Railway Group Standard  
GO/RT3053

WORKING MANUAL  
FOR RAIL STAFF  
HANDLING AND CARRIAGE OF  
DANGEROUS GOODS
WORKING MANUAL FOR RAIL STAFF

Handling and Carriage of Dangerous Goods

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This manual is for the use of all staff concerned with the classification, acceptance, identification, marshalling, movement and loading of dangerous goods.

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## Glossary of Terms

<table>
<thead>
<tr>
<th>TERM</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>Block Train Load of Dangerous Goods</td>
<td>A train which is not marshalled en route and only comprises dangerous goods and associated separation wagons <em>(if required)</em></td>
</tr>
<tr>
<td>Brakevan</td>
<td>Any vehicle with a brake compartment</td>
</tr>
<tr>
<td>Bulk</td>
<td>Solid dangerous goods carried unpackaged <em>(i.e. without any intermediate form of containment)</em> in wagons and containers. Dangerous goods carried in tank wagons and tank containers are not regarded as bulk</td>
</tr>
<tr>
<td>Compatibility Group (Explosives)</td>
<td>A code denoting groups of explosives which can be carried safely loaded together</td>
</tr>
<tr>
<td>Container</td>
<td>Freight container, tank container, swap body or swap tank</td>
</tr>
<tr>
<td>Control (or Control Office)</td>
<td>The Control Office (or other designated person) of the organisation controlling the infrastructure at the location concerned</td>
</tr>
<tr>
<td>Dangerous Goods</td>
<td>Goods which are capable of posing a significant risk to health, safety or property when carried by rail and which are classified according to Section A of this manual</td>
</tr>
<tr>
<td>Discharged (tank wagon or tank container)</td>
<td>Emptied, having contained a dangerous product but not cleaned. Certain product residues may be left inside the tank. A tank wagon/container labelled 'Discharged' must be treated exactly the same as a loaded <em>(undischarged)</em> tank wagon or tank container. See also 'Purged'</td>
</tr>
<tr>
<td>Display (label, placard)</td>
<td>To position so that it can be clearly seen, with the label contents visible</td>
</tr>
<tr>
<td>Driver Only (D.O.) train</td>
<td>A train that is worked only by a Driver and does not have a Guard</td>
</tr>
<tr>
<td>TERM</td>
<td>MEANING</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Facility</td>
<td>Any building, terminal, yard or siding where goods are handled or stored</td>
</tr>
<tr>
<td>Flammable</td>
<td>Any material solid, liquid, vapour or gas that will ignite easily and burn</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>The temperature at which a substance gives off sufficient vapour to ignite or explode in the presence of a spark or flame</td>
</tr>
<tr>
<td>Goods</td>
<td>Substances, commodities and materials offered for carriage</td>
</tr>
<tr>
<td>Guard</td>
<td>Senior Conductor, Conductor, Trainman or Trainwoman</td>
</tr>
<tr>
<td>Hazard Warning Panel</td>
<td>A panel showing emergency services information, illustrated in Section B of this manual</td>
</tr>
<tr>
<td>Hazard Warning Placard</td>
<td>Diamond-shaped hazard warning label on containers and wagons to show the hazards of the dangerous goods carried, illustrated in Section B of this manual</td>
</tr>
<tr>
<td>High consequence dangerous goods</td>
<td>Dangerous goods which have the potential for misuse in a terrorist event, the transport of which requires a security plan.</td>
</tr>
<tr>
<td>IMDG Code</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>Kemler Panel</td>
<td>European-style Hazard Warning Panel</td>
</tr>
<tr>
<td>Local Manager</td>
<td>Local/Area/Operations Manager or their representative</td>
</tr>
<tr>
<td>Locomotive</td>
<td>Any unit capable of traction</td>
</tr>
<tr>
<td>Net Explosive Mass (NEM)</td>
<td>Actual weight of explosive material in a consignment of explosives. There are limitations on the amount that can be carried by road and rail Note: Net Explosive Content (NEC), Net Explosive Mass (NEM), Net Explosive Quantity (NEQ) or Net Explosive Weight (NEW) are often used to convey the same meaning</td>
</tr>
<tr>
<td>TERM</td>
<td>MEANING</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Packing Group (PG)</td>
<td>Certain classes of dangerous goods are assigned to packing groups in accordance with their degree of danger as follows:-</td>
</tr>
<tr>
<td>Packing group I</td>
<td>Substances presenting high danger</td>
</tr>
<tr>
<td>Packing group II</td>
<td>Substances presenting medium danger</td>
</tr>
<tr>
<td>Packing group III</td>
<td>Substances presenting low danger</td>
</tr>
<tr>
<td>Purged (tank wagon or tank container)</td>
<td>All dangerous substances removed and tank thoroughly cleaned out for the period certified</td>
</tr>
<tr>
<td>RADSAFE Scheme</td>
<td>Emergency arrangements for the transport of radioactive material. Used for incidents and irregularities involving irradiated fuel flasks and radioactive in packages</td>
</tr>
<tr>
<td>Rail Incident Officer (RIO)</td>
<td>A person nominated and certificated to carry out the role of an on-site commander in accordance with Railway Group Standard GO/RT3118</td>
</tr>
<tr>
<td>Rail Staff</td>
<td>Staff employed by a company holding an accepted Safety Certificate</td>
</tr>
<tr>
<td>Receiver</td>
<td>The person/organisation to which the goods are addressed (consignee)</td>
</tr>
<tr>
<td>RID</td>
<td>Regulations Concerning the International Carriage of Dangerous Goods by Rail</td>
</tr>
<tr>
<td>Toxic</td>
<td>The ability of a substance to cause damage to living tissue, impairment of the central nervous system, severe illness, death when ingested, inhaled or absorbed by the skin</td>
</tr>
<tr>
<td>Train document</td>
<td>A list containing the necessary information for the safe operation of the train. The list can be manually prepared or produced by TOPS</td>
</tr>
<tr>
<td>TERM</td>
<td>MEANING</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Train Operating Company (TOC)</td>
<td>An organisation operating trains on Network Rail controlled infrastructure in accordance with an accepted Safety Certificate</td>
</tr>
<tr>
<td>Trip</td>
<td>Short distance rail movement in local area - normally up to 5 miles distance</td>
</tr>
<tr>
<td>United Nations Number (UN No.)</td>
<td>A four digit number given to each substance classified as dangerous goods</td>
</tr>
<tr>
<td>Unstaffed</td>
<td>No staff present at that time</td>
</tr>
<tr>
<td>Vehicle</td>
<td>Any individual unit of rolling stock, wagon, tank wagon, brakevan, not capable of traction</td>
</tr>
<tr>
<td>Wagon</td>
<td>Any goods vehicle, van, tank wagon. Not designated for carrying persons in any capacity</td>
</tr>
</tbody>
</table>
A CLASSIFICATION, ACCEPTANCE AND IDENTIFICATION

A1 Classification of Dangerous Goods

A1.1 Classification - General

Certain goods are classified as ‘dangerous’ when offered for carriage by rail. They must only be accepted for carriage under the conditions set out in the train operating company instructions.

Goods that are classified as dangerous are allocated to the following Classes.

<table>
<thead>
<tr>
<th>Class</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Explosives</td>
</tr>
<tr>
<td>2</td>
<td>Gases, compressed, liquefied, dissolved under pressure or adsorbed onto a porous material (see A1.2)</td>
</tr>
<tr>
<td>3</td>
<td>Flammable liquids (see A1.4)</td>
</tr>
<tr>
<td>4.1</td>
<td>Flammable solids</td>
</tr>
<tr>
<td>4.2</td>
<td>Substances liable to spontaneous combustion</td>
</tr>
<tr>
<td>4.3</td>
<td>Substances which give off flammable gases when wet</td>
</tr>
<tr>
<td>5.1</td>
<td>Oxidizing substances</td>
</tr>
<tr>
<td>5.2</td>
<td>Organic peroxides</td>
</tr>
<tr>
<td>6.1</td>
<td>Toxic substances</td>
</tr>
<tr>
<td>6.2</td>
<td>Infectious substances</td>
</tr>
<tr>
<td>7</td>
<td>Radioactive material</td>
</tr>
<tr>
<td>8</td>
<td>Corrosive substances</td>
</tr>
<tr>
<td>9</td>
<td>Miscellaneous dangerous substances and articles (any substances not falling within Classes 1-8 above)</td>
</tr>
</tbody>
</table>

A1.2 Classification of Gases

Gases (Dangerous Goods Class 2) can be classified in two ways. In this and other documents used for the carriage of dangerous goods by rail and in computer systems such as TOPS they are classified as:-

- Class 2.1 Flammable gases
- Class 2.2 Non-flammable, non-toxic gases
- Class 2.3 Toxic gases.
Alternatively, they can be classified in Class 2 and assigned a classification code which includes a group letter according to their hazardous properties. The conversion between the two is as follows.

<table>
<thead>
<tr>
<th>Class</th>
<th>Classification code</th>
<th>Hazardous property</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>1F, 2F, 3F, 4F, 5F, 6F, 7F, 8F, 9F</td>
<td>Flammable</td>
</tr>
<tr>
<td>2.1</td>
<td>5FC, 8FC</td>
<td>Flammable, corrosive</td>
</tr>
<tr>
<td>2.2</td>
<td>1A, 2A, 3A, 4A, 5A, 6A, 8A, 9A</td>
<td>Asphyxiant</td>
</tr>
<tr>
<td>2.2</td>
<td>1O, 2O, 3O, 5O, 9O</td>
<td>Oxidizing</td>
</tr>
<tr>
<td>2.2</td>
<td>5C, 8C</td>
<td>Corrosive</td>
</tr>
<tr>
<td>2.2</td>
<td>5CO</td>
<td>Corrosive, oxidizing</td>
</tr>
<tr>
<td>2.3</td>
<td>1T, 2T, 5T, 7T, 8T, 9T</td>
<td>Toxic</td>
</tr>
<tr>
<td>2.3</td>
<td>1TF, 2TF, 5TF, 7TF, 8TF, 9TF</td>
<td>Toxic, flammable</td>
</tr>
<tr>
<td>2.3</td>
<td>1TC, 2TC, 3TC, 4TC, 5TC, 9TC</td>
<td>Toxic, corrosive</td>
</tr>
<tr>
<td>2.3</td>
<td>1TO, 2TO, 5TO, 9TO</td>
<td>Toxic, oxidizing</td>
</tr>
<tr>
<td>2.3</td>
<td>1TFC, 2TFC, 5TFC, 9TFC</td>
<td>Toxic, flammable, corrosive</td>
</tr>
<tr>
<td>2.3</td>
<td>1TOC, 2TOC, 5TOC, 9TOC</td>
<td>Toxic, oxidizing, corrosive</td>
</tr>
</tbody>
</table>

### A1.3 Packing Groups

Some dangerous goods are assigned to packing groups (PG) in accordance with their degree of danger as follows.

- **Packing group I** Substances presenting high danger.
- **Packing group II** Substances presenting medium danger.
- **Packing group III** Substances presenting low danger.

Some dangerous goods can be assigned to more than one packing group. If this is the case the transport documentation provided should be consulted to determine the correct packing group for this consignment.
### A1.4 Classification of Flammable Liquids

Flammable liquids (Dangerous Goods Class 3) can be assigned to either a packing group or sub-class. Computer systems such as TOPS, use sub-classes.

- **Class 3(A)** Highly flammable liquids.
- **Class 3(B)** Flammable liquids.

This and other documents covering the carriage of dangerous goods by rail use packing groups and the conversion to the sub-class is as follows.

<table>
<thead>
<tr>
<th>By sub-class</th>
<th>By packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3(A)</td>
<td>3 (PGI) or 3 (PGII)</td>
</tr>
<tr>
<td>3(B)</td>
<td>3 (PGIII)</td>
</tr>
</tbody>
</table>

Uncontrolled When Printed
Document comes into force on 05/12/2015
Supersedes GORT3053 Iss 4 and sub-section documents GORT3053 (A to G inclusive)
Superseded by GORT3053 Iss 6 with effect from 03/06/2017
A2 Acceptance Information Required

When accepting dangerous goods for carriage by rail the following information must be obtained.

- UN number.
- Proper shipping name (*trade names alone are not acceptable*).
- Dangerous goods class, and any subsidiary risk in brackets.
- Packing group (*if there is one assigned*).
- Details of the load [*number and description of packages (for packages), net weight or volume of the load, whether loaded or discharged (for tanks)*].
- Emergency Action Code for domestic traffic/Hazard Identification Number for export traffic, for consignments in bulk and in tanks.
- Specialist Advice Contact Number/Alpha Code contact (*must be 24-hour cover*).

Some goods may require more information to be given (*for example the mass or volume of the goods per package*). The conditions set out in the train operating company instructions will give full information.

The following additional information must be obtained for explosives and radioactive materials.

**Explosives**

- Division and compatibility group.
- Net Explosive Mass (NEM) for Divisions 1.1, 1.3 and 1.5.
- Recipient Competent Authority Document, (*where one is required*).

**Radioactive Materials**

- Activity.
- Category of package.
- Transport Index (*for Categories II and III, yellow label*).
A3 Acceptance

A3.1 United Nations Number

(a) Dangerous Goods

Each substance classified as dangerous has a 4-digit number. There is a detailed list in Appendix 1 of this manual.

Example:-- BUTANE is UN 1011

(b) UN8989

This dummy UN number is allocated to a mixed load of packaged dangerous goods in a single wagon or container on a domestic journey. However all the UN numbers that comprise this mixed load must be obtained, since they may be needed in the event of an emergency. The sender is responsible for making sure that the goods loaded into the wagon or container are compatible or adequately separated.

(i) UN8989 is allocated when a mixed load comprises:--

- two or more dangerous goods assigned different UN numbers
- two or more dangerous goods assigned different UN numbers with non-dangerous goods.

Containers/wagons carrying UN8989 must display hazard warning placards according to the hazardous nature of all the dangerous goods they contain.

(ii) UN8989 must not be allocated when a mixed load comprises:--

- dangerous goods assigned one UN number only when mixed with non-dangerous goods
- for exports when through consigned.

In this case the UN number of the product is allocated, and the appropriate placard(s) displayed.

(iii) Goods that must not be accepted in UN8989 loads

- Explosives (Class 1).
- Radioactive materials (Class 7).
Mixed dangerous goods for export must not be described as UN8989 because this number is only used in Great Britain. Imported mixed dangerous goods should be input to TOPS as UN8989 for their rail movement in Great Britain.

(c) UN9933

This dummy UN number is allocated to dangerous goods packaged in limited quantities in a single wagon or container in loads in excess of 8 tonnes gross weight.

A3.2 TOPS Commodity Code

This code is allocated to identify the type of product or group of products. Appendix 1 of this manual shows the TOPS Commodity Code for each UN number.

Example:- BUTANE is Commodity Code 704

A3.3 Traffic with a UN Number Which Could Be Identified With More Than One Dangerous Goods Class or Packing Group.

Example:-
- UN1950 can be Class 2.1 or 2.2.
- UN1224 can be Class 3 PGII or PGIII.
- UN1935 can be Class 6.1 PG1, PGII or PGIII.

If traffic that could be identified with more than one dangerous goods class or packing group (if applicable) is offered for carriage these details must be obtained from the sender. The appropriate TOPS commodity code must be allocated from the details given.

A3.4 Alpha Code

This is a two-letter code which enables Controls to find a phone number for summoning assistance of specialists in an emergency. The code must be allocated before dangerous goods are accepted for rail movement.

Example:- SO (Esso)

Alpha codes can be obtained by a TOPS SD DANF inquiry.
A3.5 Emergency Code

(a) General
The Emergency Code is used to give information from the site of an accident or incident and is made up of the UN number plus the Alpha Code.

Example: - 1101SO

(b) Explosives

(i) Military

<table>
<thead>
<tr>
<th>Military</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>011*MY</td>
<td>014*MD</td>
</tr>
<tr>
<td>012*MD</td>
<td>015*MF</td>
</tr>
<tr>
<td>013*MF</td>
<td>016*MD</td>
</tr>
</tbody>
</table>

* Compatibility group letter as provided by the Sender

Example: - 011D MY

(ii) Commercial

<table>
<thead>
<tr>
<th>Commercial</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>011§§§</td>
<td>014§§§</td>
</tr>
<tr>
<td>012§§§</td>
<td>015§§§</td>
</tr>
<tr>
<td>013§§§</td>
<td>016§§§</td>
</tr>
</tbody>
</table>

§§§ Compatibility group letter and alpha code as provided by the Sender
B HAZARD IDENTIFICATION

B1 Hazard Warning Labels and Placards

B1.1 General Requirements

Hazard Warning Labels
Packages must display warning labels that describe the hazards of the types of dangerous goods they contain.

Hazard Warning Placards
Wagons and containers must display warning placards that describe the hazards of the types of dangerous goods in packages they contain, including mixed loads (UN8989), as shown in Section A3 3.1.

Note
The sender is responsible for affixing these hazard warning labels and placards.

B1.2 Limited and Excepted Quantities
There are two exceptions to the general requirement in Section B1.1 where packages contain small amounts of dangerous goods in limited quantities or excepted quantities.

The packages of limited and excepted quantities of dangerous goods do not require hazard warning labels. However, wagons and containers containing dangerous goods in limited quantities are required to be marked in certain circumstances, as shown in Section B4.6.
B2 Examples of Hazard Warning Labels and Placards

**Note**
Where dangerous goods possess more than one hazard, labels or placards indicating each hazard must be affixed to the package/container or wagon.

B2.1 Class 1 - Explosives

![Explosives Label](image)

**Divisions 1.1, 1.2 and 1.3**  
(Division ‘1.2’ and Compatibility Group ‘E’ are only examples)

**Divisions 1.4, 1.5 and 1.6**  
(Division ‘1.4’ and Compatibility Group ‘E’ are only examples)

**Note**
For loads of explosives of mixed Compatibility Groups, no letter is be shown.

B2.2 Class 2 - Gases

**Class 2.1**  
Flammable Gases

**Class 2.2**  
Non-Flammable Non-Toxic Gases

**Class 2.3**  
Toxic Gases
B2.3 Class 3 - Flammable Liquids

Class 3
Flammable liquids

B2.4 Class 4

Class 4.1
Flammable solids

Class 4.2
Substances liable to spontaneous combustion

Class 4.3
Substances which give off flammable gases when wet

B2.5 Class 5

Class 5.1
Oxidizing substances

Class 5.2
Organic peroxides
B2.6 Class 6

Class 6.1
Toxic Substances

Class 6.2
Infectious Substances

B2.7 Class 7 - Radioactive Material

Category I
Category II
Category III

Fissile material

Any category by freight train. Not to be used on packages, only on wagons or containers.
B2.8 Class 8 - Corrosive Substances

Class 8
Corrosives

B2.9 Class 9 - Miscellaneous Dangerous Substances

Class 9
Miscellaneous Dangerous Substances
Hazard Identification

B3 Hazard Warning Panels and Orange Panels

B3.1 Internal UK Traffic

Wagons and containers carrying dangerous goods in bulk and tank wagons and tank containers must display hazard warning panels. Some other wagons may also display them.

Example:

Or

Example:

Key

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Emergency Action Code <em>(for use by emergency services)</em></td>
</tr>
<tr>
<td>B</td>
<td>United Nations Number</td>
</tr>
<tr>
<td>C</td>
<td>Specialist Advice Telephone Number for emergency services <em>(only required for tanks)</em></td>
</tr>
<tr>
<td>D</td>
<td>Hazard Diamond</td>
</tr>
<tr>
<td>E</td>
<td>Subsidiary Hazard Diamond</td>
</tr>
<tr>
<td>I</td>
<td>Company Name</td>
</tr>
</tbody>
</table>
B3.2 Traffic to and from the Continent.

Wagons and containers carrying dangerous goods in bulk and tank wagons and tank containers must display international hazard warning panels on international journeys.

Example:-

![Hazard Identification Panel]

Key

F  Hazard Identification Number (Kemler Code)
B  United Nations Number

B3.3 Traffic Involving Carriage by Sea

For carriage by sea, the IMDG Code requires that bulk containers and tank containers carrying dangerous goods must display proper shipping names, UN numbers and hazard diamond placards. Some other containers may also display this information.

For carriage by rail before or after a sea journey, this method of identifying dangerous goods is permitted as an alternative to that shown in Sections B3.1 and B3.2.

Example:-
Hazard Identification

Example:-

B3.4 Piggyback
Road vehicles carrying packaged dangerous goods are required to bear an orange coloured panel on the rear of the vehicle and in some cases, the front.

Example:-

Road tankers and road vehicles carrying dangerous goods in tanks or in bulk must display the hazard warning panels or orange panels as required by rail as shown in Section C3.1.

B3.5 Information Carried by Train Crews
(a) TOPS produced information
Train crews carry the Train Document. This gives details of:-
• dangerous goods being carried
• actions to be taken in an emergency.
(b) Emergency code

A 6-character code comprising of a:-

• 4-digit UN number for goods being carried, and
• 2-letter Alpha Code allocated identifying the telephone number for reporting incidents and summoning 24 hour assistance of specialists in an emergency.

(c) Handwritten details

A Handwritten Train Document must identify:-

• wagons carrying dangerous goods
• UN numbers and Alpha Codes involved.
B4 Other Markings

B4.1 Black and White Hazard Marking Scheme
This is a voluntary marking scheme which provides information to the emergency services on dealing with incidents involving goods which are not regarded as dangerous but could need specialist attention.

Example:-

<table>
<thead>
<tr>
<th>2T</th>
<th>SPLASHES CAN DAMAGE EYES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIETHANOLAMINE</td>
<td></td>
</tr>
<tr>
<td>Telephone No</td>
<td>Telephone No</td>
</tr>
</tbody>
</table>

B4.2 Environmentally Hazardous Substances
Packages, wagons and containers containing environmentally hazardous substances must display the environmentally hazardous substance mark.

B4.3 Elevated Temperature Substances
The following Class 9 substances must carry an additional mark to indicate that the product inside the tank or container is hot.

- UN3257 Elevated temperature liquid.
- UN3258 Elevated temperature solid.
B4.4 Fumigated Units

Wagons and containers which have been fumigated are allocated UN3359 and are required to carry the fumigation warning sign at all points of entry.

![DANGER Sign]

The warning sign must be displayed until the wagon or container has been ventilated to remove harmful concentrations of fumigant gas and the fumigated goods have been unloaded.

B4.5 Risk of Asphyxiation

Wagons and containers containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes must be marked with a warning sign at all points of entry.

![WARNING Sign]

* Includes the name of the substance followed by the words ‘as coolant’ or ‘as conditioner’ as appropriate.

The warning sign must be displayed on the wagon or container until the wagon or container has been ventilated to remove harmful concentrations of coolant or conditioner and the cooled or conditioned goods have been unloaded.
B4.6 Limited Quantities

Wagons and containers containing dangerous goods in limited quantities in loads in excess of 8 tonnes gross weight and not placarded are allocated the dummy UN9933 and must be marked as follows.

For sea carriage the IMDG Code requires containers containing dangerous goods in limited quantities loads of any size to be marked with the diamond marking shown above.
C MARSHALLING, MOVEMENT AND LOADING

C1 Train Formation

C1.1 Instructions

These instructions apply to:-

• all wagons and containers loaded with dangerous goods
• discharged tank wagons and containers.

C1.2 Wagon Condition

Wagons and containers used to carry dangerous goods must be in good condition and the interior must be in a fit state for the goods to be loaded. Tank wagons or tank containers must be within their pressure testing date.

C1.3 Automatic Brake - Requirements

(a) Loading

Dangerous goods must only be loaded into vehicles on which the automatic brake is operative.

(b) Defective brake after goods are loaded

If the automatic brake becomes defective after loading, if possible the defect must be repaired.

If it is not possible to repair the fault, the vehicle may continue to its destination. A discharged tank wagon can make another journey. The vehicle must not be reloaded with dangerous goods until the defect has been repaired.

C1.4 Mixing Classes of Dangerous Goods

Some wagon and container loads of dangerous goods are not allowed on the same train as other dangerous goods. These prohibitions are shown in Appendix 2 of this manual.

C1.5 Separation

(a) Separation distances - requirements

Wagons and containers carrying certain types of dangerous goods must be separated on the same train from other wagons and containers carrying certain other types of dangerous goods. These and any separation distances required at the front or rear of the train are shown in Appendix 2 of this manual.
(b) **Separation wagons - meaning**

The term ‘separation wagon(s)’ or containers covers:-
- empty wagons or containers
- wagons or containers carrying certain non-dangerous goods
- wagons or containers carrying certain dangerous goods that are allowed to be on the same train without any separation distance.

(c) **Separation wagons - requirements**

Open or flat-bed wagons conveying metal products such as rails, angles, girders and pipes, which in exceptional circumstances could puncture an adjacent vehicle, together with any associated runner wagons, must not be marshalled next to tank wagons or tank containers containing dangerous goods, whether loaded or discharged.

(d) **Separation exemptions for trip working (non-explosives)**

Separation wagons are not required for trip working:-
- where the length of the journey does not exceed 5 miles, or
- where the length of the journey does exceed 5 miles and the train operating company has authorised it.

(e) **Separation exemptions for trip working (explosives)**

Some separation wagons are not required for trip working. These are:-
- between the locomotive and the first loaded wagon
- behind the last loaded wagon.

**Note**

All other separation requirements in Appendix 2 of this manual must be met.
C1.6 Driver Only (DO) Trains

The following are prohibited from driver only (DO) trains:

- Toxic gases in tank wagons or tank containers - Class 2.3.
- Radioactive flasks - Class 7.
- Escorted movements.

Mixed loads of UN8989 that meet the requirements of Section A3.3.1 are exempt from these prohibitions.

C1.7 Train Preparation

The train preparer must inform the driver of a train with wagons or containers carrying dangerous goods by giving the driver the train document.

If it is necessary to produce a manual train document, details of dangerous goods must be shown as follows:

<table>
<thead>
<tr>
<th>Wagon No.</th>
<th>UN No.</th>
<th>Proper Shipping name</th>
<th>DG Class No.</th>
<th>Alpha Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>11605</td>
<td>UN 1350</td>
<td>Sulphur</td>
<td>4.1</td>
<td>XZ</td>
</tr>
</tbody>
</table>

Example:-

C1.8 Sender’s Labels

Senders may fix their own labels to wagons, provided they do not obscure any ‘For Repairs’ or ‘Defect’ labels.
C2 Movement and Loading

C2.1 Detachment of a Wagon from a Train

When a wagon carrying dangerous goods is unfit to travel and has to be detached at any point short of destination, the person who detaches the wagon, must:-

• tell the person in charge of the location that the wagon has been detached, and
• give them full details of the dangerous goods.

C2.2 Stabling of Classes 1, 2.1, 2.3 or 7 Wagons

(a) Unstaffed siding

Wagons loaded with the following dangerous goods must not be stabled in an unstaffed location or siding, unless it is an emergency.

• Classes 1, 2.1 and 2.3 (this does not apply to discharged wagons), or
• Class 7 wagons loaded or discharged.

(b) Security

When wagon(s) are stabled in a staffed location or siding, the person in charge of the location or siding must arrange to keep both sides of the wagon(s) under regular surveillance (30 minute intervals or less). See local instructions.

If wagon(s) are stabled in an unstaffed location or siding in an emergency, the train operator will arrange for security to be provided.

C2.3 Check of Wagons

Wagons carrying dangerous goods forming part of a train must be checked wherever there is time available in a siding or yard to look for any defects such as overheated axle boxes or leaks.

Any wagon showing signs of overheated axle boxes must be detached. Any defective or leaking wagons or containers must be dealt with in accordance with Section E of this manual.
C3 **Escorts**

Sometimes it may be necessary for escorts to travel with a train. If escorts are to travel with a train, the train operating company will issue special instructions covering the following.

- Supervision of the escort.
- Where the escort will ride in the train.
- Any adjustment needed to the brake distributor timings for the vehicles in the train.
C4 Instructions for Specific Dangerous Goods by Class

C4.1 Class 1 - Explosives

**Warning**
Naked lights are forbidden near wagons or containers loaded with explosives.

C4.1.1 Weight limits

(a) Per wagon or container
A wagon or container must not carry more than the 20 tonnes net explosive mass (NEM) of explosives in Division 1.1, 1.2, 1.3, 1.5 or 1.6 (*Division 1.4 has no limit*).

(b) Per group of wagons or containers
- NEM limits also apply when wagons or containers are grouped together on a train.
- More than one group of wagons or containers may be carried on a train if the specified minimum separation distances between the groups of wagons or containers are provided.

C4.1.2 Groups of wagons or containers: maximum NEM and minimum separations distances

(a) For groups of division 1.1 and where 1.1 is combined with 1.3 and / or 1.5 explosives
- The maximum NEM in any group is 40 tonnes.
- The minimum separation distance is 80 metres (260 feet).
See table overleaf.

(b) For groups of division 1.3 and 1.5 explosives
When alone or together:-
- the maximum NEM in any group (1.3 and / or 1.5) is 120 tonnes
- the minimum separation distance between groups is 40 metres (130 feet).
See table overleaf.
**Marshalling, Movement and Loading**

**Division of explosive loaded in group of wagons or containers**

<table>
<thead>
<tr>
<th>Division of explosive loaded in group of wagons or containers</th>
<th>Maximum net explosive content in tonnes in any group of wagons or containers</th>
<th>Minimum separation distance between groups of wagons or containers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>40</td>
<td>80 metres (260 feet)</td>
</tr>
<tr>
<td>1.1 with 1.3 and/or 1.5</td>
<td>40</td>
<td>80 metres (260 feet)</td>
</tr>
<tr>
<td>1.3 and 1.5 alone or together</td>
<td>120</td>
<td>40 metres (130 feet)</td>
</tr>
</tbody>
</table>

**Note**

Wagons or containers containing Divisions 1.2, 1.4 or 1.6 may be included as part of any wagon or container group but are not included in NEM calculation for that group, and if required may form part of the separation distance between any explosive groups.

**C4.1.3 Train preparation requirements**

The person responsible for train preparation must ensure that:-

- NEM limits are not exceeded
- adequate separation distances are provided where necessary.

If the NEM is not declared separately by the sender, then the total gross weight of the explosive together with the packaging as declared by the sender must be used for the calculations for separation distance purposes.

(c) For groups of division 1.2, 1.4 and 1.6 explosives

In a group of wagons or containers:-

- the maximum NEM for Division 1.4: no limit
- the maximum NEM for Divisions 1.2 and 1.6: only limit is 20 tonnes NEM per wagon or container.
C4.2 Class 2 - Gases, Compressed, Liquefied, Dissolved Under Pressure or Adsorbed onto a Porous Material

C4.2.1 Class 2.3 - Toxic gases

(a) Restrictions

• Class 2.3 toxic gases in tank wagons or tank containers are not permitted on D.O. trains.

• A suitable vehicle must be marshalled as the last vehicle on the train in which the guard must ride.

(b) Tail lamps - prohibition

No tail lamps of any kind may be attached to tank wagons carrying toxic gases.

C4.3 Class 3 - Flammable Liquids

C4.3.1 Class 3 - Flammable liquids - packaging groups I & II

Warning

Naked lights are forbidden near vehicles containing flammable liquids - packing groups I & II.

C4.4 Class 7 - Radioactive Materials

C4.4.1 Radioactive materials - packages loaded on wagons or containers (not irradiated fuel flasks)

(a) Detention of wagons

Wagons or containers carrying radioactive packages that are detained for any reason must be placed at least 6 metres (20 feet) away from rest rooms, shunters’ cabins and similar places and also from wagons or containers carrying:-

• other dangerous goods

• livestock

• unprocessed photographic film

• mailbags.

(b) Placarding of empty wagons/containers

Wagons or containers, that have previously been used to carry radioactive material must bear ‘Radioactive’ placards, until certified by the sender as ‘clean and free from hazardous contamination’.
C4.4.2 Irradiated fuel flasks

Note
Irradiated fuel flasks are not permitted on DO trains.

(a) All movements
Locomotives hauling trains carrying irradiated fuel flasks must also have an operational radio in the rearmost cab of the locomotive, or where there is more than one locomotive, in the rearmost cab of the rearmost locomotive.

Where, for operational reasons, a brake vehicle is provided, the guard must ride in it, when it is the rearmost vehicle on the train.

Where a brake vehicle is not provided, the guard must:-
• ride in the rearmost cab of the locomotive, or where there is more than one locomotive, in the rearmost cab of the rearmost locomotive
• have a working mobile telephone for use.

(b) Train formation
Additional separation requirement
An irradiated fuel flask is not allowed within 6 metres (20 feet) of a locomotive, the guard’s accommodation of the brake vehicle (where provided) or the rear of the train.

If the distance is less than 6 metres (20 feet), a separation wagon must be provided.

(c) Radiation supervised area
Requirement
A Radiation Supervised Area will automatically exist wherever a loaded irradiated fuel flask regularly awaits:-
• forward movement
• loading/unloading.

Dimensions
6 metres (20 feet) from each face of loaded flask.

Restricted access
Only authorised persons are allowed in the area. Access must be kept to a minimum.
(d) **Detention of wagons**

If wagons carrying irradiated fuel flasks are detained for any reason they must be placed at least 6 metres (20 feet) away from rest rooms, shunters cabins, and similar places and also from wagons containing:

- other dangerous goods
- livestock
- unprocessed photographic film
- mailbags.

(e) **Minor wagon repairs**

Rail staff may do minor repairs, and are allowed to spend up to one hour within 1.5 metres (5 feet) of a flask.
DANGEROUS GOODS FACILITY INSTRUCTIONS

D1 Application and Operation

D1.1 Application

These instructions apply to facilities handling:-

• dangerous goods, in bulk and in tank wagons and tank containers
• packaged dangerous goods in Classes 1, 3 (Packing groups I and II) and 7.

These instructions DO NOT apply to:-

• traction workshops, inspection facilities or fuelling points
• the transfer of containers between road vehicles and rail wagons.

D1.2 Before a Locomotive or Train Enters a Facility

Rail staff must ensure that:-

• any prohibitions are observed on:-
  - smoking, carrying or using matches, lighters or other specified articles
  - taking standard battery electric hand lamps beyond locomotive ‘Stop’ boards
  - taking radios, mobile telephones, pagers and other communications equipment into the location
• train tail lamp is removed.

D1.3 Removing Wagons from a Facility

Before a Train Operator’s locomotive or train enters a facility to shunt or collect wagons carrying dangerous goods, a completed Certificate of Readiness must be obtained from the Facility Operator confirming that the wagons are ready for collection. (See specimen overleaf).
CERTIFICATE OF READINESS FOR RAIL MOVEMENT

TERMINAL ____________________ DATE __________________

The wagons listed below are ready for collection and rail movements:

- All connections have been removed
- All manlids closed and secured
- All end caps secured
- Gates/barriers unlocked and open
- All valves closed and secured
- No manlids opened since receipt
- All curtains/doors secured
- All end caps secured
- All cabinet doors locked (LPG tank wagons)

* Delete if not applicable

<table>
<thead>
<tr>
<th>Wagon No.</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Signed _____________________________________________ Facility Operator’s Representative

Wagon Examination Carried Out By: _______________________

Train Time_______________From _____________________To ____________________________

Siding No. _______________________________________________________________________

Signed _______________________________________ Train Operating Company Representative

Grade ___________________________________________________________________________

Time Certificated Accepted _______________ hrs

Original to be forwarded by nominated member of Rail staff to the specified local manager
Copy to be retained by Facility Operator
E1.1 Incidents and Irregularities Involving Dangerous Goods

All incidents and irregularities involving dangerous goods must be reported to the Control Office when they:

- occur on or affect Network Rail managed lines
- occur on lines, sidings and at facilities controlled by a Train Operating Company (TOC)
- involve Rail staff on any other lines
- are defects detected on a vehicle after a Certificate of Readiness has been issued or prior to the detachment of the locomotive at the destination point of the vehicle.

### Note

The term 'Control' in this Section refers to the Control Office (or other designated responsible person - see Local Instructions) of the organisation responsible for the infrastructure at the location concerned.

### Note

Tank wagons and tank containers which are discharged (but not purged) must be regarded as dangerous.

### Note

Defects found on routine examination or brake testing prior to a Certificate of Readiness being issued or after the detachment of the locomotive at the vehicle’s destination are excluded from these requirements.
E1.2 Dangerous Goods incidents

These are defined as:-

• fires on locomotive(s) hauling block train loads of dangerous goods
• fires on vehicles carrying dangerous goods or next to vehicles carrying dangerous goods
• any leakage, spillage or other escape of dangerous goods
• improperly secured valves, manlids, covers and doors which give access to the load
• collisions, derailments and other mishaps of vehicles carrying dangerous goods
• vehicle or container defects which place the dangerous goods at risk of fire, explosion or leakage. These include confirmed hot axle box detections and dragging brake defects.

E1.3 Dangerous Goods Irregularities

These are defined as:-

• TOPS and documentation errors
• train not formed in accordance with Appendix 2.
• labelling, placarding or other marking errors
• insecure end caps on outlet pipes from tanks not involving leakage of product
• suspected incidents with no fault found
• unconfirmed hot axle box detections
• vehicle or container defects which have NOT required the attendance of the emergency services. These include confirmed and unconfirmed Wheel Impact Load Detections (WILD) and Wheelchex activations.

E1.4 Initial Dangerous Goods Reports

The Control Office must compile a Dangerous Goods Report through Rail Notices and categorise the circumstances as an incident or an irregularity.
E2 Action by Train Crews and Other Rail Staff

E2.1 Immediate Action

If it is necessary to protect the train as shown in Rule Book module M1 *Dealing with a train accident or train evacuation*, traincrew must consider any dangerous goods which are being carried on the train. Traincrew must not pass affected wagons if they are conveying:

- toxic gases (class 2.3) in tank wagons or tank containers
- an irradiated fuel flask (class 7).

**Warning**

Where tank wagons or tank containers carrying toxic gases (Class 2.3) or irradiated fuel flasks (Class 7) are involved, no person should go past the affected wagons unless assurance has been received from the industry specialist adviser that it is safe to do so.
E2.2 Alert

Alert the controlling signal box or Control and:-

• give as many details as possible

• state clearly: ‘THIS IS A RAIL DANGEROUS GOODS EMERGENCY’

• give:-
  - train reporting number (*where applicable*)
  - where incident happened
  - when it happened

• list the following, for wagons involved and any wagon carrying dangerous goods:-
  - wagon types (*if you know them*)
  - wagon numbers (*if you know them*)
  - positions on train or in siding

• what protection arrangements have been applied

• describe the incident as fully as you can

• unless the incident is minor (no damage to wagon, tank, container or flask), advise signaller or person in charge, to stop all trains passing on adjacent lines

• say whether any Rail Staff or members of the public are involved.

---

**Note**

Some dangerous goods are carried under special emergency response arrangements. Train Crew will carry details.
E2.2.1 If the Train is Carrying an Irradiated Fuel Flask (Dangerous Goods Class 7)

It is important to obtain as much information as possible without endangering personal safety. In all cases, the following questions must be answered:

• as quickly as possible
• in the order shown.

If the situation is not clear, give as much information as possible.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Is the flask wagon derailed?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>(b) Has the flask wagon been involved in a collision?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>(c) Is there a fire near the flask?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>(d) Are large quantities of liquefied petroleum gas, petroleum or other flammable liquids present?</td>
<td>Yes/No</td>
</tr>
<tr>
<td>(e) Is there any visible damage to the flask or to the cover (if fitted)?</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>

Warning

No person must go past or within 45 metres (50 yards) of any wagon or flask where the answer to any of the above questions is ‘Yes’.

When the answer to any of the questions above is ‘Yes’

• Tell the signaller, person in charge or Control to stop all trains passing on adjacent lines.

• Keep all persons clear:
  - at least 45 metres (50 yards) clear of the wagons or flask until advised by the emergency services or nuclear industry specialist
  - if large quantities of liquefied gas/petroleum or other flammable liquids are present, keep everybody as far as possible from the site.
E2.2.2 If the train is carrying radioactive materials (other than an irradiated fuel flask) dangerous goods Class 7

Give:
- details of the package contents and activity level
- responsible RADSAFE site code number.

See label(s) on the package.

(a) Personal safety
- Do not handle any damaged load.
- Move all persons well clear of site.
- Establish an area a minimum of 45 metres (50 yards) around the load and do not allow access except for very short intervals if necessary to fight a fire. This area can be reduced to 3 metres (10 feet) if the package can be contained in a room or building and shielded from people.

(b) Fire
Try to put out any fire. If that is not possible, try to contain it, preferably from a distance of at least 3 metres (10 feet).

(c) Clear running lines
Running lines may be cleared for operations provided no person comes within 45 metres (50 yards) of the load, unless instructed by the RADSAFE Scheme specialist adviser.

Note
The operators of offices handling radioactive packages should use the above procedure. In addition, they should advise the sender or receiver of the package.
E2.2.3 If a radioactive package (other than an irradiated fuel flask) is damaged during loading to or unloading from rail vehicles

- Alert the signaller and Control and:-
  - indicate that Nuclear Road/Rail Emergency Plan (RADSAFE Scheme) assistance is required
  - give details of the package contents and activity level, and
  - responsible site code number

See label(s) on package.

- Summon Civil Police, BT Police, Fire Brigade and Ambulance and advise them that the RADSAFE Scheme has been initiated.

E2.3 Additional Safety Actions at Site

E2.3.1 Personal safety

(a) If possible, isolate all wagons or packages affected from the rest of train without putting yourself or any other person at risk.

(b) Keep well clear. Keep the wind at your back as you face affected wagon(s) or package(s).

(c) Avoid low-lying places.

(d) Keep unauthorised persons well clear.

E2.3.2 Prevent fire/explosions

(a) Try to put out any fire. If that is not possible, try to contain it.

(b) Do not smoke, use matches or pocket lighters.

(c) Keep naked lights and lamps well clear.

E2.3.3 Other actions

(a) On electrified lines, ask for the electricity supply to be switched off.

(b) Act on advice from Control.

E2.3.4 Emergency services

The emergency services may be called.

- Expect their arrival.
- Give them as much information as possible.
E2.4 Signaller’s Actions

Signaller’s instructions are shown in GE/RT8000 module TS1

*General signalling regulations.*
E3  Action if You are Contaminated

E3.1  Your Eyes
(a) If your eyes are affected, wash them first.
(b) Use plenty of cold water.

E3.2  Your Clothes
(a) Take off all contaminated clothes.
(b) Avoid contaminating yourself with them.

E3.3  Your Body
(a) Wash any affected parts of your body.
(b) Use plenty of cold water.

E3.4  Advice and Help
(a) Ask advice from specialist assistance contact.
(b) Give details of substance UN number.
(c) Get medical help quickly.

Warning
All persons who have been close to an irradiated fuel flask involved in an incident must be cleared by the specialist team before leaving site.
E4 Action - Control

On receiving a report of a Rail Dangerous Goods Emergency, the Control must immediately categorise the occurrence, from the details given, as an Incident or an Irregularity as shown in Section E1.2 and E1.3.

4.1 Dangerous Goods Incident

4.1.1 Make a TOPS enquiry
Make a TOPS enquiry to confirm details reported.

4.1.2 Summon the emergency services (fire/police/BT police/ambulance)
(a) Give full details. If an irradiated fuel flask is involved, advise them that the RADSAFE Scheme will be initiated. This is activated when the Specialist Advice number is activated.
(b) Give details of substance UN number.

4.1.3 Alert Specialist Advice
(a) Advise Specialist Advice contact of ALL incidents.
(b) Look up alpha code database on TOPS by using ‘SD DANF’
Example:-
1023SU use ‘SU’ - where ‘SU’ identifies the Specialist Advice.
(c) Contact the Specialist Advice telephone number.
(d) If it is an emergency situation requiring attendance of specialist advice or their repair agents etc. state clearly: ‘RAIL DANGEROUS GOODS EMERGENCY’.
(e) For all incidents, state clearly:-
   • your name and position
   • your external telephone number for contact purposes
   • details of the incident and if the incident involves an irradiated fuel flask give the answers to the questions in Section E2.2.1 of in the order given

Continue to update and summon attendance if subsequently required.

Note
The specialist advice telephone number must be contacted for all incidents. Advice to a local depot is not a sufficient response.
(f) give site of incident by stating National Grid Reference and sheet number of Ordnance Survey 1:50,000 map.
(g) Give directions on how to get to site and the access location.

E4.1.4 Instruct staff reporting incident
Instruct staff reporting incident on action to take.

E4.1.5 Notify appropriate Environment Agency, or equivalent in Scotland
In all cases where vehicles carrying dangerous goods are leaking or releasing dangerous goods to the ground, you must notify the appropriate Environment Agency (or equivalent in Scotland).

E4.1.6 Notify appropriate railway officer(s)

E4.1.7 Breakdown crews
If calling out breakdown crews, give supervisor details of dangerous goods involved and the circumstances at the site.

E4.1.8 Advise the appropriate TOPS reporting point

E4.1.9 Other actions
Control must:-
- compile a Dangerous Goods Report through Rail Notices
- carry out statutory and other reporting in accordance with local instructions.

E4.1.10 Clarification of package contents
If any package is suspected of:-
- not being correctly described, and
- containing dangerous goods, or
- if doubt exists on how the substance should be handled, ask sender or Company Specialist Adviser.
E4.1.11 Arrange emergency transhipment *(if required)*

See section F of this manual and local instructions. Rail Staff should help to remove or transfer dangerous goods, but only under the supervision of a specialist or authorised representative.

E4.2 Dangerous Goods Irregularity

E4.2.1 Make a TOPS enquiry

Make a TOPS enquiry to confirm details reported.

E4.2.2 Alert Specialist Advice

Alert specialist advice ONLY IF the irregularity involves an irradiated fuel flask or is an unconfirmed hot axle box detection.

If the irregularity involves an irradiated fuel flask, give the answers to the questions in Section E2.2.1 in the order given.

E4.2.3 Instruct staff reporting irregularity

Instruct staff reporting irregularity on action to take.

E4.2.4 Advise the appropriate TOPS reporting point

E4.2.5 Other actions

Control must:-

• compile a Dangerous Goods Report through Rail Notices
• carry out statutory and other reporting in accordance with local instructions.

E4.2.6 Clarification of package contents

If any package is suspected of:-

• not being correctly described, and
• containing dangerous goods, or
• if doubt exists on how substance should be handled, ask sender or Company Specialist Adviser.
E4.3 If Radioactive Materials in Packages (other than irradiated Fuel Flasks) are Involved (Dangerous Goods Class 7)

E4.3.1 Notify the emergency services

Summon the civil fire and police services, giving full details, tell them that the RADSAFE Scheme will be initiated. Notify the British Transport Police of the circumstances.

E4.3.2 Notify the Nuclear Industry (RADSAFE Scheme Initiation)

Contact: Civil Nuclear Constabulary Control Centre on 0800-834 153.

Give the following information.

• Name of the railway Control Office reporting and a contact telephone number.

• National Grid Reference and sheet number of Ordnance Survey 1:50,000 map.

• Details of the location of the package or vehicle and how to reach the site.

• Details of the package or wagon contents and activity level.

• Responsible RADSAFE site code number.

E4.3.3 Other actions

(a) Tell civil police that:-

• Nuclear Industry has been notified and that the RADSAFE Scheme has been invoked and give contact telephone number

• Nuclear Industry may send a specialist response team and may need a civil police escort.

(b) Maintain liaison with members of staff reporting

Advise them that the emergency services have been summoned and that the RADSAFE Scheme has been invoked. Instruct them on action they should take, for example liaise with the emergency services.
(c) Advise details to other Control(s)

Notify:-

• Network Rail and involved Train Operating Company officer(s)

• Network Rail National Operations Centre
  - by telephone on 085 65644 (ETD) or 01908 723644 (STD)
  - by fax on 085 65591 (ETD) or 01908 723591 (STD).

(d) Liaison

After the calls are made, establish and maintain liaison involving:-

• Nuclear Industry

• Network Rail National Operations Centre / Train Operating Company Control

• emergency services

• local managers involved

• British Transport police.

Give as much additional detail as possible of the incident and ensure co-ordination of the response by rail and other organisations involved.
E5  Action - Rail Incident Officer (RIO)

The responsible rail manager at the site must liaise with the:
• specialist adviser’s staff or the nuclear industry response team, and
• emergency services.

This is to ensure that ALL staff and equipment are clear of the lines concerned before movements may be permitted over lines adjacent to a Dangerous Goods Incident.
F1 Emergency Transhipment - Freight Services

F1.1 Circumstances

In an emergency it may be necessary to tranship dangerous goods from wagons or containers to other wagons or containers or road vehicles. This may follow emergency response action by the Emergency Services.

F1.2 Action Plan - Responsibility and Preparation

Before transfer is attempted, an action plan must be prepared and agreed with all involved. The action plan must identify the risks involved and the control measures that must be applied.

The responsibility for the preparation of the action plan is that of the organisation controlling the infrastructure involved. This means that normally Network Rail will be responsible with the Rail Incident Officer (RIO) taking the lead.

The plan must identify where assistance and equipment may be obtained.
F2 Before Transhipment is Attempted

The following aspects must be considered when developing and implementing the action plan.

F2.1 Risks

• explosion
• fire
• loss of containment of product
• release of flammable, toxic or radioactive material
• contamination of ground and/or watercourses
• reaction of the product being transhipped with water, air and other substances on site
• other environmental hazards.

F2.2 RIO Actions

The RIO must ensure that:-

• the Emergency Services and specialist adviser(s) are present before the transfer commences
• liaison with the Emergency Services and the specialist adviser(s) takes place at all stages of the transfer
• equipment and materials are present on site to deal with spillage or fire
• conductor rails or overhead electric line equipment within 9 metres (30 feet) are isolated before the transfer of:-
  - flammable gases
  - liquids with a flashpoint below 100˚C
• all wagons involved in the transfer are:-
  - secured against movement by having handbrakes/wheel scotches applied
  - adequately supported to guard against movement caused by transfer of weight
• the transfer is not attempted during darkness or thunderstorms unless absolutely necessary
• no member of Rail Staff or the public are allowed unnecessary access to the site.