

Carriage of Dangerous Goods Manual

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Introduction

1. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (SI 2007/1573) (CDG 2007) and the European agreement (“Accord européen relatif au transport international des marchandises dangereuses par route”, known as ADR) which together regulate the carriage of dangerous goods by road are highly prescriptive. The regulations were substantially restructured for 2007 and now include the carriage of radioactive substances. This guidance does not include reference to the carriage of radioactive substances.

2. This guidance is intended for enforcement officers, but may be helpful to others. It will guide them through the process and help them to make informed judgements about the extent of compliance. It will also guide officers when discussing compliance with duty holders and deciding when to take further action. The reader should remember that the law can only be interpreted by the Courts.

3. CDG 2007 cross-refers to ADR to a large extent, and it is ADR that contains the detailed requirements. The regulations alter some of the details of how ADR is implemented in UK, but this is discussed in ADR and CDG 2007.

4. ADR 2007 continues the security requirements in chapter 1.10. This guidance does not deal with these matters as enforcement is carried out by the Vehicle and Operator Service Agency (VOSA).

Structure of this guidance

5. ADR is highly structured and prescriptive. It follows that if care and time are taken, the answer to most problems can be found, and for that reason there is little or no need for extensive explanatory literature or guidance.

6. Many duty holders will need to appoint a “Dangerous goods safety adviser” and thus should have access to the specialist knowledge needed to navigate the regulations and ADR.

7. Some background to CDG 2007 is given in Regulatory environment. The chapter Operational strategy and enforcement sets out HSE’s operational strategy with some enforcement guidance. ADR and CDG 2007 describes the relationship between the regulations and ADR. Subsequent chapters largely follow the structure of ADR. Each chapter is set out as follows:

- Reference to the relevant regulation
- Guidance on the requirements of ADR itself
- Any special considerations, such as exemptions (which are also discussed more fully at Main exemptions).

8. This guidance does not repeat the requirements of CDG 2007 or ADR, but directs the reader to the parts of the regulations and ADR that will be of relevance. It is intended to provide a basis for a consistent approach across the three agencies that are involved in enforcement.

9. The guidance is structured in line with ADR, that is, it follows the logical chain of duties from classification of substances through to carriage.
10. The Common problems chapter gives advice for a consistent approach. It is intended that this part will be extended as new problems emerge and are resolved.

Regulatory environment

- Development of dangerous goods legislation
- Current legislation
- Enforcement
- International requirements
- ADR
- IMDG
- ICAO technical instructions
- Department for Transport (DfT)
- Liaison arrangements

Development of dangerous goods legislation

1. Legislative control of dangerous goods began with the Petroleum Act of 1879 and the Petroleum (Consolidation Act) of 1928. The latter remained (with subsidiary regulations) the major legislative control on the transport of all dangerous substances until the 1980s.

2. Following the introduction of the Health and Safety at Work etc. Act 1974, proposals were put forward for a single set of regulations, dealing with the classification, packaging and labelling of dangerous substances and regulating the conveyance of dangerous substances by road in tankers, tank containers and packages. However, when the first consultative document was published in the late 1970s industry made it clear that this was too much to cope with, and it was agreed that the legislation would be divided into three codes:

- The Classification, Labelling and Packaging of Dangerous Substances Regulations 1984 (CPR):
- The Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 (RTR); and
- The Dangerous Substances (Conveyance by Road in Packages) Regulations 1986 (PGR).

3. The impact of the 1978 tanker disaster at a campsite in Spain, meant that the 'Road Tanker Regulations' were given priority and consequently these were introduced ahead of the other regulations.

4. In 1992 RTR and PGR were revoked, and replaced by:

- The Road Traffic (Carriage of Dangerous Substances in Packages etc) Regulations (PGR 92); and
- The Road Traffic (Carriage of Dangerous Substances in Road Tankers and Tank Containers) Regulations (RTR 92).

5. At the same time new regulations dealing with driver training were introduced:

- The Road Traffic (Training of Drivers of Vehicles Carrying Dangerous Goods) Regulations (DTR).

6. In 1994 the CPR regulations were replaced by:

- The Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) Regulations (CDGCPL).

7. In 1996 these were replaced by:

- The Carriage of Dangerous Goods (Classification Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations
- The Carriage of Dangerous Goods by Road Regulations
- The Carriage of Dangerous Goods by Road (Driver Training) Regulations
- Other regulations relating to explosives, radioactive materials and other matters
- ACoPs and guidance were also published.

8. In 1999 various amendments were made but the most significant change was that the Transport of Dangerous Goods (Safety Advisers) Regulations came into force, requiring the appointment of “Dangerous goods safety advisers” by many duty holders.

Current legislation

9. As a signatory to the European agreement concerning the International Carriage of Dangerous Goods by Road (ADR), and a member state of the EU, the UK is committed to harmonisation of national and international regulations, as far as possible. Therefore, in order to align with the ADR and RID Directives, governing the carriage of dangerous goods by road and rail respectively, a consolidating set of regulations came into force on 10 May 2004. These were substantially restructured in 2007 as The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (SI 2007/1573), known in short as “CDG 2007”.

10. The regulations cover all road and rail carriage of dangerous goods, and now include radioactive substances. They directly reference both ADR and RID and provide for some domestic differences (mainly for explosives, but also to retain the UK system of marking road tankers). They also provide some exemptions, for purely domestic transport, that ADR and RID do not.

11. The prescriptive nature of the new regulatory package arises from the need to align domestic legislative arrangements with the ADR and RID codes for the carriage of dangerous goods on international journeys.

Enforcement

12. HSE is one of the enforcement authorities for many aspects of CDG 2007 (but note that DfT is the “competent authority” for most purposes – see Regulation 6 and Department for Transport (DfT) notes below).

13. Limitations in the enforcement roles of police and VOSA officers are contained in a Memorandum of Understanding. This allow suitably qualified and appointed police officers and VOSA (Vehicle and Operators Standards Agency) officers to enforce the regulations “on the road” (see Operational strategy and enforcement). That chapter also includes enforcement guidance.

International requirements

14. International standards on the transport of dangerous goods by road are derived from the recommendations of the UN Committee of Experts. These recommendations are contained in the so-called "orange book", and form the basis of a series of codes covering the classification, packaging and labelling of dangerous goods for transport by road, rail, sea and air.

15. HSE is mostly involved with the codes for the carriage of dangerous goods by road (ADR) and rail (RID). The IMDG code and the technical instructions issued by the International Civil Aviation Organisation (ICAO) deal with the carriage of dangerous goods by sea and air respectively.

16. The ADR and RID Directives required EU Member States to incorporate the codes into national legislation by 1 January 1997, thereby applying them to domestic as well as international carriage.

17. The international working party on the transport of dangerous goods (WP15), normally meets twice a year to review the conditions governing the international transport of dangerous goods between European countries by road and rail, with the aim of aligning ADR and RID with the UN recommendations. Decisions taken by WP15, when subsequently approved, are included in the latest edition of ADR for implementation. The ADR Code is updated every 2 years.

ADR

18. The ADR agreement allows dangerous goods travelling by road through more than one country to be exempt from the domestic legislation in force in those countries, as long as the requirements of ADR are met in full. However, ADR contains no provisions for enforcement and therefore, where a vehicle travelling under ADR does not comply in full, the vehicle becomes subject to all domestic requirements. As such any enforcement action should be framed in terms of the relevant domestic regulations.

19. In addition, vehicles registered outside the UK may also travel under ADR while carrying dangerous goods on journeys confined to the UK, i.e. on non-international journeys. This procedure allows for "cabotage", whereby 'foreign' vehicles may carry dangerous goods on domestic journeys without having to conform to domestic legislation. For example, a Dutch vehicle travelling under ADR on an international journey involving the consignment of dangerous goods from Rotterdam for delivery in Glasgow may pick up another load of dangerous goods in Glasgow for delivery in Hull. Although the Glasgow-Hull journey is not international the vehicle may still travel under ADR.

IMDG

20. The IMDG code contains internationally agreed guidance on the safe transport of dangerous goods by sea, and most commonly relates to the carriage of dangerous goods in freight containers and tank containers. Primarily it is used by shipping operators but it is also relevant to those transporting dangerous goods on journeys involving a sea crossing. In the UK many operators do not undertake complete international journeys but only visit a port to deliver or collect trailers, freight containers or tank containers which have been placarded with IMDG labels for sea journeys. Where there is full compliance with the

IMDG Code, vehicles are exempted from the placarding requirements of CDG 2007. However, all other relevant matters including training, information in writing, provision of fire-fighting equipment etc, apply as under the regulations. For the exemptions on placarding to apply, the journey must involve dangerous goods being carried to a port for carriage by sea, or from a port having been carried by sea.

21. Individual countries are responsible for implementing the Code under their own legislation and in the UK this is done through The Merchant Shipping (Dangerous Goods and Marine Pollutant) Regulations 1990, which are enforced by the Department of Transport, and through The Dangerous Substances in Harbour Areas Regulations 1987, as enforced by HSE.

ICAO technical instructions

22. There are analogous provisions in respect of goods packaged and consigned for air transport. Enforcement is by the Civil Aviation Authority (CAA). In this case, ICAO "technical instructions" set the relevant standards. Details are obviously different but principles are similar. Airlines generally work to IATA rules which are based on the ICAO technical instructions.

Department for Transport (DfT)

23. DfT is the lead government department on all aspects of transport, in whatever mode, and this includes the transport of dangerous goods by road. Consequently it is the Secretary of State for Transport who responds to Parliament on transport matters.

24. DfT also represents the UK on the various bodies responsible for producing international agreements and standards covering the transport of dangerous substances, i.e. ADR for Road, RID for rail and IMDG for marine.

25. Regulations on the transport of dangerous substances are made under Health and Safety at Work etc Act 1974 and are prepared by DfT.

26. DfT takes a close interest in the extent of HSE's activity and, in particular, the number of vehicle checks carried out and level of enforcement. HSE provides the CDG Committee with details of the number of vehicle checks carried out and the extent of enforcement action taken. DfT will also collate information from the checklists completed under the terms of the Uniform Monitoring Procedures Directive, and submits an annual report to the EC on levels of enforcement activity within the UK.

27. DfT is the UK competent authority for the certification of packaging. The testing and certification scheme is operated on their behalf by their agents, the Vehicle Certification Agency.

28. Organisations providing vocational training for drivers of dangerous goods vehicles must be approved by DfT. A list of the current approved training providers may be found on DfT's website.

29. DfT's Radioactive Materials team also enforces the legislation dealing with the carriage of radioactive materials by road.

Liaison arrangements

30. Liaison between DfT, HSE, the Police, VOSA and other government departments takes place at the “Enforcement Liaison Committee”, which meets twice yearly. HID is represented on the Committee by CI4B and SI 2 (Explosives Inspectorate). The committee covers all dangerous goods including radioactive materials and explosives. The transport of radioactive materials is also the subject of a Memorandum of Understanding between DfT and HSE. HID CI 4 also represents HSE in DfT and stakeholder liaison meetings.

31. Police, VOSA and HSE (HID CI 4B) hold a quarterly “practitioners’ forum” where operational problems are discussed. HID CI 4B prepares enforcement guidance in consultation with the practitioners’ forum.

32. HSE holds occasional meetings with the key trade associations. DfT and representatives from VOSA and the police and other interested parties are also invited to the meeting.

Operational strategy and enforcement

- Risk
- Operational strategy
- Enforcement
- Education, promotion and liaison with industry
- Technical input
- Inspector training
- Arrangements for dealing with 'on the road' incidents
- Annex 3.1 Enforcement guidance (tabular summary)
- Annex 3.2 Enforcement discussion
- Annex 3.3 Roadside checks (including safety considerations, equipment)
- Annex 3.4 The UMP form

Risk

1. The carriage of dangerous goods by road creates risks to drivers, other road users, the public and the emergency services. In addition some substances create environmental risk. HSE pursues an enforcement strategy that is proportionate to the level of risk, the objective of which is to ensure that high standards of compliance with the relevant legislation are achieved and maintained.

2. There have been serious incidents overseas which illustrate the potential risk, and the ACDS report, "Major hazard aspects of the transport of dangerous substances" (1991), indicated that past experience and previous rates of infringement do not necessarily provide an adequate basis for assessing the risk of rare but potentially very serious events.

3. In Britain there have been few serious accidents directly resulting from the carriage of dangerous goods. There are frequent accidents involving vehicles carrying dangerous goods and loss of containment often occurs to some extent. Proper identification of vehicles and information about the goods they are carrying is thus important. HSE's experience from roadside checks is that about one in three of those vehicles carrying dangerous goods and selected for inspection exhibit breaches of one sort or another.

4. From time to time enforcement officers stop vehicles that are blatantly breaching the requirements in many respects. It is important that firm action is taken when such cases are detected.

Operational strategy

5. The overall strategy is to operate an inspection regime that makes the best use of the skills of HSE staff to influence companies and other stakeholders. The regime includes:

- inspection of compliance with CDG 2007 during visits to duty holders' premises; this involves both the assessment of management systems (including the role of the DGSA) and checks on vehicles at the premises
- vehicle checks at the roadside (see also para 7 below)
- regular liaison with police and VOSA examiners at both national and local level, and

- liaison with intermediaries such as trade associations to improve contacts with duty holders.

6. HSE has agency agreements with most police forces (see SPC Enf/96 for current list) and VOSA which allows suitably appointed officers to carry out "on the road " inspections and to issue Prohibition Notices and initiate prosecutions where justified. Regulation 12(4) allows goods vehicle examiners to make enquiries relating to the Dangerous Goods Safety Advisor (DGSA) and reports produced by the advisor.

7. It is expected that police and VOSA officers will make the majority of contacts. They work within HSC's enforcement policy and HSE (through HID CI 4B) monitor the activity. None the less HSE continues to have overall responsibility for enforcement. It is important that HSE continues to make regulatory contacts to maintain knowledge and experience within field units.

8. The main thrust of HSE's enforcement regime is directed at the premises of duty holders who consign or carry dangerous goods, and this is where enforcement officers determine the competence of management in complying with the full range of their CDG duties. This action is informed by the intelligence produced following vehicle checks. It has been agreed that all enforcement notices served by police/VOSA will be placed on a special data base which will appear on the HSE website (via the enforcement link). Progressively HID CI 4B will use this data base to monitor the quality and consistency of enforcement. Police/VOSA liaison inspectors (see para 17 below) should refer to this data base when planning CDG interventions as part on their Unit work plans.

Enforcement

9. Enforcement should be consistent with HSC's enforcement policy.

10. HSE inspectors and other enforcement officers have a range of powers that can be applied to the enforcement of CDG 2007. In general, the approach is to ensure that the action taken is proportionate to the nature of the risk and/or the contravention and takes account of the overall record of the duty holder.

11. Enforcement effort is focused on the most important requirements, i.e. those that contribute significantly to the safety of the public, etc. These are:

- the integrity of packages, tanks, etc;
- documentation including emergency information;
- equipment including fire extinguishers;
- other matters of obvious concern, e.g. insecure loads;
- driver training;
- vehicle placarding;
- package labelling.

12. Some of these items are easier to inspect at the roadside than others. Unless there is good reason to do otherwise, officers are not routinely expected to enter load compartments to check packages. Where that is needed proper arrangements for personal safety must be followed.

13. Other, less serious, breaches would normally result in either written or verbal advice. This focus is particularly important as the legislation is prescriptive.

14. Enforcement is obviously a matter for the officer at the time, but should be in accordance with the HSC policy. HSE inspectors should use the EMM. There are particular challenges in the sense that in many cases the most obvious enforcement decision is to issue a Prohibition Notice, but judgements of "serious risk" are not always easy. Having said that, ADR and the regulations have risk assessment "built in", by setting transport categories, packing groups, small load thresholds and limited quantity exemptions. It follows that failure to comply may often be judged to represent a serious risk. Intuitively this is not the case for every transgression and so enforcement advice has been developed jointly with police and VOSA at the "Practitioners' forum" which allows the three bodies to share experience and views. The enforcement advice now takes account of the risk categories set out in the EU "Uniform Monitoring Procedures" directive.

15. For the common problems likely to be seen at the roadside, this advice has been distilled into a form that permits reasonably easy reference and is reproduced below. It could for example be printed double sided and laminated. A fuller discussion of these and other potential problems is in Annex 3.2

Education, promotion and liaison with industry

16. In the past, HSE has produced publications and guidance as ready sources of information to industry, explaining the law and providing advice on methods of compliance. This is now unlikely for three main reasons.

- It is felt that ADR itself is so prescriptive that in most cases the duty holder (guided by his/her DGSA) can find what is required,
- DfT is now the lead department and produces literature of its own,
- Where guidance is needed it will be placed on either the DfT or HSE websites.

17. HSE staff also make presentations at seminars, conferences, etc about the requirements of the legislation, as a means of promulgating good practice. Such techniques are particularly valuable as advice is given simultaneously to numerous duty holders.

18. HSE (through HID CI 4B) also seeks to develop closer links with intermediaries with an interest in the carriage of dangerous goods (trade associations, industry groups, employee representatives), and such bodies can be a valuable source of intelligence. See also Regulatory environment.

Technical input

19. DfT is now the competent authority for most functions (see Regulation 6). DfT maintains its own technical expertise and consults HSE and others as needed.

Inspector training

20. To ensure the effective implementation of the above strategy, especially in relation to complex and prescriptive legislation, it is important that inspectors are trained to an appropriate level. Training is not merely by attendance at a formal training course. HID has

prepared this manual of essential information on CDG 2007 for inspectors, and has mechanisms in place to provide technical and operational advice to its inspectors, police forces and VOSA. The MoU which has been concluded between HSE and the other agencies specifically refers to training as an essential element of the overall process.

Arrangements for dealing with 'on the road' incidents involving dangerous goods

21. 'On-the-road' emergencies involving vehicles carrying dangerous goods should be dealt with by the emergency services. Their personnel are trained and equipped to handle such incidents. HSE is not an emergency service and there are no circumstances in which inspectors should expose themselves to danger.

22. As police forces now have relevant powers there should be no need for HSE inspectors to attend incidents on the road. There may be a need to follow up incidents at duty holders' premises, in which case police officers will provide the necessary information by liaison with HID CI 4B.

23. It would be most unusual for the emergency services to require support from HSE whilst an incident is being dealt with. They might require later support in considering technical and legal issues surrounding for example vehicle or tank standards, or sometimes packaging standards. In that case the first response should be through PVLIs.

24. In a situation where the Emergency Services are unable to obtain relevant emergency information, they can contact the National Chemical Emergency Centre, through the dedicated Chemsafe emergency telephone line, which should be available through their Control Centre. If you need more information about how Chemsafe operates, details can be found at www.the-ncec.com.

25. Information on packaging certificates, issued in UK, can be obtained from the VCA Dangerous Goods Office.

Annex 3.1 - Enforcement guidance for common offences

Carriage of Dangerous Goods & Use of Transportable Pressure Equipment Regulations 2007

Consult the relevant regulations or chapter of ADR for clarification of the precise requirements. A more detailed discussion of some of the issues is in annex 3.2. In every case it is assumed that evidence exists to show that the regulations are applicable

	Regulation	RISK Cat.	ACTION	Notes
Documentation				
No indication of any sort of the presence of dangerous goods.	Reg 53(6) & 63(7)	1	PN	
No or inappropriate details of the nature & quantity of dangerous goods. The information specified in ADR 5.4 (and 5.5 where relevant) should form part of the transportation document	Reg 53(6)	1	PN	A PN is appropriate if the information is so lacking that the inspector is unable to identify what is being carried.
No "Instructions in Writing" (a.k.a. emergency information or "Tremcard ©")	Reg 63(7)	1	PN	
Inadequate "Instructions in Writing" ~ does not match goods ~ no indication of actions in event of an accident ~ in language the driver does not understand		2	PN or deferred PN	Immediate or deferred PN depending on the extent of the missing or misleading information. The main purpose of "Instructions in Writing" is to give information to the driver
"Instructions in Writing" for goods not carried not kept separate (ADR 8.1.2.4)		3	Written report	Ensure matter rectified before journey continues
Equipment				
PPE – equipment specified in the emergency information for use by the driver either not available or is	Reg 63(5)	2	Deferred PN	(Absence of a first aid kit is not an ADR matter and only warrants advice). Term inadequate is open to interpretation, the equipment

	Regulation	RISK Cat.	ACTION	Notes
Documentation				
inadequate.				provided is that necessary to enable driver to take measures detailed in emergency information and, in the case of toxic gases, to enable crew to escape.
Mandatory Items (warning signs, handlamp, high visibility jacket) as specified in ADR 8.1.5				
None carried	Reg 63(5)	1	PN	
Items missing		2	Deferred PN	Use judgement. E.g. one item only missing may justify written report only
Wheel Chocks – none		3	Written report	Considered low risk – UK journey Authorisation 24 applies
Fire Extinguishers				
None, discharged or “under pressure” (see separate decision matrix) below	Reg 63(5)	1	PN	UK vehicles on UK journeys remain as 1996 Regs until 31/12/2007
Less fire extinguishers than required		2	Deferred PN	Especially if the larger extinguisher is fully functional
Fire Extinguishers – not in full compliance with ADR 8.1.4.4 E.g. not sealed or inspection dates not clear (but extinguisher appears functional)		3	Written report	see also separate decision matrix below The extinguisher must show the date (month, year) of the NEXT examination. Risk Category 3 breach if otherwise complies with matrix below. It is also permissible to indicate the maximum permissible period of use

Fire extinguisher decision matrix

Gauge reading	Inspection date	Action	Risk category
Low red	N/A	PN (immediate or deferred depending on whether 2nd FE is in good order) Note: a second FE is not always required	1 or 2

Gauge reading	Inspection date	Action	Risk category
High Red	Overdue more than 3 months	PN (immediate or deferred depending on whether 2nd FE is in good order) Note: a second FE is not always required	1 or 2
	Overdue 1 – 3 months	Deferred PN	2
	up to 1 month overdue	Written report	3

Gauge reading	Inspection date	Action	Risk category
Green	Overdue more than 3 months	PN (immediate or deferred depending on whether 2nd FE is in good order) Note: a second FE is not always required	1 or 2
	Overdue 1 – 3 months	Deferred PN	2
	Overdue up to 1 Month	Written report	3
	In date	None	N/A

Vehicle Markings				
No orange panels and in scope	Reg 53(4) & 91	1	PN	Reg 91 applies to tanks/bulk only and for GB regd. vehicles on GB domestic journeys
Tanker placards i.e.-panels on one side only or on sides but not rear	Reg 53(4), 91 & schedule	1	PN	PN should only be considered when the inadequacy is such to prevent the emergency services from identifying the risks and taking appropriate action. Authorisation 22 allows the use of 'stick on' warning panels on GB vehicles constructed before 1.1.05 when on domestic journeys
~ panels provided but not fully compliant	7	2	Deferred PN	
~ information is inconsistent with load/contradictory/misleading ~ use of HIN (Kemler) instead of				

Vehicle Markings				
EAC when engaged on GB domestic journey				
Panels meet requirements but are dirty, not vertical, not correctly positioned, partly obscured or too small	Reg 53(4)	3	Written report	
Freight Containers				
No markings displayed or danger signs displayed do not match goods carried	Reg 53(4)	1	PN	
Plates/placards when not needed				
Empty & Cleaned but orange plated / placarded vehicles	Reg 53(4) 91 & schedule 7	3	Written report	Remedy by having markings removed or covered. Tankers and bulk should display their placards / plates until cleaned
Driver Training				
No ADR Training certificate (formerly known as VTC) Driver has none or is not carrying it NB. There is now no “small vehicle” exemption. If the load is in scope the driver must hold a valid ADR Training certificate	Reg 64(1)	1	PN	It may be possible to establish whether the driver has been issued with a Training certificate. If this is done and the operator has been informed of the failure to carry the certificate then this can be dealt with by verbal or written warning. If the issue of a certificate cannot be verified then a PN is appropriate until it can be produced. All relevant trade associations have been told of this policy Drivers of all vehicles carrying goods above “small load” thresholds require an ADR Training Certificate
No awareness training – Relevant to “small loads” only	Reg 38(1)	1	PN or deferred PN	Level of driver knowledge in such cases is bound to be subjective. Except in the grossest cases, deferred PN is appropriate. Refer concerns to HSE HID CI 4B

Vehicle Markings				
Loading / Stowing (Insecure load)				
Presents danger to the public and CANNOT be easily remedied	Reg 62	1	PN	May call for other emergency services or for the vehicle to be moved to safe place if that is reasonable in the circumstances.
Serious Leakage – cannot be immediately dealt with by driver				
Presents danger but CAN be remedied safely by the driver	Reg 62	2	Written report	If appropriate a deferred PN could be issued. In this case “defer until leakage remedied” and this could be supervised at the time. The vehicle might have to be moved to a safe place to achieve this and be re-examined before being allowed to continue.
Minor Leakage – can be dealt with safely & immediately by driver				
Inadequate separation of incompatible loads	Reg 62	2	Deferred PN only when ADR 7.5.2 breached	The restrictions on “mixed loading” are very limited and mostly apply only when carrying explosives – refer to ADR 7.5.2. & 7.5.4
Mode of Carriage				
Dangerous Goods Being carried in BULK when not permitted by ADR 3.2	Reg 62(3)	1	Deferred PN	To allow movement to nearest safe place for unloading.
or TANK	Reg 62(4)			
Vehicle & Tank Requirements				
Unprotected Tank Fittings at chassis level or tank fittings extend behind rear protection.	Reg 65(2)	1	Written report	Reports to be forwarded to HSEHID CI 4B MoU does not allow police / VOSA officers to follow up
Tank fittings – clearance between rear end protection and tank/fittings substantially less than 100mm		2		
Examination Plates do not show last examination date, or plate illegible	Reg 60(4)	3		

Vehicle Markings				
Tanker – Emergency telephone number				
No response or seriously inadequate response to number	Reg 91 & schedule 7	N/A	PN	Initial response with basic advice within 10 minutes, more detailed advice within 30 minutes, 1 transfer allowed 'Consult local depot' can be displayed subject to approval from chief fire officer in area of transport

Annex 3.2 - Enforcement discussion

1. Despite the complexity of the regulatory package, the issues to be considered by those carrying out a roadside check on a vehicle carrying dangerous goods are in most cases reasonably straightforward. These have been divided into two sections, viz, those that are relatively easy to determine at the roadside and those that are more likely to be the subject of contacts with other duty holders in the transport chain.

Roadside matters

Transport documentation: ADR part 5 and 8

2. No or inadequate information on the nature and quantity of the dangerous goods being carried would usually warrant a PN. Where there is no 'emergency information', or the information provided does not match the goods being carried, a PN should usually be issued. Emergency information that is only available in a foreign language should be treated as not available.

Driver training: ADR part 8

3. A completely untrained driver, or a driver whose knowledge and awareness is grossly inadequate, would justify a PN (immediate or deferred depending on arrangements necessary for the safe custody of the vehicle). If the driver is not carrying his/her training certificate some judgement is needed. It may be possible to make a phone call to the carrier to check the position. If some evidence that the driver holds a valid certificate cannot be provided, a PN is appropriate and trade associations have been advised that enforcing officers will take that action. At the least, reference should be made in the UMP or (police) 10500 form and a follow up letter to driver and/or carrier would be appropriate. For VOSA and police officers this can be done through HID CI 4B.

4. Sometimes drivers carry a photocopy of their ADR training certificate. This is generally not acceptable but there may be a good reason such as loss or theft of the original. In these cases the driver should be able to show that he has applied for a replacement (e.g. a letter from his employer or a copy of a letter to CGLI).

Precautions against fire and explosion: ADR part 8

5. Most vehicles carrying dangerous goods should be equipped with 2 fire extinguishers of minimum capacity 2 kg and 6 kg of dry powder (or suitable alternatives). These requirements are modified for vehicles of permissible maximum weight (PMW) less than 3.5 tonnes, or vehicles carrying infectious substances only. Details may be found at para 8.1.4 of ADR and in crew and vehicle requirements at paragraph 9.

6. A PN will usually be appropriate if the vehicle has no fire extinguishers or where they are empty or substantially discharged. A deferred PN is appropriate where there is one functional fire extinguisher (where there ought to be two).

7. Difficulties can arise where the pressure gauge on the fire extinguisher indicates "low pressure" (that is the needle is in the "lower red zone"). This usually indicates that there is a problem with the extinguisher and the enforcement table in annex 3.1 should be consulted.

8. Minor breaches such as where the seal is broken but there is no evidence that the extinguisher has been discharged, or where the way test dates are recorded is not correct should be referred to on the UMP form, or the police report form.

Mandatory equipment: ADR 8.1.5 (a) and (b)

9. A total absence of the equipment (other than the wheel chock - see para 11 below) specified in ADR 8.1.5 (a) and (b) (warning signs, high visibility clothing, torch, and where applicable a respiratory protective device) would normally warrant a PN.

10. The provision of a wheel chock was new to GB with the 2004 regulations. Within the haulage community there were strong representations that wheel chocks add little or no value to the overall safety package. None the less the requirement is clear, but the lack of wheel chocks should not be regarded as an issue warranting a PN. It should be reported on the UMP (or police) form, and if appropriate confirmed in a letter to the duty holder. Under authorisation 24 (see Main exemptions) only one wheel chock is needed even where there are two "vehicles" ((such as a lorry with drawbar trailer).

Equipment specified in the Instructions in writing ADR 8.1.5 (c)

11. The absence of equipment specified in the 'emergency' information' as being essential for the driver's use during an emergency would usually justify a deferred PN, For further discussion see "Common problems".

Vehicle marking and placards: ADR Part 5.3

12. Most vehicles carrying dangerous goods must display placards which alert emergency services, enforcement officers and other road users to the potential risks associated with the goods.

12.1 The absence of placards when required to be displayed by the Regulations would justify a PN (immediate or short deferment to allow movement under custody to safe place), and in some cases prosecution of the carrier and/or driver.

12.2 Placards giving information that is inconsistent with the load, contradictory information or information that could seriously mislead the emergency services would also justify similar action in most cases.

12.3 Information displayed on Hazard Warning Panels etc that is faint, worn or unclear needs to be considered on its merits. Where the problem is more serious a deferred PN may be appropriate, to allow the vehicle to complete its journey before new placards are provided.

12.4 Vehicles displaying 'no hazard' or 'low hazard' placards when dangerous goods are actually being carried should be subject to a PN. Prosecution of the carrier and/or driver would also be justified as this is seriously misleading.

12.5 Displaying placards when not carrying dangerous goods is an offence and could mislead the emergency services. This can often be dealt with by removing the placards; it is not usually necessary to issue a PN. However, enforcement officers should take a more serious view where the offence involves the unnecessary

display of hazard warning panels etc. on empty and cleaned road tankers, tank containers or vehicles designed to carry dangerous goods in bulk. Formal enforcement action should be considered in these circumstances, particularly if there is evidence that the carrier and/or a particular driver have been previously warned for the same offence.

12.6 Displaying plain orange-coloured placards when carrying packaged dangerous goods in quantities below the thresholds set out in ADR 1.1.3.6 (small loads) is not an offence.

12.7 Displaying ADR placards and marking when not on an international journey (or IMDG placards when not involved in a journey that includes a sea passage) is an offence. However, provided there is full compliance with the ADR or IMDG requirements, as appropriate, action should be restricted to comment on the UMP or police (10500) form. Any failure to comply with ADR or IMDG requirements means that the relevant requirements of CDG 2007 must be complied with in full.

12.8 Displaying the front plain orange-coloured plate propped up inside the cab windscreen is unacceptable. Such placards should be fixed in a position where they can be clearly seen on the front of the cab before the vehicle is allowed to continue its journey. This is usually so easily remedied that a PN will not normally be necessary but a mention on the UMP or police (10500) form would be appropriate.

12.9 Spare plates should be removed and stored in a secure place on the vehicle. Any failure to comply is usually so easily remedied that a PN will not normally be necessary, but a record will be appropriate. If there is no place on the vehicle where spare placards can be secured, enforcement officers may consider taking the spare placards into their possession, otherwise a PN may be appropriate.

12.10 Some Emergency Action Codes (EAC) have changed in recent years. A 2007 edition is now in force. The list is on the web site of DCLG. Unless seriously misleading (which should be unusual) action should be limited to UMP or police (10500) form. Note Sch 7 para 5(3) of the regulations which permits tankers constructed before 1 January 2005 to display non-fire resisting orange coloured plates.

12.11 GB registered vehicles carrying dangerous goods in tanks/tank containers on domestic journeys must display a telephone number where specialist advice about the goods is available at all times (subject to alternative described in Sch 7, para 4(2)). A domestic journey is one that is wholly within GB. Some carriers engage third parties to act directly as a source of specialist advice on their behalf, or to arrange for a nominated person to be contacted. Such arrangements are acceptable as long as they work effectively. If the initial contact promptly refers the caller to another number where specialist advice is available then this should be accepted, but further referrals would be unacceptable. No response or a seriously inadequate response would usually warrant a PN. See also Common problems.

Loading, stowage, unloading and cleaning: ADR part 7

13. Action to be taken with insecure or poorly segregated loads of packaged goods depends on the circumstances. Where there are serious problems with the way a load is

stowed, secured or segregated and these cannot be easily remedied on the spot, a PN will be appropriate.

14. Sometimes it is possible for a vehicle to be directed to a nearby industrial or distribution site where the load can be rearranged. This is common for over-weight vehicles, so at multi agency events enforcement officers may be able to make provision by liaison with Trading Standards Officers. Care needs to be taken to ensure that the carrier takes responsibility for this. It is simply an option to enable a PN to be complied with safely and at minimum "time cost" to the carrier.

The vehicle: ADR part 6

15. Tankers/tank containers should be fitted with a plate giving the date of last inspection. In the absence of this information a deferred PN may be the best course of action since it is unlikely that this can be remedied at the roadside.

16. Unprotected fittings, valves etc, projecting beyond the chassis or crash-protection bars on the vehicle should normally be dealt with by a deferred PN, since in most cases it is safer to allow the vehicle to continue to its immediate destination, than to attempt to rectify the situation or make modifications at the roadside. HID CI 4B should be notified of any enforcement action taken. Note that, under the terms of the Memorandum of Understanding, police and VOSA officers should not enforce this aspect of the regulations.

17. Covers left off valve outlets should be replaced before a vehicle is allowed to continue in which case a PN is not necessary. If the covers are not available, and assuming there is no sign of a leak from the valve(s), a deferred PN may be most appropriate, requiring them to be fitted before the next journey.

18. Minor leaks of dangerous goods and similar incidents involving the load, that can be brought under immediate control should be dealt with by the driver so far as is reasonable, in accordance with those instructions in the 'emergency information' that apply to the driver in such circumstances. As previously, in certain circumstances a deferred PN may be the best option, so that the vehicle can be moved to the nearest safe place under the control of the emergency services.

Supervision and parking of vehicles: ADR chapter 8.5

19. Column 19 of table A in ADR gives the details for each relevant substance. The reference is to the precise requirement in Chapter 8.5 of ADR (phrases S14 to S21 are applicable). Vehicles left unsupervised on the public highway without reasonable cause, or parked inappropriately should be moved to a safe place as soon as possible and action taken against the driver and/or carrier.

Other matters (less likely to be "roadside issues")

Classification: ADR part 2

20. Where there is evidence that the goods are dangerous and have been wrongly classified enforcement officers should consider issuing a PN. In many cases a deferred PN will be appropriate, so that the goods can be moved to a place where the classification process can take place in greater safety.

Packaging: ADR Part 4

21. Enforcement officers should consider issuing a PN where there is evidence of serious deficiencies in standards of packaging. A deferred PN may be appropriate so as to allow the goods to be moved to a place where they can be re-packaged in greater safety. Packagings that do not meet required UN/ADR design-type approval standards, fail to display appropriate UN/ADR markings or display falsified type approval markings may nevertheless be fit for purpose, and further information on the quality of the packaging may be needed to support enforcement action.

Concerns of this sort should be reported to HID CI 4B.

Labelling: ADR Part 5

22. The absence of labels, or labels giving false, inconsistent or seriously misleading information about the goods being carried should usually be dealt with by a deferred PN so that the goods can be moved to a place where they can be re-labelled in greater safety.

Annex 3.3 - Roadside checks

Personal safety

1. The safety of staff during vehicle checks is of overriding importance. The following information is directed mainly at HSE staff. Police and VOSA officers will have their own procedures.
2. Before carrying out a roadside check, inspectors and any other staff involved should be fully aware of the instructions provided in the HID Health and Safety Policy Supplement - Carriage of Dangerous Goods - see below for main points.
3. Inspectors identifying matters of evident concern involving a vehicle carrying explosives should seek specialist advice from the Explosives Inspectorate, HID SI2D, Redgrave Court - tel: 0151 951 4025 during office hours, or via the duty officer system at other times.

Roadside checks

4. HSE inspectors do not have the powers to stop vehicles on the road. Therefore, all roadside checks involving HSE inspectors must be carried out in conjunction with the police or VOSA.
5. Most vehicle checks are carried out by the police and VOSA officers. HSE undertakes fewer vehicle checks because the main element of our inspection/enforcement takes place at dutyholders' premises. However, roadside checks are a useful means of monitoring the level of compliance with the relevant legislation and ensuring that unregistered carriers and foreign vehicles are not excluded from our attention. In addition they provide an opportunity to maintain and develop liaison with the agencies who act on our behalf.
6. HSE inspectors and VOSA officers who carry out checks on any vehicle to which the regulations apply, must complete a UMP form and give it to the driver. A duplicate copy of each checklist completed by HSE is retained and forwarded to HID CI 4B, Redgrave Court, Bootle.

Types of roadside checks

7. Roadside checks generally fall into 2 categories:

- Static checks, which involve vehicles being selected for inspection by the police and directed to a fixed and safe checkpoint, for example a weighbridge or lay-by, where checks are carried out by HSE inspectors and/or other enforcement officers. When static checks are directed solely at vehicles carrying dangerous goods and involve a representative cross-section of vehicles to which the regulations are likely to apply, they can represent an efficient use of HSE resource. However, where such checks involve several other enforcement agencies, such as Customs and Excise, Benefits Agency, RSPCA, Environment Agency etc, and are therefore not solely directed at vehicles carrying dangerous goods, they are often a much less efficient use of HSE resource. Nevertheless, nationally organised, multi-agency checks tend to be favoured by the police in that they often result in substantial detection of crime, which is by no means confined to contraventions involving dangerous goods.
- Mobile checks which allow enforcement officers to target vehicles thought to be carrying dangerous goods and, in particular, those suspected of a breach. This technique has some merits, but it ties up considerable police resource while tending to provide fewer opportunities for enforcement. There are also risks associated with stopping vehicles in these circumstances. HSE officers must adhere to police procedures if this technique is adopted.
- Consequently, multi-agency checks at fixed locations are likely to feature more prominently in future, and there may be fewer opportunities for checks dealing exclusively, or mainly with vehicles carrying dangerous goods.

8. Roadside checks should involve a representative sample of vehicles to which the regulations are likely to apply, and should not simply concentrate on petrol tankers, for example. Experience suggests that the major operators of tanker fleets work to good standards. Where vehicles are selected for inspection by the police, HSE inspectors and VOSA officers should emphasize the need for a broad range of vehicles to be selected. In all cases, once selected, vehicles should be directed to a location where the inspection can be carried out in safety.

9. As a result of changes to legislation that implement ADR 1.10 in relation to security, some drivers may be carrying "dangerous load cards". The driver's need to check that he is being stopped by bona fide officials should be respected.

10. There is continuing concern about the need for vigilance to prevent any potential hijacking of vehicles carrying dangerous goods. These requirements will be solely enforced by the Vehicle and Operator Services agency (VOSA) and any enquiries should be referred to them or DfT Transport Security.

11. HSE Inspectors and police officers should still consider general security issues during routine inspections of carriers. There are simple checks that they can make. The aspects which should be considered include:

- Appropriate parking and supervision of vehicles (regulation 24(3) implementing ADR chapter 8.4)
- Vigilance during loading and unloading of the dangerous goods.
- Driver to hold appropriate training certificate and to carry photographic identification.

12. The small number of vehicles carrying explosives by road and the specialist nature of the industry mean that routine, roadside checks are not an effective use of Explosives Field Team resources. Instead the Explosives Field Team has a programme of central approaches at the premises of explosives hauliers and manufacturers.

13. In order to maintain the quality of the HSE's database and ensure a consistent approach to the maintenance of contact information, contact records for vehicles encountered at the roadside should only be made where the information is of value to HSE and, in particular, is likely to provide a sound basis for future intervention. Details of the criteria to be applied to creating a record for vehicles encountered at the roadside are provided below.

Planning

14. HSE inspectors should plan roadside checks with their police and, where appropriate, VOSA contacts. Important considerations include the:
safety of those involved

- type of check(s) to be carried out;
- numbers of agencies/individuals involved;
- location(s) of the checkpoint(s) and the facilities available;
- identity of the person in overall control of the checkpoint(s);
- arrangements and facilities for detaining vehicles;
- need for technical and/or administrative support; involvement of the media;
- arrangements for dealing with an emergency.

Publicity

15. On the road inspection affords a valuable source of publicity, and interest by the news media should be encouraged. Ideally, all contacts with the media should be via HSE's Press Office. However, it is accepted that HSE inspectors may deal directly with the local media in providing factual information on operational matters. Typical areas of interest include:

- HSE's role at roadside checks;
- the scope of the relevant legislation;
- the nature of any breaches encountered;
- standards of compliance;
- the level of risk; the type of enforcement action taken; and
- the penalties that may be imposed.

16. HSE inspectors should ensure that information on enforcement exercises that are planned or still in progress is not released to the media so early as to allow drivers to avoid

inspection. This is particularly important where HSE is only one of several enforcing authorities taking part.

17. Media reports of on-the-road inspections may result in questions being addressed to the Dangerous Goods Branch of the Dept for Transport. Therefore, it is important that:

interviews with the media are confined to matters for which HSE has enforcement responsibility (comments should not be made on the matters enforced by DfT); and press releases are cleared by Press Office and forwarded to DfT, via HID CI4B - although this does not apply to information given to the media on specific incidents reported or investigated by HSE.

HSWA powers

18. The definition of premises in HSWA s.53 includes a vehicle. HSE inspectors wishing to detain a vehicle for technical examination by specialists, but where the criteria for a Prohibition Notice (PN) are not satisfied, should exercise their power under HSWA s.20(2)(e) to direct that the vehicle be left undisturbed, i.e. not moved, for so long as is reasonably necessary for the purpose of any examination or investigation.

19. Inspectors should not normally exercise a power under HSW Act s.20 (2) (i) to take possession of a vehicle since this may place the inspector under a common law duty both with regard to the security of the vehicle and the health and safety of persons who may be affected by it.

Matters which may require a prohibition notice to be issued

20. Enforcement officers should consider issuing a PN if they are of the opinion that a risk of serious personal injury (to the driver, others involved in the transport of the goods, the emergency services or members of the public), exists or is foreseeable if the vehicle was to resume its journey. For example, the absence of a fire extinguisher or deficiencies in the information carried by the driver may result in an increased risk of serious personal injury if the vehicle is subsequently involved in a fire or accident. A deferred PN should be issued if the nature of the risk allows the vehicle to be moved to a place where the necessary remedial action or technical examination can be carried out in greater safety.

21. Guidance on enforcement standards is given above in Annex 3.1 and 3.2

22. Enforcement officers should use their judgement and act in accordance with the enforcement policy.

23. Other matters may also warrant enforcement action, depending on the circumstances of the journey, the goods involved, the standards of packaging, the condition of vehicle and the response of the driver. For multiple offences or blatant disregard of the regulations prosecution should be considered.

24. HSE and VOSA officers should complete a UMP form (see Annex 3.4 below) in all cases. The top copy is given to the driver. HSE Inspectors should send the copy to HID CI 4B at Redgrave Court House. VOSA officers Police officers have their own protocols that enable the results of inspections to be collated.

25. Enforcement officers should take account of the defences available under regulation 93 when considering prosecution.

Extracts from HID Health and Safety policy - carriage of dangerous goods supplement

Personal protective equipment

1. Line managers should ensure that staff conducting "on the road" inspections are equipped with the following items:

- High visibility jacket with reflective stripes;
- Protective gloves;
- Protective footwear;
- Protective glasses;
- Overalls; and
- First aid kit.

2. Checks are often carried out in exposed locations with little opportunity for shelter, and may involve contact with vehicles or equipment that is dirty. Clothing should be selected with these considerations in mind. Fingerless gloves (if protective gloves not needed), scarf, and hat will be invaluable in cold weather.

Roadside checks

3. All staff involved in roadside inspections on vehicles carrying dangerous goods should wear a high visibility jacket or waistcoat, with reflective stripes to BS EN 471, at all times during the check.

4. An HSE inspector with experience of carrying out roadside checks should take charge of all HSE staff and any HSE guests present, and brief those involved on the relevant hazards and precautions. The HSE inspector in charge should ensure that those staff involved in carrying out checks on vehicles have been issued with and wear appropriate high visibility clothing. At multi-agency checks the HSE inspector in charge should liaise with the person in overall charge of the check - usually the senior police officer - and make sure that any safety precautions laid down by that person are followed. Inspectors should not play any role in directing vehicle movements during roadside checks.

Hazard

5. At all roadside checks there will be a hazard from moving vehicles. This applies whether the checks are carried out at the roadside or off the road, for example at a Vehicle Inspectorate weighbridge.

6. Inspectors should not examine vehicles on the hard shoulder of motorways or other high speed roads. Wherever possible, vehicles should be directed to a service area, lay-by or other location where the inspection can be carried out in greater safety. Where vehicle checks take place in lay-bys or other areas adjacent to a line of moving traffic, inspectors should approach the vehicle to be checked from the side nearest the kerb and, where possible, occupy the passenger seat in the cab when talking to the driver. Alternatively, the driver should be spoken to from the nearside of the cab or asked to leave the vehicle.

Inspectors should not stand between the vehicle and a line of moving traffic or cross the carriage way on foot.

7. Incidents involving vehicles carrying dangerous goods are best dealt with by the emergency services, assisted by technical input from the companies involved, trade bodies and specialist contractors, as necessary. Although inspectors may be alerted to such incidents and requested to attend the scene it will rarely be necessary for them to do so. HSE is not an emergency service and there are no circumstances in which inspectors should approach a hazardous situation and it is not intended that they should be equipped to do so.

8. However, occasionally, the nature of a particular incident and/or the likely degree of public, political or media attention may warrant immediate HSE involvement. If, in these circumstances, a vehicle cannot be moved to a safe location off the road, inspectors should arrange for the police to drive them to the scene. When getting out of a police vehicle in a lay-by or other location adjacent to a line of moving traffic, Inspectors should use the door nearest the kerb, wherever possible.

9. On-the-road inspections should normally be confined to a visual examination of the vehicle, relevant documentation, emergency equipment and, where appropriate, any packages being carried. If a more detailed technical examination by HSE is required, this should only take place when appropriate technical support from specialists is available, and arrangements have been made for the vehicle to be parked in or taken to, a safe location and, where necessary, for the attendance of the emergency services.

10. Inspectors should not open packages or tanks, or attempt to obtain samples of the loads being carried in any circumstances. This applies even when the goods being carried are known or believed to be harmless, or the receptacle, tank etc is empty. If, in exceptional circumstances, a sample of dangerous goods is required inspectors should seek advice from the appropriate specialist support.

11. Staff should not expose themselves to any possible risk when leaks of dangerous goods are detected or suspected. No attempt should be made to close valves or control leaks, spillages etc. Minor leaks of dangerous goods and similar incidents involving the load, that can be brought under immediate control should be dealt with by the driver so far as is reasonable and consistent with personal safety. The "instructions in writing" should be consulted.

12. Staff should not enter freight containers, enclosed load compartments or similar confined spaces unless absolutely necessary. Such areas should not be entered under any circumstances where there is suspected contamination within the vehicle, for example from a leaking package. No attempt should be made to gain access to the top of tankers for inspection purposes.

13. Inspections of vehicles carrying explosives should take place from outside the vehicle, and inspectors should not enter the load compartment or move any of the load. Inspectors identifying matters of evident concern involving a vehicle carrying explosives should seek specialist advice from the Explosives Inspectorate, HID SI2D, Redgrave Court, Bootle, tel: 0151 951 4025 during office hours, or via the Duty Officer system at other times. Further advice is given in Section E.

List of other items required on a roadside check

In addition to the PPE noted above, inspectors will find the following helpful

Equipment

- Clipboard and cover (as simple as a large polythene bag to keep rain off the papers)
- Pens
- First-aid kit
- Camera
- Mobile phone

Documents

- Warrant
- Business cards
- Improvement Notices
- Prohibition Notices
- Statement forms
- UMP checklists
- Copy of CDG 2007 (can be downloaded from the OPSI website)
- ADR (2 volumes) (the "Orange Books"). This is also available in electronic format
- Carriage Manual (may most conveniently be taken in electronic form on a laptop computer)
- Major Incident Response and Investigation Manual - Inspector's card

Information

HSE contacts:

- HID SI 2D: Explosives Inspectorate - 0151 951 4025
- HID SI 5: Design standards and specification of road tankers and TPRs 0151 951 4651
- Duty Officer/other local contacts: (during 'out of hours' inspections)

Where possible, individual contacts should be agreed prior to the check.

Recording contacts

1. In order to maintain the quality of the databases and to ensure a consistent approach to the maintenance of contact information, contact records for vehicles encountered at the roadside should only be made where the information is of value to HSE and, in particular, is likely to provide a sound basis for future intervention.

2. Clearly, the decision whether or not to create a record is a question of professional judgement, and it is not possible to prescribe definitively every circumstance in which the creation of a contact record would be appropriate. However, the following points should be considered when coming to a decision.

3. Contacts with vehicles at the roadside generally fall into 3 categories:

- Vehicles to which the regulations apply, and where a likely breach is detected;
- Vehicles to which the regulations apply where no breach is detected; and

- Vehicles to which the regulations do not apply.

4. Contacts in category (a) will usually involve a thorough inspection of the load, documentation, standards of driver training and safety equipment, and should always give rise to a record, including details of the alleged breach and other relevant information.

5. Contacts in category (b) will usually require a check similar in extent to that carried out for category (a) and, despite the absence of a breach, creation of a record will often be appropriate so that positive aspects of a carrier's performance can be retained for reference. This will usually not be more than a COIN contact record. This may be particularly appropriate for large/nationally-based carriers with a significant involvement in the carriage of dangerous goods and where such information may provide a perspective in which to consider future enforcement action or resource allocation.

6. Contacts in category (c) - usually involving vehicles with no outward indication that dangerous goods are being carried - represent a valid element in our enforcement strategy; a significant proportion of the vehicles selected for inspection at static, multi-agency checks may fall into this category. In most cases such contacts will not provide HSE with valuable information and therefore a contact record should not be created. There will of course be a UMP form. However, there may be some exceptional circumstances in which a record is justified for contacts in this category. For example, where:

- a vehicle is known to have been carrying dangerous goods immediately prior to the check and there is evidence that there has been a lack of compliance (e.g. no fire extinguishers carried, driver without ADR Training certificate): or
- useful discussions take place or significant advice is given by the Inspector, even though the regulations are not applicable at the time of the check.

Annex 3.4 - The UMP form

1. The Uniform Procedures for Checks on the Transport of Dangerous Goods by Road Directive was updated in 2004. The aim is to harmonise procedures within EC member states for checking compliance with the relevant legislation during the checking of vehicles carrying dangerous goods. The main requirements are:

- The use of a standard checklist (UMP form) of items for every vehicle carrying dangerous goods that is inspected,
- The provision of a report of the findings to the driver, and
- Submission of an annual report to the EC, giving details of the checks carried out, number and types of infringements detected and enforcement taken. This is carried out by DfT.

2. These checklists are to be completed by HSE Inspectors. VOSA inspectors also use the forms. Police officers conduct the checks in accordance with the directive but use a different report form to give to the driver. In all cases the driver, and subsequently the carrier should have a clear record of the outcome of the check.

3. The following notes may help in completing the form:

- Item 11. This refers to "Small Load" thresholds.
- Item 14 Commonly called the Tremcard©

- Item 15. UK is signatory to a number of multilateral agreements but they apply only to international journeys and are for relatively esoteric purposes. In most cases "not applicable" is appropriate. If needed, details can be found on the UN website.
- Item 16. Vehicles should carry their approval certificates. See ADR 9.1.3.5
- Item 28. basic safety equipment such as wheel chocks, high visibility clothing, torch.
- Item 29. Special equipment such as intrinsically safe torch when carrying flammables
- Item 32. See risk category for common breaches set out in the tabular summary above. Risk category I is the most serious.

4. The report is given to the driver and the copy should be forwarded to HID CI4B at Redgrave Court for onward transmission to the Department for Transport, who produce the annual report to the EC.

ADR and the Carriage Regulations

- ADR
- CDG 2007
- Dangerous Goods Safety Advisor

ADR

1. ADR is available on line.
2. ADR is highly prescriptive but structured logically.
3. The structure of ADR is that each part is subdivided into chapters and each chapter into sections and paragraphs and sub paragraphs. So for example, 2.1 is the introduction to classification, 2.2 is the class specific provisions, 2.2.1 relates to class 1 (explosives), 2.2.2 to class 2 (gases) and so on.
4. Part 1 is the introductory part setting out high level aims and duties, together with exemptions. This includes the need for a dangerous goods safety adviser (DGSA) at chapter 1.8.3.
5. It then goes logically through the process as follows:
 - Part 2. Classification
 - Part 3. The dangerous goods list (including special provisions and exemptions related to limited quantities.
 - Part 4. Packing and tank provisions
 - Part 5. Consignment procedures, including documentation and vehicle marking
 - Part 6. Construction and testing of packagings, intermediate bulk containers (IBC), large packagings and tanks
 - Part 7. Carriage, loading, unloading and handling
 - Part 8. Vehicle crews, equipment, operation and documentation (including driver training)
 - Part 9. Construction and approval of vehicles
6. It follows that, if care and time are taken, the answer to most problems can be found, and for that reason there is little or no need for explanatory literature or guidance.
7. ADR itself contains general exemptions (at 1.1.3). CDG 2007 contain exemptions that apply in GB only. These are discussed in detail in the Main exemptions part of this manual.
8. Many duty holders are required to have a Dangerous Goods Safety Adviser (DGSA) who should have the training and knowledge to deal with the matter. GB exemptions are discussed below.

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007 (CDG 2007)

9. CDG 2007 set the legal framework in GB, as ADR itself has no provision for enforcement. The regulations include a number of exemptions and make substantial changes to the ADR requirements for the domestic carriage of many explosives.

10. The regulations are extensive because they draw together and replace many previous pieces of legislation. They cover every aspect of the carriage of dangerous substances by road and rail.

Dangerous goods safety adviser (DGSA)

11. ADR at 1.8.3 requires many of those involved in carriage of dangerous goods to appoint a DGSA. It prescribes the training and certification regime. It is applied in GB through CDG 2007 at regulation 43 and applies to carriers fillers and loaders subject to some exemptions discussed below. The GB exemptions do not apply to international carriage.

Exemption (a)

(i) Where the main or secondary activity of the person is not the carriage of dangerous goods or (related activities). Various questions of interpretation arise in connection with this disapplication. "Main or secondary activity" should be interpreted as the main or secondary purpose of the business. Thus companies whose business is not the transport of dangerous goods per se but whose activities involve such transport will normally not require to appoint a DGSA. For example construction companies taking dangerous goods to and from sites would not be regarded as having transport of dangerous goods as either a main or secondary. Examples include:

- Construction companies taking dangerous goods to and from sites would not be regarded as having transport of dangerous goods as either a main or secondary.
- Repair organisations that occasionally recover vehicles which are still loaded with dangerous goods. For routine services, it would be expected that the vehicles would be unloaded and where applicable cleaned and purged.

Hauliers, delivery companies, freight forwarders etc are not within this category as carriage of dangerous goods is often their main or secondary activity.

(ii) The exemption is further qualified. The terms "occasional" and "little danger or risk of pollution" pose practical difficulties of interpretation. In so far as the limited quantities exemptions apply a risk assessment approach, it could be argued that carriage above those thresholds cannot qualify. The regulation clearly envisages that there will such cases and the following examples may help in making the judgment.

- transport of dangerous goods in transport category 4
- transport of dangerous goods in transport Category 3 but only in packages (not tanks/bulk) where the volume/mass of the load concerned does not exceed 1500 litres or kg. Goods in transport categories 0, 1 and 2 should not be treated in this way.
- transport of explosives in loads of up to 10% above the thresholds at which placarding requirements apply.
- "occasionally" should be interpreted as 1 to 2 journeys per month. If more frequent deliveries (e.g. by a contractor to a site) are required this should not be

regarded as occasional. Other exemptions may allow a duty holder not to appoint a DGSA.

Exemption (b)

Where carriage is only carried out within the load limits set out in ADR 1.1.3.6. Details in Main exemptions.

Classification

- Introduction
- CDG 2007
- ADR
- Wastes

Introduction

1. ADR works in such a way that classification is the precursor for everything that follows. Once a substance or article has been properly classified, table A (ADR 3.2.1) allows every other requirement to be ascertained by working logically through the columns.

CDG 2007

2. Regulation 47 is the basis for implementing the classification aspects of ADR. This is the duty of the consignor, though he may have to rely on others for information and data. There is a “due diligence” defence (Regulation 93).

ADR

3. The rules for classification are in ADR at part 2. Dangerous substances (and this includes articles) are very widely defined, but some, for example most medicines and cosmetics, do not have the hazardous properties that would bring them within scope of the requirements, and those that do are usually carried in very small receptacles, allowing at least partial exemption from the requirements (either limited quantities or limited loads - see Main exemptions).

4. Consignors have a duty to identify the hazards of the goods they intend to transport. There are nine classes, some with divisions, as follows.

UN Class	Dangerous Goods	Division(s)	Classification
1	Explosives	1.1 - 1.6	Explosive
2	Gases	2.1	Flammable gas
		2.2	Non-flammable, non-toxic gas
		2.3	Toxic gas
3	Flammable liquid		Flammable liquid
4	Flammable solids	4.1	Flammable solid
		4.2	Spontaneously combustible substance
		4.3	Substance which in contact with water emits flammable gas
5	Oxidising substances	5.1	Oxidising substance
		5.2	Organic peroxide
6	Toxic substances	6.1	Toxic substance
		6.2	Infectious substance
7	Radioactive material		Radioactive material
8	Corrosive substances		Corrosive substance
9	Miscellaneous		Miscellaneous dangerous

UN Class	Dangerous Goods	Division(s)	Classification
	dangerous goods		goods

5. Part 2 of ADR works through the categories in logical sequence. It sets out descriptions and criteria in some detail. The consignor must assign a “proper shipping name” and UN Number to the substance.

6. There is a hierarchy of classification (ADR 2.1.3.5.3) and there are rules about choosing the most appropriate entry and hence UN number (ADR 3.1.2).

7. Many substances and generic groups (e.g. paints) have already been classified, so in many cases a consignor may only need to find his substance in the “dangerous goods list”, which is in part 3 of ADR. There is a corresponding alphabetical list - table B. Both lists are at the end of Volume 1 of ADR.

8. Many preparations will not be found in table A of ADR. In those cases the rules for classification need to be followed.

9. Once a UN number and proper shipping name have been assigned, table A allows all the relevant parts of ADR to be accessed. Some substances with the same name will have different degrees of danger (for example flash point). This is reflected in the “packing group” (PG), which is found in column 4 of table A. The head of column 4 in turn directs you to the relevant part of ADR (in this case 2.1.1.3). Where a substance has been classified from “first principles”, its PG will be determined by its properties (for example ADR 2.2.3.1.3 shows how flammable liquids are assigned a PG).

10. Some substances are not assigned a PG (notably gases and explosives), but they do have a transport category, the relevance of which will be discussed elsewhere (Main exemptions) in relation to limited load exemptions). In certain special circumstances it may not be practicable to classify the goods fully before carriage, for example when sending samples for analysis. In such cases it is acceptable to “over-classify” the goods on the basis of the information which is already available (ADR 2.1.4).

11. Proper shipping names may also be qualified by the addition of the terms such as ‘SOLUTION’; ‘LIQUID’; ‘SOLID’; ‘MOLTEN’. Details at ADR 3.1.2.3 to 3.1.2.7.

Wastes

12. With the exception of clinical waste, wastes are classified in the same way as other substances. The rules at ADR 3.1.2.8 mean that where generic or “NOS” names are chosen, the substance or substances giving rise to the hazards may have to be named. See Special Provision 274 where it appears in column 6 of Table A. The word “WASTE” should qualify other descriptions where applicable (ADR 5.4.1.1.3).

Packaging

- CDG 2007
- ADR
- Packaging example
- Approved packaging
- Re-use of packaging
- Limited quantity exemption
- Tanks etc
- Annex 6.1 Inspection and tests of a fixed tank
- Annex 6.2 Schedule 2 of CDG 2007 - "old tanks"
- Annex 6.3 Some illustrations of containment systems

CDG 2007

1. Regulation 51 is the basis for implementing the packaging parts of ADR. The duty lies with the consignor and packer, who may be the same person. There is a "due diligence" defence (regulation 93).

ADR

2. Packaging requirements are at part 4 of ADR (in volume 2 of the "orange books"). The logical sequence is followed, with chapter 4.1 covering the use of packagings, intermediate bulk containers and large packagings. Each of these terms is defined in ADR at chapter 1.2. Chapters 4.2 to 4.5 cover various sorts of tanks.

3. Part 6 of ADR is complementary in that it sets out detailed requirements for the construction, and testing of packagings and tanks.

4. The initial parts of Chapter 4.1 cover all the general requirements with more detail following (the pattern throughout in ADR).

5. Once dangerous goods have been classified correctly, table A allows all the details of permitted packaging to be accessed. Columns 8 to 14 show what sort of packaging is allowed and directs you to the details.

Example

- UN No 1263 Paint product in PG I (first entry)
- Column 8 shows that it may be packed according to the instruction P001
- In turn, top of column 8 directs you to para 4.1.4, which gives the details of what P001 allows. A wide range of packaging types is given.

6. It can also be seen that different requirements apply according to Packing group (PG). In this example, if drums are chosen as the (single) packaging, there are ten types available, all limited to 250 litres.

7. Similarly reading from columns 10 to 14 shows what tank methods are available and by reference to the relevant parts of ADR, complete details may be found.

8. That process may be adopted for all substances, care being taken to check any detailed provisions shown in other columns. In the example of the paint, there are mixed packing provisions (column 9(b)). These take you to paragraph 4.1.10. Whilst these provisions are detailed, they do allow the packer to see exactly what is and what is not permitted. The DGSA should advise the packer in this matter.

Approved packaging

9. In most cases (the main exemption being limited quantities) packaging has to be certified to UN standards. The international agreements for the carriage of dangerous goods require packaging to be of a design-type certified by a national competent authority. This involves testing the packaging to ensure its suitability for the carriage of certain dangerous goods. Such packagings are often referred to as “type-approved” or “UN certified”. Such packaging is marked in particular ways, prefixed by the UN logo and followed by codes, the details of which may be found in part 6 of ADR.

10. For the example given above, P001 shows that a “steel non-removable head drum” (a conventional drum with small openings) is coded “1A1”. Its marking might be :



1A1 / X/ 1.2/150/ 03/GB/abcd

This is interpreted as follows (see ADR 6.1.3.1)

- 1A1 steel non-removable head drum
- X for PG I, II, III
 - maximum relative density (formerly specific gravity) of contents
- 150 Test pressure of drum in kPa
- 03 last two digits of year of manufacture
- GB country of certification
- abcd represents the number of the certificate (in GB this is all figures)

11. A number of other examples, with their interpretation, may be found in ADR at 6.1.3.11.

12. If a PG II substance is used as the example (say UN 1193) it can be seen (column 8) that an IBC option is available (IBC 02), as well as “light gauge metal packaging” (code R001). By following the relevant “packing instruction” in part 4.4.4.2 the permissible types of IBC can be found.

13. The same process can be followed for any other type of packaging, with details to be found as follows

Chapter 6.2	pressure receptacles (inc aerosols)
Chapter 6.3	class 6.2 substances (infectious substances)
Chapter 6.4	Class 7 (radioactive substances)
Chapter 6.5	Intermediate bulk containers (IBCs)
Chapter 6.6	Large packagings
Chapter 6.7	Portable tanks, multi element gas containers
Chapter 6.8	Fixed tanks etc
Chapter 6.9	Fibre reinforced tanks etc
Chapter 6.10	Vacuum operated waste tanks

14. In every case all the necessary, highly prescriptive, details are to be found.
15. There are analogous processes for reconditioned packaging (e.g. there are specialist drum reconditioning firms). Drums are sometimes used on a “one trip” basis, but they may be re-used.
16. IBCs are intended for years of service and there are rules for their inspection (ADR 6.5.1.6.4). IBCs will also be marked with their inspection record (ADR 6.5.2.2.1).
17. In the UK the competent authority for the certification of packaging is the Department of Transport. The testing certification scheme is operated on their behalf by their agents VCA Dangerous Goods Office, Cleeve Road, Leatherhead, Surrey, KT22 7RU. Their website contains the details of all UK certified packaging. Similar arrangements exist in many other countries.

Re- use of packagings

18. ADR contains no specific ban on the re-use of packagings. Drums are commonly re-used, but the packer or consignor needs to be sure that the drum is in a fit state and that it can be used in accordance with the conditions set out in its certificate of packaging performance. This might include reference to the type of closure. It is common for packaging as a whole (including caps and sealing elements) to be certified. Accordingly the packer should have access to the certificate and work within its limitations. Due diligence would require such a course.
19. Where drums are returned to the original packer for re-use, it would be expected that all the necessary conditions for adequate packing could be met, but other users will have more difficulty.
20. There is no objection (under this legislation) to packagings being used for substances that are not dangerous for carriage. Similarly, packagings could be used for on-site storage subject to risk assessment and requirements of other legislation.

Exemptions

21. Although most packaging needs to be tested and certified there are some exemptions, in particular for certain dangerous goods when carried in limited quantities.
22. Limited quantities (LQ) refer to the sizes of packages. There are 29 LQ categories two of which are “reserved”. See table at ADR 3.4.6 – note that where there are gaps in the table the figure 30 kg should be entered in column 3 and 20 kg at column 5 –ADR 3.4.1.2. For limited quantity exemptions, the general requirements for packaging (to be of good quality and suitable etc) apply, but the packaging does not have to be “UN approved”. Each LQ category has some packaging constraints (ADR 3.4.2 to 3.4.5) and there are particular labelling requirements (see ADR 3.4.4(c)). Within these constraints, ADR does not apply to “limited quantities”. Note that for substances with “LQ 0” there is no lower limit to the package size that permits an exemption. In other words the LQ concept does not apply to those substances. More information may be found in Main exemptions.

Examples of limited quantity exemptions

23. Taking the paint product discussed earlier, by reference to table A, column 7 we see that it is in category LQ3. Turning to ADR 3.4.6 we see that for combination packaging (most simply thought of as “tins in a box”) the maximum “tin” size is 500 ml and the maximum “box” size is 1 litre. Accordingly this paint would be a “limited quantity” if, for example, there are two 500ml tins in a box or four 250ml tins in a box. In this case shrink wrapped trays are not permitted.

24. Aerosols (UN 1950) are commonly carried as “inner packaging in shrink wrapped or stretch wrapped trays”. Non-toxic aerosol products are LQ2 and aerosol containers up to 1 litre may be carried as “limited quantity” in trays up to total gross mass of 20kg.

Large packaging

25. Large packagings are defined in ADR 1.2.1. Although not a common packaging option across the chemical industry, the Healthcare sector uses this form of packaging on a large scale for clinical waste in the form of a “wheelie bin”, and now trolleys for the carriage of contaminated medical instruments have been certified as Large Packaging. They consist of outer packaging designed to contain inner packages or articles and which are designed for mechanical handling and to contain a net mass of 400kg or more, or are more than 450 litres in capacity. In the case of clinical waste the inner package is the familiar “yellow bag”.

26. Large Packaging specifications and testing are detailed in chapter 6.6. Details of certification are contained in 6.6.3.

27. There are several GB certifications for this type of packaging and they are used for the consignment and carriage of UN3291 Clinical Waste. The large package instruction is LP 621. This also requires that they should be leakproof.

28. The package must bear the certification mark as with other UN approved packages. Unusually the test standards for the plastic large packaging does not have the normal 5 year life span associated with most other plastics packages. Although not required to be re-tested the consignor needs to demonstrate that this form of packaging meets the UN test standard at all times. Plastics large packaging over 5 years old which has been stored outside in sunlight and subjected to regular sterilisation may not meet the UN test standard due to plastics degradation.

29. Packages of this type that do not bear the UN mark are in circulation. These do not comply with the regulations and should be taken out of use for UN 3291 dangerous goods.

Tanks etc.

30. Tanks of various sorts are commonly used to carry bulk supplies of dangerous goods. They are widely traded internationally and for that reason the construction and inspection standards are very prescriptive.

31. Accordingly ADR has four lengthy chapters, 6.7 to 6.10 that deal with various systems as follows:

- ADR 6.7 Portable tanks and UN certified “multiple element gas containers” (MEGC- an assembly of gas cylinders manifolded together and in a frame that is handled as one item)
- ADR 6.8 Metallic fixed tanks (tank vehicles), demountable tanks, tank containers and tank swap bodies, and battery vehicles (commonly known in Britain as tube trailers and often seen with red cylinders of hydrogen) and MEGCs.
- ADR 6.9 Fibre reinforced plastics fixed tanks (tank vehicles), demountable tanks, tank containers and tank swap bodies.
- ADR 6.10 Vacuum operated waste tanks

32. Each of the terms is defined in ADR 1.2.1. Note the difference between “portable tank” and “tank container”.

33. In each case there are prescriptive details of constructional standards and associated marking and certification schemes. These are operated by states’ competent authorities or agencies acting on their behalf.

34. An example of how this system works is set out in Annex 6.1 below for the common case of a fixed tank (e.g. one carrying fuel on a semi trailer).

35. Because this equipment is intended to be used for many years, items may have been constructed to older standards. There are arrangements for allowing such equipment to continue in use subject to proper inspection and maintenance. In addition GB law has not always matched ADR. Accordingly “old tanks” are the subject of schedule 2 of CDG 2007. Old tanks are defined in Carriage Regulations at Reg 2 – constructed on or before 9 May 2004. Annex 6.2 gives some details.

36. The systems for other equipment follow similar patterns.

On the road inspection of tanks

37. In most cases it will not be possible for an enforcement officer to check full compliance with the requirements, but there are simple checks that can be made. In practice, most owners/operators of tanks that are in regular use have them properly inspected and maintained.

38. The following checks can be carried out:

- Visual condition. Do the tank and its fittings appear in good order? Is there evidence of leakage? Are outlets closed with caps or blanking plates? Is the protection for tank and fittings in good order? Do temperature and pressure gauges appear to be in good order?
- Tank markings. There should be plates fitted which give information such as tank maker, serial number, year of manufacture, and original test data such as test pressure, working pressure, temperature limits and so on. In addition there should be a plate giving inspection and test history with dates and a mark identifying the inspection /test authority. These plates are not always easy to find and can be confused with other plates relating to the roadworthiness requirements.

- If there is doubt this should be recorded on the UMP form or other report given to the driver. It will be followed up by HID CI 4 on receipt of the report.

Annex 6.1 - Example of how ADR works for the inspection and tests of a fixed tank

1. ADR 6.8 deals with a range of cases and for this reason is rather intricately set out. Parts of the script are in two columns. The left column deals with fixed tanks, demountable tanks and battery vehicles. The right column deals with tank containers, tank swap bodies and multi-element gas containers (MEGC - see example in annex 6.3 below). Otherwise the text is applied to all cases.
2. ADR 6.8.2.1 to 6.8.2.3 covers construction standards and related matters. This manual is not the place to look at this in detail. It is not likely that constructional standards or type approvals will be an issue in most routine inspection or related contacts. If the matter does arise specialist assistance is likely to be needed.
3. ADR 6.8.2.4 covers inspections and tests of newly constructed equipment. Follow up inspections are also covered at 6.8.2.4.2. A certificate showing the results of the tests, inspections or checks should be issued (ADR 6.8.2.4.5).
4. ADR 6.8.2.5 details how the equipment should be marked. This data should be found somewhere on the tank or its frame. In the case of trailers it may often be found on the trailer chassis, but care should be taken to distinguish this data from that related to road safety approvals.
5. There are some special requirements relating to tanks not made to recognised standards (ADR 6.8.2.7) though this is likely to be unusual.
6. ADR 6.8.3 sets out other requirements for class 2 substances (gases).
7. Inspection regimes are more likely to be an issue, though much of the sector operates satisfactorily. The requirements for routine inspections during the life of the tank are in ADR 6.8.2.4.2 to 6.8.2.4.5. For tanks the maximum interval for inspection is six years (this will usually include a hydraulic test). In addition a "leakproofness" test is needed every three years.
8. The details of the tests should be marked on the tank or frame as above (para 4). Accordingly it should be possible to follow the inspection history of a tank from its construction to the present by reference to the data fixed to it. For each inspection or test there should be a unique mark to identify the "expert" who carried out the tests and inspections. This will often be the mark of an insurance company.

Annex 6.2 - Example of how Schedule 2 of CDG 2007 works for "old tanks"

1. Instead of ADR's requirements, "old tanks" are the subject of a regime that carries on the arrangements in the older regulations.
2. There is an overarching requirement (see para 2 of schedule 2) to
 - ensure that the tank is suitable in every respect for its intended use

- maintained to prevent its contents escaping
- for tanks put into use after 1 July 1992, to have information in writing concerning its design construction and maintenance, and details of any repairs or modifications.

3. Tanks are subject to a "Written Scheme of Examination" (WSE) drawn up by a competent person (analogous to that required for pressure plant). Paragraph 4 of schedule 2 refers. The scheme will not usually be available at the roadside, so it will not be easy to check, by reference to the marks, whether the WSE has been implemented.

4. Most written schemes will give inspection frequencies at least matching those required by ADR. Accordingly if evidence cannot be found of an inspection or test within the last three years some follow up with the owner should be made. Care should be taken as it is not always easy to find the marks, especially if the vehicle is wet or dirty.

5. There should be a written report of the inspection and/or test (para 4(c) of schedule 2). This is analogous to the certificate required under ADR 6.8.2.4.5.

6. The Energy Institute has published a model written scheme and information about training of technicians to carry out the work. CI 4B has a copy of the model WSE which HSE inspectors may consult.

Annex 6.3 - Some containment systems

Examples of IBCs



IBCs vary in size, shape and material of construction. All are intended for mechanical handling (usually fork lift truck)



Flexible IBC ("big bag")

Multi element gas container (MEGC)



There are different variations but all are assemblies that can be moved as one piece on to and off vehicles

Battery vehicle



Often known as a tube trailer

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Fixed tank



This is the one of the commonest way of carrying liquids, gases and some solids (powders, granules etc).

Tank container



Used very widely for international trading of many dangerous substances.

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Consignment procedures

- CDG 2007
- ADR
- Marking and labelling of packages (ADR 5.2)
- Placarding and marking of vehicles etc. (ADR 5.3)
- Vehicles carrying packages
- Tanks, tank containers etc.
- Documentation
- Language and format
- Emergency information (instructions in writing)

CDG 2007

1. Regulation 53 is the basis for implementing ADR. Paragraphs as follows:

- Paragraph 1 Marking and labelling of packages
- Paragraph 2 in connection with "overpacks" (ADR 5.1.2)
- Paragraph 3 in relation to Class 7 goods
- Paragraph 4 Placarding and plating of tanks etc.
- Paragraph 6 Documentation.

2. Depending on the case, these duties fall on the packer, loader, consignor and/or carrier. Marking and labelling of packages is the duty of packers and consignors. Placarding and marking of containers, multi-element gas containers (MEGC, definition in ADR 1.2.1), tank containers, portable tanks, vehicles etc is the duty of the loader, consignor and carrier. Documentation is the duty of the consignor and carrier.

3. Regulation 63(7) reiterates the carrier's duty to ensure that documentation is carried.

ADR

4. The relevant part of ADR is part 5. There are linked requirements in part 8, but they make it the carrier's duty to ensure that the "transport unit" carries the documents, placards etc. that are required by Part 5.

5. Chapter 5.1 contains the general provisions and covers:

- overpacks (see definition at 1.2.1)
- empty uncleaned packagings, tanks, vehicles and containers for carriage in bulk
- mixed packing
- approval and notification (uncommon)
- certificates (mostly radioactives)

Marking and labelling of packages (ADR 5.2)

6. These words mean something different, but in both cases refer to packages.

- Marking is described in 5.2.1 and comprises the UN Number and other information for certain classes (1, 2 and 7). Marking is also used to describe the UN package certification details (ADR 6.1.3 and in Packaging)
- Labelling is described in 5.2.2 and comprises "hazard diamond(s)" with the Class number (e.g. "3" for flammable liquids) and subsidiary hazard where specified. Details in column 5 of Table A. Specimen labels are shown in 5.2.2.2.2. Note that for class 5.2 (organic peroxides) the old style label is allowed until the end of 2010



Old style label for organic peroxide (allowed until end of 2010)

7. The details are to be found in the various sub-paragraphs within 5.2.1 and 5.2.2 respectively. This is highly prescriptive and includes special requirements for certain substances.

8. Size requirements are in 5.2.2.2.1.1. ADR 2007 permits some flexibility in labelling of refrigerated liquid gases (5.2.2.2.1.1), and also allows changes to the background colour of flammable gas labels for UN1011, 1075, 1965, and 1978 (5.2.2.2.1.6 (c)).

9. There is an additional requirement to display an orientation label for certain packages (5.2.1.9). ADR 2007 permits alternative colours (black or red) for the orientation arrows.

10. Working logically through the sections enables the requirements to be precisely determined.

11. The rules for combined supply and carriage labelling have been amended. In any event the carriage labelling has to be applied.

Placarding and marking of vehicles etc. (ADR 5.3)

12. As with marking and labelling these words mean different things, and apply to vehicles and containers, MEGCs (multi element gas container - defined in ADR 1.2.1), tank containers, and portable tanks.

- Placarding is described in 5.3.1 and refers to the "hazard diamonds" that are a familiar part of the overall warning system.
- Marking is described in 5.3.2 and refers to the plain orange plates carried at the front of vehicles (and on the back of vehicles carrying packages) and to the other marks on the sides and backs of vehicles.

Placarding

13. Placarding is the process of placing on the tank, container etc. the hazard diamonds referred to in column 5 of table A (analogous to labelling of packages). The precise details

of sizes and so on are at 5.3.1.7. For small tanks or containers smaller placards can be used (5.3.1.7.3 - allows "package labels" to be used).

14. Placards have to be displayed as indicated in 5.3.1.2 to 5.3.1.6 according to the type of load.

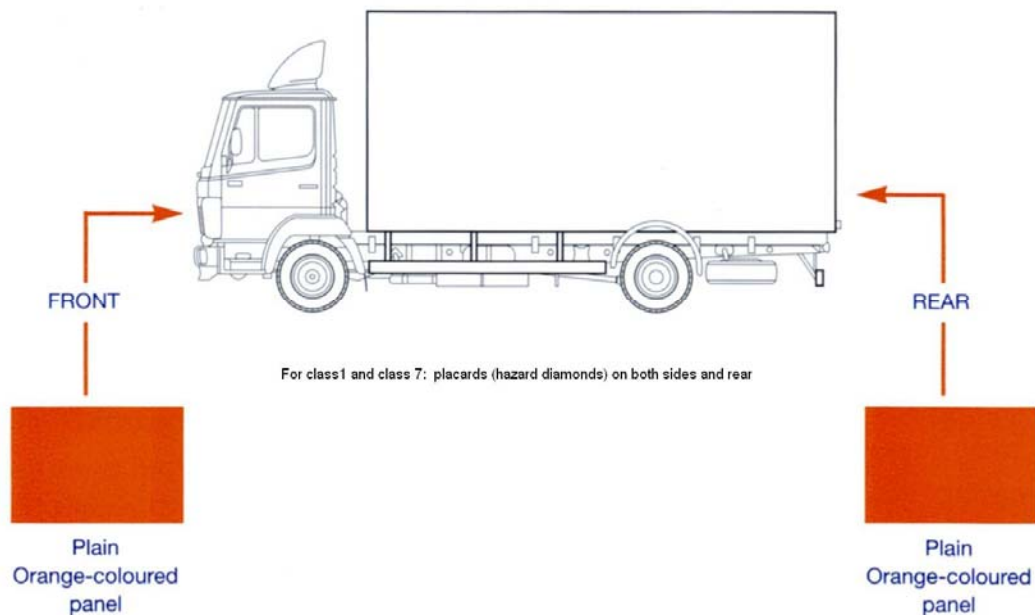
Marking

15. Marking is the process of placing on the vehicle and the tank, container etc, the orange plates. See ADR 5.3.2.

16. ADR 2005 allows the familiar plain orange plate to be divided by a horizontal black line (5.3.2.2.1).

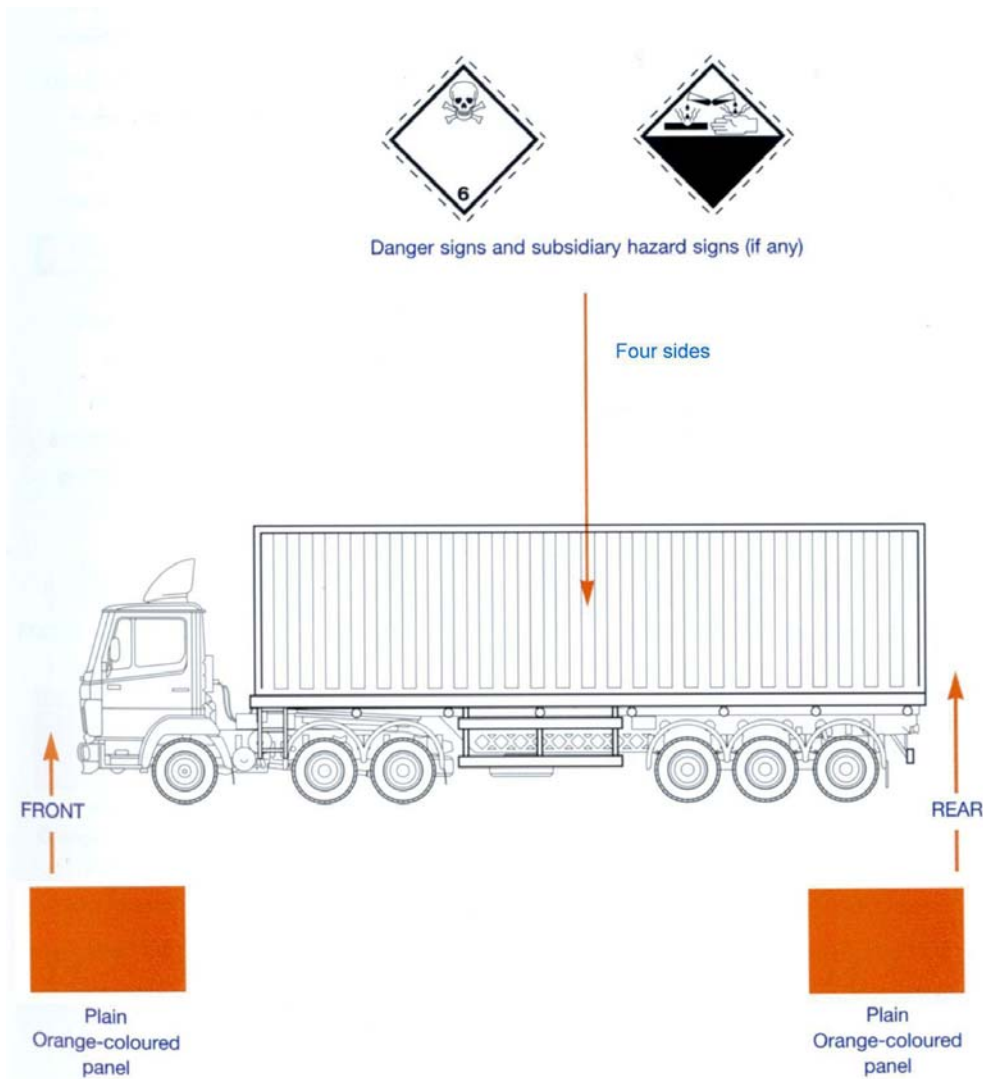
Vehicles carrying packages

17. In all cases the plain orange plates for vehicles carrying packages are as described in ADR at 5.3.2.1.1. A plain orange plate is fixed at front and back of the "transport unit". Note the extra requirement for vehicles carrying class 1 (explosives) and class 7 ((radio-active substances) to display placards (hazard diamonds) on both sides and the rear of the vehicle (ADR 5.3.1.5).



Carrying packages in freight containers

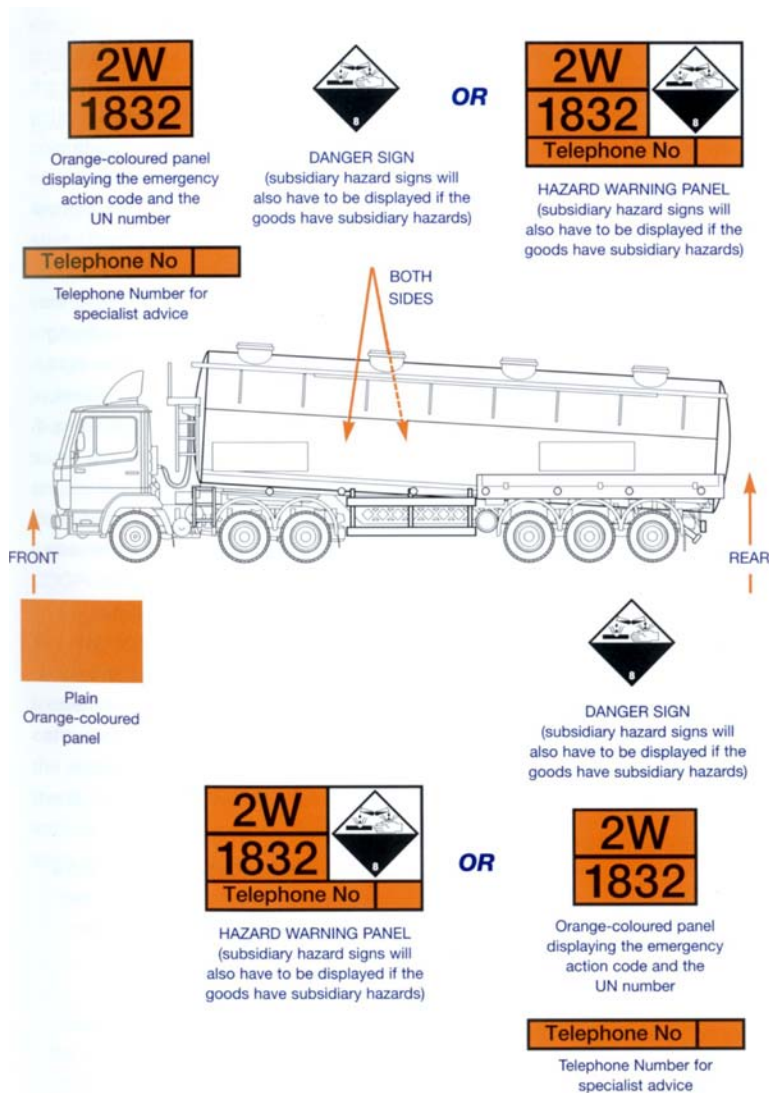
18. This is similar to the above but in this case the freight container should display relevant placards (hazard diamonds) on all four sides of the container.



19. ADR 2007 continues the requirement of Special Provision CV 36 (see 7.5.11 and table A column 18). This requires vehicles carrying packages of gases which could vitiate the atmosphere to be carried in open or ventilated vehicles /containers or if that is not feasible the cargo doors have to carry a suitable warning.

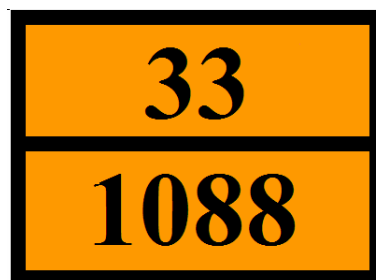
Tanks, tank containers etc

20. Different requirements apply to GB domestic journeys and international journeys. CDG 2007 (at regulation 91 and Schedule 7) require GB registered vehicles on GB domestic journeys to be marked with the familiar “Emergency Action Codes” (sometimes called “Hazchem codes”), and to include a telephone number for advice in the event of an emergency. This is usually in the form of a hazard warning panel, an example of which is shown in Schedule 7. This is in addition to the plain orange plate at the front of the vehicle. Note that paragraph 5(3) of schedule 7 allows the hazard warning panel not to be fire resisting for tanks made before 1 January 2005.
 GB registered vehicle on GB domestic journey



Vehicles on international journeys

21. Vehicles with tanks etc on international journeys carry the HIN (hazard identification number – sometimes called the Kemler code) in the pattern shown at ADR para 5.3.2.2.3. For example:



These are in addition to the placards (hazard warning diamonds) described at para 12 above.

22. Plates should be displayed at the rear and both sides, with a plain orange plate at the front. Where one substance only is carried it is permissible to display plates at front and rear only provided the front plate also carries the HIN code and UN Number. There is no requirement to display a telephone number. An international journey is described at ADR 1.1.2.4.

Documentation

23. Chapter 5.4 of ADR covers this in the usual detail. The key requirements are that the documentation contains the following information (5.4.1.1):

- The UN Number
- Proper shipping name
- Class (with subsidiary hazard, if any, in brackets)
- Packing group (where assigned)
- Number and description of packages
- Total quantity of each item of different UN Number
- name/address of consignor
- name /address of consignee(s). New for ADR 2007 is a provision that where there are multiple consignees not known at the start of the journey, the words "Delivery Sale" may be used.
- Declaration relating to any special agreement, where applicable (uncommon)

24. New for ADR 2007 is that the first four items of information listed above must appear in that order. (ADR 5.1.1.1.1). There is no requirement for all information to be on one document. Where a vehicle has picked up loads from more than one consignor this would clearly not be possible.

25. There are special rules for wastes, salvage packagings, and empty uncleaned packaging etc (5.4.1.1.3 to 5.4.1.1.6). For more on empty uncleaned packaging and wastes see Common problems.

26. For empty tanks and bulk there are other rules about documentation in 5.4.1.1.6. See Common problems for a discussion of practical problems.

27. Where loads are being carried on domestic journeys under the limited load threshold (ADR 1.1.3.6 - more details in Main exemptions) the requirement to carry documentation is disapplied (except for explosives and radioactives). Details in regulation 26. The regulation 34/ ADR 1.4.2.1.1(b) requirement to furnish the carrier with documentation still applies.

28. Other special rules cover:

- Loads in a transport chain that includes air or sea (5.4.1.1.7)
- Carriage in "date expired" IBCs (5.4.1.1.11 - details in 4.1.2.2)
- Multi compartment tanks or transport units with more than one tank (5.4.1.1.13)
- Elevated temperature substances (5.4.1.1.14)
- Substances stabilised by temperature control (5.4.1.1.15)

29. There are other rules for class 1 (explosives) class 2 (gases), class 4.1 (flammable solids etc.), class 5.2 (organic peroxides), class 6.2 (infectious substances) class 7 (radioactives). These are in ADR 5.4.1.2. The most likely to be met are those relating to gas mixtures where the composition of the mixture should be given (5.4.1.2.2(a)).

Language and format

30. The language should be that of the forwarding country and one of English, French or German if not already on the document (5.4.1.4.1). This means that, especially for international journeys, the documents may not be in English and that is one reason why the layout of the information referred to in 5.4.1.1.1 is important.

Emergency information (Instructions in writing)

31. Emergency information is a separate consideration from documentation and is covered in Crew and vehicle.

Carriage, loading, unloading and handling

- Introduction
- Basic requirements
- CDG 2007
- ADR
- Annex 8.1 An example of poor stowage

Introduction

This comparatively short part of ADR (part 7) covers the transport chain from loading the vehicle to unloading it.

It includes references to particular provisions for the three basic modes (packages, bulk and tanks).

Basic requirements

There are some very basic requirements in part 1.4 of ADR which is implemented through Regulation 39. In particular, 1.4.1.2 concerns immediate risk to public safety. Paragraph 1.4.2.2.4 requires the journey to be stopped if there is an infringement which could jeopardise the safety of the operation.

CDG 2007

1. Regulation 62 is the basis for implementing ADR. Main duties as follows:

- i. Paragraph 1 Comply with ADR 7.1 relating to general provisions
- ii. Paragraph 2 Comply with ADR 7.2 in relation to special packaging provisions
- iii. Paragraph 3 Comply with ADR 7.3 in relation to bulk carriage
- iv. Paragraphs 4 & 5 Comply with ADR 7.4 in relation to carriage in tanks
- v. Paragraph 6 Comply with ADR 7.5 in relation to
 - 7.5.2 mixed loading,
 - 7.5.4 carriage of foodstuffs etc.,
 - 7.5.5 limitations of quantities
 - 7.5.7 handling and stowage,
 - 7.5.9 prohibition of smoking
 - 7.5.10 precautions against electrostatic discharges
 - 7.5.11 special provisions “CV”
- vi. Paragraph 7 Comply with ADR 7.5.8 in relation to cleaning a vehicle if contents of packages have leaked (carrier duty)

2. Depending on the case, these duties fall mostly on the carrier or filler, but also on the loader, where applicable.

ADR

3. The relevant part of ADR is part 7. For the most part this is straightforward. The following should help to navigate the main requirements.

4. Paragraph 7.2 contains the special provisions in relation to packages which are set out in column 16 of table A. These are all prefixed “V”.

5. Paragraph 7.3 contains the special provisions in relation to carriage in bulk which are set out in column 17 of table A. These are all prefixed “VV”.

6. Paragraph 7.4 contains the special provisions in relation to carriage in tanks which can only be done if allowed by reference in columns 10 or 12 of table A. It is possible for a competent authority to grant approval for exception to this rule. The designation codes for vehicle types are also set out (see column 14 of table A).

7. Parts 7.5 sets out:

- at 7.5.2 the rules on mixed loading (not to be confused with “mixed packing” – see ADR at 4.1.10 and Packaging, para 9). There is special detail for explosives. The matrix enables one to see where mixed loading is prohibited, allowed without qualification or allowed under certain circumstances. Note that where there are prohibitions, these apply to loading within the same vehicle or container. For example the towing unit and trailer of a draw bar combination are separate vehicles.
- at 7.5.4 some rules about precautions with respect to foodstuffs etc.
- at 7.5.4 some rules about quantity limitations (mainly explosives and organic peroxides)
- at 7.5.7 are the rules about handling and stowage. The most obvious is that relating to proper loading (stowing) and securing of the load to prevent accidents arising from the load shifting. This sets a high standard and supplements the more general laws concerning load safety on goods vehicles. An example of poor stowage is shown below
- 7.5.8 requires the carrier to clean the vehicle if packaged loads have leaked
- 7.5.9 prohibits smoking during handling operations in or around vehicles
- 7.5.10 requires precautions against electrostatic discharges when carrying substances with flash point 61o C or lower.
- 7.5.11 Special provisions “CV” where specified in column 18 of table A. Some of these are very detailed and specific to particular substances or groups of substances.

Annex 8.1 - An example of poor stowage



Note that the upper cylinders are free to move or be dislodged by cornering or braking forces

Crew and vehicle

- Introduction
- CDG 2007
- ADR
- Transport unit
- Equipment and documentation
- Documents
- Placarding and marking
- Fire extinguishers
- Miscellaneous equipment (wheel chocks etc.)
- Driver training
- Enforcement
- Other matters

Introduction

1. This part of ADR covers most of the matters that the carrier has to deal with, and includes:

- Driver training
- Equipment to be carried, including fire extinguishers, wheel chocks, pocket lamp, warning signs, warning vest
- Documentation

CDG 2007

2. Regulations 63 and 64 are the basis for implementing ADR. The regulations refer directly to various sections of part 8 of ADR.

3. Regulation 63 is broken into paragraphs as follows:

- Paragraph 5 (carrier's duty) Transport cannot have more than one trailer, and must be placarded and marked and carry fire extinguishers and other equipment as needed.
- Paragraph 7 (Carrier's and crew members' duty). Transport unit to carry the transport documents and instructions in writing ("Tremcard©"). Comply with ADR 8.3 (miscellaneous requirements), 8.4 (supervision), and 8.5 (additional requirements – mainly the operational "S" provisions in column 19 of table A,

4. Regulation 64 is concerned with driver training.

ADR

5. The relevant part of ADR is part 8. In principle this is not complicated, but there are some intricacies which this manual discusses. Virtually all of the carrier's duties are set out in this part of ADR. Many of those duties are little changed from what was required under CDG 96 and CDG(DT) 96.

Transport unit

6. Some duties refer to "transport unit" and some to vehicles. The transport unit may be one vehicle or may be comprised of a tractor unit and semi-trailer (articulated lorry) or a rigid lorry and trailer (drawbar combination). A vehicle most obviously is a lorry or van but it also includes a trailer. Accordingly an articulated lorry or drawbar combination is two vehicles. Vehicle is defined in Article 1 and in part 9 of ADR.

Equipment and documentation

7. ADR chapter 8.1 covers equipment and documentation. This is grouped in three main parts:

- Documents (8.1.2)
- Placarding and marking (8.1.3)
- Fire fighting equipment (8.1.4)
- Miscellaneous equipment (8.1.5)

Documents

8. There are cross references to other parts of ADR where the details of documentation are given (ADR 5.4.1).

9. The list below summarises the main documentation requirements (see also Consignment procedures for more details):

- i. "Transport documents" which should include
 - UN No.
 - proper shipping name
 - classification (plus label number where applicable)
 - packing group (where assigned)
 - number and description of packages
 - total quantity of each item bearing a different UN No., name or packing group
 - name and address of consignor
 - name and address of consignee(s)
- ii. "Instructions In Writing" (emergency information)

10. Note that the TREMCARD© (TRansport EMergency CARD) which was developed by CEFIC in the mid-1980s to comply with the emergency information requirement is only one way of doing so. As long as the Instructions in Writing contain the information that is set out in ADR at 5.4.3 and which is valid for the substance(s) being carried then the requirement is met. Although the information should include first aid advice, there is no requirement (under this legislation) for first aid equipment to be carried.

Placarding and marking

11. ADR para 8.1.3 refers to ADR Chapter 5.3 in respect of placarding and marking. More details may be found in Consignment procedures.

Enforcement would be framed around Regulation 63(7).

Fire extinguishers

12. ADR para 8.1.4 concerns fire extinguishers. ADR allows older provision to be acceptable until the end of 2007. The table below sets out a summary of the current minimum requirements. Enforcement would be framed around Regulation 63(5).

Vehicle	Minimum dry powder fire extinguisher provision
Vehicles up to 3.5 t	2kg for cab plus 2 kg
Vehicles over 3.5 t	2 kg for cab plus one 6 kg
Any vehicle carrying dangerous goods under the "small load" limit or carrying only infectious substances	1 x 2kg

Miscellaneous equipment

13. Para 8.1.5 refers to "miscellaneous equipment". This is a substantial difference from the 1996 regulations. The most common problem is in the wording of subparagraph (a) about wheel chocks. Under ADR, the transport unit has to carry at least one suitable chock for each vehicle (which means at least two chocks for articulated lorries and drawbar combinations). However, authorisation 24 permits GB registered "transport units" on domestic journeys to carry one suitable wheel chock, even if there are two vehicles forming the unit. There is no prescription as to where wheel chocks are to be carried. Information about the suitability of wheel chocks may be found on the VOSA web site at Q13. A discussion on enforcement issues is in para 8 of Annex 3.2 in Operational strategy.

14. Under this heading also come:

- Two self standing warning signs
- A suitable warning vest or warning clothing for each member of the crew
- A pocket lamp for each member of the crew. Note that special provision S2 (Table A column 19) means that the "pocket lamp" has to be suitable for use in a flammable atmosphere in certain circumstances.
- Respiratory protective equipment (RPE) where special provision S7 applies (toxic gases).
- PPE and other equipment necessary to take the "additional and/or special actions" referred to in the "instructions in writing" (which may be a Tremcard©). This is discussed more fully under the heading "Equipment on vehicles" in Common problems.

Driver training

15. Chapter 8.2 of ADR covers driver training. ADR 2005 has changed driver training requirements. Note that the term VTC is no longer used. The term "ADR Training Certificate" fits well with the wording of ADR at 8.2.2.8 and the model certificate shown at 8.2.2.8.3.

16. The table below summarises the requirements which applied from 1 January 2007.

Vehicle /load	Driver training	ADR Reference
All vehicles except those carrying packages under the load limit.	General training plus ADR Training certificate The certificate may be endorsed for different classes of dangerous goods or different modes (in tanks or other than tanks.)	8.2.1
Any vehicle carrying packaged dangerous goods under the "small load" limit	General training	8.2.3 (refers to chapter 1.3) ADR 1.1.3.6
Vehicle with small tank (up to 1 m3)	General training	8.2.1.3 8.2.3

17. ADR chapter 1.3 gives the details of the "general training". The requirement for carriers to keep a record of training is now in ADR 1.3.3.

18. Enforcement would be framed around Regulation 63(7).

19. Drivers are required to carry their training certificates. See regulation 24(6).

20. Information on the training schemes may be found on DfT's website.

Enforcement

21. When checking a driver's training certificate, Inspectors should ensure that:

- it is in the same name as the driving licence
- the expiry date has not passed;
- the certificate is valid for the class of dangerous goods being carried, and for the mode of carriage - i.e. 'in tanks/other than in tanks';
- the Certificate Number matches that on the holder's driving licence, where possible.

22. Inspectors considering a prosecution for an apparent breach involving a training certificate, will need to check whether a certificate has been issued to the driver concerned. This will need to be done through the DVLA as with other licence matters.

Other matters

23. ADR 8.3 covers a number of simple and obvious precautions. Enforcement would be framed around regulation 63(7). These duties fall on the carrier and the crew (usually the driver, but in some cases a second person).

24. ADR 8.4 includes supervision of vehicles. This applies where special provisions S14 to S21 appear in column 19 of Table A. Again regulation 63(7) is relevant.

Main exemptions

- ADR exemptions
- Limited quantity exemptions
- Small load exemptions
- Exemptions in CDG 2007
 - types of vehicle
 - Movement between nearby premises and between premises and vehicles
 - Retail distribution
 - Duty to appoint DGSA
- Exemptions by authorisation
- Transport categories as amended by CDG 2007

Introduction

Exemptions arise in three ways, ADR itself, CDG 2007, and by Authorisation.

ADR Exemptions

1. ADR itself has exemptions set out in part 1.1.3. The main ones are:

- Private use of vehicles (but other legislation may limit carriage of petrol etc).
- Carriage of machinery which happens to contain dangerous goods.
- Carriage that is "ancillary" to main activity. Note the second part of this exemption which limits its scope. This is not easy to define. For the present the following guidance is offered.
- A driver taking dangerous goods with him for use with some machine or process that will be operated on arrival will be exempt.
- A journey taking dangerous goods to "re-supply" the above example will not be covered by this exemption (other exemptions may apply).
- Carriage by or under the supervision of the emergency services. This is intended to allow the necessary emergency response to be completed, and not for wider purposes. See also "Common problems – breakdown vehicles".
- Emergency transport intended to save life or protect the environment.
- Uncleaned empty static storage vessels that have contained certain gases, class 3 (flammable liquids – PG II and III only) or class 9 (miscellaneous). In this context "static" means not designed for transport of dangerous goods. For LPG there is an industry Code of Practice (LPGA CoP 26) dealing with their safe removal and carriage
- Some carriage of gases. (ADR 1.1.3.2).
- Some carriage of liquid fuels (ADR 1.1.3.3)
- Empty uncleaned packaging (ADR 1.1.3.5). This is not a clear exemption and not everything is exempt. Note that there are documentary requirements at ADR part 5.4.1.1.6. See also discussion in Common problems.
- Limited quantity packages containing small receptacles are likely to be low risk, so this exemption provides that, depending on the nature of the goods, small receptacles packed within a box or on a shrink-wrapped tray can be carried without application of ADR.
- Small load exemptions. Vehicles (or more correctly transport units) carrying small loads of packaged goods present less risk than larger loads or loads in tanks or

in bulk. The load thresholds that allow these exemptions depend on the nature of the goods.

Limited quantity (LQ) exemptions (ADR 3.4)

2. LQ refers to small receptacles (typically of the sort that go into the retail distribution chain) which are packed in boxes or on shrink-wrapped trays.

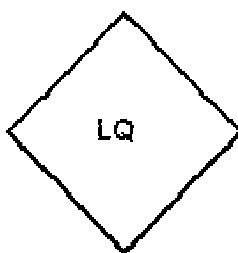
3. The principle behind LQ is that an acceptable level of safety is assured providing the receptacles are in a box or shrink-wrapped tray. Individual receptacles do not come into the LQ category. Regulation 7(4) (as amended in 2005) allows retail distribution of LQ packages that have been "broken down", subject to certain conditions.

4. Dangerous goods are assigned an LQ category (Column 7 of Table A in ADR). There are 29 LQ categories (table at ADR 3.4.6). Some substances are LQ 0, and in these cases there is no LQ exemption.

5. The table at 3.4.6 shows, for each LQ category, the maximum receptacle size (inner packaging) and "box size" or tray size. Note that where there are gaps in columns 3 and 5 the figures are 30kg and 20 kg respectively, and that these are gross package weights (ADR 3.4.1.2).

6. For limited quantity exemptions, the general requirements for packaging (to be of good quality and suitable etc) apply, but the packaging does not have to be "UN approved". Each LQ category has some packaging constraints (ADR 3.4.3 to 3.4.5) and there are particular labelling requirements (see ADR 3.4.4(c)). Within these constraints, ADR does not apply to "limited quantities". The limited quantity symbol is:

- For one substance in a package, the UN No. within a diamond at least 100 x 100 mm
- For more than one substance in a package, all of the UN No. within the same diamond, or the following symbol, also at least 100 x 100 mm



Precise details at ADR 3.4.4(c)

Examples of limited quantity application

- Hydrochloric acid (Strong PG II). This is LQ 22 which means that as long as the individual "bottles" are not larger than 1 litre, and the box does not weigh more than 30 kg, then, subject to the conditions outlined above, ADR does not apply.
- The same substance more diluted (PG III) is LQ 7, and the allowed "bottle" size is 5 litres. Again the maximum box weight is 30 kg. Typical 2 ½ litre bottles, packed four to a box, are within the LQ limit. The detailed packaging

requirements do not have to be met but the LQ labelling requirements apply (see above).

- Lighter fluid (assume classified as UN 1993 Packing group I). This is LQ3. Typical 100 ml cans may be packed 10 to a box (column 3 limit being 1 litre). Subject to the box being marked as above, ADR does not apply. In this case the shrink wrapped tray option is not allowed.
- Paint UN 1263 PG II. This is LQ6. Cans up to 5 litres may be packed in a box not exceeding a gross weight of 30kg. Cans up to 1 litre may be on shrink wrapped tray not exceeding a gross weight of 20 kg. Subject to the box or tray being marked as above ADR does not apply.

Small load exemptions (ADR 1.1.3.6)

7. Small load exemptions relate to the total quantity of dangerous goods carried in packages by the "transport unit" (usually the van or lorry, but also any trailer). It is the transport category (TC) that determines the load limits (thresholds). Many substances are assigned a packing group but these are not synonymous in all cases with TC. TC is given in column 15 of Table A in ADR (Chapter 3.2). If that is not available, the table at ADR part 1.1.3.6.3 needs to be consulted. Load limits for the different transport categories are given in the table below. For convenience this has been amended in accordance with Regulation 19 but it needs to be used with care. For explosives there is separate guidance.

8. Small load exemptions do not apply to tankers or bulk carriage.

9. If a vehicle is carrying under the small load threshold, many of the requirements of ADR are not applicable. The table below summarises the position. Some care needs to be taken, as "what is not exempted is still required". In most cases the remaining obligations are:

- General training for driver (ADR 1.3.2). A record should be kept (ADR 1.3.3)
- Carry one 2 kg dry powder fire extinguisher or equivalent (ADR 8.1.4.2)
- Stow the dangerous goods properly (ADR 7.5.7)

10. Note that use of these exemptions is optional. For example, a carrier may choose to display the orange plates as long as the vehicle is carrying dangerous goods.

11. All vehicle marks (orange plates) must be removed when no dangerous goods are being carried.

12. An important aspect is that packaging has to comply with the relevant standards.

Examples of small load application

- LPG. This is in transport category 2. The "small load threshold" is 333 kg and LPG is LQ0. The result is that all cylinders count towards the load limit, but if that is less than 333 kg, the "minimum" ADR requirements apply.
- Hydrochloric acid. Depending on its strength this is in transport category 2 or 3. The "small load threshold" is 333 or 1000 litres respectively. For TC 3, one 1000 litre IBC or five 200 litre drums or forty 25 litre drums can be carried under the "minimum" ADR requirements if the carrier chooses to do so. Any packages that meet LQ criteria are not counted.

- Methanol. This is in transport category 2. The "small load threshold" is 333 litres. Any combination of packages up to that amount can be carried under "minimum" ADR requirements if the carrier chooses to do so. Because methanol is LQ0 all packages count towards this threshold.
- Clinical waste (UN 3291). This is in transport category 2 and LQ0. As with methanol, all packages have to be counted. It is now possible to use combination packaging consisting of an outer "flat pack" corrugated fibreboard box into which is placed a conventional clinical waste bag. Providing the outer box is properly certified this makes the carriage of small amounts of clinical waste possible as "packages". Typical situations would be the collection of waste from GPs' surgeries or patients' homes. In this case, as long as the total load is less than 333 kg (which would normally be the case) the small load exemptions will apply." Other information concerning clinical waste is in Common problems.

13. It can be seen that depending on the substances and the package size, there will be differences in the way the regulations are applied. In each case, if there are mixed loads the aggregation rules in ADR at 1.1.3.6.4 must be applied.

Exemptions allowed by small load threshold

ADR reference	Requirement that does not apply	Not exempted
5.3	Placarding and marking	
5.4.3	Instructions in writing (Emergency information)	Other documentary requirements. Consignor's duty to "furnish the carrier with information...." remains (ADR 1.4.2.1.1 (b)), but it doesn't have to be carried in GB for classes 2 to 6, 8 and 9 See regulation 29
7.2	The details attached to package requirements. Depends on substance - see column 16 of Table A	7.2.4 V5 packages not to be carried in "small containers" V7 ventilation of vehicle V8 Temperature control
7.5.11 CV 1 only	Prohibition of loading/unloading in public place	When carrying explosives All other "CV" special conditions apply to small loads. Note in particular CV9, CV10, and CV36 apply to carriage of gas cylinders
Part 8	Vehicle crews, equipment, documentation, operation Driver training	8.1.2.1 (a) and (c) (documentation) but note GB exemption in Regulation 29 8.1.4.2 to 8.1.4.5 fire extinguisher for cab (but note transition period in ADR at 1.6.5.6) 8.2.3 General training as set out in Chapter 1.3 8.3.4 prohibition of certain types of lighting apparatus 8.4 Supervision of vehicles (where applicable) 8.5 The following operational notes in column 19 of Table A S1(3), S1(6), S2(1), S4,

ADR reference	Requirement that does not apply	Not exempted
		S14 to 21 (supervision details)
Part 9	Construction and approval of vehicles	

Exemptions in CDG 2007

14. The regulations contain a number of exemptions. Those with more common application are discussed below.

Reg 12(4) type of vehicle

- vehicles with fewer than 4 wheels and with maximum design speed of 25 km/hour or less
- Vehicles that run on rails
- Mobile machinery (not defined). This could include vehicles specially equipped for road construction purposes, such as white lining vehicles.
- Agricultural or forestry tractor, or any trailer being towed by such a vehicle. There is no definition of "agricultural or forestry tractor". Cases will have to be judged on their merits. There are certain tests that can be applied, including taxation class, legal use of "red diesel", and fittings common to tractors such as PTOs and three point linkages for attachment of agricultural implements. Subject to any Court decision, vehicles, such as Landrovers, Range Rovers and other 4x4 road vehicles are not regarded as agricultural or forestry tractors.

Reg 13 Movements within premises

Reg 14 Movement between nearby premises and between premises and vehicles

Except for explosives, the regulations do not apply to the following movements:

- Between private premises and a vehicle in the immediate vicinity (for example loading a vehicle just outside the premises).
- Between private premises (in the immediate vicinity) occupied by the same person, including where separated by a road. It follows that the regulations do not apply to movement within private premises.
- "Immediate vicinity" is not defined and there is scope for abuse. Subject to any Court decision, in the first case a journey of more than about 100 metres on the highway, and in the second case more than about 400 metres, should be regarded as not in the "immediate vicinity".

Reg 14(2) applies related exemptions to class 1 and 7 goods.

Reg 19 Explosives - domestic transport

- This paragraph has made changes to transport categories and load thresholds for many explosives. In effect these changes maintain older arrangements for domestic transport only. See also amended table of transport categories.

Regulation 26 Retail distribution

Allows dangerous goods which have been packaged as "limited quantities" (ADR 3.4) to be removed from their outer packaging and carried from distribution depot to retail outlet (and back if needed) without the packaging having to be marked with UN certification marks or the hazard symbols. Typical products are paints, varnishes, adhesives, drain cleaners, and aerosols. There are conditions:

- The journey must be part of the final distribution stages from depot to retailer or end user, or an equivalent return journey.
- No type, colour, strength or inner package size of a substance or article (sometimes called "stock keeping unit") is more than 30 litres (or kg) and the total of such goods is not more than 333 litres (or kg).
- Such a load is no longer generally exempt from ADR. The "minimum" provisions will apply as long as the small load thresholds (ADR 1.1.3.6) are not exceeded (which will usually be the case). See para 11 above.

This will also apply to inner packages taken from "non LQ" combination packages.

DfT have issued Guidance Note 7 which explains this exemption in more detail.

There are logistical problems in ensuring that the load limits in para (ii) are complied with. The Guidance note describes the use of "tote boxes" as an alternative to the outer packaging usually used in LQ packaging. Subject to the conditions (broadly, with a properly secured lid, not more than 30 kg gross mass and marked for LQ as described above), the limits set out in para (ii) above will not apply and neither will the provisions in para (iii), i.e. the goods can again enjoy the full exemptions from ADR by being limited quantities.

This does not apply to the inners taken from non-LQ combination packages if they are too large to qualify for LQ status. They will still be subject to the 30 / 333 rule.

See also the entry in the Common problems chapter.

Reg 30 Documentation

- For small loads (ADR 1.1.3.6) there is no need in GB to carry the documentation except for explosives and radioactive materials.
- The need for the consignor to provide documentation to the carrier remains (ADR 1.4.2.1.1(b) and Regulation 35).

Reg 43(1) Exemption from duty to appoint a DGSA

This is a limited exemption which is discussed in ADR and CDG 2007.

Exemptions by "authorisation"

15. For a variety of reasons it has been found necessary to issue authorisations to allow certain activities to take place outside the strict scope of ADR. These are added to and deleted as the need arises or recedes. They are all time limited (though in some cases the time is substantial). The up-to-date list may be found at authorisations.

16. The authorisations are all in pdf files and can readily be downloaded. Some are somewhat esoteric, but those most likely to be encountered are:

- No. 1 - bowsers used for diesel
- No. 24 allows one wheel chock only to be provided for GB registered transport units on domestic journeys.

Transport categories as amended by CDG 2007

Transport Category (See column 15 of Table A)	Substances or articles packing group or classification code/group or UN No.	Maximum total quantity per transport unit Kg or litres	Multiplier for mixed loads
0	Class 1: 1.1A/1.1L/1.2L/1.3L/1.4L and UN No. 0190 Class 3: UN No. 3343 Class 4.2: Substances belonging to packing group I Class 4.3: UN Nos. 1183, 1242, 1295, 1340, 1390, 1403, 1928, 2813, 2965, 2968, 2988, 3129, 3130, 3131, 3134, 3148, 3207 and 3372 Class 6.1: UN Nos. 1051, 1613, 1614 and 3294 Class 6.2: UN Nos. 2814 and 2900 (risk groups 3 and 4) Class 7: UN Nos. 2912 to 2919, 2977, 2978 and 3321 to 3333 Class 8: UN No 2215 (Molten maleic anhydride) Class 9: UN Nos. 2315, 3151, 3152 and equipment containing such substances or mixtures and empty uncleaned packagings having contained substances classified in this transport category	0	N/A
1	Substances and articles belonging to packing group I and not classified in transport category 0 and substances and articles of the following classes: Class 2: groups T, TC a, TO, TF, TOC and TFC aerosols: groups C, CO, FC, T, TF, TC, TO, TFC and TOC Class 4.1: UN Nos. 3221 to 3224 and 3231 to 3240 Class 5.2: UN Nos. 3101 to 3104 and 3111 to 3120	20 See note "a" below	50
1A	Class 1: 1.1B to 1.1J/1.2B to 1.2J/1.3C/1.3G/1.3H/1.3J/1.5D Applies only to UK domestic journeys	50	20
2	Substances or articles belonging to packing group II and not classified in transport categories	333	3

Transport Category (See column 15 of Table A)	Substances or articles packing group or classification code/group or UN No.	Maximum total quantity per transport unit Kg or litres	Multiplier for mixed loads
	0, 1 or 4 and substances of the following classes: Class 2: group F aerosols: group F Class 4.1: UN Nos. 3225 to 3230 Class 5.2: UN Nos. 3105 to 3110 Class 6.1: substances and articles belonging to packing group III Class 6.2: UN Nos. 2814 and 2900 (risk group 2) Class 9: UN No. 3245		
2A	Class1: 1.4B to 1.4G and 1.6N Applies only to UK domestic journeys	500	2
3	Substances and articles belonging to packing group III and not classified in transport categories 0, 2 or 4 and substances and articles of the following classes: Class 2: groups A and O aerosols: groups A and O Class 8: UN Nos. 2794, 2795, 2800 and 3028 Class 9: UN Nos. 2990 and 3072	1 000	1
4	Class 1: 1.4S Class 4.1: UN Nos. 1331,1345,1944,1945,2254 and 2623 Class 4.2: UN Nos. 1361 and 1362 packing group III Class 7: UN Nos. 2908 to 2911 Class 9: UN No. 3268 and empty, uncleaned packagings having contained dangerous goods, except for those classified in transport category 0	unlimited	
	Note a: For UN Nos. 1005 and 1017 (anhydrous ammonia and chlorine), the total maximum quantity per transport unit shall be 50 kg	50	20

Common problems

- Acetylene and small scale carriage of industrial gases
- ADR and IMDG
- Airports and sea ports
- Asbestos and asbestos waste
- Batteries (waste)
- Browsers
- Breakdown vehicles
- Clinical waste
- Empty tanks and bulk containers
- Empty uncleaned packaging
- Equipment on vehicles
- Fire extinguishers – where should they be carried?
- Foodstuffs
- Medical gases
- Medicines and pharmaceutical products
- Old tanks
- Petrol - small scale carriage
- Retail distribution of LQ packages
- Response to emergency telephone numbers
- Switch loading and placarding
- Vans with hazard diamonds
- Waste
- Waste aerosols
- White lining and other road construction vehicles

Acetylene and small scale carriage of industrial gases

Acetylene, LPG and other gases are commonly carried by tradesmen such as welders and motor vehicle repair technicians. Flammable gases are in Transport Category 2. Oxygen and gases such as carbon dioxide and argon are in Transport Category 3. Usually the small load threshold exemptions will apply.

The parts of ADR which apply are then:

- Driver to have received “general awareness”, “function specific“, and “safety” training (ADR 1.3). A training record should be kept.
- Vehicle to be equipped with at least one 2 kg dry powder fire extinguisher which is kept in good working order.
- The load to be properly stowed. Note that special provisions CV9, 10 and 36 all apply in the case of these gases. In particular, CV 36 specifies:

“Packages shall preferably be loaded in open or ventilated vehicles or open or ventilated containers. If this is not feasible and packages are carried in other closed vehicles or containers, the cargo doors of the vehicles or containers shall be marked with the following in letters not less than 25 mm high:

"WARNING
NO VENTILATION
OPEN WITH CAUTION"

This shall be in a language considered appropriate by the consignor.”

HSE has published the leaflet "Take care with acetylene" and the British Compressed Gases Association has a useful leaflet on the topic of carrying gas cylinders in vehicles. BCGA has wider range of publications which may also be helpful. The LPGA has also published its Code of Practice 27 "Carriage of LPG Cylinders by Road".

ADR and IMDG

Tanks and tank containers being carried as part of a journey including a sea passage will need to be marked to comply with IMDG before loading on to the vessel. In practice the necessary marking will be applied at the start of the journey. IMDG's tank labelling and placarding requirements are not identical to ADR and this also affects the use of Emergency Action Codes seen on GB vehicles.

Many IMDG journeys are international but some are domestic, for example to the islands of Scotland, and the Isle of Wight.

IMDG requires:

- The hazard diamonds (placards) for both primary and, where applicable, secondary class on all four sides of a tank container (same as ADR).
- The proper shipping name of the substance on at least both sides (not required by ADR).
- The UN Number of the substance either within the hazard diamond (below the pictogram) or on an adjacent orange board. Placing UN numbers within the hazard diamond is not ADR practice.

ADR requires the UN Number and Hazard Identification Number (HIN or sometimes known as the "Kemler" code) on the orange plate (as illustrated in 5.3.2.2.3 of ADR) on at least two sides. IMDG does not require the HIN to be displayed.

Because the requirements are different, ADR allows the IMDG method to be used as long as the transport unit is marked with plain orange plates front and back (ADR 1.1.4.2.2).

To comply with IMDG it is necessary to have IMDG compliant documentation and this is more stringent in some ways than ADR. ADR accepts IMDG documents (ADR 5.4.1.4.1).

For GB registered vehicles on GB domestic journeys schedule 9 of CDG 2007 normally applies. It provides (for tanks and bulk) that where the HIN is required by ADR it shall be replaced by the hazard warning panels including the telephone number where specialist advice may be obtained. The information in a hazard warning panel may be shown in a different way but that is the commonest method.

It follows that if the HIN is not required, schedule 9 is not applicable. Such a case is where the journey is being carried out under IMDG terms.

To summarise, an IMDG journey, whether within GB or internationally, may be carried out with the tanks marked as for IMDG (see above) and with plain orange plates front and back on the transport unit. Sch 9 of CDG 2007 does not apply as long as IMDG is fully complied with.

All the other relevant parts of ADR apply (driver training, vehicle equipment etc.)

Airports and sea ports

The regulations apply if tankers or other vehicles carrying dangerous goods use roads that are freely available for other road users.

The typical situation involves airport perimeter roads which may be owned by the airport but are public roads. If fuel depots are situated on those roads then the regulations apply to movements from there on to the airport proper (i.e. "airside"). In some cases, fuel terminals are within the airport itself, and only airport-authorized vehicles are allowed in those areas. In that case, CDG 2007 does not apply. If there are concerns about standards, other legislation is available to remedy the matter and in any case the airport operator is bound to have an interest.

Similar principles can be applied at seaports. CDG 2007 will apply if areas used by the public (for example to get to or queue for ferries) are used by refuelling tankers. Note that heavier fuel oils often used by ships may not be dangerous goods for the purposes of the regulations.

Asbestos and asbestos waste

Some asbestos waste (for example thermal insulation material, asbestos insulation board) is dangerous for carriage under UN numbers 2212 (Transport category 2 - the more hazardous) or 2590 (transport category 3). It is also "special waste" for the purposes of waste disposal legislation which is enforced by the EA or SEPA as the case may be.

Accordingly it has to be properly packaged in UN certified packaging (usually double bagged in polythene bags that are tested and certificated, see "approved packaging") and properly consigned as for any other dangerous substance. Carriage documentation is separate from waste disposal documentation, though some information may be shared. Note that the key information of proper shipping name, UN Number, class (in this case "9") and packing group (in this case same as transport category) preceded by the word "WASTE" must be together in the documents (ADR 5.4.1.1.3).

Asbestos cement products are covered by ADR special provision 168 and as such are not regarded as dangerous for carriage.

Articles such as lengths of pipe or ducting that have asbestos insulation inside or outside, or timber that has been used for enclosures should be treated as "manufactured articles" for the purposes of SP 168 provided that they are so wrapped in heavy gauge polythene (or similar) that asbestos fibres cannot escape. It follows that the way they are handled and transported should ensure that the integrity of the wrapping is not compromised.

ADR requires packages of asbestos to be carried in closed vehicles or containers (packing instruction P002, Special Provision PP37). The Control of Asbestos at Work Regulations 2002 will apply. The preferred method is to use skips with lockable covers. See also note below in connection with wastes legislation.

Skips meet the definition of "container" (ADR 1.2.1) so, unless the load limit exemptions apply (threshold 333 kg for blue/brown, 1000 kg for white asbestos), they must be marked as required by ADR 5.3.1.2 (UN Class 9 hazard placards on all four sides), and the vehicle

must also display plain orange plates front and rear (ADR 5.3.2.1.1) - again subject to the small load exemptions.

Summary

Substance	Application of ADR	Carriage requirements
Waste thermal insulation and AIB	UN 2212 or 2590 Class 9	Certified packaging (usually double polythene bags). Other aspects of Carriage Regulations apply. Special waste legislation
Asbestos in or attached to items such as pipes or ductwork	Treated as SP 168 exempted	Must be wrapped to prevent escape of fibres
Asbestos cement products (new)	Does not apply by SP 168	None
Asbestos cement products as waste	Does not apply by SP 168	Special waste legislation
Waste rubble or soil contaminated with asbestos	UN 2212 or 2590 Class 9	Certified packaging (available in up to 2 tonnes capacity bags) within skip or freight container. Other aspects of Carriage Regulations apply. Special waste legislation

Asbestos cement products are "special waste" and must be consigned under the relevant waste rules which include a "duty of care". That duty of care means, amongst other things, that dutyholders prevent escape of the waste whilst it is in their control.

The duty of care is described more fully at the Defra website.

Batteries (waste)

Waste batteries (usually scrap lead acid batteries from vehicles - UN 2794) may be carried in bulk subject to the conditions set out in ADR 7.3.3 V V 14. There is no minimum load for bulk carriage so ADR/CDG 2007 apply in full.

Conventional skips can be used as long as they are corrosion resistant lined or thick enough to retain their integrity. They must be covered. The pictures below show a typical skip and how corrosion that could allow leakage may develop.



Bowers

- **Diesel and gas oil**

Diesel and gas oil (UN 1202) are in scope up to flash point 100 oC. This means that many operations such as moving fuel to construction sites, forestry operations etc. are now subject to the regulations (but certain vehicles are exempt - see Main exemptions). The rules for tanks, tankers and carrying of packages such as jerrycans, drums and IBCs are now the same as for other substances. Because diesel/fuel oil is in TC 3, up to 1000 litres may be carried in packages without application of much of the regulations (small load exemption). This exemption will be enough for many users, but for others, exemptions have been allowed as follows. There is also some guidance on HSE's web site.

Authorisation No 1 allows certain bowers (carrying UN 1202) to be treated as if they are IBCs. The certificate specifies that the tank must not be "permanently fixed to a motor vehicle or trailer". If the tank can be removed, the exemption applies, as long as the bowser was made before 10th May 2004. This issue is causing some confusion especially in those sectors (construction, plant-hire, entertainment etc.) that make use of bowers to move fuel for generators and similar plant. The significance of this is that the bowser can be treated as a package and labelled accordingly, and that if it does not exceed 1000 litres the small load exemptions apply. It applies only to diesel /gas oil (UN 1202). Bowser are treated as tank-vehicles if carrying jet fuel, kerosene or petrol.

The wording of the authorisation also allows tanks (which meet the other conditions) to be placed on the back of any vehicle and still to be treated as an IBC if carrying UN 1202.

Some manufacturers' bowser are certified as IBCs and are packages for the purpose of the regulations.

In all other respects carriers of diesel are now subject to the standard ADR and Carriage Regulations requirements. Note that paragraph 5(3) of schedule 7 continues to allow the hazard warning panel not to be fire resisting for tanks made before 1 January 2005.

- **Petrol**

Browsers are not so commonly used for petrol, but they may be seen supporting aircraft operations or motor sports away from their usual bases. If the browser is a tank vehicle meeting all the usual tank conditions there is no problem, but note the requirements for the towing vehicle to be FL certified. If the browser is a certified IBC then packing provision IBC 02 applies. SP 534 which permits IBCs to be used for petrol has been amended in ADR 2007. The new special packing provision Bbx in packing instruction IBC 02 will mean that the fuel's actual vapour pressure will have to be lower than the set figures.

- **Towing vehicles**

Browsers are commonly towed by vans, 4 x 4s etc. Where the browser is not an IBC (either conventionally or via authorisation no. 1), then the towing vehicle should meet the AT or FL standards as appropriate for the substance being carried (ADR 9.1.2.3).

Breakdown vehicles

When a vehicle carrying dangerous goods breaks down, it may have to be recovered by a towing vehicle. If it is supervised by the emergency services (usually the police), ADR exemption 1.1.3.1 (d) applies. If that is not the case, the original (trained) driver will usually be with the vehicle so it is not necessary for the driver of the towing vehicle to be ADR trained. The transport documents should remain with the original vehicle, which in turn should be marked and placarded as needed. It is not necessary for more to be required.

Clinical waste

Clinical waste is commonly carried in packages (including IBCs) but may be carried in bulk, subject to special provision V1.

- Packages shall be loaded on to closed or sheeted vehicles or into closed or sheeted containers).

For packages, the relevant packing instructions are P621, IBC 620 and LP 621 in chapter 4.1 of ADR 2007. P621 packages are usually to be found as "sharps" boxes. At the time of writing, no GB approvals for rigid packages suitable for "bulkier" clinical waste have been issued. This may change.

No GB approvals for IBCs meeting IBC 620 have been issued.

Large packagings to LP 621 have been approved in GB. By definition these are combination packagings, which means that the waste must be contained in a suitable inner packaging, usually a plastics bag, which in turn is placed in the large packaging (typically a UN approved "wheelie bin"). The bag itself has to be UN approved for clinical waste and these are available from many suppliers.

Packages of this type that do not bear the UN mark are in circulation. These do not comply with the regulations and should be removed from use.

The closure method for this type of large packaging is usually a lockable lid. Sometimes these are damaged and do not lock. This is not acceptable.



Broken lock

Sometimes the lids are distorted and, although closed, do not fit properly.



Distorted lid

Depending on the circumstances these matters should be treated as Risk Category II or III. In any event the matter should be brought to the attention of HSE (HID CI 4B)

“Wheelie bins” are sometimes overfilled and not closed properly.



In this picture the driver is closing the lids properly after being stopped during his journey



This is how some consignors present the packages.

This is unacceptable and is in Risk Category 1. An immediate PN would be appropriate, and the consignor or carrier should be required to make good the packaging before the vehicle is allowed on its way. Remedial action will need to be carried out in a place and in a manner that does not create risk to others. A deferred PN should be considered if it is thought that greater risk arises from immediate remedial action. In any event prosecution of the carrier and/or the consignor should be considered with appropriate evidence (including photographs) collected at the time.

ADR 5.2.2.1.7 requires large packagings to be labelled (“hazard diamonds” and UN Number) on two opposite sides. This is sometimes a problem as markings can be easily damaged or defaced.



Defaced labels

This should be treated as Risk Category II or III depending on the scale of the problem and whether proper documentation is available. In any event the matter should be brought to the attention of HSE (HID CI 4B) as it may represent a consignor’s failure to comply.

For small scale carriage, for example the collection of waste from GPs' surgeries or patients' homes, it is now possible to use combination packaging consisting of an outer "flat pack" corrugated fibreboard box into which is placed a conventional clinical waste bag. Providing the outer box is properly certified this makes the carriage of small amounts of clinical waste compliant with ADR and hence the regulations. Individual boxes are likely to be certified for a few kilograms only. As long as the total load is less than 333 kg (which would normally be the case) the small load exemptions will apply.

Bulk carriage of clinical waste

Carriage in bulk is permitted subject to condition VV11 in part 7.3.3 of ADR.

“Carriage in bulk is permitted in specially equipped vehicles and containers in a manner which avoids risks to humans, animals and the environment, e.g. by loading the wastes in bags or by airtight connections”.

ADR 2007 introduces a number of new details at 7.3.2.6.2.

For example:

7.3.2.6.2 (b) “Closed bulk containers and their openings shall be leakproof by design”. Note that by the definition of “bulk container” (ADR 1.2.1) the load compartment of a vehicle is deemed to be a bulk container. Commercial vans will not generally meet the leakproof criterion. The end to be achieved is that leaks from bags that may be damaged will not readily escape from the load compartment. This should never be more than a few litres if the other criteria in 7.3.2.6.2 are met. Examples of how this might be achieved include:

- making a floor liner slope upwards to the rear of the vehicle
- making a floor liner slope downwards to a low point within the vehicle
- using a suitable “tray”, taking care to ensure that bags cannot be damaged by the up-stand and that a tripping hazard is not created.

7.3.2.6.2 (g) where rigid packagings (such as sharps boxes or “wheelie bins”) are carried with bags, arrangements have to be made to ensure that the bags cannot be damaged.

7.3.2.6.2 (h) Bags should not be so compressed that they “are rendered no longer leakproof”.

Carriage in bulk is usually encountered where plastic bags are loaded directly into the load compartment of a vehicle and the new ADR provisions are directly relevant. This can lead to problems, e.g., the following illustrates an unacceptable situation by a number of the relevant criteria.



Note that mixing bags and boxes is not permitted and that the vehicle is not “leakproof by design”

Some specialist carriers now divide the load compartment to keep rigid packagings separate from bags, or they use means to ensure that the wheelie bins are properly secured.

For carriage in bulk, the small load exemptions do not apply. Accordingly the vehicle must:

- be properly placarded and marked. This is similar to tank carriage except that an emergency telephone number does not have to be displayed,



- equipped as required by ADR 8.1.4 and 8.1.5, but note that only one 2 kg fire extinguisher is needed,
- carry appropriate documentation.

The driver should be carrying a valid ADR training certificate endorsed at least for class 6.2 goods.

Documentation carried to comply with waste legislation may also serve as transport documentation provided the relevant information is included.

Note that for the return (empty) journey documentation should comply with ADR 5.4.1.1.6.2.2 and contain the information "EMPTY VEHICLE, LAST LOAD CLINICAL WASTE, 6.2, UN 3291, II ". Alternatively, and new for 2007, ADR 5.4.1.1.6.1 allows "EMPTY, UNCLEARED CLINICAL WASTE" or "RESIDUE, LAST CONTAINED CLINICAL WASTE".

For other categories of infectious substances (UN 2814, 2900 and 3373) the same principles of following the provisions in Table A and their references to detailed requirements should be followed. Note that ADR has revised the classification criteria for infectious substances (see ADR 2005 at 2.2.62, with detail for wastes at 2.2.62.1.11).

Some advice on classifications can be found in the document, Infectious Substances, Clinical Waste and Diagnostic Specimens.

Empty tanks and bulk containers

ADR at 5.4.1.1.6 sets out the rules for documentation of empty tanks, bulk vehicles etc. This seems simple enough but there can be problems for:

- multi-drops
- gases, where "empty" is not a clear concept
- nominally empty packages (returned drums or IBCs). The 1.1.3.6.3 (small load) thresholds would usually mean that a load consisting of nominally empty packages would not need documentation (Carriage Regulations at 3(7)(a) dis-apply the ADR requirement in GB, other than for explosives and radioactive materials).

In some cases drivers leave all documentation at the delivery point. This would not be acceptable for tanks and bulk.

The driver may carry a document marked as shown in 5.4.1.1.6 in a secure compartment until it is valid. Documents could be endorsed by rubber stamp or sticky label, and there may be other ways of achieving the required outcome. There is no need for the "empty load document" to be dated. It needs only to comply with ADR at 5.4.1.1.6.2 and to be valid.

There are obvious potential problems but the purpose is to ensure that in an emergency the "blue light services" have information that enables them to take proportionate action.

It is for the carrier (in liaison with the consignor) to comply with 5.4.1.1.6 and how he does so is up to him.

The following pragmatic guidance may be helpful:

- Multi-drops. ADR does not make a special case for part loads. The "starting" documentation would comply. When the tank or bulk container is nominally empty the driver should bring out his "empty document", in whatever form that takes.
- Gases. As for multi loads, but use "empty document" or endorse original when vehicle is nominally empty and returning to base.
- If all documents are left at delivery, then use an "empty document" from that point. Where this is the practice, a pre-prepared document may be the simplest answer.

If the choice is to use a pre-prepared "empty document" it will be important to train the driver in its use and provide a secure compartment for keeping it until it is needed.

Empty uncleaned packaging

This issue causes problems out of proportion to the risk it presents. The parts of ADR that are relevant are 1.1.3.5, 1.1.3.6 and 5.4.1.1.6. The exemption in 1.1.3.5 is qualified by the condition "if adequate measures have been taken to nullify any hazard". The exemption in 1.1.3.5 is not available for all classes.

There is no definition of empty uncleaned packaging, but the following is a workable rule "as empty as practically possible".

Inspectors should find this easy to work with. There should be few cases where concerns about whether packages fulfil this criterion would lead to enforcement. Any concerns should be itemised on the document given to the driver and followed up if necessary with the consignor or carrier as needed (via HID CI 4B).

Inspectors contemplating enforcement action in cases where this advice is not appropriate or has not been followed are advised to consider risk and the intricacies of the requirements. In particular the question of whether hazards have been nullified is not always going to be easy. For example, receptacles with remains of flammable solvents will still present a hazard.

CDG 2007 at Reg 30 exempts from the documentary requirements of ADR, loads which are within the small load thresholds (see Main exemptions). ADR 1.1.3.6.3 states that for liquids and compressed gases the thresholds are calculated by reference to "nominal capacity". That in turn is defined at 1.2.1 as:

- "the nominal volume of the dangerous substance contained in the receptacle in litres. For compressed gas cylinders the nominal capacity shall be the water capacity of the cylinder"

By this definition, nominal capacity amounts to net contents for a receptacle that contains a liquid.

Thus for most cases of empty uncleaned packaging, the small load threshold will apply. Thus no documentation would be required for GB domestic transport. The key remaining requirements are as follows:

- Train the driver at least to "general " standards (ADR 8.2.3)
- Carry one 2 kg fire extinguisher
- Ensure stowage complies with 7.5.7 (this would be needed under other road safety legislation anyway)

There is no need to display orange plates, though it would not be an offence to do so. Some trade associations advise their members to display orange plates whenever the vehicle is carrying dangerous goods.

Adopting this approach should ensure good standards, and compliance with almost any interpretation of the requirements, and minimise the stopping of what should be low risk vehicles for ADR reasons alone.

Equipment on vehicles

There have been some difficulties in interpreting the need for equipment in relation to the basic ADR requirements and that mentioned in the emergency information. Apart from fire extinguishers, vehicles have to carry the following equipment (see ADR 8.1.5):

- At least one wheel chock "of a size suited to the weight of the vehicle and the diameter of the wheels". See Crew and vehicle for details. This includes a reference to authorisation 24 which permits one wheel chock even where the transport unit consists of two vehicles (for GB registered vehicles on domestic journeys). Guidance on suitability of wheel chocks may be found on the VOSA web site at Q13.
- Two self standing warning signs. These would need to be used in compliance with the Traffic Signs (Temporary Obstructions) Regulations 1977. See DfT Guidance Note 8.
- High visibility clothing for each member of the crew.
- A pocket lamp for each member of the crew (ADR 8.3.4 restricts what can be used). Note special provision S2 (column 19 of the substance list) when carrying flammable substances in closed vehicles.
- Suitable respiratory protective equipment (RPE) when carrying toxic gases (special provision S7 - ADR 8.5). This is for escape purposes only.

- The personal protection and the equipment necessary to take the additional and/or special actions referred to in the instructions in writing (commonly referred to as the "Tremcard©", though this is a trade name of CEFIC). This might include goggles, protective clothing, gloves, shovel, absorbent material etc.

Put another way, if the instructions include "additional and/or special actions by the driver" then the vehicle should carry the equipment for that to be achieved. The Tremcard© (or its equivalent) should list the necessary items (ADR 5.4.3.8).

If in doubt about the adequacy of the equipment, officers should consider whether it would enable the driver to take the simple actions given on the instructions and which would be needed to deal with a leak or spillage without personal risk. Some substances are so hazardous that actions might be very limited and this will be reflected in the emergency information. Officers will generally not be able to judge the adequacy of RPE, goggles, gloves, footwear or other protective clothing in relation to the substance, but concerns should be reported to CI 4B (UMP or police report form) for possible follow up by HSE. Enforcement guidance is in Operational strategy and enforcement.

Consignors and/or carriers do not have to use Tremcards©. They are entitled to prepare their own instructions. As long as those instructions follow the requirements of ADR at 5.4.3 and are valid for the dangerous goods carried, the dutyholder (mainly the consignor - see ADR 1.4.2.1.1(b)) will determine the "additional and/or special actions by the driver" and thus define the equipment deemed necessary.

There is no requirement (under CDG 2007 and ADR) to carry first aid equipment (this includes eyewash bottle which some instructions include under "personal protection"). Inspections of a first aid box, if carried, should not form part of a check for the purposes of these Regulations. The emergency information is required to have first aid information (ADR at 5.4.3.8).

Fire extinguishers – where should they be carried?

The conditions are:

- Easily accessible to the vehicle crew
- Protected against the effects of weather

Fire extinguishers may be carried anywhere on the transport unit provided those conditions are met. Typical problems that arise are:

- Corrosion of fittings of the protective container making it hard to access the extinguisher. Where this occurs it suggests that it is not examined as part of daily or other routine checking of the vehicle and its equipment
- Inspection records being scraped off as the extinguisher is lifted in and out of the container
- The extinguisher being hard to find in the cab

Foodstuffs and dangerous goods

The restrictions on carrying foodstuffs (including animal feeds) with dangerous goods are limited and set out in ADR at 7.5.4. The principle is that foodstuffs should not be carried

with toxic substances (Class 6.1 and 6.2) or with a limited range of Class 9 substances. However it is permissible to mix these loads subject to certain precautions which are set out below:

- partitions at least as high as the packages containing the dangerous substances
- separation by packages of substances other than class 6.1, 6.2 or the relevant class 9 substances
- separation by a space of at least 0.8 metre
- by additional packaging or wrapping of the substances. Whilst this is not described in much detail, it would seem that the principle to be followed is that the conventional DG packaging (such as a drum, IBC or bags) should be further covered. Examples might be shrink wrapping or plastic sheeting firmly covering the package or packages. Note that this might constitute an "overpack" and require labelling in its own right (ADR 5.1.2).

Medical gases

Some medical and para-medical staff carry items such as compressed oxygen or nitrous oxide mixtures ("Entonox"), sometimes in their cars. Compressed non-toxic gases are in transport category 3 but in limited quantity category LQ0. This means that any amount is counted in application of the regulations and ADR. However, the small load provisions in ADR 1.1.3.6 mean that more than 1000 litres would have to be carried for full application of ADR. That volume is measured by water capacity (ADR 1.1.3.6.3 and 1.2.1). In all foreseeable cases therefore the small load exemption may be applied. The key duties are:

- General training of the driver, with record kept
- Carry 2kg fire extinguisher
- Proper stowage of the cylinders

There is no need for the vehicle to be marked, but no objection need be made if the compressed gas hazard label is displayed.

Medicines and pharmaceutical products

Medicines can be dangerous for carriage particularly, cytotoxic drugs for cancer treatments etc. Some medicines are flammable. Typical UN Numbers are 1851, 3248, and 3249. They are treated exactly as any other dangerous goods unless SP 601 applies. These goods are out of scope if in the packages are prepared for retail sale or personal consumption.

Many problems with carriage of drugs relate to returns to pharmacies for disposal, as the pharmacist may take drugs out of the packaging and mix them. Good practice is to avoid mixing, and to keep drugs in their original packaging until they reach the disposal site.

Old tanks

Old tanks/tankers (see definition in Regulation 2) etc are subject to Schedule 2 of the regulations. This requires there to be an inspection regime in place, as well as that the tanks are safe and suitable for purpose. See also Packaging.

Petrol - small scale carriage

ADR exempts completely private, non-work related carriage. A HELA Circular discusses other aspects of the private storage of petrol and this includes advice about containers.

Work related carriage may be exempt under the LQ provisions (see Main exemptions). Petrol is LQ4 and the relevant container size is 3 litres.

In containers larger than that (and this will be most cases) only the "ancillary activity" exemption may be applicable, but this is very limited. See Main exemptions.

Otherwise the small load exemption (Main exemptions) will be applicable up to a total quantity of 333 litres (as long as other dangerous goods are not being carried in which case the aggregation rules must be applied). The containers must be UN approved (see Packaging) and properly labelled (see Consignment procedures).

Typical 5 litre containers purchased from car accessory shops and garages may not be so approved.

A typical case would be the carriage of two or three jerry cans in a van. Providing those cans are UN approved, marked UN 1203 and labelled with the flammable diamond, the only requirements are:

- Driver awareness training
- Carry 2 kg fire extinguisher
- Stow the jerry cans correctly to avoid damage or loss from the vehicle

Note: a typical steel jerry can might be marked 3A1/Y1.2/150/05/GB/****

Retail distribution of LQ packages

Full details in Main exemptions.

Some carriers may provide the driver with a card that can be shown to enforcement officers. The card will explain that carriage is under the terms of Regulation 26. This is useful because as long as the small load thresholds are not exceeded there is no requirement (on UK domestic journeys) for the vehicle to carry dangerous goods documentation. Some transfers are done by "paperless" systems so the driver may have no documentation at all.

Unless there are good reasons to take a different approach, enforcement officers are advised to accept the card as describing the situation outlined above. Where there is no card the driver may be able to describe the journey and the load and this will show that the relevant conditions are met.

Dutyholders should be able to show, when requested to do so by an HSE inspector:

- that they have procedures in place to ensure that vehicles will not be loaded outside the limits allowed by Reg 26 and
- that there are relevant training procedures in place (to include short term agency drivers) and that appropriate records are kept.

Response to emergency telephone numbers (domestic tanker and bulk journeys only)

CDG 2007 at schedule 7, paragraph 4 requires that a telephone number where specialist advice concerning the dangerous goods in question can be obtained in English at any time during carriage should be displayed.

This is a GB domestic requirement and does not apply to vehicles properly displaying HIN plates, that is, on international journeys.

The regulations offer no guidance as to what might be considered to be a reasonable response, but this is discussed below.

Arranging for specialist advice to be available out of normal working hours is difficult and carriers or consignors often retain external contractors to:

- Provide the specialist advice, or
- Act as an initial point of contact, with enquiries being referred to appointed 'duty officers' within the company.

Inspectors are advised that the above arrangements are acceptable provided the advice at the point of contact is appropriate, prompt and involves only one referral.

The Chemsafe Liaison Group when it was formed considered and agreed the parameters against which an informed response was deemed to be reasonable. These were included in a CIA publication, "Chemsafe - Assistance in Chemical Distribution Emergencies." The key points are summarised below:

- The initial call to the number should be picked up as might be expected of a normal telephone call.
- Thereafter, companies should aim to respond by providing,
 - Product based information within 10 minutes of receipt of the initial request, and
 - Any further technical information and advice, as necessary, within 30 minutes.

Inspectors encountering vehicles carrying dangerous goods in tanks should consider enforcement action where there is:

- No telephone number displayed (but note alternative provision in Schedule 6 para 5(2),
- No response, or
- A seriously inadequate response (i.e. significantly worse than that indicated above).

When checking the availability of specialist advice as part of a roadside check, by telephoning the displayed number, inspectors should ask for information based on all available information relating to the load (e.g. the UN number(s) and Emergency Action Code which are displayed). Where UN numbers are generic ("NOS") there may be a need

to supply any other information that is available in the documentation to get more detailed advice.

It is not necessary to imagine a scenario where that information is not available. Inspectors should make the purpose of the call clear. This will avoid any misunderstanding that the call could be related to an actual emergency and enable the person answering the call to do so in the correct context.

Switch loading and placarding

Switch loading is the practice of reloading a tanker compartment which previously carried one of the products petrol (UN1203), kerosene (UN1223) or diesel (UN1202) with another of those products. It is commonest in the fleets that supply retail fuel outlets and so will usually include petrol.

The 2004 Carriage Regulations and ADR allow the tanker to be placarded/ marked as if carrying only the most hazardous of the substances (descending order of hazard 1203, 1223, 1202).

ADR does not deal well with this practice, but paragraphs 5.3.1.1.5 & 5.3.1.6.1 are relevant. For example, if a compartment that previously contained petrol is left nominally empty, then the placarding and marking for petrol (1203 / 3YE) should remain in place.

Changes to practice for the purpose of controlling emissions of volatile organic compounds means that it is possible for a compartment discharging (say) diesel at a retail filling station to be backfilled with petrol vapour.

Therefore, for all practical purposes, tankers engaged in switch loading will retain their "1203/3YE" placarding and marking at all times, and enforcement officers should accept this practice.

This does not mean that road tankers dedicated to carrying diesel or kerosene should be placarded and marked for petrol. Typically these vehicles are dedicated to industrial /agricultural /domestic fuel oils and will often be "rigids". Another category serves the aviation market and these may be marked UN 1223 or UN 1863.

Where, in this context, it is clear that a vehicle is not correctly placarded and marked, enforcement officers should note the guidance on action to be taken (advice only).

When vehicles are taken to workshops or inspection stations, it would be expected that systems of work for any testing or maintenance and repair work involving the cargo tank or its ancillary equipment would not rely on tanker placarding and marking as a basis for decision making.

Vans with hazard diamonds

Many operators of vehicles that are exempt from the requirements to display the orange plates because they are carrying under the thresholds set out in ADR at 1.1.3.6 may display danger signs (hazard diamonds - properly called placards under ADR). They consider this to be useful to the emergency services.

Ambulances, mobile workshops, engineer's vans and road construction vehicles are examples where hazard diamonds are often displayed.

Some members of the emergency services are concerned that inappropriate action may be taken in the event of an accident involving such a vehicle. They have been advised that the vehicle may be treated as low risk (that is, as if no orange plates were displayed) because the goods should be in limited quantities or under the "small load" limits (see Main exemptions). If that is not the case, an offence is committed.

Such vehicles are in an analogous situation to those displaying orange plates when carrying under the small load thresholds. Emergency responders will take account of the external warnings in their dynamic risk assessment.

Note that vehicles carrying class 1 (explosives) and Class 7 (radio-active substances) will need to display hazard diamonds (at the rear and both sides) as well as orange plates when carrying above the relevant load thresholds (ADR 5.3.1.5). ADR at 8.1.3 and 5.3.1.1.5 and 5.3.2.1.8 are the relevant paragraphs. CDG 2007 at Regulation 63(4) is the relevant legislation.

As long as dangerous goods are being carried, the use of danger signs and hazard warning panels would not contravene the legislation.

Inspectors should therefore only seek to have orange-coloured panels, danger signs or hazard warning panels removed or covered when dangerous goods are not being carried on the vehicle. The hazard diamonds are often semi-permanently attached to the vehicle using self-adhesive labels. Carriers should have arrangements to remove or cover the hazard diamonds when dangerous substances are not being carried on the vehicle. This would be covered by comment in the UMP or other report form given to the driver.

Waste

Some waste is also dangerous for carriage and has to be classified, packed, loaded, documented and carried in the same way as any other dangerous goods.

Waste is carried under legislation enforced by the Environment Agency (in England and Wales) and SEPA (in Scotland). There are special documentary requirements ("Hazardous Waste Consignment Note", and in Scotland "Special Waste Consignment Note"). The EA document now includes all the data needed under ADR. The information is not presented in the order specified by ADR but no exception need be taken to this as long as it is complete.

The SEPA document does not contain that information so the consignor will have to prepare a separate transport document. For shipments from Scotland to other parts of the UK the waste documents may contain the additional (ADR) information. If they don't, other transport documents will be needed.

None of the above affects the need to carry "instructions in writing" (emergency information).

Waste aerosols

Aerosols are UN no 1950 and there are 12 entries in Table A of Chapter 3.2. Most aerosols are flammable only. The arrangements for “new” aerosols are well set out in ADR especially at chapter 6.2.

Waste aerosols are covered by a special provision SP 327 in part 3.3 which states:

“Waste aerosols consigned in accordance with 5.4.1.1.3 may be carried under this entry for the purposes of reprocessing or disposal. They need not be protected against inadvertent discharge provided that measures to prevent dangerous build up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special provision PP87, or packing instruction LP02 and special packing provision L2. Leaking or severely deformed aerosols shall be carried in salvage packagings provided appropriate measures are taken to ensure there is no dangerous build up of pressure.”

Packaging made of any material including plastics and aluminium can be used as long as it is either "suitable" (P003 and its associated provisions) or certified for the purpose as LP 02.

The special provisions PP87 or LP02 must be met which means that whatever is used has to prevent a build up of pressure and be able to retain free liquid.

In any event a dutyholder has to do a risk assessment and that should consider amongst other things the risk of static charges, thermite reactions and how effective ventilation is likely to be given that it may only be applied at the tops of the packaging.

In principle packaging suitable for use in transport ought also to be suitable for on site storage but there may be good reasons why an alternative approach would be recommended.

White lining and other road construction vehicles

Mobile machinery is fully exempt from CDG 2007 (Regulation 12(4)). The term is not defined, but, subject to any Court decision, dedicated road construction machinery should be regarded as exempt.

Thus vehicles used by white lining contractors are exempt as long as they are dedicated for the task and not simply, for example, flat bed lorries that happen to have the equipment on board. Note that the exemption in ADR at 1.1.3.2 (e) may be relevant in that case.

Similar principles would apply to machinery such as road planing machines, black top machines etc.

A variation on this theme is the vehicle that carries items such as LPG cylinders, diesel fuel, compressors and generators to sites such as road repairs. The wording at ADR 1.1.3.1 (c) exempts this subject to conditions:

- The transport operation is ancillary to the work. This means that the driver is going to do work with the equipment / goods carried. If the journey is to re-supply

existing work or in preparation for work by others, then this exemption is not available.

- No substance may be carried in a quantity larger than 450 litres per packaging (drum, IBC etc).
- The small load thresholds (ADR 1.1.3.6) are not exceeded.