CP Rail
Dangerous Goods
Reference Manual

Montreal, Que
July, 1987

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Subject

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Subject

Introduction

The movement of dangerous goods is regulated by Transport Canada's "**Regulations Respecting the Handling, Offering for Transport and Transporting of Dangerous Goods**" and the Canadian Transport Commission's "**Regulations for the Transportation of Dangerous Commodities by Rail**".

These Regulations require that "No person shall handle, offer for transport or transport dangerous goods unless that person is a trained person, or is performing duties under the direct supervision of a trained person".

An employee is a trained person if he attends a dangerous goods training course related to his specific duties and receives a **Certificate of Training** valid for 36 months.

The purpose of this manual is to provide employees with sufficient information on the Dangerous Goods Regulations to enable these goods to be properly and safely handled

Problems, where to go?

Employees requiring further information on Dangerous Goods Regulations may consult with their supervisor or contact the Supervisor Dangerous Commodities.

Name & Location		Telephone No.	S2-MR ID
(T) R. Labrie	Mtl	514-483-7105	om00261
(M) M. Gelinas	Mtl	514-483-7050	om00309
(T) T.E. Munt	Tor	416-863-8076	om00261
(M) D.P. Birchill	Tor	416-863-8071	om00309
(T) J.N. Zinger	Wpg	204-946-3228	zin0001
(T) B.H. Swan	Wpg	204-946-3374	zin0001
(M) A.J. Hock	Wpg	204-946-3409	om00270
(M) W.M. Alston	Cal	403-267-5372	als0001
(M) H.W. Cosh	Van	604-643-3241	cos0001
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T= Transportation

M = Mechanical

I = Intermodal Services

A.1 What are dangerous goods?

There are approximately 3400 products, substances and organisms identified as dangerous goods. These goods are divided into nine (9) classes (See Item A.2 for explanation) on the basis of their general characteristics.

Each year, CP Rail handles over 100,000 cars of dangerous goods.

These tank cars, containers and trailers, covered hoppers and box cars are easily identified because they are placarded, identified separately on the consist, have additional documentation and special handling instructions.

A listing of the dangerous goods transported regularly by rail is included in Appendix I.

A.2 Classes and divisions of dangerous goods

Class	Division	Characteristics of Dangerous Goods
1 Explosives	1.1	A substance or article with a mass explosion hazard
	1.2	A substance or article with a severe fragment projection hazard, but not a mass explosion hazard
	1.3	A substance or article which has a mass fire hazard along with a minor blast hazard and/or a minor projection hazard, but does not have a mass explosion hazard
	1.4	A substance or article which presents no significant hazard – explosion effects are localized to immediate surroundings
	1.5	A very insensitive substance which nevertheless has a mass explosion hazard like those substances in Class 1.1
2 Gases	2.1	A *flammable gas* which is easily ignited and burns
	2.2	A *non-flammable, non-toxic gas*
	2.3	A *poisonous gas* which is harmful to living beings through inhalation, swallowing or contact with skin
	2.4	A *corrosive gas* harmful to living beings through corrosion of the tissue of the respiratory tract upon inhalation or swallowing
3 Flammable Liquids	3.1	A flammable liquid with a closed-cup flash point of less than -18°C (0°F)
	3.2	A flammable liquid with a closed-cup flash point between -18°C (0°F) and 23°C (73°F)
	3.3	A flammable liquid with a closed-cup flash point between 23°C (73°F) and 37.8°C (100°F) (23°C (73°F) and 61°C (142°F) for international shipments)
4 Flammable Solids, Spontaneously Combustible Substances, Dangerous-When-Wet Substances	4.1	A *flammable solid* which is readily combustible and burns vigorously and persistently, or which may cause or contribute to fire through friction or from heat retained from manufacturing or processing
	4.2	A *spontaneously combustible substance* liable to spontaneous heating under normal conditions of transport – i.e., by heating up, upon contact with air, to the point where it begins to burn
	4.3	A *dangerous-when-wet substance* which emits flammable gas or becomes spontaneously combustible when it comes into contact with water or water vapor
5 Oxidizers, Organic Peroxides	5.1	An *oxidizer* which is not necessarily combustible but which, generally by yielding oxygen, may cause or contribute to the combustion of other material
	5.2	An *organic peroxide*, a strong oxidizing agent which releases oxygen very readily and may be liable to explosive decomposition, or sensitive to heat, shock and/or friction
6 Poisonous and Infectious Substances	6.1	A poisonous substance
	6.2	An infectious substance
7 Radioactive Materials	*	Radioactive materials within the meaning of the Atomic Energy Control Act
8 Corrosive Substances	*	Both acid and alkaline materials are included in class 8
9 Miscellaneous Dangerous Goods	9.1	A substance or product presenting dangers sufficient to warrant regulation in transport but which cannot be ascribed to any other class
	9.2	An environmentally hazardous substance that cannot be ascribed to any other class
	9.3	A dangerous waste that cannot be ascribed to any other class

* No divisions are assigned to these classes.

A.3 Movement to be expedited

CP Rail must forward shipments of dangerous goods promptly and within 48 hours, Saturdays, Sundays and holidays excluded, after acceptance at originating point or receipt at any yard, transfer station, or interchange point, except that where bi-weekly or weekly service only is performed, shipments of dangerous goods must be forwarded on the first available train.

The requirements regarding movements to be expedited do not apply to OCS shipments and bad order cars as well as Intermodal shipments when such shipments have been grounded at an Intermodal facility. In all other cases, cars must not be held unless authorized in advance by a C.T.C. Special Permit (See item A.4).

A.4 Permits

Transport Canada (TC) and the Canadian Transport Commission (CTC) may issue permits granting exemptions from any of the requirements of the regulations as long as the established standard of safety is not lowered.

There are three (3) different types of permits:

- C.T.C. Special Permit
- T.C. Permit for equivalent level of safety
- T.C. Permit for exception

Each shipping document issued in connection with any shipment made under a CTC Special Permit shall bear the notation:

C.T.C. Special Permit No. and the number assigned.

The outside of each package must be plainly and durably marked CTC SP followed by the number assigned. On portable tanks and tank cars, such markings must be in letters at least 2 inches high on a contrasting background.

Each shipping document issued in connection with any shipment made under a TC permit shall bear one of the following notation:

ER and the number assigned if it is a permit of exception for rail only.

SR and the number assigned if it is a permit for equivalent level of safety for rail only.

EU and the number assigned if it is a permit of exception for more than one mode of transport.

SU and the number assigned if it is a permit for equivalent level of safety for more than one mode of transport

The following TC Permits have been issued to CP Rail:

SR-0120 – Authorizes CP Rail to replace one missing placard by a non retroreflective placard as long as it is displayed on one end of the railway vehicle.

SR-0270 – Authorizes CP Rail to transport dangerous goods, from a place outside of Canada, through Canada, to a place outside of Canada, without having its ERP number and telephone number shown by the shipper on its document.

A.4 Permits (cont'd)

SR- ••••– Authorizes CP Rail to replace documents, found missing in transit between two terminals, at the next crew change point.

All requests for permits must be forwarded to the Supervisor Dangerous Commodities.

The following must not be done unless authorized in advance by a C.T.C. Special Permit:

1) Loading, unloading or storing cars on CP Rail property.

2) Moving and/or transhipping leaking or overloaded cars.

3) Transshipping cars at a derailment.

4) Holding cars over 48 hours, except bad order and ocs cars.

Note: Permits may also be issued by the Department of Transport (DOT) in the U.S. and identified by DOT E and the number assigned.

A.5 Placards

Cars, trailers and containers of dangerous goods must not be accepted from shippers siding or interchange points unless placarded on both sides and ends.

When required the shipper will display the product identification number in a white rectangle on the placard.

Empty tank cars, not cleaned or purged after unloading, must be placarded by the shipper with the appropriate **Empty** or **Residu(e)** placard.

In the case of a domestic consignment,

i) On or before **June 30, 1991**, the **Empty/vide** or **Residu(e)** placard may be used.

ii) On or after **July 1, 1991**, the **Residu(e)** placard must be used.

In the case of a transborder consignment,

i) On or before **September 30, 1987**, the **Empty/Vide** or **Residu(e)** placard may be used.

ii) On or after **October 1, 1987**, the **Residu(e)** placard must be used.

Other than tank cars, not cleaned or purged after unloading, must be placarded by the shipper with the appropriate loaded placard. C.T.C. has also authorized the use of the appropriate **Empty** or **Residu(e)** placard.

A consignment of dangerous goods with a primary class 9.2 does not require placards.

A mixed load containing more than one class of dangerous goods except explosives, organic peroxides, poison gases, corrosive gases or radioactive material shall display a DANGER placard. If one of the above exceptions is included in the mixed load, the appropriate placard must be displayed in addition to any other placard.

Placards found missing or unreadable must be replaced at designated points where trains are given standing train inspection by Mechanical Forces and prior to being interchanged to another carrier.

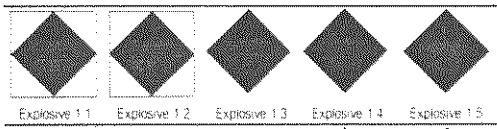
Placard Chart on next page.

Placard Chart

Canada

Canada to/from United States

CP Rail



Explosive 1.1 | Explosive 1.2 | Explosive 1.3 | Explosive 1.4 | Explosive 1.5

Flammable Gas 2 | Non-flammable Gas 2 | Poison Gas 2 | Poison Gas 2 | Corrosive Gas 2

Flammable Liquid 3.1, 3.2 or 3.3 | Combustible | Combustible

Flammable Solid 4 | Spontaneously Combustible 4 | Dangerous When wet 4

Oxidizer 5.1 | Organic Peroxide 5.2

Poisonous Substance 6 | Harmful Substance 6

Radioactive Substances 7

Corrosives 8

Misc. Substances 9.1 or 9.3 | Mixed Loads

A.6 Car certificate – Form 1084

A car to be loaded with Explosives 1.1 or 1.2, must be thoroughly inspected prior to loading, by an employee of the Mechanical Dept., who must certify that the car is suitable for such a consignment. Before loading commences, the shipper must also inspect the interior of the car and after loading is complete, he must certify as to the proper condition of both the car and the lading.

After loading is complete, the carrier, usually an employee of the Mechanical Dept., must inspect the finished load. The certification referred to must be completed by the shipper and the carrier's inspector completing the appropriate sections of the car certificate.

The certificate must be prepared in triplicate. The original is to be retained at the forwarding station or CSC on a separate file and one copy affixed to each side of the car next to the Explosive 1.1 or 1.2 placards.

Certificates found missing or unreadable must be replaced at designated points where trains are given standing train inspection by mechanical forces and prior to being interchanged to another carrier.

Certificates will be replaced by photocopying the one remaining on the car. In the case where both are missing, a copy of the original certificate must be obtained by telecopier from the originating carrier, station or Customer Service Centre.

Sample of CP Rail Car Certificate Form 1084 on next page.

Car Certificate – Form 1084

Car Certificate

CP Rail

Section 1

Car No. _____ Station _____ Date _____

I hereby certify that I have this day personally examined the above car; that there are no holes or cracks in the roof, sides, ends or car lining; that the floor is clean and in good condition, and it and the car lining are free of nails and uncovered pieces of projecting metal; that I have examined all the journal boxes and they are properly packed, oiled and covered; and that the air brakes and hand brakes are in good condition for service.

_____

Railway employee inspecting car

Section 2

Station _____ Date _____

I hereby certify that I have this day personally examined the above car; that the explosives in or on this car have been loaded, blocked and braced according to the regulations prescribed by the Canadian Transport Commission; that required placards have been applied to the car; and that the doors fit or have been stripped so that sparks cannot enter.

_____

Shipper's authorized agent

_____

Railway employee inspecting load

Section 3

Railway _____ Station _____ Date _____

I hereby certify that I have this day personally supervised the loading of the above unit on Car No. _____ and its securement to that car.

_____

Shipper or railway employee inspecting loading onto railcar

Form 1084
0988 CPR

A.7 Shipments of carriers' material and supplies

The following apply to dangerous commodities which are transported by rail on company service (OCS) by and for the use of a carrier, other than dangerous goods transported between a carrier's stores departments.

The shipping document (Form DG 1) issued shall accompany the shipment from origin to destination and be in the possession of the train or work crew and be readily accessible at all times.

Carload shipments of dangerous goods shall be accompanied by an Emergency Response form, when required.

Carriers are not required to empty remaining flammable liquids from internal combustion engines, lines or fuel tanks of equipment used for OCS purposes.

The following are exempt from the packaging requirements:

1. Packages of OCS materials other than compressed gas cylinders in UL or CSA approved containers of not more than 5 gallons capacity having closures of a type that will prevent continuous venting of the contents.
2. Signal devices, hand (fusees) packaged in closed strong metal, wooden or fiberglass containers, held in place in fusee racks or in open metal compartment in cabooses.
3. Articles pyrotechnic (torpedoes) packaged in closed strong metal, wooden or fiberglass containers or in open metal compartment in cabooses.

Loading, blocking, bracing and segregation shall be in accordance with the requirements of the Regulations.

Sample of OCS Shipping Document Form DG 1 Rev. 05/86 on next page.

No: 2076

CP Rail

Dangerous Goods Shipping Document
Document d'expédition de marchandises dangereuses

Form/Imprimé DG 1
05-86
CL077-301705

PRESS HEAVILY you are making 4 copies
APPUYEZ. Vous ecrivez en 4 exemplaires

Consignor/*Expéditeur*

Name
Nom _____

Address
Adresse _____

City, Prov
Ville, prov. _____
Postal Code
Code postal _____

Consignee/*Destinataire*

Name
Nom _____

Address
Adresse _____

City, Prov
Ville, prov. _____
Postal Code
Code postal _____

Date Received
Date de reception _____

Carrier: Truck
Transporteur: ☐ *Camion* ☐ Rail

Company Name
Nom de l'entreprise _____

Address
Adresse _____

City, Prov
Ville, prov _____
Postal Code
Code postal _____

Serial or Owner Unit
No. of Transport Unit
Nº de série de l'unite de transport ou nº assigne par le proprietaire _____

Shipping Name and description of dangerous goods ***Appellation réglementaire et description des marchandises dangereuses***	**Class** ***Classe***	**Sub-class** ***Sous-classe*** ( )	**PIN UN or NA** ***NIP, UN ou NA***	**E** ***or/ou I***	**Packing Group** ***Groupe d'emballage***	**Summary of Emergency Response Plan** ***Résumé du plan d'urgence***		**Mass or Volume** ***Masse ou volume***	**No. of Pkgs** ***Nbre de colis***
						Reference *Nº de ref*	Telephone *Nº de tel*		

Special Instructions (i.e. control and emergency temperatures, any requirements to ensure stability)
Instructions spéciales *(par exemple: temperature de régulation ou d'urgence, exigences visant à assurer la stabilite)*

Rail: 24 Hour Emerg. Tel No *Rail: Nº de tél. d'urgence (24 h)*	Road: Provincial authorities Local Police or: *Route: Autorités Provinciale, Police locale ou.*	Protective Direction Number *Nº de référence de l'ordre*	Equivalent Level of Safety Permit Number *Nº de réf du permis de niveau équivalent de securite*	Permit for Exception Number *Nº de réf du permis de dérogation*

Placards required: Class
Plaques requises: *Type* _____ Quantity
Nombre _____

Signed/*Signature* _____ Date _____

Original — To accompany shipments — Consignee's copy

Original — a joindre a l'envoi — feuillet de l'expediteur

A.8 Transfer of OCS fuel on railway property

The following arrangements covering the transfer of compressed gases and flammable liquids, for use by rail carriers are permitted to be performed on railway property.

1. Compressed Gases
   (i) Tank car to switch heater storage tanks.
   (ii) Tank truck to switch heater storage tanks.
   (iii) Tank truck to permanent storage tanks.
   (iv) Tank truck to trailers, containers, and railway owned equipment such as towmotors, forklifts and track equipment.
   (v) Storage tank to trailers and railway owned equipment.
   (vi) Storage tank to cylinders.

2. Permanent storage tanks referred to above must comply with the requirements of Part IX of General Order No. 0-31. "Regulations Respecting the Design, Location, Construction, Operation and Maintenance of Stationary Bulk Storage Facilities for Liquefied Petroleum Gases".

3. Flammable Liquids
   (i) Tank truck to storage tanks.
   (ii) Portable tanks on railway cars and storage tanks to tank trucks, storage tanks and railway owned equipment.
   (iii) Tank trucks to railway owned equipment.
   (iv) Storage tanks to 45 gallon and similar capacity drums.
   (v) Portable container to portable container, for example, from drums to 5 gallon containers to company owned equipment.

4. Permanent storage tanks referred to above must comply with General Order No. 0-32, "Regulations Respecting the Design, Location, Construction, Operation and Maintenance of Stationary Bulk Storage Facilities for Flammable Liquids"

A.8 Transfer of OCS fuel on railway property (cont'd)

Carriers shall ensure that the following restrictions are observed before and during any of the transfer operations outlined in this section:

(1) The carrier shall be responsible for the inspection and proper verification of portable tanks, containers and cylinders involved in the transfer of flammable compressed gases and flammable liquids and shall not employ any which are defective, or improperly marked, including those with overdue retest dates

(2) All train activity in the immediate vicinity shall be stopped while refuelling is in progress.

(3) Cars involved in refuelling shall have handbrakes applied, wheels properly blocked and a blue flag shall be erected while fueling is in progress.

(4) Signs prohibiting smoking shall be properly posted and observed.

(5) Appropriate fire extinguishers shall be present on site and readily available to railway employees performing the refuelling.

(6) Only those persons required for performing such transfers shall be in the immediate vicinity while such transfers are being carried out and transfers shall not be permitted in the immediate vicinity of occupied passenger cars, passenger stations or other locations where the public is liable to congregate.

(7) When fuelling switch heater storage tanks from tank car or modified car combination, the following procedure shall be observed.

(i) Fuelling operations from a train or the transportation on a train of hoses filled with propane shall not take place when the consist of the train includes other cars containing shipments of dangerous commodities or cars occupied by employees or passengers.

(ii) At least two buffer cars shall be placed at each end of the tank or modified car combination.

(iii) During unloading operation, handbrakes shall be applied and wheels blocked on both supply and transfer equipment cars.

(iv) After cars have been spotted, engine shall be uncoupled and moved a safe distance from transfer operation.

(8) Any incident or accident involving either storage or transfer of tanks, cylinders or containers shall be reported immediately to your local dispatching office.

Carriers shall also ensure compliance with CTC 1982-8 Rail (regulations respecting the prevention of electric sparks that may cause fire during the transfer of flammable liquids or compressed flammable gases between units of railway rolling stock and stationary bulk storage facility).

A.9 Gateway inspection

Trains carrying one or more full carloads, trailerloads or containerloads of any special dangerous commodity shall be monitored by a hotbox and dragging equipment detector and subject to speed restrictions at locations designated in timetable footnotes.

If not so monitored, train crews must, within one mile of gateway inspection point, perform a pull-by or standing inspection from the front of the train to, and including, the second car behind the last full carload, trailerload or containerload of a special dangerous commodity.

When a defect is found, by inspection or monitoring, that may affect the safe operation of the train, the person in charge shall take the appropriate action to eliminate or minimize any potential danger by means of one or more of the following methods.

a) correction of the defect,

b) reduction of train speed,

c) removal of the defective car from the train, or

d) the taking of such other action as is necessary to ensure the continued safe operation of the train.

Special Dangerous Commodities are identified by a "Special Commodity" notation on the shipping document, emergency response form and waybill as well as on the enhanced train consist under the heading "Special Dangerous Commodities on Train".

A.10 Transportation of dangerous goods by road (CP Rail vehicles)

A **road vehicle** is any device that operates on land other than rail. A Hi-Rail equipped vehicle is classed as a road vehicle.

Highway shipments are governed by Provincial Regulations which encompass Transport Canada's Transportation of Dangerous Goods (T.D.G.) Regulations.

Some parts of the T.D.G. Regulations do not apply to CP Rail when transporting dangerous goods by highway, however this does not relieve the **Consignor** (Shipper) of the dangerous goods or the **Driver** of the vehicle transporting the dangerous goods from the responsibility of complying with the parts of the regulations that do apply.

Any violation of the Regulations can result in prosecution of the individual.

Exemptions

1. Documentation, placarding of vehicle and training of vehicle operator do not apply for items classed as dangerous goods and carried on a road vehicle where the dangerous goods are necessary for....

   a) the operation of the road vehicle,

   b) the safety of the road vehicle or,

   c) the safety of the persons on board the road vehicle.

Therefore, dangerous goods such as flagging kits, fire extinguishers, gasoline, etc., in amounts which are carried for the safety and operation of the road vehicle, are exempt from all of the regulations.

2. The following parts of the Regulations.

   classification,
   documentation,
   placarding,
   safety standards and requirements,
   training and
   occurrence reporting,

   do not apply to a **service truck** carrying items classed as dangerous goods in quantities normally required for an emergency or repair.

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

Note: Service trucks that have oxygen/acetylene equipment in compartments where the cylinders are not visible from the outside of the vehicle, must have the appropriate labels applied to the outside of the compartment door and maintained in good condition. In addition, gauges and hoses must be disconnected and removed from cylinders prior to moving the vehicle and only be re-attached to the cylinders prior to use.

3 The following parts of the Regulations:

documentation,
placarding,
training,

do not apply to a vehicle transporting gasoline if:

a) the gasoline is transported in one or more containers (drums),

b) each container is transported in an open vehicle so that the label or placard displayed on the container is visible from outside the vehicle,

c) each container is secured to the vehicle during transport, and

d) the total capacity of the containers in the vehicle, excluding the volume of the gasoline used for the propulsion of the vehicle is not more than 2,000 L = 439.95 gal. (9-45 gal. drums).

Note: If any quantity of gasoline is transported in a closed vehicle or more than 2000 L is to be transported, documentation, placarding and training apply,

4. The following parts of the Regulations:

documentation,
placarding,
training,

do not apply to a vehicle transporting acetylene, propane or oxygen if:

(a) in a total quantity not greater than 500 kg = 1102.29 lbs. gross mass,

(b) contained in not more than five (5) cylinders.

(c) each cylinder is transported in an open vehicle so that the label displayed on the cylinder is visible from outside the vehicle, and

(d) each cylinder is secured to the vehicle during transport in an upright position.

Note: If more than 5 cylinders are to be transported or transported in a closed vehicle. documentation, placarding and training apply.

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

Limited Quantity

The quantity of dangerous goods that meets the standards for packaging set out in the Regulations and the outer packaging is marked with

i) the shipping name,

ii) the words "limited quantity" or the abbreviation "ltd qty", and

iii) the flash point, for goods included in class 3.

A shipping document is also required with the following information:

(a) the shipping name,

(b) the words "limited quantity" or the abbreviation "ltd qty",

(c) the primary and subsidiary classifications,

(d) the U.N. identification number, and

(e) the total quantity

Placards are not required.

Shipping Document

A shipping document must accompany the consignment of dangerous goods to destination and shall contain the required information legibly and indelibly printed. (See Item B.1)

Note: 1. When a shipment is picked up, the shipping document must be picked up with the shipment and a copy must be delivered to the consignee at time of delivery. A copy of the shipping document must be retained by the shipper, carrier and consignee for two years.

2. The documents must be with the driver when the shipment is on a truck enroute. When the driver is in the cab, the documents must be in the cab within the driver's reach or in a pocket mounted on the driver's door. When the driver is not in the cab, the documents must be on the driver's seat or in a pocket mounted on the driver's door.

See Item A.7 for sample of Form DG-1 Rev. 05/86

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

Placarding

1. No placard is required to be displayed on a road vehicle that contains:
   a) explosives that are:
      i) in a net explosive quantity of 1000 kg or less if the explosives are included in Division 4 of Class 1 and are not included in compatibility group "S" or,
      ii) in any quantity, if the explosives are included in division 4 of Class 1 and in Compatibility Group "S";
   b) 500 kg or less gross quantity of dangerous goods, other than explosives subject to paragraph (a).

2. A road vehicle transporting a mixed load of dangerous goods that are included in different classes must display the DANGER placard except:
   a) when explosives are included in the mixed load, the appropriate placard for that commodity must be displayed in addition to the DANGER placard; refer to quantities in 1(a) above.

   b) when class 2 goods are included in the mixed load, the placard of the most hazardous gas, as determined in accordance with the following decreasing order of hazard, must be displayed in addition to the DANGER placard.
      i) flammable gas,
      ii) oxygen,
      iii) non-flammable, non poisonous gas.

3. Placards are to be removed only upon completely unloading a dangerous goods shipment, except for tank trucks. Under no circumstances are loaded placards to be reversed on tank trucks to indicate Empty or Residu(e).

Emergency Response

1. If an accident occurs, call the dispatcher by radio, telephone using the 24 hour emergency telephone number shown on the shipping document, or any other means available.

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

2. Identify yourself then provide the following:
   (a) Location of the emergency,
   (b) Nature of the emergency,
   (c) Information on the product from the shipping document
      (i) Proper shipping names and classification(s) of the goods (to be spelled out),
      (ii) Product identification numbers,
      (iii) Total quantity by weight or volume,
      (iv) Shipper and consignee addresses.

3. Seek the public security official dispatched to the scene and make the shipping documents available for examination. These documents should be retained by you, another employee or officer of CP Rail.

   Except for the exceptions noted in this section, an employee must not transport dangerous goods unless he has the proper documents, the vehicle is placarded and he has received a "Certificate of Training", valid for a period of 36 months.

The following is a partial listing of shipping and transporting requirements for items classed as dangerous goods and commonly transported by CP Rail vehicles.

Flammable Liquids – Shipping and Transporting – Open Truck

Are liquids that have a flash point below 37.8° C (100° F) such as gasoline. They will burn or explode if the vapors are mixed in the right proportion of air and are exposed to a source of ignition, such as a spark or flame.

When a flammable liquid is to be shipped in drums, ensure the drums are CTC approved. They will have the designated approved initials and numbers stamped in the metal on one end such as...CTC 5B or 17E.

Ensure all caps or plugs are tight to prevent leakage.

Check to see that all containers or drums have the flammable liquid labels on them. If any are missing or damaged, apply new labels.

Secure the containers or drums in or on the vehicle prior to transporting, ensuring all labels are visible from the outside of the vehicle.

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

Diesel Fuel – Not regulated,
Shipping Document,
Placarding of vehicle,
Driver certification
not required.

Methanol – In any quantity, shipping documents must accompany shipment,
Vehicle must be placarded,
Driver must be certified.

Note: When a tank truck is being used for multiple deliveries, such as the R&H refuelling of methanol heaters at different locations, the quantity delivered must be subtracted after each delivery from the total quantity listed on the shipping document so that at all times, the shipping document will reflect the actual quantity in the tank truck When the tank truck is empty, the placard must not be reversed to show Empty or Residu(e). The Empty or Residu(e) placard is used for railway cars only.

Gases – Shipping and transporting – Open truck

Are Materials, both flammable and non-flammable, contained in portable cylinders under pressure. The following requirements apply to these cylinders:

- When shipped, must be considered full insofar as safety and shipping are concerned. All reference to the total number of cylinders includes both full and empty.

- If so equipped, must have the protective plugs and/or caps applied at all times.

- Each must have the appropriate flammable, non-flammable gas and/or oxidizer label on the neck of the cylinder. If missing or damaged, they must be replaced in kind.

- Prior to shipping, they must be secured in or on the transport vehicle in an upright position with the labels visible from the outside of the vehicle. (Do not lay cylinders on their sides.)

A.10 Transportation of dangerous goods by road (CP Rail vehicles) (cont'd)

Fusees and torpedoes

Are classed as dangerous goods (Explosives 1.4G) and are exempt from the Regulations only when they are used for the following:

- Safety of the means of transport,

- Safety of the persons on board the means of transport, providing they are firmly secured and protected from external damage.

When shipping fusees and torpedoes in an open or closed truck, ensure the approved type carton as provided by the manufacturer is used, that it is in good condition, unopened, that each carton has the applicable label for the contents applied to the outside of the carton. (Explosive 1.4G) and that they are properly described on the shipping document.

No loose fusees or torpedoes permitted.

If shipped in amounts of less than 1,000 kg. = 2,204 lb., all parts of the regulations apply except that vehicle must not be placarded.

If shipped in amounts of more than 1,000 kg. = 2,204 lb., all parts of the regulations apply.

Emergency response forms are not required for the transportation of dangerous goods by road.

A.11 Recommended practices for handling dangerous goods

Dangerous goods, even in small amounts, are potentially hazardous and must be properly handled.

Flammable Liquids – Storage

1. All containers and drums must be labelled.

2. If outside, drums must be in an area kept free of grass and weeds for a distance of six to ten feet.

3. Following sign must be posted at storage area entrances:

"Flammable Liquids – No Smoking – Keep Fire Away"

Gases – Storage

1. If outside, cylinders must be protected from direct sunlight.

2. When not in use, store all cylinders in an upright position. Do not stack them.

3. All cylinders must have the protective plug or cap, if so equipped, tightly screwed into the outlet.

Acetylene and oxygen

1. Except when in use, keep oxygen cylinders, full or empty as far away as possible from acetylene or other flammable gases.

2. Keep valves, regulators, hoses and any other fittings on oxygen cylinders free of oil or grease. Do not handle them with oily gloves.

3. Empty or full cylinders, when not in use, must have the gauges and hoses removed, the valves tightly closed and the protective caps, if equipped, applied securely.

Propane (boarding cars)

Only cylinders stamped "DOT, CTC, ICC or CRC – 4B240 or 4B260 - and serial number CPRWY000" are to be used on boarding cars.

A.11 Recommended practices for handling dangerous goods (cont'd)

All cylinders must have a protective plug and chain for the outlet valve. Screw the plug tightly into the outlet valve and only remove it when the cylinders are connected to cars. When the cylinders are removed from cars, reapply the plugs to the outlet valves. Protective plugs must be tightened with an approved non-sparking wrench. Hand tightening is not sufficient.

Whenever propane or acetylene cylinders are stored, a notice must be posted in a conspicuous location near the cylinders reading as follows:

Warning – Flammable
Keep lights and fires away
Do not pile combustible material within 10 feet

A.12 Procedure – Tank car emission standard (LEL)

This standard utilizes a portable combustible gas tester for the measurement of hydrocarbon concentration in air and expresses the values as a percentage of the lower explosive limit (% of LEL). These readings are to be taken within the enclosed dome area of the Liquefied Petroleum Gas (LPG) tank car by qualified personnel.

Method

A gaseous sample is withdrawn from the manway of the LPG tank car at standardized conditions and analysed by a portable combustible gas detector. The results obtained as a percentage of the lower explosive limit relate to the concentration of hydrocarbons in the manway.

Apparatus

A portable combustible gas detector, approved as to type by the Director of Operation, suitable for taking % of LEL readings with a precision of at least 1% of LEL in the 0 to 10% range and at least 2% of LEL in the 10 to 100% range. (Dual Range Gas Tester).

Approximately 50 cm long 0.4 cm inside diameter copper sample probe which is connected to the detector by no more than 100 cm long teflon or special synthetic rubber tubing. A stainless steel sample probe may also be used. It should be covered by insulating material to eliminate the possibility of spark.

Calibration

If the detector is in daily use, calibration using a standard propane/nitrogen mixture shall be performed at least once a week. If the detector has not been in regular service the calibration shall be checked prior to use.

The procedure for calibration shall be as indicated in the manufacturer's instrument manual for the detector.

Procedure

After the dome housing cover has been closed for at least 10 minutes, insert the sample probe through a port hole about 30 cm radially in the manway. The sample probe should be in horizontal position and should be resting on the lower edge of the port hole.

Obtain a % of LEL reading by following the instructions outlined in the operating manual of the detector.

A.12 Procedure – Tank car emission standard (LEL) (cont'd)

If the reading is above 10%, open the dome housing cover for a sufficient time to allow the gases inside to be vented off. Then close it for at least ten minutes and take a second reading using the previous procedure.

If the two readings differ by more than 2% of LEL, make a third measurement from another port hole.

If the final reading is above 10% of the LEL, the tank car shall be considered leaking and shall not be transported until proper repairs are effected.

If any emissions are encountered and determined to be originating from the tank car's manway gasket, the 10% of LEL criteria will not apply. Corrective action shall be taken immediately.

When emission test conducted in the dome housing of a tank car containing liquefied petroleum gas, in rail transportation, indicate a reading above 10 percent of the lower explosive limit (LEL) determined by the criteria outlined in this section, the tank car is considered to be leaking and the required repair and reporting procedures must be effected.

A.13 Penalties and fines

Offences

Every person who contravenes or fails to comply with any part of the Transportation of Dangerous Goods Act or Regulations is guilty of an offence and is liable to a fine not exceeding 100,000 dollars or on conviction or indictment to a prison term not exceeding two (2) years.

Ticket Offences

The government may by Regulations designate any offence under the Act as an offence with respect to which any person designated as an inspector may issue a ticket to any person alleged to have committed the offence.

A fine prescribed in respect of an offence by Regulations may be lower for a first offence than for any subsequent offence but in no case shall it be greater than 1,000 dollars.

No person is guilty of an offence under the Transportation of Dangerous Goods Act if he establishes that he took all reasonable measures to comply with this Act and the Regulations.