



# Pira Consulting Report

*Consulting Group*

## Final Report

## HCDG Study

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by Pira International

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## Executive Summary

This study is an evaluation of the security provisions for the transport of dangerous goods adopted by the land modal regulations, RID/ADR/ADN, in 2005 and has employed desk research and a questionnaire with face to face interviews to gather the information contained herein. The questionnaire was circulated in January 2008 and followed up with two consultation meetings for industrial stakeholders as well as two meetings with the railway sector and ten interviews with representatives of Member State Competent Authorities. The responses have been analysed and are presented along with the consultants' conclusions in this report.

Overall, the consultants believe that the current regulations covering security during the transport of dangerous goods have provided the right level of protection to the public taking account of the factor that trade in dangerous goods must continue with the minimum of restrictions.

Member States were quite evenly divided in their attitudes to the whole subject of security. Many considered it to be of high importance, notably those countries that have been affected by terrorism placed great emphasis on this when compared to many others who did not consider themselves at risk. The consultants do not believe these wide ranging views affect the conclusions set out in this chapter.

The security provisions in the transport regulations were analysed for consistency and deficiencies. Whilst there is a case for clarification in some areas the consultants are of the view that the majority of these could be addressed in the form of guidance as opposed to proposing amendments to the provisions or new legislation for the Community.

A comprehensive review of Chapter 1.10 (Chapter 5 of this report) has identified a number of minor issues which mostly relate to differences in or absence of text in the ADR/RID/ADN and UN texts. In most cases, clarification in the form of guidance would address these issues.

There was general support that the provisions of Chapter 1.10 were adequate although there were a significant number of respondents that did indicate that some areas of the text could be improved and clarified. Specific examples of these deficiencies were difficult to identify but amongst the issues raised in

other parts of the questionnaire it would appear that there could be more assistance with:

- better definition of the content of security plans
- what happens when drivers run out of driving time through road accidents
- defining responsibility for preparing and implementing security plans and procedures
- advice on the application of enforcement

An analysis of the High Consequence Dangerous Goods (HCDG) list and the responses from stakeholders have identified some further issues as follows:

- delay in issuing new revised requirements for radioactive materials Class 7 by the IAEA
- possible inclusion of all UN Division 1.3 explosives in the list
- inclusion of UN Division 2.2 cryogenic gases which are oxidizing (e.g. liquid oxygen) in the list
- volumes of traffic for solid and liquid organic peroxides type B (Class 5.2) and self-reactive substances type B (Class 4.1) to be investigated, since if it is significant and could therefore pose a risk, inclusion may be considered
- treatment of Class 6.2 infectious substances Category A pathogens.
- treatment of smaller quantities of security sensitive dangerous goods which are currently exempt under the provisions of 1.1.3.6 of ADR/RID/ADN.

Other issues raised were enforcement and regular visits to premises which appears to be a deficiency in the system as there is no clear requirement either in RID/ADR/ADN, the Framework Directives or the Uniform Procedures Directive to visit premises. Other difficulties arise when different Government departments are responsible for security and transport and staff trained in safety do not have the expertise and knowledge to apply the security provisions. It is possible that these shortcomings could be addressed by an amendment to the Uniform Procedures Directive to require specific security inspections at the roadside and at premises. An extension to the Uniform Procedures Directive checklist to include security questions may also help.

The SEVESO reporting requirements were considered to be helpful and such a provision for reporting security incidents could be considered.

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A clarification of the role, in the context of security, of the Dangerous Goods Safety Adviser (DGSA) would be beneficial.

A serious problem was identified with the lack of secure parking facilities for vehicles carrying HCDG. Although the Commission has recently made funds available, there was low awareness about this. The Commission and other stakeholders could usefully offer more help and guidance.

There was no support for the registration of companies carrying HCDG although some countries do require registration of drivers and DGSAs. However, WP.15 is currently reviewing the driver training certificate - if a common standard design can be agreed which includes some security features which will allow enforcement staff to carry out quick checks, then this may offer significant benefits without excessive cost. Finally, there was very little support for vehicle tracking systems at present.

# 1 Overview

This report summarises the findings of consultants from Pira International, the VCA, Scientifics, TNO and BAM following a study which analysed the new security rules for HCDG and their effectiveness. This study was conducted on behalf of Directorate General Transport and Energy during 2007-2008.

A comprehensive overview of the international legislation concerning the transport of dangerous goods since 2001 was undertaken including a review of the work of the other agencies (including IMO and ICAO) and the air and sea modes of transport.

The following key areas were identified for investigation:-

- clarity of the meaning of the current regulations
- is there a sufficient level of detail?
- optional measures to be made mandatory
- routing of vehicles/tank wagons/barges
- comprehensiveness of HCDG list
- relationship of Chapter 1.10 to the rest of RID/ADR/ADN (is it clear?)
- incorporating best practice as HCDG rules
- potential inconsistencies in the rules
- identification of HCDG companies

The study covered all the land modes of transport for HCDG and a wide range of stakeholders across Europe, including national representatives, industry associations and commercial organisations were consulted. The study comprised a questionnaire, consultation meetings and in-depth interviews supported by desk research.

This report presents the collated results and the conclusions drawn from these by the consultants.

## 2 Introduction

Dangerous goods as defined in RID/ADR/ADN have always presented security risks.

Chemicals generally can present security risks and the following groups could be specific targets for criminals:

- low-value chemicals but with relatively high taxes (e.g. petrol) can be attractive to criminals particularly where tax in one area is lower than in an adjacent area
- chemicals used in the illegal drugs trade, e.g. alkaloids, and this has been recognised in the UN system by leaving the entry for these as non-specific
- chemicals that are precursors for explosives (The EU Action Plan on Enhancing the Security of Explosives defines the top 11 precursors for IEDs)
- high-value chemicals which are rare and expensive
- radioactive materials of Class 7.

To varying degrees, the transport regulations for dangerous goods have recognised that over identification can present risks and the regulators have tried to strike a balance between safety and security.

Certain chemicals have always been attractive to the terrorist but it was the events of 11 September 2001 that lead to the development of specific security requirements in the dangerous goods regulations. The regulators recognised that there would still have to be a balance between:-

- safe practices,
- security,  
and
- commercial pressures.

This report is an attempt to determine whether this balance has been achieved.

Definitive positions are difficult to identify as countries have different perceptions of the security threat. Some countries believe that they have no serious security threats from terrorists whilst others see themselves as significantly at risk.



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Recent studies by the USA and the World Economic Forum suggest that the terrorist threat is relatively low in relation to economic loss or loss of life when compared to a number of other scenarios e.g. a collapse in the Chinese economy of 6% or diseases in the third world and the recent world financial crisis.

Some dangerous goods (notably explosives, self-reactives, organic peroxides and radioactive materials) have been subject to controls by national authorities often not only for safety reasons but also for reasons of security.

## 3 Methodology

### 3.1 Introduction

The consultants used a three-stage approach to the study on HCDG: a questionnaire, desk analysis and interviews. The questionnaire and the desk analysis were largely completed by the spring of 2008.

#### 3.1.1 The questionnaire

A questionnaire was developed (see Annex C) between the consultants and the European Commission in January 2008 and circulated to all Member States (plus Norway and Switzerland), international trade associations and a number of national bodies. Over 100 questionnaires were circulated in late January and on completion of the study a total of 54 responses had been received.

The sources of the responses are as follows:

- governments 18
- International trade associations 10  
All three modes made contributions.
- Other national bodies and private companies 26  
including railway, road and inland waterway  
associations and companies

The questionnaire was analysed in two stages. The first stage was an analysis of each one to highlight significant comments. These comments were then summarised to enable the consultancy team to have supplementary information when undertaking the interviews with respondents.

A more detailed analysis of all the responses was then undertaken and a summary of answers to each question was prepared for use at the interviews.

#### 3.1.2 Desk analysis

Desk analysis was carried out on the:

- background to the development of Chapter 1.10 of RID/ADR/ADN
- other modal provisions in brief (sea and air)
- other provisions that impact or might impact on transport security e.g. SEVESO, WCO

- guidance material published mainly on the Internet.

### **3.1.3 Interviews**

The interviews began in April and were completed in July 2008. Face to face interviews took place with ten competent authorities during this period. In addition, meetings were held with industry trade associations - one at CEFIC and another at the offices of the Commission. Finally, two meetings took place with representatives of the railway industry.

The Consultants would like to express their appreciation for the co-operation received from all parties for both responding to the questionnaires and the interviews which have proved extremely helpful.

### **3.1.4 Interviews and questionnaires**

The combined responses from the questionnaires and the interviews are primarily summarised in Chapter 6 of this report although specific issues dealing with the list of HCDG are set out in Chapter 5 of this report.

## **4 Dangerous Goods Transport Security Regulations**

### **4.1 Introduction**

#### **4.1.1 International organisations Involved in security**

The following organisations are responsible for issuing and influencing security regulations.

- UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals.
- Working Party on the Transport of Dangerous Goods - Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods (WP.15/AC.1)
- Working Party on the Transport of Dangerous Goods WP.15
- Administrative Committee of the ADN
- RID Committee of Experts
- International Civil Aviation Organization (ICAO)
- International Maritime Organization (IMO )
- World Customs Organization (WCO)
- European Commission (EC)
- The European Council
- The European Parliament

#### **4.1.2 History**

Following the events of 11 September 2001, Governments and international organisations were faced with the challenge of how to effectively combat terrorism and prevent further terrorist attacks particularly in the field of transport. The terrorists had used transport equipment (aircraft) containing aircraft fuel which when transported would be regarded as dangerous goods.

The United Nations General Assembly and the United Nations Security Council called for intensified international action to prevent and suppress

terrorist acts effectively in response to the serious threat that such acts represent to international security.<sup>1</sup>

The report from the UN General Assembly was reported to the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals<sup>2</sup> as the responsible committee for the safe transport of dangerous goods in July 2002. Separately this resolution was sent to the International Maritime Organization and to the International Civil Aviation Organization; each mode has responsibilities for security generally.

This document was supplemented by an information paper from the United States of America and one from the United Kingdom<sup>3</sup>. The USA paper listed the proposed security provisions that they intended to apply in their territory whilst the UK noted action by the European Commission and proposed action to the G8 group of countries. The UK proposed that security should be treated as a subset of the existing safety requirements.

In December 2002 a joint paper from the United Kingdom, the observer from Namibia, the European Commission and the International Association of the Soap, Detergent and Maintenance Products Industry (AISE)<sup>4</sup> proposed the addition of a new Chapter 1.4 to the UN Recommendations on the Transport of Dangerous Goods - Model Regulations. This paper along with information papers from Canada, Germany and the USA<sup>5</sup> eventually lead to the adoption of Chapter 1.4 into the 13<sup>th</sup> revised edition of the UN Recommendations published in 2003.

The text adopted by the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals became Chapter 1.4 and was handed over to the modes (road, rail, inland waterway, sea and air) to adopt into the editions of the various dangerous goods modal regulations that could be used from 1 January 2005.<sup>6</sup>

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<sup>1</sup> TRANS/2002/15 to the UN ECE Inland Transport Committee

<sup>2</sup> ST/SG/AC.10/2002/56

<sup>3</sup> UN/SCETDG/INF21/19 and 53

<sup>4</sup> ST/SG/AC.10/2002/65

<sup>5</sup> UN/SCETDG/INF22/19, 28 and 35

<sup>6</sup> The modal regulations are published for use in an odd numbered year e.g.2005, 2007 etc. The actual date of application of the provisions varies, for example RID/ADR/ADN provide for a six month transition so the 2009 regulations are optional from 1 January to 30 June 2009,

The original text of the security provisions was addressed to all consignors of dangerous goods irrespective of the quantity. The effect would have been that any consignor would have been placed under a duty to take account of these provisions i.e. consider whether the goods have potential for misuse, using reputable carriers and ensuring staff had appropriate training.

Following decisions made by the Joint Meeting, the application to all dangerous goods was modified to exclude limited quantities (RID/ADR/ADN chapter 3.4) and exemptions related to quantities carried per transport unit (RID/ADR/ADN Sub-section 1.1.3.6).<sup>7</sup>

In December 2006 a further amendment was proposed to the UN Committee of Experts and adopted. This amended the list of HCDG to include certain Division 1.4 articles in the list and to add certain oxidizing substances of Class 5.1. These changes have been adopted for the 2009 editions of the modal regulations.

At the RID/ADR/ADN Joint Meeting in March 2008 it was proposed to remove animal carcasses of Class 6.2 (infectious substances) in Category A from the list of HCDG. However this change will not come into force until 2011. However it should be noted that the Government of France has initiated an ADR Multilateral Agreement (M199) permitting signatories to apply the provisions immediately. It has been signed by several countries.

At the UN Sub-Committee meeting in July 2008 an amendment was made to the text of 1.4.2.4 which addresses training records. The new text is as follows:

“1.4.2.4 Records of all security training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.”

This text has not been directly adopted by RID/ADR/ADN (see Chapter 5 of this report) but a similar amendment has been made to the training provisions of Chapter 1.3 of the UN Recommendations and this should now be adopted by the modes.

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where as the IMDG Code provides 12 months but ICAO does not provide any transitional arrangements.

<sup>7</sup> ST/SG/AC.10/32/Add1

The new text requires the training records to be available to the competent authority for inspection and the competent authority must define a period for retention of such records.

## **4.2 RID/ADR/ADN 2002 - 2007**

The text of Chapter 1.4 was discussed extensively in 2003 at the various RID/ADR/ADN meetings (WP15.AC.1). a number of proposals were presented by various delegations<sup>8</sup> and a number of changes were made during the discussions that took place.

Although the UN principles were maintained, a number of significant variations were adopted, many of which add (in the main) clarifications or interpretations for the mode of transport. These include:

- keeping a register of trained drivers
- limiting the application of the security rules in the UN Recommendations by excluding all dangerous goods in Limited Quantities (Chapter 3.4) and dangerous goods within the small load thresholds (Sub-section 1.1.3.6)

These issues are dealt with in more detail in Chapter 5 of this report which reviews the 2009 text of Chapter 1.10 in RID/ADR/ADN.

## **4.3 Report of the Multidisciplinary Group of Experts on Inland Transport Security 2006 - 2008**

The Inland Transport Committee (ITC) of the UN Economic Commission for Europe established the Multidisciplinary Group of Experts on Inland Transport Security. The Expert Group's work was expected to be completed by the end of January 2008. A report was circulated by the group in February 2008 (see below) and the group is expecting to hold one more meeting towards the end of 2008 or early 2009. The work of the Group is not limited to dangerous goods; it deals with all aspects of transport security.

The Expert Group discussed the definition of security in relation to safety and they agreed to use a broad approach to the security concept (by including issues such as crime and vandalism). The focus of the Group's work, however, is threat of terrorist attack. The Group also recognised that they should ensure that the interface with ports was taken into account.

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<sup>8</sup> TRANS/WP15/AC.1/2003/ 23, 49, 61 and 64; Information papers: TRANS/WP15/AC.1/2003/BE, INF25 and GE, INF 9 and 20

The Group has carried out a review of the current information available both from Governments, international organisations and various industries and industry bodies. Comprehensive information can be found on the UN website<sup>9</sup>.

The Group's report published in February 2008 has been sent to a number of ITC committees including WP.15 with a number of recommendations including:

- UNECE Member States and other interested parties provide information about inland transport security regulations and initiatives in order to complete the inventories of national legislation
- review international legal instruments under their respective areas of responsibility. This work should include the following:
  - (a) create an inventory of the existing security measures;
  - (b) provide a clear rationale/justification why there exists no security measures, if appropriate;
  - (c) provide a preliminary evaluation concerning the appropriateness/sufficiency of the existing security measures;
  - (d) examine the effectiveness of the implementation of the existing security provisions;
  - (e) create a list of potentially desirable additional security measures;
  - (f) explore the cost effectiveness of future security provisions.

WP.15 and the other UNECE committees, to whom this report has been addressed, have been asked to provide written reports on their findings before the end of 2008. In the case of WP.15 and the RID Committee of Experts (not part of the UN), most of the work relating to security has already been published and the committee may decide to review the provisions in relation to the points listed above. Other UN committees that have been asked to undertake a review may not have any security provisions in place and the Multimodal Disciplinary Group has gone on to request the UNECE ITC subsidiary bodies to incorporate security provisions into the relevant international legal instruments under their responsibility.

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<sup>9</sup> See: <http://www.unece.org/trans/main/ac11/ac11.html>



#### **4.4 RID/ADR/ADN 2008**

The recommendations referred to above have been sent to the following groups for consideration:

- RID Committee of Experts on the Transport of Dangerous Goods (for information only),
- ADR Working Party on the Transport of Dangerous Goods (WP.15),
- Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee).

The meetings were held in May and June 2008.

The document from the Multidisciplinary Group was submitted as an information paper to WP.15 in May. A detailed discussion did not take place but having received a report from the European Commission that it was undertaking a study of the security provisions, it was agreed that WP.15 would await the report of the study before responding to the Multidisciplinary Group. The questionnaire used in this HCDG study (see Annex C) was noted by the Chairman of WP.15. It was agreed that the questionnaire used by the Commission would be adapted by the Chairman and circulated by him to non-EU signatories to ADR. He hoped that by using the final Commission report and the replies from those non-EU Member States that he would be able to prepare a response to the Inland Transport Committee of the ECE in time for its meeting in 2009.

The Multidisciplinary Group is also due to meet again at the end of 2008 or early 2009 to consider responses to its documents. In the view of the consultants it is unlikely that this report and questionnaire results will have been in circulation for very long at the time of the proposed meeting and consideration will have to be given to delaying a debate until after the Joint Meeting in March 2009.

#### **4.5 Sea Transport**

The IMO adopted Chapter 1.4 into the International Maritime Dangerous Goods (IMDG) Code. Account had to be taken of the International Ship and Port Facility Security (ISPS) Code and relevant provisions of Chapter IX-2 of the Safety of Life at Sea Convention 1974 (SOLAS 74). In addition, most legal instruments of the IMO address ships of more than 500 gross tonnes and

they include a recommendation to competent authorities that at a national level the provisions should be applied to smaller ships.

The ISPS Code was adopted by the IMO in 2002 and provides comprehensive guidance for an international framework addressing the shipping and port industries as well as governments and local administrations. Ships are required to undergo an initial verification before being put into service. The verification process must ensure that they have a security plan and any security equipment must fully comply with the ISPS Code.

## 4.6 Air Transport

Adoption by the International Civil Aviation Organization (ICAO) was rather more difficult. Annex 17 of the Convention on Civil Aviation (Chicago Convention)<sup>10</sup> which controls international aviation addresses all aspects of security. After much debate within the ICAO's Dangerous Goods Panel, it was agreed to adopt Chapter 1.4 of the UN Recommendations but with the following note at the beginning of the Chapter.

*“Note. - This Chapter addresses the security responsibilities of operators, shippers and others involved in the transport of dangerous goods aboard aircraft. It should be noted that Annex 17 - Security, provides comprehensive requirements for implementation of security measures by States to prevent unlawful interference with civil aviation or when such interference has been committed. In addition, the Security Manual for Safeguarding Civil Aviation against Acts of Unlawful Interference (Doc 8973 - Restricted) provides procedures and guidance on aspects of aviation security and is intended to assist States in the implementation of their respective national civil aviation security programmes. The requirements in the Chapter are intended to supplement the requirements of Annex 17 and to implement measures to be taken to minimize theft or misuse of dangerous goods that may endanger persons or property. The provisions of this Chapter do not supersede requirements of Annex 17 or the Security Manual.<sup>11</sup>”*

The ICAO security provisions set out in Annex 17 concentrate primarily on cargo (including dangerous goods) placed on passenger aircraft. Detailed

<sup>10</sup> The Convention on Civil Aviation 1944, Annex 17 Security Safeguarding International Civil Aviation against acts of unlawful interference.

<sup>11</sup> Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc9284AN905)

security guidance for cargo aircraft has not been produced by the relevant ICAO Panel although they do plan to undertake this work.

However, the complication for the air mode is that Annex 17 and its security manual of the Chicago Convention is a restricted document intended for Governments whereas the text developed by the UN Sub-Committee was intended for all users, with national Governments permitted to add enforcement and guidance rules.

#### **4.7 Group of Eight (G8) Countries**

The G8 countries have had discussions on security issues but as G8 is intended to be an informal forum and has no administrative structure; these have been restricted to high level discussions. They have sought to identify appropriate international bodies, such as the UN able to lead the development of more detailed proposals.

#### **4.8 Security Guidance**

There are a number of sources of information which are to be found in Annex B. A review was undertaken of some of those listed along with some documents offered by Member States and they range from a single page of advice to comprehensive details on how to develop, prepare and apply security plans. The consultants offer no opinions on these except to say each document reviewed offered helpful advice and some of the shorter ones were appropriate for particular circumstances whereas the larger documents may offer too much detail for smaller organisations.

Many factors dictate the type of security advice needed, not least being:

- the company's scale of operation
- the national Government's policy on all security.

Based on the responses from questionnaires and the interviews there is no doubt that guidance material is essential if Governments and industry are to be able to interpret and apply the provisions.

Universal advice from either the EU or ECE at best can only be general since, as stated above, the security situation in each State varies and each company is different.

## 5 Review of Chapter 1.10

### 5.1 Table 1: Comparison of Security Provisions of RID/ADR/ADN and UN

The table below provides a review of Chapter 1.10 in each of the surface modes covered by this project. It identifies differences between the modes and the UN Model Regulations and includes comments from the consultants.

This analysis does not address Table 1.10.5 which is dealt with in Chapter 5.2 of this report concerning HCDG.

ADR Text	RID Text	ADN Text	UN Text	Comments
<p><b>1.10.1 General provisions</b></p> <p>1.10.1.1 All persons engaged in the carriage of dangerous goods shall consider the security requirements set out in this Chapter commensurate with their responsibilities.</p> <p>1.10.1.2 Dangerous goods shall only be offered for carriage to carriers that have been appropriately identified.</p>			<p>1.4.1</p> <p>1.4.1.1</p> <p>1.4.1.2</p>	

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<b>ADR Text</b>	<b>RID Text</b>	<b>ADN Text</b>	<b>UN Text</b>	<b>Comments</b>
1.10.1.3 Areas within temporary storage terminals, temporary storage sites, vehicle depots, berthing areas and marshalling yards used for the temporary storage during carriage of dangerous goods shall be properly secured, well lit and, where possible and appropriate, not accessible to the general public.		1.10.1.3 Holding areas in transshipment zones for dangerous goods shall be secured, well lit and, where possible and appropriate, not accessible to the general public	1.4.1.3 has different wording	The wording in the RID/ADR/ADN text is more specific to these regulations whilst the UN text is more general.
1.10.1.4 Each member of a vehicle crew shall carry with them means of identification, which includes their photograph, during carriage of dangerous goods.	“train crew”	“crew member”	7.2.4.1	According to some questionnaire responses this presents problems particularly in countries where identity cards are not required.
1.10.1.5 Safety inspections in accordance with 1.8.1 and 7.5.1.1 shall cover appropriate security measures.	Reference to 1.8.1 only		7.2.4.4	

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p>1.10.1.6 The competent authority shall maintain up-to-date registers of all valid training certificates for drivers stipulated in 8.2.1 issued by it or by any recognized organization.</p>	<p>Not in RID</p>		<p>NOT UN</p>	<p>The text is not from UN. There appears to be no specific requirement in 8.2 for the retention of a register for trained drivers.</p>
<p><b>1.10.2 Security training</b></p> <p>1.10.2.1 The training and the refresher training specified in Chapter 1.3 shall also include elements of security awareness. The security refresher training need not be linked to regulatory changes only.</p>			<p>Not the same</p> <p>1.4.2.1</p>	<p>Different wording from UN but the RID/ADR/ADN covers the same requirement and usefully makes it clear that security training may be separate from other dangerous goods training</p>
<p>1.10.2.2 Security awareness training shall address the nature of security risks, recognising security risks, methods to address and reduce such risks and actions to be taken in the event of a security breach. It shall include awareness of security plans (if appropriate) commensurate with the responsibilities and duties of individuals and their part in implementing security plans.</p>			<p>1.4.2.2</p>	<p>The retention of records will have to be determined by the competent authority. This could become a complex issue but in the air mode they say that records for the past 36 months should be available. This allows a record to last more than one edition of the modal regulations.</p> <p>(See Note in section below 1.4.2.4)</p>

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ADR Text	RID Text	ADN Text	UN Text	Comments
			<p>1.4.2.3 and 4 are missing from RID/ADR/ADN</p>	<p>These Sub-Sections refer to training requirements. It can be argued that these are unnecessary as 1.3 requires this and is therefore dealt with in 1.10.2.1.</p> <p>However it should be noted that a number of respondents to the questionnaire commented that the training requirements are not clear in the revised text of the 16<sup>th</sup> edition of the UN Recommendations (see Chapter 4.1 of this report)</p> <p>Whilst 1.10.2.1 addresses Chapter 1.3, it makes no mention of 1.8.3 or 8.2 for ADR. This may be a deficiency.</p> <p>Note: In July 2008 the UN Sub-Committee has agreed to amend 1.4.2.4 (see 4.1.2 of this report) and the Joint Meeting will have to consider changes to Chapter 1.10 for 2011.</p>

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p><b>1.10.3 Provisions for high consequence dangerous goods</b></p> <p>1.10.3.1 “High consequence dangerous goods” are those which have the potential for misuse in a terrorist incident and which may, as a result, produce serious consequences such as mass casualties or mass destruction. The list of high consequence dangerous goods is provided in Table 1.10.5.</p>		<p>In ADN first sentence is a NOTE and second sentence is 1.10.3.1</p>	<p>NOT UN</p>	<p>Note: This term is a definition. The term is rarely used outside Chapter 1.10 in the regulations but many substances are potentially affected perhaps there is a case for incorporating it into definitions in Chapter 1.2 so that general readers can find it especially as the title of the Chapter does not include the term.</p> <p>It is not clear why ADN has shown this in a different way.</p>



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ADR Text	RID Text	ADN Text	UN Text	Comments
			1.4.3.1 is missing from RID/ADR/ADN	This provides for competent authorities to consider setting up registers of consignors, carriers etc. There was no significant support for this concept from respondents to the questionnaire although some countries require registration of companies involved in specific Classes (e.g. 1 and 7) or they hold registers of drivers and DGSA's which include details of their employers. Although these latter lists were not set up for security some argue that it does provide benefits in knowing what personnel do.
<p><b>1.10.3.2 Security plans</b></p> <p>1.10.3.2.1 Carriers, consignors and other participants specified in 1.4.2 and 1.4.3 engaged in the carriage of high consequence dangerous goods (see Table 1.10.5) shall adopt, implement and comply with a security plan that addresses at least the elements specified in 1.10.3.2.2</p>			1.4.3.2.1	

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p>1.10.3.2.2 The security plan shall comprise at least the following elements:</p> <p>(a) specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;</p> <p>(b) records of dangerous goods or types of dangerous goods concerned;</p> <p>(c) review of current operations and assessment of security risks, including any stops necessary to the transport operation, the keeping of dangerous goods in the vehicle, tank or container before, during and after the journey and the intermediate temporary storage of dangerous goods during the course of intermodal transfer or transshipment between units as appropriate;</p>			1.4.3.2.2	<p>The wording is different for c) but is more appropriate for these regulations.</p>

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p>(d) clear statement of measures that are to be taken to reduce security risks, commensurate with the responsibilities and duties of the participant, including:</p> <ul style="list-style-type: none"> <li>- training;</li> <li>- security policies (e.g. response to higher threat conditions, new employee/employment verification, etc.);</li> <li>- operating practices (e.g. choice/use of routes where known, access to dangerous goods in intermediate temporary storage (as defined in (c)), proximity to vulnerable infrastructure etc.);</li> <li>- equipment and resources that are to be used to reduce security risks;</li> </ul> <p>(e) effective and up to date procedures for reporting and dealing with security threats, breaches of security or security incidents;</p>				

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p>(f) procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;</p> <p>(g) measures to ensure the physical security plan; and</p> <p>(h) measures to ensure that the distribution of information relating to the transport operation contained in the security plan is limited to those who need to have it. Such measures shall not preclude the provision of information required elsewhere in ADR.</p> <p><b>NOTE:</b> <i>Carriers, consignors and consignees should co-operate with each other and with competent authorities to exchange threat information, apply appropriate security measures and respond to security incidents.</i></p>				<p>There were observations from railway authorities that the need to provide information to railway infrastructure managers for safety reasons but to restrict it for security reasons was proving a difficult area.</p>

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ADR Text	RID Text	ADN Text	UN Text	Comments
<p>1.10.3.3 Devices, equipment or arrangements to prevent the theft of the vehicle carrying high consequence dangerous goods (see Table 1.10.5) and its cargo, shall be applied and measures taken to ensure that these are operational and effective at all times. The application of these protective measures shall not jeopardize emergency response.</p> <p><b>NOTE:</b> <i>When appropriate and already fitted, the use of transport telemetry or other tracking methods or devices should be used to monitor the movement of high consequence dangerous goods (see Table 1.10.5).</i></p>		<p>1.10.3.3 Operational or technical measures shall be taken on vessels carrying high consequence dangerous goods referred to in 1.10.5 in order to prevent the improper use of the vessel and of the dangerous goods. The application of these protective measures shall not jeopardize emergency response.</p> <p>NOTE as in ADR</p>	<p>7.2.4.3</p> <p>7.2.4.2</p>	<p>This could be used for the application of telematics.</p>

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<b>ADR Text</b>	<b>RID Text</b>	<b>ADN Text</b>	<b>UN Text</b>	<b>Comments</b>
<p>1.10.4 In accordance with the provisions of 1.1.3.6, the requirements of 1.10.1, 1.10.2, 1.10.3 and 8.1.2.1 (d) do not apply when the quantities carried in packages on a transport unit do not exceed those referred to in 1.1.3.6.3. In addition, the requirements of 1.10.1, 1.10.2, 1.10.3 and 8.1.2.1 (d) do not apply when the quantities carried in tanks or in bulk on a transport unit do not exceed those referred to in 1.1.3.6.3.</p>	<p>8.1.2.1(d) is not referenced and RID uses the terms “wagons and large containers”</p>	<p>The requirements of 1.10.1, 1.10.2, 1.10.3 do not apply when the quantities carried in packages on a vessel do not exceed those referred to in 1.1.3.6.1.</p>		<p><b>For RID and ADR</b></p> <p>Firstly this exempts Limited Quantities of Chapter 3.4 and this aligns with UN. However the text then goes further and states that:</p> <p><b>1</b> Packaged dangerous goods in quantities below the load limits (Exemptions related to quantities carried per transport unit, 1.1.3.6) are exempted from the requirements of Chapter 1.10. This has the effect that the following substances can be carried without the need for security arrangements:</p> <p>Division 1.1, 1.2, 1.3 and 1.5 explosives in quantities not exceeding the thresholds (usually 20kg).</p> <p>Class 2.3 toxic gases (Classification Codes T, TC etc) can be carried in cylinders of up to and including 20L/kg nominal capacity/net mass.</p>

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				<p>One Class 3 and a few Class 4.1 desensitized explosives up to and including 333kg/L.</p> <p>Class 3 and 4.1 desensitized explosives up to and including 20kg/L.</p> <p>Class 6.1 toxic substances of packing group I up to and including 20kg/L.</p> <p><b>2</b> Goods in tanks and bulk if the quantities are below the thresholds in table 1.1.3.6.2 then they are also exempt from the security requirements.</p> <p>The effect of these changes is that a number of substances which can present very serious hazards in very small quantities are exempted from the requirements e.g. phosgene.</p> <p><b>For ADN</b></p> <p>The limits in 1.1.3.6.1 of ADN are structured in a different way from the</p>
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				other modes - they relate to consignments not exceeding 3000kg. The provision does not exempt all substances e.g. packing group I, Class 6.2 Category A and most Class 7 are excluded.
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<b>ADR Text</b>	<b>RID Text</b>	<b>ADN Text</b>	<b>UN Text</b>	<b>Comments</b>
1.10.5 High consequence dangerous goods are those listed in the table below and carried in quantities greater than those indicated therein.			Table 1.4.1	This table is considered in more detail in Chapter 5.2.
1.10.6 For radioactive material, the provisions of this Chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material and of IAEA INFCIRC/225 (Rev.4) are applied.				



## 5.2 Analysis of the High Consequence Dangerous Goods List

The list of HCDG is standard throughout all modes of transport. The list is now nearly six years old and this has provided time for authorities to consider its validity in relation to transport of these goods.

The original list was drafted relatively quickly in the light of the events of 11 September 2001. It was noted at the time that there may need to be revisions when Governments had had a chance to look at all the implications that would follow from the implementation of new rules. There was always a concern about the activity levels used to define radioactive materials of Class 7 as HCDG and this has been under consideration by the IAEA since 2002 (see Chapter 5.2.1 of this report).

In the last biennium, the “UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (2005/2006)” adopted amendments to the Security Chapter 1.4 to include some Division 1.4 explosives and additional Division 5.1 oxidizing substances in the HCDG list. Table 2 below shows the full list including the changes that will appear in the 2009 editions of RID/ADR/ADN.

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**Table 2: - List of High Consequence Dangerous Goods 2009  
(RID/ADR/ADN Table 1.10.5)**

Class	Division	Substance or article	Quantity		
			Tank (l) c	Bulk (kg) d	Packages (kg)
1	1.1	Explosives	a	a	0
	1.2	Explosives	a	a	0
	1.3	Compatibility group C explosives	a	a	0
	1.4	Explosives of UN Nos. 0104, 0237, 0255, 0267, 0289, 0361, 0365, 0366, 0440, 0441, 0455, 0456 and 0500	0	a	0
	1.5	Explosives	0	a	0
2		Flammable gases (classification codes including only the letter F)	3000	a	b
		Toxic gases (classification codes including letters T, TF, TC, TO, TFC or TOC) excluding aerosols	0	a	0
3		Flammable liquids of packing groups I and II	3000	a	b
		Desensitized explosives	0	a	0
4.1		Desensitized explosives	a	a	0
4.2		Packing group I substances	3000	a	b
4.3		Packing group I substances	3000	a	b
5.1		Oxidizing liquids of packing group I	3000	a	b
		Perchlorates, ammonium nitrate, ammonium nitrate fertilizers and ammonium nitrate emulsions or suspensions or gels	3000	3000	b
6.1		Toxic substances of packing group I	0	a	0
6.2		Infectious substances of Category A (UN Nos. 2814 and 2900)	a	0	0
7		Radioactive material	3000 A <sub>1</sub> (special form) or 3000 A <sub>2</sub> , as applicable, in Type B(U), B(M) or C packages		
8		Corrosive substances of packing group I	3000	a	b

- a** Not relevant.
- b** The provisions of 1.10.3 do not apply, whatever the quantity is.
- c** A value indicated in this column is applicable only if carriage in tanks is authorized, in accordance with Chapter 3.2, Table A, column (10) or (12). For substances that are not authorized for carriage in tanks, the instruction in this column is not relevant.
- d** A value indicated in this column is applicable only if carriage in bulk is authorized, in accordance with Chapter 3.2, Table A, column (10) or (17). For substances that are not authorized for carriage in tanks, the instruction in this column is not relevant.

The questionnaire results revealed a number of suggestions and these are considered below. The consultants have also been given a copy of a USA document that raises a number of issues regarding the HCDG list and this is addressed in Section 5.2.3. The US report provides additional technical justification for amendments to the HCDG list.

#### **5.2.1 Activity level limits for radioactive material of Class 7**

The Transport Safety and Security Committee (TRANSCC) of the IAEA met in March 2008 and agreed to provide extra guidance for Class 7. It is understood that the  $A_1$  and  $A_2$  values remain but it will be supplemented by a list of radionuclides. This list does not appear to have been published nor has it been submitted to the UN Secretariat in Geneva to amend the UN Recommendations which would in turn lead to amendments to ADR/RID/ADN.

The fact that the IAEA has been unable to adopt the security provisions agreed at the UN in more than 5 years and that even when published, the TRANSCC Report is likely to set out a number of conditions/variations, is very unsatisfactory.

Although it will be argued that such changes affect a specialist industry, the IAEA experts must be made aware that the producers may be specialists but there are many other parties in the distribution system notably: forwarders, carriers, port and airport operators. Many of these organisations have set up systems based upon the current text and changes may cause confusion and additional work. In addition the problem of “denial of shipment” of radioactive material could be made significantly worse by the delays.

#### **5.2.2 Comments from the questionnaires and interviews**

##### **a) *High Consequence Dangerous Goods***

This part of the report includes comments made from the questionnaires and incorporates the consultants' conclusions.

The questionnaire results produced no overall support for changes to the HCDG list in the UN text but a number of responses indicated that they would like to see changes to the list. Most of the comments below are based on no more than one or two respondent's comments.

## **Class 1**

### *Division 1.3*

It has been suggested that all Division 1.3 explosives should be included in the list of HCDG and not only Division 1.3C. This approach would align with the USA analysis (see Chapter 5.2.3 of this report).

Consultants' conclusion: The main hazard of substances and articles of Division 1.3 is fire generating considerable radiant heat. Division 1.3C comprises articles with a propellant characteristic and as such these articles were considered as HCDG by the UN experts tasked with compiling the original HCDG list. Other Division 1.3 substances include those used in the offshore industries, pyrotechnics used in the theatre, and consumer and display fireworks which are often classified as Division 1.3G. These items were originally felt to be less attractive to terrorists.

The US study (see 5.2.3) argues that all Division 1.3 substances and articles should be included in the HCDG list (although the issue was not raised in the interviews or questionnaire responses from this project). Extending the coverage of the HCDG list will have a significant effect on those Division 1.3G items (fireworks and pyrotechnics for example) that are not currently within scope.

The consultants draw no specific conclusion relating to the inclusion of all Division 1.3 substances and articles in the HCDG list, but suggest that a decision on this should be made once the DGJLS (see 7.3 (iv)) has concluded its review of the subject.

## **Class 2**

### *Substances of classification code F (UN Division 2.1- flammable gases)*

One respondent felt that as these substances are commonly available to the public (the majority being propane and butane), flammable gases should be removed from the list. No other justification was presented and the counter argument to this is that as these are so readily available and are easily accessible, tank quantities of greater than 3000 litres should be suitably controlled to restrict terrorists from accessing large quantities.

Consultants' conclusion: Retain in the HCDG list

### *Substances of classification code 3O (UN Division 2.2 refrigerated liquefied gases which are oxidizing)*

Two respondents suggested that liquid oxygen should be considered a HCDG, this would align with the views of the USA consultant. Oxidizing

liquids of Class 5.1, packing group I carried in quantities greater than 3000 litres in tanks are in the HCDG list.

Consultants' conclusion: As the oxidizing ability of refrigerated liquefied gases with an oxidizing subsidiary hazard is at least as great as oxidizing liquids of Class 5.1, packing group I, there is a good case for including these gases, particularly UN 1073, Oxygen, refrigerated liquid, in the list of HCDG when carried in quantities greater than 3,000 litres in tanks.

### **Class 3**

#### *Remove packing group II*

A similar argument as for flammable gases has been put forward for Class 3 packing group II. The counter argument here is the same.

Consultants' conclusion: Retain in the HCDG list.

### **Class 4.1**

See Class 5.2 below.

### **Class 5.2**

#### *Include Class 5.2 with an explosive subsidiary risk*

This proposal came from several respondents, again without justification and no clarifications were offered during the interviews. Packages of solid and liquid organic peroxides type B, including those requiring temperature control, are required to bear the “explosive “ subsidiary risk label unless test data have proved that the substance in the packaging used does not exhibit explosive behaviour.

The quantity of organic peroxides contained in a package is limited in order to mitigate the effects of dangerous reactions, with the most hazardous of type B being limited to a maximum quantity per package of 25kg/30L. However, if subject to misuse, quantities could be aggregated to produce a greater thermal explosion.

The same principles apply to self-reactive substances type B of Class 4.1 but they were not identified by any respondents to the questionnaire.

Consultants' conclusion: The volume of this traffic is not known but if found to be significant it may be worth further consideration by specialists.

## **Class 6.2**

### *Category A pathogens need higher security*

There has been some suggestion that Class 6.2 Category A pathogens should be subject to more stringent transport control. It would appear that some of these substances can produce a very high risk in the wrong hands and in a closed environment. There appears to be very little control within the EU on this type of product. Whether more stringent transport controls would assist needs further research.

However, during meetings with Governments and industry, it has become clear from a security viewpoint that some Category B substances can, in the wrong hands, also produce a severe risk.

Consultants' conclusion: There may be a case for including a wider range of pathogens in the HCDG list but the advice of specialists in the field would need to be sought to determine their “effectiveness” in relation to deliberate misuse. However, the use of the Category A and B systems for transport safety may not be appropriate for security. It is understood that other parts of the European Commission are considering this subject and perhaps the outcome of their deliberations should be awaited before making a decision. Inventing a new system simply for security would provide terrorists with an easily identifiable list.

## **b Other issues relating to dangerous goods**

### ***Empty uncleaned tanks***

There were comments that empty uncleaned tanks that have contained HCDG should not be subject to the security requirements. If the residue in the tank is below the quantity given in 1.1.3.6.3 they are exempt.

Consultants' conclusion: The consultants believe that this is a mistake in interpretation. An empty uncleaned tank can present similar hazards to a full tank. Uncleaned empty tanks will always have a residue of substance which could prove to be of use to a terrorist. In addition, confusion amongst drivers and enforcement agencies is likely to arise if a tank is considered in scope of the HCDG security rules when leaving a depot full, and yet reverts to ‘normal’ security arrangements after having been discharged.

### ***RID/ADR/ADN Variations from the UN Recommendations***

Class 1 explosives in Divisions 1.1, 1.2, 1.3 and 1.5, Class 2.3 toxic gases and Class 6.1 packing group I toxic substances are in the list of HCDG. However in RID/ADR/ADN the security provisions, including the requirement

for a security plan (linked with the carriage of HCDG), do not apply when the quantities carried per wagon, vehicle or container do not exceed those in Sub-section 1.1.3.6 of RID/ADR.

This means that up to 20kg or 20L of these explosives or toxic substances can be carried per transport unit and be exempt but could still have a significant effect on the surrounding population if misused.

From 2009, detonators, detonating cord and shaped charges classified in Division 1.4 will be added to the list of HCDG in RID/ADR/ADN. However this time the security provisions will apply whatever the quantity of explosives carried. To be consistent with this latest development and with the UN Model Regulations and other modal rules (IMDG Code and ICAO Technical Instructions), where only Limited Quantities if applicable are exempt, there is a good case to review the link of the HCDG list to the quantities given in Sub-section 1.1.3.6 in RID/ADR and in particular for explosives and highly toxic substances.

Consultants' conclusion: Some of the quantities of the classes listed above should be considered for individual attention by the Joint Meeting with a view to controlling smaller quantities.

### **5.2.3 USA Transport Security Administration/American Trucking Association – analysis of security sensitive hazardous materials**

The Transport Security Administration (TSA) with the US Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) developed a list of goods for which drivers of trucks carrying these goods would have to be security checked and finger printed. The list was put out for consultation and amongst those consulted was the American Trucking Association (ATA) who employed a consultant to review the list and comment on its suitability. According to officials at the USA DOT, they and TSA consider the report a sound basis for reviewing their security strategy.

“The Analysis of the Transport Security Administration Draft List of Security Sensitive Hazardous Materials” refers extensively to the UN list and comments on its suitability. The report notes that the USA has never objected to the list developed at the UN which was developed quickly and this analysis should not be taken as a criticism; rather, it should be taken as a clearer analysis over time. The USA analysis confirms that the decisions made in

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2002 were broadly correct and no major changes to the list are suggested. The report found some anomalies and most of these have been identified during the study through the questionnaire or through discussion.

In September 2008 the USA Government announced plans to align their domestic list of High Consequence Dangerous Goods more closely with the list in Chapter 1.10.

Annex D of this report provides a brief summary of the USA analysis's conclusions.



## 6 Questionnaire and Interview Analysis

### 6.1 Introduction

A questionnaire was circulated in January 2008 to over 100 Governments and organisations with known interests in the transport of dangerous goods. By July 2008 fifty four replies had been received and analysed.

A copy of the questionnaire can be found in Annex C.

This exercise was followed by a series of interviews with industry and 10 Governments. These were based on the questionnaire and the subsequent analysis of responses to the questionnaire.

This section gives an analysis of the responses and reactions from the questionnaires and the interviews. Suggestions for changes or improvements to the regulations (RID/ADR/ADN) were made by a number of respondents and sometimes more than one suggested the same or similar change. However, it should be made clear that there was never unanimous support for any changes that are described below.

### 6.2 Application of the RID/ADR/ADN provisions

#### 6.2.1 Chapter 1.10 - General

There was general support that the provisions of Chapter 1.10 were adequate although there were a significant number of respondents that did indicate that some areas of the text could be improved and clarified. Specific examples of these deficiencies were difficult to identify but amongst the issues raised in other parts of the questionnaire it would appear that there could be more help with:

- defining security plans in particular the contents
- what happens when drivers run out of driving time through road accidents
- defining responsibility for preparing and implementing plans and procedures
- advice on enforcement, how to apply
- specific training requirements for drivers.

In the consultants' view, most of these deficiencies could be dealt with in the form of guidance from the relevant authorities. On balance, such advice should be issued at a national level because it will be possible to address local conditions but general guidelines from UN or the European Commission might be appropriate. It has to be remembered that industry and Governments work in different ways in each country. Such differences result from the different legal systems, history and geography. A single set of guidelines is not appropriate. The various guides listed in Annex B provide a set of basic rules from which the necessary plans can be developed.

There were two observations from industry sources that indicated wider problems: there were complaints of insufficient co-operation between all the authorities that had a role in security recognising in some countries this may be under a single Ministry but in others it could be many different organisations; and secondly, the railway sector indicated in some of its responses to questionnaires and interviews that the rules were written with road vehicles in mind.

This last comment would appear to have some justification if one considers the history of these provisions. Although the text was drafted in Geneva at the UN Sub-Committee and recognising that this is a multimodal body it is probably fair to say that in 2001/2002 when the text was being prepared many of the authors were concerned about potential theft of vehicles. However, the text is generic and is adaptable to all modes and it is in the consultants' view simple to add specific modal guidance.

Three States that responded to the questionnaire felt strongly that Chapter 1.10 should not be in ADR. Among the reasons given were that these transport conventions were about safety not security, that their Governments had separate arrangements for security and that this was not usually a transport matter but the duty of other ministries. They believed that if there was a need for a convention it should be done under some other legal instrument.

It was not clear from either the interviews or responses to the questionnaire what these countries wanted in place of the UN text. Certainly in one case there was an indication that there should be a separate international legal instrument that would involve security service representatives of Member States.

Although a strongly held view, it is the opinion of the consultants that there is a clear link between dangerous goods safety and security. If another legal instrument were to be used to establish security measures there would still have to be a link between it and the transport rules.

### **6.2.2 High consequence dangerous goods list**

There was overall support for defining goods into two basic levels: HCDG and other regulated goods, and excluding small quantities (Limited Quantities and goods carried below the limits set in 1.1.3.6).

Respondents were generally content with the current list of goods although some had specific issues with individual Classes and substances. These issues are addressed in Chapter 5.1 of this report.

### **6.2.3 Enforcement**

Regular enforcement visits to premises appears to be a deficiency in the system there is clearly no requirement either in RID/ADR/ADN, the Framework Directives or the Uniform Procedures Directive to visit premises. Generally, Government respondents were supportive of such an approach but industry was concerned about the meaning of “regular visits” and areas of interpretation.

Some countries were clearly only doing a limited amount of enforcement and other countries who considered that they were under a security threat expressed concern that there was no consistency of approach.

There were comments that the staff responsible for the safety enforcement did not have the experience and knowledge to apply the security provisions. This in part comes about because security is often not the responsibility of the ministries that deal with transport and at national level the arrangements between Government departments will vary.

Perhaps a partial solution to this problem is to amend the Uniform Procedures Directive to require specific security inspections at the roadside and at premises. The Uniform Procedures Directive only addresses road transport and perhaps the Commission needs to consider separate instruments for rail and inland waterway.

It is understood that returns from the Uniform Procedures Directive have improved in recent years and therefore an extension may be possible. A

separate security checklist should be developed by the Technical Committee for this Directive.

#### **6.2.4 Major Accidents Directive (96/82EEC)(SEVESO)**

Could any lessons to be learnt from the SEVESO Directive which has been in effect in Member States for over 20 years (the 1996 Directive updated a 1982 Directive)? It should be noted that the 1996 Directive is currently under review.

Some respondents from Governments and industry felt that aspects such as incident reporting requirements detailed in SEVESO were useful. The Directive sets down parameters for the reporting of accidents to the Commission such as death, persons hospitalised for at least 24 hours etc. Some of the parameters are not dissimilar to those already in Section 1.8.5 of ADR/RID/ADN.

There are no provisions in Chapter 1.10 to report security incidents and the provisions of Section 1.8.5 of RID/ADR/ADN were originally intended to cover safety accidents. There is nothing in these provisions to exclude security incidents from accident reporting but perhaps an amendment to the text in Section 1.8.5 would make it clear that security incidents need to be reported. Such an amendment would help to underline the need that Chapter 1.10 is an integral part of the regulatory text of RID/ADR/ADN. However there would need to be a definition of a security incident based on similar parameters currently listed in Sub-section 1.8.5.3. Such criteria should include theft of the vehicle but there may be other parameters that need to be considered.

#### **6.2.5 The Role of Dangerous Goods Safety Advisers (DGSAs)**

The questionnaire asked whether there should be a security manager or whether the DGSA should take on a security role. The responses from Governments were that no changes were required but industry representatives suggested that the provisions in Section 1.8.3 were not sufficiently clear and that some clarification should be made in either Section 1.8.3 or Chapter 1.10 or both concerning the role of the DGSA in relation to security.

It should be remembered that the DGSA provisions were in the regulations before the introduction of the Chapter 1.10 and Section 1.8.3 and various UN Model Regulations do not have a DGSA provision. The Joint Meeting did consider changes when Chapter 1.10 was being adopted but they decided

that the DGSA was primarily appointed for safety reasons and he/she may not have the appropriate background to advise on security. It was therefore decided that the DGSA should limit his/her responsibility to ensuring that a security plan exists.

There may need to be additional guidance and Section 1.10.2 may need to address this issue.

#### **6.2.6 Operational difficulties**

Does Chapter 1.10 give operational difficulties to the participants of RID/ADR/ADN?

##### **1 SEVESO Directive issues.**

The SEVESO Directive is an extensive document but only applies to a limited range of substances, in fact fewer substances than set down in Chapter 1.10. Primarily it is aimed at substances that can cause fire and explosion or have severe toxic effects. For example SEVESO, does not include Classes 6.2, 7 and 8.

Two industry respondents to the questionnaires said that there were problems and conflicts with the SEVESO Directive but during the interviews no evidence was produced to substantiate this. However, some informal talks with industry representatives suggest that this may be an area of misinterpretation between the SEVESO rules and Chapter 1.10.

Clarification in a guidance document may be necessary regarding the interface between Chapter 1.10 and SEVESO.

##### **2 Parking of vehicles**

There have been a number of comments mainly from industry that there are insufficient secure parking facilities for vehicles carrying HCDG. This is compounded by the fact that, in some Member States, when attempts to open new parking facilities are initiated some planning authorities reject applications on environmental grounds.

This appears to be a serious problem and although a part of the Commission has made funds available to assist in the development of parking facilities, they do not appear to have been widely advertised. Much of the Commission money is directed at international cross border traffic whereas in some countries even domestic transport lacks sufficient parking facilities.

The consultants believe that this is an area where the Commission and other stakeholders could usefully offer more help and guidance.

#### **6.2.7 Improvements to Chapter 1.10 RID/ADR/ADN**

Security provisions are available from ICAO, the IMO (ISPS Code) – see Chapter 3 of this report, and other guidelines are set out in the SEVESO Directive. Some respondents indicated that there were some parts of the ISPS and SEVESO rules that could be usefully adopted into RID/ADR/ADN

In studying the ISPS Code, the document provides basically the same system of security provisions that exists in Chapter 1.10 but adds greater detail. Much of this detail is included in the guides that are referred to in the various documents produced by Governments and Trade Associations (see Annex B). The ISPS Code does not incorporate the list of HCDG because it does not only address dangerous goods security.

Although this document provides very useful information which could assist Governments and industry when the former wish to offer guidance and the latter needs to draft detailed plans, the consultants were not able to identify any additional provisions which would appear to be essential for inclusion in Chapter 1.10.

#### **6.2.8 Registration of companies carrying HCDG**

There was no support for this idea. A number of countries require the registration of all companies involved in the transport of Classes 1 and 7. Others said they would be willing to consider such a requirement.

Some countries require registration of drivers and DGSA's, not for security reasons, and as part of the registration they retain details of by whom they are employed.

It was observed by some Member States that such registration of DGSA's and drivers could help those countries particularly concerned with security.

Although there may be some merit in the registration of drivers and DGSA's, the consultants believe that this would present a number of difficulties and would be quite inappropriate for many Member States where the HCDG "industry" is very small. There could be equally difficult problems for larger Members States, namely with the mobility of labour and the fact that several DGSA's act for many companies. Even if this was acceptable to road

transport, could a similar arrangement apply to train companies and to barge operators?

It is difficult to see how the benefits of such a system could outweigh the costs. However WP.15 is currently reviewing the driver training certificate and apparently very few countries issue a certificate that mirrors the specimen in ADR. If WP.15 can agree to a common standard design including some security features allowing for enforcement staff to carry out quick checks, this may offer significant benefits without excessive cost.

## **6.2.9 Telematics, Tracking and Tracing**

### **6.2.9.1 General views**

The responses to the question of whether there was support for the concept of vehicle tracking systems proved difficult to analyse. Although there appears to be no support, at present, from Governments for this idea a number said that they may consider this in the future (2020 was a popular date) when there could be more systems available, better international standards and greater cost effectiveness. A small number of Member States already require tracking and tracing for vehicles carrying Class 1 and 7 goods.

Industry saw no justification for mandatory tracking and tracing systems and in the meetings held with them they were strongly opposed to such a proposal. There was great concern that the “dangerous goods sector” would be the “guinea pigs” for testing and developing such a scheme and all the costs would fall on them.

The railways already have tracking and tracing in many parts of their systems.

### **6.2.9.2 Mandatory routeing**

Mandatory routeing of dangerous goods vehicles is very much a philosophical issue. There are those who say that it is best to keep all dangerous goods vehicles on particular routes thereby better knowing their location and, making sure that suitable emergency response teams are promptly available. There are others who argue that this is a dangerous practice. In the event of an incident, concentrating dangerous goods on specific routes could make a smaller incident into one that is much larger.

This subject was addressed in the study TREN/E3/43-2003 published in 2005.

There was generally no support for routing of dangerous goods vehicles from Governments or industry, although there were a few Member States who already had mandatory routing requirements in place.

### **6.2.9.3 RFID (Radio Frequency Identification)**

Would RFID provide benefits for the security of HCDG? The views of Governments and industry were mixed and there was no overall support for such a system. Views were that the system was open to abuse, there were no clear international standards and if it were ever to be adopted there should be defined elements of information that should be collected. There was also the issue of collecting data which could be commercially sensitive. Whilst RFID systems are used for high-value goods in particular, the cost benefit for general goods, including chemicals, was open to question.

Additionally, RFID devices can be easily damaged or removed.

### **6.2.10 List of High Consequence Dangerous Goods**

There were a number of queries regarding the list of HCDG and whether there were unnecessary inclusions or omissions of substances or threshold levels. The response to these queries has been assessed in Chapter 5 of this report along with other comments.

### **6.2.11 Governments and Government Agencies**

This group was asked a number of questions regarding the provision of advice and enforcement.

#### **6.2.11.1 Advice to industry**

Some Member States have issued additional advice on the provisions of Chapter 1.10 whilst others have referred their industry to the various Codes produced by trade associations (see Annex B).

#### **6.2.11.2 Enforcement**

The level of enforcement has varied. The majority of Member States said that they would like to see amendments to the Uniform Procedures Directive. This would ensure that enforcement is carried out by adding questions to the check list and possibly having a separate check list for security checks at premises.



## 7 Conclusions and Observations

### 7.1 Overall Conclusion

The consultants believe that the current regulations covering security during the transport of dangerous goods have provided the right level of protection to the public taking account of the factor that trade in dangerous goods must continue with the minimum of restrictions as it provides important raw materials for many different sectors of the economies of Europe.

A general observation identified during this work that the three sets of modal regulations have adopted the same text with very minor changes. However the individual modes do present different security risks. Vehicles are easily stolen and easily moved from one place to another whilst barges and trains are unlikely to be stolen and the most likely scenario is that the contents of the barge or train are stolen. The current provisions do not recognize this distinction and the consultants make no recommendation. However should it be decided in the future to make further amendments it may be necessary to consider this aspect of modal differences.

The consultants were aware that other parts of the European Commission are looking at security in specific areas notably explosives precursors and pathogens. This work will need to be monitored with a view to ensuring that there are no conflicts with the transport regulations and if there are they will have to be taken into account later.

Member States were quite evenly divided over their attitudes to the whole subject of security. Many considered it to be of high importance, notably those countries that have been affected by terrorism placed great emphasis on this when compared to many others who did not consider themselves at risk. The consultants do not believe these wide ranging views affect the conclusions set out in this chapter.

### 7.2 The RID/ADR/ADN Provisions in Chapter 1.10

#### a) The Main Text

##### i) Definitions of HCDG

The current definition of HCDG can only be found in Chapter 1.10. The Joint Meeting has argued that definitions unique to a particular Chapter should not be in Chapter 1.2. The consultants accept this

logic. However, the term HCDG is unique to one part of ADR, is easily missed and Chapter 1.10 is not entitled HCDG but “Security Provisions”. It is therefore suggested that the term is either moved to Chapter 1.2 or in Chapter 1.2 there is a reference:

*“High consequence dangerous goods see 1.10.3.1”*

ii) Register of driver training certificates

Sub-section 1.10.1.6 requires the competent authority to maintain a register of training certificates in Section 8.2.1. There does not appear to be any requirement in Chapter 8.2 to have such a register. The requirements for driver training in Chapter 8.2 make it almost impossible to operate the system without such a register. Recognising that WP.15 are currently reviewing the driver training certificate requirements it would be opportune to add a Sub-section 8.2.1.10 to require a register and to define the minimum contents.

iii) Training

Sub-section 1.10.2.1 requires training and it refers to Chapter 1.3 but not to Section 1.8.3 or Chapter 8.2 directly (there are notes in Chapter 1.3 but not in 1.10). This seems to have caused some confusion and it is recommended that Sub-section 1.10.2.1 is amended to include references to the other Chapters. In addition, it is suggested that either:

the provisions in Chapter 8.2 (ADR) regarding teaching units for this subject are reviewed,

or

some separate guidance concerning security training for drivers is issued.

RID and ADN should consider clarifying their requirements.

iv) ‘Security v safety’ in security plans

Paragraph 1.10.3.2.2(h) requires the distribution of information in the security plan to be limited to those who need to know. This does not appear to be a problem with road transport operations where the infrastructure authority will be the national road administrations. However, the infrastructure authorities for railways are separate companies and there does have to be an exchange of information. A number expressed concerns that there is a conflict between safety and security.

This appears to be an issue unique to the railway and perhaps the RID Committee of Experts should consider this at a future meeting.

v) Security plans

A number of comments, mainly from industry, were made that the guidance on security plans was varied and not very clear. However, in the consultants' views it is difficult to see how this situation can be improved within the current text without setting down very prescriptive requirements that would not suit others. In the consultants views, all the guidance is aimed at assisting industry in applying the provisions of Chapter 1.10. Where appropriate, they should discuss any particular issues with enforcement authorities. Most of the guidance seen by the consultants recognize that there are a wide range of companies both in size and type of operations that have to be catered for. Perhaps a second note in 1.10.3.2.2 could indicate that the detail in the elements required will vary from type of company and their operation along with any guidance offered by the competent authority.

**b) Analysis of the HCDG List**

i) The current list

Class 1 Explosives of Division 1.3

The consultants draw no specific conclusion relating to the inclusion of all Division 1.3 substances and articles in the HCDG list, but suggest that a decision on this should be made once the DGJLS (see 7.3 (iv)) has completed its review of the subject.

Class 2 Gases Classification Code 3O (refrigerated liquefied oxidizing gases)

As the oxidizing ability of refrigerated liquefied gases with an oxidizing subsidiary hazard is at least as great as oxidizing liquids of Class 5.1, packing group I, there is a good case for including these gases, particularly UN 1073, Oxygen, refrigerated liquid, in the list of HCDG when carried in quantities greater than 3,000 litres in tanks.

Classes 4.1 and 5.2 Substances

Volumes of traffic for solid and liquid organic peroxides type B (Class 5.2) and self-reactive substances type B (Class 4.1) to be investigated since if it is significant and could therefore pose a risk, inclusion may be considered.

#### Class 6.2 Infectious substances

There may be a case for including a wider range of pathogens in the list of HCDG but the advice of specialists in the field would need to be sought to determine their “effectiveness” in relation to deliberate misuse. However the Category A and B systems used for transport safety may not be appropriate for security. It is understood that other parts of the European Commission are considering this subject and perhaps the outcome of their deliberations should be awaited before making a decision. Therefore devising a new system may not be appropriate.

#### Class 7 Radioactive material

Amendments to the Class 7 security provisions are normally made through the UN Recommendations which in turn are adopted by the various modes of transport. There has been no proposal to amend the Recommendations in December 2008 and therefore none of the changes adopted at the IAEA will appear before 2013.

It is extremely disappointing that the IAEA has taken over 5 years to produce a response to the work done by the UN in 2002.

#### ii) Other dangerous substance issues

The UN Recommendations exclude dangerous goods in Limited Quantities of Chapter 3.4 from the security provisions. The Joint Meeting went a step further and excluded substances below the limits in table 1.1.3.6.3 which relates to quantities of dangerous goods carried per transport unit.

There was some concern that excluding substances below these thresholds was a step too far. However, there was no support for reversing this decision – rather, it was preferred to deal with certain substances on a case by case basis. A precedent for this has already been set by the addition to the list of HCDG of a number of Division 1.4S articles.

The consultants support the idea of dealing with substances below the 1.1.3.6 threshold on a case by case basis. Classes 1 and 2 substances and articles in Transport Category 1 of 1.1.3.6.3 should be considered first as these represent high risk explosives and toxic gases. These can produce devastating effects in small quantities.

An amendment to Section 1.10.4 could include Transport Category 1.

**c) Other Issues with Chapter 1.10**

**i) Interpretation of Chapter 1.10**

In the consultant's view most of the deficiencies of Chapter 1.10 (apart from those listed above) identified by Member States could be dealt with in the form of guidance from the authorities. On balance such advice should be given at a national level because it would then be possible to address local conditions, although general guidelines from the UN or the European Commission might be appropriate.

Additional guidance on security plans, the role of DGSA's and empty uncleaned vehicles should be considered. In the case of DGSA's, it should be made clear that they are advisers and they monitor compliance and there is not a requirement for them to be responsible for security.

**ii) Enforcement**

Some difficulties were highlighted. A solution to this problem is to amend the Uniform Procedures Directive to require specific security inspections especially at premises and to develop a check-list for use at the roadside and at premises.

It is noted that a number of Competent Authorities meets annually to discuss enforcement under the Uniform Procedures Directive and the consultants propose that at the next meeting a session is offered to assist in advising Member States on enforcing the security provisions.

The Uniform Procedures Directive only addresses road transport and perhaps the Commission needs to address separate instruments for rail and inland waterway.

**iv) Drivers' and security plans**

There were comments from industry that there is no provision in Chapter 1.10 of ADR to address the fact that other regulations in Europe, notably drivers' hours, will have a direct impact on how to apply the security provisions. The example quoted is that of a driver making a delivery or having delivered HCDG cannot return to a secure facility because he has exceeded his driving time. Although the regulation on drivers' hours provides for emergencies, this would generally have to be confirmed by a police officer. A view would have

to be taken on safety and security grounds how far a driver should travel; even then it may not be to a secure facility.

It is suggested that as there may be severe delays in traffic following accidents or bad weather, the Commission gives some guidance in this area.

iii) A separate convention

Three Member States interviewed took a strongly held view that none of these provisions should be in the respective rules but that there should be a separate international convention. The consultants do not support this policy. Any convention for the security of dangerous goods would have to refer to the current transport rules and new or amended conventions can take a very long time to come into force (Note: ADN finally came into force 8 years after it was adopted and with only 9 countries having ratified it).

### 7.3 Other Security Issues

i) SEVESO

There are no provisions in Chapter 1.10 for the reporting of security incidents whereas SEVESO does provide for this.

There is nothing in these provisions to exclude security incidents from accident reporting but perhaps an amendment to the text in 1.8.5 would make it clear that security incidents need to be reported although a definition or guidance will need to be provided. Such an amendment would help to underline the need that Chapter 1.10 is an integral part of the regulatory text.

ii) Operations

Some industry respondents believed that there was a problem with the interface between SEVESO and Chapter 1.10. This appears to relate to drivers arriving at SEVESO sites to load or deliver HCDG but not being allowed onto the site, the vehicle being taken by someone else to the delivery/loading point. Clearly, if this can be confirmed, not only does this raise issues in relation to security but also to safety, as drivers are normally trained to load and unload vehicles especially tanks. A joint guidance note from the respective parts of the European Commission should be considered to ensure that this misinterpretation no longer occurs.

iii) Compulsory registration of drivers, DGSAs and companies

The consultants are not convinced that on a Europe-wide basis this is necessary or beneficial.

iv) It is noted that some other parts of the European Commission are considering issues regarding security for certain dangerous substances, notably:

- the joint DGJLS/ENTR Explosives Precursors Working Group
- the CBRN Task Force
- the DGJLS Action Plan on explosives security.

It is important, if these projects continue and any new ones are established, that DG TREN monitors the work and ensures as far as possible that there is no conflict with the dangerous goods rules or work to include them in the dangerous goods rules.

v) Telematics

The Joint Meeting has a Working Group investigating telematics and DG TREN should monitor progress in this area.

vi) Secure Parking

A serious problem was identified with the lack of secure parking facilities for vehicles carrying HCDG. Although the Commission has recently made funds available, there is low awareness about this. The Commission and stakeholders could usefully offer more help and guidance.

## Annex A - Abbreviations

49CFR/CFR49	Code of Federal regulations Part 49 (105-180) (USA dangerous goods legislation)
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterway.
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATA	American Trucking Association
BAM	Federal Institute for Materials Research and Testing Germany. Safety in Technology and Chemistry
Basel Convention	Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal
CBRN	Chemical, Biological, Radiological and Nuclear Risks in Biological Preparedness (EU)
CCNR	Central Rhine Commission
CEFIC	European Council of Chemical Manufacturer's Federations.
CEN	European Standards Organisation.
CIM	Uniform Rules concerning the Contract for International Carriage of Goods by Rail.
COLPOFER	Cooperation between Railway Police and Security Services <b>(Collaboration des services de police ferroviaire et de sécurité)</b>
COTIF	Convention concerning International Carriage by Rail.
CTIF	The International Association of Fire and Rescue Services
DG ENTR	Enterprise Directorate General (EU)
DGSA	Dangerous Goods Safety Adviser
DOT	Department of Transportation (USA)
EBSA	European Biosafety Association
EBU	European Barge Union
EC	European Commission
ECE	See UNECE



ECE/ADN	Administrative Committee of the ADN
ECOSOC	Economic and Social Council of the United Nations.
ECTA	European Chemical Transport Association
EFMA	European Fertilizer Manufacturers Association
EIGA	European Industrial Gases Association
EU	European Union.
FIATA	International Federation of Freight Forwarders Associations
Framework Directives	Council Directives 94/55/EC and 96/49/EC
G8	Group of Eight (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom & the United States of America).
GHS	Globally Harmonized system for Chemical Classification and Hazard Communication.
HCDG	High Consequence Dangerous Goods
IAEA	International Atomic Energy Agency.
IATA	International Air Transport Association.
IED	Improvised explosive device
IBC	Intermediate Bulk Container.
ICAO	International Civil Aviation Organization.
IMDG (Code)	International Maritime Dangerous Goods (Code).
IMO	International Maritime Organization.
ITCO	International Tank Container Organization
ISO	International Standards Organization.
ISPS	International Ship and Port Facilities Security Code
IRU	International Road Transport Union
ITC	Inland Transport Committee of the UN ECE
DG JLS	Justice, Freedom and Security Directorate General (EU)
Joint Meeting	Joint Meeting of the RID Committee of Experts and the Working Party (WP.15) on Dangerous Goods (ADR).
Orange Book	The UN Recommendations on the Transport of Dangerous Goods

OTIF	Intergovernmental Organization for International Carriage by Rail
OSZhD	The Organization for Co-operation of Railways
Pira International	Testing, training research and consultancy
PHMSA	Pipeline and Hazardous Materials Safety Administration (USA)
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail.
Scientifics Ltd.	Independent analytical and environmental consultancy
SEVESO	Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances
SOLAS	The Safety of Life at Sea Convention.
SMGS	Agreement on International Goods Transport by Rail (OSZhD)
TDG	Transport of Dangerous Goods
TDG Committee	The Committee on the Transport of Dangerous Goods (EU).
TIH	Toxic by inhalation
TIs	Technical Instructions for the Safe Transport of Dangerous Goods by Air
TNO	Netherlands Organisation for Applied Scientific Research
TRANSCC	Transport Safety Standards Committee of the IAEA
TSA	Transport Security Administration (USA)
UIC	International Union of Railways
UIP	International Union of Private Wagons
UN	United Nations.
UN Committee	The United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals
UNECE	United Nations Economic Commission for Europe
UN Recommendations	The Recommendations on the Transport of Dangerous Goods, published by the United Nations
VCA	UK Vehicle Certification Agency dangerous goods office.

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	Packaging approvals consultancy and training
WCO	World Customs Organization
WNTI	World Nuclear Transport Institute
WP.15	Working Party on the Transport of Dangerous Goods

Note: the trade associations listed above are generally not mentioned by name in the report but they have made an important contribution to this study

## Annex B - Sources of Information

### Security Guidance related to Chapter 1.10

#### Department for Transport, UK

Range of guidance documents for road and rail

<http://www.dft.gov.uk/pgr/security/subdangerousgoods/download/road/>

#### EBU

"Leitbild Terrorismusvorbeugung in der Binnenschifffahrt", (Guidance for the prevention of terrorism in the inland waterway).

#### CEFIC

<http://www.cefic.be/files/Publications/56496CEFICbrGUIDELINES.pdf>

#### IRU

[http://www.iru.org/index/cms-file-system-action?file=en\\_pdf\\_publication/Security%20Guide\\_goods\\_eng.pdf](http://www.iru.org/index/cms-file-system-action?file=en_pdf_publication/Security%20Guide_goods_eng.pdf)

#### CIFMD

<http://www.cifmd.fr>

#### ECTA

[www.ecta.be](http://www.ecta.be)

#### UIC/COLPOFER

[www.uic.asso.fr/download.php/colpfer/colpomember\\_security\\_RID\\_eng.doc](http://www.uic.asso.fr/download.php/colpfer/colpomember_security_RID_eng.doc)

## **Security Documents reports referred to during the study**

### **American Trucking Association**

Analysis of the Transportation Security Administration Draft Lists  
of Security Sensitive Hazardous Materials 2006

### **Swedish Government**

Supply Chain Security Initiatives: A Trade Facilitation Perspective  
ISBN 978-91-977354-3-8 2008

### **European Commission DG TREN**

Study on the impacts of possible European legislation to improve transport  
security  
400008032-6-2 2005

### **International Maritime Organization**

International ship and Port facility Security Code  
ISBN 92 801-5149-5 2003

## Annex C - Questionnaire

### **Analysis of the implementation of the new security rules for High Consequence Dangerous Goods (HCDG) and determine if they are effective**

The Energy and Transport DG of the European Commission have engaged consultants from Pira International, the VCA, Scientifics, BAM and TNO to perform a study on the current status and effectiveness of the regulations governing High Consequence Dangerous Goods (HCDG). The study aims to be independent and impartial and to include the views of all stakeholders who are affected by the HCDG regulations. We would be grateful if you can complete the sections relevant to your organisation and look forward to receiving your contributions.

The following questionnaire is addressed to both industry and Government.

The questions are in four parts

- 1 Addressed to all
- 2 Addressed to governments
- 3 Addressed to industry
- 4 Additional comments you wish to make.

A list of addressees is attached. If you feel that any organisation government or industry has been missed out, please inform us or pass a copy to them.

We would ask you to complete the questionnaire by 28 February 2008 and return it to

[Sheena.bassett@pira-international.com](mailto:Sheena.bassett@pira-international.com)

Should you have any queries regarding questions please do not hesitate to contact one of the consultants:

[James.raw@pira-international.com](mailto:James.raw@pira-international.com)

[Martin.castle@vca.gov.uk](mailto:Martin.castle@vca.gov.uk)

[Keith.white@vca.gov.uk](mailto:Keith.white@vca.gov.uk)

[Arne.bale@scientifics.com](mailto:Arne.bale@scientifics.com)

[Schilperoord@certi.tno.nl](mailto:Schilperoord@certi.tno.nl)

[John.bethke@bam.de](mailto:John.bethke@bam.de)

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The questionnaire is in four parts: Part 1 should be answered by everyone; Part 2 is intended for Governments and Government agencies; Part 3 is intended for industry groups; Part 4 allows for additional general comments. Please provide answers to all questions in the parts that are relevant to you, and feel free to provide additional comments and answers in parts that are not directly related to your role if you wish.

It would be helpful if you could provide brief explanations with your answers.

**1 Questions for all addressees to answer.**

**a) RID/ADR/ADN application of the provisions**

- i) Do you consider the provisions of Chapter 1.10 are adequate (clear and comprehensive)?

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If you believe that new provisions or additional expansion or simplification is required then please give examples.

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- ii) Is the list of High Consequence Dangerous Goods (HCDG) comprehensive?

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Should any substances be added or removed?

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Are the threshold levels set at the appropriate levels?

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Should a distinction be made between high risk and lower risk HCDG?  
For example should tanks of toxic gases or highly flammable liquids or  
gases be subject to more stringent controls?

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iii) What do you think is the most probable scenario for a terrorist action in  
relation to the transport of dangerous goods?

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iv) What degree of severity should dangerous goods security regulations be  
designed to protect against? For example should the regulations be aimed  
at protecting against any terrorist incident however small or only against  
severe incidents such as those likely to cause death or serious injury of a  
substantial number of people or cause significant damage to infrastructure  
that would have a serious economic impact on society?

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v) Do you find deficiencies in the security provisions and if so what are the  
most common?

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vi) Do you believe there should be regular enforcement visits by inspectors?

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- vii) The Council Directive 82/501/EEC on the major-accident hazards of certain industrial activities (OJ No L 230 of 5 August 1982) - The Seveso Directive, deals with major chemical incidents at sites. Do you consider that it could or should be used to cover the transport of high consequence dangerous goods considering that RID/ADR/ADN have made a series of clear definitions concerning carriage? In your answer please give your reasons.

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- viii) Should there be a requirement for a designated security manager? Should there be an extension of DGSA duties to cover this aspect?

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- ix) Are there any difficulties in complying with both the chapter 1.10 rules and other rules in the supply chain?

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- x) Are there any best practices from other aspects of the supply chain which could be included in chapter 1.10 provisions?

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- xi) Are you aware of any inconsistencies between the text of chapter 1.10 and the rest of RID/ADR/ADN? If so what are they and how should they be resolved?

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xii) Can you identify any benefits that have resulted from the HCDG provisions?

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xiii) How should driver training courses cover the responsibilities of chapter 1.10?

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xiv) Should DGSA's be expected to have a wider knowledge of security measures both in the examinations and the day to day work?

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xv) Should there be an additional mandatory training regime for employees involved in transport operations involving HCDG?

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xvi) Are there any specific HCDG measures that you think do not provide any additional security benefits?

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- xvii) Are you aware of the security rules that apply to dangerous goods in air and sea transport?

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Do you consider that they conflict in any way with the provisions of *RID/ADR/ADN*?

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- xviii) Should companies involved in the transport of HCDG (chemical companies, carriers etc) be required to be registered with the competent authority?

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**b) Telematics, tracking and tracing**

- i) Should vehicles be fitted with tracking devices when carrying HCDG?

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- ii) Should there be mandatory routeing of trucks, rail wagons and barges carrying HCDG as far as reasonably practicable?

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iii) If mandatory routeing is in place in your territory, do you feel that this helps or hinders security?

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iv) Are HCDG movements in your territory timed to avoid overnight stops where possible?

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If overnight stops are necessary are secure parking facilities identified and pre-booked?

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How far is it appropriate to deviate from a defined route to enable a vehicle to stop in a secure parking location?

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v) Do you consider that mandatory use of telematics/RFID would improve security?

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vi) Do you see a role for telematics generally for dangerous goods?

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- vii) Have any tracking requirements been applied within your territory on any vehicles/rail wagons/barges carrying HCDG?

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**c) High consequence dangerous goods**

- i) Should there be more substances on the list of dangerous goods e.g. Class 3 PGIII, Class 1.4 or 5.2? Are the threshold limits set at the right levels?

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- ii) Should there be a set of higher consequence dangerous goods with even more requirements e.g. Class 6.2 Category A pathogens?

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- iii) When Chapter 1.10 was drafted at UN the general security provisions were applicable to all dangerous goods including limited quantities. Subsequently following decisions at the Joint Meeting limited quantities have been removed and in RID/ADR/ADN the provisions do not apply to dangerous goods that fall below the thresholds in 1.1.3.6.2. Do you believe that this is a reasonable approach?

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**Commercial in confidence**

If so are you aware that there are organic peroxides and self reactive substances with explosive sub risks that are not subject to any security provisions?

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This question also applies to a number of Class 1 substances and some toxic gases.

## **2 For Governments and Government Agencies**

- i) Since the application of chapter 1.10 (ADR), 1.10 (RID) and 1.10 (ADN) have you made/given any additional advice to industry on the way the rules are applied in your territory?

If so please provide details.

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- ii) What is your policy on carrying out transport security checks or audits on those companies in your territory that transport high HCDG?

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**Commercial in confidence**

- iii) Have you visited all companies who are involved in the transport of HCDG in your country?

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- iv) What is your policy on registration of companies/organizations that transport HCDG?

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For example have you required companies to register with the competent authority? If so please provide some details.

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- v) Does the Uniform Procedures (Road Checks) Directive 95/50 help with enforcement?

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Should it be extended or developed?

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- vi) Are regular checks and inspections carried out by enforcement staff? If so are the enforcement staff specialists in : -  
dangerous goods ?



Commercial in confidence

transport security     ?  
both                     ?

- vii) Should the UNECE and OTIF dangerous goods safety committees continue to lead on this subject? Or should UN transport security bodies be more involved?

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- viii) For those companies involved in the transport of HCDG do you require separate training from the general requirements set out in Chapter 1.3, 1.8 and 8.2 of the various regulations (8.2 only applies to ADR)? Please give details.

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**3 For industry (including railway companies and inland waterway barge operators)**

- i) In addition to the provisions of chapter 1.10 how was industry informed and advised about the security requirements relating to the transport of HCDG?

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Do you consider the information and advice provided to be adequate?

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**Commercial in confidence**

ii) Do you consider the requirements affect transport operations adversely?

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If so in what way?

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iii) Can you provide any data to suggest what costs industry has incurred in relation to these provisions?

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iv) Do you believe any of the security provisions strike the right balance between costs and benefits? If not, please identify specific examples where the balance is out of line.

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**4 Please provide any additional comments you have here.**

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## Annex D - USA Analysis of the UN list of High Consequence Dangerous Goods 2006 (15<sup>th</sup> edition)

Class	Brief Description from UN	Summary of conclusions in US (ATA) report	US (ATA) proposal
1.1	All	Supports UN	
1.2	All	Supports UN	
1.3	Compatibility group C	1.3 almost exclusively military and under military control except 1.3G display fireworks	ALL 1.3 should be considered HCDG
1.4	Specific UN numbers	The 1.4 articles added in 2006 can be made from readily available material	Do not support the addition of 1.4 changes
1.5	All		
2.1	In bulk		
2.2		Bulk liquid oxygen presents similar hazards to Class 5.1 and should be included in the HCDG list	Liquid Oxygen in bulk should be included in the HCDG list
2.3	Any excluding aerosols	The paper uses the criteria of toxic by inhalation not used by UN and this is dealt with separately below	US TIH Zone A always subject to HCDG rules while Zone B should be subject above 450 litres (see below)
3	PGI and II bulk	Supports the UN	
3 & 4.1	Desensitized explosives	These substances have been treated to ensure that they do not demonstrate explosive properties in a fire test they must not produce an explosion within 30 minutes They are not permitted in tanks or IBCs	Exclude
4.2	PGI bulk	Addressed in comments relating to 5.1 supports UN	
4.3	PGI bulk	Supports UN	
5.1	PGI oxidising liquids	Supports UN	
5.1	Solid substances in bulk	Supports UN	
5.2		TSA proposed the inclusion of bulk in this class. It is not listed in the UN provisions	ATA consultant did not support this proposal

Commercial in confidence

6.1	PGI	The paper uses the criteria of toxic by inhalation (TIH) not used by UN.	See 2.3 above.(see below)
6.2	Cat A	Supports UN	
7	3000A <sub>1</sub> or A <sub>2</sub> in Type B or C	The US limits are more conservative than UN	
8	PGI bulk		The USA analysis does not directly address this as they consider that most Class 8 substances affected will be TIH (see next page)

## TIH

Hazard zones are assigned to TIH materials as follows:

- Zone A for gases having an LC50 value less than or equal to 200 ppm.
- Zone B for gases having an LC50 value greater than 200 ppm and less than or equal to 1000 ppm.
- Zone C for gases having an LC50 value greater than 1000 ppm and less than or equal to 3000 ppm.
- Zone D for gases having an LC50 value greater than 3000 ppm and less than or equal to 5000 ppm.
- Zone A for vapours having an LC50 value less than or equal to 200 ppm and V equal to or greater than 500 X LC50. (Note: "V" = Saturated vapour concentration in air (in ppm) at 20°C and 101.3kPa.)
- Zone B for vapours having an LC50 value less than or equal to 1000 ppm and V equal to or greater than 10 X LC50 and where the criteria for Zone A are not met.

Two examples of Zone A substances are Acrolein and methyl isocyanate which are said to have concentrations of 36ppm and 4ppm. For these substances 1 litre is proposed as the minimum quantity.

Two examples of Zone B substances are allyl alcohol and chlorine. For substances in this category the minimum quantity proposed is 450 litres.