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Working Party on the Transport
of Dangerous Goods
Joint Meeting of Experts on the Regulations
annexed to the European Agreement concerning
the International Carriage of Dangerous Goods
by Inland Waterways (ADN)*
(Fifth session, 21-25 January 2002)

# RESTRUCTURING OF THE REGULATIONS ANNEXED TO ADN

## Addendum 1

## Draft Part 1 - General provisions

## Note by the secretariat

This document comprises a draft of Part 1 of the restructured annexed Regulations (see explanations in document TRANS/WP.15/AC.2/2001/l).

* This meeting is organized jointly by the Economic Commission for Europe and the Central Commission for the Navigation of the Rhine.

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# PART I

# GENERAL PROVISIONS

## CHAPTER 1.1

## SCOPE AND APPLICABILITY

### 1.1.1 Structure

The Regulations annexed to ADN ~~Annexes A and B of ADR~~ are grouped into nine parts. ~~Annex A consists of Parts 1 to 7, and Annex B of Parts 8 and 9~~. Each part is subdivided into chapters and each chapter into sections and subsections (see table of contents). Within each part the number of the part is included with the numbers of the chapters, sections and subsections, for example Part 2, Chapter 2, section 1 is numbered "2.2.1".

### 1.1.2 Scope

1.1.2.1 For the purposes of Article 2 paragraph 2 (a) and Article 4 of ADN, the annexed Regulations ~~of ADR, Annex A~~ specify:

(a) dangerous goods which are barred from international carriage;

(b) dangerous goods which are authorized for international carriage and the conditions attaching to them (including exemptions) particularly with regard to:

- classification of goods, including classification criteria and relevant test methods;
- use of packagings (including mixed packing);
- use of tanks (including filling);
- consignment procedures (including marking and labelling of packages and placarding and marking of means of transport embarked, the marking of vessels as well as documentation and information required);
- provisions concerning the construction, testing and approval of packagings and tanks;
- use of means of transport (including loading, mixed loading and unloading).

[1.1.2.2 For the purposes of Article 5 of ADN, section 1.1.3 of this chapter specifies the cases in which the carriage of dangerous goods is partially or totally exempted from the conditions of carriage established by ADN] [ADNR: reserved].

[1.1.2.3 For the purposes of Article 7 of ADN, Chapter 1.5 of this part specifies the rules concerning the derogations, special authorizations and equivalences for which that article provides] [ADNR: reserved].

[1.1.2.4 For the purposes of Article 8 of ADN, Chapter 1.6 of this part specifies the transitional measures concerning the application of the Regulations annexed to ADN] [ADNR: reserved].

[1.1.2.5 The provisions of this part also apply to empty vessels or vessels which have been unloaded as long as the holds, cargo tanks or receptacles or tanks accepted on board are not free from dangerous substances or gases, except for the exemptions for which section 1.1.3 of this chapter provides] [ADNR: reserved].

**1.1.3 Exemptions**

**[1.1.3.1** ***Exemptions related to the nature of the transport operation***

The provisions laid down in ~~ADR~~ ADN do not apply to:

(a) the carriage of dangerous goods by private individuals where the goods in question are packaged for retail sale and are intended for their personal or domestic use or for leisure or sporting activities;

(b) the carriage of machinery or equipment not specified in ~~ADR~~ ADN and which happen to contain dangerous goods in their internal or operational equipment;

(c) the carriage undertaken by enterprises which is ancillary to their main activity, such as deliveries to building or civil engineering sites, or in relation to surveying, repairs and maintenance, in quantities of not more than 450 litres per packaging and within the maximum quantities specified in 1.1.3.6.
Carriage undertaken by such enterprises for their supply or external or internal distribution does not fall within the scope of this exemption;

(d) the carriage undertaken by, or under the supervision of, the emergency services, in particular by breakdown vessels ~~vehicles~~ carrying vehicles which have been involved in accidents or have broken down and contain dangerous goods;

(e) emergency transport intended to save human lives or protect the environment provided that all measures are taken to ensure that such transport is carried out in complete safety.

***NOTE***: *For radioactive material see 2.2.7.1.2.]*

**1.1.3.2** ***Exemptions related to the carriage of gases***

The provisions laid down in ~~ADR~~ ADN do not apply to the carriage of:

(a) ~~gases contained in the tanks of a vehicle, performing a transport operation and destined for its propulsion or for the operation of any of its equipment (e.g. refrigerating equipment);~~ (reserved);

[(b) ~~gases contained in the fuel tanks of vehicles transported. The fuel cock between gas tank and engine shall be closed and the electric contact open;~~ (reserved)];

(c) gases of Groups A and O (according to 2.2.2.1), if the pressure of the gas in the receptacle or tank at a temperature of 15° C does not exceed 200 kPa (2 bar) and if the gas is completely in the gaseous state during carriage. This includes every kind of receptacle or tank, e.g. also parts of machinery and apparatus;

(d) ~~gases contained in the equipment used for the operation of the vehicle (e.g. fire extinguishers or inflated pneumatic tyres, even as spare parts or as a load);~~ (reserved);

(e) ~~gases contained in the special equipment of vehicles and necessary for the operation of this special equipment during transport (cooling systems, fish tanks, heaters, etc.) as well as spare receptacles for such equipment or uncleaned empty exchange receptacles, transported in the same transport unit;~~ (reserved);

(f) uncleaned empty fixed pressure tanks which are carried on condition that they are hermetically closed; and

(g) gases contained in foodstuffs or beverages.

**1.1.3.3** ***Exemptions related to ~~the carriage of liquid fuels~~*** the propulsion of vessels and vehicles carried, the operation of special equipment, safety and on-board provisions.

The requirements of ADN do not apply to ~~the carriage of~~ substances used for the propulsion of vessels or the vehicles carried, for the operation of their special equipment, for their upkeep or to ensure safety, which are carried on board [in their usual receptacle] [in the packaging, receptacle or tanks intended for use for this purpose].

~~(a) fuel contained in the tanks of a vehicle performing a transport operation and destined for its propulsion or for the operation of any of its equipment.~~

~~The fuel may be carried in fixed fuel tanks, directly connected to the vehicle's engine and/or auxiliary equipment, which comply with the pertinent legal provisions, or may be carried in portable fuel containers (such as jerricans).~~

~~The total capacity of the fixed tanks shall not exceed 1,500 litres per transport unit and the capacity of a tank fitted to a trailer shall not exceed 500 litres. A maximum of 60 litres per transport unit may be carried in portable fuel containers. These restrictions shall not apply to vehicles operated by the emergency services.~~

~~(b) fuel contained in the tanks of vehicles or of other means of conveyance (such as boats) which are carried as a load, where it is destined for their propulsion or the operation of any of their equipment. Any fuel cocks between the engine or equipment and the fuel tank shall be closed during carriage unless it is essential for the equipment to remain operational. Where appropriate, the vehicles or other means of conveyance shall be loaded upright and secured against falling.~~

**1.1.3.4** ***Exemptions related to special provisions or to dangerous goods packed in limited quantities***

***NOTE:*** *For radioactive material see 2.2.7.1.2.*

1.1.3.4.1 Certain special provisions of Chapter 3.3 exempt partially or totally the carriage of specific dangerous goods from the requirements of ~~ADR~~ ADN. The exemption applies when the special provision is referred to in Column (6) of Table A of Chapter 3.2 against the dangerous goods entry concerned.

1.1.3.4.2 Certain dangerous goods packed in limited quantities may be subject to exemptions provided that the conditions of Chapter 3.4 are met.

**1.1.3.5** ***Exemptions related to empty uncleaned packagings***

Empty uncleaned packagings (including IBCs and large packagings) which have contained substances of Classes 2, 3, 4.1, 5.1, 6.1, 8 and 9 are not subject to the conditions of ~~ADR~~ ADN if adequate measures have been taken to nullify any hazards. Hazards are nullified if adequate measures have been taken to nullify all hazards of Classes 1 to 9.

**1.1.3.6** ***Exemptions related to quantities carried on board vessels***

1.1.3.6.1 *Exemptions in this subsection apply when the following conditions are met:*

(a) The total gross mass of the packages does not exceed 3,000 kg and when the goods concerned are other than:

(i) substances and articles of Class 1;

(ii) substances of Class 2, groups T, F, TF, TC, TO, TFC or TOC, according to 2.2.2.1.3 (classification code comprising at least T or F in column (3) (b) of Table A of Chapter 3.2);

(iii) substances of Classes 4.1 or 5.2. for which a danger label of model No. l is required in column (5) of Table A of Chapter 3.2;

(iv) substances of Class 7 other than UN Nos. 2908, 2909, 2910 and 2911;

(v) substances assigned to Packing Group I;

(vi) substances carried in tanks;

(b) The gross mass of the packages does not exceed 300 kg in the case of

(i) substances of Class 2 of group F in accordance with 2.2.2.1.3 (classification code including F only in column (3) (b) of Table A of Chapter 3.2); or

(ii) substances assigned to Packing Group I.

For the purposes of this paragraph, the dangerous goods exempted in accordance with 1.1.3.2 to 1.1.3.5 and 1.1.3.7 shall not be taken into account.

1.1.3.6.1 When the conditions of 1.1.3.6.1 are met, the requirements of Part 7 (with the exception of those relating to the loading plan of 7.2.4.11) and those of Parts 8 and 9 are not applicable.

The following requirements shall, however, be complied with:

(a) Packages shall be stowed in the holds, except in the case of containers with complete spray-proof walls, road vehicles with complete spray-proof walls or tank containers, portable tanks (MEGCs, vehicles with demountable tanks, tank-vehicles or battery-vehicles);

(b) Goods of different classes shall be separated by a minimum horizontal distance of 3 m. They shall not be stowed on top of each other. This requirement does not apply to:

[(i) stowage of packages and separation between packages loaded in a vehicle or a container, provided that the requirements of ADR applicable to mixed loading and separation or the requirements of the IMDG Code regarding packing and separation are complied with;] (proposal by the secretariat)

(ii) the separation between

– containers with complete metal walls; and/or

– vehicles with bodies with complete metal walls;

– and/or tank-containers, portable tanks and MECGs;

– and/or vehicles with demountable tanks, tank-vehicles and battery-vehicles;

NOTE: For seagoing and inland navigation vessels, where the latter carry only containers [tank-containers, portable tanks or MEGCs], the requirements of (a) and (b) above shall be considered to have been met if the requirements of the IMDG Code regarding stowage and separation are met and if this particular is recorded in the transport document.

**[1.1.4 Applicability of other regulations**

***1.1.4.1 General***

The following requirements are applicable to packages:

(a) in the case of packagings (including large packagings and intermediate bulk containers (IBCs), the applicable requirements of one of the international regulations shall be met (see also Part 4 and Part 6 of these Regulations);

(b) in the case of containers, tank-containers, portable tanks and multiple element gas containers (MEGCs), the applicable requirements of ADR, RID or the IMDG Code shall be met (see also Part 4 and Part 6 of these Regulations);

(c) in the case of vehicles, the vehicles and their load shall meet the applicable requirements of ADR [or of RID, as relevant].

NOTE: For the marking, labelling, placarding and orange plate marking, see also Chapters 5.2 and 5.3.

***1.1.4.2 Carriage in a transport chain including maritime, road, rail or air carriage***

When a maritime, road, rail or air transport operation follows or precedes carriage by inland waterway, the transport document used or to be used for the maritime, road, rail or air transport operation may be used in place of the transport document prescribed in 5.4.1 provided that the particulars it contains are in conformity with the applicable requirements of the IMDG Code, ADR, RID or the ICAO Technical Instructions, respectively.

1.1.4.3 (reserved)

1.1.4.4 (reserved)

1.1.4.5 (reserved).

## CHAPTER 1.2

## DEFINITIONS AND UNITS OF MEASUREMENT

### 1.2.1 Definitions

*NOTE: This section contains all general or specific definitions.*

For the purposes of ~~ADR~~ these regulations:

**A**

*"Accommodation"* means spaces intended for the use of persons normally living on board, including galleys, food stores, lavatories, washrooms, bathrooms, laundries, halls, alleyways, etc., but excluding the wheelhouse;

*"ADR"* means the European Agreement concerning the International Carriage of Dangerous Goods by Road;

*"Aerosol"*, see *"Aerosol dispenser"*;

*"Aerosol dispenser"* means any non-refillable receptacle meeting the requirements of 6.2.2 made of metal, glass or plastics, and containing a gas, compressed, liquefied or dissolved, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state;

"*Auto-ignition temperature*" *(EN 1127-1:1997, No. 331)* means the lowest temperature determined under prescribed test conditions of a hot surface on which a flammable substance in the form of a gas/air or vapour/air mixture ignites.

**B**

*"Bag"* means a flexible packaging made of paper, plastics film, textiles, woven material or other suitable material;

*"Battery-vehicle"* means a vehicle containing elements which are linked to each other by a manifold and permanently fixed to a transport unit. The following elements are considered to be elements of a battery-vehicle: cylinders, tubes, bundles of cylinders (also known as frames), pressure drums as well as tanks destined for the carriage of gases of Class 2 with a capacity of more than 450 litres;

*"BC Code"* means the Code of Safe Practice for Solid Bulk Cargoes of the International Maritime Organization (IMO);

*"Bilge water"* means oily water from the engine room bilges, the peak, the cofferdams and the double-hull spaces;

*"Biological/technical name"* means a name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose;

*"Body"* (for all categories of IBC other than composite IBCs) means the receptacle proper, including openings and closures, but does not include service equipment;

*"Box"* means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics or other suitable material. Small holes for purposes of ease of handling or opening or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during carriage;

*"Breathing apparatus (ambient air-dependent)"* means an apparatus which protects the person wearing it when working in a dangerous atmosphere by means of a suitable filter;

~~*"Breathing apparatus (self contained)"* means an apparatus which supplies the person wearing it when working in a dangerous atmosphere with breathing air by means of pressurized air carried with him or by means of an external supply via a tube;~~

*"Bulkhead"* means a metal wall, generally vertical, inside the vessel and which is bounded by the bottom, the side plating, a deck, the hatchway covers or by another bulkhead;

~~*"Bulkhead"* means a metal wall or partition, generally vertical, both sides of which are inside the vessel and which is bounded by the bottom, the side plating, a deck or by another bulkhead;~~

*"Bulkhead (watertight)"* means

- in a tank vessel: a bulkhead ~~shall be considered watertight if it has been~~ constructed to withstand a water pressure of 1 metre above the deck;

- in a dry cargo vessel: a bulkhead ~~shall be considered watertight if it has been~~ constructed so that it can withstand water pressure with a head of 1 metre above the deck but at least to the top of the hatchway coaming;

*"Bundle of cylinders (frame)"* means an assembly of cylinders that are fastened together and are interconnected by a manifold and carried as a unit. The total water capacity shall not exceed 3,000 l except that bundles intended for the carriage of toxic gases of Class 2 (groups starting with letter T according to 2.2.2.1.3) shall be limited to 1,000 l water capacity.

**C**

~~*"Calculation pressure"* means a theoretical pressure at least equal to the test pressure which, according to the degree of danger exhibited by the substance being carried, may to a greater or lesser degree exceed the working pressure. It is used solely to determine the thickness of the walls of the shell, independently of any external or internal reinforcing device (see also *"Discharge pressure"*, *"Filling pressure"*, *"Maximum working pressure (gauge pressure)"* and *"Test pressure"*);~~

~~*NOTE: For portable tanks, see Chapter 6.7.*~~

"*Cargo area"* means the whole of the following spaces (see figures below);

*"Cargo area (part below deck)"* means the space between two vertical planes perpendicular to the centre-line plane of the vessel, which comprises cargo tanks, hold spaces, cofferdams, double-hull spaces and double bottoms; these planes normally coincide with the outer cofferdam bulkheads or hold end bulkheads. Their intersection line with the deck is referred to as the "boundary of the cargo area part below deck";

[Insert the figures from marginal 210 014]

*"Cargo area (main part above deck)"* *(When anti-explosion protection is required - comparable to "zone 1")* means the space which is bounded:

- at the sides, by the shell plating extending upwards from the decks sides;
- fore and aft, by planes inclined at 45° towards the cargo area, starting at the boundary of the cargo area part below deck;
- vertically, 3.00 m above the deck;

"*Cargo area (additional part above deck)"* *(When anti-explosion protection is required, comparable to "zone 1")* means the spaces not included in the main part of cargo area above deck comprising 1.00 m radius spherical segments centred over the ventilation openings of the cofferdams and the service spaces located in the cargo area part below the deck and 2.00 m spherical segments centred over the ventilation openings of the cargo tanks and the opening of the pump-rooms;

*"Cargo piping"*

See "pipes for loading and unloading";

*"Cargo pump-room" (~~comparable to "zone 1"~~) (When anti-explosion protection is required, comparable to "zone 1" - see "Classification of zones")* means a service space where the cargo pumps and stripping pumps are installed together with their operational equipment;

*"Cargo residues"* means liquid cargo which remain in the cargo tank or cargo piping after discharging or stripping;

*"Cargo tank"* means a tank which is permanently attached to the vessel and the boundaries of which are either formed by the hull itself or by walls separate from the hull and which is intended for the carriage of dangerous goods;

*"Cargo tank" (When anti-explosion protection is required, ~~comparable to zone 0~~)* means a tank which is permanently attached to the vessel and the boundaries of which are either formed by the hull itself or by walls separate from the hull and which is intended for the carriage of dangerous goods;

*"Cargo tank (condition)"*

| | |
|---|---|
| discharged: | empty, but containing residual cargo; |
| empty: | dry, but not gas-free; |
| gas-free: | not containing any measurable concentration of dangerous gases or vapours; |

*"Carriage"* means the change of place of dangerous goods, including stops made necessary by transport conditions and including any period spent by the dangerous goods in vessels, vehicles, tanks and containers made necessary by traffic conditions before, during and after the change of place.

This definition also covers the intermediate temporary storage of dangerous goods in order to change the mode or means of transport (transshipment). This shall apply provided that transport documents showing the place of dispatch and the place of reception are presented on request and provided that packages and tanks are not opened during intermediate storage, except to be checked by the competent authorities;

*"Carriage in bulk"* means the carriage of an unpackaged solid which can be discharged;

NOTE: Within the meaning of ADN, the carriage in bulk referred to in ADR is considered as carriage in packages.

~~*"Carriage in bulk"* means the carriage of solid substances, material or articles without packaging.~~

~~*"Carriage in bulk"* means the carriage of unpackaged solids or articles in vehicles or containers. The term does not apply to packaged goods nor to substances carried in tanks.~~

*"Carrier"* means the enterprise which carries out the transport operation with or without a transport contract;

*"Certified safe type electrical apparatus"* means an electrical apparatus which has been tested and approved by the competent authority regarding its safety of operation in an explosive atmosphere, e.g.

- intrinsically safe apparatus;
- flameproof enclosure apparatus;
- apparatus protected by pressurization;
- powder filling apparatus;
- apparatus protected by encapsulation;
- increased safety apparatus.

NOTE: "Limited explosion risk" apparatus is not covered by this definition.

"*Classification society (recognized)*" means a classification society which is recognized by the competent authorities in accordance with [Annex C, Chapter 2];

*"Classification of zones (see IEC publication 79-10)"*

Zone 0: areas in which dangerous explosive atmospheres of gases, vapours or sprays exist permanently or during long periods;

Zone 1: areas in which dangerous explosive atmospheres of gases, vapours or sprays are likely to occur occasionally;

Zone 2: areas in which dangerous explosive atmospheres of gases, vapours or sprays are likely to occur rarely and if so for short periods only.

*"Closed container"* means a totally enclosed container having a rigid roof, rigid side walls, rigid end walls and a floor. The term includes containers with an opening roof where the roof can be closed during transport;

*"Closed vehicle"* means a vehicle having a body capable of being closed;

*"Closure"* means a device which closes an opening in a receptacle;

*"Cofferdam"(<u>when anti-explosion protection is required</u>, comparable to "zone 1")* means an athwartship compartment which is bounded by watertight bulkheads and which can be inspected. The cofferdam shall extend over the whole area of the end bulkheads of the cargo tanks. The bulkhead not facing the cargo area shall extend from one side of the vessel to the other and from the bottom to the deck in one frame plane;

*"Collective entry"* means an entry for a well-defined group of substances or articles (see 2.1.1.2, B, C and D);

*"Combination packaging"* means a combination of packagings for transport purposes, consisting of one or more inner packagings secured in an outer packing in accordance with 4.1.1.5;

*NOTE: The "inners" of "combination packagings" are always termed "inner packagings" and not "inner receptacles". A glass bottle is an example of such an "inner packaging".*

~~*"Competent authority"* means the authority designated or recognized as such in each country and in each specific case in connection with these provisions.~~

*"Competent authority"* means the authority or authorities or any other body or bodies designated as such in each State and in each specific case in accordance with domestic law;

*"Compliance assurance"* (radioactive material) means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the requirements of ~~ADR~~ <u>ADN</u> are met in practice;

*"Composite IBC with plastics inner receptacle"* means an IBC comprising structural equipment in the form of a rigid outer casing encasing a plastics inner receptacle together with any service or other structural equipment. It is so constructed that the inner receptacle and outer casing once assembled form, and are used as, an integrated single unit to be filled, stored, transported or emptied as such;

*NOTE: "Plastics", when used in connection with inner receptacles for composite IBCs, is taken to include other polymeric materials such as rubber, etc.*

*"Composite packaging (plastics material)"* is a packaging consisting of an inner plastics receptacle and an outer packaging (made of metal, fibreboard, plywood, etc.). Once assembled such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

*NOTE: See NOTE under "Composite packagings (glass, porcelain or stoneware)".*

*"Composite packaging (glass, porcelain or stoneware)"* is a packaging consisting of an inner glass, porcelain or stoneware receptacle and an outer packaging (made of metal, wood, fibreboard, plastics material, expanded plastics material, etc.). Once assembled, such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

*NOTE: The "inners" of "composite packagings" are normally termed "inner receptacles". For example, the "inner" of a 6HA1 (composite packaging, plastics material) is such an "inner receptacle" since it is normally not designed to perform a containment function without its "outer packaging" and is not therefore an "inner packaging".*

*"Consignee"* means the consignee according to the contract for carriage. If the consignee designates a third party in accordance with the provisions applicable to the contract for carriage, this person shall be deemed to be the consignee within the meaning of ~~ADR~~ ADN. If the transport operation takes place without a contract for carriage, the enterprise which takes charge of the dangerous goods on arrival shall be deemed to be the consignee;

*"Consignment"* means any package or packages, or load of dangerous goods, presented by a consignor for carriage;

*"Consignor"* means the enterprise which consigns dangerous goods either on its own behalf or for a third party. If the transport operation is carried out under a contract for carriage, consignor means the consignor according to the contract for carriage. In the case of a tank vessel, when the cargo tanks are empty or have just been unloaded, the master is considered to be the consignor for the purpose of the transport document;

*"Construction pressure"* means the pressure on the basis of which the cargo tank or the residual cargo tank has been designed and built. This pressure generally equals the maximum working pressure;

*"Container"* means an article of transport equipment (lift van or other similar structure):

- of a permanent character and accordingly strong enough to be suitable for repeated use;

- specially designed to facilitate the carriage of goods, by one or more means of transport, without breakage of load;

- fitted with devices permitting its ready stowage and handling, particularly when being transloaded from one means of transport to another;

- so designed as to be easy to fill and empty (see also *"Closed container"*, *"Large container"*, *"Open container"*, *"Sheeted container"* and *"Small container"*);

A swap body is a container which, in accordance with European Standard EN 283 (1991 edition) has the following characteristics:

- from the point of view of mechanical strength, it is only built for carriage on a wagon or a vehicle on land or by roll-on roll-off ship;

- it cannot be stacked;

- it can be removed from vehicles by means of equipment on board the vehicle and on its own supports, and can be reloaded;

*NOTE: The term "container" does not cover conventional packagings, IBCs, tank-containers or vehicles.*

*"Control temperature"* means the maximum temperature at which an organic peroxide or a self-reactive substance can be safely carried;

[*"Conveyance"* means, with respect to the carriage by inland waterway, any vessel, hold or defined deck area of any vessel;]

*"Crate"* means an outer packaging with incomplete surfaces;

*"Critical temperature"* means the temperature above which the substance cannot exist in the liquid state;

*"Cryogenic receptacle"* means a transportable thermally insulated receptacle for refrigerated liquefied gases of a water capacity of not more than 1,000 litres;

*"CSC"* means the International Convention for Safe Containers (Geneva, 1972) as amended and published by the International Maritime Organization (IMO), London;

*"Cylinder"* means a transportable pressure receptacle of a water capacity not exceeding 150 litres (see also *"Bundle of cylinders (frame)"*).

**D**

*"Damage control plan"* means the plan indicating the boundaries of the watertight compartments serving as the basis for the stability calculations, in the event of a leak, the trimming arrangements for the correction of any list due to flooding and the means of closure which are to be kept closed when the vessel is under way;

*"Damage stability plan"* means a plan indicating the water-tight subdivisions serving as the basis for the stability calculations, the arrangements necessary to offset a list caused by water penetration and all closing appliances which are to be kept closed during the voyage. These closing appliances shall be appropriately indicated;

*"Dangerous goods"* means those substances and articles the carriage of which is prohibited by ADN, or authorized only under the conditions prescribed therein;

*"Dangerous reaction"* means:

(a) combustion or evolution of considerable heat;

(b) evolution of flammable, asphyxiate, oxidizing or toxic gases;

(c) the formation of corrosive substances;

(d) the formation of unstable substances; or

(e) dangerous rise in pressure (for tanks only);

*"Deflagration"* means an explosion which propagates at subsonic speed (see EN 1127-1:1997);

*"Demountable tank"* means a tank, other than a fixed tank, a portable tank, a tank-container or an element of a battery-vehicle or a MEGC which has a capacity of more than 450 litres, is not designed for the carriage of goods without breakage of load, and normally can only be handled when it is empty;

*"Detonation" means an explosion which propagates at supersonic speed and is characterized by a shock-wave (see EN 1127-1:1997);*

~~*"Discharge pressure"* means the maximum pressure actually built up in the tank when it is being discharged under pressure (see also *"Calculation pressure", "Filling pressure", "Maximum working pressure (gauge pressure)"* and *"Test pressure"*);~~

*"Drum"* means a flat-ended or convex-ended cylindrical packaging made out of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, e.g. round, taper-necked packagings or pail-shaped packagings. *Wooden barrels* and *jerricans* are not covered by this definition.

**E**

*"EC Directive"* means provisions decided by the competent institutions of the European Community and which are binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods;

~~*"ECE Regulation"* means a regulation annexed to the Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles equipment and parts which can be fitted and or used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions (1958 Agreement, as amended);~~

*"Emergency temperature"* means:

(a) the temperature at which emergency procedures shall be implemented in the event of loss of temperature control;

(b) (within the meaning of provisions relating to gas), the temperature above which a substance cannot exist in the liquid state;

*"Electrical apparatus protected against water jets"* means an electrical apparatus so designed that water, projected by a nozzle on the enclosure from any direction, has no damaging effects. The test conditions are specified in the IEC publication 529, minimum degree of protection IP 55;

*"Enterprise"* means any natural person, any legal person, whether profit-making or not, any association or group of persons without legal personality, whether profit-making or not, or any official body, whether it has legal personality itself or is dependent upon an authority that has such personality;

*"Escape device (suitable)"* means a respiratory protection device, designed to cover the wearer's mouth, nose and eyes, which can be easily put on and which serves to escape from a danger area;

~~*"Exclusive use"* means the sole use, by a single consignor, of a conveyance or of a large freight container, in respect of which all initial, intermediate and final loading and unloading is carried out in accordance with the directions of the consignor or consignee.~~

*"Explosion" means a sudden reaction of oxidation or decomposition with an increase in temperature or in pressure or both simultaneously (see EN 1127-1: 1997);*

*"Explosion group (see IEC publication 79 and EN 50 014)"* means a grouping of flammable gases and vapours according to their maximum experimental safe gaps and minimum ignition currents, and of electrical apparatus which may be used in the corresponding potentially explosive atmosphere.

**F**

*"Fibreboard IBC"* means a fibreboard body with or without separate top and bottom caps, if necessary an inner liner (but no inner packagings), and appropriate service and structural equipment;

*"Filler"* means any enterprise

(a) which fills dangerous goods into a tank (tank-vehicle, demountable tank, portable tank or tank-container) ~~and/or into a vehicle, large container or small container for carriage in bulk,~~ or into a battery-vehicle or MEGC; or

(b) which fills dangerous goods into a cargo tank; or

(c) which fills dangerous goods into a vessel, a vehicle, a large container or small container for carriage in bulk;

*"Filling pressure"* means the maximum pressure actually built up in the tank when it is being filled under pressure; (see also *"Calculation pressure", "Discharge pressure", "Maximum working pressure (gauge pressure)"* and *"Test pressure"*);

~~*"Filling ratio"* means the ratio of the mass of gas to the mass of water at 15° C that would fill completely a pressure receptacle fitted ready for use;~~

*"Filling ratio"*: Where a filling ratio is given for a cargo tank, it refers to a percentage of the volume at a temperature of the substance of 15° C, except where a different temperature is indicated;

*"Fixed tank"* means a tank having a capacity of more than 1,000 litres which is permanently attached to a vehicle (which then becomes a tank-vehicle) or is an integral part of the frame of such vehicle;

*"Flame arrester"* means a device mounted in the vent of part of an installation or in the interconnecting piping of a system of installations, the purpose of which is to permit flow but prevent the propagation of a flame front. This device shall be tested according to the European standard EN 12874 (1998);

*"Flame arrester plate stack"* means the part of the flame arrester the main purpose of which is to prevent the passage of a flame front;

*"Flame arrester housing"* means the part of a flame arrester the main purpose of which is to form a suitable casing for the flame arrester plate stack and ensure a mechanical connection with other systems;

*"Flammable component"* (for aerosols and gas cartridges) means a gas which is flammable in air at normal pressure or a substance or a preparation in liquid form which has a flash-point less than or equal to 100° C;

*"Flammable gas detector"* means a device allowing measuring of any significant concentration of flammable gases given off by the cargo below the lower explosive limit and which clearly indicates the presence of higher concentrations of such gases. Flammable gas detectors may be designed for measuring flammable gases only but also for measuring both flammable gases and oxygen.

This device shall be so designed that measurements are possible without the necessity of entering the spaces to be checked;

*"Flash-point"* means the lowest temperature of a liquid at which its vapours form a flammable mixture with air;

*"Flexible IBC"* means a body constituted of film, woven fabric or any other flexible material or combinations thereof, and if necessary, an inner coating or liner, together with any appropriate service equipment and handling devices;

*"Frame"* (Class 2), see *"Bundle of cylinders"*;

*"Full load*" means any load originating from one consignor for which the use of a vehicle or of a large container is exclusively reserved and all operations for the loading and unloading of which are carried out in conformity with the instructions of the consignor or of the consignee;

***NOTE:*** *The corresponding term for Class 7 is "exclusive use", see 2.2.7.2.*

**G**

*"Gas"* means a substance which:

(a) at 50° C has a vapour pressure greater than 300 kPa (3 bar); or

(b) is completely gaseous at 20° C under standard pressure of 101.3 kPa;

*"Gas cartridge"* means any non-refillable receptacle containing, under pressure, a gas or a mixture of gases. It may be fitted with a valve;

[*"Gases"* means gases or vapours;]

*"Gas detection system"* means a fixed system capable of detecting in time significant concentrations of flammable gases given off by the cargoes at concentrations below the lower explosion limit and capable of activating the alarms;

*"Gas discharge pipe"*.

**H**

*"Handling device"* (for flexible IBCs) means any sling, loop, eye or frame attached to the body of the IBC or formed from the continuation of the IBC body material;

*"Hermetically closed tank"* means a tank whose openings are hermetically closed and which is not equipped with safety valves, bursting discs or other similar safety devices. Tanks having safety valves preceded by a bursting disc shall be deemed to be hermetically closed;

*"Highest class"* may be assigned to a vessel when:

- the hull, inclusive of rudder and steering gear and equipment of anchors and chains, complies with the rules and regulations of a recognized classification society and has been built and tested under its supervision;

- the propulsion plant, together with the essential auxiliary engines mechanical and electrical installations, have been made and tested in conformity with the rules and regulations of this classification society, and the installation has been carried out under its supervision, and the complete plant was tested to its satisfaction on completion;

*"High velocity vent valve"* means a pressure-reducing valve with a nominal ejection speed greater than the speed of propagation of a flame, thus preventing the passage of a flame front. This type of installation shall be tested in accordance with European standard EN 12 874 (1999);

*"Hold"* (~~see also "zone 1"~~) (when anti-explosion protection is required, comparable to zone 1 - see "Classification of Zones") means a part of the vessel which, whether covered by hatchway covers or not, is bounded fore and aft by bulkheads and which is intended to carry goods in packages or in bulk. The upper boundary of the hold is the upper edge of the hatchway coaming. Cargo extending above the hatchway coaming shall be considered as loaded on deck;

*"Hold (condition)"*

discharged: empty, but containing residual cargo
empty: without residual cargo (swept clean);

*"Hold space" (when anti-explosion protection is required, comparable to "zone 1")* means an enclosed part of the vessel which is bounded fore and aft by watertight bulkheads and which is intended only to carry cargo tanks independent of the vessel's hull.

**I**

*"IBC"* see *"Intermediate bulk container"*;

*"ICAO Technical Instructions"* means the Technical Instructions for the Safe Transport of Dangerous Goods by Air, which complement Annex 18 to the Chicago Convention on International Civil Aviation (Chicago 1944) published by the International Civil Aviation Organization (ICAO) in Montreal;

~~*ICAO-TI* means the Technical Instructions for the Safe Transport of Dangerous Goods by Air of the International Civil Aviation Organization (ICAO).~~

*"Identification number"* means the number for identifying a substance, ~~material or article~~ to which no UN number has been assigned or which cannot be classified under a collective entry with a UN number. These numbers ~~are taken from the "United Nations Recommendations on the Transport of Dangerous Goods"~~ have four figures beginning with 9;

*"IEC"* means The International Electro technical Commission;

*"IMDG Code"* means the International Maritime Dangerous Goods Code, for the implementation of Chapter VII, Part A, of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), published by the International Maritime Organization (IMO), London;

*"Independent cargo tank"* (when anti-explosion protection is required) means a cargo tank which is permanently built in, but which is independent of the vessel's structure;

*"Inner packaging"* means a packaging for which an outer packaging is required for carriage;

[*"Inner receptacle"* means a receptacle which requires an outer packaging in order to perform its containment function;]

~~*"Inspection body"* means an independent inspection and testing body approved by the competent authority;~~

*"Intermediate bulk container"* (IBC) means a rigid, or flexible portable packaging, other than those specified in Chapter 6.1, that:

(a) has a capacity of:

(i) not more than 3 $m^3$ for solids and liquids of packing groups II and III;

(ii) not more than 1.5 $m^3$ for solids of packing group I when packed in flexible, rigid plastics, composite, fibreboard and wooden IBCs;

(iii) not more than 3 $m^3$ for solids of packing group I when packed in metal IBCs;

(iv) not more than 3 $m^3$ for radioactive material of Class 7;

(b) is designed for mechanical handling;

(c) is resistant to the stresses produced in handling and transport as determined by the tests specified in Chapter 6.5 <u>of ADR</u> (see also *"Composite IBC with plastics inter receptacle"*, *"Fibreboard IBC"*, *"Flexible IBC"*, *"Metal IBC"*, *"Rigid plastics IBC"* and *"Wooden IBC"*);

***NOTE 1:*** *Portable tanks or tank-containers that meet the requirements of Chapter 6.7 or 6.8 <u>of ADR</u> respectively are not considered to be intermediate bulk containers (IBCs).*

***NOTE 2:*** *Intermediate bulk containers (IBCs) which meet the requirements of Chapter 6.5 <u>of ADR</u> are not considered to be containers for the purposes of ADR.*

*"Intermediate packaging"* means a packaging placed between inner packagings or articles and an outer packaging;

*"International regulations"* means ADR, BC Code, ICAO-TI, IMDG Code or RID.

**J**

*"Jerrican"* means a metal or plastics packaging of rectangular or polygonal cross-section with one or more orifices.

**L**

*"Large container"* means:

(a) a container having an internal volume of more than 3 $m^3$;

(b) in the meaning of the CSC, a container of a size such that the area enclosed by the four outer bottom corners is either

(i) at least 14 $m^2$ (150 square feet) or

(ii) at least 7 $m^2$ (75 square feet) if fitted with top corner fittings;

***NOTE**: For radioactive material see 2.2.7.1.2.*

*"Large packaging"* means a packaging consisting of an outer packaging which contains articles or inner packagings and which:

(a) is designed for mechanical handling;

(b) exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3 $m^3$;

~~*"Leakproofness test"* means a test to determine the leakproofness of a tank, a packaging or an IBC and of the equipment and closure devices;~~

~~***NOTE**: For portable tanks, see Chapter 6.7.*~~

*"Light-gauge metal packaging"* means a packaging of circular, elliptical, rectangular or polygonal cross-section (also conical) and taper-necked and pail-shaped packaging made of metal, having a wall thickness of less than 0.5 mm (e.g. tinplate), flat or convex bottomed and with one or more orifices, which is not covered by the definitions for drums or jerricans;

*"Limited explosion risk electrical apparatus"* means an electrical apparatus which, during normal operation, does not cause sparks or exhibits surface temperatures which are above the required temperature class, including e.g.:

- three-phase squirrel cage rotor motors;
- brushless generators with contactless excitation;
- fuses with an enclosed fuse element;
- contactless electronic apparatus;

or means an electrical apparatus with an enclosure protected against water jets (degree of protection IP55) which during normal operation does not exhibit surface temperatures which are above the required temperature class;

[*"Liner"* means a tube or bag inserted into a packaging, including large packagings or IBCs, but not forming an integral part of it, including the closures of its openings;]

*"Liquid"* means a substance which at 50° C has a vapour pressure of not more than 300 kPa (3 bar) which is not completely gaseous at 20° C and 101.3 kPa, and which:

- has a melting point or initial melting point of 20° C or less at a pressure of 101.3 kPa, or

- is liquid according to the ASTM D 4359-90 test method or

- is not pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

***NOTE**: "Carriage in the liquid state" for the purpose of tank requirements means:*

- Carriage of liquids according to the above definition, or

- Solids handed over for carriage in the molten state;

*"Loader"* means any enterprise which loads dangerous goods into [a vehicle or large container;] [a vessel];

*"Loading journal"* means a journal where all activities relating to loading, unloading, cleaning, gas-freeing, delivering washing water and taking in and discharging ballast water (in cargo tanks) are recorded.

**M**

*"Manual of Tests and Criteria"* means the third revised edition of the United Nations Model Regulations on the Transport of Dangerous Goods, Manual of Tests and Criteria, published by the United Nations Organization (ST/SG/AC.10/11/Rev.3), as amended by document ST/SG/AC.10/11/Rev.3/ Amend.1;

*"Mass of package"* means gross mass of the package unless otherwise stated. The mass of containers and tanks used for the carriage of goods is not included in the gross mass;

*"Master"* means a person as defined in Article 1.02 of the European Code for Inland Waterways (CEVNI);

*"Maximum capacity"* means the maximum inner volume of receptacles or packagings including intermediate bulk containers (IBCs) and large packagings expressed in cubic metres or litres;

*"Maximum net mass"* means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof expressed in kilograms;

*"Maximum permissible gross mass"*

(a) (for all categories of IBCs other than flexible IBCs) means the mass of the IBC and any service or structural equipment together with the maximum net mass;

(b) (for tanks) means the tare of the tank and the heaviest load authorized for carriage;

***NOTE:*** *For portable tanks, see Chapter 6.7 <u>of ADR</u>..*

*"Maximum permissible load"* (for flexible IBCs) means the maximum net mass for which the IBC is intended and which it is authorized to carry;

*"Maximum working pressure"* means the maximum pressure occurring in a cargo tank or a residual cargo tank during operation. This pressure equals the opening pressure of high velocity vent valves;

~~*"Maximum working pressure (gauge pressure)"* means the highest of the following three pressures:~~

~~(a) the highest effective pressure allowed in the tank during filling (maximum filling pressure allowed);~~

~~(b) the highest effective pressure allowed in the tank during discharge (maximum discharge pressure allowed); and~~

~~(c) the effective gauge pressure to which the tank is subjected by its contents (including such extraneous gases as it may contain) at the maximum working temperature.~~

~~Unless the special requirements prescribed in Chapter 4.3 provide otherwise, the numerical value of this working pressure (gauge pressure) shall not be lower than the vapour pressure (absolute pressure) of the filling substance at 50º C.~~

~~For tanks equipped with safety valves (with or without bursting disc), the maximum working pressure (gauge pressure) shall however be equal to the prescribed opening pressure of such safety valves (see also *"Calculation pressure"*, *"Discharge pressure"*, *"Filling pressure"* and *"Test pressure"*);~~

~~***NOTE:** For portable tanks see Chapter 6.7.*~~

*"MEGC"*, see *"Multiple-element gas container"*;

*"Metal IBC"* means a metal body together with appropriate service and structural equipment;

~~*"Mild steel"* means a steel having a minimum tensile strength between 360 N/mm$^2$ and 440 N/mm$^2$;~~

~~***NOTE:** For portable tanks, see Chapter 6.7.*~~

*"Multiple-element gas container"* (MEGC) means a unit containing elements which are linked to each other by a manifold and mounted on a frame. The following elements are considered to be elements of a multiple-element gas container: cylinders, tubes, pressure drums and bundles of cylinders as well as tanks for the carriage of gases of Class 2 having a capacity of more than 450 litres.

**N**

~~*"Naked light"* means light produced by a flame which is not enclosed in a flameproof enclosure.~~

*"Naked light"* means a source of light using a flame which is not enclosed in a flameproof enclosure.

*"Nominal capacity of the receptacle"* means the nominal volume of the dangerous substance contained in the receptacle expressed in litres. For compressed gas cylinders the nominal capacity shall be the water capacity of the cylinder;

*"N.O.S. entry (not otherwise specified entry)"* means a collective entry to which substances, mixtures, solutions or articles may be assigned if they:

(a) are not mentioned by name in Table A of Chapter 3.2, and

(b) exhibit chemical, physical and/or dangerous properties corresponding to the Class, classification code, packing group and the name and description of the n.o.s. entry;

*"Oil separator vessel"* means an open type N tank-vessel with a dead weight of up to 300 tonnes, constructed and fitted to accept and carry oily and greasy wastes from the operation of vessels. Vessels without cargo tanks are considered to be subject to ~~Annex B.1~~ [Chapters 9.1 or 9.21];

*"Oily and greasy wastes from the operation of the vessel"* means used oils, bilge water and other oily or greasy wastes, such as used grease, used filters, used rags, and receptacles and packagings for such wastes;

*"Open container"* means an open top container or a platform based container;

*"Open vehicle"* means a vehicle the platform of which has no superstructure or is merely provided with side boards and a tailboard;

*"Opening pressure"* means the pressure referred to in a list of substances at which the high velocity vent valves open. For pressure tanks the opening pressure of the safety valve shall be established in accordance with the requirements of the competent authority or a recognized classification society;

*"Outer packaging"* means the outer protection of the composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings;

*"Overpack"* means an enclosure used by a single consignor to contain one or more packages, consolidated into a single unit easier to handle and stow during carriage;

Examples of overpacks:

(a) a loading tray such as a pallet, on which several packages are placed or stacked and secured by a plastic strip, shrink or stretch wrapping or other appropriate means; or

(b) an outer protective packaging such as a box or a crate;

***NOTE:*** For radioactive material, see the definition of *"containment system"* in 2.2.7.2.

*"Oxygen meter"* means a device allowing measuring of any significant reduction of the oxygen content of the air. Oxygen meters may either be a device for measuring oxygen only or part of a combination device for measuring both flammable gas and oxygen.

This device shall be so designed that measurements are possible without the necessity of entering the spaces to be checked.

**P**

~~*Package*~~

~~The term package also includes road vehicles (including battery-vehicles), containers (including swap bodies), tank-containers (including multiple-elements tank-containers), intermediate bulk containers (IBCs).~~

~~*Packages (carriage in)*~~

~~means the carriage of any packaged solid, liquid or gaseous substance, material or article, or any solid material which cannot be carried in bulk.~~

*"Package"* means the complete product of the packing operation, consisting of the packaging or large packaging or IBC and its contents prepared for dispatch. The term includes receptacles for gases as defined in this section as well as articles which, because of their size, mass or configuration may be carried unpackaged or carried in cradles, crates or handling devices.

On board vessels, the term also includes [road] vehicles, containers (including swap bodies), tank-containers, portable tanks, battery-vehicles, tank vehicles and multiple element gas containers (MECGs).

The term does not apply to goods which are carried in bulk in the holds of vessels, nor to substances carried in tanks in tank vessels.

***NOTE:*** *For radioactive material, see 2.2.7.2.*

*"Packaging"* means the receptacle and any other components or materials necessary for the receptacle to perform its containment function (see also *"Combination packaging"*, *"Composite packaging (plastics material)"*, *"Composite packaging (glass, porcelain or stoneware)"*, *"Inner packaging"*, *"Intermediate bulk container (IBC)"*, *"Intermediate packaging"*, *"Large packaging"*, *"Light-gauge metal packaging"*, *"Outer packaging"*, *"Reconditioned packaging"*, *"Remanufactured packaging"*, *"Reused packaging"*, *"Salvage packaging"* and *"Sift-proof packaging")*;

***NOTE:*** *For radioactive material, see 2.2.7.2.*

*"Packer"* means any enterprise which puts dangerous goods into packagings, including large packagings and intermediate bulk containers (IBCs) and, where necessary, prepares packages for carriage;

*"Packing group"* means a group to which, for packing purposes, certain substances may be assigned in accordance with their degree of danger. The packing groups have the following meanings which are explained more fully in Part 2:

Packing group I: Substances presenting high danger;

Packing group II: Substances presenting medium danger; and

Packing group III: Substances presenting low danger;

***NOTE:*** *Certain articles containing dangerous goods are assigned to a packing group.*

*"Pipes for loading or unloading (cargo piping)"* means all pipes which may contain liquid or gaseous cargo, including the connected pumps, filters and closure devices;

*"Portable tank"* means a multimodal tank having a capacity of more than 450 litres in accordance with the definitions in Chapter 6.7 of ADR or the IMDG Code and indicated by a portable tank instruction (T-Code) in Column (10) of Table A of Chapter 3.2 of ADR;

*"Portable tank operator"*, see *"Tank-container/portable tank operator"*;

*"Pressure drum"* means a welded, transportable pressure receptacle of a water capacity exceeding 150 litres and of not more than 1,000 litres (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids);

*"Pressure compensation pipe";*

*"Pressure relief device"* means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable excess internal pressure;

[*"Pressure receptacle"* a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles and bundles of cylinders;]

*"Pressures"* For tanks, all kinds of pressures (e.g. working pressure, opening pressure of the high velocity vent valves, test pressure) shall be expressed as gauge pressures in kPa (bar); the vapour pressure of substances, however, shall be expressed as an absolute pressure in kPa (bar);

*"Pressure tank"* means a tank designated and approved for a working pressure ≥ 400 kPa (4 bar).

*"Pressurized gas cartridge"*, see *"Aerosol dispenser"*;

*"Protected area"* means

(a) the hold or holds (~~see also~~ when anti-explosion protection is required, comparable to zone 1);

(b) the space situated above the deck (~~see also~~ when anti-explosion protection is required, comparable to zone 2), bounded:

(i) athwartships, by vertical planes corresponding to the side plating;

(ii) fore and aft, by vertical planes corresponding to the end bulkheads of the hold; and

(iii) upwards, by a horizontal plane 2.00 m above the upper level of the load, but at least by a horizontal plane 3.00 m above the deck.

*"Protected IBC"* (for metal IBCs) means an IBC provided with additional protection against impact, the protection taking the form of, for example, a multi-layer (sandwich) or double-wall construction, or a frame with a metal lattice-work casing.

**Q**

*"Quality assurance"* means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing confidence that the safety prescriptions in ~~ADR~~ ADN are met in practice.

**R**

*"Receptacle"* (Class 1) includes boxes, bottles, cans, drums, jars and tubes, including any means of closure used in the inner or intermediate packaging;

*"Receptacle"* means a containment vessel for receiving and holding substances or articles, including any means of closing. This definition does not apply to shells (see also *"Cryogenic receptacle"*, *"Inner receptacle"*, *"Rigid inner receptacle"* and *"Gas cartridge"*);

***NOTE:*** *Receptacles for gases of Class 2 are cylinders, tubes, pressure drums, cryogenic receptacles and bundles of cylinders (frames).*

~~*"Reconditioned packaging"* means in particular~~

~~(a) metal drums that are:~~

~~(i) cleaned to original materials of construction, with all former contents, internal and external corrosion, and external coatings and labels removed;~~

~~(ii) restored to original shape and contour, with chimes (if any) straightened and sealed and all non-integral gaskets replaced; and~~

~~(iii) inspected after cleaning but before painting, with rejection of packagings with visible pitting, significant reduction in the material thickness, metal fatigue, damaged threads or closures or other significant defects;~~

~~(b) plastics drums and jerricans that:~~

~~(i) are cleaned to original materials of construction, with all former contents, external coatings and labels removed;~~

~~(ii) have all non-integral gaskets replaced; and~~

~~(iii) are inspected after cleaning with rejection of packagings with visible damage such as tears, creases or cracks, or damaged threads or closures or other significant defects;~~

*"Recycled plastics material"* means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings;

*"Reel"* (Class 1) means a device made of plastics, wood, fibreboard, metal or other suitable material comprising a central spindle with, or without, side walls at each end of the spindle. Articles and substances can be wound on to the spindle and may be retained by side walls;

~~*"Reference steel"* means a steel with a tensile strength of 370 N/mm$^2$ and an elongation at fracture of 27%;~~

~~*"Remanufactured IBC"* means a metal, rigid plastics or composite IBC that:~~

~~(a) is produced as a UN type from a non-UN type; or~~

~~(b) is converted from one UN design type to another UN design type.~~

~~Remanufactured IBCs are subject to the same requirements of RID/ADR that apply to new IBCs of the same type (see also design type definition in 6.5.4.1.1).~~ (see *"Intermediate bulk container (IBC)"*).

~~*"Remanufactured packaging"* means in particular~~

~~(a) metal drums that:~~

~~(i) are produced as a UN type complying with the requirements of Chapter 6.1 from a non-UN type;~~

~~(ii) are converted from one UN type complying with the requirements of Chapter 6.1 to another UN type; or~~

~~(iii) undergo the replacement of integral structural components (such as non-removable heads);~~

~~(b) plastics drums that:~~

~~(i) are converted from one UN type to another UN type (e.g. 1H1 to 1H2); or~~

~~(ii) undergo the replacement of integral structural components.~~

~~Remanufactured drums are subject to the requirements of Chapter 6.1 which apply to new drums of the same type;~~

~~*Repaired IBC* means a metal, rigid plastics or composite IBC that, as a result of impact or for any other cause (e.g. corrosion, embrittlement or other evidence of reduced strength as compared to the design type) is restored so as to conform to the design type and to be able to withstand the design type tests. For the purposes of RID/ADR, the replacement of the rigid inner receptacle of a composite IBC with a receptacle conforming to the original manufacturer's specification is considered repair. However, routine maintenance of IBCs is not considered repair. The bodies of rigid plastics IBCs and the inner receptacles of composite IBCs are not repairable.~~

(see *"Intermediate bulk container (IBC)"*).

*"Rescue winch"* means a device for hoisting persons from spaces such as cargo tanks, cofferdams and double-hull spaces. The device shall be operable by one person;

*"Residual cargo"* means liquid cargo remaining in the cargo tank or cargo piping after unloading without the use of the stripping system;

~~*"Reused packaging"* means a packaging which has been examined and found free of defects affecting the ability to withstand the performance tests. The term includes those which are refilled with the same or similar compatible contents and are carried within distribution chains controlled by the consignor of the product;~~

~~*"RID" means the Regulations concerning the International Carriage of Dangerous Goods by Rail.*~~

*"RID"* means Regulations concerning the International Carriage of Dangerous Goods by Rail, Annex 1 to Appendix B (Uniform Rules Concerning the Contract for International Carriage of Goods by Rail) (CIM) of COTIF (Convention concerning International Carriage by Rail);

*"Rigid inner receptacle"* (for composite IBCs) means a receptacle which retains its general shape when empty without its closures in place and without benefit of the outer casing. Any inner receptacle that is not "rigid" is considered to be "flexible";

*"Rigid plastics IBC"* means a rigid plastics body, which may have structural equipment together with appropriate service equipment;

"~~Road~~ vehicle" (see "Vehicle");

~~*"Routine maintenance of IBCs"* means the routine performance on metal, rigid plastics or composite IBCs of operations such as:~~

~~(a) cleaning;~~

~~(b) removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, conforming to the original manufacturer's specifications, provided that the leaktightness of the IBC is verified; or~~

~~(c) Restoration of structural equipment not directly performing a dangerous goods containment or discharge pressure retention function so as to conform to the design type (e.g. the straightening of legs or lifting attachments) provided that the containment function of the IBC is not affected.~~

(see *"Intermediate bulk container (IBC)"*).

**S**

*"Safety valve"* means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable excess internal pressure (see also *"pressure-relief device"* and *"vacuum valve"*);

*"SADT"* see *"Self-accelerating decomposition temperature"*;

*"Salvage packaging"* means a special packaging into which damaged, defective or leaking dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;

*"Self-accelerating decomposition temperature"* (SADT), means the lowest temperature at which self-accelerating decomposition may occur with substance in the packaging as used during carriage. Provisions for determining the SADT and the effects of heating under confinement are contained in Part II of the Manual of Tests and Criteria;

~~*"Service equipment"*~~

~~(a) of the tank means filling and emptying, venting, safety, heating and heat insulating devices and measuring instruments;~~

~~(b) of the elements of a battery-vehicle or of a MEGC means filling and emptying devices, including the manifold, safety devices and measuring instruments;~~

~~(c) of an IBC means the filling and discharge devices and any pressure-relief or venting, safety, heating and heat insulating devices and measuring instruments;~~

~~***NOTE:** For portable tanks, see Chapter 6.7.*~~

*"Service space"* means a space which is accessible during the operation of the vessel and which is neither part of the accommodation nor of the cargo tanks, with the exception of the forepeak and after peak, provided no machinery has been installed in these latter spaces;

~~*"Settled pressure"* means the pressure of the contents of a pressure receptacle in thermal and diffusive equilibrium;~~

*"Sheeted container"* means an open container equipped with a sheet to protect the goods loaded;

*"Sheeted vehicle"* means an open vehicle provided with a sheet to protect the load;

~~*"Shell"* means the sheathing containing the substance (including the openings and their closures);~~

~~***NOTE 1:** This definition does not apply to receptacles.*~~

~~***NOTE 2:** For portable tanks, see Chapter 6.7.*~~

*"Sift-proof packaging"* means a packaging impermeable to dry contents, including fine solid material produced during carriage;

*"Slops"* means liquid cargo residues which cannot be removed from the cargo tank or cargo piping by discharging, draining or stripping; by extension, a mixture of cargo residues and washing water, rust, etc., which is either suitable or not suitable for pumping;

*"Small container"* means a container having an internal volume of not less than 1 $m^3$ and not more than 3 $m^3$;

***NOTE:** For radioactive material, see* 2.2.7.2.

*"Small receptacle containing gas"*, see *"Gas cartridge"*;

*"SOLAS"* means the International Convention for the Safety of Life at Sea, 1974, as amended;

*"Solid"* means:

(a) a substance with a melting point or initial melting point of more than 20º C at a pressure of 101.3 kPa; or

(b) a substance which is not liquid according to the ASTM D 4359-90 test method or which is pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

<u>*"Steady burning"* means combustion stabilized for an indeterminate period (see EN 12 874: 1999);</u>

*"Stripping system (efficient)"* means a system for draining the cargo tanks and stripping the cargo piping except for the cargo residues;

~~*"Structural equipment"*~~

~~(a) for tanks of a tank-vehicle or demountable tank, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;~~

~~(b) for tanks of a tank-container, means the external or internal reinforcing, fastening, protective or stabilizing members of the shell;~~

~~(c) for elements of a battery-vehicle or an MEGC means the external or internal reinforcing, fastening, protective or stabilizing members of the shell or receptacle;~~

~~(d) for IBCs other than flexible IBCs means the reinforcing, fastening, handling, protective or stabilizing members of the body (including the base pallet for composite IBCs with plastics inner receptacle);~~

~~***NOTE:*** *For portable tanks, see Chapter 6.7.*~~

*"Supply installation (bunkering system)"* means an installation for the supply of vessels with liquid fuels;

*"Supply vessel"* means an open type N tank vessel with a dead weight of up to 300 tonnes, constructed and fitted for the carriage and delivery to other vessels of products intended for the operation of vessels;

*"Swap-body"*, see *"Container"*.

**T**

*"Tank"* means a shell, including its service and structural equipment. When used alone, the term tank means a tank-container, portable tank, demountable tank or fixed tank as defined in this part, including tanks forming elements of battery-vehicles or MEGCs (see also *"Demountable tank", "Fixed tank", "Portable tank" and "Multiple-element gas container");*

***NOTE**: For portable tanks, see 6.7.4.1 of ADR.*

*"~~Tank-container~~"*

~~means an article of transport equipment (including swap body tanks) conforming to the definition of "container" given above and built to contain liquid, gaseous, powdery or granular substances or materials and having a capacity of more than 0.45m$^3$.~~

*"Tank container"* means an article of transport equipment meeting the definition of a container, and comprising a shell and items of equipment, including the equipment to facilitate movement of the tank-container without significant change of attitude, used for the carriage of gases, liquid, powdery or granular substances and having a capacity of more than 0.45 $m^3$ (450 litres);

***NOTE**: IBCs which meet the requirements of Chapter 6.5 of ADR are not considered to be tank-containers.*

*"Tank-container/portable tank operator"* means any enterprise in whose name the tank-container/portable tank is registered;

*"Tank swap body"* is considered to be a tank-container;

*"Tank-vehicle"* means a vehicle built to carry liquids, gases or powdery or granular substances and comprising one or more fixed tanks. In addition to the vehicle proper, or the units of running gear used in its stead, a tank-vehicle comprises one or more shells, their items of equipment and the fittings for attaching them to the vehicle or to the running-gear units;

*"Tank vessel"* means a vessel intended for the carriage of substances in cargo tanks;

*"Technical/biological name"* means a name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose;

"*Temperature class* (*see IEC publication 79 and EN 50 014*)" means a grouping of flammable gases and vapours of flammable liquids according to their ignition temperature; and of the electrical apparatus intended to be used in the corresponding potentially explosive atmosphere according to their maximum surface temperature;

~~*"Test pressure* means the required pressure applied during a pressure test for initial or periodic inspection;".~~

*"Test pressure"* means the pressure at which a cargo tank, a residual cargo tank, a cofferdam or the loading and unloading pipes shall be tested prior to being brought into service for the first time and subsequently regularly within prescribed times;

"*Toximeter"* means a device allowing measuring of any significant concentration of toxic gases given off by the cargo.

This device shall be so designed that such measurements are possible without the necessity of entering the spaced to be checked.

[*"Transport unit"* means a motor vehicle without an attached trailer, or a combination consisting of a motor vehicle and an attached trailer;]

[*"Transport unit (inland waterways)"* means, in carriage by inland waterways, a vessel, a hold, or a specific part of a vessel's deck;]

*"Tray"* (Class 1) means a sheet of metal, plastics, fibreboard or other suitable material which is placed in the inner, intermediate or outer packaging and achieves a close-fit in such packaging. The surface of the tray may be shaped so that packagings or articles can be inserted, held secure and separated from each other;

*"Tube"* means a seamless transportable pressure receptacle of a water capacity exceeding 150 litres and of not more than 3,000 litres;

*Types of protection (see IEC Publication 79 and EN 50 014)*

| | | |
|---|---|---|
| EEx (d) | : | flameproof enclosure (EN 50 018); |
| EEx (e) | : | increased safety (EN 50 019); |
| EEx (ia) and EEx (ib) | : | intrinsic safety (EN 50 020); |
| EEx (m) | : | encapsulation (EN 50 028); |
| EEx (p) | : | pressurized apparatus (EN 50 016); |
| EEx (q) | : | powder filling (EN 50 017). |

*"Type of vessel"*

Type G ...: means a tank vessel intended for the carriage of gases. Carriage may be under pressure or under refrigeration.

Type C ...: means a tank vessel intended for the carriage of liquids. The vessel shall be of the flush-deck/double-hull type with double-hull spaces, double bottoms, but without trunk. The cargo tanks may be formed by the vessel's inner hull or may be installed in the hold spaces as independent tanks.

Type N ...: means a tank vessel intended for the carriage of liquids.

[The sketches will be added later].

**U**

*"Undertaking"*, see *"Enterprise"*;

*"UN Model Regulations"* means the Model Regulations annexed to the twelfth revised edition of the Recommendations on the Transport of Dangerous Goods published by the United Nations (ST/SG/AC.10/1/Rev.12);

*"UN number"* means the four-figure identification number of the substance or article taken from the United Nations Model Regulations.

**V**

*"Vacuum-operated waste tank"* means a fixed or demountable tank primarily used for the carriage of dangerous wastes, with special constructional features and/or equipment to facilitate the loading and unloading of wastes as specified in Chapter 6.10 of ADR. A tank which fully complies with the requirements of Chapter 6.7 or 6.8 of ADR is not considered to be a vacuum-operated waste tank;

*"Vacuum valve"* means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable negative internal pressure;

[*"Vehicle"* means any vehicle covered by the definition of the term "vehicle" in the ADR.] [or "wagon" in RID]. [see *"Battery-vehicle", "Closed vehicle", "Open vehicle", "Sheeted vehicle"* and *"Tank-vehicle"*];

*"Venting pipe";*

"*Vessel*" means an inland navigation vessel or a seagoing vessel.

**W**

*"Wastes"* means substances, solutions, mixtures or articles for which no direct use is envisaged but which are transported for reprocessing, dumping, elimination by incineration or other methods of disposal;

*"Wooden barrel"* means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops;

*"Wooden IBC"* means a rigid or collapsible wooden body, together with an inner liner (but no inner packaging) and appropriate service and structural equipment;

~~*"Woven plastics"* (for flexible IBCs) means a material made from stretch tapes or monofilaments of suitable plastics material.~~

[*"Working pressure"* means the settled pressure of a compressed gas at a reference temperature of 15º C in a full pressure receptacle.

***NOTE**: For tanks, see "Maximum working pressure".*]

### 1.2.2 Units of measurement

1.2.2.1 The following units of measurement[a] are applicable in ~~ADR~~ ADN:

| Measurement of | SI Unit[b] | Acceptable alternative unit | Relationship between units |
|---|---|---|---|
| Length | m (metre) | - | - |
| Area | $m^2$ (square metre) | - | - |
| Volume | $m^3$ (cubic metre) | l [c] (litre) | 1 *l* = $10^{-3}$ $m^3$ |
| Time | s (second) | min. (minute) | 1 min. = 60 s |
| | | h (hour) | 1 h = 3 600 s |
| | | d (day) | 1 d = 86 400 s |
| Mass | kg (kilogram) | g (gramme) | 1g = $10^{-3}$ kg |
| | | t (ton) | 1 t = $10^3$ kg |
| Mass density | $kg/m^3$ | kg/l | 1 kg/l = $10^3$ $kg/m^3$ |
| Temperature | K (kelvin) | °C (degree Celsius) | 0° C = 273.15 K |
| Temperature difference | K (kelvin) | °C (degree Celsius) | 1° C = 1 K |
| Force | N (newton) | - | 1 N = 1 $kg.m/s^2$ |
| Pressure | Pa (pascal) | | 1 Pa = 1 $N/m^2$ |
| | | bar (bar) | 1 bar = $10^5$ Pa |
| Stress | $N/m^2$ | $N/mm^2$ | 1 $N/mm^2$ = 1 MPa |
| Work | | kWh (kilowatt hours) | 1 kWh = 3.6 MJ |
| Energy | J (joule) | | 1 J = 1 N.m = 1 W.s |
| Quantity of heat | | eV (electronvolt) | 1 eV = 0.1602 × $10^{-18}$J |
| Power | W (watt) | - | 1 W = 1 J/s = 1 N.m/s |
| Kinematic viscosity | $m^2/s$ | $mm^2/s$ | 1 $mm^2/s$ = $10^{-6}$ $m^2/s$ |
| Dynamic viscosity | Pa.s | mPa.s | 1 mPa.s = $10^{-3}$ Pa.s |
| Activity | Bq (becquerel) | | |
| Dose equivalent | Sv (sievert) | | |

[a] *The following round figures are applicable for the conversion of the units hitherto used into SI Units.*

*Force*

| | | | | | |
|---|---|---|---|---|---|
| *1 kg* | = | *9.807 N* | *1 kg/mm²* | = | *9.807 N/mm²* |
| *1 N* | = | *0.102 kg* | *1 N/mm²* | = | *0.102 kg/mm²* |

*Pressure*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *1 Pa* | = | *1 N/m²* | = | *$10^{-5}$ bar* | = | *1.02 × $10^{-5}$ kg/cm²* | *= 0.75 × $10^{-2}$ torr* |
| *1 bar* | = | *$10^5$ Pa* | = | *1.02 kg/cm²* | = | *750 torr* | |
| *1 kg/cm²* | = | *9.807 × $10^4$ Pa* | = | *0.9807 bar* | = | *736 torr* | |
| *1 torr* | = | *1.33 × $10^2$ Pa* | = | *1.33 × $10^{-3}$ bar* | = | *1.36 × $10^{-3}$ kg/cm²* | |

*Energy, Work, Quantity of heat*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *1 J* | = | *1 N.m* | = | *0.278 × $10^{-6}$ kWh* | = | *0.102 kgm* | = *0.239 × $10^{-3}$ kcal* |
| *1 kWh* | = | *3.6 × $10^6$ J* | = | *367 × $10^3$ kgm* | = | *860 kcal* | |
| *1 kgm* | = | *9.807 J* | = | *2.72 × $10^{-6}$ kWh* | = | *2.34 × $10^{-3}$ kcal* | |
| *1 kcal* | = | *4.19 × $10^3$ J* | = | *1.16 × $10^{-3}$ kWh* | = | *427 kgm* | |

*Power*

*1 W = 0.102 kgm/s = 0.86 kcal/h*
*1 kgm/s = 9.807 W = 8.43 kcal/h*
*1 kcal/h = 1.16 W = 0.119 kgm/s*

*Kinematic viscosity*

*1 $m^2/s$ = $10^4$ St (Stokes)*
*1 St = $10^{-4}$ $m^2/s$*

*Dynamic viscosity*

*1 Pa.s = 1 $N.s/m^2$ = 10 P (poise) = 0.102 $kg.s/m^2$*
*1 P = 0.1 Pa.s = 0.1 $N.s/m^2$ = 1.02 $\times$ $10^{-2}$ $kg.s/m^2$*
*1 $kg.s/m^2$ = 9.807 Pa.s = 9.807 $N.s/m^2$ = 98.07 P*

[b] *The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92 310 Sèvres).*

[c] *The abbreviation "L" for litre may also be used in place of the abbreviation "l" when a typewriter cannot distinguish between figure "1" and letter "l".*

The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

| Factor | | | Prefix | Symbol |
|---|---|---|---|---|
| 1 000 000 000 000 000 000 | = $10^{18}$ | quintillion | exa | E |
| 1 000 000 000 000 000 | = $10^{15}$ | quadrillion | peta | P |
| 1 000 000 000 000 | = $10^{12}$ | trillion | tera | T |
| 1 000 000 000 | = $10^{9}$ | billion | giga | G |
| 1 000 000 | = $10^{6}$ | million | mega | M |
| 1 000 | = $10^{3}$ | thousand | kilo | k |
| 100 | = $10^{2}$ | hundred | hecto | h |
| 10 | = $10^{1}$ | ten | deca | da |
| 0.1 | = $10^{-1}$ | tenth | deci | d |
| 0.01 | = $10^{-2}$ | hundredth | centi | c |
| 0.001 | = $10^{-3}$ | thousandth | milli | m |
| 0.000 001 | = $10^{-6}$ | millionth | micro | µ |
| 0.000 000 001 | = $10^{-9}$ | billionth | nano | n |
| 0.000 000 000 001 | = $10^{-12}$ | trillionth | pico | p |
| 0.000 000 000 000 001 | = $10^{-15}$ | quadrillionth | femto | f |
| 0.000 000 000 000 000 001 | = $10^{-18}$ | quintillionth | atto | a |

***NOTE:*** *$10^9$ = 1 billion is United Nations usage in English. By analogy, so is $10^{-9}$ = 1 billionth.*

1.2.2.2 Unless expressly stated otherwise, the sign "%" in ~~ADR~~ ADN represents:

(a) In the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid, a percentage mass based on the total mass of the mixture, the solution or the wetted solid;

(b) In the case of mixtures of compressed gases, when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;

(c) In the case of mixtures of liquefied gases and gases dissolved under pressure, the proportion of the mass indicated as a percentage of the total mass of the mixture.

1.2.2.3 Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.

1.2.2.4 Where ~~ADR~~ ADN specifies a degree of filling for receptacles, this is always related to a reference temperature of the substances of 15° C, unless some other temperature is indicated.

1.2.2.5 Where the mass of a package is concerned, it refers to the gross mass unless otherwise indicated. The mass of containers, tanks and [road] vehicles used for the carriage of goods is not included in the gross mass.

## CHAPTER 1.3

## TRAINING OF PERSONS INVOLVED IN THE CARRIAGE OF DANGEROUS GOODS

### 1.3.1 Scope and applicability

Persons employed by the participants referred to in Chapter 1.4, whose duties concern the carriage of dangerous goods, shall receive training in the requirements governing the carriage of such goods appropriate to their responsibilities and duties.

***NOTE 1:*** *With regard to the training for the safety adviser, see 1.8.3.*

***NOTE 2:*** *With regard to ~~the~~ expert training, ~~of the vehicle crew~~ see Chapter 8.2.*

### 1.3.2 Nature of the training

The training shall take the following form, appropriate to the responsibility and duties of the individual concerned.

1.3.2.1 ***General awareness training***

Personnel shall be familiar with the general requirements of the provisions for the carriage of dangerous goods.

**1.3.2.2** ***Function-specific training***

1.3.2.2.1 Personnel shall receive detailed training, commensurate directly with their duties and responsibilities in the requirements of the regulations concerning the carriage of dangerous goods.

Where the carriage of dangerous goods involves a multimodal transport operation, the personnel shall be made aware of the requirements concerning other transport modes.

1.3.2.2.2 The crew shall be familiarized with the handling of fire-extinguishing systems and fire-extinguishers.

1.3.2.2.3 The crew shall be familiarized with the handling of the fire-extinguishing systems and fire-extinguishers with the special equipment referred to in 8.1.5.

1.3.2.2.4 Persons wearing self-contained breathing apparatus when entering holds shall be trained to handle this apparatus and shall be physically able to bear the additional constraints.

1.3.2.3.5 The master shall bring the instructions in writing to the attention of the other persons on board to ensure that they are capable of applying them.

**1.3.2.3** ***Safety training***

Commensurate with the degree of risk of injury or exposure arising from an incident involving the carriage of dangerous goods, including loading and unloading, personnel shall receive training covering the hazards and dangers presented by dangerous goods.

The training provided shall aim to make personnel aware of the safe handling and emergency response procedures.

**1.3.2.4** ***Training for Class 7***

For the purpose of Class 7, personnel shall receive appropriate training concerning the radiation hazards involved and the precautions to be observed in order to ensure restriction of their exposure and that of other persons who might be affected by their actions.

**1.3.3 Documentation**

Details of all the training undertaken shall be kept by both the employer and the employee and shall be verified upon commencing a new employment. The training shall be periodically supplemented with refresher training to take account of changes in regulations.

## CHAPTER 1.4

## SAFETY OBLIGATIONS OF THE PARTICIPANTS

### 1.4.1 General safety measures

1.4.1.1 The participants in the carriage of dangerous goods shall take appropriate measures according to the nature and the extent of foreseeable dangers, so as to avoid damage or injury and, if necessary, to minimize their effects. They shall, in all events, comply with the requirements of ~~ADR~~ ADN in their respective fields.

1.4.1.2 When there is an immediate risk that public safety may be jeopardized, the participants shall immediately notify the emergency services and shall make available to them the information they require to take action.

1.4.1.3 ~~ADR~~ ADN may specify certain of the obligations falling to the various participants.

If a Contracting Party considers that no lessening of safety is involved, it may in its domestic legislation transfer the obligations falling to a specific participant to one or several other participants, provided that the obligations of 1.4.2 and 1.4.3 are met. These derogations shall be communicated by the Contracting Party to the secretariat of the United Nations Economic Commission for Europe which will bring them to the attention of the Contracting Parties.

The requirements of 1.2.1, 1.4.2 and 1.4.3 concerning the definitions of participants and their respective obligations shall not affect the provisions of domestic law concerning the legal consequences (criminal nature, liability, etc.) stemming from the fact that the participant in question is e.g. a legal entity, a self-employed worker, an employer or an employee.

### 1.4.2 Obligations of the main participants

#### 1.4.2.1 *Consignor*

1.4.2.1.1 The consignor of dangerous goods is required to hand over for carriage only consignments which conform to the requirements of ~~ADR~~ ADN. In the context of 1.4.1, he shall in particular:

(a) ascertain that the dangerous goods are classified and authorized for carriage in accordance with ~~ADR~~ ADN;

(b) furnish the carrier with information and data and, if necessary, the required transport documents and accompanying documents (authorizations, approvals, notifications, certificates, etc.), taking into account in particular the requirements of Chapter 5.4 and of the tables in Part 3;

(c) use only packagings, large packagings, intermediate bulk containers (IBCs) and tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks and tank-containers) approved for and suited to the carriage of the substances concerned and bearing the markings prescribed by ~~ADR;~~ one of the international Regulations, and to use only approved vessels or tank-vessels suitable for the carriage of the goods in question;

(d) comply with the requirements on the means of dispatch and on forwarding restrictions;

(e) ensure that even empty uncleaned and not degassed tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks and tank-containers) or empty uncleaned vehicles and large and small bulk containers are appropriately marked and labelled and that empty uncleaned tanks are closed and present the same degree of leakproofness as if they were full.

1.4.2.1.2 If the consignor uses the services of other participants (packer, loader, filler, etc.), he shall take appropriate measures to ensure that the consignment meets the requirements of ~~ADR~~ ADN. He may, however, in the case of 1.4.2.1.1 (a), (b), (c) and (e), rely on the information and data made available to him by other participants.

1.4.2.1.3 When the consignor acts on behalf of a third party, the latter shall inform the consignor in writing that dangerous goods are involved and make available to him all the information and documents he needs to perform his obligations.

**1.4.2.2** ***Carrier***

1.4.2.2.1 In the context of 1.4.1, where appropriate, the carrier shall in particular:

(a) ascertain that the dangerous goods to be carried are authorized for carriage in accordance with ~~ADR~~ ADN;

(b) ascertain that the prescribed documentation is on board the vessel ~~transport unit~~;

[(c) ascertain visually that the ~~vehicles~~ vessels and loads have no obvious defects, leakages or cracks, missing equipment, etc.;]

[(d) ascertain that the date of the next test for tank-vehicles, battery-vehicles, fixed tanks, demountable tanks, portable tanks, tank-containers and MEGCs has not expired;] [(reserved)];

[(e) verify that the ~~vehicles~~ vessels are not overloaded;] [(reserved)];

[(f) ~~ascertain that the danger labels and markings prescribed for the vehicles have been affixed; [(reserved)];~~

(g) ascertain that the equipment prescribed in the written instructions for the driver is on board the ~~vehicle.~~ vessel;

(h) ascertain that the marking requirements for the vessel have been met;

(i) ascertain that during loading, carriage, unloading and any other handling of the dangerous goods in the holds or cargo tanks, special requirements are complied with.

[Where appropriate, this shall be done on the basis of the transport documents and accompanying documents, by a visual inspection of the ~~vehicle~~ vessel or the containers and, where appropriate, the load.]

1.4.2.2.2 The carrier may, however, in the case of 1.4.2.2.1 (a), (b), [(c)], [(e)], ~~and~~ (f) and (i), rely on information and data made available to him by other participants.

~~1.4.2.2.3~~ If the carrier observes an infringement of the requirements of ~~ADR~~ ADN, in accordance with 1.4.2.2.1, he shall not forward the consignment until the matter has been rectified.

1.4.2.2.4 ~~If, during the journey, an infringement which could jeopardize the safety of the operation is observed, the consignment shall be halted as soon as possible bearing in mind the requirements of traffic safety, of the safe immobilisation of the consignment, and of public safety. The transport operation may only be continued once the consignment complies with applicable regulations. The competent authority(ies) concerned by the rest of the journey may grant an authorization to pursue the transport operation.~~

~~In case the required compliance cannot be achieved and no authorization is granted for the rest of the journey, the competent authority(ies) shall provide the carrier with the necessary administrative assistance. The same shall apply in case the carrier informs this/these competent authority(ies) that the dangerous nature of the goods carried was not communicated to him by the consignor and that he wishes, by virtue of the law applicable in particular to the contract of carriage, to unload, destroy or render the goods harmless.~~

~~(reserved).~~

**1.4.2.3** ***Consignee***

1.4.2.3.1 The consignee has the obligation not to defer acceptance of the goods without compelling reasons and to verify, [before, during or] after unloading, [as appropriate] that the requirements of ~~ADR~~ ADN concerning him have been complied with.

In the context of 1.4.1, he shall in particular:

(a) carry out in the cases provided for by ADN the prescribed operations for the unloading of vessels;

~~(a)~~(b) carry out in the cases provided for by ~~ADR~~ ADN the prescribed cleaning and decontamination of the ~~vehicles and containers~~ vessels;

[~~(b)~~(c) ensure that the containers [and vehicles], once completely unloaded, cleaned and decontaminated, no longer bear danger markings conforming to Chapter 5.3;]

(d) ascertain that provision has been made in the fore and aft sections of the vessel for its evacuation in the event of an emergency;

(e) ascertain that in the cases provided for by ADN a flame-arrester is installed in the gas discharge pipe or the compensation pipe to protect the vessel against detonations and flame-fronts from the landward side.

1.4.2.3.2 If the consignee makes use of the services of other participants (unloader, cleaner, decontamination facility, etc.) he shall take appropriate measures to ensure that the requirements of ~~ADR~~ ADN have been complied with.

1.4.2.3.3 If these verifications bring to light an infringement of the requirements of ~~ADR~~ ADN, the consignee shall return ~~the container~~ [a container or a vehicle] to the carrier only after the infringement has been remedied.

**1.4.3 Obligations of the other participants**

A non-exhaustive list of the other participants and their respective obligations is given below. The obligations of the other participants flow from section 1.4.1 above insofar as they know or should have known that their duties are performed as part of a transport operation subject to ~~ADR;~~ ADN;

**1.4.3.1** ***Loader***

In the context of 1.4.1, the loader has the following obligations in particular:

(a) he shall hand the dangerous goods over to the carrier only if they are authorized for carriage in accordance with ~~ADR~~ ADN;

(b) he shall, when handing over for carriage packed dangerous goods or uncleaned empty packagings, check whether the packaging is damaged. He shall not hand over a package the packaging of which is damaged, especially if it is not leakproof, and there are leakages or the possibility of leakages of the dangerous substance, until the damage has been repaired; this obligation also applies to empty uncleaned packagings;

(c) he shall, when loading dangerous goods in a ~~vehicle~~ vessel, a vehicle, or a large or small container, comply with the special requirements concerning loading and handling;

(d) he shall, after loading dangerous goods into a container comply with the requirements concerning danger markings conforming to Chapter 5.3;

(e) he shall, when loading packages, comply with the prohibitions on mixed loading taking into account dangerous goods already in the ~~vehicle~~ vessel or large container and requirements concerning the separation of foodstuffs, other articles of consumption or animal feedstuffs;

[(f) he shall ascertain that the marking requirements for the vessel have been complied with;]

(g) he shall furnish the masters with the additional protection material and equipment required in the instructions in writing.

1.4.3.1.2 The loader may, however, in the case of 1.4.3.1.1 (a), (d) and (e), rely on information and data made available to him by other participants.

**1.4.3.2** ***Packer***

In the context of 1.4.1, the packer shall comply with in particular:

(a) the requirements concerning packing conditions, or mixed packing conditions and,

(b) when he prepares packages for carriage, the requirements concerning marking and labelling of the packages.

**1.4.3.3** ***Filler***

In the context of 1.4.1, the filler has the following obligations in particular:

Obligations concerning the filling of tanks (tank-vehicles, battery-vehicles, demountable tanks, portable tanks, tank-containers and MEGCs)

(a) he shall ascertain prior to the filling of tanks that both they and their equipment are technically in a satisfactory condition;

(b) he shall ascertain that the date of the next test for tank-vehicles, battery-vehicles, demountable tanks, portable tanks, tank-containers and MEGCs has not expired;

(c) he shall only fill tanks with the dangerous goods authorized for carriage in those tanks;

(d) he shall, in filling the tank, comply with the requirements concerning dangerous goods in adjoining compartments;

(e) he shall, during the filling of the tank, observe the maximum permissible degree of filling or the maximum permissible mass of contents per litre of capacity for the substance being filled;

(f) he shall, after filling the tank, check the leakproofness of the closing devices;

(g) he shall ensure that no dangerous residue of the filling substance adheres to the outside of the tanks filled by him;

(h) he shall, in preparing the dangerous goods for carriage, ensure that the orange plates and placards or labels prescribed are affixed ~~on the tanks, on the vehicles and on the large and small containers for carriage in bulk~~ in accordance with the requirements of chapter 5.3 concerning tanks.

Obligations concerning the bulk loading of dangerous solids in vehicles or containers:

(i) he shall ascertain, prior to loading, that the vehicles and containers, and if necessary their equipment, are technically in a satisfactory condition and that the carriage in bulk of the dangerous goods in question is authorized in these vehicles or containers;

(j) he shall ensure after loading that the orange plates and placards or labels prescribed are affixed in accordance with the requirements of Chapter 5.3 applicable to such vehicles or containers;

Obligations concerning the filling of cargo tanks

(k) [He shall ascertain, prior to filling, that the additional protection material and equipment required in the instructions in writing have been provided to the master];

(1) he shall complete his section of the check list referred to in 7.2.4.10 prior to the loading of the cargo tanks of a tank vessel;

(m) he shall only fill cargo tanks with the dangerous goods accepted in such tanks;

(n) he shall, when necessary, issue a heating instruction in the case of the carriage of substances whose melting point is 0°C or higher;

(o) he shall ascertain that during loading the trigger for the automatic device for the prevention of overfilling switches off the electric line established and supplied by the on-shore installation and that he can take steps against overfilling;

(p) he shall ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency;

(q) he shall ascertain that, when prescribed in 7.2.4.25.5. there is a flame-arrester in the gas discharge pipe or the compensation pipe to protect the vessel against detonations and flame-fronts from the landward side;

(r) he shall ascertain that the loading flows conform to the loading instructions referred to in 9.3.2.25.9 or 9.3.3.25.9 and that the pressure at the crossing-point of the gas discharge pipe or the compensation pipe is not greater than the opening pressure of the high velocity vent valve.

He shall ascertain, after loading, that the marking requirements for the vessel have been complied with.

[Obligations concerning the bulk loading of dangerous solids in vessels

(s) he shall ascertain, prior to loading, that the additional protection material and equipment required in the instructions in writing have been provided to the master];

(t) he shall only load the vessel with dangerous goods the bulk carriage of which is authorized in that vessel;

(u) he shall ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency;

(v) he shall ascertain, after loading, that that the marking requirements for the vessel have been complied with].

**1.4.3.4** ***Tank-container/portable tank operator***

In the context of 1.4.1, the tank-container/portable tank operator shall in particular:

(a) ensure compliance with the requirements for construction, equipment, tests and marking;

(b) ensure that the maintenance of shells and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the tank-container/portable tank satisfies the requirements of ADR, RID or the IMDG Code until the next inspection;

(c) have an exceptional check made when the safety of the shell or its equipment is liable to be impaired by a repair, an alteration or an accident.

**1.4.3.5** ***(Reserved)***

## CHAPTER 1.5

## SPECIAL RULES, DEROGATIONS

**1.5.1** ~~**Temporary derogations**~~ **Bilateral and multilateral agreements**

1.5.1.1 In accordance with Article 7, paragraph 1 of ADN, for the purpose of adapting the requirements of ~~ADR~~ the annexed Regulations to technological and industrial developments, the competent authorities of the Contracting Parties may agree directly among themselves to authorize certain transport operations in their territories by temporary derogation from the requirements of ~~ADR~~ ADN, provided that safety is not compromised thereby. The authority which has taken the initiative with respect to the temporary derogation shall notify such derogations to the Secretariat of the United Nations Economic Commission for Europe which shall bring them to the attention of the Contracting Parties.~~[1]~~

***NOTE:*** *"Special arrangement" in accordance with 1.7.4 is not considered to be a temporary derogation in accordance with this section.*

1.5.1.2 The period of validity of the temporary derogation shall not be more than five years from the date of its entry into force. The temporary derogation shall automatically cease as from the date of the entry into force of a relevant amendment to ~~ADR~~ these annexed Regulations

1.5.1.3 Transport operations on the basis of these agreements ~~temporary derogations~~ shall constitute transport operations in the sense of ~~ADR~~ ADN.

**1.5.2** ~~*(Reserved)*~~

~~[1] *Note by the Secretariat: The special agreements concluded under this Chapter may be consulted on the web site of the Secretariat of the United Nations Economic Commission for Europe (http://www.unece.org/trans/danger/danger.htm).*~~

~~**CHAPTER 4**~~

~~**SPECIAL AUTHORIZATIONS CONCERNING TRANSPORT IN TANK VESSELS**~~

**1.5.2.1** ~~**4.1** *Special authorizations*~~

1.5.2.1.1 ~~4.1.1~~ In accordance with paragraph 2 of Article 7, the competent authority shall have the right to issue special authorizations to a carrier or a consignor for the international carriage in tank vessels of dangerous substances, including mixtures, the carriage of which in tank vessels is not authorized under these Regulations, in accordance with the procedure set out below.

1.5.2.1.2 ~~4.1.2~~ The special authorization shall be valid, due account being taken of the restrictions specified therein, for the Contracting Parties and on whose territory the transport operation will take place, for not more than two years but unless it is repealed at an earlier date. With the approval of the competent authorities of these Contracting Parties, the special authorization may be renewed for a period of not more than one year.

1.5.2.1.3 ~~4.1.3~~ The special authorization shall include a statement concerning its repeal at an earlier date and shall conform to the model established by the Administrative Committee.

**1.5.2.2** ~~**4.2** *Procedure*~~

1.5.2.2.1 ~~4.2.1~~ The carrier or the consignor shall apply to the competent authority of a Contracting Party on whose territory the transport operation takes place for the issue of a special authorization.

The application shall include the particulars mentioned in these Regulations. The applicant shall be responsible for the accuracy of the particulars.

1.5.2.2.2 ~~4.2.2~~ The competent authority shall consider the application from the technical and safety point of view. If it has no reservations, it shall draw up a special authorization in accordance with the criteria established by the Administrative Committee and immediately inform the other competent authorities involved in the carriage in question. The special authorization shall be issued only when the authorities concerned agree to it or have not expressed opposition within a period of two months after receiving the information. The applicant shall receive the original of the special authorization and keep a copy of it on board the vessel(s) involved in the carriage in question. The competent authorities shall immediately communicate to the Administrative Committee the applications for special authorizations, the applications rejected and the special authorizations granted.

1.5.2.2.3 ~~4.2.3~~ If the special authorization is not issued because doubts or opposition have been expressed, the Administrative Committee shall decide whether or not to issue a special authorization.

**1.5.2.3** ~~**4.3**~~ ***Update of the list of substances authorized for carriage in tank vessels***

1.5.2.3.1 The Administrative Committee shall consider all the special authorizations and applications communicated to it and decide whether the substance is to be included in the list of substances in these Regulations, authorized for carriage in tank vessels.

1.5.2.3.2 If the Administrative Committee enters technical or safety reservations concerning the inclusion of the substance in the list of substances of these Regulations authorized for carriage in tank vessels or concerning certain conditions, the competent authority shall be so informed. The competent authority shall immediately withdraw or, if necessary, modify the special authorization.

~~**CHAPTER 3**~~

~~**PROCEDURE FOR EQUIVALENTS AND DEROGATIONS**~~

## 1.5.3 Equivalents and derogations (Article 7, paragraph 3 of ADN)

### 1.5.3.1 *Procedure for equivalents*

When the provisions of these Regulations prescribe for a vessel the use or the presence on board of certain materials, installations or equipment or the adoption of certain construction measures or certain fixtures, the competent authority may agree to the use or the presence on board of other materials, installations or equipment or the adoption of other construction measures or other fixtures for this vessel if, in line with recommendations established by the Administrative Committee, they are accepted as equivalent.

### 1.5.3.2 *Derogations on a trial basis*

The competent authority may, on the basis of a recommendation by the Administrative Committee, issue a trial certificate of approval for a limited period for a specific vessel having new technical characteristics departing from the requirements of these Regulations, provided that these characteristics are sufficiently safe.

### 1.5.3.3 *Particulars of equivalents and derogations*

The equivalents and derogations referred to in 1.5.3.1 and 1.5.3.2 shall be entered in the certificate of approval.

## CHAPTER 1.6

## TRANSITIONAL MEASURES

### 1.6.1 General

[1.6.1.1 Unless otherwise provided, the substances and articles of ~~ADR~~ ADN may be carried until 30 June 2003 ~~31 December 2002~~ in accordance with the requirements of ~~ADR~~ AND applicable up to ~~30 June 2001~~ 31 December 2002].

1.6.1.2 The danger labels which until 31 December 1998 conformed to the models prescribed up to that date may be used until stocks are exhausted.

1.6.1.3 Substances and articles of Class 1, belonging to the armed forces of a Contracting Party, that were packaged prior to 1 January 1990 in accordance with the requirements of ADR in effect at that time may be carried after 31 December 1989 provided the packagings maintain their integrity and are declared in the transport document as military goods packaged prior to 1 January 1990. The other requirements of ADR applicable as from 1 January 1990 for this class shall be complied with.

1.6.1.4 Substances and articles of Class 1 that were packaged between 1 January 1990 and 31 December 1996 in accordance with the requirements of ADR in effect at that time may be carried after 31 December 1996, provided the packagings maintain their integrity and are declared in the transport document as goods of Class 1 packaged between 1 January 1990 and 31 December 1996.

1.6.1.5 *(Reserved)*

### 1.6.2 Receptacles for Class 2

The transitional measures of section 1.6.2 of ADR [and RID] are also valid for transport operations subject to ADN.

### 1.6.3 Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles

The transitional measures of section 1.6.3 of ADR [and RID] are also valid for transport operations subject to ADN

### 1.6.4 Tank-containers, portable tanks and MEGCs

The transitional measures of section 1.6.4 of ADR and RID or of section 4.2.0 of the IMDG Code, depending on the case, are also valid for transport operations subject to ADN.

**1.6.5 Vehicles**

The transitional measures of section 1.6.5 of ADR are also valid for transport operations subject to ADN.

**1.6.6 Class 7**

The transitional measures of section 1.6.6 of ADR or RID or of section 6.4.24 of the IMDG Code are also valid for transport operations subject to ADN

**1.6.7 Transitional provisions concerning vessels**

**1.6.7.1 *General***

1.6.7.1.1 For the purposes of Article 8 of ADN, section 1.6.7 sets out general transitional provisions in 1.6.7.2 (see Article 8, paragraphs 1, 2 and 4) and specific transitional provisions in 1.6.7.3 (see Article 8, paragraph 3).

~~Annex D.1 - GENERAL TRANSITIONAL PROVISIONS~~

1.6.7.1.2 In this ~~Annex D1~~ section 1.6.7:

(a) Vessel in service" means a vessel according to Article 8, paragraph 2 of the Agreement;

(b) N.R.M." means that the requirement does not apply to vessels in service except where the parts concerned are replaced or modified, i.e. it applies only to vessels which are **n**ew, or to parts which are **r**eplaced or **m**odified; where existing parts are replaced by spare or replacement parts of the same type and manufacture, this shall not be considered a replacement "R" as defined in these transitional provisions.

Modification shall also be taken to mean the conversion of an existing type of tank vessel, a type of cargo tank or a cargo tank design to another type or design at a higher level.

(c) "Renewal of the certificate of approval after the …" means that the requirement shall be met at the next renewal of the certificate of approval following the date indicated. If the certificate of approval expires during the first year after the date of application of these Regulations, the requirement shall be mandatory only after the expiry of this first year.

***1.6.7.2 General transitional provisions***

*1.6.7.2.1 General transitional provisions for dry cargo vessels*

1.6.7.2.1.1 Vessels in service shall meet:

(a) the requirements of ~~marginals and, where necessary~~, paragraphs ~~and subparagraphs~~ mentioned in the table below within the period established therein;

(b) the requirements of ~~marginals and, where necessary~~, paragraphs ~~and subparagraphs~~ not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

| 1.6.7.2.1.1 Table of general transitional provisions: Dry cargo | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~110 212 (1)~~ 9.1.0.12.1 | Ventilation of holds | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Each hold shall have appropriate natural or artificial ventilation; for the carriage of substances of Class 4.3, each hold shall be equipped with forced-air ventilation; the appliances used for this purpose must be so constructed that water cannot enter the hold. |
| ~~110 212 (3)~~ 9.1.0.12.3 | Ventilation of service spaces | N.R.M. |
| ~~110 217 (2)~~ 9.1.0.17.2 | Gas-tight openings facing holds | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Openings of accommodation and the wheelhouse facing the holds must be capable of being tightly closed. |

| 1.6.7.2.1.1 Table of general transitional provisions: Dry cargo | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~110 217 (3)~~ 9.1.0.17.3 | Entrances and openings in the protected area | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Openings of accommodation and the wheelhouse facing holds shall be capable of being tightly closed. |
| ~~110 231 (2)~~ 9.1.0.31.2 | Air intakes of engines | N.R.M. |
| ~~110 232 (2)~~ 9.1.0.32.2 | Air pipes<br>50 cm above the deck | N.R.M. |
| ~~110 234 (1)~~ 9.1.0.34.1 | Exhaust pipes | N.R.M. |
| ~~110 235~~ 9.1.0.35 | Stripping pumps in the protected area | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>In the event of the carriage of substances of Class 4.1, 52°, of all substances of Class 4.3 in bulk or unpackaged and polymeric beads, expandable, of Class 9, 4° (c), the stripping of the holds may only be effected using a stripping installation located in the protected area. The stripping installation located above the engine room must be clamped. |
| ~~110 240 (1)~~ 9.1.0.40.1 | Fire extinguishers,<br>two pumps, etc. | N.R.M. |
| ~~110 240 (2)~~ 9.1.0.40.2 | Fire extinguishing systems permanently fixed in engine rooms | N.R.M. |

| 1.6.7.2.1.1 Table of general transitional provisions: Dry cargo | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~110 241~~ 9.1.0.41 in conjunction with ~~10 341~~ 7.1.3.41 | Fire and naked light | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The outlets of funnels shall be located not less than 2.00 m from the nearest point on hold hatchways. Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses.<br><br>However:<br><br>Heating appliances fuelled with liquid fuels having a flashpoint above 55° C shall be permitted in engine rooms;<br><br>Central-heating boilers fuelled with solid fuels shall be permitted in spaces situated below deck and accessible only from the deck. |
| ~~120 231 (2)~~ 9.2.0.31.2 | Air intakes of engines | N.R.M. |
| ~~120 234 (1)~~ 9.2.0.34.1 | Position of exhaust pipes | N.R.M. |
| ~~120 241~~ 9.2.0.41 in conjunction with ~~10 341~~ 7.1.3.4.1 | Fire and naked light | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Outlets of funnels shall be located not less than 2.00 m from the nearest point on hold hatchways.<br><br>Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses. |

| 1.6.7.2.1.1 Table of general transitional provisions: Dry cargo | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| | | However:<br><br>Heating appliances fuelled with liquid fuels having a flashpoint above 55° C shall be permitted in engine rooms;<br><br>Central-heating boilers fuelled by solid fuels shall be permitted in spaces situated below the deck and accessible only from the deck. |

1.6.7.2.1.2 Vessels carrying only the dangerous goods referred to below in bulk are only required to meet the requirements of ADN as from 1 January 2005:

Class 4.1 1350 SULPHUR:

3175 SOLIDS or mixtures of solids (such as preparations and wastes) CONTAINING FLAMMABLE LIQUID N.O.S., having a flash point up to 61° C;

Class 4.2 1364 COTTON WASTE, OILY, in bulk;

1365 COTTON, WET

1376 IRON OXIDE, SPENT or IRON SPONGE, SPENT obtained from coalgas purification;

1379 PAPER, UNSATURATED OIL TREATED, incompletely dried (including carbon paper);

2210 MANEB or MANEB PREPARATION with not less than 60% maneb;

1373 FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil;

3190 SELF-HEATING SOLID, INORGANIC, N.O.S., Packing Group III;

Class 9 2969 CASTOR BEANS

Vessels shall, however, meet the requirements of the following paragraphs of Part 7 below:

7.1.1.11 and 7.1.3.5.1.4

*1.6.7.2.2 General transitional provisions for tank vessels*

1.6.7.2.2.1 Vessels in service shall meet:

(a) the requirements of paragraphs mentioned in the table below within the period established therein;

(b) the requirements of paragraphs not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

1.6.7.2.3 *General transitional provisions for tank vessels*

1.6.7.2.3.1 Table of general transitional provisions for tank vessels

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~210 014~~ 1.2.1 | Limited explosion risk electrical apparatus | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Limited explosion risk electrical apparatus is:<br><br>– Electrical apparatus which, during normal operation, does not cause sparks or exhibit surface temperatures exceeding 200° C; or<br><br>– Electrical apparatus with a spray-water protected housing which, during normal operation, does not exhibit surface temperatures above 200° C. |
| ~~210 014~~ 1.2.1 | Hold space | Not applicable to Type N open vessels whose hold spaces contain auxiliary appliances and which are carrying only substances of Class 8, ~~1° (a), 1° (b) or 42° (b).~~ with remark 30 in column (20) of Table C of Chapter 3.2. |
| ~~210 014~~ 1.2.1 | Flame arrester<br>High velocity vent valve<br>~~Test~~ according to ~~European~~ standard EN 12 874 ~~(1998)~~ (1999) | N.R.M.<br><br>The following requirements are applicable on board vessels in service:<br><br>Flame arresters and high velocity vent valves shall be of a type approved by the competent authority for the use prescribed. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~210 206~~ 7.2.2.6 | Approved gas detection system | N.R.M. |
| ~~210 208 (2) and (3)~~ ~~7.2.2.19.3~~ 7.2.2.8 | Classification and list of substances of Type N open vessels with flame arresters and Type N open vessels | N.R.M. |
| ~~210 219 (3)~~ 7.2.2.19.3 | Vessels used for propulsion | N.R.M. |
| 8.1.2.3 (i) | Loading and unloading instructions | N.R.M. |
| ~~210 320~~ 7.2.3.20 | Use of cofferdams for ballasting | On board vessels in service, cofferdams may be filled with water during unloading to provide trim and to permit residue-free drainage if possible. |
| 7.2.2.8.1 | Classification of Type N open vessels | N.R.M. |
| ~~210 320 (1)~~ 7.2.3.20.1 | Ballast water<br><br>Prohibition against filling cofferdams with water | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Cofferdams may be filled with ballast water only when cargo tanks are empty. |
| ~~210 320 (1)~~ 7.2.3.20.1 | Proof of stabilization in the event of a leak connected with ballast water for Type G vessels | N.R.M. |
| ~~210 325 (1)(c)~~ 7.2.3.2.5.1 (c) | Connections prohibited between pipes for loading and unloading and pipes located outside the cargo area | N.R.M. for oil-separator vessels. |
| ~~210 331 (2)~~ 7.2.3.31.2 | Motor vehicles only outside the cargo area:<br>Type N open | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The vehicle shall not be started on board. |
| ~~210 342 (3)~~ 7.2.3.42.3 | Use of the cargo heating system | Not applicable to vessels in service of Type N open. |
| ~~210 351 (3)~~ 7.2.3.51.1 | Live sockets for Type G and Type N vessels | N.R.M. |
| 7.2.4.16.15 | Start of loading flow | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~210 422 (1)~~<br>7.2.4.22.1 | Opening of openings<br>Type N open | N.R.M.<br><br>On board vessels in service cargo tank hatches may be opened during loading for control and sampling. |
| ~~210 381 (1)(h)~~<br>8.1.2.3 (c) | Damage control plan:<br>Type G | N.R.M. |
| ~~210 381 (1)(i)~~<br>8.1.2.3 (c) | Documents concerning intact stability | N.R.M. |
| 8.1.2.3 (i) | Loading and unloading instructions | N.R.M. |
| 9.3.2.0.1 (c)<br>9.3.3.0.1 (c) | Protection of vapour pipes against corrosion | N.R.M. |
| ~~311 200 (3)(d)~~<br>9.1.3.0.3 (d)<br>~~321 200 (3)(d)~~<br>9.1.3.2.0.3 (d)<br>~~331 200 (3)(d)~~<br>9.3.3.0.3 (d) | Fire-resistant materials of accommodation and wheelhouse | N.R.M. |
| ~~331 208 (1)~~<br>~~in conjunction with 210 208~~<br>9.3.3.8.1<br>in conjunction with<br>7.2.2.8 | Continuation of class for Type N open vessels with flame arresters and Type N open vessels | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Except where otherwise provided, the type of construction, the strength, the subdivision, the equipment and the gear of the vessel shall conform or be equivalent to the construction requirements for classification in the highest class of a recognized classification society. |
| ~~311 210 (2)~~<br>~~321 210 (2)~~<br>~~331 210 (2)~~<br>9.3.1.10.2<br>9.3.2.10.2<br>9.3.3.10.2 | Door coamings, etc. | N.R.M.<br><br>The following requirements apply on board vessels in service, with the exception of Type N open vessels:<br><br>This requirement may be met by fitting vertical protection walls not less than 0.50 m in height;<br><br>On board vessels in service less than 50.00 m long, the height of 0.50 m may be reduced to 0.30 m in passageways leading to the deck. |
| ~~311 211 (1)(b)~~<br>9.3.1.11.1 (b) | Ratio of length to diameter of pressure cargo tanks | Not applicable to Type G vessels whose keels were laid before 1 January 1977. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~331 211 (1)(d)~~ 9.3.3.11.1 (d) | Limitation of length of cargo tanks | N.R.M. |
| ~~311 211 (2)(a)~~ 9.3.1.11.2 (a) | Arrangement of cargo tanks<br><br>Distance between cargo tanks and side walls<br><br>Height of saddles, spacers | N.R.M.<br><br>Not applicable to Type G vessels whose keels were laid before 1 January 1977.<br><br>N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Where tank volume is more than 200 $m^3$ or where the ratio of length to diameter is less than 7 but more than 5, the hull in the tank area shall be such that, in the event of a collision, the tanks remain intact as far as possible. This requirement shall be considered as having been met where, in the tank area, the vessel:<br><br>– is double-hulled with a distance of at least 80 cm between the side plating and the longitudinal bulkhead,<br>– or is designed as follows:<br><br>(a) Between the gangboard and the top of the floorplates there shall be side stringers at regular intervals of not more than 60 cm;<br><br>(b) The side stringers shall be supported by web frames spaced at intervals of not more than 2.00 m. The height of the web frames shall be not less than 10% of the depth and in any event not less than 30 cm. They shall be fitted with a face plate made of flat steel having a cross section of not less than 15 $cm^2$;<br><br>(c) The side stringers referred to in (a) shall have the same height as the web frames and be fitted with a face plate made of flat steel having a cross section of not less than 7.5 $cm^2$. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 211 (2)(b)~~<br>~~321 211 (2)(b)~~<br>~~331 211 (2)(a)~~<br>9.3.1.11.2 (b)<br>9.3.2.11.2 (b)<br>9.3.3.11.2 (a) | Cargo tank fastenings | N.R.M. |
| ~~311 211 (2)(c)~~<br>~~321 211 (2)(c)~~<br>~~331 211 (2)(b)~~<br>9.3.1.11.2 (c)<br>9.3.2.11.2 (c)<br>9.3.3.11.2 (b) | Capacity of suction well | N.R.M. |
| ~~9.3.1.11.2 (d)~~<br>~~9.3.2.11.2 (d)~~ | Side stringers between the hull and the cargo tanks | N.R.M. |
| ~~311 211 (3)(a)~~<br>9.3.1.11.3 (a) | End bulkheads of cargo area with "A-60" insulation. Distance of 0.50 m from cargo tanks in hold spaces | N.R.M. |
| ~~321 211 (3)(a)~~<br>~~331 211 (3)(a)~~<br>9.3.2.11.3 (a)<br>9.3.3.11.3 (a) | Width of cofferdams of 0.60 m<br><br>Hold spaces with cofferdams or "A-60" insulated bulkheads<br><br>Distance of 0.50 m from cargo tanks in hold spaces | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Type C: minimum width of cofferdams: 0.50 m;<br><br>Type N: minimum width of cofferdams: 0.50 m, on board vessels with a deadweight of up to 150 t: 0.40 m;<br><br>Type N open: cofferdams shall not be required with deadweight up to 150 t: The distance between cargo tanks and end bulkheads of hold spaces shall be at least 0.40 m. |
| ~~331 211 (4)~~<br>9.3.3.11.4 | Passages through the end bulkheads of hold spaces | Shall not apply to Type N open vessels whose keels were laid before 1 January 1977. |
| ~~331 211 (6)(a)~~<br>9.3.3.11.6 (a) | Form of cofferdam arranged as a pump room | Shall not apply to Type N vessels whose keels were laid before 1 January 1977. |
| ~~311 211 (7)~~<br>~~331 211 (7)~~<br>~~9.3.1.11.7~~<br>~~9.3.3.11.8~~ | Arrangement of service spaces located in the cargo area below decks | N.R.M. |
| 9.3.3.11.7 | Distances in relation to the outer wall | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 211 (8)~~<br>~~331 211 (8)~~<br>9.3.1.11.8<br>9.3.3.11.9 | Dimensions of openings for access to spaces within the cargo area | N.R.M. |
| ~~311 211 (8)~~<br>~~321 211 (10)~~<br>~~331 211 (8)~~<br>9.3.1.11.8<br>9.3.2.11.10<br>9.3.3.11.9 | Interval between reinforcing elements | N.R.M. |
| 9.3.2.12.1<br>9.3.3.12.1 | Ventilation opening inhold spaces | N.R.M. |
| ~~311 212 (2)~~<br>~~331 212 (1)~~<br>9.3.1.12.2<br>9.3.3.12.2 | Ventilation systems in double-hull spaces and double bottoms | N.R.M. |
| ~~311 212 (3)~~<br>~~321 212 (2)~~<br>~~331 212 (2)~~<br>9.3.1.12.3<br>9.3.2.12.3<br>9.3.3.12.3 | Height above the deck of the air intake for service spaces located below deck | N.R.M. |
| ~~311 212 (6)~~<br>~~321 212 (5)~~<br>~~331 212 (5)~~<br>9.3.1.12.6<br>9.3.2.12.6<br>9.3.3.12.6 | Distance of ventilation inlets from cargo area | N.R.M. |
| 9.3.1.12.6<br>9.3.2.12.6<br>9.3.3.12.6 | Permanently installed flame screens | N.R.M. |
| ~~331 212 (6)~~<br>9.3.3.12.7 | Approval of flame arresters | Shall not apply to Type N vessels whose keels were laid before 1 January 1977. |
| ~~311 213~~<br>~~331 213~~<br>9.3.1.13<br>9.3.3.13 | General stability | N.R.M. |
| ~~311 214~~<br>~~331 214~~<br>9.3.1.14<br>9.3.3.14 | Intact stability | N.R.M. |
| ~~311 215~~<br>9.3.3.1.15 | Stability after damage | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 216 (1)~~<br>~~331 216 (1)~~<br>9.3.1.16.1<br>9.3.3.16.1 | Distance of openings of engine rooms from the cargo area | N.R.M. |
| ~~331 216 (1)~~<br>9.3.3.1.16.1 | Internal combustion engines outside the cargo area for Type N open vessels | N.R.M. |
| ~~311 216 (2)~~<br>~~331 216 (2)~~<br>9.3.1.16.2<br>9.3.3.16.2 | Hinges of doors facing the cargo area<br><br>Engine rooms accessible from the deck for Type N open vessels | Shall not apply to vessels whose keels were laid before 1 January 1977 where alterations would obstruct other major openings.<br><br>N.R.M. |
| ~~311 217 (1)~~<br>~~331 217 (1)~~<br>9.3.1.17.1<br>9.3.3.17.1 | Accommodation and wheelhouse outside the cargo area<br><br>Type N open | Shall not apply to vessels whose keels were laid before 1 January 1977, provided that there is no connection between the wheelhouse and other enclosed spaces.<br><br>Shall not apply to vessels up to 50 m in length whose keels were laid before 1 January 1977 and whose wheelhouses are located in the cargo area even if it provides access to another enclosed space, provided that safety is ensured by appropriate service requirements of the competent authority.<br><br>N.R.M. |
| ~~311 217 (2)~~<br>~~321 217 (2)~~<br>~~331 217 (2)~~<br>9.3.1.17.2<br>9.3.2.17.2<br>9.3.3.17.2 | Arrangement of entrances and openings of forward superstructures<br><br>Entrances facing the cargo area<br><br>Entrances and openings on Type N open vessels | N.R.M.<br><br>Shall not apply to vessels up to 50.00 m in length whose keels were laid before 1 January 1977, provided that gas screens are installed.<br><br>N.R.M. |
| ~~331 217 (3)~~<br>9.3.1.17.3 | Entrances and openings must be capable of being closed<br><br>Type N open | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 217 (4)~~<br>~~331 217 (4)~~<br>9.3.1.17.4<br>9.3.3.17.4 | Distance of openings from the cargo area | N.R.M. |
| ~~331 217 (5) (b), (c)~~<br>2.3.3.17.5 (b), (c) | Approval of shaft passages and displaying of instructions<br><br>Type N open | N.R.M. |
| ~~311 217 (6)~~<br>~~331 217 (6)~~<br>9.3.1.17.6<br>9.3.3.17.6 | Pump-room below deck | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Pump-rooms below deck shall meet the requirements for service spaces:<br><br>for Type G vessels: ~~marg. 311 212 (3)~~ 9.3.1.12.3<br>for Type N vessels: ~~marg. 331 212 (2)~~ 9.3.3.12.3 |
| ~~321 220 (1)~~<br>~~331 220 (1)~~<br>9.3.2.20.1<br>9.3.3.20.1 | Access and ventilation openings 0.50 m above the deck | N.R.M. |
| ~~321 220 (2)~~<br>~~331 220 (2)~~<br>9.3.2.20.2<br>9.3.3.20.2 | Intake valve | N.R.M. |
| ~~331 220 (2)~~<br>9.3.3.20.2 | Filling of cofferdams with pump<br><br>Type N open | N.R.M. |
| ~~321 220 (2)~~<br>~~331 220 (2)~~<br>9.3.2.20.2<br>9.3.3.20.2 | Filling of cofferdams within 30 minutes | N.R.M. |
| ~~331 221 (1)(b)~~<br>9.3.3.21.1 (b) | Liquid level gauge<br><br>Type N open with flame arrester<br><br>Type N open | N.R.M. |
| ~~331 221 (1)(c)~~<br>9.3.3.21.1 (c) | Level alarm device | Not applicable to open Type N vessels in service permitted only to carry sulphur in the molten state, UN No. 2448. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~331 221 (1)(d)~~<br>~~321 221 (1)(d)~~<br>~~331 221 (1)(d)~~<br>9.3.1.21.1.(d)<br>9.3.2.21.1 (d)<br>9.3.3.21.1 (d) | Sensor for actuating the facility against overflowing | Applicable only to vessels to be loaded in a Contracting Party where the shore installation is equipped accordingly. |
| ~~321 221 (1) (e)~~<br>9.3.2.21.1 (e) | Alarm of the instrument for measuring the pressure in each cargo tank in the event of the carriage of substances for which deck spraying is required | Renewal of certificate of approval after 1 January 1999. |
| ~~321 221 (1)(e)~~<br>~~331 221 (1)(e)~~<br>9.3.2.21.1.(e)<br>9.3.3.21.1.(e) | Instrument for measuring pressure in the cargo tank | Renewal of the certificate of approval after 1 January 2001. Up to 31 December 2010 on board vessels in service which do not carry substances for which remarks 5, 6 or 7 are included in column (20) of Table C of Chapter 3.2, ~~of the list of substances in Appendix 4,~~ the instrument for measuring pressure in the cargo tank conforms to requirements when the vapour pipe is equipped with such an instrument at its front and rear extremities. |
| ~~321 221 (1)(f)~~<br>~~331 221 (1)(f)~~<br>9.3.2.21.1 (f)<br>9.3.3.21.1 (f) | Installation of the instrument for measuring the temperature | Renewal of certificate of approval after 1 January 1999. |
| ~~331 221 (1)(g)~~<br>9.3.3.21.1 (g) | Sampling opening Type N open | N.R.M. |
| ~~311 221 (4)~~<br>~~321 221 (4)~~<br>~~331 221 (4)~~<br>9.3.1.21.4<br>9.3.2.21.4<br>9.3.3.21.4 | Independent liquid-level alarm device | N.R.M. |
| ~~311 221 (5)~~<br>~~321 221 (5)~~<br>~~331 221 (5)~~<br>9.3.1.21.5<br>9.3.2.21.5<br>9.3.3.21.5 | Socket close to the shore connections and cut-out of vessel's pump | N.R.M. |
| ~~331 221 (5)(b)~~<br>9.3.3.21.5 (b) | Sensor according to ~~marginal~~ ~~331 221 (1)(d)~~ 9.3.3.21.1 (d) | Renewal of the certificate of approval after 1 January 1999. |
| ~~331 221 (5)(c)~~<br>~~9.3.3.21.5 (c)~~ | Connecting nozzle according to standard EN 12827 | [Renewal of the certificate of approval after] 31 December 2002 |
| ~~331 221 (5)(c)~~<br>~~9.3.3.21.5 (c)~~ | Device for rapid shutting off of supply | [Renewal of the certificate of approval after] 31 December 2003 |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 221 (7)~~<br>~~321 221 (7)~~<br>~~331 221 (7)~~<br>9.3.1.21.7<br>9.3.2.21.7<br>9.3.3.21.7 | Vacuum or over-pressure alarms in cargo tanks for the carriage of substances without remark 5 in column (20) ~~of the list of substances (Appendix 4)~~ of Table C of Chapter 3.2. | N.R.M. |
| ~~321 221 (7)~~<br>~~331 221 (7)~~<br>9.3.2.21.7<br>9.3.3.21.7 | Vacuum or over-pressure alarms in cargo tanks for the carriage of substances with remark 5 in column (20) ~~of the list of substances (Appendix 4)~~ of Table C of Chapter 3.2. | N.R.M.<br><br>Vessels furnished with a certificate of approval valid at 31 December 2000 shall meet these requirements no later than 31 December 2010. |
| ~~311 221 (7)~~<br>~~321 221 (7)~~<br>~~331 221 (7)~~<br>9.3.1.21.7<br>9.3.2.21.7<br>9.3.3.21.7 | Temperature alarms in cargo tanks | N.R.M. |
| ~~331 221 (12)~~<br>9.3.3.21.12 | Self-closing lid | N.R.M. |
| ~~331 222 (1)(b)~~<br>9.3.3.22.1 (b) | Cargo tank openings 0.50 m above the deck | Shall not apply to vessels whose keels were laid before 1 January 1977. |
| 9.3.1.22.4 | Prevention of spark-formation by closure devices | N.R.M. |
| ~~311 222 (3)~~<br>~~321 222 (4)(b)~~<br>~~331 222 (4)(b)~~<br>9.3.1.22.3<br>9.3.2.22.4 (b)<br>9.3.3.22.4 (b) | Position of outlets of valves above the deck | N.R.M. |
| ~~321 222 (4)(b)~~<br>~~331 222 (4)(b)~~<br>9.3.2.22.4 (b)<br>9.3.3.22.4 (b) | Pressure setting of high velocity vent valves | N.R.M. |
| ~~331 222 (5)(a)~~<br>~~(b)~~<br>~~(c)~~<br><br>~~(d)~~<br>~~9~~.3.2.22.5<br>9.3.3.22.5 | Flame arrester or<br>Valves or<br>Individual gas discharge pipe or<br>Shut-off devices | N.R.M.<br><br>Vessels furnished with a certificate of approval valid at 31 December 1998 shall meet these requirements no later than 31 December 2010 |
| ~~321 222 (5)(a)~~<br>9.3.2.22.5 (a) | Fire-fighting installation | 31 December 2010 |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~331 223 (2)~~<br>9.3.3.23.2 | Test pressure for cargo tanks | Shall not apply to vessels whose keels were laid before 1 January 1977, for which a test pressure of 15 kPa (0.15 bar) is required. A test pressure of 10 kPa (0.10 bar) shall be sufficient. |
| ~~331 223 (3)~~<br>9.3.3.23.3 | Test pressure for pipes for loading and unloading | On board oil-separator vessels in service before 1 January 1999 a test pressure of 400 kPa is sufficient. |
| ~~321 225 (1)~~<br>~~331 225 (1)~~<br>9.3.2.25.1<br>9.3.3.25.1 | Shut-down of cargo pumps | N.R.M. |
| ~~311 225 (1)~~<br>~~321 225 (1)~~<br>~~331 225 (1)~~<br>9.3.1.25.1<br>9.3.2.25.1<br>9.3.3.25.1 | Distance of pumps, etc. from accommodation, etc. | N.R.M. |
| ~~331 225 (2)(a)~~<br>9.3.3.25.2 (a) | Pipes for loading and unloading located in the below-deck area | N.R.M. for oil-separator vessels. |
| ~~311 225 (2)(d)~~<br>~~321 225 (2)(d)~~<br>9.3.1.25.2 (d)<br>9.3.2.25.2 (d) | Position of loading and unloading pipes on deck | N.R.M. |
| ~~311 225 (2)(e)~~<br>~~321 225 (2)(e)~~<br>~~331 225 (2)(e)~~<br>9.3.1.25.2 (e)<br>9.3.2.25.2 (e)<br>9.3.3.25.2 (e) | Distance of shore connections from accommodation, etc. | N.R.M. |
| ~~311 225 (2)(i)~~<br>~~311 225 (2)(j)~~<br>~~311 225 (2)(k)~~<br>9.3.1.25.2 (i)<br>9.3.2.25.2.(j)<br>9.3.3.25.2 (k) | Position of cargo piping | N.R.M. |
| ~~331 225 (8)(a)~~<br>9.3.2.25.8 (a) | Ballasting suction pipes located within the cargo area but outside the cargo tanks | N.R.M. |
| 9.3.2.25.9<br>9.3.3.25.9 | Loading and unloading flow | N.R.M.<br>As from 1 January 2003, the loading flows mentioned in the certificate of approval shall be checked if necessary when the certificate of approval is renewed. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| 9.3.3.25.13 | 9.3.3.25.1 (a) and (c), 9.3.3.25.2 (e), 9.3.3.25.3 and 9.3.3.25.4 (a) are not applicable with the exception of Type N open carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8) | N.R.M.<br>This time limit concerns only Type N open vessels carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8). |
| ~~311 227 (2)~~<br>9.3.1.27.2 | Refrigeration system<br>List of 12° instead of 10° | N.R.M. |
| 9.3.2.28 | Water-spray installation required in Table C of Chapter 3.2 | This transitional requirement is valid only for substances accepted for carriage in tank vessels before 1 January 1995. |
| ~~311 231 (2)~~<br>~~321 231 (2)~~<br>~~331 231 (2)~~<br>9.3.1.31.2<br>9.3.2.31.2<br>9.3.3.31.2 | Distance of engine air intakes from the cargo area | N.R.M. |
| ~~311 231 (4)~~<br>~~321 231 (4)~~<br>~~331 231 (4)~~<br>9.3.1.31.4<br>9.3.2.31.4<br>9.3.3.31.4 | Temperature of outer parts of engines, etc. | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The temperature of outer parts shall not exceed 300° C. |
| ~~311 231 (5)~~<br>~~321 231 (5)~~<br>~~331 231 (5)~~<br>9.3.1.31.5<br>9.3.2.31.5<br>9.3.3.31.5 | Temperature in the engine room | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The temperature in the engine room shall not exceed 45 °C. |
| ~~311 232 (2)~~<br>~~321 232 (2)~~<br>~~331 232 (2)~~<br>9.3.1.32.2<br>9.3.2.32.2<br>9.3.3.32.2 | Openings of air pipes<br>~~Ventilation pipes~~ 0.50 m above the deck | N.R.M. |
| ~~331 234 (1)~~<br>9.3.3.34.1 | Exhaust pipes | N.R.M. |
| ~~311 235 (1)~~<br>~~331 235 (1)~~<br>9.3.1.35.1<br>9.3.3.35.1 | Stripping and ballast pumps in the cargo area | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~331 235 (3)~~ 9.3.3.35.3 | Suction pipes for ballasting located within the cargo area but outside the cargo tanks | N.R.M. |
| ~~9.3.1.35.4~~ | Stripping installation of the pump-room outside the pump-room | N.R.M. |
| ~~311 240 (1)~~ ~~321 240 (1)~~ ~~331 240 (1)~~ 9.3.1.40.1 9.3.2.40.1 9.3.3.40.1 | Fire extinguishing systems, two pumps, etc. | N.R.M. |
| ~~311 240 (2)~~ ~~321 240 (2)~~ ~~331 240 (2)~~ 9.3.1.40.2 9.3.2.40.2 9.3.3.40.2 | Fixed fire extinguishing system in engine room | N.R.M. |
| ~~311 241 (1)~~ ~~331 241 (1)~~ 9.3.1.41.1 9.3.3.41.1 | Outlets of funnels located not less than 2 m from the cargo area | Not applicable to vessels whose keels were laid before 1 January 1977. |
| ~~331 241 (1)~~ 9.3.3.41.1 | Outlets of funnels | N.R.M. for oil-separator vessels. |
| ~~311 241 (2)~~ ~~321 241 (2)~~ ~~331 241 (2)~~ 9.3.1.41.2 9.3.2.41.3 9.3.3.41.2 in conjunction with ~~210 341~~ 7.2.3.41 | Heating, cooking and refrigerating appliances | N.R.M. |
| ~~331 242 (2)~~ 9.3.3.42.2 | Cargo heating system: Type N open | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>This can be achieved by an oil separator fitted to the condensed water return pipe. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 251 (2)~~<br>~~321 251 (2)~~<br>~~331 251 (2)~~<br>9.3.1.51.2<br>9.3.2.51.2<br>9.3.3.51.2 | Visual and audible alarm | N.R.M. |
| ~~311 251 (3)~~<br>~~321 251 (3)~~<br>~~331 251 (3)~~<br>9.3.1.51.3<br>9.3.2.51.3<br>9.3.3.51.3 | Temperature class and explosion group | N.R.M. |
| ~~331 252 (1)(b)~~<br>~~331 252 (1)(c)~~<br>~~331 252 (1)(d)~~<br>~~331 252 (1)(e)~~<br>9.3.3.52.1 (b), (c), (d) and (e) | Electrical installations: Type N open | N.R.M. |
| ~~311 252 (1)(e)~~<br>~~331 252 (1)(e)~~<br>9.3.1.52.1 (e)<br>9.3.3.52.1 (e) | Electrical installations of the "certified safe" type in the cargo area | Shall not apply to vessels whose keels were laid before 1 January 1977. The following conditions shall be met during loading, unloading and gas-freeing on board vessels having non-gastight wheelhouse openings (e.g. doors, windows, etc.) giving on to the cargo area:<br><br>(a) All electrical installations designed to be used shall be of a limited explosion-risk type, i.e. they shall be so designed that there is no sparking under normal operating conditions and the temperature of their outer surfaces does not rise above 200° C, or be of a type protected against water spray the temperature of whose outer surfaces does not exceed 200° C under normal operating conditions;<br><br>(b) Electrical installations which do not meet the requirements of (a) above shall be marked in red and it shall be possible to switch them off by means of a central switch. |
| ~~331 252 (2)~~<br>9.3.3.52.2 | Accumulators located outside the cargo area | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~311 252 (3)(a)~~<br>~~311 252 (3)(b)~~<br>~~331 252 (3)(a)~~<br>~~331 252 (3)(b)~~<br>9.3.1.52.3 (a)<br>9.3.3.52.3 (a)<br>9.3.1.52.3 (b)<br>9.3.3.52.3 (b) | Electrical installations used during loading, unloading or gas-freeing<br><br>Type N open | Shall not apply to the following installations on vessels whose keels were laid before 1 January 1977:<br><br>Lighting installations in accommodation, with the exception of switches near the entrances to accommodation;<br><br>Radio telephone installations in accommodation and wheelhouses and combustion engine control appliances.<br><br>All other electrical installations shall meet the following requirements:<br><br>(a) Generators, engines, etc.<br>P13 protection mode<br><br>(b) Control panels, lamps, etc.<br>IP23 protection mode<br><br>(c) Appliances, etc.<br>IP55 protection mode.<br><br>N.R.M. |
| ~~311 252 (3)(b)~~<br>~~321 252 (3)(b)~~<br>~~331 252 (3)(b)~~<br>9.3.1.52.3 (b)<br>9.3.2.52.3 (b)<br>9.3.3.52.3 (b)<br>in conjunction with ~~paragraph (3)(a)~~<br>.3 (a) | Electrical installations used during loading, unloading and gas-freeing | N.R.M.<br><br>On board vessels in service, paragraph (3) (a) shall not apply to:<br><br>Lighting installations in accommodation, with the exception of switches near entrances to accommodation;<br><br>Radiotelephone installations in accommodation and wheelhouses. |
| ~~311 252 (4)~~<br>~~321 252 (4)~~<br>~~331 252 (4)~~<br>9.3.1.52.4<br>9.3.2.52.4<br>9.3.3.52.4<br>last sentence | Disconnection of such installations from a centralized location | N.R.M. |
| ~~331 252 (4)~~<br>9.3.3.52.4 | Red mark on electrical installations<br>Type N open | N.R.M. |

| 1.6.7.2.3.1 Table of general transitional provisions: Tank vessels | | |
|---|---|---|
| ~~Marginal~~ Paragraphs | Subject | Time limit and comments |
| ~~331 252 (5)~~ 9.3.3.52.5 | Cut-out switch for continuously driven generator: Type N open | N.R.M. |
| ~~331 252 (6)~~ 9.3.3.52.6 | Permanently fitted sockets: Type N open | N.R.M. |
| ~~311 256 (1)~~ ~~331 256 (1)~~ 9.3.1.56.1 9.3.3.56.1 | Metallic sheaths for all cables | Shall not apply to vessels whose keels were laid before 1 January 1977. |
| ~~331 256 (1)~~ 9.3.3.56.1 | Metallic sheath | N.R.M. for oil-separator vessels. |
| ~~311 256 (3)~~ ~~321 256 (3)~~ ~~331 256 (3)~~ 9.3.1.56.3 9.3.2.56.3 9.3.3.56.3 | Movable cables in the cargo area | N.R.M. |

1.6.7.2.3.2 Transitional provisions concerning the application of the requirements of Table C of Chapter 3.2 to the carriage of goods in tank vessels.

1.6.7.2.3.2.1 The goods for which Type N closed with a minimum valve setting of 10 kPa (0.10 bar) is required in ~~the list of substances (Annex B.2, Appendix 4)~~ Table C of Chapter 3.2, may be carried in tank-vessels in service of Type N closed with a minimum valve setting of 6 kPa (0.06 bar) (cargo tank test pressure of 10 kPa (0.10 bar)).

1.6.7.2.3.2.1.1 (Remark 5)

On board tank vessels in service, the dismantling of the fixed plate stacks of flame arresters is permitted in the event of the carriage of substances for which remark 5 is included in column (20) of Table C of Chapter 3.2 ~~the list of substance (Annex B.2, Appendix 4)~~. This transitional provision is valid until 31 December 2010.

1.6.7.2.3.2.3 (Remarks 6 and 7)

On board tank vessels in service vapour pipes and pressure/vacuum valves do not need to be heated in the event of the carriage of substances for which remarks 6 or 7 are included in column (20) of Table C of Chapter 3.2 ~~the list of substances (Annex B.2, Appendix 4)~~. This transitional provision is valid until 30 December 2010.

On board vessels equipped with flame arresters with fixed plate stacks, the latter may be dismantled in the event of the carriage of the above-mentioned substances. This transitional provision is valid until 31 December 2010.

**1.6.7.3 Supplementary transitional provisions applicable to specific inland waterways**

1.6.7.3.1

~~2.~~ Vessels in service to which the transitional provisions of this ~~Annex~~ subsection are applied shall meet:

- the requirements of ~~marginals and, where necessary,~~ paragraphs and subparagraphs mentioned in the table below and in the table of general transitional provisions (see 1.6.7.2.1.1 and 1.6.7.2.3.1) within the period established therein;

- the requirements of ~~marginals and, where necessary,~~ paragraphs and subparagraphs not mentioned in the table below or in the table of general transitional provisions at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

Table of supplementary transitional provisions

| Paragraph | Subject | Time limit and comments |
|---|---|---|
| ~~110 211 (1) (b)~~<br>9.1.0.11.1 (b) | Holds, common bulkheads with oil fuel tanks | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Holds may share a common bulkhead with the oil fuel tanks, provided that the cargo or its packaging does not react chemically with the fuel. |
| ~~110 292~~<br>9.1.0.92 | Emergency exit | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Spaces the entrances or exits of which are partly or fully immersed in damaged condition shall be provided with an emergency exit not less than 0.075 m above the damage waterline. |

| Table of supplementary transitional provisions | | |
|---|---|---|
| Paragraph | Subject | Time limit and comments |
| ~~110 295 (1) (c)~~<br>9.1.10.95.1 (c) | Height of openings above damage waterline | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The lower edge of any non-watertight openings (e.g. doors, windows, access hatchways) shall, at the final stage of flooding, be not less than 0.075 m above the damage waterline. |
| ~~110 295 (2)~~<br>~~321 215 (2)~~<br>9.1.10.95.2<br>9.3.2.15.2 | Extent of the stability diagram (damaged condition) | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>At the final stage of flooding the angle of heel shall not exceed:<br><br>20° before measures to right the vessel;<br><br>12° following measures to right the vessel. |
| ~~210 208 (1)~~<br>7.2.2.8.1 | Classification of Type N open vessels | N.R.M. |
| ~~311 211 (1) (a)~~<br>~~321 211 (1) (a)~~<br>~~331 211 (1) (a)~~<br>9.3.1.11.1 (a)<br>9.3.2.11.1 (a)<br>9.3.3.11.1 (a) | Maximum capacity of cargo tanks. | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The maximum permissible capacity of a cargo tank shall be 760 $m^3$. |
| ~~311 212 (3)~~<br>~~321 212 (2)~~<br>~~331 212 (2)~~<br>9.3.1.12.3<br>9.3.2.12.2<br>9.3.3.12.2 | Position of air inlets | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The air inlets to be positioned at least 5.00 m from the safety-valve outlets |
| ~~321 211 (1) (d)~~<br>9.3.2.11.1 (d) | Length of cargo tanks | N.R.M.<br><br>The following requirements apply on board vessels in service:<br>The length of a cargo tank may exceed 10 m and 0.2 L. |

| Table of supplementary transitional provisions | | |
|---|---|---|
| Paragraph | Subject | Time limit and comments |
| ~~331 208 (1)~~<br>9.3.3.8.1 | Classification of Type N open vessels | N.R.M. |
| ~~321 215 (1) (c)~~<br>9.3.2.15.1 (c) | Height of openings above damage waterline | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>The lower edge of any non-watertight openings (e.g. doors, windows, access hatchways) shall, at the final stage of flooding, be not less than 0.075 m above the damage waterline. |
| ~~321 220 (2)~~<br>~~331 220 (2)~~<br>9.3.2.20.2<br>9.3.3.20.2 | Filling of cofferdams with water | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Cofferdams shall be fitted with a system for filling with water or inert gas. |
| ~~311 292~~<br>~~321 292~~<br>9.3.1.92<br>9.3.2.92 | Emergency Exit | N.R.M.<br><br>The following requirements apply on board vessels in service:<br><br>Spaces the entrances or exits of which are partly or fully immersed in damaged condition shall be provided with an emergency exit not less than 0.075 m above the damage waterline. |

# CHAPTER 1.7

# GENERAL REQUIREMENTS CONCERNING CLASS 7

## 1.7.1 General

1.7.1.1 ~~ADR~~ ADN establishes standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to persons, property and the environment that are associated with the carriage of radioactive material. These standards are based on the IAEA Regulations for the Safe Transport of Radioactive Material (ST-1), IAEA, Vienna (1996). Explanatory material on ST-1 can be found in "Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (1996 Edition)", Safety Standard Series No. ST-2, IAEA, Vienna (to be published).

1.7.1.2 The objective of ~~ADR~~ ADN is to protect persons, property and the environment from the effects of radiation during the carriage of radioactive material. This protection is achieved by requiring:

(a) Containment of the radioactive contents;

(b) Control of external radiation levels;

(c) Prevention of criticality; and

(d) Prevention of damage caused by heat.

These requirements are satisfied firstly by applying a graded approach to contents limits for packages and vehicles and to performance standards applied to package designs depending upon the hazard of the radioactive contents. Secondly, they are satisfied by imposing requirements on the design and operation of packages and on the maintenance of packagings, including a consideration of the nature of the radioactive contents. Finally, they are satisfied by requiring administrative controls including, where appropriate, approval by competent authorities.

1.7.1.3 ~~ADR~~ ADN applies to the carriage of radioactive material by ~~road~~ inland waterways including carriage which is incidental to the use of the radioactive material. Carriage comprises all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A graded approach is applied to the performance standards in ~~ADR~~ ADN that is characterized by three general severity levels:

(a) Routine conditions of carriage (incident free);

(b) Normal conditions of carriage (minor mishaps);

(c) Accident conditions of carriage.

**1.7.2 Radiation protection programme**

1.7.2.1 The carriage of radioactive material shall be subject to a Radiation protection programme which shall consist of systematic arrangements aimed at providing adequate consideration of radiation protection measures.

1.7.2.2 The nature and extent of the measures to be employed in the programme shall be related to the magnitude and likelihood of radiation exposures. The programme shall incorporate the requirements in 1.7.2.3, and 1.7.2.4, CV33 (1.1) and (1.4) of 7.5.11 of ADR and applicable emergency response procedures. Programme documents shall be available, on request, for inspection by the relevant competent authority.

1.7.2.3 Protection and safety shall be optimized in order that the magnitude of individual doses, the number of persons exposed, and the likelihood of incurring exposure shall be kept as low as reasonably achievable, economic and social factors being taken into account, and doses to persons shall be below the relevant dose limits. A structured and systematic approach shall be adopted and shall include consideration of the interfaces between carriage and other activities.

1.7.2.4 For occupational exposures arising from transport activities, where it is assessed that the effective dose:

(a) is most unlikely to exceed 1 mSv in a year, no special work patterns, detailed monitoring, dose assessment programmes or individual record keeping shall be required;

(b) is likely to be between 1 mSv and 6 mSv in a year, a dose assessment programme via work place monitoring or individual monitoring shall be conducted;

(c) is likely to exceed 6 mSv in a year, individual monitoring shall be conducted.

When individual monitoring or work place monitoring is conducted, appropriate records shall be kept.

**1.7.3 Quality assurance**

Quality assurance programmes based on international, national or other standards acceptable to the competent authority shall be established and implemented for the design, manufacture, testing, documentation, use, maintenance and inspection of all special form radioactive material, low dispersible radioactive material and

packages and for carriage and in-transit storage operations to ensure compliance with the relevant provisions of ~~ADR~~ ADN. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared to provide facilities for competent authority inspection during manufacture and use and to demonstrate to any cognizant competent authority that:

(a) the manufacturing methods and materials used are in accordance with the approved design specifications; and

(b) all packagings are periodically inspected and, as necessary, repaired and maintained in good condition so that they continue to comply with all relevant requirements and specifications, even after repeated use.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the quality assurance programme.

**1.7.4 Special arrangement**

1.7.4.1 Special arrangement shall mean those provisions, approved by the competent authority, under which consignments which do not satisfy all the requirements of ~~ADR~~ ADN applicable to radioactive material may be transported.

***NOTE*:** *Special arrangement is not considered to be a temporary derogation in accordance with 1.5.1.*

1.7.4.2 Consignments for which conformity with any provision applicable to Class 7 is impracticable shall not be transported except under special arrangement. Provided the competent authority is satisfied that conformity with the Class 7 provisions of ~~ADR~~ ADN is impracticable and that the requisite standards of safety established by ~~ADR~~ ADN have been demonstrated through alternative means the competent authority may approve special arrangement transport operations for single or a planned series of multiple consignments. The overall level of safety in carriage shall be at least equivalent to that which would be provided if all the applicable requirements had been met. For international consignments of this type, multilateral approval shall be required.

**1.7.5 Radioactive material possessing other dangerous properties**

In addition to the radioactive and fissile properties, any subsidiary risk of the contents of the package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the documentation, packing, labelling, marking, placarding, stowage, segregation and carriage, in order to be in compliance with all relevant provisions for dangerous goods of ~~ADR~~ ADN.

## CHAPTER 1.8

## CHECKS AND OTHER SUPPORT MEASURES TO ENSURE COMPLIANCE WITH SAFETY REQUIREMENTS

~~**CHAPTER 5**~~

~~**MONITORING THE CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS**~~

### 1.8.1 Monitoring compliance with requirements

#### 1.8.1.1 *General*

1.8.1.1.1 In accordance with Article 4, paragraph 3 of ADN, Contracting Parties shall ensure that a representative proportion of consignments of dangerous goods carried by inland waterways is subject to monitoring in accordance with the provisions of this Chapter.

1.8.1.1.2 [Participants] in the carriage of dangerous goods [(see Chapter 1.4)] [shall], [without delay,] [in the context of their respective obligations,] provide the competent authorities and their agents with the necessary [information] [facilities] [for carrying out the checks] [for enabling them to perform their task and ensure compliance with the requirements of these Regulations].

#### 1.8.1.1 ~~5.2~~ *Monitoring procedure*

1.8.1.1.1 ~~5.2.1~~ In order to carry out the checks provided for in Article 4, paragraph 3 of ADN ~~this Agreement~~, the Contracting Parties shall use the checklist [to be] developed by the Administrative Committee. A copy of this checklist or a certificate showing the result of the check drawn up by the competent authority which carried it out shall be given to the master of the vessel and presented on request in order to simplify or avoid, where possible, subsequent checks. This paragraph shall not prejudice Contracting Parties' right to carry out specific measures for detailed checks.

1.8.1.1.2 ~~5.2.2~~ The checks shall be random and shall as far as possible cover an extensive portion of the inland waterway network.

1.8.1.1.3 ~~5.2.3~~ When exercising the right to monitor, the authorities shall make all possible efforts to avoid unduly detaining or delaying a vessel.

#### 1.8.1.2 *Infringements of the requirements*

Without prejudice to other penalties which may be imposed, vessels in respect of which one or more infringements of the rules on the transport of dangerous goods by inland waterways are established may be detained at a place designated for this

purpose by the authorities carrying out the check and required to be brought into conformity before continuing their journey or may be subject to other appropriate measures, depending on the circumstances or the requirements of safety.

**1.8.1.3** ~~**5.4**~~ ***Checks in companies and at places of loading and unloading***

1.8.1.3.1 ~~5.4.1~~ Checks may be carried out at the premises of undertakings, as a preventive measure or where infringements which jeopardize safety in the transport of dangerous goods have been recorded during the voyage.

1.8.1.3.2 ~~5.4.2~~ The purpose of such checks shall be to ensure that safety conditions for the transport of dangerous goods by inland waterways comply with the relevant laws.

**1.8.1.3.3** ***Sampling***

Where appropriate and provided that this does not constitute a safety hazard, samples of the goods transported may be taken for examination by laboratories recognized by the competent authority.

**1.8.1.3.4** ~~**5.6**~~ ***Cooperation of the competent authorities***

1.8.1.3.4.1 ~~5.6.1~~ Contracting Parties shall assist one another in order to give proper effect to these requirements.

1.8.1.3.4.2 ~~5.6.2~~ Serious or repeated infringements jeopardizing the safety of the transport of dangerous goods committed by a foreign vessel or undertaking shall be reported to the competent authority in the Contracting Party where the certificate of approval of the vessel was issued or where the undertaking is established.

1.8.1.3.4.3 ~~5.6.3~~ The competent authority of the Contracting Party where serious or repeated infringements have been recorded may ask the competent authority of the Contracting Party where the certificate of approval of the vessel was issued or where the undertaking is established for appropriate measures to be taken with regard to the offender or offenders.

1.8.1.3.4.4 ~~5.6.4~~ The latter competent authority shall notify the competent authorities of the Contracting Party where the infringements were recorded of any measures taken with regard to the offender or offenders.

**1.8.2** ~~**5.7**~~ ***Administrative assistance during the checking of a foreign vessel***

If the findings of a check on a foreign vessel give grounds for believing that serious or repeated infringements have been committed which cannot be detected in the course of that check in the absence of the necessary data, the competent authorities of the Contracting Parties concerned shall assist one another in order to clarify the situation.

**1.8.3 Safety adviser**

~~***NOTE:** The provisions of Section 1.8.3 are only applicable if the competent authorities of the country or countries to which the various participants in a transport chain are accountable have taken the necessary administrative measures to allow their implementation. These measures shall have been taken to allow the application of Section 1.8.3 at latest by 1 January 2003.*~~

1.8.3.1 Each undertaking, the activities of which include the carriage, or the related packing, loading, filling or unloading, of dangerous goods by ~~road~~ inland waterways shall appoint one or more safety advisers, hereinafter referred to as "advisers", for the carriage of dangerous goods, responsible for helping to prevent the risks inherent in such activities with regard to persons, property and the environment.

1.8.3.2 The competent authorities of the Contracting Parties may provide that these requirements shall not apply to undertakings:

(a) the activities of which concern quantities in each transport unit smaller than those referred to in 1.1.3.6, 2.2.7.1.2 and in Chapters 3.3 and 3.4, [or in the cases for which 1.1.3.1 of ADR provides]; or

(b) the main or secondary activities of which are not the carriage or the related loading or unloading of dangerous goods but which occasionally engage in the national carriage or the related loading or unloading of dangerous goods posing little danger or risk of pollution.

[These requirements moreover do not apply in the cases for which 1.1.3.1 of ADR provides].

1.8.3.3 The main task of the adviser shall be, under the responsibility of the head of the undertaking, to seek by all appropriate means and by all appropriate action, within the limits of the relevant activities of that undertaking, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way.

With regard to the undertaking's activities, the adviser has the following duties in particular:

- monitoring compliance with the requirements governing the carriage of dangerous goods;

- advising his undertaking on the carriage of dangerous goods;

- preparing an annual report to the management of his undertaking or a local public authority, as appropriate, on the undertaking's activities in the carriage of dangerous goods. Such annual reports shall be preserved for five years and made available to the national authorities at their request.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the undertaking:

- the procedures for compliance with the requirements governing the identification of dangerous goods being transported;

- the undertaking's practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;

- the procedures for checking the equipment used in connection with the carriage, loading or unloading of dangerous goods;

- the proper training of the undertaking's employees and the maintenance of records of such training;

- the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the carriage, loading or unloading of dangerous goods;

- investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the carriage, loading or unloading of dangerous goods;

- the implementation of appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;

- the account taken of the legal prescriptions and special requirements associated with the carriage of dangerous goods in the choice and use of sub-contractors or third parties;

- verification that employees involved in the carriage, loading or unloading of dangerous goods have detailed operational procedures and instructions,

- the introduction of measures to increase awareness of the risks inherent in the carriage, loading and unloading of dangerous goods;

- the implementation of verification procedures to ensure the presence on board, means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;

- the implementation of verification procedures to ensure compliance with the requirements governing loading and unloading.

1.8.3.4 The safety adviser may also be the head of the undertaking, a person with other duties in the undertaking, or a person not directly employed by that undertaking, provided that that person is capable of performing the duties of adviser.

1.8.3.5 Each undertaking concerned shall, on request, inform the competent authority or the body designated for that purpose by each Contracting Party of the identity of its adviser.

1.8.3.6 Whenever an accident affects persons, property or the environment or results in damage to property or the environment during carriage, loading or unloading carried out by the undertaking concerned, the safety adviser shall, after collecting all the relevant information, prepare an accident report to the management of the undertaking or to a local public authority, as appropriate. That report shall not replace any report by the management of the undertaking which might be required under any other international or national legislation.

1.8.3.7 A safety adviser shall hold a vocational training certificate, valid for transport by ~~road~~ inland waterways. That certificate shall be issued by the competent authority or the body designated for that purpose by each Contracting Party.

1.8.3.8 To obtain a certificate, a candidate shall undergo training and pass an examination approved by the competent authority of the Contracting Party.

1.8.3.9 The main aims of the training shall be to provide candidates with sufficient knowledge of the risks inherent in the carriage of dangerous goods, of the laws, regulations and administrative provisions applicable to the modes of transport concerned and of the duties listed in 1.8.3.3.

1.8.3.10 The examination shall be organized by the competent authority or by an examining body designated by the competent authority.

The examining body shall be designated in writing. This approval may be of limited duration and shall be based on the following criteria:

- competence of the examining body;

- specifications of the form of the examinations the examining body is proposing;

- measures intended to ensure that examinations are impartial;

- independence of the body from all natural or legal persons employing safety advisers.

1.8.3.11 The aim of the examination is to ascertain whether candidates possess the necessary level of knowledge to carry out the duties incumbent upon a safety adviser as listed in 1.8.3.3, for the purpose of obtaining the certificate prescribed in subsection 1.8.3.7, and it shall cover at least the following subjects:

(a) Knowledge of the types of consequences which may be caused by an accident involving dangerous goods and knowledge of the main causes of accidents;

(b) Requirements under national law, international conventions and agreements, with regard to the following in particular:

- classification of dangerous goods (procedure for classifying solutions and mixtures, structure of the list of substances, classes of dangerous goods and principles for their classification, nature of dangerous goods transported, physical, chemical and toxicological properties of dangerous goods);

- general packing provisions, provisions for tanks and tank-containers (types, code, marking, construction, initial and periodic inspection and testing);

- marking and labelling, placarding and orange plates marking (marking and labelling of packages, placing and removal of placards and orange plates);

- particulars in transport documents (information required);

- method of consignment and restrictions on dispatch (full load, carriage in bulk, carriage in intermediate bulk containers, carriage in containers, carriage in fixed or demountable tanks);

- transport of passengers;

- prohibitions and precautions relating to mixed loading;

- segregation of goods;

- limitation of the quantities carried and quantities exempted;

- handling and stowage (loading and unloading - filling ratios -, stowage and segregation);

- cleaning and/or degassing before loading and after unloading;

- crews, vocational training;

- vehicle documents (transport document, instructions in writing, vessel ~~vehicle~~ approval certificate, ~~driver~~ ADN dangerous goods training certificate, copies of any derogations, other documents);

- instructions in writing (implementation of the instructions and crew protection equipment);

- supervision requirements (parking);

- traffic regulations and restrictions;

- operational discharges or accidental leaks of pollutants;

- requirements relating to ~~transport~~ equipment for transport by vessel.

1.8.3.12 The examination shall consist of a written test which may be supplemented by an oral examination.

The written examination shall consist of two parts:

(a) Candidates shall receive a questionnaire. It shall include at least 20 open questions covering at least the subjects mentioned in the list in 1.8.3.11. However, multiple choice questions may be used. In this case, two multiple choice questions count as one open question. Amongst these subjects particular attention shall be paid to the following subjects:

- general preventive and safety measures;

- classification of dangerous goods;

- general packing provisions, including tanks, tank-containers, tank-vehicles, etc.;

- danger markings and labels;

- information in transport document;
- handling and stowage;
- crew, vocational training;
- vehicle documents and transport certificates;
- instructions in writing;
- requirements concerning ~~transport~~ equipment for transport by vessel;

(b) Candidates shall undertake a case study in keeping with the duties of the adviser referred to in 1.8.3.3, in order to demonstrate that they have the necessary qualifications to fulfil the task of adviser.

1.8.3.13 The Contracting Parties may decide that candidates who intend working for undertakings specializing in the carriage of certain types of dangerous goods need only be questioned on the substances relating to their activities. These types of goods are:

- Class 1;
- Class 2;
- Class 7;
- Classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 8 and 9;
- UN Nos. 1202, 1203 and 1223.

The certificate prescribed in 1.8.3.7 shall clearly indicate that it is only valid for one type of the dangerous goods referred to in this subsection and on which the adviser has been questioned under the conditions defined in 1.8.3.12.

1.8.3.14 The competent authority or the examining body shall keep a running list of the questions that have been included in the examination.

1.8.3.15 The certificate prescribed in 1.8.3.7 shall take the form laid down in 1.8.3.18 and shall be recognized by all Contracting Parties.

1.8.3.16 The certificate shall be valid for five years. The period of validity of a certificate shall be extended automatically for five years at a time where, during the final year before its expiry, its holder has followed refresher courses or passed an examination both of which shall be approved by the competent authority.

1.8.3.17 The requirements set out in 1.8.3.1 to 1.8.3.16 shall be considered to have been fulfilled if the relevant conditions of Council Directive 96/35/EC of 3 June 1996 on the appointment and vocational qualification of safety advisers for the transport of dangerous goods by road, rail and inland waterway[1] and of Directive 2000/18/EC of the European Parliament and of the Council of 17 April 2000 on minimum examination requirements for safety advisers for the transport of dangerous goods by road, rail or inland waterway[2] are applied.

**1.8.3.18** *Form of certificate*

**Certificate of training as safety adviser for the transport of dangerous goods**

Certificate No: .....

Distinguishing sign of the State issuing the certificate: .....

Surname: .....

Forename(s): .....

Date and place of birth: .....

Nationality: .....

Signature of holder: .....

Valid until ..... for undertakings which transport dangerous goods and for undertakings which carry out related loading or unloading:

by road by rail by inland waterway

Issued by: .....

Date: ..... Signature: .....

Extended until: ..... By: .....

Date: ..... Signature: .....

[1] *Official Journal of the European Communities, No. L145 of 19 June 1996, page 10.*

[2] *Official Journal of the European Communities, No. L118 of 19 May 2000, page 41.*

**1.8.4 List of competent authorities and bodies designated by them**

The Contracting Parties shall communicate to the Secretariat of the United Nations Economic Commission for Europe the addresses of the authorities and bodies designated by them which are competent in accordance with national law to implement ~~ADR~~, ADN, referring in each case to the relevant requirement of ~~ADR~~ ADN and giving the addresses to which the relevant applications should be made.

The secretariat of the United Nations Economic Commission for Europe shall establish a list on the basis of the information received and shall keep it up-to-date. It shall communicate this list and the amendments thereto to the Contracting Parties.[3]

**1.8.5 Notifications of occurrences involving dangerous goods**

1.8.5.1 If a serious accident or incident takes place during the carriage of dangerous goods on the territory of a Contracting Party, the carrier is required to make a report to the competent authority of the Contracting Party concerned.

1.8.5.2 The Contracting Party shall in turn, if necessary, make a report to the secretariat of the United Nations Economic Commission for Europe with a view to informing the other Contracting Parties.

[3] *A list of the competent authorities (up-to-date on 1 January 2001) can be found in the Appendix to Part 1.*

**[CHAPTER 1.9**

**TRANSPORT RESTRICTIONS BY THE COMPETENT AUTHORITIES**

1.9.1 In accordance with ~~Article 4~~ Article 6, paragraph 1 of ~~ADR~~ ADN, the entry of dangerous goods into the territory of Contracting Parties may be subject to regulations or prohibitions imposed for reasons other than safety during carriage. Such regulations or prohibitions shall be published in an appropriate form.

1.9.2 Subject to the provisions of 1.9.3, a Contracting Party may apply to vehicles engaged in the international carriage of dangerous goods by ~~road~~ inland waterways on its territory certain additional provisions not included in ~~ADR~~ ADN, provided that those provisions do not conflict with Article ~~2~~, 4, paragraph 2 of the Agreement, and are contained in its domestic legislation applying equally to ~~vehicles~~ vessels engaged in the domestic carriage of dangerous goods by ~~road~~ inland waterways on the territory of that Contracting Party.

1.9.3 Additional provisions falling within the scope of 1.9.2 are as follows:

(a) Additional safety requirements or restrictions concerning ~~vehicles~~ vessels using certain structures such as ~~bridges or~~ tunnels, ~~vehicles using combined transport modes such as ferries or trains~~, or ~~vehicles~~ vessels entering or leaving ports or other transport terminals;

(b) Requirements for ~~vehicles~~ vessels to follow prescribed routes to avoid commercial or residential areas, environmentally sensitive areas, industrial zones containing hazardous installations or ~~roads~~ inland waterways presenting severe physical hazards;

(c) Emergency requirements regarding routeing or parking of ~~vehicles~~ vessels carrying dangerous goods resulting from extreme weather conditions, earthquake, accident, industrial action, civil disorder or military hostilities;

(d) Restrictions on movement of vessels carrying dangerous goods ~~traffic~~ on certain days of the week or year.

1.9.4 The competent authority of the Contracting Party applying on its territory any additional provisions within the scope of 1.9.3 (a) and (d) above shall notify the secretariat of the United Nations Economic Commission for Europe of the additional provisions, which secretariat shall bring them to the attention of the Contracting Parties.]

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