

**Syllabus**  
**for**  
**Dangerous Goods**  
**Safety Adviser**  
**Examinations**

Version 9 (as at 12/12/2007)



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## **Introduction**



## **Introduction**

This document contains the syllabus for the subjects of the Dangerous Goods Safety Adviser (DGSA) examinations. To qualify as a DGSA, you must take and pass three subjects as follows:

Core - compulsory for all candidates

**and** *one mode paper*

*either Road or Rail or Inland Waterways*

**and** *one of the class papers*

All Classes

Class 1

Class 2

Class 3 (specifically UN 1202, 1203 and 1223)

Class 7

The examinations take place on the same day, the Core paper at 0930 – 1045, the Classes papers at 1115 - 1300, the mode papers of Road *or* Rail *or* Inland Waterways at 1400 - 1545.

You do not need to take all three subjects at the same sitting but can hold single subjects until you gain three passes. You must, however, pass all three papers within a 12 month period. The examinations are open-book, which means that you are allowed to take certain texts into the examination room. A list of permitted material is issued with this syllabus. CD-ROMs are not permitted in the examination.

You can obtain information about enrolling for examinations by contacting the Testing Services Section of SQA on 0845 213 5273.

## **Format of syllabus**

As you will see, the syllabus presents the examination subjects in a particular way. The topics which will be examined appear in groups. Each group has a percentage weighting figure which reflects the order of importance of those topics and the percentage of the examination which will be set on those topics. For example, 45% of each Core examination paper will be set on classification and identification while a further 45% will cover containment systems, marking, labelling and placarding and documentation requirements. The final 10% of the examination will be set on the third group of topics of compliance thresholds, environmental protection, training and the legal framework.

Each topic is presented as a general statement, followed by an expansion of the area on which you will be examined. Alongside each heading are indicative references to the parts of RID/ADR/ADN/GB Regulations that may form the basis of questions on that section. This is intended to let you know the level at which each topic is set and the depth of understanding which will be required to answer examination questions in that area.

For example, the topic “Documentation requirements” appears in the second group of the Core syllabus as Topic 5 and in the first group of the Road syllabus as Topic 3. Each of these groups carries 45% of the examination. In the Core syllabus, you are expected to understand the requirements of the various regulations whereas in the Road syllabus you are expected to have a comprehensive understanding of the documentation requirements of The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (CDG 2007) and ADR and be able to interpret these regulations and complete the documentation.

There are essentially three different levels of understanding which are being examined by the various subjects.

The first is knowledge and general understanding of the principal areas of a topic, for example in Topic 3 of Core you are expected to know the commonly available packing and tank provisions and have an understanding of the basic principles of approval and certification.

The second level is general understanding of a topic and the ability to apply that understanding. For example, in Topic 2 of All Classes, you are expected to have a general understanding of class specific features of packing and tank provisions and to be able to select a suitable packaging or tank from the appropriate regulations for a particular substance or article.

The third level is a comprehensive understanding of a topic and the ability to apply that knowledge. For example, in Topic 2 of Rail you are expected to have a comprehensive understanding of the marking, labelling and placarding requirements of the applicable regulations and the influence of other modal regulations.

Differences also exist between the various class subjects. All Classes covers a wider range than the specialist class papers which explore a more in-depth knowledge of a restricted area. The examinations are not more difficult in one area than another but they do have a different scope.

### **What you may be asked**

The examinations for rail and road will be primarily based on the provisions of the current RID or ADR plus The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (SI2007:1573).

The candidate should have a general understanding of the layout, structure and contents of the ADR. The candidate should have the ability to refer to ADR to define the legal requirements for compliance.

The candidate should have a general understanding of the requirements of the regulations as they apply to the loading, unloading and transport of dangerous goods.

The GB regulations require industry to follow RID or ADR unless specific variations (including transitional arrangements) are shown in the regulations. Questions may therefore be set on the GB regulations and in particular:

Regulation:

- 2 Interpretations – especially those not in RID/ADR Text e.g. EAC; Old Tanks
  - 9 Exceptions
  - 14 – 34 Derogations e.g. old tanks, Class1, load thresholds
  - 81 – 91 Requirements in addition to RID and ADR eg Class 1 Provisions, keeping of information and placards, marks etc for carriage in GB.
- Schedule 5 and 6 including Radiological Emergencies (Class 7 exam only)  
Schedule 7 Placards and marks for use in GB.

The current examination text of European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN) 2007 edition is the only permitted material for the Inland Waterway Paper.

There may be questions concerning the Emergency Action Codes, their use and interpretation. A complete list of Codes will only be available from the Stationery Office and **it is not intended that candidates will need this publication**. Instead the SQA will provide a document to be issued with Permitted Examination Material that will include all additional relevant information required by candidates which may be taken into the examination. Relevant exam papers will include a list of Emergency Action Codes to be used in candidates answers.

The Syllabus sections show in the title of each Group the parts of RID or ADR that may be examined. In all cases appropriate questions from the GB Regulations CDG2007, as amended (SI2007:1573) (CDG2007) may be asked.

### **Format of examinations**

You will be given an examination booklet which will contain the questions and provide space for your answers.

The Core paper will consist of ten compulsory questions of which four will come from group 1 topics, four from group 2 topics and two from group 3. The questions will require short responses. The pass mark will be 65% and the examination will last for 1 hour 15 minutes, from 0930 to 1045.

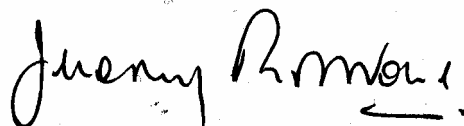
The Class papers will each comprise a mixture of structured and short response questions. There will be at least eight questions covering the syllabus topics in accordance with the stated weightings. The questions will be compulsory. The pass mark will be 65% and the examination will last for 1 hour 45 minutes, from 1115 to 1300.

The mode papers will contain two sections. Section A is a case-study, worth 70% of the final mark. You have to answer one case-study from a choice of not less than three which will cover the various classes. Section B will contain a range of compulsory questions which will make up 30% of the final mark. The pass mark will be 65%, derived from Sections A and B. The examination will last for 1 hour 45 minutes, from 1400 to 1545.

This syllabus has been approved by SQA and Dft.



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Scottish Qualifications Authority



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**Core**



## CORE

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1 Classification; Identification (RID/ADR Parts 1, 2 and 3) 45% of examination**

#### *Topic 1 Classification*

- 1.1 The broad principles of the UN classification system for dangerous goods
- The candidate should have a general understanding of the regulations governing classification.
  - The candidate should understand the general principles of the classification of dangerous goods.
  - The candidate should understand the responsibilities of the various parties.
- 1.2 A review of the basic hazards inherent for each of the classes
- 1.3 The concept and methods for indicating degrees of hazard
- The candidate should understand the relationship between the UN classification system and the concept of Packing Groups.
  - The candidate should be aware of the Table of Precedence and its role.

#### *Topic 2 Identification*

- 2.1 The international framework for the identification of dangerous goods
- The candidate should understand the international framework
- 2.2 The definition of UN numbers, proper shipping names, N.O.S. entries and preparations/solutions/mixtures within the various regulatory regimes.
- The candidate should understand how the various identification systems work and are applied.

### **Group 2 Packing and tank provisions; Marking, Labelling and Placarding; Documentation Requirements (RID/ADR Parts 1, 3.4, 4, 5 and 6) 45% of examination**

#### *Topic 3 Packing and tank provisions*

- 3.1 The nature of the commonly available packagings including tanks for use in the transport of dangerous goods by road, rail and inland waterways
- The candidate should know the commonly available packing and tank provisions such as packagings; IBCs; large packagings; tank containers; demountable tanks;

road and rail tanks; and carriage in bulk; batteries of receptacles; tubes; cylinder trailers (MEGC).

- The candidate should be able to distinguish between different tank types e.g. UN portable tanks, RID/ADR tank containers, UN MEGCs and RID/ADR MEGCs etc.

3.2 The basic principles of design approval, examination, testing and approval of packing and tank provisions

- The candidate should understand the importance of the correct design of packing and tank provisions.
- The candidate should understand the basic principles of approval.
- The candidate should understand the principles of routine examination and testing as applied to single and multi trip packing and tank provisions.

*Topic 4 Marking, Labelling and Placarding*

4.1 The basic principles of marking, labelling and placarding, as defined in CDG2007 ADR, RID and ADN

- The candidate should understand the principles behind the marking, labelling and placarding of packing and tank provisions.

*Topic 5 Documentation requirements*

5.1 The requirements for dangerous goods documentation (including EDI systems)

- The candidate should understand the requirements of the various regulations.

5.2 The specific documentation requirements for the journey to be undertaken including the interface with other modal regulations on documentary requirements.

**Group 3 Compliance Thresholds; Environmental Protection; Training; Legal Framework (RID/ADR Parts 1, 2 and 3)  
10% of examination**

*Topic 6 Compliance thresholds*

6.1 The available thresholds within the regulations covering the transport of dangerous goods by road, rail and inland waterways

- The candidate should recognise the existence of thresholds such as limited quantities, special agreements and consignor thresholds, and how they apply in varying circumstances.
- The candidate should understand how thresholds may simplify the impact of relevant regulations.

*Topic 7 Environmental protection*

7.1 Identification of possible sources of environmental pollution

The candidate should have a general understanding of the possible sources of environmental pollution during the loading, unloading and transport of dangerous goods.

7.2 Basic principles of accident prevention and safety auditing as applied to transport undertakings and the role of a DGSA

- The candidate should have a general understanding of the main causes of accidents.
- The candidate should have a general understanding of the consequences of accidents.
- The candidate should have a general understanding of the use of auditing as a safety monitoring and improvement activity.
- The candidate should understand the importance of properly documented systems and procedures.

*Topic 8 Training*

8.1 The statutory training requirements for persons involved in the transport of dangerous goods

- The candidate should have a general understanding of the statutory training requirements for those involved in the transport of dangerous goods.

8.2 The general training requirements for all involved in the transport of dangerous goods

- The candidate should understand the general need for adequate training for all those involved in the transport of dangerous goods.
- The candidate should understand the need to update and keep training records.
- The candidate should have a general understanding of the role of training in maintaining safe systems of work.

*Topic 9*

*Legal framework*

9.1

The regulations governing the appointment, duties, training and examination requirements of the Dangerous Goods Safety Adviser

- The candidate should understand the legal responsibilities and duties of the DGSA.
- The candidate should understand the relationship of the DGSA with the undertaking.
- The candidate should understand the system of examination, qualification and re-validation.
- The candidate should understand the recognition of the certificate throughout the EU.

9.2

The inter-relationship between the various national and international regulations covering the transport (including loading and unloading) of dangerous goods

- The candidate should understand the impact of these regulations on the operations of an undertaking and their relationship to the role of a DGSA.
- The candidate should have a general understanding of the inter-relationship of the sea and air regulations with the other modes.

9.3

The provisions concerning security

- The candidate should have a general understanding of the security provisions
- The candidate should be able to identify high consequence dangerous goods and the thresholds which apply

**Road**



## ROAD

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Transport Units, Marking and Placarding; Documentation (ADR Parts 5, 6, 7, 8 and 9) 40% of examination**

#### *Topic 1      Transport equipment*

Note: The term transport equipment refers to transport units as defined and all other transport equipment including: freight containers, fixed tanks, demountable tanks, tank containers, portable tanks and multiple element gas containers (MEGCs)

1.1            The selection of appropriate transport equipment for the carriage of dangerous goods in packages and tanks (including MEGCs) and bulk.

- The candidate should have a general understanding of the types of transport equipment and their use (purpose).
- The candidate should be able to distinguish between different tank types e.g. UN portable tanks, RID/ADR tank containers, UN MEGCs and RID/ADR MEGCs etc.
- The candidate should have a general understanding of the examination and approval schemes associated different types of transport equipment and the need for periodic inspection and approval/markings.

#### *Topic 2      Marking and placarding*

2.1            The marking and placarding of vehicles and transport units

- The candidate should have a comprehensive understanding of the marking and placarding requirements of the applicable regulations in particular as they apply to vehicles; tank containers; road tankers; demountable tanks and batteries of receptacles/tubes/cylinder trailers (MEGCs), UN portable tanks and freight containers.
- The candidate should understand the operational requirements associated with marking and placarding, in particular the duties of all parties involved.

#### *Topic 3      Documentation*

3.1            The applicable documentation requirements ADR

- The candidate should have a comprehensive understanding of the documentation requirements.
- The candidate should have the ability to interpret the regulations and complete the documentation.

**Group 2 Compliance Thresholds; Filling, Stowage, Loading and Segregation; Cleaning and/or Decontamination (ADR Parts 1, 4, 7 and 8)**  
**40% of examination**

*Topic 4 Compliance thresholds*

4.1 The thresholds available within the regulations with regard to: transport documentation; carrier duties; operational provisions, such as parking requirements; vehicle equipment

- The candidate should have a detailed understanding of the available thresholds within the regulations governing the transport of dangerous goods by road.

4.2 The provisions concerning security in relation to vehicle operations

- The candidate should have a general understanding of the security provisions
- The candidate should be able to identify high consequence dangerous goods and the thresholds which apply
- The candidate should be able to identify which transport operations are subject to the security provisions

*Topic 5 Filling, stowage, loading and segregation*

5.1 The specific requirements of the regulations with regard to safe loading and stowage, correct filling ratios and ullage

- The candidate should have a general understanding of the importance of correct filling and the implications of under/over filling.

5.2 The principles of load security (safety)

- The candidate should have a general understanding of the importance of safe loading, stowage and securing.
- The candidate should have a general understanding of the available guidance.

5.3 The specific requirements of the regulations with regard to the segregation of dangerous goods

- The candidate should understand the concepts of mixed loading on vehicles.
- The candidate should understand the segregation requirements specified in the regulations.

*Topic 6 Cleaning and/or decontamination*

6.1 The requirements for proper cleaning and decontamination procedures during the transport of dangerous goods.

**Group 3      Operational Procedures; Emergency Response Requirements; Environmental Protection; Training; Legal Framework (ADR Parts 1, 5, 7, 8 and 9)**  
**20% of examination**

*Topic 7      Operational procedures*

7.1      Key features of typical equipment and procedures governing common operations, such as safety equipment; loading; securing; operation of transfer equipment; unloading; cleaning and purging; route restrictions.

- The candidate should have a general understanding of the need for written procedures covering the principal operations associated with the transport of dangerous goods by road.

*Topic 8      Emergency response requirements*

8.1      The arrangements needed to deal with an emergency which arises during the carriage of dangerous goods by road

- The candidate should have a general understanding of the need for procedures to deal with emergencies which may arise during the carriage of dangerous goods.
- The candidate should have a general understanding of the roles of the emergency services and industry mutual aid schemes where applicable.

*Topic 9      Environmental protection*

9.1      The principal sources of environmental pollution during road transport operations

- The candidate should have a general understanding of those activities which take place during the loading, unloading and delivery process ( including emergencies) which could give rise to environmental pollution.
- The candidate should have a general understanding of the control measures which may be appropriate.

*Topic 10      Training*

10.1      The statutory training requirements for those involved in the transport of dangerous goods by road, such as driver training requirements; the vocational training certificate; additional training requirements for others involved in the operation; training records

- The candidate should understand the statutory training requirements for those involved in the transport of dangerous goods by road.
- The candidate should understand the importance of appropriate training for all those involved in transport operations.
- The candidate should have a general understanding of the need to keep records of all such training.



**Rail**



## RAIL

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Wagons And Containers; Marking and Placarding; Documentation (RID Parts 4, 5 and 6) 40% of examination**

#### *Topic 1      Transport equipment*

Note: The term transport equipment refers to transport units as defined and all other transport equipment including: freight containers, fixed tanks, demountable tanks, tank containers, portable tanks and multiple element gas containers (MEGCs)

1.1      The selection of appropriate transport equipment for the carriage of dangerous goods in packages and tanks (including MEGCs) and bulk.

- The candidate should have a general understanding of the types of transport equipment and their use (purpose).
- The candidate should understand the use of the relevant legislation/agreements in packing and tank provisions selection.
- The candidate should have a general understanding of the examination and approval schemes associated with different types of transport equipment and the need for periodic inspection and approval.

#### *Topic 2      Marking and placarding*

2.1      The marking and placarding of wagons and transport packing and tank provisions

- The candidate should have a comprehensive understanding of the marking and placarding requirements of the applicable regulations and the influence of other modal regulations.
- The candidate should understand the operational requirements associated with marking and placarding, in particular the duties of all parties involved.

#### *Topic 3      Documentation*

3.1      The applicable documentation requirements for RID

- The candidate should have a comprehensive understanding of the documentation requirements for the various regulations.
- The candidate should have the ability to interpret the regulations and complete the documentation.
- The candidate should understand the restrictions on the use of electronic data transmission

**Group 2 Compliance Thresholds; Filling, Stowage, Loading and Segregation; Cleaning and/or Decontamination (RID Parts 1 and 7)  
40% of examination**

*Topic 4 Compliance thresholds*

- 4.1 The thresholds available within the various rail transport regulations with regard to: transport documentation and transport carrier duties
- The candidate should have a detailed understanding of the available thresholds within the domestic and European regulations governing the transport of dangerous goods by rail.
- 4.2 The provisions concerning security in relation to vehicle operations
- The candidate should have a general understanding of the security provisions
  - The candidate should be able to identify high consequence dangerous goods and the thresholds which apply
  - The candidate should be able to identify which transport operations are subject to the security provisions

*Topic 5 Filling, stowage, loading and segregation*

- 5.1 The specific requirements of the regulations with regard to safe loading and stowage, correct filling ratios and ullage
- The candidate should have a general understanding of the importance of correct filling of transport packing and tank provisions and the implications of under/over filling.
- 5.2 The principles of load security
- The candidate should have a general understanding of the importance of wagon security and stabling arrangements.
- 5.3 The specific requirements of the regulations with regard to the segregation of dangerous goods
- The candidate should understand the concepts of mixed loading of rail wagons.
  - The candidate should understand the on-train segregation and prohibition requirements specified in the regulations.

*Topic 6 Cleaning and/or decontamination*

- 6.1 The requirements for proper cleaning and decontamination procedures during the transport of dangerous goods

**Group 3      Operational Procedures; Emergency Response Requirements; Environmental Protection; Training; Legal Framework (RID Parts 1, 2 and 3)**

**20% of examination**

*Topic 7      Operational procedures*

7.1      Key features of typical equipment and procedures governing common operations, such as loading and unloading and securing; cleaning and purging; safety equipment; operation of transfer equipment, shunting and marshalling

- The candidate should have a general understanding of the need for written procedures covering the principal operations associated with the transport of dangerous goods by rail.

*Topic 8      Emergency response requirements*

8.1      The arrangements needed to deal with an emergency which arises during the transport of dangerous goods by rail

- The candidate should have a general understanding of the need for procedures to deal with emergencies which may arise during the transport of dangerous goods by rail.
- The candidate should have a general understanding of the roles of the emergency services, specialist advice and industry mutual aid schemes where applicable.

*Topic 9      Environmental protection*

9.1      The principal sources of environmental pollution during rail transport operations

- The candidate should have a general understanding of those activities which take place during the loading, transport and unloading process (including emergencies) which could give rise to environmental pollution.
- The candidate should have a general understanding of the control measures which may be appropriate.

*Topic 10      Training*

10.1      The statutory training requirements for those involved in the transport of dangerous goods by rail such as additional training requirements for others involved in the operation and training records

- The candidate should understand the statutory training requirements for those involved in the transport of dangerous goods by rail.
- The candidate should understand the importance of appropriate training for all those involved in the loading, unloading and delivery operations.
- The candidate should have a general understanding of the need to keep records of all such training.



## **Inland Waterways**



## **Inland Waterways**

### **Group 1      Classification; Transport Packing and Tank provisions; Marking, labelling and placarding; Documentation (ADN Parts 4, 5 and 6) 40% of examination**

#### *Topic 1      Classification*

##### 1.1      The classification system used in ADN

- The candidate should understand the classification system used in ADN.
- The candidate should understand the relationship between the IMDG Code and the ADN.
- The candidate should understand that certain additional substances are regulated as dangerous goods of ADN Classes 2, 3, 4.1, 4.3, 5.1 and 9.
- The candidate should demonstrate an understanding of the conditions in which their requirements apply.

#### *Topic 2      Transport packing and tank provisions*

##### 2.1      The selection of the appropriate containment systems for the transport of dangerous goods and an overview of the containment systems permitted for carriage by inland waterway.

- The candidate should understand the packages and IBCs which are permitted for transport by inland waterway.
- The candidate should know that road vehicle containers, swap bodies and tank containers are acceptable forms of transport containment for carriage by inland waterway.
- The candidate should understand that the carriage of certain dangerous goods is permitted in inland waterway tank vessels.
- The candidate should understand the prohibition on the transport of dangerous goods in the cargo tanks of dry-cargo vessels.

##### 2.2      The requirements for the construction of inland waterway and sea-going vessels

- The candidate should have a general understanding of the examination and approval schemes associated with the various containment systems and the need for periodic inspection and approval.

*Topic 3*      *Marking, labelling and placarding*

3.1      The marking, labelling and placarding of inland waterway vessels and transport units

- The candidate should have a comprehensive understanding of the marking, labelling and placarding requirements of the applicable regulations and the influence of other modal regulations for packages, IBCs, vehicles, containers, road tankers and tank containers taken on board inland waterway vessels.
- The candidate should understand the additional requirements for the marking of inland waterway vessels with blue cones/lights.

*Topic 4*      *Documentation*

4.1      The applicable documentation requirements for ADN

- The candidate should understand the documents which must be kept on board an inland waterway vessel: vessel approval certificates; inland waterway transport documents; instructions in writing; stowage plan; training certificate of a dangerous goods expert on board, a book in which required measurements are recorded; additional requirements for double-hulled vessels; inspection documents of fire-fighting appliances, fire hoses and any special equipment to be carried.
- The candidate should have the ability to interpret the regulations and complete the documentation.
- The candidate should understand the exemption for the vessel approval certificate for pushed barges.

**Group 2**      **Compliance Thresholds; Filling, Stowage, Loading and Segregation; Cleaning and/or Decontamination (ADN Parts 1 and 7)**  
**40% of examination**

*Topic 5*      *Compliance thresholds*

5.1      The candidate should understand the exempted quantities of ADN.

5.2      The provisions concerning security in relation to vehicle operations.

- The candidate should have a general understanding of the security provisions
- The candidate should be able to identify high consequence dangerous goods and the thresholds which apply
- The candidate should be able to identify which transport operations are subject to the security provisions

*Topic 6*      *Stowage, loading and segregation*

6.1      The specific requirements of the regulations with regard to safe loading and stowage

- The candidate should have a general understanding of the need for Competent Authority approval for places of loading, unloading or cargo transfer operations.

- The candidate should have a general understanding of the Class specific loading, carriage and unloading requirements.
- The candidate should understand the prohibitions with regard to mixed loading in the holds of inland waterway vessels, containers and road vehicles.
- The candidate should understand the mixed loading rules for sea-going vessels.
- The candidate should have a general understanding of any Class specific mixed loading requirements.
- The candidate should understand the various safety procedures such as: ventilation requirements and lighting rules during loading and unloading; cleaning of holds and cargo decks prior to loading; separation rules with respect to engine rooms, wheelhouses, sources of heat and on-board accommodation; the precautions against sparking; the use of synthetic ropes; prohibitions on filling or emptying on board.

6.2 Correct stowage procedures

- The candidate should understand the need for a stowage plan.
- The candidate should know when on-deck stowage of dangerous goods is permitted.

*Topic 7 Cleaning and/or decontamination*

- The candidate should have a general understanding of the requirements for proper decontamination of dangerous goods packing and tank provisions and the precautions which must be taken with respect to inland waterway tank vessels.
- The candidate should know the liquids prohibited or restricted during cleaning operations.

**Group 3 Operational Procedures; Emergency Response Requirements; Environmental Protection; Training; Legal Framework (ADN Parts 1, 2 and 8)  
15% of examination**

*Topic 8 Operational procedures*

8.1 The requirements for the operation of inland waterway vessels

- The candidate should understand the requirements for instructions for the use of devices and installations on board inland waterway vessels.
- The candidate should understand the requirements to protect dangerous goods on board from the influences of weather and spray.
- The candidate should understand the prohibitions on unauthorised persons on board inland waterway vessels.

- The candidate should understand the requirements and prohibitions for the running of engines.
- The candidate should understand the provisions of ADN regarding fires; naked lights; use of portable lamps; smoking; heating and cooking on board inland waterway vessels.
- The candidate should understand the prohibitions regarding the heating of holds of inland waterway vessels.
- The candidate should understand the gross quantity limits applicable to the nine classes of dangerous goods on board inland waterway vessels.
- The candidate should understand the requirements for mooring and berthing inland waterway vessels.
- The candidate should understand the reporting duty of masters.
- The candidate should understand the rules for access to holds, double-hull spaces, double bottoms and the need for ventilations of holds.

*Topic 9      Emergency response requirements*

9.1      The arrangements needed to deal with an emergency which arises during the carriage of dangerous goods by inland waterway.

- The candidate should have a general understanding of the need for appropriate emergency procedures for all those involved in loading, unloading and carriage of dangerous goods in inland waterway vessels.
- The candidate should understand the requirements for fire-extinguishing arrangements and the requirements for special equipment to be provided on board inland waterway vessels.

*Topic 10      Environmental protection*

10.1      The principal sources of environmental pollution during inland waterway transport operations.

- The candidate should have a general understanding of those activities which take place during the loading, unloading and delivery process (including emergencies) which could give rise to environmental pollution.
- The candidate should have a general understanding of the control measures which may be appropriate.

*Topic 11      Training*

11.1      The statutory training requirements for those involved in the transport of dangerous goods by inland waterway

- The candidate should understand the requirement for a trained dangerous goods expert on board inland waterway vessels, the content of that training and the certificate which the expert is required to hold.
- The candidate should understand the requirement for crew to be trained in the use of the fire-extinguishing appliances on board.
- The candidate should understand the requirement for crew to be familiar with the use of any special equipment which must be on board inland waterway vessels.

*Topic 12*      *Legal Framework*

12.1      The international regulations and standards relating to the transport of dangerous goods by inland waterways.

- The candidate should understand the status of the European ADN provisions and the existence of a distinct framework of rules for the carriage of dangerous goods by inland waterway vessels along the river Rhine and its tributaries (ADNR).

12.2      Safety Obligations of the Participants.

- The candidate shall understand the safety obligations of the participants as set out in Chapter 1.4 of the ADN.

**Group 4      Construction of inland waterway vessels; sea-going vessels;  
Stability of container vessels; Tank vessels (ADN Part 9)  
5% of examination**

*Topic 13*      *Construction and stability of vessels*

13.1      The candidate should be aware of the rules for the design and construction of inland waterway vessels and sea-going vessels which also pass along inland waterways.

13.2      The candidate should be aware of the rules for the stability of inland waterway vessels carrying containers.

*Topic 14*      *Tank vessels*

14.1      The candidate should be aware of the special rules for the design, construction and operation of inland waterway tank vessels.

14.2      The candidate should be aware of the additional rules concerning the marking, mode of navigation, mooring and berthing of inland waterway tank vessels.

14.3      The candidate should be aware of the existence of special rules for the construction of Type G, Type C and Type N inland waterway tank vessels.



## **All Classes**



## ALL CLASSES

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Classification (RID/ADR Parts 1, 2 and 3) 20% of examination**

#### *Topic 1      Classification*

- 1.1            The classification of dangerous goods into the nine UN classes and their divisions
- The candidate should understand the structure of the UN classification system and the divisions of the various classes.
- 1.2            The hazards associated with all the UN classes and their divisions
- The candidate should understand the characteristics, hazards and properties of each of the UN classes and their divisions.
- 1.3            The use of UN numbers, proper shipping names, N.O.S. entries, and preparations/solutions/mixtures within the various regulatory regimes.
- The candidate should understand how the identification methods work and are applied.

### **Group 2      Packing and tank provisions\*; Marking, Labelling and Placarding; Documentation Requirements; Compliance Thresholds (RID/ADR Parts 1, 3.4, 4, 5 and 6) 75% of examination**

#### *Topic 2      Packing and tank provisions*

- 2.1            The class specific features of packing and tank provisions\* for the transport of dangerous goods
- The candidate should have a general understanding of the class specific features of packing and tank provisions.
  - The candidate should be able to identify and select a suitable packaging from the regulations for a particular substance or article.
  - The candidate should understand the general rules concerning the design, construction and testing of packaging and tanks including the marking requirements.
  - The candidate should be able to distinguish between different tank types e.g. UN portable tanks, RID/ADR tank containers, UN MEGCs and RID/ADR MEGCs etc.

\*            *This refers to the range of packing and tank provisions outlined in Topic 3 of the Core syllabus.*

*Topic 3 Marking, labelling and placarding*

3.1 The class specific requirements for the marking, labelling and placarding of dangerous goods

- The candidate should understand the class specific marking and labelling requirements applying to the commonly used packing and tank provisions for the carriage of dangerous goods.
- The candidate should understand the class specific tank, MEGC, bulk marking requirements for the carriage of dangerous goods.

*Topic 4 Documentation requirements*

4.1 The class specific requirements for the transport of dangerous goods

- The candidate should understand the class specific documentation requirements.
- The candidate should understand the additional documentation requirements for some classes of dangerous goods.

*Topic 5 Compliance thresholds*

5.1 The class specific concessions which apply to: packing and tank provisions; marking and labelling; documentation; placarding and equipment

- The candidate should understand any class specific thresholds which apply to certain classes of dangerous goods (limited quantities).
- The candidate should understand the class specific restrictions on the quantities of dangerous goods which may be carried.
- The candidate should understand and be able to apply the appropriate marks and labels to a given substance.

**Group 3      Environmental Pollution; Training; Legal Framework (RID/ADR  
Parts 1, 2 and 3)  
5% of examination**

*Topic 6      Environmental pollution*

6.1      The pollution hazards associated with the various UN classes

- The candidate should have a general understanding of the environmental threats posed by specific classes and the control measures which may be appropriate.

*Topic 7      Training*

7.1      The class specific training requirements for the various UN classes of dangerous goods

*Topic 8      Legal framework*

8.1      The specific regulatory requirements for the transport by road and rail of the various UN classes and their divisions

- The candidate should understand any class specific regulatory requirements.



**Class 1**



## CLASS 1

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Classification (RID/ADR Parts 1, 2 and 3) 20% of examination**

#### *Topic 1      Classification*

- 1.1            The classification and hazards of explosive materials
- The candidate should have a detailed understanding of the structure of Class 1 including its divisions, compatibility groups and the definitions of substances and articles.
  - The candidate should have a general understanding of the nature of explosives ie the distinction between high and low explosives and between detonation and deflagration; the causes of initiation and hence the effects of heat and shock on explosives.
  - The candidate should understand the rules of precedence in relation to the other classes of dangerous goods.
- 1.2            The definition of UN numbers, proper shipping names, N.O.S entries and preparations/solutions/mixtures within the various regulatory regimes
- The candidate should understand how the identification methods work and are applied.

### **Group 2      Packing and tank provisions; Marking, Labelling and Placarding; Documentation; Compliance Thresholds; Stowage, Loading and Segregation (ADR/RID Parts 1, 4, 5 and 6) 65% of examination**

#### *Topic 2      Packing and tank provisions*

- 2.1            The class specific features of packing provisions for the transport of explosives
- The candidate should have a general understanding of the class specific features of packing for explosives.
  - The candidate should be able to identify and select a suitable packaging from the appropriate regulations for a particular substance or article.
  - The candidate should understand the general rules concerning the design, construction and testing of packaging including the marking requirements.
- 2.2            The requirements for the construction of vehicles used for the carriage of explosives
- The candidate should understand the key construction requirements for vehicles for the carriage of explosives.

*Topic 3 Marking, labelling and placarding*

3.1 The marking and labelling requirements for Class 1 packages.

- The candidate should understand the specific marking and labelling requirements relating to Class 1 in any packaging type.

3.2 The placarding requirements for vehicles used for the carriage of Class 1 materials.

- The candidate should understand the placarding requirements for vehicles used for the carriage of explosives.

*Topic 4 Documentation*

4.1 The specific documentation requirements for consignors and carriers relating to Class 1 substances and articles

- The candidate should understand the documentation requirements of consignors and carriers.

*Topic 5 Compliance thresholds*

5.1 The permissible maximum limits on the quantities of explosive materials which may be carried

- The candidate should understand the rules governing the maximum quantities of explosive materials which may be carried in different types of vehicles.
- The candidate should understand minimum quantity exemptions.

*Topic 6 Stowage, loading and segregation*

6.1 The segregation requirements applying to the carriage of explosive materials

- The candidate should understand the segregation requirements in relation to mixed loads of explosives and to mixing explosives with other dangerous goods.

6.2 The correct stowage procedures

- The candidate should understand the principles covering the safe stowage of explosive materials.

6.3 The importance of load security

- The candidate should understand the potential for an insecure load to initiate an explosion.

**Group 3      Operational Requirements; Emergency Response; Training;  
Legal Framework (RID/ADR Parts 1, 2, 3 and 5)  
15% of examination**

*Topic 7      Operational requirements*

7.1      The control measures specific to the carriage of explosives as they relate to parking, supervision, attendants, uncompleted delivery controls and routing

- The candidate should understand the specific operational requirements governing: routes; parking and supervision; the need for attendants; the measures that need to be taken if deliveries cannot be completed.

*Topic 8      Emergency response*

8.1      The need for emergency response procedures specific to the carriage of explosive materials

- The candidate should have a general understanding of the need for appropriate emergency response procedures for all those involved in the loading, unloading and transport of Class 1 materials.

*Topic 9      Training*

9.1      The statutory and industry specific additional training requirements for persons involved in the loading, transport and unloading of Class 1 materials

- The candidate should understand the statutory training requirements of the Driver Training regulations for drivers and attendants in respect of Class 1 materials.

9.2      The need for training of others who may be involved with Class 1 materials

- The candidate should have a general understanding of the need for training for all those involved in the loading, transport and unloading of Class 1 materials.

*Topic 10      Legal framework*

10.1      The specific regulations associated with the loading, unloading and carriage of explosives

- The candidate should have a detailed understanding of the requirements of the various regulations specifically associated with the carriage of explosives.



## **Class 2**



## CLASS 2

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Classification (RID/ADR Parts 1, 2 and 3) 20% of examination**

#### *Topic 1      Classification*

- 1.1            The classification of Class 2
- The candidate should have a detailed understanding of the principles of classification of Class 2 substances and articles.
- 1.2            The structure of Class 2 including its divisions and sub-groups
- The candidate should have a detailed understanding of the concept of classification via sub-groups according to hazard risk.
  - The candidate should understand the precedence of hazard.
- 1.3            The specific hazards associated with Class 2 substances and articles
- The candidate should understand the hazards associated with compressed gases, flammable/toxic/corrosive gases, dissolved gases, aerosols, deeply refrigerated liquids and small receptacles containing gas.
  - The candidate should have an understanding of subsidiary risk.
  - Classification of samples.
- 1.4            The definition of UN numbers, proper shipping names, N.O.S entries and preparations/solutions/mixtures within the various regulatory regimes.
- The candidate should understand how the identification methods work and are applied.

### **Group 2      Packing and tank provisions; Marking, Labelling and Placarding; Documentation; Compliance Thresholds; Stowage, Loading and Segregation (RID/ADR Parts 1, 3.4, 4, 5 and 6) 70% of examination**

#### *Topic 2      Packing and tank provisions*

- 2.1            The packing and tank provisions\* for the carriage of Class 2 substances and articles
- The candidate should understand the requirements with regard to the design of pressure receptacles, MEGCs and tanks for Class 2 substances and articles.
- 2.2            The approved requirements for the construction of vehicles for the carriage of Class 2 substances and articles

- The candidate should understand the key requirements for vehicles for the carriage of Class 2 substances and articles.

\* *This refers to the range of packing and tank provisions outlined in Topic 3 of the Core syllabus.*

*Topic 3 Marking, labelling and placarding*

3.1 The specific marking, labelling and placarding requirements for Class 2

- The candidate should understand the specific marking and labelling requirements relating to Class 2 substances and articles.

3.2 The placarding requirements for vehicles used for the carriage of Class 2

- The candidate should understand the placarding requirements for vehicles used for the carriage of Class 2 substances and articles.

*Topic 4 Documentation*

4.1 The specific documentation requirements relating to Class 2 substances and articles

- The candidate should understand the documentation requirements of consignors and operators.

*Topic 5 Compliance thresholds*

5.1 The Class 2 specific concessions which may apply to: packing and tank provisions; marking and labelling; documentation; placarding; equipment

- The candidate should understand the rules governing the quantities of Class 2 substances and articles which may be carried.
- The candidate should understand minimum quantity exemptions/concessions.

5.2 Class specific restrictions

- The candidate should understand the restrictions which apply to the carriage of Class 2 substances and articles.

*Topic 6 Stowage, loading and segregation*

6.1 The specific segregation requirements applying to the carriage of Class 2 materials

- The candidate should understand the segregation requirements

6.2 Correct stowage procedures

- The candidate should understand the principles covering the stowage of Class 2 substances and articles.

6.3 The importance of load securing on vehicles, particularly with regard to the carriage of gas cylinders

- The candidate should understand the hazards of an insecure load.

**Group 3      Operational Requirements; Emergency Response; Training; Legal Framework (RID/ADR Parts 1, 2 and 3)**  
**10% of examination**

*Topic 7      Operational requirements*

- 7.1      Systems and procedures specific to loading and unloading of Class 2 substances and articles.
- 7.2      Specific requirements for cleaning and decontamination with respect to the carriage of Class 2 substances and articles.

*Topic 8      Emergency response*

- 8.1      The need for emergency response procedures specific to the carriage of Class 2 substances and articles
- The candidate should have a general understanding of the need for appropriate emergency response procedures for all those involved in the loading, unloading and carriage of Class 2 substances and articles.

*Topic 9      Training*

- 9.1      The statutory and industry specific additional training requirements for persons involved in the loading, transport and unloading of Class 2 substances and articles
- The candidate should understand the statutory training requirements of the Driver Training regulations in respect of Class 2 substances and articles.
- 9.2      The need for training for others who may be involved with Class 2 substances and articles
- The candidate should have a general understanding of the need for training of all those involved in the loading, transport and unloading of Class 2 substances and articles.

*Topic 10      Legal framework*

- 10.1      The specific regulations associated with the loading, unloading and carriage of Class 2 materials
- The candidate should have a detailed understanding of the requirements of the various regulations specifically associated with the carriage of Class 2 substances and articles.
- 10.2      The interface with other modal regulations
- The candidate should understand the impact of other modal regulations which apply to the carriage of Class 2 substances and articles.



**Class 3, specifically UN 1202, UN 1203, UN 1223 ('mineral oils')**



## **CLASS 3, specifically UN 1202, UN 1203, UN 1223 ('mineral oils')**

**(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)**

### **Group 1 Classification (RID/ADR Parts 1, 2 and 3) 20% of examination**

#### *Topic 1 Classification*

- 1.1 The classification of UN 1202, UN 1203 and UN 1223
- The candidate should have a detailed understanding of the principles of classification for mineral oils.
- 1.2 The structure of Class 3 and packing groups
- The candidate should have a detailed understanding of UN Class 3 and its packaging groups.
- 1.3 The specific hazards associated with UN 1202, UN 1203 and UN 1223
- The candidate should have an understanding of : flammability; volatility and flashpoint
  - Classification of samples
- 1.4 The use of UN numbers, proper shipping names, N.O.S. entries and preparation/solutions/mixtures within the various regulatory regimes
- The candidate should understand how the identification methods work and are applied.
- 1.5 The means of ignition
- The candidate should understand the causes and dangers of ignition; naked flames; heat; compression; static electricity.

### **Group 2 Packing and tank provisions; Marking, Labelling and Placarding; Documentation; Filling, Stowage, Loading and Segregation (RID/ADR Parts 1, 3.4, 4, 5 and 6) 70% of examination**

#### *Topic 2 Packing and tank provisions*

- 2.1 The specific requirements of packing and tank provisions\* for the transport of UN 1202, UN 1203 and UN 1223
- The candidate should understand the packaging requirements of UN 1202, UN 1203 and UN 1223.
  - The candidate should understand the key constructional and maintenance requirements for the transport units for UN 1202, UN 1203 and UN 1223.

\* *This refers to the range of packing and tank provisions outlined in Topic 3 of the Core syllabus.*

*Topic 3 Marking, labelling and placarding*

3.1 The specific requirements for the marking, labelling and placarding of UN 1202, UN 1203 and UN 1223 transported by road and rail

- The candidate should understand the specific marking and labelling requirements applying to commonly used packing and tank provisions used for the carriage of "mineral oils" by road and rail.
- The candidate should understand the specific vehicle placarding requirements for the carriage of "mineral oils" by road and rail.

*Topic 4 Documentation*

4.1 Specific requirements for the transport of UN 1202, UN 1203 and UN 1223

- The candidate should understand the specific documentation requirements when consigning or carrying UN 1202, UN 1203 and UN 1223.

*Topic 5 Filling, stowage, loading and segregation*

5.1 The specific segregation requirements for the transport of UN 1202, UN 1203 and UN 1223 by road and rail

- The candidate should understand the applicable regulations concerning the segregation requirements of UN 1202, UN 1203 and UN 1223.

5.2 The requirements with regard to limitations

- The candidate should understand the limitations on tanker compartment volume and ullage for all packing and tank provisions.
- The candidate should understand the limitations on rail tank wagon volume and ullage.
- The candidate should understand the limitations on volume and ullage applicable to other packing and tank provisions.

**Group 3 Operational Requirements; Emergency Response Requirements; Environmental Pollution; Training; Legal Framework (RID/ADR Part 1)  
10% of examination**

*Topic 6 Operational requirements*

6.1 Features of loading and unloading equipment, systems and procedures specific to UN 1202, UN 1203 and UN 1223

- The candidate should have a general understanding of the equipment and systems available for the loading and unloading of UN 1202, UN 1203 and UN 1223 materials.

6.2 Specific requirements for the cleaning and decontamination of packing and tank provisions and vehicles used for the carriage of UN 1202, UN 1203 and UN 1223 materials by road and rail.

*Topic 7 Emergency response requirements*

7.1 The need for emergency response requirement procedures specific to the transport of UN 1202, UN 1203 and UN 1223

- The candidate should understand the need for appropriate emergency response procedures for all those involved in the loading, transport and unloading of UN 1202, UN 1203 and UN 1223.

*Topic 8 Environmental pollution*

8.1 The pollution hazards associated with UN 1202, UN 1203 and UN 1223

- The candidate should have a general understanding of the particular environmental threats posed by UN 1202, UN 1203 and UN 1223 and the control measures which may be appropriate.

*Topic 9 Training*

9.1 The statutory and industry specific additional training requirements for persons involved in the loading, transport and unloading of UN 1202, UN 1203 and UN 1223

- The candidate should understand the statutory training requirements for those involved in the transport of UN 1202, UN 1203 and UN 1223 by road and rail.

9.2 The need for training of others who may be involved with mineral oils

- The candidate should have a general understanding of the need for training of all involved in the loading, transport and unloading of UN 1202, UN 1203 and UN 1223.

*Topic 10 Legal framework*

10.1 The specific national regulatory requirements for the transport by road and rail of UN 1202, UN 1203 and UN 1223

- The candidate should understand the specific requirements for the transport of mineral oils by road and rail.



**Class 7**



## CLASS 7

(Note GB Regulations (CDG2007) (SI2007:1573) may be examined as appropriate)

### **Group 1      Classification and Labelling (RID/ADR Parts 1, 2 and 3 and RAMRoad 2002) 20% of examination**

#### *Topic 1      Classification*

##### 1.1      Classification and hazards of radioactive material

- The candidate should have a detailed understanding of the definition of radioactive material for transport.
- The candidate should understand the general nature of radioactive material.
- The candidate should understand the types of ionising radiation and their general biological effects.
- The candidate should understand the concepts of activity and dose and the units of measurement used for these.
- The candidate should have a general understanding of subsidiary risks.
- The candidate should understand the rules of precedence concerning other chemical classes.

### **Group 2      Packing and tank provisions; Marking, labelling and placarding; Documentation; Compliance Thresholds; Stowage, Loading and Segregation (RID/ADR Parts 1, 4, 5 and 6) 65% of examination**

#### *Topic 2      Packing and tank provisions*

##### 2.1      The packing and tank provisions for the carriage of radioactive material

- The candidate should have a detailed understanding of the requirements for packaging radioactive material, ie Excepted Packages; Industrial Packages; Type A packages; Type B (U) and (M) packages.

#### *Topic 3      Marking, labelling and placarding*

##### 3.1      The marking, labelling and placarding requirements for Class 7 packing and tank provisions

- The candidate should understand the specific marking and labelling requirements relating to Class 7 materials and in any containment system.

##### 3.2      The placarding requirements for vehicles used for the carriage of Class 7 materials.

- The candidate should understand the placarding requirements for vehicles used for the carriage of Class 7 materials.

- Topic 4 Documentation*
- 4.1 The specific documentation requirements relating to the carriage of radioactive material
- The candidate should understand the need for and the contents of transport documentation including the consignor's declaration.

- Topic 5 Compliance thresholds*
- 5.1 The permissible maximum limits on the quantities of radioactive material which may be carried
- The candidate should understand the rules governing the quantities of radioactive material which may be carried, and how the transport index is used to control this.
  - The candidate should understand the requirements for and the limitations on transport under exclusive use, and under special arrangements.

- Topic 6 Stowage, loading and segregation*
- 6.1 The segregation requirements applying to the carriage of radioactive material
- The candidate should understand the segregation requirements as detailed in the regulations.
- 6.2 Correct stowage procedures
- The candidate should understand the principles covering the safe stowage of radioactive material.

**Group 3 Operational Requirements; Emergency Response; Training; Legal Framework (RID/ADR Parts 7 and 8)  
15% of examination**

- Topic 7 Operational requirements*
- 7.1 Control measures relating to parking and supervision
- The candidate should understand the specific operational requirements governing parking (road) and/or stabling (rail).
- 7.2 Quality assurance systems
- The candidate should understand the requirement for quality assurance systems to cover all activities to do with radioactive material.

*Topic 8           Emergency response*

8.1           The need for emergency response procedures specific to the transport of radioactive material

- The candidate should have a general understanding of the need for appropriate emergency procedures for all those involved in the loading, unloading and transport of Class 7 material.
- The candidate should understand the reporting requirements in the event of an accident or incident involving Class 7 material.

*Topic 9           Training*

9.1           The statutory and industry specific additional training requirements for persons involved in the loading, transport and unloading of Class 7 material

- The candidate should understand the statutory training requirements of the Driver Training regulations in respect of Class 7 material.

9.2           The need for training of others who may be involved with Class 7 material

- The candidate should have a general understanding of the need for training for all those involved in the loading, transport and unloading of Class 7 material.

*Topic 10         Legal framework*

10.1         The specific regulations associated with the loading, unloading and carriage of radioactive material

- The candidate should have a detailed understanding of the requirements of the various regulations specifically associated with the carriage of radioactive material, and in particular, any special arrangements specified by ADR.



