Substance may be shown adjacent to the Proper Shipping Name instead of the Technical Name in accordance with the provisions of this section.

Section 12.8 - Packing Instruction 910

- “Consumer commodities” may be transported in accordance with the provisions of this section.

Section 12.9 - Limited Access

- Dangerous goods may be transported to or from a location where access is limited in accordance with the provisions of this section.

Section 12.10 - Private Aircraft

- Dangerous Goods for non-commercial recreational use may be transported in accordance with the provisions of this section.

Section 12.11 - Geological Core Samples

- Geological core samples of 100 mm or less in diameter that contain dangerous goods may be transported in accordance with the provisions of this section.

Section 12.12 - Aerial Work

- Dangerous goods used in active fire suppression, aerial cloud seeding, aerial drip torching, agriculture, avalanche control, forestry, horticulture, hydrographic and seismographic work, or pollution control may be transported in accordance with this section.

Section 12.13 - Measuring Instruments

- Measuring instruments that contain dangerous goods may be transported in accordance with this section.

Section 12.14 - Medical Aid

- Dangerous goods that are to be used or parts of which have been used for in-flight medical aid to a patient may be transported in accordance with this section.

Section 12.15 - Air Ambulance

- Dangerous goods that are to be used or parts of which have been used for in-flight medical aid on board an air ambulance dedicated and configured for the transport of patients may be transported in accordance with this section.

Section 12.16 - Emergency Response

- Dangerous goods used for search and rescue operations or emergency response may be transported in accordance with this section.

Section 12.17 - Flight Deck Loading Restrictions

- Dangerous goods may be transported on a Flight Deck in accordance with the provisions of this section.

Publication

You may obtain an electronic copy of the Regulations from the TDG Web site at the following address:

<http://www.tc.gc.ca/tdg/menu.htm>

Copies in printed annotated form are available from commercial sources.

Please note that air operators will be required to revise their Transportation of Dangerous Goods Training Programs and the Dangerous Goods Chapter of their Operations Manual to reflect the pertinent requirements of the revised Transportation of Dangerous Goods Regulations.

Awareness Presentations

Commercial and Business Aviation, Dangerous Goods Offices, located across Canada, are offering Transportation of Dangerous Goods Regulations awareness sessions on Part 12, Air Requirements, at specific locations. Contact your Regional Office for further information (see below) or Headquarters at (613) 990-1060.

Atlantic	(506) 851-7247
Quebec	(514) 633-2838
Ontario	(416) 952-0000
Prairie and Northern	(780) 495-5278
Pacific	(604) 666-5655
Airline Inspection	(514) 633-3116

Awareness Presentation Schedule

Region	Telephone	Cities
Atlantic	(506) 851-7247	Halifax, N.S., St-John's, NFLD, and Goose Bay, Labrador
Quebec	(514) 633-2838	Montréal, Québec, Sept-Îles, and Val d'Or
Ontario	(416) 952-0000	Thunder Bay, Red Lake, Toronto, North Bay, and Ottawa
Prairie and Northern	(780) 495-5278	Edmonton and Calgary, Alta., Winnipeg and Thompson, Man., Saskatoon, Sask., Yellowknife, NWT., and Whitehorse, Yukon
Pacific	(604) 666-5655	Victoria, Campbell River, Vancouver, Kelowna, Prince George, Prince Rupert, Smithers, Fort Nelson, Fort St-John, and Abbotsford

TDG Clear Language Information Sessions

Quebec Region

Information sessions will be held in Montréal on April 4, 2002, in Dorval in the week of April 15, 2002 and in Québec City, Sherbrooke and Chicoutimi in the week of May 6, 2002. Please visit the TDG Web site at www.tc.gc.ca/tdg/menu.htm for more details on the timetable and other sessions to come.

For information on all these sessions or to register, as the number of seats is limited, please contact the Quebec Regional Office at tmd-tdg.quebec@tc.gc.ca, or by calling (514) 283-5722 or by fax (514) 283-8234.

For details concerning other sessions offered in other regions, please visit the TDG Web site at: www.tc.gc.ca/tdg/menu.htm.

CN Presents Safe Handling Awards to Shippers

(This article originally appeared in the CN publication MOVIN, Summer 2001 issue.)

CN has presented its Safe Handling Awards for 2000 to eighty-three industrial facilities. Forty-nine of these facilities are located in Canada and thirty-four in the U.S. First introduced in 1992, the CN Safe Handling Awards are presented each year to CN customers that load 100 or more cars with dangerous goods annually and meet established safety objectives.

“Our customers have made a real effort to comply with CN’s high standards for handling regulated goods,” says Jean-Jacques Ruest, CN’s vice-president, Petroleum and Chemicals. “Our customers and employees work together to meet the day-to-day challenges of maintaining a safe operation. The purpose of the Safe Handling Awards is to recognize customers that have worked hard to make sure that safety is the number-one priority.”

The CN Safe Handling Awards program complements a series of initiatives aimed at making CN the safest railway in North America. The awards are also an integral part of the Responsible Care® program - a performance improvement initiative of the Canadian Chemical Producers’ Association (CCPA) that has also been adopted by the American Chemistry Council (ACC). CN intends to maximize the initiative’s numerous benefits by applying Responsible Care® principles not only to the transportation of regulated goods, but to all of its activities. CN’s participation in Responsible Care® confirms its commitment to continuously improving work practices and procedures throughout the company.

“Over the past nine years, our CN Safe Handling Awards program has built up considerable momentum throughout industry,” adds Jean Ouellette, CN’s director of Dangerous Goods and Responsible Care. “This long-term investment continues to pay off as companies work with us to ensure the safest possible transportation, loading and unloading practices.”

Special Mentions

Three facilities received a special mention for having earned CN Safe Handling Awards nine years in a row: PIONEER (Dalhousie, N.B.), Enersul (Operations) Inc. (Benbow, Alberta) and BP Canada Energy Resources Co. (Elsbeth, Alberta).

Two new award categories are also included in the CN Safe Handling Awards program: The Corporate Safe Handling Award and the Continuous Improvement Award. The Corporate Safe Handling Award is presented to companies whose combined aggregate numbers exceed 5,000 carloads of dangerous goods or hazardous materials shipped, and who meet the Safe Handling Awards thresholds. In 2000, this award was presented to BP Canada Energy Resources Company, The Dow Chemical Company, Ultramar Ltd. and PIONEER. CN also recognized the facilities that posted the best overall improvement by awarding them a Continuous Improvement Award. The recipients of the Continuous Improvement Award for 2000 are: Irving Oil Ltd. (Saint John, N.B.) and BP Canada Energy Resources Company (Sarnia, Ont.).

2000 SAFE HANDLING AWARDS WINNERS

NOVA SCOTIA

- ◆ Sable Offshore Energy Incorporated – *Tupper*

NEW BRUNSWICK

- ◆ PIONEER (*) – *Dalhousie*

QUEBEC

- ◆ PPG Canada Inc. – *Beauharnois*
- ◆ Nexen Chemicals Canada Ltd. – *Beauharnois*
- ◆ PIONEER – *Becancour*
- ◆ Phenolchernic, Inc. – *Limoilou*
- ◆ I M T T (International Matex Terminal) – *Limoilou*
- ◆ EKA CHIMIE CANADA INC. – *Magog*
- ◆ Petro-Canada – *Montreal East*
- ◆ Ultramar Ltée – *St-Romuald*
- ◆ Marsulex – *Tracy*
- ◆ Noranda Inc. – *CEZinc. – Valleyfield*
- ◆ EKA CHIMIE CANADA INC. – *Valleyfield*
- ◆ Petromont SOC en Commandite – *Varennnes*

ONTARIO

- ◆ Honeywell International – *Amherstburg*
- ◆ Sulco Chemicals Ltd. – *Elmira*
- ◆ Kemira Chemicals Canada Inc. – *Maitland*
- ◆ BP Canada Energy Resources Co. – *Sarnia*
- ◆ Imperial Oil Limited – *Sarnia*
- ◆ Imperial Oil Limited – *Sarnia*
- ◆ Chinook Group Ltd. – *Sarnia*
- ◆ Nova Chemicals (Canada) Ltd. – *Sarnia*

- ◆ Marsulex/Inco – *Sudbury*

MANITOBA

- ◆ Simplot Canada Limited – *Brandon*
- ◆ Nexen Chemicals Canada Ltd. – *Brandon*
- ◆ Border Chemicals – *Transcona*
- ◆ Conoco Canada Limited – *Winnipeg - Fort Whyte*

SASKATCHEWAN

- ◆ Saskferco Products Inc. – *Belle Plaines*
- ◆ Procor LPG Storage Inc. – *Regina*

ALBERTA

- ◆ Talisman Energy Inc. – *Ansell*
- ◆ Enersul (Operations) Inc. (*) – *Benbow*
- ◆ Albchern Industries Ltd. – *Bruderheim*
- ◆ Nexen Chemicals Canada Ltd. – *Bruderheim*
- ◆ Neste MTBE Canada – *East Edmonton*
- ◆ Keyspan Energy Canada – *Eckville*
- ◆ BP Canada Energy Resources Co. (*) – *Elspeth*
- ◆ Thiopet Chemicals Ltd. – *Fort Saskatchewan*
- ◆ Praxair Canada Inc. – *Fort Saskatchewan*
- ◆ Dow Chemical Canada Inc. – *Fort Saskatchewan*
- ◆ Sterling Pulp Chemicals Limited – *Grande Prairie*
- ◆ Weldwood Of Canada Limited – *Hinton*
- ◆ Petro-Canada Oil & Gas – *Lochearn*
- ◆ Husky Oil Ltd – *Ram River*
- ◆ Agrium – *Red Deer*

- ◆ Williams Energy (Canada) Inc. – *South Beamer*
- ◆ Husky Oil Ltd. – *Windfall*

BRITISH COLUMBIA

- ◆ Sterling Pulp Chemicals Limited – *N.E. Vancouver*
- ◆ Marsulex Westcoast Energy Inc. – *Prince George*
- ◆ BC Chemicals – *Prince George*

MICHIGAN

- ◆ The Dow Chemical Company – *Midland*
- ◆ Solutia Inc. – *Trenton*

IOWA

- ◆ Farmland Industries – *Judd*

ILLINOIS

- ◆ Royster Clark Nitrogen – *Areco*
- ◆ Koppers Industries – *Cicero*
- ◆ Archer Daniels Midland Company – *Decatur*
- ◆ Stepan Chemical Company – *Millsdale*
- ◆ Equistar Chemicals – *Tuscola*

MISSISSIPPI

- ◆ Air Liquide America – *Canton*
- ◆ Ethyl Petroleum Additives Inc. – *Natchez*
- ◆ Airgas Carbonic – *Star*
- ◆ Pursue Energy Corporation – *Thomasville*
- ◆ Mississippi Chemical Corporation – *Yazoo City*

TENNESSEE

- ◆ Koeh Materials Company – *Memphis*
- ◆ Velsicol Chemical Corporation – *Memphis*
- ◆ Williams; Refining & Marketing LLC – *Memphis*
- ◆ E. I. du Pont de Nemours and Company – *Woodstock*
- ◆ PCS Nitrogen – *Woodstock*

LOUISIANA

- ◆ Honeywell International – *Baton Rouge*
- ◆ Formosa Plastic Corp – *Baton Rouge*
- ◆ ExxonMobil Chemical – *Baton Rouge*
- ◆ GE Petrochemicals – *Brunns*
- ◆ E. I. du Pont de Nemours and Company – *Burnside*
- ◆ Honeywell International – *Geismar*
- ◆ Vulcan Chemicals Company – *Geismar*
- ◆ PCS Nitrogen – *Geismar*
- ◆ Shell Chemicals – *Geismar*
- ◆ LaRoche Industries Inc. – *Gramercy*
- ◆ E. I. du Pont de Nemours and Company – *La Place*
- ◆ DuPONT DOW Elastomers – *La Place*
- ◆ Air Products & Chemicals, Inc. – *St. Gabriel*
- ◆ PIONEER – *St. Gabriel*
- ◆ Ineos Fluor Americas LLC – *St. Gabriel*
- ◆ Motiva Enterprises, LLC – *Convent Refinery – Union*

(* These facilities have earned CN Safe Handling Awards nine years in a row.)

Port of Montréal Container Study

by Jennifer Sully and Josée Chabot

Introduction

The purpose of this study is to investigate the nature and content of containers carrying dangerous goods in order to obtain information in the following areas:

- the proportion of box-type to tank-type containers;
- the frequency of distinct dangerous goods shipped in one container;
- the frequency of dangerous goods shipped in a quantity greater than or equal to 4000kg/L;
- the frequency of dangerous goods transported in a quantity requiring an ERAP; and
- the frequency of the transportation of dangerous goods classified as 6.1.

Sample

The results of this study were determined from an analysis of all of the shipments of dangerous goods that came to and from the Port of Montréal for the year 2000, as recorded by the Port of Montréal administration.

Results

Table 1: Distinct UN Numbers in Containers

Container Type	Count of Distinct UN Numbers	Number of Occurrences/ Shipments	Percent of Total Box Containers	Percent of Total Boxes with More Than 2 Distinct DG's
T	1	1900	N/A	N/A
B	1	22491	79.36	N/A
B	2	3076	10.85	52.60
B	3	1223	4.32	20.91
B	4	617	2.18	10.55
B	5 +	932	3.29	15.94
Total containers		30239	28339 (100%)	5848 (100%)

Table 2: Dangerous Goods Shipped in a Quantity Greater Than or Equal to 4000 kg/L

Container Type	Count of Distinct UN Numbers	DG's With Total Weight Greater Than or Equal to 4000kg/L	Shipments/Occurrences
T	1	0	196
T	1	1	1704
B	1	0	8721
B	1	1	13770
B	2	0	2272

Container Types

The study was directed at both box-type (B) and tank-type (T) containers.

The original data provided by the Port of Montréal did not specifically indicate whether a container was of type B or T. Hence, the following prefixes to container identification numbers, indicative of tank type containers, were used to separate container types:

BAFU, BAYU, C 151, C 154, C 155, CCRU, EXFU, EXSU, HOTU, LOGU, NMCU, PCU, Q 062, Q 060, Q 076, SECS, SILU, SNTU, STLU, SUTU, TCLU, TIFU, TMLU, TPMU, UTCU, UTTU, VGTU

Container Size

This study did not differentiate between 20 foot and 40 foot containers.

Table 2: Dangerous Goods Shipped in a Quantity Greater Than or Equal to 4000 kg/L

Container Type	Count of Distinct UN Numbers	DG's With Total Weight Greater Than or Equal to 4000kg/L	Shipments/Occurrences
B	2	1	692
B	2	2	112
B	3	0	900
B	3	1	259
B	3	2	59
B	3	3	5
B	4	0	489
B	4	1	102
B	4	2	18
B	4	3	8
B	4	4	0
B	5 +	0	627
B	5 +	1	209
B	5 +	2	66
B	5 +	3	24
B	5 +	4	6
B	5 +	5 +	0
totals			30239

Table 3: Multiple ERAPables in Containers

Number of DG's in Container Requiring an ERAP	Number of Occurrences (Containers)	Percent of ERAPable Containers	Percent of All Containers
1	3563	96.6	11.78
2	117	3.2	3.87
3	10	0.3	
Total containers	3690	3690 (100%)	30239

Table 4: Frequency of Class 6.1 Dangerous Goods Shipped With or Without an ERAP

* Note: the information is here expressed in two parallel tables. The first, table 4A, is a demonstration of the data listed by UN Number. The second, table 4B, is the same material presented by the frequency of shipments.

UN Number Table 4A	Number of Shipments	Count of Shipments with DG in ERAPable Quantity	UN Number Table 4B	Number of Shipments	Count of Shipments with DG in ERAPable Quantity
UN1092	2		UN2810	343	
UN1098	6		UN1564	255	
UN1135	1		UN2811	158	
UN1143	3		UN2662	143	
UN1163	1		UN2291	116	
UN1181	1		UN2659	108	
UN1182	1		UN1593	96	
UN1238	3		UN2929	90	60
UN1239	6		UN1897	57	
UN1244	1		UN2928	53	
UN1251	1		UN2206	50	
UN1544	1		UN2902	50	
UN1545	1		UN2674	48	

UN Number Table 4A (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity	UN Number Table 4B (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity
UN1557	42		UN2874	43	
UN1560	6		UN1557	42	
UN1561	3		UN2927	41	18
UN1564	255		UN1710	38	
UN1578	13		UN1689	33	33
UN1580	1		UN1888	32	
UN1588	4		UN1738	30	
UN1590	5		UN1751	30	
UN1593	96		UN1680	28	25
UN1595	8		UN1690	28	
UN1603	6		UN2078	27	
UN1605	1		UN2644	25	
UN1616	6		UN3288	25	
UN1625	2		UN2022	23	
UN1636	1		UN2570	21	
UN1638	3		UN2477	18	
UN1641	1		UN1889	17	
UN1646	1		UN3283	15	
UN1649	11	8	UN1578	13	
UN1662	2		UN2076	13	
UN1663	1		UN2630	13	
UN1664	1		UN2771	13	
UN1665	1		UN2588	12	
UN1670	1		UN1649	118	
UN1671	4		UN2023	11	
UN1673	10		UN3016	11	
UN1674	2		UN3143	11	
UN1679	1		UN3287	11	
UN1680	28	25	UN1673	10	
UN1687	2		UN2788	10	
UN1688	1		UN3246	10	
UN1689	33	33	UN2239	9	
UN1690	28		UN2311	9	
UN1694	7		UN2487	9	
UN1695	1		UN2655	9	
UN1700	2		UN2821	9	
UN1701	1		UN301	79	
UN1702	2		UN1595	8	
UN1707	2		UN1994	8	
UN1708	4		UN2407	8	
UN1710	38		UN2485	8	
UN1711	3		UN2558	8	
UN1722	4		UN2750	8	
UN1738	30		UN3289	8	
UN1751	30		UN3293	8	
UN1809	6		UN1694	7	
UN1812	2		UN2521	7	

UN Number Table 4A (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity	UN Number Table 4B (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity
UN1888	32		UN2657	7	
UN1889	17		UN2871	7	
UN1894	1		UN3071	7	
UN1897	57		UN3249	7	
UN1994	8		UN3276	7	
UN2020	1		UN1098	6	
UN2022	23		UN1239	6	
UN2023	11		UN1560	6	
UN2026	2		UN1603	6	
UN2038	4		UN1616	6	
UN2076	13		UN1809	6	
UN2078	27		UN2237	6	
UN2206	50		UN2321	6	
UN2232	1		UN2337	6	
UN2237	6		UN2484	6	
UN2239	9		UN2740	6	
UN2253	4		UN2854	6	
UN2261	5		UN1590	5	
UN2290	5		UN2261	5	
UN2291	116		UN2290	5	
UN2295	2		UN2334	5	
UN2311	9		UN2482	5	
UN2321	6		UN2649	5	
UN2334	5		UN2668	5	
UN2337	6		UN2716	5	
UN2407	8		UN2757	5	
UN2438	3		UN2761	5	
UN2446	1		UN2775	5	
UN2474	4	4	UN2862	5	
UN2477	18		UN2936	5	
UN2482	5		UN1588	4	
UN2484	6		UN1671	4	
UN2485	8		UN1708	4	
UN2487	9		UN1722	4	
UN2488	2		UN2038	4	
UN2504	3		UN2253	4	
UN2512	1		UN2474	4	4
UN2515	1		UN2587	4	
UN2521	7		UN2853	4	
UN2558	8		UN2966	4	
UN2570	21		UN1143	3	
UN2587	4		UN1238	3	
UN2588	12		UN1561	3	
UN2606	2		UN1638	3	
UN2630	13		UN1711	3	
UN2643	1		UN2438	3	
UN2644	25		UN2504	3	

UN Number Table 4A (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity	UN Number Table 4B (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity
UN2649	5		UN3282	3	
UN2651	1		UN3290	3	
UN2655	9		UN1092	2	
UN2656	1		UN1625	2	
UN2657	7		UN1662	2	
UN2659	108		UN1674	2	
UN2660	2		UN1687	2	
UN2661	2		UN1700	2	
UN2662	143		UN1702	2	
UN2668	5		UN1707	2	
UN2674	48		UN1812	2	
UN2690	1		UN2026	2	
UN2716	5		UN2295	2	
UN2740	6		UN2488	2	
UN2742	2		UN2606	2	
UN2743	2		UN2660	2	
UN2746	1		UN2661	2	
UN2750	8		UN2742	2	
UN2757	5		UN2743	2	
UN2761	5		UN2831	2	
UN2771	13		UN2863	2	
UN2775	5		UN3080	2	
UN2788	10		UN1135	1	
UN2810	343		UN1163	1	
UN2811	158		UN1181	1	
UN2821	9		UN1182	1	
UN2831	2		UN1244	1	
UN2853	4		UN1251	1	
UN2854	6		UN1544	1	
UN2859	1		UN1545	1	
UN2862	5		UN1580	1	
UN2863	2		UN1605	1	
UN2864	1		UN1636	1	
UN2871	7		UN1641	1	
UN2874	43		UN1646	1	
UN2902	50		UN1663	1	
UN2927	41	18	UN1664	1	
UN2928	53		UN1665	1	
UN2929	90	60	UN1670	1	
UN2936	5		UN1679	1	
UN2966	4		UN1688	1	
UN2996	1		UN1695	1	
UN2997	1		UN1701	1	
UN3016	11		UN1894	1	
UN3017	9		UN2020	1	
UN3018	1	1	UN2232	1	
UN3071	7		UN2446	1	

UN Number Table 4A (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity	UN Number Table 4B (cont'd)	Number of Shipments	Count of Shipments with DG in ERAPable Quantity
UN3073	1		UN2512	1	
UN3080	2		UN2515	1	
UN3143	11		UN2643	1	
UN3246	10		UN2651	1	
UN3249	7		UN2656	1	
UN3276	7		UN2690	1	
UN3277	1		UN2746	1	
UN3278	1		UN2859	1	
UN3282	3		UN2864	1	
UN3283	15		UN2996	1	
UN3287	11		UN2997	1	
UN3288	25		UN3018	1	1
UN3289	8		UN3073	1	
UN3290	3		UN3277	1	
UN3293	8		UN3278	1	

Table 5: Breakdown of All Dangerous Goods Shipments

Container Type	Count of Distinct UN Numbers in Container	Count of DG's Greater or Equal to 4000 kg/L	Count of DG's Shipped in ERAPable Quantity	Count of DG's in Class 6.1	E	E	E	E	E	E	E	Occurrences/ Shipments
					R	R	R	R	R	R		
					A	A	A	A	A	A	A	
					P	P	P	P	P	P	P	
					1	1	1	2	2	2	3	
					6	6	6	4	9	9	0	
					4	8	8	7	2	2	1	
					9	0	9	4	7	9	8	
T	1											196
T	1	1										1691
T	1	1		1	X							10
T	1	1		1					x			3
B	1											7872
B	1			1								280
B	1			1						x		1
B	1			1					x			2
B	1			1		x						1
B	1		1									554
B	1		1	1						x		3
B	1		1	1					x			4
B	1		1	1				x				2
B	1		1	1	X							2
B	1	1										10777
B	1	1		1								1198
B	1	1	1									1706
B	1	1	1	1							x	1
B	1	1	1	1						x		30
B	1	1	1	1					x			6
B	1	1	1	1			x					27
B	1	1	1	1		x						19
B	1	1	1	1	X							6
B	2											1690

Container Type	Count of Distinct UN Numbers in Container	Count of DG's Greater or Equal to 4000 kg/L	Count of DG's Shipped in ERAPable Quantity	Count of DG's in Class 6.1	ERAP 1649	ERAP 1680	ERAP 1689	ERAP 2474	ERAP 2927	ERAP 2929	ERAP 3018	Occurrences/Shipments
B	2			1								232
B	2			1					x			1
B	2			1					x			2
B	2		1									323
B	2		1	1								8
B	2		1	1					x			3
B	2		2									12
B	2		2	1					x	x		1
B	2	1										495
B	2	1		1								45
B	2	1		1						x		1
B	2	1	1									130
B	2	1	1	1								2
B	2	1	1	1						x		9
B	2	1	1	1					x			2
B	2	1	2									4
B	2	1	2	1		x	x					4
B	2	2										71
B	2	2		1								9
B	2	2	1									26
B	2	2	1	1						x		3
B	2	2	2									1
B	2	2	2	1		x	x					2
B	3											676
B	3			1								66
B	3			1						x		2
B	3			1					x			1
B	3			1		x						1
B	3		1									131
B	3		1	1								5
B	3		1	1						x		4
B	3		2									9
B	3		2	1					x			2
B	3		3									3
B	3	1										175
B	3	1		1								10
B	3	1		1						x		1
B	3	1	1									67
B	3	1	1	1								2
B	3	1	2									4
B	3	2										39
B	3	2		1								7
B	3	2	1									12

Container Type	Count of Distinct UN Numbers in Container	Count of DG's Greater or Equal to 4000 kg/L	Count of DG's Shipped in ERAPable Quantity	Count of DG's in Class 6.1	ERAP 1649	ERAP 1680	ERAP 1689	ERAP 2474	ERAP 2927	ERAP 2929	ERAP 3018	Occurrences/ Shipments
B	3	2	3									1
B	3	3										2
B	3	3		1								2
B	3	3	1									1
B	4											374
B	4			1								47
B	4			1					x			1
B	4		1									55
B	4		1	1								6
B	4		2									3
B	4		2	1								1
B	4		2	1					x			1
B	4		2	1				x				1
B	4	1										60
B	4	1		1								10
B	4	1	1									25
B	4	1	1	1								4
B	4	1	1	1					x			1
B	4	1	2									2
B	4	2										6
B	4	2		1								3
B	4	2	1									7
B	4	2	2									2
B	4	3										1
B	4	3	1									6
B	4	3	2									1
B	5+											372
B	5+			1								91
B	5+			1					x			10
B	5+			1				x				3
B	5+			1				x	x			7
B	5+			1	x							1
B	5+			1						x		1
B	5+		1									104
B	5+		1	1								17
B	5+		1	1					x			1
B	5+		1	1					x	x		3
B	5+		1	1	x				x	x		1
B	5+		2									8
B	5+		2	1								1
B	5+		2	1					x	x		2
B	5+		2	1				x				1

Container Type	Count of Distinct UN Numbers in Container	Count of DG's Greater or Equal to 4000 kg/L	Count of DG's Shipped in ERAPable Quantity	Count of DG's in Class 6.1	E R A P 1 6 4 9	E R A P 1 6 8 0	E R A P 1 6 8 9	E R A P 2 4 7 4	E R A P 2 9 2 7	E R A P 2 9 2 9	E R A P 3 0 1 8	Occurrences/ Shipments
B	5+		2	1	x				x	x		1
B	5+		3									1
B	5+		3	1					x	x		1
B	5+	1										76
B	5+	1		1								18
B	5+	1	1									79
B	5+	1	1	1								4
B	5+	1	2									29
B	5+	1	2	1					x	x		1
B	5+	1	3									2
B	5+	2										11
B	5+	2		1								2
B	5+	2	1									37
B	5+	2	2									13
B	5+	2	2	1				x				1
B	5+	2	3									2
B	5+	3										2
B	5+	3	1									15
B	5+	3	2									7
B	5+	4										1
B	5+	4	1									2
B	5+	4	2									3
												30239

Number of Calls

Technical	4,590
Regulatory	1,472
Information	4,331
Other	2,347

Total 12,740

Emergency Calls 466

Source of Emergency Calls

Fire Dept.	157
Police Dept.	50
Hazmat Contractor	5
Carrier	163
End User	29
Manufacturer	5
Government	25
Private Citizen	10
ER Centre	1
Poison Control	10
Medical	5
Others	6



July 1, 2001 to November 30, 2001

Emergency Calls by Class of Dangerous Goods

Class 1 - Explosives	2
Class 2 - Compressed Gas	94
Class 3 - Flammable Liquids	105
Class 4 - Flammable Solids	8
Class 5 - Oxidizers and Organic Peroxides	27
Class 6 - Poisonous and Infectious Substances	31
Class 7 - Radioactives	4
Class 8 - Corrosives	115
Class 9 - Miscellaneous	152
NR - Non-regulated	51
Mixed Load -	6
Unknown -	14

Emergency Calls by Province/Country

British Columbia	77
Alberta	44
Saskatchewan	16
Manitoba	22
Ontario	158
Quebec	105
New-Brunswick	11
Nova Scotia	10
Prince Edward Island	0
Newfoundland	4
Northwest Territories	2
Yukon	0
Nunavut	0
United States	16
International	1

Emergency Calls by Transport Mode

Road	105
Rail	127
Air	4
Marine	6
Pipeline	1
Non transport	223
Multimodal	0

TDG Clear Language Congress – A Resounding Success

by Renée Major

In cooperation with Transport Canada (Transport Dangerous Goods Directorate), this event was organized by the Canadian Chemical Producers' Association (CCPA), the Canadian Petroleum Products Institute (CPPI), the Canadian Association of Petroleum Producers (CAPP), the Crop Protection Institute of Canada (CPIC), the Canadian Fertilizer Institute (CFI), the Canadian Association of Chemical Distributors (CACD) and the Railway Association of Canada (RAC).

The TDG Congress was held on November 5 and 6, 2001 at the Crowne Plaza Hotel in Ottawa. The event attracted over 300 delegates representing various Canadian industries, institutions, federal, provincial territorial and municipal governments as well as some of our American counterparts.

The objective of the two-day event was to provide comprehensive awareness of the new Transportation of Dangerous Goods Clear Language Regulations.

Mr. Louis Laferrière, CCPA's Senior Manager, Logistics gave introductory comments to the delegates. Mr. Richard Paton, President of the Canadian Chemical Producers' Association welcomed the participants and acknowledged the years of cooperation between the CCPA and Transport Canada in addressing and promoting public safety through regulatory initiatives such as the new Clear Language Regulations and the CCPA's own voluntary Responsible Care Program.

Mr. William J.S. Elliott, Assistant Deputy Minister, Safety and Security, at Transport Canada welcomed the delegates, on behalf of the Minister of Transport, the Honorable David Collenette and recognized the extensive work and contribution by all stakeholders to the development of the new regulations which were published in the *Canada Gazette*, Part II on August 15, 2001. He thanked everyone for their commitment to safety and security in the transportation sector and reminded them of the new challenges ahead in dealing with dangerous goods issues.

Mr. Elliott also spoke on the Transportation Blueprint initiative which will develop a federal strategy to respond

to the major challenge that will face Canada's transportation sector over the next decade and beyond.

The agenda included plenary sessions and a series of workshops covering such topics as: Training, Emergency Response Assistance Plan, Reporting, Means of Containment, Safety Marks, Classification, Documentation, and Provincial and Territorial Perspectives and TDG Program Delivery. The topics provided a platform for discussion as well as a forum for addressing questions on specific issues.

Some of the guest speakers included Dr. John Read, Director General, Transport Dangerous Goods Directorate, Transport Canada and Mr. Milt Schmidt of the U.S. Department of Transport. Both speakers elaborated on the security initiatives presently underway, particularly as it relates to dangerous goods, following the tragic events of September 11, 2001 in the United States.

The two-day event ended with a question and answer period where a TDG Panel of Experts lead by Mr. Edgar Ladouceur, Director, Compliance and Response, TDG Directorate answered many written questions. This session proved very valuable and served as an information guide on some areas where improvements may be required. The participants were reminded to visit the TDG Web site at: <http://www.tc.gc.ca/tdg/menu.htm> and to use the Clear Language Interpretations file for clarification or interpretation on the new regulations.

If you would like additional information, you may view the speakers' notes which are available on CCPA's Web site at: <http://www.ccpa.ca> or contact Mr. Louis Laferrière at (613) 237-6215 or by E-mail to llaferriere@ccpa.ca or Mr. Edgar Ladouceur at (613) 998-6540 or by E-mail to ladouce@tc.gc.ca



Mr. Elliott addressing the participants.

NFPA 1600 – New Standard on Disaster Recovery, Emergency Management and Business Continuity Planning

(This article was submitted by the Education Task Group of the NFPA 1600 committee.)

As disaster recovery, emergency management, and business continuity planning professionals strive to perform their jobs within the world's rapidly changing business and service environment, they face many challenges - not the least of which has been the lack of a uniformly accepted 'total program approach' for mitigation, recovery and continuity planning. Although various groups within the public and private sector have, over the years, developed well-structured emergency management guidelines, procedures and management systems based on specific types of incidents and requirements, e.g. the Incident Command System, there was still a need for a complete industry standard that could be utilized for both pre-loss and post-loss mitigation, recovery and continuity planning.

The goal of NFPA 1600 is to meet these needs. On January 14, 2000, the National Fire Protection Association (NFPA) issued their NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs and the present edition of NFPA 1600 was approved as an American National Standard on February 11, 2000 by the American National Standards Institute

This standard, which is endorsed by the Federal Emergency Management Agency (FEMA), the National Emergency Management Association (NEMA) and the International Association of Emergency Managers (IAEM), establishes a common set of criteria for disaster management, emergency management and business continuity programs. It also provides those individuals responsible for disaster and emergency management and business continuity programs with the criteria to assess current programs, or to develop, implement and maintain a program to mitigate, prepare for, respond to, and recover from disasters and emergencies.

The development of NFPA 1600 began in January 1991 when the NFPA Standards Council established the Disaster

Management Committee. The committee, which consists of members from both the public and private sectors who specialize in the field of disaster recovery, emergency management, and business continuity planning was then given the responsibility to develop documents relating to preparedness for, response to, and recovery from disasters resulting from natural, human or technological events. This committee, meeting several times a year, and whose members donate their time and expenses (as do all of NFPA's voluntary non-staff committee members) first focused on the development of the **NFPA 1600, Recommended Practice for Disaster Management**. After much work and numerous discussions representing various viewpoints, NFPA 1600 was presented to the NFPA membership at the 1995 Annual Meeting in Denver, Colorado, and that effort produced the 1995 edition of NFPA 1600.

In its revision of the document from a recommended practice to a standard for the 2000 edition, the committee also more fully addressed the long-term business interruption and second order effects of increasing natural, manmade and technological disasters. They expanded the program to address business continuity planning issues both before and after a disaster. These additional guidelines in NFPA 1600 aid in the mitigation of losses, the continuing of time-sensitive business and service functions and processes, while also protecting life and property.

NFPA 1600 is designed to be the basic criteria to consider when creating or assessing a program to address disaster recovery, emergency management and business continuity.

Specific subject matter addressed in NFPA 1600 includes the following:

- **Laws and Authorities**

The applicable legislation, regulations and industry codes of practice an entity needs to consider when developing a disaster recovery, emergency management or business continuity plan.

- **Hazard Identification and Risk Assessment**

The identification of hazards (e.g., natural, human, and technological), the likelihood of their occurrence and the organization's vulnerability to these hazards.

- **Hazard Mitigation**

Activities taken to eliminate or reduce the degree of risk to life and property from hazards, either prior to or following a disaster or emergency.

- **Resource Management**

The means within the organization to reduce or eliminate the hazards identified in the risk assessment phase.

- **Planning**

The process of developing advance arrangements and procedures which will enable an organization to respond to a disaster and resume critical business or service functions within a predetermined period of time, minimize the amount of loss, and repair, restore or replace the stricken facilities as soon as possible.

Strategic Plan - A plan outlining decisions regarding resource allocation, priorities, and action steps necessary to reach the goals of the disaster recovery, emergency management or business continuity plan.

Emergency Operations Plan - A plan outlining the response an organization will have to a disaster or emergency. This may include procedures or criteria for opening an Emergency Operations Centre, the deployment of assets to meet critical needs and the description and assurance of a coordinated response to emergency situations.

Mitigation Plan - The strategy and action steps to eliminate hazards or mitigate their effect if they cannot be eliminated.

Business Impact Analysis - The process of determining the impact on an organization should a potential loss (hopefully identified by the risk analysis) actually occur. The BIA should qualify and quantify, where possible, the loss impact from a business interruption, operational, and financial standpoint.

Recovery / Business Continuity Plan - The documentation of the strategies, procedures, resources, organizational structure, and information database utilized by an organization to recover from, resume, manage and continue operations in the event of a substantial disruptive incident.

- **Direction, Control and Coordination**

The ability to manage the response and recovery operations, as well as notify officials, emergency personnel employees and other personnel of an actual or pending emergency.

- **Communications and Warning**

The communication systems and procedures are to be established and regularly tested to support the program.

- **Operations and Procedure**

The implementation of all tactical operations at the incident, including response, damage assessment and recovery operations.

- **Logistics and Facilities**

Identifies methods and responsibilities for providing facilities, services, personnel and materials for the incident.

- **Training**

The implementation of a training / educational program to facilitate and provide understanding and support of the program.

- **Exercises, Evaluations and Corrective Actions**

The evaluation of the program through periodic reviews, testing, post-incident reports, performance evaluations and exercises.

- **Crisis Communication, Public Education and Information**

Procedures to disseminate helpful recovery information and respond to requests for pre-disaster, disaster and post-disaster information including procedures for addressing media inquiries, as well as providing information to them.

- **Finance and Administration**

Responsible for developing financial and administrative procedures to support the program before, during and after an emergency or a disaster.

There is also a chapter on Program Management which identifies a methodology to initiate the program, an Appendix which includes additional explanatory material numbered to correspond with the applicable text paragraphs, as well as a glossary.

NFPA 1600 is considered an excellent benchmark for planners in both the public and private sectors. This standard provides numerous methodologies for defining and identifying risk and vulnerabilities within a community or business / service organization, as well as thorough planning guidelines which address stabilizing the restoration of the physical infrastructure of the community or business organization; protecting the health and life safety of personnel housed in those communities or businesses; and crisis communications procedures and management structure for both short-term recovery and ongoing long-term continuity of operations within that community or business / service organization.

In addition, NFPA 1600 identifies methodologies for exercising those plans and provides a listing of numerous resource organizations within and for the fields of disaster recovery, emergency management and business continuity planning.

As with other standards, NFPA 1600 will join the family of voluntary codes and standards (approximately 300) which are available for adoption by federal, state and local entities as well as the private sector. NFPA will continuously

monitor the adoption and usage of the standard and the NFPA Disaster Management Committee will revisit its contents and usage regularly over the next 3 - 5 years and address any appropriate changes, revisions or additions.

We encourage you to review NFPA 1600 and utilize the

valuable pre-loss and post-loss mitigation, recovery and continuity planning information housed therein.

For more information on this article, please contact Mr. Edgar Ladouceur, Director, Compliance and Response at (613) 998-6540 or ladouce@tc.gc.ca.

Marine Transportation

by Julia Cloutier

This article is the first in a series of four articles to be published on the history of the transportation of dangerous goods program through the modes of transportation used to move the goods; namely, marine, rail, air and road.

Canada has a long history with the sea. From the very beginning of our country, we were shipping products back and forth; invariably some would be dangerous. We also began regulating dangerous goods early on. Today, we use both the *Canada Shipping Act* and the multi-modal *Transportation of Dangerous Goods Act, 1992*, to regulate sea traffic involving dangerous goods. The *Transportation of Dangerous Goods Act* however takes precedence over the *Canada Shipping Act* in some management of dangerous goods.

Many different factors have influenced the changes made to the legislation governing the transportation of dangerous goods by sea. Before the *Canada Shipping Act* was proclaimed, there existed the *Merchant Shipping Act* which Britain had left to Canada after the Confederation. The 1894 British Act had a short chapter which explained what the dangerous goods were and how they were to be transported and stored. At that time, Canada classified dangerous goods the same as cattle and horses. Much of what applied to these also applied to explosives and poisonous chemicals.

Canada quickly determined it was necessary to have its own legislation

on the shipment of dangerous goods. The *Canada Shipping Act* was drawn up at the turn of the century (1906), modeled from the *British Merchant Shipping Act*. The act explained what needed to be done for ships to be properly built, how to keep their crew safe, and what rules to obey when navigating in Canadian waters. It also gave restrictions on the transportation of dangerous goods.

The *Canada Shipping Act* went through many changes to ensure it would provide maximum protection. When accidents occurred at sea, they were analyzed and changes were made according to what was deemed as lacking. The explosion in Halifax is one of the occasions where a disaster ushered in changes to the legislation. On December 6, 1917, 200 tons of TNT, 2,300 tons of picric acid, 10 tons of gun cotton, and 35 tons of benzol were set ablaze in the French ship *Mont Blanc* when it rubbed against the *Imo* while entering the Port of Halifax. The blast from these chemicals obliterated the ship and about a fifth of the city; leaving 6,000 residents homeless, 4,000 people injured and over 1,700 people dead. This explosion, the second largest man-made, non-atomic explosion to date, provoked massive strengthening of regulations in harbours.

The *Canada Shipping Act* is still effective today, though, as mentioned above, the *Transportation of*

Dangerous Goods Act takes precedence over some matters of dangerous goods.

Canada has not been the only country revamping its legislation on the transportation of dangerous goods. Our country is part of a large international community that has agreed to basic shipping standards for dangerous goods, for the safety and ease of those involved with or affected by the shipping industry. Canada follows the regulations set by the International Maritime Dangerous Goods Code (IMDG).

The tragic accident on April 14, 1912 triggered an international consensus. Early, that fateful morning, the unsinkable *Titanic* struck an iceberg and plummeted into the depths of the ocean, costing 1,513 people their lives. There was a public uproar as many of the deaths could have been avoided if more safety measures had been in place, including simply having enough life boats to rescue everyone on board.

The needless waste of lives brought the world together in an attempt to set standards for sea transportation around the globe. By 1929, the international community had gathered together to form the Safety of Life at Sea (SOLAS) convention to explain what was allowed and what was not. One chapter that SOLAS agreed on was Chapter VII which contained a specific clause regulating the transportation of

dangerous goods by sea. Actual definitions and a classification of dangerous goods were set out later at the 1948 SOLAS conference.

Eventually, several of the countries involved in the transportation of goods by sea decided that they needed to enhance their own legislation, which placed different conditions on how to transport dangerous goods in and out of their jurisdiction. Canada was no different. With different practices, labels and codes, ships could find themselves facing conflicting rules. This had serious drawbacks. If safety precautions varied from country to country, then the carriers would need several sets of documents, labels and even containers. Accidents could happen and bad communication would hamper efforts to help. Canada and the international community then decided that this was not the path to follow. Part of the consensus was not to wait for accidents to happen before prompting changes, but rather to use forethought and decipher what would be needed to prevent accidents.

The terms outlined and the definitions given in Chapter VII of the SOLAS convention provided the framework for the IMDG code which is closely followed today. The member countries of SOLAS refined the details of Chapter VII in 1960, and the IMDG code incorporated them, taking the information and establishing rules and regulations around them that all countries could comply with. Canada took the necessary steps to ensure that it was in compliance. The legislation in Canada already included provisions that allowed for the use of international regulations.

Canadian legislation was, and continues to be, affected by changes made by the IMDG code and, through it SOLAS, as well as the United

Nations Committee of Experts on the Transport of Dangerous Goods. The Committee of Experts sets guidelines for safety that apply to all modes of transportation. This began in 1956 when the UN Committee of Experts created a blueprint SOLAS used to set the regulations on containers, labels and classification. Most recently, in 1996, the UN Committee of Experts introduced its Model Regulations, which the IMDG code complies with.

The history of the IMDG code, SOLAS and the UN Committee of Experts is part of the Canadian history governing the legislation on the transportation of dangerous goods. In Canada, the Marine mode legislation on the topic has been shaped both domestically and internationally. As sea shipments of dangerous goods are mainly

international as far as Canada is concerned, this makes good sense. Today, Canada uses the tools its domestic history and international relations created. We still comply with the *Canada Shipping Act*, and with the IMDG Regulations as part of our own legislation.

The marine mode, however, went through one more historical move in legislation. The transportation of dangerous goods fell under the multi-modal *Transportation of Dangerous Goods Act* in 1980, later changed in 1992. This will be explained in a next article on the transportation of dangerous goods.

If you have any questions or would like to comment on this article, please contact Edgar Ladouceur, Director, Compliance and Response at ladouce@tc.gc.ca or (613) 998-6540.

Health Santé
Canada Canada

Marketing Chemicals in Canada? *

Workplace Hazardous Materials Information System (WHMIS)

is Canada's hazard communication standard

www.hc-sc.gc.ca/whmis

This Government of Canada site provides information on:

- * hazard classification;
- * preparation of labels and MSDSs, including ingredient disclosure;
- * language requirements, MSDS toxicological and PPE disclosure;
- * trade secret provisions;
- * use of the ANSI / ILO / EU 16-heading MSDS format;
- * Globally Harmonized System for hazard communication; plus
- * high-resolution files for hazard symbols and label borders;
- * an indexed Reference Manual; and
- * data sheets for infectious agents (including anthrax).

*New: Revised Canadian regulations for chemicals for the retail market now in effect. Visit: <http://publiservice.gc.ca/services/gazette/part2/pdf/g2-13517.pdf> for the amended «Consumer Chemicals and Containers Regulations, 2001»; (see SOR/2001-269 and -270).

Call for Papers

International Symposium on Protection of Dangerous Goods Tanks in Fire

October 22-23, 2002, Ottawa, Ontario, Canada

The purposes of this symposium are to present the latest information on *pressure relief devices* and *fire protection systems* used on tanks ranging in size from small cylinders to rail tank cars, and to discuss new approaches to tank fire protection. Included in the sessions will be presentations on the results of research conducted for the Transport Dangerous Goods Directorate, Transport Canada, to determine how pressure relief devices function and what performance characteristics of pressure relief devices are needed to prevent tank failure or to minimize the consequences of tank failure.

Authors are requested to submit 250 word abstracts on any of the following topics:

- a) Testing and Research
- b) Design, Manufacturing and Quality Control
- c) Maintenance, Periodic Inspections and Performance Monitoring
- d) Accident Experiences
- e) Protection of Tanks with Commodities that React, Decompose or Polymerize
- f) Computer Modelling
- g) Regulatory Issues
 - use/non-use of pressure relief devices/valves on cylinders and tanks
 - design codes/standards
 - approval process for pressure relief devices
 - adequacy and comparison of standardized fire tests for cylinders and tanks

Abstracts should be sent by February 28, 2002 to either of the following:

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Ottawa, Ontario, Canada K1A 0N5
613-990-5883
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Symposium Timeline:

Abstracts due — February 28, 2002
Authors Notified of Abstract Acceptance — March 30, 2002
Preliminary Program Released — April 30, 2002
Draft Papers Due for Review — May 30, 2002
Authors Notified of Paper Acceptance — July 15, 2002
Final Program Released — August 1, 2002
Full Papers Due — September 1, 2002

Accepted papers will be published in PDF files on CD and will be distributed at the Symposium.