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**Evaluation of the global and regional impact of UNECE regulations and
United Nations Recommendations on the transport of Dangerous Goods
(2005 – 2014)**

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Executive summary

This report evaluates the work of the UNECE in its role (for the period 2005-14) as the ECOSOC secretariat for the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals and its two sub committees; along with its role on behalf of ECE for providing the secretarial services for two dangerous goods transport agreements - ADR and ADR. It will assess the significance of international cooperation in the field of transport of dangerous goods, and the global and regional impact of United Nations agreements and recommendations for the transport of dangerous goods.

Over 190 countries of the world apply all or part of the UN Recommendations on the Transport of Dangerous Goods.

Dangerous goods are essential to the global economy and must be carried in a safe and efficient manner. Overall the system that has developed over the last 62 years produces an acceptable system of safe transport to both regulators, carriers and consignors of dangerous goods.

The study was carried out between June and November 2015 and included a questionnaire to all members of the United Nations. NGOs and IGOs with an interest in the transport of dangerous goods were also surveyed. A desk analysis of a range of documents and reports were considered and a number of bodies and individuals (including UN staff) were consulted.

Overall the UN Recommendations are widely known and recognized and are used in many parts of the world as a basis for national regulations.

The secretariat are encouraged to continue to try and persuade countries to adopt ADR but constraints on staffing and funding are a severe obstacle to progressing such work.

The extension of ADR to countries beyond Europe has proven difficult although a number of countries in other continents use elements of the document.

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In this report:

SCETDG United Nations Sub Committee of Experts on the Transport of Dangerous Goods
SCESCE United Nations Sub Committee of Experts on the Globally Harmonised System of Classification and Labelling of Chemicals
Other Acronyms and Abbreviations will be found in (Annex A.)

1 INTRODUCTION

1.1 Purpose of the review

1 The purpose of this evaluation is to assess the significance of international cooperation in the field of transport of dangerous goods, and the global and regional impact of United Nations agreements and recommendations for the transport of dangerous goods. The evaluation has identified the significant achievements by UNECE towards this end. It has also identified certain gaps and weaknesses, principally arising from the deficient harmonization of national regulations or international legal instruments with the UN Recommendations on the Transport of Dangerous Goods. It further identifies current good practice within the UNECE whilst recommending potential initiatives and activities for enhancing the impact of United Nations Recommendations on the Transport of Dangerous Goods and UNECE Agreements (ADR and ADN).

1.2 Scope of the Review

2 The evaluation covers UNECE and the ECOSOC Recommendations their relationship to the Globally Harmonized System of Classification and Labelling of Chemicals (SCEGHS) related to the transport of dangerous goods, and their impact at both the regional (UNECE Member States) and global levels. The period specified to be covered by the review is 2005 to 2014. The effectiveness of the evaluation has been limited by the relatively poor response to questionnaires; somewhat contradictory advice to the evaluator on what was being sought from this evaluation; and the relatively short time in which to produce a fully comprehensive evaluation.

1.3 Methodology

3 The principle objective of this study were set out in the TOR (Annex C)

Following the responses from the questionnaire the consultant has added a secondary objective to consider comments made by a number of respondents not covered by the TOR.

4 The methodology for the analysis was set out in the specification for the project (TOR) (Annex C). To complete the evaluation there was a:

- Desk study of a number of documents (see Annex D) and a review on the internet of data and information relating to the transport of dangerous goods
- Distribution of three questionnaires (Governments, IGOs and NGOs)
- Review of the answers
- Review of the statistics concerning the transport of dangerous goods
- Meeting delegates attending the meeting of the UNSCOE in June 2015
- Meeting with the secretariat
- Set of correspondence with Governments, IGOs and NGOs

The exercise produced a number of challenges notably a poor response to the questionnaires, a lack statistics particularly from the emerging economies

5 The questionnaire was distributed to

- All delegates (governments, IGOs, NGOs) participating in the meetings of the ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods, WP.15, RID/ADR/ADN Joint Meeting and ADN Safety Committee;
- All/permanent missions of UNECE member States Geneva;

- Official responsible for road safety – having participated in ECE/ECA workshops on Road Safety in Addis-Abeba, i.e. about 40 African countries;

The response has been disappointing (see Table 1 below) and makes a balanced analysis difficult to report that the evaluation represents world views. This also means very little interviewing or correspondence took place. However it can be assumed that as the level of responses has been so low that most Member States are content with the arrangement as they are today. The questionnaire (Annex B1) was deliberately intended to be simple to encourage answers particularly as the survey was being undertaken in a short time over the summer period of 2015.

Table 1 Replies to the questionnaire

	Total	Voting members of the UNSCOE	Non ADR countries	ADR Countries	ADR Countries subject to the EU DG Directive ²
Governments ¹	25	17	5	20	19
IGOs	7				
NGOs	30				

¹ Note the figures for governments include Database and separate PDF replies and is adjusted where a number of countries submitted more than one response

² EU and EFTA states subject to Directive 2008/68 of the European Parliament on the inland transport of dangerous goods where it is mandatory to apply the provisions of RID, ADR and ADN to all journeys.

A list of respondents to the questionnaire can be found in Annex B2.

6 In addition to the questions prepared by the consultant a number of others were added by the secretariat following the adoption by ECOSOC of resolution (2015/7):

“B Mutual administrative support for monitoring compliance of UN-marked containment systems with the *Recommendations on the Transport of Dangerous Goods: Model Regulations*”

7 The UN Model Regulations require competent authorities to appoint a range of organisations to approve and or inspect certain substance classifications, containment systems (e.g. tanks, packagings, pressure receptacles etc.). This report does not include that data as the detail is not relevant to this evaluation.

8 Although the total response to the questionnaire was low it could be explained by the general level of satisfaction with the performance of the UNECE and the long established use of its provisions (this statement is explained in para 124). Many administrations are under severe resource constraints at this time and response to such studies is of a relatively low priority.

1.4 Review team

9 The review was commissioned by the Transport Division of the UN ECE and undertaken by an external evaluator, Robert Martin Castle between May 2015 and December 2015. The Dangerous Goods and Special Cargoes Section of the UNECE Transport Division managed the review under Mr Olivier Kervella and supported the consultant providing relevant documents for the desk review and organising meetings with some of the stakeholders in Geneva. The consultant carried out some additional telephone interviews and email correspondence both with respondents of the survey and other relevant experts.

2 FINDINGS

2.1 Introduction

10 The findings are driven by the methodology set out in 1.3:

Relevance of the work undertaken by the ECOSOC committee and the UNECE promoting international cooperation

Efficiency and effectiveness of the various committees administered by the UN ECE Dangerous Goods and Special Cargoes Section of the Transport Division in assessing alignment the Model Regulations and the Modal Bodies

Impact of the Model Regulations on the various agreements and recommendations implemented throughout the world

11 Most importantly, for the non-expert reader of this evaluation much in the way of findings, conclusions and recommendations will not be fully appreciated unless they have a clear understanding of the pyramidal hierarchy of the transport of dangerous goods regulations and how and when these have been developed over a very long period of time.

2.2 **The *relevance* of the work of the ECOSOC Committee and UNECE in promoting international cooperation in the field of transport of dangerous goods:**

12 Since ECOSOC appointed a Committee of Experts on the Transport of Dangerous Goods in 1953 it has been the objective of Members of the UN that there should be a basic standard system to benefit:

- Safety of the public and transport workers
- Protection of the environment in dangerous goods
- Facilitation of Trade, and

More recently, the security of dangerous goods in the transport chain

13 Prior to the UN provisions developed in the early 1950s there were few international regulations of railways in Europe had rules and IATA was introducing them for air transport. People moving goods they had to comply with national regulations if any existed. This could mean that goods sent from the UK to France would have to comply with UK domestic regulations to the port, UK shipping regulations for the ferry crossing and then French national rules for final delivery. At each stage different requirements could apply. Some countries had limited domestic regulations.

14 The UN Model Regulations provide a set of straight forward procedures for consignors, carriers and enforcement staff. It enhances safety because in the past industry might be able to move goods by different modes of transport but often had to repackage, mark and label at each stage of the journey. Such procedures could lead to confusion and to danger for transport workers

15 ICAO, IMO, OTIF and UNECE (as a body responsible for servicing ADR and ADN) are requested to adopt the UN provisions:

“Invites: all interested Governments, the regional commissions, the specialized agencies and the international organizations concerned to take into account the recommendations of the Committee when developing or updating appropriate codes and regulations”

(ECOSOC Resolution (E/2015/66)).

The SCETDG has developed a set of provisions over sixty years that have been incorporated into a set of regulations for each mode. These are:

- (a) The International Maritime Dangerous Goods Code (IMDG Code);
- (b) The ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAOTI);
- (c) The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR);
- (d) The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN);
- (e) Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) *(Appendix C of the Convention concerning international carriage by rail (COTIF))*.

Finding 1 There is no global consistent data relating to the transport of dangerous goods

16 The table below illustrates the range of dangerous goods that impact on people's lives

Table 2: Hazard classes/divisions¹

Class	Danger	Examples
Class 1	Explosives	- All types of military ammunitions, bombs, etc. - Industrial explosives (dynamite etc.) - Fireworks
Class 2:	Gases compressed, liquefied, or refrigerated	Class 2 includes not only industrial gasses but also aerosols of which about 15 billion are produced each year
- Division 2.1	Flammable gases	- Propane, Liquid Petroleum Gases - Cigarette lighters
- Division 2.2	Non-flammable, non-toxic gases	- Air, oxygen, nitrogen, helium
- Division 2.3	Toxic gases	- Ammonia, chlorine
Class 3:	Flammable liquids	- Petroleum products - Paints - Alcoholic beverages
Class 4:		
- Division 4.1	Flammable solids	- Sulphur - Matches
- Division 4.2	Substances liable to spontaneous combustion	- Phosphorus - Fish meal, seed cake
- Division 4.3	Substances, which in contact with water, emit flammable gases	- Metal powders - Sodium
Class 5:		
- Division 5.1	Oxidizing substances	- Ammonium nitrate fertilizers - Hydrogen peroxide - Bleaching agents
- Division 5.2	Organic peroxides	- Dibenzoyl peroxide - Catalysts for polyester resin
Class 6:		
- Division 6.1	Toxic substances	- Sodium cyanide - Pesticides
- Division 6.2	Infectious substances	- Cultures of bacteria viruses etc. - Medical diagnostic specimens - Medical wastes
Class 7:	Radioactive material	- Nuclear fuel - Uranium hexafluoride - Medical radioisotopes - Lamps, smoke detectors
Class 8:	Corrosive substances	- Sulphuric acid, caustic soda - Car batteries
Class 9:	Miscellaneous dangerous substances and articles	- Environmentally hazardous substances - Mobile phone/computer batteries

17 Although it is possible to get a range of statistics on the production and transport of dangerous goods from some countries others have not produced such data. This means that world-wide statistics are neither comprehensive nor are the chemicals always defined in the same way as the regulations developed at UN² e.g. many statistics are based on customs data and they do not collect information in the same way. A recent example involving the Swedish and UK competent authorities involved golf carts containing lithium ion batteries which were not recognised as dangerous in the customs tariffs but are in transport.

18 The Review of the Implementation of the OSCE Commitments in the Economic and Environmental forum (OSCE) 2012 provides an excellent range of statistics on various aspects of the transport of dangerous goods. However they are not based on world wide data.

¹ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 para 8

² Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 para9

The following tables illustrate the volumes of traffic in the USA and European Union and EFTA. They are probably broadly reflective of the trade throughout the world. However in recent years the production of many bulk chemicals has moved to Asia. This means that distribution patterns will gradually change over the course of time.

Table 3a USA³

Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2012

[Estimates are based on data from the 2012 Commodity Flow Survey. Because of rounding, estimates may not be additive]

Mode of transportation	Value		Tons		Ton-miles ¹		Average miles per shipment
	2012 (million dollars)	Percent of total	2012 (thousands)	Percent of total	2012 (millions)	Percent of total	
All modes	2,334,425	100.0	2,580,153	100.0	307,524	100.0	114
Single modes	2,304,743	98.7	2,552,868	98.9	275,628	89.6	68
Truck ²	1,466,021	62.8	1,531,405	59.4	96,559	31.4	56
For-hire truck	870,893	37.3	882,288	34.2	62,018	20.2	150
Private truck	595,128	25.5	649,117	25.2	34,541	11.2	33
Rail	79,222	3.4	110,988	4.3	84,850	27.6	808
Water	217,816	9.3	283,561	11.0	54,902	17.9	212
Inland water	170,595	7.3	226,349	8.8	27,636	9.0	S
Great Lakes	0	0.0	0	0.0	0	0.0	0
Deep sea	35,570	1.5	45,001	1.7	18,359	6.0	854
Multiple waterways	11,651	0.5	12,210	0.5	8,907	2.9	S
Air (includes truck and air)	4,380	0.2	261	Z	271	0.1	1,120
Pipeline ³	537,304	23.0	626,652	24.3	S	S	S
Multiple modes	29,682	1.3	27,285	1.1	31,896	10.4	654
Parcel, U.S. Postal Service, or courier	10,294	0.4	305	Z	178	0.1	650
Truck and rail	13,338	0.6	16,992	0.7	16,577	5.4	954
Truck and water	S	S	S	S	S	S	1,181
Rail and water	2,474	0.1	4,589	0.2	1,377	0.4	S
Other multiple modes	0	0.0	0	0.0	0	0.0	0
Other modes	0	0.0	0	0.0	0	0.0	0

S Withheld because estimate did not meet publication standards.
Z Rounds to zero.

¹ Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

² "Truck" as a single mode includes shipments that were made by only private truck or only for-hire truck.

³ Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design and definitions. Links to this information on the Internet may be found at <www.census.gov/econ/cfs>.

Table 3b USA

Hazardous Material Shipment Characteristics by Mode of Transportation for the United States: 2012 and 2007

[Estimates are based on data from the 2012 and 2007 Commodity Flow Surveys. Because of rounding, estimates may not be additive]

Mode of transportation	Value			Tons			Ton-miles ¹			Average miles per shipment		
	2012 (million dollars)	2007 (million dollars)	Percent change	2012 (thousands)	2007 (thousands)	Percent change	2012 (millions)	2007 (millions)	Percent change	2012	2007	Percent change
All modes	2,334,425	1,448,218	61.2	2,580,153	2,231,133	15.6	307,524	323,457	-4.9	114	96	19.2
Single modes	2,304,743	1,370,615	68.2	2,552,868	2,111,622	20.9	275,628	279,105	-1.2	68	65	4.7
Truck ²	1,466,021	837,074	75.1	1,531,405	1,202,825	27.3	96,559	103,997	-7.2	56	59	-3.9
For-hire truck	870,893	358,792	142.7	882,288	495,077	78.2	62,018	63,288	-2.0	150	214	-29.9
Private truck	595,128	478,282	24.4	649,117	707,748	-8.3	34,541	40,709	-15.2	33	32	2.4
Rail	79,222	69,213	14.5	110,988	129,743	-14.5	84,850	92,169	-7.9	808	578	39.8
Water	217,816	69,186	214.8	283,561	149,794	89.3	54,902	37,064	48.1	212	383	-44.5
Inland water	170,595	57,022	199.2	226,349	124,396	82.0	27,636	22,411	23.3	S	S	S
Great Lakes	0	S	S	0	S	S	0	S	S	0	S	S
Deep sea	35,570	11,626	205.9	45,001	24,181	86.1	18,359	13,767	33.4	854	861	-0.8
Multiple waterways	11,651	X	X	12,210	X	X	8,907	X	X	S	X	X
Air (includes truck and air)	4,380	1,735	152.5	261	S	S	271	S	S	1,120	1,096	2.3
Pipeline ³	537,304	393,408	36.6	626,652	628,905	-0.4	S	S	S	S	S	S
Multiple modes	29,682	71,069	-58.2	27,285	111,022	-75.4	31,896	42,886	-25.6	654	834	-21.6
Parcel, U.S. Postal Service, or courier	10,294	7,675	34.1	305	236	29.2	178	151	17.7	650	836	-22.2
Truck and rail	13,338	7,052	89.1	16,992	11,706	45.2	16,577	10,120	63.8	954	779	22.5
Truck and water	S	23,451	S	S	36,588	S	S	12,380	S	1,181	1,010	17.0
Rail and water	2,474	5,153	-52.0	4,589	5,742	-20.1	1,377	2,937	-53.1	S	1,506	S
Other multiple modes	0	27,739	-100.0	0	56,750	-100.0	0	17,297	-100.0	0	233	-100.0
Other modes	0	6,534	-100.0	0	8,489	-100.0	0	1,466	-100.0	0	58	-100.0

S Withheld because estimate did not meet publication standards.
X Not applicable.

¹ Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. See "Mileage Calculations" section for additional information.

² "Truck" as a single mode includes shipments that were made by only private truck or only for-hire truck.

³ Estimates for pipeline exclude shipments of crude petroleum (SCTG 16).

Note: Value-of-shipments estimates have not been adjusted for price changes. Appendix B tables provide estimated measures of sampling variability. The Introduction and appendixes give information on confidentiality protection, sampling error, nonsampling error, sample design and definitions. Links to this information on the Internet may be found at <www.census.gov/econ/cfs>.

³ US Commodity Flow Survey 2012

Table 4 International transport EU and EFTA Countries - Total all dangerous goods groups Million TKM (tonne-kilometre)⁴

TIME	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
European Union (28 countries)	:	:	:	:	:	:	:	16,126	15,458	15,356
Belgium	1,195	1,300	1,063	1,108	939	966	981	779	853	900
Bulgaria	:	:	133	105	114	360	22	347	189	370
Czech Republic	600	934	1,134	777	758	691	1,007	1,002	850	719
Denmark	110	93	169	225	540	367	166	92	78	85
Germany	2,766	2,602	2,864	2,571	2,476	2,644	2,182	2,369	2,174	2,306
Estonia	14	118	73	160	94	28	77	91	54	59
Ireland	88	53	54	86	98	30	29	12	22	41
Greece	61	39	66	55	35	18	36	39	47	26
Spain	1,941	1,867	1,725	1,674	1,903	1,293	1,843	1,912	2,301	2,176
France	1,029	755	858	704	652	624	596	549	720	641
Croatia	:	:	:	:	92	115	70	134	151	135
Italy	779	1,046	843	701	758	1,526	838	781	563	654
Cyprus	:	:	:	:	:	:	:	0	:	0
Latvia	9	12	32	53	66	59	24	89	120	124
Lithuania	961	198	268	268	202	154	140	208	264	242
Luxembourg	291	388	380	435	306	319	371	435	518	646
Hungary	:	:	:	490	475	419	350	445	467	471
Netherlands	1,069	1,002	1,420	1,185	1,683	1,408	1,766	1,539	1,087	703
Austria	467	472	537	557	591	594	540	591	481	491
Poland	733	690	780	1,536	2,069	1,507	2,119	2,782	2,420	2,339
Portugal	666	786	1,020	739	506	536	334	295	306	413
Romania	:	:	889	591	515	577	472	413	569	706
Slovenia	285	387	386	370	450	469	434	643	466	414

⁴ <http://ec.europa.eu/eurostat/help/first-visit/statistics>

Slovakia	220	220	337	372	136	163	226	183	198	150
Finland	168	131	376	271	154	82	548	139	158	100
Sweden	131	83	130	78	82	70	78	61	70	106
United Kingdom	81	110	93	69	44	39	98	197	332	339
Norway	174	90	190	332	176	102	257	132	129	164
Switzerland	:	:	:	:	220	362	328	146	318	129

19 It is generally accepted that about 60% of all dangerous goods are flammable liquids (petrol, diesel, kerosene etc.) (US Hazardous Materials Census 2012, Eurostat, TREN/E3/43-2003) the percentage varies according to the measure used e.g. t/km, T/miles, tonnage

20 The remaining 40% of dangerous goods will move in many different ways. Some will be in tankers initially and then move again in smaller quantities having been re packed into drums, bottles, tubes and vials of just a few millilitres. In addition some get put into articles e.g. batteries and remain dangerous for transport.

21 More importantly the statistics do not reflect the volumes of goods actually moving. There may be statistics showing “X million tonnes of dangerous goods are produced in a year” but that figure does not reflect the number of times those tonnages move, having a total tonnage is no more than an indicator of the scale of transport.

22 Take for example ethanol, a class 3 flammable liquid. Produced in large chemical works and then carried from the production point usually in some form of tank. Ethanol is then delivered to others who will turn it into smaller packages for specialist users e.g. drums, IBCs, bottles etc. Smaller packages do not exempt the goods from the regulations. These smaller processors may then produce even smaller quantities e.g. alcoholic beverages, perfumes staying in class 3. Then some of the ethanol is used as a preservative for biological specimens, again not exempt from the regulations but now being carried as an infectious substance Division/Class 6.2.

23 As the smaller quantities (e.g. perfumes) move from a statistical viewpoint tracing and tracking them becomes more difficult even though the goods remain dangerous and subject to regulation. The records required during movement can be non-existent.

24 During a discussion with delegates at the UN SCETDG in June 2015 it was recalled that the most interesting statistic would be the number of journeys (tonne/Km) made by all dangerous goods but such a figure is unavailable and can only be guessed at. The USA made an estimate some years ago that there are about a 800,000⁵ shipments of dangerous goods a day in their territory. There is no reason to believe that Europe with a population of c500million people (USA c320 million) would be very different in volumes moved. Proportionately similar movements will be taking place in the rest of the world.

⁵ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 para 14

25 The data quoted in the OSCE document⁶ comes primarily from two continents which will not reflect all the trends and volumes in other parts of the world. However the quantity of dangerous goods moving does show an increasing trend (Tables 5 and 6 of the OSCE document) between 1997 and 2002. This reflects the greater use of dangerous chemicals in industrial and consumer products which has in turn lead to more proposals to the SCETDG for changes to the regulations. Since 2002 amongst the changes that have taken place at the UNSCETDG include the addition of:

- Metal hydride storage systems
- Fuel cell cartridges
- Lithium ion batteries
- Chemicals under pressure
- Asymmetric capacitors

At the same time it is interesting to note in the US statistics a fall in the transport of explosives. Is this perhaps due in part to the use of mobile explosive manufacturing units in the mining and quarrying where chemicals (not explosives) are sent to a site and they are mixed and made into explosive substances? This system makes transport simpler and safer allows the site using them to measure the quantity needed. The use of these mixing units is becoming more common in many continents including Europe and Australasia.

26 Direct comparisons are difficult to make because of the methods of collection. However looking at Tables 4 and 15 of the OSCE document reveal in general terms the following

Table5 Percentage of dangerous goods traffic by mode

Percentage of traffic by mode of transport					
USA	Road	51	EU	Road	56
	Rail	15		Rail	25
	Water	34		Water	18

Note 1 The figure do not take account of pipeline traffic

2 The water figures will be significantly different, the USA will include sea and waterway while the EU figures only include inland waterways and then mainly the Rhine/Danube corridor

Finding 2 Safety for the public and transport workers

27 The UN provisions for the transport of dangerous goods provide a straight forward harmonized procedure for consignors, carriers and enforcement staff. It enhances safety because in the past industry might be able to move goods by different modes of transport but had to comply with different rules which could involve repackaging, remarking and labelling for different parts of the journey.

28 A number of catastrophic accidents and incidents in the past have prompted Governments to develop regulations intended to eliminate, or to minimize to the extent possible, such risks. Nevertheless, due to the economic importance of dangerous goods and to the importance of international transport, it has been necessary to discuss these regulations internationally in order to ensure a high level of safety acceptable to all countries and authorities responsible for different modes of transport while making international and multimodal transport possible through the harmonization

⁶ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012

of transport conditions. Some of the more significant accidents are set out in Table 6. Many of those shown have impacted on the development and application of the regulations.

Table 6 Major Accidents

Year	Location	Consequences	Transport regulatory changes
1947	USA Texas City explosions	600 killed	Developed segregation and stowage rules
1972	UK oleum tanker	2 killed	UK tanker marking scheme which later developed into the ADR HIN system
1973	USA Boston Boeing 707	5 air crew killed	ICAO TIs
1974	Atlantic Ocean	Disabled crew members	Undeclared dangerous goods (arsine) led to severe injuries
1978	Spain propylene tanker explodes	257 killed	No immediate change as ADR had only addressed tanker operations for the first time in 1978
1979	Canada Ontario	250000 evacuated	ADR metal for tanks reviewed
1984	India Bhopal	Estimated deaths 2500 to 8000	Isocyanates reclassified US introduces Poisonous by Inhalation (UN adopted some provisions later)
1985	Germany bus crashes into a tanker	17 killed	Discussions on under run bumpers
1987	Germany tanker brake failure, explosion	50 killed	Discussions on braking for dangerous goods
1988	UK Peterborough explosion	1 killed	Inadequate packaging but no changes to UN a company failure
1989	USA Alaska Exxon Valdez pollution	Pollution	No direct changes
1990	Thailand Bangkok	56 killed	LPG tanker rolled over as driver drove through red traffic lights. Tank was not properly connected to the chassis.
1996	USA Miami Valujet	109 killed	Oxygen generator provisions reviewed and changed at UN
1999	Austria Salzburg	12 killed	No direct changes road accident
2000	Netherlands Firework explosions	30 killed	Firework classification for transport and storage revised
2001	USA Los Angeles lithium battery fire	No injuries	Lithium battery issues come to the top of the UN agenda and many changes made in the ensuing years
2010	Dubai Boeing 747 crash	Crew killed	No changes to date possible lithium batteries involved
2013	Canada	42 killed	Derailment of tank wagons at Lac Megantic. Some changes to North American regulations and a review of crude oil issues at SCETDG
2011	Germany barge Waldhof sulphuric acid leak	2 killed	Stability requirements amended

Note: Not all of those listed above occurred during transport but some transport changes made.

29 The accidents reported in Table 4 above have been brought to the attention of one or more of the UN committees over the years and in many cases have led to some changes to the various regulations. Unfortunately accidents still occur on a regular basis in the world and most of these do not get directly reported to the regulatory bodies. The causes and consequences of such accidents are never entirely clear and the only reports are usually from the press and television however based on study of news reports these are road traffic accidents either because of driver error or poor road conditions.

30 Accidents are reported to modal authorities in various countries but for air sea and rail modes the data is collected centrally and does not always reveal the impact of dangerous goods in an accident.

31 ADR adopted provisions ten years ago to report accidents (Table 7) the intention is for competent authorities to submit reports that met the criteria in 1.8.5 (definition of an accident) of ADR with a view to learning lessons or changing the regulations. As far as can be ascertained there

have been no changes to the regulations to date as a result of these three accidents although the two involving hydrochloric acid may be under consideration by the Joint Meeting Tanks Working Group. However the consultant understands that other reports have been submitted to the secretariat but are deemed confidential by the competent authority and cannot be displayed. This surely makes this provision in ADR of questionable value. Whilst there may be commercial issues/confidential issues it is surely not impossible to disguise the incident so that it can be assessed by all to decide whether changes need to be made to the regulations.

Table 7 Accidents reported under ADR

Accident reports (notifications according to 1.8.5.2)	
European Agreement concerning the International Carriage of Dangerous Goods by Road	
Reports on serious accidents or incidents, notified by the Contracting Parties according to 1.8.5.2	
Accidents involving corrosive substances	
Accident at the port of Antwerp, 4 March 2004 (UN No. 1744, bromine, liquid, corrosive substance, toxic substance, semi-trailer, tank container, overturning)	
Accident report	PDF 
Report of the Working Party on its 81st session, paragraphs 56 to 61	PDF 
Accident in Cologne, Germany, 6 November 2010 (UN No. 1789, hydrochloric acid, loss of product)	PDF 
Accident in Saudarkrokur, Iceland, 7 February 2013 (UN No. 1789, hydrochloric acid, loss of product, evacuation of	PDF 

32 Following decisions by the Joint Meeting in 2013 a more comprehensive pilot database is being developed with the assistance of France and may have the same problems both systems rely on competent authorities submitting such reports. Although in ADR it can be mandatory to supply accident reports and other data to the secretariat there is no enforcement power with the UN.

33 Accident data is important and if Members States can be encouraged to submit reports all to the good but considering the accidents in Table 4 which have led to changes in the regulations it has been normal for a single competent authority to make a proposal.

Finding 3 Trade facilitation

34 Not only does a standardised system assist in safety many of the same reasons provide enormous benefit to consignors and carriers of dangerous goods. Although there is not complete modal alignment the amount of progress has been such that consignors can now, if they wish, produce packaging, marking and labelling which can apply to all modes of transport.

35 The modal variations are usually based on safety grounds e.g. smaller packages for air transport, greater restrictions on water reactive substances in the sea mode, the carriage of temperature controlled substances in railway operation where operations of rail freight can present problems of ensuring the correct conditions of carriage are maintained.

36 The development of Agenda 21 (see 56) also means that the regulations concerning supply and use of chemicals at home or in the workplace are more closely aligned with the transport provisions.

Finding 4 Protection of the environment

37 Protection of the environment came about originally through major accidents at sea in the 1970s and 1980s but environmental damage is now a recognised problem for all surface modes and to ensure a common approach the SCETDG has taken the lead in this area, although some modal differences remain.

38 For the larger quantities of dangerous goods the use of approved containment systems (this term includes pressure equipment, packaging and portable tanks etc., normally defined in part 6 of the various modal regulations) has played an important part in protecting the environment. All packages of dangerous goods must be of good quality, adapted to the danger presented by the goods to be transported and compatible with them. Failure of containment systems can lead to leakage or spillages or even explosions.

39 The means of transport units themselves (e.g. vehicles, ships barges etc.) may also have to meet certain safety requirements depending on the goods carried (e.g. tank-vehicles, holds of ships, maritime or inland navigation tankers).

Finding 5 Emergency response

40 The standardised system of UN numbers for chemicals, groups of chemicals (generic, n.o.s. entries) along with the marking and labelling requirements has led to the development of relatively simple emergency response systems around the world.

41 In the first instance the marking and labelling system helps prevent accidents by giving guidance on what is contained and how it should be stowed and or segregated from other goods not only dangerous goods.⁷

42 Most of these systems are regionally based so individual procedures will vary but the use of the basic UN data means that the UN number provides immediate guidance to emergency responders. Both IMO and ICAO produce emergency guidance procedures. The USA produces an Emergency Response Guidebook. There are no equivalent procedures for ADR and RID (although the IMO emergency response guide could be applied to ADN). ADR and RID provide for the driver to have basic Instructions in Writing in his/her language to address the first stages of an emergency

43 For road and rail many emergency services have access to databases which provide additional information for use at the site of an incident. Using the UN number system some countries and continents have developed emergency response databases for use by the emergency services e.g. Chemtrec in North America and National Chemical emergency Centre in the UK.

⁷ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 98-101

Finding 6 Training

44 Many accidents are the result of human error and training personnel in the rules relevant to their job function reduces the risks.⁸ Training came late in the day to the UN Recommendations (mid 1990s) but ICAO and ADR have had training requirements for a longer period. The UN Recommendations made the application of training a requirement for all modes and all personnel,

45 In 1989 the EEC adopted a Directive 89/64 a Directive on the training of drivers of road vehicles carrying dangerous goods or wastes⁹ The Directive was subsumed into ADR and the directive was repealed. Training has taken place under the ADR provisions and includes attending an approved training course and an exam set by the competent authority.

Table 8

Valid ADR Certificates			
	2005	2006	2007
Albania	44	210	346
Austria	NA	NA	NA
Belgium	35000	35000	35000
Bosnia and Herzegovina	481	222	343
Bulgaria	8402	12367	18646
Czech Republic	38862	43756	47827
Finland	29472	30145	30607
France	NA	NA	NA
Germany	NA	NA	NA
Greece	10201	9045	9834
Hungary	22000	22240	22781
Ireland	6312	6989	7507
Latvia	2587	2616	2858
Lithuania	3228	4212	5129
Luxembourg	345	325	362
Malta	NA	NA	375
Netherlands	29015	34652	41303
Poland	NA	NA	NA
Romania	26818	27249	31853
Slovenia	6856	7255	7440
Spain	NA	NA	NA
Sweden	69460	68440	68260
Switzerland	17358	19184	21204
The former Yugoslav Republic of Macedonia	2324	2209	2276
United Kingdom	NA	NA	NA
TOTAL	308765	326116	353951
<i>Availability</i>	<i>72%</i>	<i>72%</i>	<i>76%</i>

The approvals issued must be renewed every five years.

46 Originally competent authorities issued variety of certificates based on the model in ADR 2009. Following concerns from several competent authorities regarding forgeries and misuse in 2011 a standard plastic “credit card” size certificate was introduced and must contain security features e.g holograms.

⁸ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 102- 106

⁹ Evaluation of EU policy on the Transport of Dangerous Goods since 1994 (TREN/E3/432003) published 2005p12

47 In ADR, ADN and RID there is a further requirement for the appointment of Dangerous Goods Safety Advisers (DGSA). Like the driver training this requirement began as an EU Directive (96/35)¹⁰ but was adopted into ADR. Advisers need to be appointed to participants (ADR chapter 1.4) when certain quantities of dangerous goods are despatched. Enterprises are not required to necessarily appoint full time advisers they may use consultants to provide the function. The system has been in place since 1998 for EU countries. (Table 10)

Table 9
Dangerous Goods Safety Adviser appointments

	Total number of DGSA			<i>Comments</i>
	2005	2006	2007	
Albania	NA	NA	NA	
Austria	NA	NA	NA	
Belgium	2500	2500	2500	
B and H	0	0	0	
Bulgaria	368	467	652	
Czech Republic	747	843	938	
Finland	1171	1114	1090	
France	5102	5005	5051	
Germany	NA	NA	NA	
Greece	178	179	151	
Hungary	640	682	704	
Ireland	NA	514	667	
Latvia	235	294	306	
Lithuania	117	160	192	
Luxembourg	95	101	99	
Malta	NA	NA	21	
Netherlands	NA	NA		
Poland	2438	1945	2068	
Romania	4395	4851	5196	
Slovenia	182	242	284	
Spain	20015	21194	21221	
Sweden	840	790	790	
Switzerland	1500	1700	2000	
The former Yugoslav Republic of Macedonia	NA	NA	NA	
United Kingdom	3539	2862	2932	
TOTAL	44062	45443	46862	
<i>Availability</i>	72%	76%	80%	

48 ICAO and IMO have used the basic training requirements in the UN Recommendations but have developed more detailed rules and guidance on training.

49 Many of the dangerous goods covered by the UN Recommendations have the potential to be used for criminal and terrorist purposes. 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.

¹⁰ Evaluation of EU policy on the Transport of Dangerous Goods since 1994 (TREN/E3/432003) published 2005 p12

50 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.¹¹

51 In July 2002, the report from the UN General Assembly was communicated to the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals¹² as the responsible committee for the safe transport of dangerous goods. Separately, this resolution was sent to the International Maritime Organization and to the International Civil Aviation Organization; each mode has responsibilities for security generally.

52 This report was supplemented by papers from the United States of America and one from the United Kingdom¹³ reporting the various actions being taken against terrorist activity in the EU and USA. The UK proposed that security should be treated as a subset of the existing safety requirements.

53 In December 2002, a new Chapter 1.4 to the UN Recommendations on the Transport of Dangerous Goods - Model Regulations - was adopted and published included in the 13th revised edition of the UN Recommendations. Chapter 1.4 introduced the concept of High Consequence Dangerous Goods (HCDG) as "...those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for Class 7, mass socio-economic disruption."

54 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 was transmitted to the modes (road, rail, sea and air) to adopt into the editions of the various mandatory dangerous goods modal regulations that could be used from 1 January 2005.

Thus the transport modes have had a set of rules covering security of defined dangerous goods in force since 2005. The report for DG TREN in 2008 was to review the position for inland transport at that time. For all modes of transport the regulations have existed for over ten years and to date there have been no recorded incidents of terrorist activity relating to the transport of dangerous goods.

55 A study by the EC in 2008 and 2012 concluded that the provisions were probably adequate at that time¹⁴

Finding 7 Intersectoral harmonisation

56 This evaluation is primarily aimed at the transport of dangerous goods. However the work undertaken by the secretariat on the United Nations Sub Committee on the Globally Harmonised System of Classification and Labelling of Chemicals (SCEGHS) must be mentioned as the link between use and transport of chemicals is now extremely important to the relevance, efficiency and impact of the work in the transport sector.

57 Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED, 1992), provided the international mandate to develop a single, globally harmonized system to address classification of chemicals, labels, and safety data sheets. This was mandated through Chapter 19

¹¹ TRANS2002/15 to the UN ECE Inland Transport Committee

¹² ST/SG/AC.10/2002/56

¹³ UN/SCETDG/INF21/19 and 53

¹⁴ Stocktaking study on good practices in CBRN transport security: Final report HOME/2010/ISEC/PR/038-A1(2012), Final Report HCDG Study EU Ref: TREN/07/ST/S07.76239(2008)

provisions but was not a new concept. Harmonization of classification and labelling was already largely in place for physical hazards and acute toxicity in the transport sector. Chapter 19 proposed an extension of this work to classification for workplace and consumer use of chemicals.

Agenda 21 recognised in Chapter 19 that the UNSCOETDG had already developed¹⁵ certain classification criteria along with bodies in other sectors.

58 In 1999 following several years of working groups under various bodies it was agreed that future work should be under the role of ECOSOC and the structure of the UN Committee Experts on the Transport of dangerous Goods should be changes and all the work should be placed under the UN Transport Division and the body since has become known as:

“The Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals” and became the parent committee to two Sub Committees:

- The UN Sub-Committee of Experts on the Transport of Dangerous Goods (SCETDG), and
- The UN Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (SCEGHS)¹⁶

59 The transport committee functioned in much the same way as it had done before the rules changed although there now had to be closer liaison with the SCEGHS Sub Committee particularly on classification. The SCETDG remains responsible for physical hazards.

60 More recently labelling issues have become a subject of concern to members of the UNSCTDG¹⁷. This has led to some changes in the criteria for classifying substances for transport but usually at the margins of the various classes of dangerous goods. Standardisation with SCEGHS classification is not entirely complete. Work is progressing on corrosive criteria.

61 The SCETDG and the SCEGHS cooperate closely to ensure intersectoral harmonization and at the last meeting of the Sub committees in December 2015 held a formal joint session. Informal arrangements had taken place at earlier meetings¹⁸.

Finding 8 Decade of Action for Road Safety.

62 In 2010, the United Nations General Assembly adopted a resolution proclaiming the period 2011-2020 as the Decade of Action for Road Safety¹⁹, with a goal to stabilize and then reduce the forecast level of road traffic fatalities around the world. Recognizing that nearly half of the road fatalities worldwide are vulnerable road users, the resolution explicitly called for inclusion of

¹⁵ <http://www.un-documents.net/a21-19.htm>, B. Harmonization of classification and labelling of chemicals paragraph 29

¹⁶ According to Resolution 1999/65 as in E/1999/INF/2/Add.3

¹⁷ For example see <http://www.unece.org/trans/main/dgdb/dgsubc3/c32015.html> ST/SG/AC.10/C.3/2015/23 - ST/SG/AC.10/C.4/2015/3

¹⁸ <http://www.unece.org/fileadmin/DAM/trans/doc/2015/dgac10c3/ST-SG-AC10-C3-95e.pdf> note6

¹⁹ See Resolutions adopted by the General Assembly 64/255. Improving global road safety, Resolution adopted by the General Assembly on 10 April 2014 68/269. Improving global road safety

activities targeted at reducing the risk imposed on pedestrians and cyclist in the Plan of Action of the Decade.

63 The resolution called upon Member States to implement road safety activities, particularly in the areas of road safety management, road infrastructure, vehicle safety, road user behaviour, road safety education and post-crash care, based on the Plan of Action. It further invited all Member States to set their own national road traffic casualty reduction targets to be achieved by the end of the Decade, and to pay attention to the needs of all road users, in particular the needs of pedestrians, cyclists and other vulnerable road users.

64 ADR provides a set of procedures for ensuring the transport of dangerous goods when in transport on the road. The developments over 48 years of ADR form a sound basis for the safe transport of such goods.

65 The requirement to report accidents to the secretariats for possible review of the regulations enabling contracting parties to consider the adoption of additional provisions where there may be a “gap” in the regulations.

Finding 9 Sustainable development

66 Dangerous goods form an important part of the world economy and such goods have to be moved and used. Excluding fuels dangerous goods only account for relatively small quantities of world trade (see Finding 1) but many are life saving for populations not only in the sense of medicine but they can provide heat light and fuel.

67 Sustainable development has been a subject on international agendas for about thirty years. It was only in 1992 that the issue of chemicals in this context was addressed (see Finding 7).

68 In August 2014 the UN announced the Secretary-General’s High-level Advisory Group on Sustainable Transport. In July 2015 the document “TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR GLOBAL ACTION

69 The resolutions are a “plan of action for **people, planet and prosperity** ...” part of these objectives is to ensure cooperation between all states to achieve this. The UN Model regulations along with various modal regulations have played a part in achieving these objectives. A universally and highly respected secretariat along with the adoption of standard regulations and the ability to change them quickly has meant that this sector can be confident that it has made a significant contribution to sustainable development. ECOSOC need to continue to encourage adoption and application of the rules. The UN provisions for dangerous goods need not be overly complex to adopt or to apply by any state or sector of industry.

Finding 10 Intergovernmental cooperation

70 Cooperation with international/inter-governmental organizations is an essential part of the modern development of the regulations.

71 In 1959 ECOSOC adopted a resolution to the effect that the International Atomic Energy Agency (IAEA) because of its technical competence and world wide membership should be entrusted with the elaboration of recommendations on the safe transport of radioactive material. The TRANSCC committee produces Regulations for the Safe Transport of Radioactive Material (SSR6) but these are not written in a regulatory style that aligns with the other dangerous goods regulations.

The text and amendments are remitted to the SCETDG and inserted into the Model Regulations. Some radioactive material has other hazards e.g. corrosive, flammable etc. it is therefore left to the SCETDG to decide on additional conditions, if necessary.

72 International Organization for Standardization (ISO) and the European Committee for Standardization (CEN) play a positive role in the development of the regulations by referencing technical standards developed with the input and cooperation of industry. ISO standards are quoted in the UN Model Regulations whilst CEN standards supplement the work of the Joint Meeting in developing the road, rail and inland waterway regulations. The role of CEN was formalized at the Joint Meeting in 2002²⁰. The use of standards not only saves an enormous amount of work for the particular meetings it also provides industry with regulatory technical documents that have been developed by technical experts in their field.

73 The World Health Organisation (WHO) advises the SCETDG on infectious substances and other aspects of medical shipments that are regarded as dangerous e.g. clinical/medical waste.

74 The European Union (EU) although only an observer at the UN (they are a Member at OTIF-RID) have made proposals to SCETDG at times but most importantly require Member States to apply ADR/ADN/RID provisions to all dangerous goods journeys within the EU whether domestic or cross border. This requirement is applied through the Dangerous Goods Directive²¹

75 The Organization for Economic Co-operation and Development (OECD) has provided input on certain aspects of classification

76 The CCNR works closely with the UN-ECE. The two organisations have jointly promoted a number of international conventions involving inland navigation, including the ADN Convention.

77 The Universal Postal Union (UPU) has permitted certain dangerous goods in the international mail for many years. More recently with the development of modern technology it has permitted the carriage of lithium ion batteries (used in computers, tablet and phones). Although it has not directly adopted UN model regulation provisions because so much of the international mail travels by air it has taken into account provisions relating to batteries from ICAO many of which originated from the UNSCOE.

2.3 The efficiency and effectiveness of the ECOSOC Committee and UNECE contributing to harmonisation

Finding 11 Application of the UN provisions at a domestic/regional level

78 Table 10²² illustrates the extent of the application of the UN Model Regulation provisions to regional international and domestic markets around the world.

²⁰ <http://www.unece.org/fileadmin/DAM/trans/doc/2002/wp15ac1/TRANS-WP15-AC1-88e.pdf>

²¹ Directive 2008/68 on the inland transport of dangerous goods (OJ L260 30.9.2008)

²² Figure 4 are based on those from "Evaluation of EU Policy on the Transport of Dangerous Goods Since 1994", TREN/E3/43-2003. Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE) 2012 paras 180-182 and responses to the questionnaire.

Table 10 Domestic surface transport regulations in national territory

State/Region	Type of system
Andean Countries	UN Model Regulations
Australia	UN Model Regulations plus domestic variations
Canada	UN Model Regulations plus domestic variation's
Iceland	ADR
India	UN Model Regulations plus domestic
New Zealand	UN Model Regulations
Norway	ADR/RID
Switzerland	ADR/RID
Thailand	UN Model Regulations
USA	UN Model Regulations plus domestic variation's
ASEAN (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. 1 Observer — Papua New Guinea.)	ADR/ UN Model Regulations
European Union (Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK)	RID/ADR/ADN (derogations have been agreed for some Member States see para.128) Member States without Railways or international waterways are not required to apply those provisions
South American Mercosur States (Brazil, Argentina, Paraguay, Uruguay, Chile and Venezuela)	UN Model Regulations and parts of ADR

79 It is worth noting that the following countries have attended the RID/ADR/ADN Joint Meeting in recent years with a view to considering the adoption of ADR:

Israel

South Africa

Democratic Republic of the Congo

Also considering the accession to ADR but not having attended the meetings are:

Gulf States

Saudi Arabia

Finding 12 The UN provisions working in the world

80 Over 190 countries in the world use all or part of the UN Model Regulations whether directly or through the various modal regulations for the transport of dangerous goods.

81 The Model Regulations must be kept under constant review ensuring that they take account of new developments in the use and transport of dangerous goods. The SCEGHS and SCETDG now work closely together and physical hazards are the responsibility of the SCETDG. This work is largely complete; however, two classes are undergoing a thorough review through the SCETDG and SCEGHS committees.

82 Firstly explosives (Class 1) the SCETDG have had detailed requirements on the classification of explosives for many years SCEGHS has now asked the SCETDG Explosives Working Group to

address supply and use issues. This work is not expected to have any serious impact on transport requirements rather the work will generally address handling and storage issues in the workplace. This work is ongoing and is likely to see fruition over the next two bienniums.

83 Secondly the corrosive criteria (Class 8) have not been fully aligned and in spite of 6 years of discussion there is no complete solution in sight. This area of chemistry has had two different approaches and getting them to align in such a way that largely the status quo remains has proved problematical efforts continue to be made

84 In December 2015 there was a joint working group of SCETDG and SCEGHS to discuss issues that are either common to both or present potential conflicts for example labelling where the SCEGHS labels are different yet sometimes appear on the transport packaging. If both committees consider it a success then more regular joint sessions are likely to take place.

85 Another area of difficulty that has now largely been overcome is that of the radioactive transport provisions. The IAEA was given responsibility for this area of dangerous goods transport (see Para 71). Since the restructuring of the Model Regulations in the mid-1990s liaison between the IAEA and the UN secretariat has ensured that as far as possible the use and application of the regulations is approached in a consistent manner.

86 The meeting reports published by UNECE do not always explain full the background to the debates as to why text was adopted or changed. Although IMO and ICAO regularly attend the SCETDG meetings a reciprocal arrangement could assist in smoothing changes particularly those that are more controversial. This does raise the issue of budgetary constraints (see Finding 16)

Finding 13 A harmonised set of provisions

87 The UN provisions offer a harmonised system for use by all stakeholders whether at a national or international level. The regulations were set out into a single structure in the mid-1990s by the SCETDG and it was adopted by the modes in 2001.

The “*Recommendations on the Transport of Dangerous Goods*” or “*Model Regulations*” establishes a basic system for safe transport of dangerous goods. These ‘Recommendations’ have been incorporated in the RID, ADR, the ICAO TIs and the IMDG Code.

88 Dangerous goods for the purpose of the transport rules are those substances (including mixtures and solutions) or articles that are listed in the regulations or meet the criteria for one or more of the classes. The Recommendations establish concepts to ensure that, prior to consignment, dangerous goods are properly:

- classified – according to one of nine classes,
- identified – by means of a ‘UN number’ and a ‘proper shipping name’,
- packaged – limited quantities, packagings, IBCs (Intermediate Bulk Containers), large packagings, pressure receptacles, portable tanks, MEGCs (Multiple-Element Gas Containers), etc.,
- marked– UN number and proper shipping name plus other marks such as those for pollutants, limited quantities and package orientation arrows

- labelled – the diamond hazard label(s),
- documented – details of the consignment with a declaration,
- that relevant personnel are appropriately trained and
- security during transport is taken into account.

89 The modes add requirements mainly in the areas of transport operation such as stowage and segregation. The modes may restrict packaging and other containment systems to recognise the different conditions of transport being encountered. However the basic UN provisions e.g. classification, marking, labelling etc. mainly for consignors remains as a common system.

Finding 14 Relationships between UNSCETDG and the IGOs

90 The UN Committee structure plays a significant part in ensuring effective and efficient control and dissemination of the regulations.

The following organogram (Table 11) sets out the structure of the UN regulatory system as it is today

91 The organogram would appear to show a rigid structure with the SCETDG at the top and the organisations (below) accepting the decisions from above. As already stated ICAO, IMO, OTIF and UNECE (as a body for ADR and ADN) are invited by ECOSOC to adopt the UN provisions:

“Invites: all interested Governments, the regional commissions, the specialized agencies and the international organizations concerned to take into account the recommendations of the Committee when developing or updating appropriate codes and regulations”²³

There are occasions where decisions are not adopted by the modal agencies they provide feedback to the UNSCTEDG²⁴ explaining their reasons

The International Atomic Energy Agency (IAEA) TRANSCC committee produces text and amendments are remitted to the SCETDG²⁵ and inserted into the Model Regulations.

92 Other IGOs that have contributed to the UN SCETDG work include:

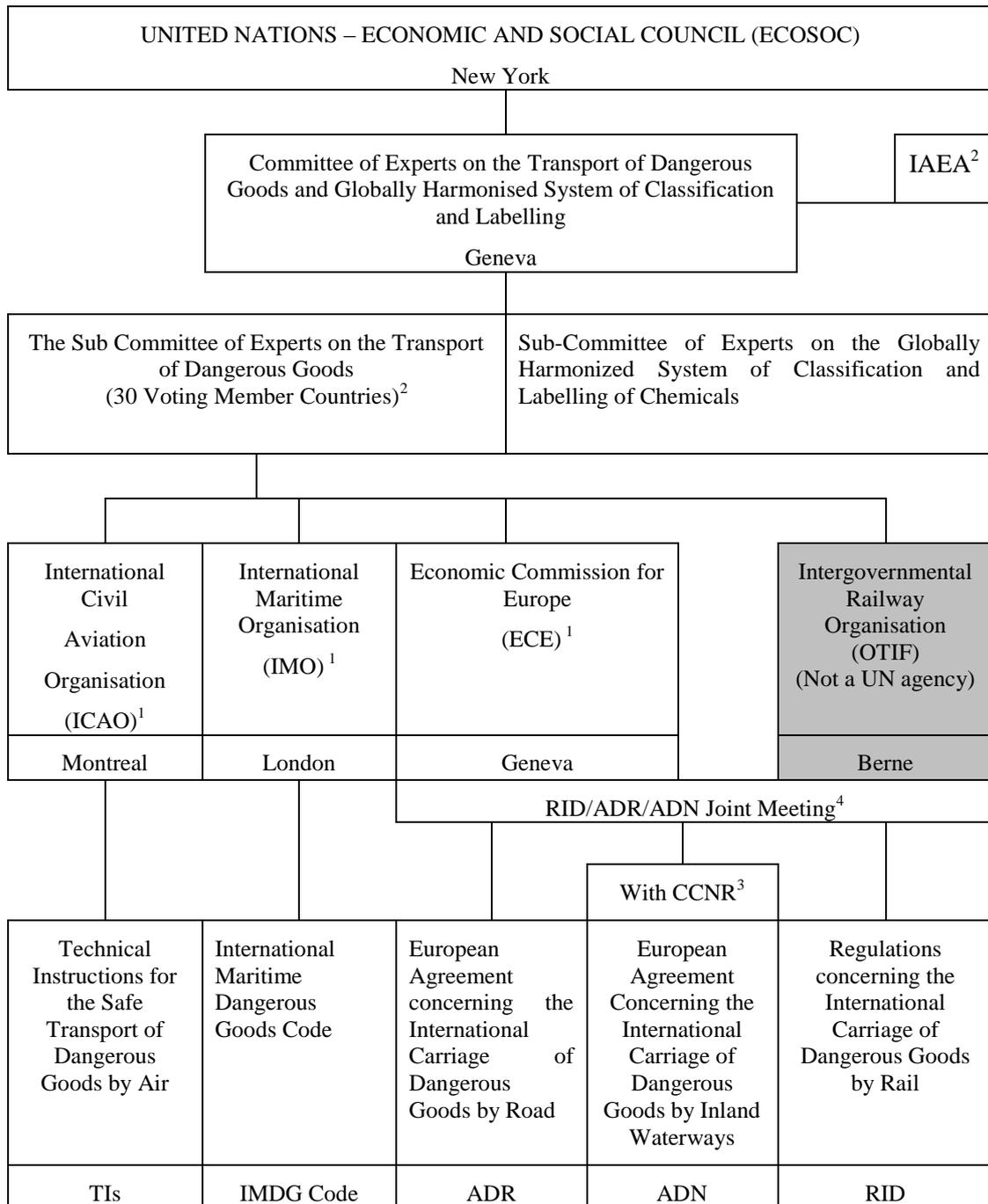
The ILO	for classification and labelling related to worker safety
UNEP	specify the transport of hazardous wastes
WHO	specify infectious substances and pesticides

²³ ECOSOC Resolution (E/2015/66

²⁴ For example see <http://www.unece.org/trans/main/dgdb/dgsubc3/c3inf48.html> (UN/SCETDG/48/INF.41 - (ICAO) Incident involving catecholborane, UN/SCETDG/48/INF.40 - (ICAO) Information on decisions taken by the ICAO Dangerous Goods Panels (DGP/25))

²⁵ See UN/SCETDG/48/INF.33 - (IAEA) Outcome of TRANSSC31

Table 11 Basic UN Dangerous Goods Transport Structure



¹ These bodies have ECOSOC as their parent organisation. This diagram shows how dangerous goods regulations are sent to the different agencies. (See Table 12 below)

² The IAEA prepare text for the transport of radioactive material and pass it to the Sub Committee for inclusion in the Model Regulations

³ There is a Joint Meeting between UNECE and CCNR to finalise the text

⁴ OSJD (SMGS) attends Joint meetings and is in the process of aligning its regulations with UN and the RID.

93 Table 7 below shows in detail how the regulations are developed for road, rail and inland waterway.

Table 12: Text development for Inland Transport (in Europe)

UN Economic Commission for Europe (ECE)		Intergovernmental Organisation for International Carriage by Rail (OTIF)	
GENEVA		BERN	
Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods			
<i>Documents presented to this meeting consist of the decisions of the UN SCETDG and any specific proposal on the common areas of RID/ADR/ADN – normally parts 1-6</i>			
<i>Note1: there is a sub group the “Ad hoc Working Group on the Harmonization of RID/ADR/AND with the UN Recommendations on the Transport of Dangerous Goods of the Joint Meeting” that meets every two years and converts the UN decisions into draft text for these European regulations. These are then presented to the JM for adoption</i>			
<i>Note2: The meetings alternate between Geneva (UNECE) and Berne (OTIF)</i>			
Decisions made here are sent to:			
ADR-Working Party on the Transport of Dangerous Goods (WP15) <i>(meets twice a year)</i> <i>Adopts the Joint Meeting decisions and discusses other proposals unique to that mode, e.g. for ADR this is usually Parts 7-9</i>		ADN Safety Committee (WP15.AC2) <i>Adopts the Joint Meeting decisions and discusses other proposals unique to that mode</i>	
For road and inland waterway		For rail	
		RID Committee of Experts <i>(meets once every two years)</i> <i>Considers the work of the Standing Working Group</i>	
European Agreement concerning the International Carriage of Dangerous Goods by Road		European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways <i>Text prepared in a Joint Meeting with CCNR</i>	
Regulations concerning the International Carriage of Dangerous Goods by Rail			
ADR	AND	RID	

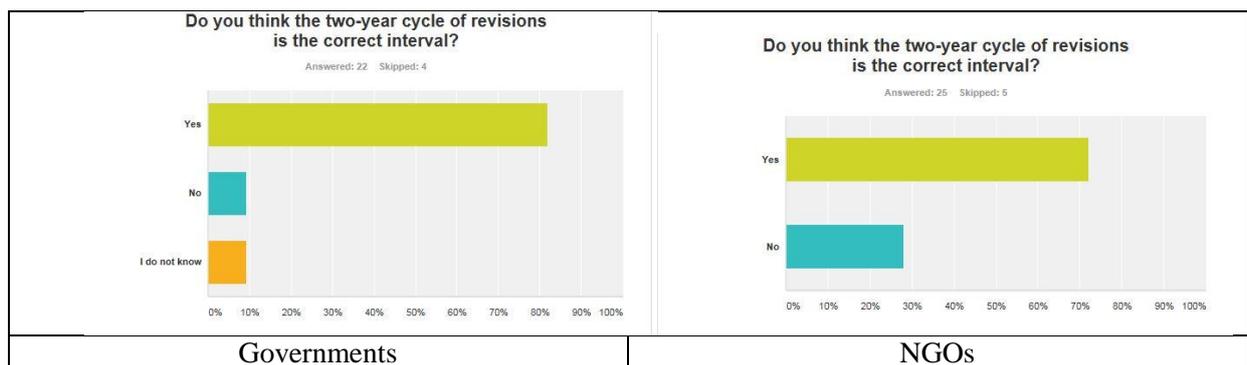
Finding 15 The meeting cycle and keeping up to date with the changes

94 The two year meeting cycle has often been discussed whether it is too long or too short or about right. The last time it was discussed at the SCETDG was soon after the restructuring was complete and it was agreed at that time that it would be premature to change the cycle.

95 It is now more than a decade since the last discussion. Should the cycle be changed? Amongst the issues that need to be considered would be:

- 1 Changing the meeting period would mean getting the agreement of all the modal bodies because they also make changes at two yearly intervals at present;
- 2 What period should be chosen? Annually, every three years or every four years?;
- 3 How should the system cope with urgent changes? Although this has not happened often there have been occasions where the SCETDG has decided to make urgent changes. Urgent changes normally mean a serious safety issue has to be addressed and therefore dissemination of the change needs to be widespread immediately.

Figure 13 Meeting cycle preferences



There is no significant support for a change at the present time

96 There are no easy or simple answers to the problem of the cycle of revisions.

Finding 16 Close liaisons between secretariats aids the efficient operation of the regulatory environment

97 Administration of the committee structure at the UN offices in Geneva with an efficient and dedicated secretariat ensures the whole system works in a timely manner. For over 60 years a dedicated team of staff have serviced the ECOSOC and UNECE committees in this field. This has been reflected in a number of comments in the questionnaire responses. In the case of the SCETDG the steady regular attendance of 70% of appointees reflects the importance governments place on this work.

98 Many of the technical annexes of ADR particularly Annex A have been developed through a Joint Meeting with OTIF which has been responsible for the railway rules (RID) since the late 1950s. When ADN came into force (2008) the Joint Meeting represented the three modes when considering common areas. The benefits of this arrangement are that:

- there are four working languages
- there are shared costs (meetings alternate between Geneva and Bern)
- the result is common text for the three modes
- Governments, IGO and NGOs can attend these single meetings rather than have a separate meeting to discuss the same subject for road, rail and inland waterway

99 The secretariat in Geneva has regular liaison discussions with their counterparts at IMO, ICAO and IAEA in particular. The Geneva office regularly attends IAEA meetings and occasionally IMO. Liaison with ICAO is usually by conference calls.

100 The Dangerous Goods and Special Cargoes Section of the UNECE Transport Division consists of five technical staff consisting of the following grades:

1 P5 Head of Section

1 P4 Dedicated to GHS

2 P3 One P3 is responsible for ATP and ADN, the other assists in other dangerous goods issues UNSCOE, WP15 and associate publications

1 P2

There are 2.5 secretarial staff (2.5GS)

This group has to prepare for, attend and report on 78 days of official meetings a year and produce new editions every two years of

Recommendations on the Transport of Dangerous Goods – Model regulations ADR European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

SCEGHS Globally Harmonized System of Classification and Labelling of Chemicals

In addition the secretariat publishes:

UN Manual of Tests and Criteria (see para 103 below)

Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP) (see para 101 below)

The Recommendations are published in 6 languages whilst ADR and ADN are published in three languages.

101 This section of the UN secretariat requires staff with the qualifications and experience that can understand and reflect the complexity of the various regulations, their structure and purpose. Such experience is not only based on academic achievement but also knowledge of the subjects and the background to the regulations. It is not uncommon for a delegation to make proposals to the regulations that have been considered in the past and the meeting relies on the secretarial knowledge to report earlier outcomes.

102 The P2 member of the secretariat staff is appointed by national competitive examination and staff appointed to this grade are subject to an automatic move to another position every two or three years. Although this may benefit some staff members in the form of career development it can also be seen as a disadvantage to some who have found the work particularly interesting and would like to remain longer. From the secretariats viewpoint this is frustrating. Any person appointed to the work in this area will take at least 2 years to understand the basics of not only the regulations themselves but also the meeting procedures.

103 In addition the UN Manual of Tests and Criteria which has been revised and published at longer intervals, details test requirements for the classification of certain classes of dangerous goods. A new edition, the 6th, will be published at the end of 2015. This is likely to be the last in the current

style. The original Manual was intended for use by the transport modes but since SCEGHS was established it has become a reference document for those provisions as well and in the future it will underpin both sets of provisions.

104 The office in the transport division is also responsible for the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP) and this has to be reproduced at regular intervals. This is not relevant to this evaluation but it does form part of the heavy workload that this unit faces.

105 The secretariat does not generally attend meetings outside Geneva and Berne on a regular basis except to the IAEA TRANSCC which addresses transport issues for radioactive material. The effect is that the adoption of texts at the other international modal bodies is left to those secretariats. This does occasionally lead to text agreed by the SCETDG either not being adopted or being amended because it is not understood by the mode or there are possible errors in the adopted text. This lack of attendance at some of the other meetings is an issue because sometimes the attendance of the “Geneva” secretariat could assist the modal secretariats in clarifying decisions made by the UNSCETDG and vice versa.

106 Mention should be made that there are often informal working groups both under SCETDG and ADR/ADN e.g. lithium batteries, WEEE (The Waste Electrical and Electronic Equipment Directive), Telematics, BLEVES (Boiling liquid expanding vapour explosion) etc. These groups are informal and usually for specialists and not serviced by the secretariat. Occasionally the secretariats should consider attendance at these meetings for them to understand the issues and to advise on procedural matters.

107 Attendance at meetings of the other transport modal bodies or working groups by the Geneva secretariat is both a staffing and budgetary issue. There does appear to be recognition that the staffing of the secretariat in the Special Cargoes Section is an issue but this could in part be overcome with reallocation of some of the income from regulatory sales (see para 142). It should also be recognised that attendance at these meetings:

Enhances staff development both for them

Enabling them to know experts in a more informal atmosphere,

Understanding the issues which will later be presented as proposals and

Advising on methods of presentation to SCETDG.

Finding 17 Interpretation at meetings²⁶

108 A number of respondents commented on interpretation. The interpretation at the meetings does appear to raise issues, respondents felt that sometimes the interpreters were not using the correct terminology and not referring to documents being referenced by the meeting. It was felt that often the country(s) receiving the interpretation e.g. the Chinese receiving comments from an English speaker were not understanding the meanings being presented by the delegate. Not only was this frustrating for the English speaker but also for the Chinese recipients and then the Chairman or secretary had to intervene. When the Chinese respond they have received the wrong message and give an unsuitable/inappropriate response.

²⁶ Comments in questionnaires

109 Solutions to this problem are really outside the control of the Dangerous Goods and Special Cargoes Section However this is an issue that should be noted by UNECE.

Finding 18 Delegate attendance at meetings²⁷

110 The whole UN system (UNSCETDG, ADR and ADN) revolves around decisions being made by delegates to the various regulatory body meetings. Although it is UN Member States that have the ability to decide on a particular issue the various dangerous goods committees rely on the experts both from NGOs and IGOs. NGOs in particular make a significant contribution to the work both in the form of proposals and comments in the meetings. All of the various dangerous goods committees try to work for consensus and not formal votes in the decision making process.

In a study undertaken for the European Commission in 2012 an analysis of documents presented to the UNSCOE in the years 2011/2012 showed that approximately one third of all papers discussed in that biennium (both formal and informal) were from NGOs²⁸.

111 The SCETDG has thirty voting members appointed by ECOSOC. These members have been appointed on the basis of geography (balanced from all areas of the world as far as possible), expertise and a willingness to participate²⁹. A study of government attendance during the last ten years reveals that on average 21/22 delegations out of 30 regularly attend (70%) for each meeting. It is perhaps worth noting that attendance at these meeting can involve over 200 delegates (Governments, IGOs and NGOs) on the first day of the meeting and more than 50% (by observation) are still in attendance at the end. This reflects the importance of the work to all the attendees.

112 For WP15 the ADR parent committee attendance is in the region 24/25 (52%) of parties to the ADR Convention.

113 For the Joint Meeting which can have representatives from ADR, RID or ADN. All ADN countries are party to ADR and RID but not all countries party to RID are members of ADN. Thus a similar analysis to WP is not as accurate a reflection of representatives. Taking ADR as the largest of the Conventions (48 states) 46% of contracting parties (22) attend regularly. However it is interesting to note that there has been a slight fall in attendance in the last 5 years 44% (21) but it has been as low as 19. On average there appear to be about 100 delegates in total to these meetings.

114 Questions arise from this analysis:

- Is the size of attendance an indication that the majority of the regulations are carried out by the SCETDG and that the number of changes required that are not from the Model regulations is reducing?
- Are some contracting parties without the necessary expertise?
- Do some particularly smaller states rely on the expertise of other regular attendees? However when the EU report was prepared in 2005 (TREN/E3//43-2003 see Annex C Bibliography) it was clear that some Member States had tiny departments in one instance a single person

²⁷ Data in this section by the consultant analysing attendance at meeting over the last 10 years.

²⁸ Analysis of the interaction and coherence between railway and dangerous goods legislation in the European Union (MOVE/D3/2011-409) Final Report Table 5

²⁹ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 134

looking after ADR whilst others had staffing well into double figures on policy/technical matters.

- Are there budgetary controls which prevent attendance?³⁰ This is without doubt a constraint for some parties as is revealed in the questionnaire responses.

115 The questions above must lead to the conclusion that some further investigations by the UN Secretariat needs to be made to determine in more detail what are the reasons for

- Nonattendance or
- Poor attendance

2.4 The global and regional *impact* of United Nations agreements and recommendations for the transport of dangerous goods:

Introduction

116 The lack of a standardised system for the transport of dangerous goods which was in existence until the 1980s was “an accident waiting to happen” in many territories.

117 This can be illustrated in the National Transportation Safety Board comments on the Boston air accident of 1973³¹.

“A contributing factor was the general lack of compliance with existing regulations governing the transportation of hazardous materials³² which resulted from the complexity of the regulations the industry wide lack of familiarity with the regulations at the working level, the overlapping jurisdictions and the inadequacy of government surveillance.”

18. Federal regulations and enforcement programs governing the transportation of hazardous materials were inadequate.

19. The carrier's procedures for handling hazardous materials were inadequately enforced by the carrier and the FAA.

20. DOT jurisdiction over certain parties handling restricted articles moving in air transportation is questionable.

118 This accident was a catalyst that led to a thorough attempt by countries to standardise the rules. Although the UNCOE had been in existence for twenty years the only mode up to that time that had made use of the Recommendations on a regular basis was the IMDG Code. RID and ADR had usually remained with a system that came from the original railway regulations whilst in the air mode the only world-wide regulations that were generally recognised were the IATA Restricted Articles

³⁰ A number of respondents gave this as an answer

³¹ NTSB Air Accident Report Pan American World Airways 707-312 N458PA November 3 1973p36,37(published 1974)

³² Hazardous material or Hazmat is the term used by the USA for dangerous goods

Regulations . IATA is a trade association not an IGO. The Boston accident lead ICAO to begin a process of developing international regulations in the mid-1970s and at the same time RID and ADR began a process of aligning their regulations with the UN Recommendations. Neither process was completed until the 1980s.

Once all the modal regulations were generally aligned in content terms the full impact of the UN Recommendations began to be felt. However there was no standard structure.

119 The Recommendations themselves had never undergone a review regarding the structure and contents. They had developed in a haphazard way for example chapter 4 dealt with explosive classification, Chapter 5 for class 3 classification but class 4 was addressed in Chapter 14, in between were tank and consignment provisions.

120 In 1994 following an initiative by the USA it was agreed that the book should be revised to follow a more structured format. This project was undertaken by the US with help from the DGAC. The 10th edition of the recommendations published in 1997 came out in a new format (the one seen today) with an amended title “Recommendations on the Transport of Dangerous Goods – Model Regulations”. This new format provided a basis for anybody wishing to establish a set of transport regulations at a national or international level.³³

Finding 19 The impact of aligned regulations

121 A standard layout/structure whatever the mode of transport means that a consignor can, for example, open Part 2 of any of the regulations and find classification and should be able to identify variations when another regulation is studied. Similarly comparisons with other sections are possible. The rules are a standard structure. This alone reduces the risk of serious accidents and usually significant variations, which do still exist, are easy to identify.

122 Amongst the benefits that have been achieved apart from a standard system are:

- a Training for all personnel across all modes is a minimum requirement.
- b Having a standard system in particular the UN number for the shipment of dangerous goods means that emergency responders with different languages can identify the chemical and from various databases operated by the chemical industry and or competent authorities the substance can be identified..³⁴
- c Package testing and approval is standardised and there is worldwide mutual recognition³⁵
- d Portable tank construction and inspection standards are universal³⁶
- e Basic shipping procedures are the same so companies should be able to simplify automated procedures

³³ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 para 140 and correspondence with the then US representative to UNSCTEDG

³⁴ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 98-101

³⁵ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 87-95

³⁶ See footnote 27 above

123 There are of course some costs to achieving this type of system in that containment systems have to be designed, tested and approved. For road transport approval of vehicles meeting ADR and for ADN barges have to be constructed to new standards.

Finding 20 A common system for the international transport of dangerous goods³⁷

124 The efficiency and effectiveness of the ECOSOC committee and UNECE is surely revealed by the results achieved over the last sixty years. The application of the various dangerous goods Conventions/Agreements shows that most countries of the world apply some or all aspects of the UN regulations:

OTIF	RID	49 ³⁸
UNECE	ADR	48
IMO	IMDG Code	171 ³⁹
ICAO	Technical Instructions	191 ⁴⁰
UNECE	ADN	18
OSJD	SMGS	28 ⁴¹

The IMO and ICAO regulations have a world-wide impact. In effect the world has accepted the UN provisions even if it has not been done consciously.

At the end of each biennium the ECOSOC resolution from the SCETDGGHS request that the changes to the model regulations are adopted by the modes (above)⁴² and at the ECOSOC meeting in June 2015⁴³

125 The Chicago Convention (Convention on International Civil Aviation) consists of 19 Annexes. Annex 18 addresses the safe transport of dangerous goods. No party to the convention has opted out of Annex 18. Thus the convention becomes mandatory if a state wishes to have an international airport(s) and without it their carriers cannot fly to other destinations and vice versa⁴⁴.

126 The effect of Annex 18 is that wherever aircraft carry dangerous goods the UN rules apply when on board. However, more importantly, very few if any dangerous goods are manufactured and or packaged at airports, rather they have to be transported by other means to the point of loading. This means that in effect the UN rules apply in many domestic transport situations where there is no evidence that national regulations exist.

³⁷ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 161- 174

³⁹ <http://www.otif.org/en/about-otif/list-of-member-states.htm>

⁴⁰ <http://www.icao.int/about-icao/Pages/default.aspx>

⁴¹ http://en.osjd.org/statico/public/en?STRUCTURE_ID=5113 It is worth noting that some members of this organization are also parties to RID.

⁴² E2015/66 B (8)

⁴³ E/RES/2015/7

⁴⁴ ICAO secretariat

127 Similar provisions apply to the International Convention for the Safety of Life at Sea (SOLAS) although not as extensive (landlocked countries do not generally belong to IMO although there are exceptions) the effect of the convention is that 99% of the world shipping tonnage is covered by SOLAS.

128 National domestic transport regulations still vary tremendously throughout the world. Some regional bodies such as the European Union have mandated application of RID/ADR/ADN to Member States domestic transport. Other regional bodies, such as ASEAN and MERCOSUR, have either recommended the application of RID or ADR (all or in part) or are in the process of adopting these provisions on a regional basis. In Southern Africa and in the Arabian Gulf area initiatives have begun to apply at least to the fundamental elements of the ADR Agreement.

129 Various other national governments, such as Australia, Canada, India and the USA utilise the UN Model Regulations as the basis for their national legislation. There remains a problem however, that individual countries can find it difficult to maintain a legislative programme that ensures that the latest revision of the appropriate international provisions are applied before the expiry of the standard transitional provisions. Hence in South America the applicable editions of the UN Model Regulations cited range from the 7th to the 12th.

130 The use of international modal transport conventions at a domestic level are used by some countries (e.g. the United Kingdom uses both the IMDG Code and ICAO Technical instructions for domestic transport) not necessarily ideal for dealing with the nature of local national distribution. Most countries are free to apply their own regulation for national transport. The EU requires the application of ADR, RID and ADN for all journeys within the Community whether domestic or international. However in recognition that some parts of the international rules are not appropriate or necessary the European Commission permits derogations for national transport. These include waiving transport documents for local deliveries and delivering unpackaged inner packagings from outer combination packages in the final stages of distribution to shops and offices. The derogations must be applied for by Member States but once agreed other States may apply to use them. Some of these derogations have subsequently been turned into text for RID or ADR but in other cases the issues are so special that they must clearly stay as domestic regulations.

Agreement on International Goods Transport by Rail (SMGS) is aligning more closely to RID and has representatives attend the Joint Meeting and the RID Safety Committee

Regional instruments in Asia (ASEAN) US, Canada and Mexico (NAFTA) and South America (MERCOSUR) and the Andean countries are being aligned⁴⁵

It is also noteworthy that Middle East States particularly the Emirates, Abu Dhabi, Bahrain and Saudi Arabia are all taking an interest in adopting ADR.⁴⁶

Finding 21 Keeping the regulations up to date

131 The analysis of the questionnaires reveals that most countries who have replied are using the 18th edition of the Model Regulations. In the case of the EU (most respondents to the questionnaire) keeping up to date is an automatic process as the Dangerous Goods Directive⁴⁷ requires application of

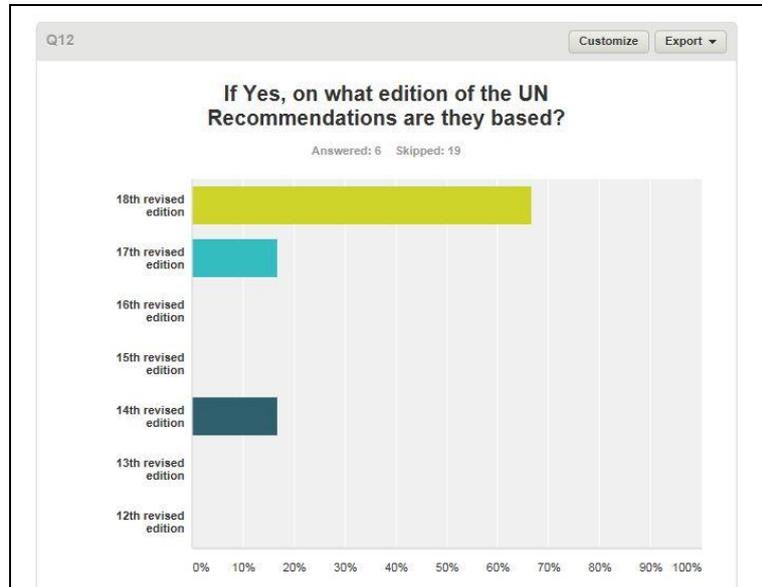
⁴⁵ Review of the implementation of the OSCE commitments in the economic and environmental forum (OSCE)2012 paras 180- 182

⁴⁶ Conference reported in Hazardous Cargo Bulletin November 2015

⁴⁷ Directive 2008/68 on the inland transport of dangerous goods (OJ L260 30.9.2008)

the current edition of RID, ADR and ADN. For other countries updating can be a slow process depending on their legislative system

Figure 14 Application of UN recommendations



132 Keeping up to date raises issues for stakeholders. If country A has not updated its national regulations since 2009, for example, but exporters to that country work on 2015 editions of the rules what happens? This comment has been made by several carriers and exporters. The general approach appears to be to use the latest regulations and hope the importing country recognises the use of updated rules. However there is no definitive advice available in this area.

133 This is particularly frustrating for trade but also for safety. Industry needs one set of rules when transporting goods across the world and not knowing what rules apply in a particular State can be very frustrating when trying to sell and deliver goods.

Finding 22 Adopting the regulations national or internationally

134 The Model Regulations can be described as “ready-made” legislation i.e. not a great deal of extra work needs to be done to make it applicable in any territory. To do so a country would have to establish competent authorities for the approval of certain containment systems, some classification (explosives) and deal with operational systems such as placarding vehicles and specific training for all personnel and in particular drivers. Finally any domestic regulations would have to set down an enforcement regime including penalties.

135 The UNECE have produced “ADR - Road Map for accession and implementation” this document provides an outline of certain aspects of ADR to aid governments who wish to accede to the Convention:

136 Identification of the competent authority can prove difficult. There is no comprehensive world-wide list. Such a list based on questions 19 -26 in the government questionnaire (Annex B) included as part of the Evaluation questionnaire for this project is a starting point.

137 However as identified in responses to the questionnaire a simple guide to the basic regulations and how they work on a day to day basis. Such a guide could be based on the principles set out in Paragraph 88 such a guide could be very simple and unless fundamental changes to the basic “system” are made updating would not be onerous. It could also ensure that training is essential.

Finding 23 Keeping up to date

138 Most of the work done by the SCETDG is amending and updating the regulations in many cases the work today is addressing new technologies e.g. adsorbed gases, capacitors asymmetric, sodium batteries and how and if they should be regulated. For example changes in centres of production leading to changes in the pattern of distribution can affect the regulatory requirements. Then there are new uses for chemicals such as fracking chemicals for oil and gas.

139 Respondents to the questionnaire when asked whether the current cycle was adequate indicated that this was the case

Finding 24 Liaison between UNECE and IGOs and Member States

140 The IMO, ICAO and IAEA have for many years sent delegations around the world to encourage the adoption and enforcement of their regulations. Consideration has to be given that the UNECE Transport Division develops a similar programme for all of its work. There are clearly 3 major issues here:

- 1 Staffing, the team in Geneva is small and they have a heavy workload (Para 100-107) and doing such projects alone would be impossible. However, a member of the staff could lead delegations. This would be beneficial to them as individuals and would help them identify issues that prevent countries signing up to the conventions. Teams of consultants or representatives from Member States that are members of the SCETDG or parties to ADR, ADN could form part of such delegations. This is a method that has been used by IAEA, IMO and ICAO.

However for the Geneva staff there is a further problem of finance. IMO, ICAO and IAEA have mandates to carry out such missions, and a related budget. UNECE has a mandate to carry out such missions in the UNECE region only, but has no budget allocated to this. The UNECE has no mandate to carry out such missions outside the UNECE regions. UNECE Governments do need to consider the provision of an extra budget for such missions and recommend that Governments ask ECOSOC to mandate such missions worldwide and provide a budget for this. (see para 143)

- 2 The cost, the Secretariat does not have a large travel budget. In the recent questionnaire a question asked if respondents would be prepared to contribute to funding training. There is really no support for this. It is possible that retired experts might be prepared to help the Transport Division promote the use of dangerous goods regulations a suitable message from the secretariat to the heads of delegations may produce a list of people who would be prepared to help provided expenses were reimbursed.
- 3 A third issue already mentioned is the word “European” in the title of UNECE documents:
“European Agreement concerning the International Carriage of Dangerous Goods by Road”

“European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways”

This is a diplomatic issue for countries outside the UNECE Region.

Contrary to ADR, ADN is not open to countries outside the UNECE region, and nor to countries which are not part of the network of European rivers of main importance. However, countries beyond Europe have expressed interest in the provisions contained therein. The application of the ADN provisions on the Mekong, Amazon, certain rivers in Colombia, Congo is under consideration.

141 To encourage further use of these UNECE/OTIF regulations the UNECE should note that a number of IGOs carry out capacity building exercises in Member States. Such programmes need significantly more resources than currently available in the Dangerous Goods and Special Cargoes Section if safety infrastructures and cultures are to be developed effectively and in a timely manner that offsets the effects of changing personnel in the Member State Government departments. In determining resources it is not simply a question of personnel but also money. The recent questionnaire has not revealed any encouraging signs that governments or NGOs are prepared to make a contribution to such funds. However the IMO do such capacity building outreach programs with funding from sales of the IMDG Code and have sufficient money to employ experts to assist in them.

142 UN publications controls the sale of the various publications generated by the UNECE secretariat based on 2011 ADR sales (14,000 copies mainly in English and French) the gross income for sales was in the region of \$2,000,000. It is recognized there is clearly a cost to producing these books but even taking 25% of the gross could provide a basis for providing some of the above recommendations.

Note the figure is for ADR, the UN Model Regulations have very good sales but they are not complete regulations, modes have to add operational conditions.

The UNECE should discuss with UN publications whether some of the income could be used for the development of:

- Capacity building missions to countries considering development of regulations
- Providing a simple guide to the regulations for general users similar to the recently published ADR “Road map for accession and implementation”
- Training government personnel, and
- Providing on line training programs for government personnel.

Although sales of ADR, for example, may not be as great as the IMDG Code there is a significant income available to provide some of the above developments.

The UNECE could use the income to employ consultants to assist in such work.

143 An observation made by respondents to the questionnaire and in discussions suggests that although the various regulations have imposed training requirements for the consignors and carriers little or nothing is said about government officials having training. The resulting government lack of understanding is occasionally reflected in comments and proposals made to the various committees.

2.5 Issues raise by the questionnaires and discussions

144 The questionnaire presented an opportunity for respondents to provide general comments on the UN provisions generally. A number have been made which would not be part of the specification for this project but it is felt that they should be noted and commented upon. In addition some comments made during discussions with various people have been included.

Finding 25 Customs tariffs

145 Many States have implemented a requirement for advance information related to the transport of cargo to be submitted to the customs authority at ports t origin and destination on security grounds. This information would be presented mainly in the form of descriptions in terms of customs tariff references for data collection purposes (dangerous goods documentation would accompany shipments but only limited data is collected through these) This information has the potential to better identify dangerous goods that are not prepared in accordance with the relevant regulations if there was improved coordination between Customs and the agencies responsible for security and safety for mutual benefit.

146 Transport security is still an important issue for many states and a closer liaison with customs administrations has been raised in the past (particularly in the air mode) and would probably be welcomed by many. Such a proposal may well be helpful but it would require an initiative from the customs side as well as the TDG/SCEGHS. The UN provisions do not correlate to the customs tariff nomenclature. Such an initiative would need to be raised by the SCETDG and then the Secretariat would need to liaise with the WCU

Finding 26 Consumer issues

147 “There needs to be a better alignment with current consumer trends in online ordering, in particular, the need for exemptions of minimal quantities of dangerous goods”⁴⁸

148 Although this does appear to be an issue with goods in postal services the solution is not really in the hands of the SCETDG. Many consumer products do contain small quantities of dangerous goods and the regulations have not always addressed them but now the issue is being addressed in a number of ways:

- De minimus quantities
- Excepted quantities and
- Limited quantities

149 It is not clear immediately what other actions could be taken by the SCETDG .

150 Many post offices now have dangerous goods rules for national transport and provide notices and leaflets on conditions for carriage.

151 The UPU international postal conditions permit certain dangerous goods in the international mail. There have been very initial discussions between UPU and ICAO to consider allowing “consumer quantities” of dangerous goods in international mail, commensurate with quantities allowed in airline passenger carry-on baggage. Such consumer commodities are likely to be addressed by the procedures above (150)

⁴⁸ Quote from an IGO questionnaire

152 The SCETDG should be kept informed both because most mail will travel in vehicles but also by railways and sea and contributions from the other modes might be of assistance. Once a scheme has been identified it should be included as appropriate in the Model Regulations and the various modal documents.

Finding 27 Guiding principles⁴⁹

153 About 10 years ago the SCETDG decided to ensure that future generations participating in the discussions knew how and why principal decisions were made e.g. marks and labels including their use, packing instructions when proposed how they should be constructed. Not only does it provide background material for the regulations it is also a useful training aid when students ask why certain things have occurred. Many trainers do not follow in detail or have access to the reasons for certain decisions.

This has proved a useful document over the years and the 5th edition was published in 2015.

154 A Guiding Principles document for those parts of ADR and ADN which are not addressed in the Model Regulations would be very helpful where they could explain:

- Why they have rejected or not adopted completely UN Recommendations
- Why additional provisions have been adopted (e.g. Instructions in writing, driver training etc.)and
- This would not only assist the regulators but also the users.

This principle could now be adopted by the other modes in relation to:

- Explanations of UN text that had not been adopted
- Deviations from the UN provisions
- Operational requirements e.g. emergency response guidelines, instructions in writing and the Emergency Schedules/Medical First Aid Guide

Finding 28 INF papers

155 Late Information papers (INF) and papers on new subjects to the committee can be disruptive to preparations, especially for non-English speakers and those having to travel long distances who may not see them or get an opportunity to discuss them with colleagues and interested stakeholders. In such cases, it can mean that the comments of relevant experts have not been obtained in time which can lead to decisions being made that may have to be reversed later. In addition even if there has been some consideration or thought about the paper submitted there is every possibility that consequential changes to other parts of the text are overlooked. Not only is this frustrating for delegates at future meetings it is also difficult for the secretariat not only at UNECE but at ICAO, IMO and OTIF who have to interpret decisions for inclusion in their regulations.

Finding 29 Costs of attending, electronic attendance at meetings, WP15 should follow Joint Meetings in Geneva JM and WP 15

156 About 40% of respondents to the questionnaire indicated that there are difficulties attending meetings because of funding. Suggestions were made to reduce the cost. Two ideas were suggested:

⁴⁹ http://www.unece.org/trans/danger/publi/unrec/guidingprinciples/guidingprinciplesrev15_e.html

- 1 Participation through electronic means e.g. conference calls.
- 2 Joining meetings e.g. when the Joint Meeting is in Geneva it should be immediately following there should be a WP15 meeting and when it is in Bern it should be followed by the RID Standing Working Group or the RID Committee of Experts.

Finding 30 Structuring the regulations for each class

157 A suggestion that all pages/chapters relevant to one particular subject (e.g. infectious substances, aerosols etc.) be grouped or somehow connected should be considered. It is true that there are a few substances and classes where it would be possible to consolidate all the relevant text for one class in one place. This would require a fundamental change to all the regulations. Now that there is in place an accepted recognized system it is unlikely such a big project would get support

158 There is nothing to prevent guides being produced for particular sector to help industry. Such examples seen by the consultant have included guides for aerosols, Class 6.2, lithium/lithium ion batteries and security. Many of these have been produced by either NGOs or commercial organizations some governments have produced guidance. These are clearly not legally binding text but they can be very helpful and they can offer practical guides on how to apply the regulations.⁵⁰

Finding 31 Accidents

159 Accidents have often played a part in changing the regulations and it is correct that this should occur, lessons can be learnt from many incidents. In Table 4 there is a list of major accidents and Table 5 lists those accidents submitted under 1.8.5 of ADR.

160 There is some developing work on a more comprehensive database based on a pilot provided by France with the work of the Joint Meeting to assist in risk analysis and decision making.

Finding 32 Telematics

161 Telematics is the tracking and tracing of vehicles when delivering goods including relevant documentation. This has become quite common in our everyday lives. When we order goods, particularly on line, it is possible to track the goods from the point of sale to the delivery point. The dangerous goods regulations have provided for the use of electronic transmission of certain documents but where this has occurred it has been generally at a national level.

162 This Joint Meeting project has been considering the issue of standards for this for some years. It is aiming as far as possible to address all documents the driver may need not only a dangerous goods note but Instructions in Writing and any other paperwork needed. Amongst the issues that need to be addressed are the

- Servers for storage both the central versions and any mobile versions on vehicles
- Enforcement staff must have easy access and
- The system must address system failures i.e. if the normal system fails what back up exists.

163 The Joint Meeting working group has not made recommendations on

- The system to be used- it needs to be commonly available and acceptable to the majority of stakeholders

⁵⁰ Some examples will be found in the bibliography Annex D.

- The vehicles to which it might apply. If we assume that in Europe there are a million shipments every day to what level of load/vehicle should this system apply

3 CONCLUSIONS AND RECOMMENDATIONS

164 Main conclusions

1. From the evidence of the questionnaire, and from the evidence provided by earlier UN studies and studies from other bodies that the UN Model Regulations on the Safe Transport of Dangerous Goods and the international modal transport Conventions are widely known throughout the globe and do form the basis of most transport legislation in this field. (124)
2. The provisions are widely applied through international, regional and national legislation. There remains further scope to ensure even wider application and, importantly, regular updates of legislation to apply the latest versions of the UN instruments. (124, 128)
3. It has been demonstrated that UNECE can respond rapidly and effectively by working together with UN experts/contracting parties when faced with major new challenges. This is evidenced by the adoption and subsequent dissemination of new security provisions following the 9/11 attacks, the response to major accidents such as Bhopal in 1986 and Valu-Jet in 1996 and rapidly developing new technologies such as lithium batteries. (Table 6)
4. Considerable effort has been made both by the Secretariat and participating bodies to promote better cooperation and understanding between the SCETDG and SCEGHS. The establishment by the Main Committee in 2014 of an experimental standing joint working group is a significant step forward to ensuring the transport is seen as an integral part of the SCEGHS.(61)
5. The UNECE Secretariat, together with the other relevant UN Secretariats, provides a universally well respected and highly professional performance in servicing the instruments for which they have the remit to support. However, there is little available facility to do much more than service meetings and prepare regulatory text revisions for publication. Outreach to governments and NGOs is on an ad-hoc and unstructured basis dependent on the availability and willingness of individuals within the Secretariat. This is despite the written intent to provide such support in a number of UN seminars and reports. This should be reviewed in particular the resource and budgetary issues need to reflect a world that relies on the UN Recommendations (97-107, 142-143)
6. Without a formal technical support programme it is difficult to envisage how the UNECE can impact greatly on the wider adoption and application of its various instruments. Whilst recognising the difficult budgetary issues that this raises (97- 107). Such a programme could offer training to government officials.(140-143)
7. The sustainable development of the world needs the transport of dangerous goods and whilst there is a universally and well respected secretariat they simply do not have the resource to help promote the rules they administer. More assistance is needed from ECOSOC or the General Assembly.(140 -143)

165 Secondary conclusions

- 1 Some attention needs to be given to goods in the mail whether for international or domestic post. It is sensible that UPU and ICAO take a lead on this as a good starting point for such items are the passenger allowances in the ICAO TIs. The SCETDG should be kept informed because most mail will travel not only in vehicles but also railways and ships. Once a scheme has been identified it should be included as appropriate in the Model Regulations and the various modal documents (151)
- 2 Guiding principles documents (153) for the modal regulations should be produced to

ensure stakeholders understand the reasons for variations and additions in modal requirements
(151)

Annex A Abbreviations and Acronyms

ADN:	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
Agenda 21	Report of the United Nations Conference on Environment and Development (UNCED), 1992 - "The Earth Summit". ASEAN Association of Southeast Asian Nations
ATP	Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP)
Basel Convention	Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal (Basel Convention)
CCNR:	Central Commission for the Navigation of the Rhine
CEC:	Commission of the European Communities
CEN:	European Committee for Standardization
CIM	Uniform Rules concerning the Contract for International Carriage of Goods by Rail
COTIF:	Convention for international carriage by rail
DGP	ICAO Dangerous Goods Panel
EC:	European Commission
ECOSOC:	Economic and Social Council
GESAMP Protection	The Joint Group of Experts on the Scientific Aspects of Marine Environmental
GHS:	Globally Harmonized System of Classification and labelling of Chemicals
IAEA:	International Atomic Energy Agency
IATA:	International Air Transport Association
ICAO:	International Civil Aviation Organization
IGO:	Intergovernmental organization
IMDG	International Maritime dangerous Goods Code
IMO:	International Maritime Organization
ISO:	International Organization for Standardization
JOINT MEETING of the RID Safety Committee and the Working Party (WP15) on dangerous goods (ADR).	
MERCOSUR	Treaty Establishing a Common Market between the Argentine Republic, the Federal Republic of Brazil, the Republic of Paraguay and the Eastern Republic of Uruguay
NGO:	Non-governmental organization
OECD:	Organization for Economic Co-operation and Development
OSZhD:	Organization for Co-operation between Railways
OTIF:	Intergovernmental Organization for International Carriage by Rail
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDG	Sustainable Development Goals

SMGS Agreement on International Goods Transport by Rail (OSZhD)

SOLAS Safety of Life at Sea Convention

TDG: Transport of Dangerous Goods

Technical Instructions (see TIs)

TIs Technical Instructions for the safe Transport of Dangerous Goods by Air (ICAO)

TRANSCC Transport Safety Standards Committee (IAEA)

UNCOE Committee of Experts on the Transport of Dangerous Goods and the Globally Harmonised System of Classification and Labelling of Chemicals

UNECE: Economic Commission for Europe

UPU: Universal Postal Union

WHO: World Health Organization

WP.15: Working Party on the Transport of Dangerous Goods

WP.15/AC.1: Joint Meeting of the RID Safety Committee and the Working Party on the Transport of Dangerous Goods

WP.15/AC.2: Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)

Annex B Questionnaires

1 The attached analysis of the questionnaires is attached in three parts:

Governments
NGOs, and
IGOs

The reason is that some of the questions were varied/added/deleted according to the data that is likely to be available.

Note some of the Governments made more than one response usually coming from different departments.

2 The responses have been taken into account in the various Findings in the main report

Annex B1 - Responses from Governments

Results from Governments

Responses were received from

Peru, Belgium, Brazil, Turkey, Germany, Bulgaria, Lithuania, Denmark, Spain, Norway, USA, France, Switzerland, Slovakia, Portugal, Romania, Belgium; Luxembourg, Latvia, Norway, **Results**

Competent authorities from the following 28 countries replied to the questionnaire:

Peru, Belgium, Brazil, Turkey, Germany, Bulgaria, Lithuania, Denmark, Spain, Norway, USA, France, Switzerland, Slovakia, Portugal, Romania, Belgium; Luxembourg, Latvia, Norway, the Netherlands, UK, Sweden, Canada, Finland, Australia, Austria and Malta.

The response rate was unequal. While in some countries the questionnaire was answered by several competent authorities, no answer was received from African countries.

Q2 : Name of the person responding

Q3 : email

Q4 : Telephone number

Q5 : Following the completion of this survey would you be willing to discuss by phone or email the responses with the consultant who is carrying out the evaluation?

Following the completion of this survey would you be willing to discuss by phone or email the responses with the consultant who is carrying out the evaluation?		
Answer Options	Response Percent	Response Count
Yes	88.2%	30
No	11.8%	4
<i>answered question</i>		34

Q.6: Status of the answers (please tick as appropriate)

Answer Options	Response Percent	Response Count
I have filled the questionnaire after consultation with other relevant governmental entities and the answers represent the coordinated views of my government	38.2%	13
I have filled the questionnaire only for matters falling within my area of competence and other replies may be received from other governmental entities	47.1%	16
I have filled the questionnaire in my personal capacity and the answers do not necessarily represent the views of my government	14.7%	5
<i>answered question</i>		34

Results

38.2% respondents indicated that they have filled the questionnaire after consultation with other relevant governmental entities and therefore the answers represent the coordinated views of their governments. This is the case for the following countries:

47.1% of the respondents filling the questionnaire only for matters falling within their area of responsibility.

Finally, 14.7% of the respondents filled the questionnaire in their personal capacity (i.e the answers provided do not necessarily represent their governments view)

Q.7: Status of the answers (please tick as appropriate)

Answer Options	Yes	No	Response Count
by road	26	0	26
by rail	24	1	25
by inland waterways	16	9	25
<i>answered question</i>			33

Q.8: Does your country require compliance with the requirements of the following international legal instruments for DOMESTIC transport of dangerous goods?

Answer Options	Yes	No	Response Count
ADR	22	4	26
RID	20	6	26
ADN	13	13	26
SMGS	2	18	20
<i>answered question</i>			26
<i>skipped question</i>			0

Q.9: If Yes, then

Answer Options	Partly	Significantly	Fully	Response Count
ADR	1	1	20	22
RID	0	0	20	20
ADN	0	0	11	11
SMGS	1	0	1	2

Which edition?

Answer Options	2015	2013	2011	Response Count
ADR	20	0	1	21
RID	18	1	0	19
ADN	10	0	0	10
SMGS	2	0	0	2

				Question Totals
<i>answered question</i>				27

Q.10 : Does your country ENVISAGE requiring compliance with the requirements of the following international legal instruments for DOMESTIC transport of dangerous goods in the future?

Answer Options	No	Yes	Response Count
ADR	4	16	20
RID	5	13	18
ADN	11	9	20
SMGS	10	5	15
<i>answered question</i>			25
<i>skipped question</i>			9

Q.11 : If the requirements applicable to domestic inland transport of dangerous goods in your country are not those of ADR, RID, ADN or SMGS, are they nevertheless based on the UN Recommendations on the Transport of Dangerous Goods, Model Regulations?

Answer Options	Response Percent	Response Count
No	0.0%	0
Yes, partly	0.0%	0
Yes, significantly	80.0%	4
Yes, fully	20.0%	1
<i>answered question</i>		5
<i>skipped question</i>		25

Q.12: if Yes, on what edition of the UN Recommendations are they based?

Answer Options	Response Percent	Response Count
18th revised edition	77.8%	7
17th revised edition	11.1%	1
16th revised edition	0.0%	0
15th revised edition	0.0%	0
14th revised edition	11.1%	1
13th revised edition	0.0%	0
12th revised edition	0.0%	0
Previous edition (please specify)		1
<i>answered question</i>		9
<i>skipped question</i>		25

- Aplicamos la edición actualizada del LIBRO NARANJA

Q.13: Are packages, freight containers and portable tanks containing dangerous goods, which are in conformity with the IMDG code or ICAO TI, accepted for transport by road, rail and inland waterways, prior to or following maritime or air transport, even when they are not in full conformity with your domestic transport regulations?

Answer Options	Response Percent	Response Count
----------------	------------------	----------------

Yes	83.9%	26
No	16.1%	5
<i>answered question</i>		31
<i>skipped question</i>		3

Q.14: If your national regulations are available online, please provide the relevant links. Otherwise, please quote the relevant piece(s) of legislation

Answer Options	Response Count
	30
<i>answered question</i>	30
<i>skipped question</i>	4

N°	Response Text	Country
1	http://www.apn.gob.pe/web/apn/mercancias-peligrosas	Peru
2	Ley 28256, Ley que regula el transporte terrestre de materiales y/o residuos peligrosos, Decreto Supremo No. 021-2008-MTC, Reglamento Nacional del Transporte Terrestre de Materiales y/o residuos peligrosos	Peru (land transport transport)
3	I cannot give the exact link, but they can be found in our official journal http://www.ejustice.just.fgov.be/cgi/welcome.pl	Belgium
4	The main regulation on inland and rail transport is available at http://www.antt.gov.br/carga/pperigoso/pperigoso.asp Also, there are other pieces of legislation at www.inmetro.gov.br (packagings) and, in the case of radioactive materials, at www.cnen.gov.br . RBAC 175 is the main regulation for air mode transport of dangerous goods http://www2.anac.gov.br/transparencia/pdf/RBAC%20175.pdf	Brazil
5	In a separate document.	
6	http://www.dziennikustaw.gov.pl/DU/2011/s/227/1367/1 - this act refers to RID/ADR/ADN, links to regulations on transport of dangerous goods are also provided on the following pages: http://www.mir.gov.pl/strony/zadania/transport/drogi/przewozy-drogowe/przewozy-specjalne/towary-niebezpieczne/ or http://www.mir.gov.pl/strony/zadania/transport/kolej/przewoz-towarow-niebezpiecznych/	Poland
7	http://www.bmvi.de/SharedDocs/DE/Artikel/G/Gefahrgut/gefahrgut-recht-vorschriften.html	Germany
8	https://www.e-tar.lt/portal/lt/legalAct/TAR.32E0A3FB18C4/cjNQTryBUx https://www.e-tar.lt/portal/lt/legalAct/TAR.2CD9AB1C25F7/TfnRVIBWnN	Lithuania
9	ADR https://www.lovtidende.dk/pdf.aspx?id=152738 RID http://www.trafikstyrelsen.dk/DA/Jernbane/Farligt-gods/RID/RID-2015.aspx	Denmark
10	http://www.fomento.es/MFOM/LANG_CASTELLANO/ORGANOS_COLEGIADOS/CTMP/ULTIMA_HORA/	Spain
11	http://www.dsb.no/no/Ansvarsomrader/Farlige-stoffer/Transport/Oppdatert-regelverk-for-transport-av-farlig-gods/	Norway
12	LEY N° 28256 DECRETO SUPREMO N° 021-2009-MTC	Peru
13	http://www.ecfr.gov/cgi-bin/text-idx?gp=&SID=ff497e9fc72cf97687c7662916cc215c&mc=true&tpl=/ecfrbrowse/Title49/49chapterI.tpl	USA

- 14 <http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000020796240&categorieLien=id> France
- 15 SDR: <http://www.astra.admin.ch/themen/schwerverkehr/00246/00408/index.html?lang=fr> CH
RSD: <https://www.admin.ch/opc/fr/classified-compilation/20121700/index.html>
- 16 Act 56 of 31st, January 2012 on Road Transport as amended Slovakia
ADR is fully valid in SR also for domestic transport and it is implemented in the Act
56/2012 of Coll of SR.
- 17 ACT 338 of 22 September 2000 on Inland Navigation and on Amendments of some Acts **Slovakia?**
?
- 18 www.imt-ip.pt Portugal
- 19 for ADR approved by Low no. 31/1994 - there is a link on UNECE website - Romania
http://www.arr.ro/doc_353_Transport-marfuri-periculoase--ADR-_pg_0.htmADN
approved by Low no. 159/2008RID approved by Government Ordinance no. 69/2001
- 20 ADR: 28 JUNI 2009. - Arrêté royal relatif au transport des marchandises dangereuses par route ou par chemin de fer, à l'exception des matières explosibles et radioactives Belgium
ADN: 31 JUILLET 2009. - Arrêté royal relatif au transport des marchandises dangereuses par voie de navigation intérieure
explosifs: 23 SEPTEMBRE 1958. - Arrêté royal portant règlement général sur la fabrication, l'emmagasinage, la détention, le débit, le transport et l'emploi des produits explosifs. (link:
http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&cn=1958092301&table_name=loi)
nuclear: Chapter VII of the Royal Decree of 20 July 2001 laying down general rules on the protection of the public, workers and the environment against the dangers of ionizing radiation (GRR-2001). Only available in French or Dutch:
- French: <http://www.jurion.fanc.fgov.be/jurdb-consult/consultatieLink?wettekstId=11617&appLang=fr&wettekstLang=fr>
- 21 <http://www.mt.public.lu/ministere/index.html> Luxemburg
- 22 <http://likumi.lv/doc.php?id=220516> Latvia
http://www.vvc.gov.lv/export/sites/default/docs/LRTA/Likumi/Law_On_the_Handling_of_Dangerous_Goods.doc
<http://likumi.lv/ta/id/116190-bistamo-kravu-parvadajumu-noteikumi>
<http://likumi.lv/ta/id/74478-noteikumi-par-bistamo-kravu-parvasanu-pa-dzelzcelu>
- 23 <https://lovdata.no/dokument/SF/forskrift/2009-04-01-384> Norway
- 24 Wet Vervoer Gevaarlijke Stoffen and its Annexes (Law on Transport of Dangerous Goods and its Annexes). Netherlands
- 25 For Great Britain: CDG 2009 as amended by CDG 2011. There are separate regulations for Northern Ireland. See links below: UK
http://www.legislation.gov.uk/uksi/2011/1885/pdfs/uksi_20111885_en.pdf
http://www.legislation.gov.uk/uksi/2009/1348/pdfs/uksi_20091348_en.pdf
http://www.legislation.gov.uk/nisr/2011/365/pdfs/nisr_20110365_en.pdf
- 26 RID-S: <https://www.msb.se/externdata/rs/66703878-b6b0-4498-a03b-ccfddb5c7bd7.pdf> Sweden
ADR-S: <https://www.msb.se/externdata/rs/974f510a-4964-4c5e-b69c-ae96d32116b3.pdf>

- 27 <http://laws-lois.justice.gc.ca/eng/acts/T-19.01/FullText.html>
<https://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm> Canada
- 28 National regulations: Finland
http://www.trafi.fi/tietopalvelut/vaaralliset_aineet/saadokset_ja_maaraykset
- 29 The Australian Code for the Transport of Dangerous Goods by Road and Rail and Australia's national Model Act on the Transport of Dangerous Goods by Road and Rail are available at the following link. Australia
<http://www.ntc.gov.au/topics/safety/australian-dangerous-goods-code/>
- 30 <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=9206&l=1> Malta

Q.15. There is a general lack of statistics on a worldwide basis about the transport of dangerous goods by:

- Mode of transport
- Class of dangerous goods
- Dangerous goods packed in limited quantities
- National versus international transport
- Accidents involving dangerous goods during transport

Does your government collect national statistics concerning the transport of dangerous goods by:

- i) Road
- ii) Rail
- iii) Inland waterways
- iv) Sea
- v) Air

If yes could you supply copies or a web link for the statistics:

Answered question: 31

Skipped question: 3

Country	Link
USA	http://www.census.gov/econ/cfs/2012/ec12tcf-us-hm.pdf
France	http://www.statistiques.developpement-durable.gouv.fr/donnees-ligne/r/flux-marchandises-sitram-i.html
CH	http://www.bav.admin.ch/themen/verkehrspolitik/00709/02277/02609/index.html?lang=fr
Denmark	http://www.danmarksstatistik.dk/da/search.aspx?q=farligt+goods
Romania	We encourage you to request the statistics to National Institute of Statistics - INS www.insse.ro
Belgium	See the information document on transport of radioactive material in Belgium. Only available in French or Dutch: - French: http://www.fanc.fgov.be/GED/00000000/3500/3539.pdf - Dutch: http://www.fanc.fgov.be/GED/00000000/3500/3538.pdf Inland waterways: Information available about classes of dangerous goods (1) oil and gasoline (2) chemical products and (3) explosifs Road: information available about number of controls conducted
???	We collect some elements of statistics, but statistic is according to national provisions not fully in line with above mentioned criteria
Lithuania	http://www.stat.gov.lt/en/home
Germany	https://www.destatis.de/DE/Publikationen/Thematisch/TransportVerkehr/Querschnitt/Gefahrgutransporte.html
Norway	https://www.ssb.no/statistikkbanken/SelectVarVal/Define.asp?MainTable=JernbGodsFarlig&Ko

Country	Link
	rtNavnWeb=jernbane&PLanguage=0&checked=true https://www.ssb.no/statistikbanken/SelectVarVal/Define.asp?MainTable=KvSafeSeaNet&KortNavnWeb=kv%5Fstatres&PLanguage=0&checked=true
Poland	<p>In rail/road/inland waterways transport data specified in the regulation on yearly report concerning the activities connected with the transport of dangerous goods (http://www.dziennikustaw.gov.pl/DU/2012/966/1) are gathered. Under the Parliamentary Act on transport of dangerous goods these data are gathered by the Office of Rail Transport (Urząd Transportu Kolejowego, Inland Waterways Offices (urzędy żeglugi śródlądowej), Inspectorates of Road Transport (inspektoraty transportu drogowego). As far as Maritime transport is concerned data on transport of dangerous goods are collected by Maritime Offices (urzędy morskie).</p> <p>As far as rail transport is concerned some of these data are presented in an aggregate form in yearly reports on rail transport safety available on the national safety authority http://www.utk.gov.pl/pl/bezpieczenstwo-systemu/monitoring/opracowania-dotyczace-b/3883,Opracowania-dotyczace-bezpieczenstwa.html.</p> <p>As far as other modes of transport are concerned the statistics are not published.</p>
???	I am not aware of any statistics for the transport of dangerous goods for inland navigation.
Brazil	<p>This information is not published on internet for air mode, although we can supply you with some statistics. More than 750000 packages of dangerous goods were transported by air since January 1st of 2015 until today (79% of Class 9; 10% of Class 6; 4% of Class 3). There isn't any accident involving dangerous goods transported by air, although there were 60 incidents reported since January 1st of 2014 until today (26% undeclared; 44% regarding documentation; 17% regarding packaging) (Top 3 dangerous goods incidents reported are Class 3, Class 9 and Class 8). For road transportation, you can check at produtosperigososbrasil.com; www.ipr.dnit.gov.br; http://www.mma.gov.br/seguranca-quimica/emergencias-ambientais/plano-nacional-de-prevencao-preparacao-e-resposta-rapida-a-emergencias-ambientais-com-produtos-quimicos-perigosos</p>
Sweden	<p>http://www.trafa.se/en/Statistics/ The available statistics are of a more general character. Concerning the air mode, we do not know what statistics that is available.</p>
???	These are not available publicly for competitiveness issues. Aggregate information is sometimes available depending on the nature of what is requested.
Australia	<p>In September 2015, the Australian Bureau of Statistics will release a publication entitled "Road Freight Movements" (catalogue number 9223.0), which is expected to include, among other things, total tonnes of dangerous goods carried, total dangerous goods tonne-kilometres, and total kilometres travelled. The publication will be made available on the website of the Australian Bureau of Statistics. http://www.abs.gov.au/</p>
Norway	http://www.dsb.no/Global/Farlige%20stoffer/Dokumenter/1293-2013-elektronisk%20(2).pdf
Spain	<p>http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/DIRECCIONES_GENERALES/TTRANSPORTE_TERRESTRE/MMPP/Estadisticas/ For air, not available for the public.</p>
Peru	http://www.apn.gob.pe/web/apn/reportes-estadisticos-sobre-mercancias-peligrosas

Q.16 : Is your country party to a convention/agreement governing international transport of dangerous goods by road, rail or inland waterways, OTHER than ADR, RID, ADN, SMGS?

Answer Options	Response Percent	Response Count
No	78.8%	26
Yes	21.2%	7
If Yes, please specify (Name and depositary)		6
answered question		33
skipped question		1

If Yes, please specify (Name and depositary)

Country	
	Convenio SOLAS y Convenio MARPOL
???	English-French Intergovernmental Commission (IGC): Eurotunnel Safety Arrangements - Volume F
???	The Agreement on the Rail and Road Transportation of Dangerous Goods on Mercosul
Peru	EL LIBRO NARANJA, MTC, MINSA-DIGESA
???	Unclear, the agreements are North American Specific. For example, for rail in North America, this is done through agreements with the Association of American Railways.
???	Bilateral agreement with Russia (Rail, dangerous goods)

Q. 17. Are the provisions of this agreement/convention consistent with those of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations?

Answer Options	Response Percent	Response Count
Yes	88.9%	8
No	11.1%	1
<i>answered question</i>		9
<i>skipped question</i>		25

Q.18. If Yes, which edition? (18th to 12th). Previous edition (please specify)

Answer Options	Response Percent	Response Count
18th revised edition	66.7%	4
17th revised edition	16.7%	1
16th revised edition	0.0%	0
15th revised edition	16.7%	1
14th revised edition	0.0%	0
13th revised edition	0.0%	0
12th revised edition	0.0%	0
Previous edition (please specify)		2
<i>answered question</i>		6
<i>skipped question</i>		28

- One country applying the 7th edition

Comment removed by the secretariat for confidentiality reasons

Q.31. The United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations are dealt with by the Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and its Sub-Committee on TDG. This leads to standard methods of classification, packaging, marking and labelling. They are then transferred to the individual modal bodies for adoption.

Do you consider the system works well? If your answer is No, please explain briefly your concerns

Answer Options	Response Percent	Response Count
Yes	90.9%	30
No	3.0%	1
I do not know	6.1%	2
If your answer is No, please explain briefly your concerns		1
<i>answered question</i>		33
<i>skipped question</i>		1

If your answer is No, please explain briefly your concerns

- Intermodal differences in classification of dangerous goods (e.g. ADN has some different numbers as ADR for dangerous goods).

Q.32. Do you consider that the international regulations are up to date and relevant to the modern uses of and distribution of dangerous goods?

Answer Options	Response Percent	Response Count
Yes	90.9%	30
No	3.0%	1
I do not know	6.1%	2
If your answer is No, please provide examples of deficiencies		2
<i>answered question</i>		33
<i>skipped question</i>		1

If your answer is No, please provide examples of deficiencies:

- In certain areas it may be considered to develop performance based provisions rather than very detailed provisions.
- Regarding technical development there is always a delay in adapting suitable provisions. This is of course frustrating for industry, but it is difficult to solve this problem with the current system.

Q.33. The UNECE Transport Division in Geneva provides secretariat services to ECE TDG bodies namely WP15 for ADR, the RID/ADR/ADN Joint Meeting and WP15/AC.2 for ADN. In addition, they provide secretariat services to the ECOSOC TDG and GHS committee and its sub-committees. Do you consider the secretariat functions/works well?

Answer Options	Response Percent	Response Count
Yes	84.8%	28
No	3.0%	1
I do not know	12.1%	4
If not, could you please identify weaknesses and supply details		3
<i>answered question</i>		33
<i>skipped question</i>		1

If not, could you please identify weaknesses and supply details

- Even the answer is yes, we consider a need to supplement the number of persons and the funds for transport of dangerous goods Section.
- Generally works well. Better documentation of discussions, resolutions, and evolution of files would be appreciated. Decisions are documented, but the rationale and discussions are lacking especially when changes or major points are raised in plenary.

• 

Comment removed by the secretariat for confidentiality reasons.

Q.35. Are the United Nations regulatory and capacity building exercises effective in spreading knowledge concerning dangerous goods transport?

Answer Options	Response Percent	Response Count
Yes	63.6%	21
No	3.0%	1
I do not know	33.3%	11
<i>answered question</i>		33
<i>skipped question</i>		1

Q.36. Could more be done for example:

- **Providing written guidance on how the regulations work (note there is already a Road map for accession and implementation of ADR)?**
- **Providing training courses for government official and agencies on application of the various legal Instruments**
- **Other (please specify)**

Answer Options	Yes	No	Response Count
Providing written guidance on how the regulations	16	5	21

work (note there is already a Road map for accession and implementation of ADR)? Providing training courses for government official and agencies on application of the various legal instruments	21	3	24
Other (please specify)			5
	<i>answered question</i>		25
	<i>skipped question</i>		9

- the rules should be more promoted in developing countries
- Providing the latest ADR version in MS Word format to governments.
- Providing guidelines concerning application of certain regulations based on positions agreed at the UNECE bodies meetings. In other words e.g. agreed understanding of regulations raising doubts which have been discussed under the point “Interpretation of RID/ADR/ADN” could be gathered in one place.
- It would be useful for us if the Spanish translation of the Un Model Regulations would be done earlier.

Comment removed by the secretariat for confidentiality reasons.

Q.38 Does your country need support for developing and implementing relevant national regulations for the inland transport of dangerous goods based on the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations and related instruments?

Answer Options	Response Percent	Response Count
Yes	3.0%	1
No	81.8%	27
I do not know	15.2%	5
If yes, please specify		1
	<i>answered question</i>	33
	<i>skipped question</i>	1

Comment removed by the secretariat for confidentiality reasons.

Q.39. If yes, has your country ever sought support for this specific purpose from donor organizations, such as the World Bank, the Asian Development Bank, the African Development Bank, the Islamic Development Bank, the United Nations Development Account, EU Aid, US Aid and other countries' technical cooperation institutions?

Answer Options	Response Percent	Response Count
Yes	0.0%	0
No	66.7%	6
I do not know	33.3%	3
If yes, please specify		0
	<i>answered question</i>	9

Comment removed by the secretariat for confidentiality reasons.

Q.40. The various documents (United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations, ADR, ADN as well as official meeting documentation) are published in more than one language although the majority of proposals are made in English. Do you consider official translations of the documents satisfactory?

Answer Options	Response Percent	Response Count
Yes	81.8%	27
No	9.1%	3
I do not know	9.1%	3
If No please provide some examples or general concerns you have		5
<i>answered question</i>		33
<i>skipped question</i>		1

If No please provide some examples or general concerns you have

- very often the translations in French from English texts as well as the translations from French to English appear to late to read on the Web site of the UN so that most of the experts are not able dot read in time the English versions before the sessions;
- Translation of documents should be made available earlier. Checking equivalence in technical language takes time and believes that the regulations would increase in value if delegations would have more time available before the session to verify this;

- In the end of the meetings, generally some parts of the English version of the report can not be translated.

Comments removed by the secretariat for confidentiality reasons.

Q.42. Are there obstacles to your government's participation?

Answer Options	Response Percent	Response Count
Yes	53.8%	7
No	46.2%	6
If yes, please specify		8
<i>answered question</i>		13
<i>skipped question</i>		21

- Lack of finances
- lack of finance
- Financial
- Our travel budget have been drastically reduced
- the cost for the participation (travel, hotel, etc).
- we participate

- Fund allocation to travelling expenses related to ADR are very limited.

Comment removed by the secretariat for confidentiality reasons.

Q.43. If you wish to make additional comments not covered by the questions, the consultant would be happy to receive them

- Au-delà des activités purement réglementaires, il nous paraît important de développer au niveau du secrétariat des outils permettant d'obtenir des données préalables aux décisions que prennent les différents groupes de travail. Notamment une base de données sur les accidents impliquant des transports de marchandises dangereuses nous semble à cet effet essentielle. Dans le cadre du développement des outils de suivi télématique des transports, la CEE-ONU pourrait examiner la possibilité d'héberger certains serveurs. La mise en place de tels outils nécessite bien entendu un compromis au niveau des Parties contractantes.

[REDACTED]

Comment removed by the secretariat for confidentiality reasons.

- For the transport of radioactive material (dangerous goods of class 7), the input and the recommendations for the safe transport of radioactive material are issued by the IAEA (International Atomic Energy Agency) and discussed and prepared by the TRANSSEC members (nominated by their Government), see:
 - <http://www-ns.iaea.org/tech-areas/radiation-safety/transport.asp?s=3&l=23>
 - <http://www-ns.iaea.org/committees/transsc/>
 - Ad question 8: The SMGS is not a part of Polish legal order however it is applied by carriers in transport of dangerous goods from third states.
- Ad question 42: In general there are no obstacles to the government's participation, however expenses connected with the stay in Geneva may require limiting the number of sessions attended.
- In relation to the 2-year cycle of amendments, we suggest that new or amended text will only be included in the amendments to the UN TDG Recommendations, when the issue is finalized. If more discussion on a subject is needed, and more changes in the text is envisaged, the text should be kept as a working document for further discussion in the next biennium. (in the present situation, text just adopted by the modes has already been amended by the UN Subcommittee of Experts on TDG. This leads to a unnecessary burden and costs)
1. Late INF papers on new subjects to the committee can be disruptive to preparations, especially for non-English speakers and those having to travel long distances. In such cases, it can mean that the comments of relevant experts have not been obtained in time.
 2. In view of the costs involved with the current meeting schedule (time, travel and hotels), could consideration be given to linking two of the four WP.15 sessions per biennium to the two Joint Meetings held in Geneva? And if this was found acceptable, perhaps consideration could then be given to following suit for rail and the Joint Meetings held in Bern?
 3. With the ICT advancements that have been made could consideration be given to enabling a competent authority or NGO which is not able to send a representative in person to instead take part electronically (as is the case with some informal working groups).

Comment removed by the secretariat for confidentiality reasons.

- [REDACTED]

[REDACTED]

Comment removed by the secretariat for confidentiality reasons.

- I can only fill in this form for ADN.
 - There is no transport of dangerous goods by inland waterways in Turkey.
 - We have no inland waterways, so no ADN is needed.
 - [REDACTED] Falta más apoyo a las personas que tenemos la responsabilidad de comentar o instruir a los usuarios del transporte Terrestre de mercancías peligrosas, sobre el USO de lo que contiene el LIBRO NARANJA. el suscrito ha solicitado muchas veces por correo electrónico, la forma de como poder obtener la edición impresa del Libro Naranja, pero nunca he sido atendido [REDACTED]
- [REDACTED]

Comment removed by the secretariat for confidentiality reasons.

Annex B2 – IGO Responses

Q.1: Responder: (Organization)

Response Text	
1	International Maritime Organization
2	World Health Organization
3	IAEA
4	Intergovernmental Organisation for International Carriage by Rail
5	ICAO
6	Universal Postal Union

Q.2: Name of person responding

Q.3: Email address

Q.4: Telf. Numbers

Q.5: Following the completion of this survey would you be willing to discuss by phone or email the responses with the consultant?

Answer Options	Response Percent	Response Count
Yes	100.0%	6
No	0.0%	0
<i>answered question</i>		6
<i>skipped question</i>		0

Q.6: Overall, do you consider the UN system works well:

Answer Options	Yes	No	Response Count
For your organisation	6	0	6
For the committees you service	6	0	6
For the regulations you produce	6	0	6
If not, please explain			0
<i>answered question</i>			6
<i>skipped question</i>			0

Q.7 Note: If your organization is not aware of this system, but it would be interested in knowing more about it or in establishing liaison with the relevant United Nations bodies, please provide the name and contact details of the relevant person/department.

One respondent required more details of the UNECE work

Q.8 Do you think the two-year cycle of revisions is the correct interval?

Do you think the current two-year cycle of revisions is the correct interval?		
Answer Options	Response Percent	Response Count
Yes	66.7%	4
No	33.3%	2
Do not know	0.0%	0
<i>answered question</i>		6
<i>skipped question</i>		0

Q.9 If No, then is it:

If No, then is it:		
Answer Options	Select one answer	Response Count
Too long	0	0
Too short	2	2
<i>answered question</i>		2
<i>skipped question</i>		4

Results

66.7% of the respondents consider that the two-year cycle of revisions is the correct interval, while 33.3% of the respondents consider it to be too short

Q.10. The United Nations Model Regulations are dealt with by the Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and its sub-committee on TDG. This leads to standard methods of classification, packaging marking and labelling. They are then transferred to the individual modal bodies for adoption. Do you consider the system works well?

Answer Options	Response Percent	Response Count
Yes	100.0%	6
No	0.0%	0
If your answer is No, please explain briefly your concerns		0
<i>answered question</i>		6
<i>skipped question</i>		0

Q.11. Do you think the Model Regulations should be further elaborated to address aspects which are not currently addressed, e.g. mode specific aspects? If your answer is Yes, please explain and indicate for which mode(s) of transport

Answer Options	Response Percent	Response Count
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Yes	33.3%	2
No	66.7%	4
If your answer is Yes, please explain and indicate for which mode(s) of transport		1
answered question		6
skipped question		0

"Model Training curricula". Training section is very broad. Training requirements is a must for the transport of certain classes/divisions or categories of DGs. A model training curricula for such Classes/Divisions/Categories will facilitate standardization of training curricula developed by the appropriate authorities.

Results

66.7% of the respondents did not see the need for the Model Regulations to address aspects which are not currently addressed. One respondent (33.3%) however, considered that a “model training curricula” should be included in the Model Regulations to facilitate standardization of training curricula developed by competent authorities.

Q.12. Do you consider that the regulations are up to date and relevant to the modern uses of and distribution of dangerous goods?

Answer Options	Response Percent	Response Count
Yes	80.0%	4
No	20.0%	1
If you answer no please provide examples of deficiencies		1
answered question		5
skipped question		1

Q.13 If your answer is No, please provide examples of deficiencies

There needs to be a better alignment with current consumer trends in online ordering, in particular the need for exemptions of minimal quantities of dangerous goods.

Results

80 % of the respondents (4) consider that the regulations are up to date and relevant to the modern uses of and distribution of dangerous goods, while 20% (1) answered “no” to that question.

Comments of general deficiencies given by the respondent who answered “no” to the question indicated a need for better alignment with current consumer trends in online ordering, in particular the need for exemptions of minimal quantities of dangerous goods.

Q.14 The timing of meetings held in Geneva, particularly those under the auspices of ECOSOC do not necessarily align with dates of your organization meetings. Is this an inconvenience?

Answer Options	Response Percent	Response Count
Yes	33.3%	2
No	66.7%	4
Do you consider that some attempt at closer alignment should be made? If so how?		2
answered question		6

Do you consider that some attempt at closer alignment should be made? If so how?

I believe the meetings could be of shorter duration and/or less frequent

Results

66.7 % of the respondents (4) consider that the current timing of meetings is convenient. 2 respondents (33.3%) considered it to be inconvenient, and suggested as measures for a closer alignment: on-line calendar and shorter and/or less frequent meetings

Q.15 The UNECE Transport Division in Geneva provides secretariat services to both UNECE bodies (Working Party on the Transport of Dangerous Goods (WP.15) for ADR, ADN Safety Committee, RID/ADR/ADN Joint Meeting) and ECOSOC bodies (TDG and GHS sub-committees). Do you consider the secretariat functions/works well?

Answer Options	Response Percent	Response Count
Yes	100.0%	6
No	0.0%	0
If not, could you please identify weaknesses and supply details		0
<i>answered question</i>		6
<i>skipped question</i>		0

Q.16 Does the UNECE secretariat provide you with relevant support for facilitating implementation of the UN Recommendations by your organization and cooperation between your organization and UN or UNECE intergovernmental bodies?

Answer Options	Response Percent	Response Count
Yes	100.0%	6
No	0.0%	0
If not, could you please identify weaknesses? Please supply details		1
<i>answered question</i>		6
<i>skipped question</i>		0

WHO receives kind permission from UNECE to use text from the Model Regulations for the transport of infectious substances guidelines WHO produces.

Q.17 Are the various publications from the UNECE Transport Division (UN Recommendations on TDG, ADR, ADN, Manual of Tests and Criteria, GHS) produced in a timely manner? I.e. are they available in good time for use by your organization?

Answer Options	Response Percent	Response Count
Yes	100.0%	6
No	0.0%	0
<i>answered question</i>		6

Q.18 Are the United Nations regulatory and capacity building exercises effective in spreading knowledge concerning dangerous goods transport?

Answer Options	Response Percent	Response Count
Yes	60.0%	3
No	40.0%	2
If No, please explain		3
<i>answered question</i>		5
<i>skipped question</i>		1

It is hard to choose "Yes" or "No". An example of such capacity building exercises is needed in the questions in order to clarify what is meant by "..exercises". for example: is training on the regulations part of the capacity building exercises? if not, would training on dangerous goods transport be considered in the capacity building exercises.

Capacity building in the developing Member States need significantly more resources if safety infrastructures and safety cultures are to be developed effectively and in a timely manner that offsets the effects of changing personnel in the Member State Government departments.

I would prefer to answer this with "Do not know"

Q.19 Could more be done, for example:

Answer Options	Yes	No	Response Count
Providing written guidance on how the regulations work (Note: Some material is already available on the UNECE website, such as Guiding Principles related to the UN Recommendations on TDG, GHS Guidance, GHS Presentations, Road Map for accession and implementation of ADR, Catalogue of questions related to ADN training)	4	2	6
Providing training courses for government official and agencies on application of the various legal instruments	5	1	6
Other (please specify)			2
<i>answered question</i>			6

Provide translation of the UN Model and Modal regulations (ADN/ADR/RID) in all UN Official languages. This will promote implementation in non-EU Countries and will facilitate Intergovernmental Organizations in the UN System ensuring the use of correct translation or terminology used in the regulations.

On line modular training for Regulatory Bodies including behavioural and safety culture development. The training should be structured to represent how regulatory bodies function. There are examples of industry training but not for regulatory bodies. This is being developed in the IAEA for the transport of Class 7 using the IAEA SSR-6 transport requirements. This work would benefit from multi-agency funding which would then include reference to the Model Regulations and perhaps modal regulations

Results

3 respondents (60%) consider that the United Nations regulatory and capacity building exercises are effective in spreading knowledge concerning dangerous goods transport.

For one respondent it wasn't clear what was meant by "capacity building exercises" in the question while another indicated that he/she would have preferred to answer this question with "do not know"

The need for additional capacity building activities in developing Member States was raised by one respondent, in order to develop a "safety culture" and to offset the effects of continuous changes in personal in Member States government departments.

On the question "could more be done [by the United Nations] to spreading knowledge concerning dangerous goods transport", there was similar support from the respondents to the 2 options provided as an example, i.e: development of written guidance on how the regulations work, and development of courses for government official and agencies on application of the various legal instruments.

Additional suggestions for improvement included:

- Providing translation of UN model Regulations as well as ADR/RID/ADN in all UN official languages to promote their implementation in non-EU countries and facilitate the use of correct translation and terminology used in other legal instruments prepared by other IGOs
- Development of on-line training for regulatory bodies, with modules focusing on behavioural and safety culture development and explanations on how the different regulatory bodies function.

Analysis

The UN Model Regulations and the Manual of Tests and Criteria are already published in all UN official languages.

ADR and ADN are agreements administered by UNECE bodies and as such, issued in the three official languages of UNECE (i.e. English, French and Russian).

- ADR:
<http://www.unece.org/trans/danger/publi/adr/adr2015/15contentse.html>
- ADN:
http://www.unece.org/trans/danger/publi/adn/adn2015/15files_e.html

However, it is worth noting than countries applying ADR and ADN to domestic transport, do often translate its provisions into their own official languages, and therefore, both are available in languages other than English, French and Russian. The UNECE secretariat provides links to other linguistic versions through its website, see for instance:

- For ADR:
http://www.unece.org/trans/danger/publi/adr/adr_linguistic_e.html
- Is similar information available for ADN?

RID regulations are prepared by OTIF which issues them in the three official languages (English, French and German), see: <http://www.otif.org/>

- Develop on absence of mandate (institutional (ECE) to translate ECE publications in additional UN languages?

As regards development of training :

- lack of resources within the organisation for additional activities/developing guidance, training materials, publications, leaflets, etc...
- current conditions/limitations for participation of the secretariat in workshops/seminars?
- possible available options? (e.g.: e-publications for the website; revisiting information published; developing guidance...)

Q.20. The various documents (United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations, ADR, ADN as well as official meeting documentation) are published in more than one language although the majority of proposals are made in English. Do you consider official translations of the documents satisfactory?

Answer Options	Response Percent	Response Count
Yes	33.3%	2
No	33.3%	2
I do not know	33.3%	2
If No, please provide some examples or general concerns you have		2
<i>answered question</i>		6
<i>skipped question</i>		0

If No, please provide some examples or general concerns you have

Consider publishing the UN Model Regulations for the Transport of DG in all UN Official languages (i.e, Arabic, Chinese, English, French, Russian and Spanish).

Consideration should be given to translations in all UN languages, at least of the reports and addenda

Results

Answers were equally divided among those who considered that the translation of UN documents is satisfactory, those who considered it unsatisfactory and those who answered "I do not know".

Those who provided comments suggested considering publishing the UN Model Regulations on the Transport of Dangerous Goods, as well as reports from meetings and its addenda in all UN official languages.

Analysis

1. Availability of reports and its addenda in all UN official languages

As regards availability of reports and its addenda in all UN languages, it is worth noting that all the reports of the Committee of Experts on the TDG and GHS as well as its addenda containing the list of amendments to the 3 publications mentioned in the previous paragraph are already issued in the 6 UN official languages and made publicly available at the secretariat's website:

<http://www.unece.org/trans/main/dgdb/dgcomm/ac10rep.html>

Reports (including its addenda) on the sessions of the ECOSOC Sub-Committees as well as those on the sessions of UNECE bodies (such as those responsible for ADR and ADN are available on the working languages of the secretariat, i.e.:

- For ECOSOC bodies: English and French

- TDG Sub-Committee:

- <http://www.unece.org/trans/main/dgdb/dgsubc3/c3rep.html>

- GHS Sub-Committee:

- <http://www.unece.org/trans/main/dgdb/dgsubc4/c4rep.html>

- For UNECE bodies in general: English, French and Russian.

- WP:15 (ADR meetings):

- <http://www.unece.org/trans/main/dgdb/wp15/wp15rep.html>

- WP.15/AC.1 (RID/ADR/ADN Joint meeting):

- <http://www.unece.org/trans/main/dgdb/ac1/ac1rep.html>

- WP.15/AC.2 (ADN meetings):

- <http://www.unece.org/trans/main/dgdb/ac2/ac2rep.html>

- For UNECE bodies working in cooperation with other international organizations, translation into German is provided:

- By OTIF (for the reports of the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods)

- By the Central Commission for the Navigation of the Rhine (for the reports of the Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN Safety Committee))

2. Availability of publications (UN Model Regulations, Manual of Tests and Criteria, ADR, RID and AND) in all UN official languages

The request of having the UN Model Regulations published in all UN official languages comes as a surprise to the secretariat, since this publication, as well as the Manual of Tests and Criteria and the GHS are already published in the 6 UN official languages (Arabic, Chinese, English, French, Russian and Spanish). All are made available at the secretariat's website.

- UN Model Regulations:

- http://www.unece.org/trans/danger/publi/unrec/rev19/19files_e.html

- Manual of Tests and Criteria:

- http://www.unece.org/trans/danger/publi/manual/rev5/manrev5-files_e.html

GHS:

http://www.unece.org/trans/danger/publi/ghs/ghs_rev06/06files_e.html

ADR and ADN are agreements administered by UNECE bodies and as such, issued in the three official languages of UNECE (i.e. English, French and Russian).

- ADR:
<http://www.unece.org/trans/danger/publi/adr/adr2015/15contentse.html>
- ADN:
http://www.unece.org/trans/danger/publi/adn/adn2015/15files_e.html

However, it is worth noting than countries applying ADR and ADN to domestic transport, do often translated its provisions into their own official languages, and therefore, both are available in languages other than English, French and Russian. The UNECE secretariat provides links to other linguistic versions through its website, see for instance:

- For ADR:
http://www.unece.org/trans/danger/publi/adr/adr_linguistic_e.html
- *Is similar information available for ADN?*

RID regulations are prepared by OTIF which issues them in the three official languages (English, French and German), see: <http://www.otif.org/>

Q.21. Does your organisation monitor accidents involving dangerous goods during transport?

Answer Options	Response Percent	Response Count
Yes	83.3%	5
No	16.7%	1
If yes could you supply copies or a web link for a review		5
<i>answered question</i>		6
<i>skipped question</i>		0

If yes could you supply copies or a web link for a review

N°	Response date
1	GISIS System Indirect monitoring through International Health Regulations mandate for Member States to report on public health emergencies of international concern
2	http://www.otif.org/en/dangerous-goods/rid-references-on-the-otif-website/1852.html
3	Not available for public review
4	no
5	

Q.22. If any person wishes to make additional comments they will be gratefully received

The IAEA has conducted a survey of available accident data for Class 7 and found very few records. The purpose was to provide evidence that the current performance criteria for transport package designs is appropriate as Type B packages are designed to retain their contents under transport accident conditions. What will be needed is a global survey with member States requested to collect data on accidents which is designed not to be too onerous; eg did the accident involve a fire, did the packaged

dangerous goods leak, what class of DG was involved, did the consignment meet all regulatory requirements, etc.

Now that the UN has completed a large body of work on restructuring and developing packing instructions, the issue of lengthening the periodicity should be revisited. I believe a strong argument could be made to have a major revision every four or six years with either a minor revision every two years OR keep the longer cycle but have a mechanism to allow for an urgent, safety based need to implement such amendments.

Annex B3 - DGO Responses

Results from NGOs

Dangerous Goods Advisory Council, Verein der Kohlenimporteure e.V., IPPIC - International Paint and Printing Ink, IFDI Council, European Skippers Organisation (ESO), SAAMI, CIPA, IATA, CLEPA, Compressed Gas Association (CGA), Recommended ADN Classification Societies, Cefic OICA, Union Internationale des chemins de fer (UIC), Eucobat aisbl, International Road Transport Union (IRU), Institute of Makers of Explosives, International Dangerous Goods and Containers Association (IDGCA), Lloyd's Register, RECHARGE, European Industrial Gases Association International tank Container Organisation, Australian Explosives Industry Safety Group, IFFO

Q.2. Name of person responding

Q.3. email

Q.4. Phone number

Q.5. Following the completion of this survey would you be willing to discuss by phone or email the responses with the consultant?

Answer Options	Response Percent	Response Count
Yes	96.0%	24
No	4.0%	1
<i>answered question</i>		25
<i>skipped question</i>		2

Q.6. Indicate your main area(s) of interest when attending either UN TDG Sub-Committee, RID/ADR/ADN Joint meeting, WP15 ADR and WP15 ADN. (It is recognised that most NGOs have a wide range of interests)

Answer Options	Select all that apply	Response Count
Classification of substances and articles	15	15
Packaging	17	17
Tanks	11	11
Marking	16	16
Labelling	17	17
Documentation	18	18
Operations	19	19
Emergency response	10	10
<i>answered question</i>		24
<i>skipped question</i>		3

Q.7. Do you have a particular interest in one mode of transport

Answer Options	Select all that apply	Response Count
----------------	-----------------------	----------------

Road	19	19
Rail	13	13
Inland Waterway	14	14
Sea	16	16
Air	12	12
<i>answered question</i>		25
<i>skipped question</i>		2

Q.8. Do you consider that government participation at the various meetings is adequate at the meetings. For example do enough governments (i.e. countries attend and do they make a positive contribution)

Answer Options	Yes	No	Response Count
UN Sub Committee of Experts on the Transport on Dangerous Goods	16	4	20
UNECE Working Party on the Transport of Dangerous Goods (WP.15)	10	0	10
RID/ADR/ADN Joint Meeting	11	0	11
ADN Safety Committee (WP.15/AC.2)	12	0	12
<i>answered question</i>			25
<i>skipped question</i>			2

Q.9. Overall do you consider the United Nations system works well?

Answer Options	Response Percent	Response Count
Yes	91.7%	22
No	8.3%	2
<i>answered question</i>		24
<i>skipped question</i>		3

Q.10. Do you consider that all governments are aware that the Model Regulations and the various modal regulations are updated at two-year intervals?

Answer Options	Response Percent	Response Count
Yes	62.5%	15
No	37.5%	9
<i>answered question</i>		24
<i>skipped question</i>		3

Q.11 Do you think the two-year cycle of revisions is the correct interval?

Answer Options	Response Percent	Response Count
Yes	70.8%	17
No	29.2%	7
<i>answered question</i>		24
<i>skipped question</i>		3

Q.12 If No, then is it:

Answer Options	Select one answer	Response Count
----------------	-------------------	----------------

Too long	1	1
Too short	6	6
About right	2	2
<i>answered question</i>		9
<i>skipped question</i>		18

Results

70.8% of the respondents consider that the two-year cycle of revisions is the correct interval.

Among the 29.2% of those who replied “no” to this question, 19,47% considered the 2-year cycle too long, 6.49% consider it to be about right and 3.24% consider it to be too long.

Q.13. The United Nations Model Regulations are dealt with by the Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and its sub-committee on TDG. This leads to standard methods of classification, packaging marking and labelling. They are then transferred to the individual modal bodies for adoption. Do you consider the system works well?

Answer Options	Response Percent	Response Count
Yes	78.3%	18
No	21.7%	5
<i>answered question</i>		23
<i>skipped question</i>		4

Q.14. If your answer is no please explain briefly your concerns

Too much divergence remains in modes and in competent authority implementations, either through conscious deviation or time lag in transposing Model Regulations. Resulting lack of harmonisation makes intermodal/international transport complicated for operators.

It is frustrating when some issues are discussed and decided upon first by the European or modal bodies and then are brought afterwards to the UN Sub-Committee to "harmonise", when these decisions clearly have an impact outside of Europe or the modes.

Some discussions simply take too long. Furthermore the fact that some issues are first discussed by TDG, then handed over to GHS for discussion and then coming back to TDG makes the process to slow. TDG and GHS-meeting should partly be overlapping in order to discuss certain issues together.

I believe it works well because the modal bodies participate in a cooperative and constructive manner. They try to implement promptly and also feed back to the UNSCE in a positive manner. Governments however are not so cooperative or efficient in implementing for land transport.

Results

78.3% of the respondents consider that the current system of work works well (i.e. standardisation of classification, packaging, marking and labelling at Committee level followed by transfer to the relevant provisions to the individual modal bodies for adoption).

21.7 % of the respondents consider that the system does not work well. This percentage includes the contribution of one respondent who answered “no” to the question although he/she specified in the comments that in his/her view the system works well as far as the modal bodies are concerned since

they participate in a cooperative and constructive manner to the work of the Committee, transposing its recommendations into the legal instruments under their responsibility as soon as possible and providing feedback when necessary. On the contrary he/she felt that Governments are not so cooperative and efficient in implementing provisions for land transport.

The concerns expressed by those who considered that the system does not work well are as follows:

- Too much divergences remaining in modal provisions as well as in the way competent authority implement them (e.g. conscious deviation or time lag in transposing the Model Regulations)
- Dis-harmonization generated by non-respect of the procedure, i.e.: issues of global concern discussed first at regional level and once a decision has been taken regionally, brought to the attention of the Sub-Committee where the outcome of the discussions might be different.
- Too lengthy discussions on some issues.
- Duplication of discussions on the same issues in TDG and GHS sub-committees, which slows down significantly the decision-making process.
- Lack of efficiency of governments as regards the implementation of provisions for land transport.

Analysis

As regards the question of avoiding duplication of work and enhancing cooperation between the TDG and GHS sub-committees, it is worth noting that both sub-committees addressed this issue in December 2014 and agreed to sharing meeting time (starting on July 2015) to discuss issues of common concern.

Q.15. Do you consider that the regulations are up to date and relevant to the modern uses of and distribution of dangerous goods?

Answer Options	Response Percent	Response Count
Yes	68.2%	15
No	31.8%	7
<i>answered question</i>		22
<i>skipped question</i>		5

Q.16 If your answer is No, please provide examples of deficiencies

Answer Options	Response Count
	6
<i>answered question</i>	6
<i>skipped question</i>	21

Lack of non-testing criteria to assign Packing Groups to mixtures in Class 8.
 Packing instructions are not keeping pace with packaging technology.
 Provisions are lacking on combustibility (as in 49 CFR) which would allow for deregulation where risk is low.

In specific regard to packaging the regulations are sufficient in most regards. The failures are lack of enforcement by the competent authorities to ensure the packagings are made in daily production the same as the units tested in the design qualification tests. More regulation does not fix the problem of less oversight. Too onerous laws tempt unscrupulous producers to circumvent the laws. The packaging companies representing their NGOs at the SCOE TDG are "the good guys". Our worries are the producers who choose not to participate and follow good practices.

It is necessary to get full recognition of new developments, e.g. document digitisation. This requires an acknowledgement by all contracting parties, which is not the case at the moment.

For the most part, the TDG Model Regulations are up-to-date. However, they need to include recommendations for a harmonized explosives security marking (this is currently in the works for possible adoption by the TDG). As noted above, it appears to us that the GHS is still in the formative stages.

Regulations don't comprise the conditions of transportation and loading of dangerous goods at port territory. It will be much appreciated if such kind of recommendations related to the transportation, loading and handling of dangerous goods at port territory would be developed.

We are in the fishmeal industry and the shipping of fishmeal has not been reviewed for many years. The packaging size and type have changed during the past few years as well as the antioxidants used to ship fishmeal,

Results

68.2% of the respondents consider that the regulations are up to date and relevant to the modern uses of and distribution of dangerous goods, while 31.8% answered “no” to that question.

Examples of general deficiencies given by those who answered “no” to the question are:

- Packing instructions not keeping pace with packing technology
- Lack of enforcement capacity by some competent authorities to ensure the packagings are made in daily production the same as the units tested in the design qualification tests.

Examples of more nature or modal specific deficiencies given by those who answered “no” to the question are:

- Lack of non-testing criteria to assign packing groups to mixtures in Class 8
- Lack of provisions addressing combustibility
- Lack of full recognition of new developments (such as document digitisation) by all contracting parties to ADR??.
- Lack of recommendations for a harmonized explosives security marking
- Outdated provisions for the transport of fishmeal

Q.17 The UNECE Transport Division secretariat in Geneva provide services to both ECE TDG bodies namely WP15 for ADR, the RID/ADR/ADN Joint Meeting and WP15/AC.2 for ADN. In addition, on behalf, of ECOSOC, they provide secretarial services to the TDG and GHS committees and sub-committee. Do you consider the secretariat functions work well?

Answer Options	Response Percent	Response Count
Yes	100.0%	22
No	0.0%	0
<i>answered question</i>		22
<i>skipped question</i>		5

Q.18 If not, could you please identify weaknesses and supply details

I cannot say yes or no. For me all the different bodies with different tasks, time frames, operating modes and decision powers looks not clear, e.g. I sometimes do not know who is responsible for what decision.

The service of the UNECE-Secretariat is EXCELLENT! Their service is outstanding. Thank you very much indeed.

They work well and their strength is that they are very aware of implementation of the UNMR through their involvement in the EU bodies. If it were not for this involvement all their knowledge about implementation would be vicarious. Their weakness is lack of funding for outreach. No funding for participation in conferences for example to spread the word to non-UN countries.

Results

100% of the respondents consider that the secretariat works well

Additional feedback provided in relation to that question indicates the following:

- The service provided by the secretariat is outstanding
- The secretariat has a deep knowledge on the implementation of the Model Regulations through their involvement in EU bodies *does he mean in the work of other ECE bodies/UN/intergovernmental agencies?* (this is identified as a strength)
- Weakness: lack of funding for outreach, particularly as regards countries which are not able to participate in the meetings

Q.19 Are the various publications from the UNECE Transport Division produced in a timely manner? I.e. are they available in

Answer Options	Response Percent	Response Count
Yes	100.0%	23
No	0.0%	0
<i>answered question</i>		23
<i>skipped question</i>		4

Q.20 Are the United Nations regulatory and capacity building exercises effective in spreading knowledge concerning dangerous goods transport?

Answer Options	Response Percent	Response Count
Yes	75.0%	15
No	25.0%	5
<i>answered question</i>		20
<i>skipped question</i>		7

Q.21 Could more be done, for example:

Answer Options	Yes	No	Response Count
Providing written guidance on how the regulations work (note there is already a guide on a Road map to accession to ADR and implementation)?	12	5	17
Providing training courses for government official and agencies on application of the various legal instruments	13	6	19
<i>answered question</i>			20
<i>skipped question</i>			7

Results

75% of the respondents consider that the United Nations regulatory and capacity building exercises are effective in spreading knowledge concerning dangerous goods transport.

On the question “could more be done [by the United Nations] to spreading knowledge concerning dangerous goods transport”, there was similar support from the respondents to the 2 options provided as an example, i.e: development of written guidance on how the regulations work, and development of courses for government official and agencies on application of the various legal instruments.

Analysis

Notwithstanding the fact that a majority of respondents seem satisfied with the effectiveness of the United Nations regulatory and capacity building exercises as regards spreading knowledge concerning dangerous goods transport, there is support to developing additional resources.

Q.22 Would your organization or its members be prepared to contribute to a trust fund intended for financing UN extra-budgetary training/capacity building activities in countries that need support for implementation?

Answer Options	Response Percent	Response Count
Yes	23.8%	5
No	76.2%	16
	<i>answered question</i>	21
	<i>skipped question</i>	6

Results

23.8% of the respondents would be prepared to contribute to a trust fund for financing UN extra-budgetary training/capacity building activities in countries that need support for implementation.

Q.23 Do you consider the services the UN provides to government and industry is widely recognised by companies and organisations involved in dangerous goods transport

Answer Options	Response Percent	Response Count
Yes	72.7%	16
No	27.3%	6
	<i>answered question</i>	22
	<i>skipped question</i>	5

Q.24 The various documents (UN Model regulations, ADR, ADN) are published in more than one language although the majority of proposals are made in English. Do you consider official translations of the documents satisfactory?

Answer Options	Response Percent	Response Count
Yes	91.3%	21

No	8.7%	2
<i>answered question</i>		23
<i>skipped question</i>		4

Q.25 If No please provide some examples or general concerns you have

It was very difficult to answer "no" because in general, I agree that they are satisfactory. However, there is one relatively minor aspect that could be improved, although I don't know that it is feasible. I haven't noticed the translators are generally unaware of the unique jargon used in dangerous goods, e.g., safety v. security, material v. substance, article v. item, mark v label, label v placard, etc.

I use the English version.

There was one UN SCETDG session in the past several years for which the translations of the working documents were provided very late; I know that the Secretariat shared the participants' frustrations regarding this.

Unable to comment

I have answered "yes" however I have no real experience as I work in English. However I am aware of the possibility of efficiency improvements. For example, the Chinese make their own translation of the orange Book (and probably GHS) and surely a deal could be done to avoid dual translations by them and the UN translators.

Results

91.3% of the respondents considered official translations of the documents satisfactory.

Among those who provided comments, the following issues were raised:

- Translators could be better trained on dangerous goods jargon (e.g., safety vs. security, material vs. substance, article vs. item, mark vs label, label vs placard, etc)
- Late availability of translated versions of official documents for the meetings
- Different translations available for the same texts (e.g. UN official translation vs national translations in some countries)

Q.26 Do you believe the stakeholders (your members) are

Answer Options	Yes	No	Response Count
aware of the UN role in the transport of dangerous goods	22	1	23
appreciative of the work that is done in Geneva	20	2	22
<i>answered question</i>			23
<i>skipped question</i>			4

Q.27 Do the various regulations improve the movement of dangerous goods in transport

Answer Options	Response Percent	Response Count
Yes	90.9%	20
No	9.1%	2

<i>answered question</i>	22
<i>skipped question</i>	5

Q.28 Are you aware of any conflicts between the UN transport of dangerous goods system and other regulations not the responsibility of the UNECE e.g. customs, general safety regulations from other agencies e.g. EU, OSHA?

Answer Options	Response Percent	Response Count
Yes	34.8%	8
No	65.2%	15
<i>answered question</i>		23
<i>skipped question</i>		4

Q.29 If so can you give any examples

Interface between supply labelling and transport - labelling of goods which are hazardous for supply but not classified as dangerous for transport (EU CLP Regulation, Canada WHMIS 2015).



Comment removed by the secretariat for confidentiality reasons.

GHS and it's implementing regulations need to give higher priority to alignment with TDG. For example, not even the terminology is aligned, while the focus is very similar.

Many States have implemented a requirement for advance information related to the transport of cargo to be submitted to the Customs authority at origin and destination. This information has the potential to better identify dangerous goods that are not prepared in accordance with the Regulations if there was improved coordination between Customs and the agencies responsible for security and safety for mutual benefit.

There are requirements in the EU Transportable Pressure Equipment Directive (TPED) that impede the global movement of UN pressure receptacles, i.e. the requirement that, in Europe, only pressure receptacles and valves with a "Pi marking" may be used (i.e. filled, temporarily stored linked to carriage, emptied, and refilled), and that "Pi marking" shall be affixed by or under the surveillance of a "notified body" who must have a place of business in an EU member state.



Comment removed by the secretariat for confidentiality reasons.

There are known cases of inconsistency between national and international rules.

The only antioxidants written into the UN Model Regulations for the transport of fishmeal (to prevent spontaneous combustion) is ethoxyquin (although in IMO codes BHT is also allowed). These antioxidants are being reviewed for their safety by the European Food safety Authority before is will be considered for re-authorisation. If ethoxyquin (or BHT) is found to be not safe then shippers of fishmeal will face serious consequences with little alternative options.

Results

65.2% of the respondents were not aware of any conflicts between the UN transport of dangerous goods system and other regulations not the responsibility of the UNECE (e.g. customs, general safety regulations from other agencies e.g. EU, OSHA)

Among those who replied “yes” (34.8%) the following issues were raised:

- Differences in the classification results:
 - goods classified as hazardous for supply and use but not for transport under different regulatory regimes
 - different classification criteria remaining in some countries for different sectors (e.g. USA criteria for flammability used by OSHA, NFPA and DOT)
 - Need for further alignment of GHS and TDG provisions (e.g. terminology)
 - Need for further coordination between customs and agencies responsible for security and safety in some countries (e.g. as regards advance information related to the transport of cargo)
 - Requirements in the EU Transportable Pressure Equipment Directive (TPED) that impede the global movement of UN pressure receptacles (“Pi marking”)
 - Potential conflict with the EU over security marking; Inconsistencies between national and international rules
- Provisions for the transport of fishmeal being discussed at EU level **Analysis**

- Differences in classification results being addressed by the GHS SubCommittee (mention development of a harmonized list of chemicals classified according to GHS criteria)

- other comments or suggestions for further action?

- Q.30 There is a general lack of statistics on a worldwide basis about the transport of dangerous goods by: - Mode of transport - Class of dangerous goods - Dangerous goods packed in limited quantities - National versus international transport - Accidents involving dangerous goods during transport.**
Does your organisation collect national statistics concerning the transport of dangerous goods by: road, rail, inland waterway, sea and air.

Answer Options	Yes	No	Response Count
i) Road	2	20	22
ii) Rail	1	21	22
iii) Inland waterway	1	21	22
iv) Sea	1	21	22
v) Air	1	21	22
<i>answered question</i>			22
<i>skipped question</i>			5

- Q.31 If yes could you supply copies or a web link for a review?**

Possibly; some data may be proprietary.

Yes, copies might be provided

Q.32 Can your organization provide any relevant data of interest to the evaluation of the economic impact of the UN Recommendations on the Transport of Dangerous Goods or ADR or ADN? (e.g. packaging, tank, vehicle, vessels markets)

Partly concerning inland waterways and transportation of coal.

Not sure.

Sorry, no - our association does not collect any data.

No

ADR road map for accession to and implementation of the Agreement, which is key in order to promote prosperity and safety in emerging countries.

Not that I'm aware of

UN Recommendation on the Transport of Dangerous Goods, ADR and ADN are regarded as unique base documents during development of national rules and requirements. Exception applies to the certain modes of transport (IMDG Code, ICAO) and to the certain international Agreements (SMGS).



Comment removed by the secretariat for confidentiality reasons.

Yes

We only have data from our members on volumes of fishmeal traded and possibly shipped per year.

Annex C Evaluation Requirements



ECONOMIC COMMISSION FOR EUROPE

Evaluation of the global and regional impact of UNECE regulations and United Nations recommendations on the transport of dangerous goods

(2005 – 2014)

I. Purpose

The evaluation will assess the significance of international cooperation in the field of transport of dangerous goods, and the global and regional impact of United Nations agreements and recommendations for the transport of dangerous goods. The evaluation will identify gaps and weaknesses, if any, resulting from the deficient harmonization of national regulations or international legal instruments with the UN Recommendations on the transport of dangerous goods. It will further identify potential initiatives and activities for enhancing the impact of United Nations Recommendations on the Transport of Dangerous Goods and UNECE Agreements (ADR and ADN).

II. Scope

The evaluation will cover UNECE and UN agreements and Recommendations related to the transport of dangerous goods, and their impact at both the regional (UNECE member States) and global levels. The period to be covered by the review is 2005 to 2014. The recommendations from the evaluation will focus on areas addressed by intergovernmental bodies serviced by the UNECE secretariat.

III. Background

As per the UNECE Evaluation Policy (2014), the secretariat of the Commission conducts one programme-level and three sub-programme-level evaluations each biennium. These evaluations assess the impact of the activities in a particular area, build knowledge and give recommendations for further improvements. “The global and regional impact of the regulations on the transport of dangerous goods” was selected for evaluation because it is a significant area of work for the Transport Division which has not been self-evaluated in the past 10 years.

Within the Transport Division, the Dangerous Goods and Special Cargoes Section services the UNECE Working Party on the Transport of Dangerous Goods (WP.15) responsible for regulating road, rail (in cooperation with the Intergovernmental organisation for international carriage by rail (OTIF) (WP:15/AC1) and inland waterways transport of dangerous goods (in cooperation with the Central Commission for the Navigation on the Rhine (WP.15/AC.2), as follows:

- (a) WP.15: European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR);
- (b) WP.15/AC.2: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN); and
- (c) WP.15/AC.1: Harmonization of ADR, ADN and the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) (Appendix C of the Convention concerning international carriage by rail (COTIF)).

The Transport Division also provides secretariat services to the Economic and Social Council (ECOSOC) [Committee of Experts on the Transport of Dangerous Goods \(TDG\) and on the Globally Harmonized System of Classification and Labelling of Chemicals \(SCEGHS\)](#), and its two sub-committees (TDG and SCEGHS sub-committees). The Committee formally endorses the recommendations of its two sub-committees and channels these recommendations to governments, UN specialized agencies and other relevant entities of the UN provisions through ECOSOC. The Committee was created in 1953 when the international community realized that the Governments of countries most interested in the international transport of dangerous goods were independently developing national regulations for the safe transport of dangerous goods by various modes, and recognized that the incompatibilities between these regulations would ultimately present significant barriers to trade.

The mandate of the ECOSOC Committee is to elaborate recommendations addressed to all Governments and international organizations concerned with the safe transport of dangerous goods, to allow the uniform development of national and international regulations. These recommendations are contained in *the [United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations](#)* (also known as the *Orange Book*). They contain all necessary provisions concerning the classification and identification of dangerous goods; their packing conditions, including standards for packaging and tank construction; labelling, marking and placarding of packages and transport equipment; and transport documentation. They apply to all modes of transport while remaining flexible enough to accommodate any special additional requirements that have to be met by specific modes of transport, or at national or regional level.

Although not legally binding per se, the United Nations Recommendations on the Transport of Dangerous Goods are applied worldwide when transposed into international, regional or national legislation for:

- (a) **Maritime transport:** International Maritime Dangerous Goods Code, (International Maritime Organization) (IMO)
- (b) **Air transport:** Technical Instructions for the Safe Transport of Dangerous Goods by Air (International Civil Aviation Organization) (ICAO)
- (c) **Inland international transport** (road, rail, inland waterways):
 - (i) [European Agreement concerning the International Carriage of Dangerous Goods by Road \(UNECE\)](#) known as **ADR**;
 - (ii) [European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways \(UNECE\)](#) known as **ADN**;
 - (iii) Regulations concerning the International Carriage of Dangerous Goods by Rail , Intergovernmental Organization for International Carriage by Rail (OTIF) known as **RID**.

While the United Nations Recommendations on the Transport of Dangerous Goods are applied through national legislation on domestic inland transport in a number of countries, the level of implementation is more difficult to assess as the information available to the UNECE secretariat is largely reliant upon submissions from countries (i.e. information may be incomplete or not up-to-date for those countries which do not provide information at all or on a regular basis). Nonetheless, all EU countries are bound to apply ADR, RID and ADN to domestic traffic, and most non-EU contracting parties to ADR, RID and ADN do so as well. Globally, countries economically interested in international trade of dangerous goods use the United Nations Recommendations for their national legislation, although evidence is available to the UNECE secretariat only for USA, Canada, Mexico, Colombia, Brazil, Australia, New Zealand, South Africa, Malaysia, and Thailand.

Although the international transport of dangerous goods is facilitated by the harmonization of the major international conventions and agreements concerning the transport of dangerous goods with the Model Regulations and their simultaneous updating, the fact that certain national regulations applicable to inland transport are not brought in line simultaneously or completely, continues to cause problems in international trade, in particular in the case of multimodal transport. For that reason, the Committee maintains an item on global harmonization of regulations on the transport of dangerous goods with the Model Regulations in its programme of work.

For these reasons, this evaluation will be a timely review of the impact the United Nations Recommendations on the transport of dangerous goods and related UNECE legal instruments. It will enable the secretariat to consider and propose adjustments to the work programme to further improve coverage and reduce critical gaps in the application of regulations, to ultimately improve safety and reduce barriers to trade in the UNECE region and beyond.

IV. Issues

The evaluation will focus on the **relevance, efficiency, and effectiveness** of the activities serviced by the UNECE secretariat in the field of transport of dangerous goods, and the global and regional **impact** of these related agreements and recommendations.

Key overarching questions have been elaborated to guide the evaluator in its work and to facilitate a common understanding of the objectives of the evaluation between the evaluators and the secretariat. However, the evaluator may propose supplementary or alternative approaches to elicit answers to these questions.

Question 1: Evaluate the **relevance** of the work of the ECOSOC Committee and UNECE in promoting international cooperation in the field of transport of dangerous goods:

To what extent are dangerous goods transported internationally, including multimodal and modal transport worldwide? What are the types of dangerous goods most commonly transported internationally (by mode)?

How does the international cooperation among international/inter-governmental organizations work? Which organizations involved? To what extent has the work of the ECOSOC Committee and UNECE contributed to this international cooperation?

Question 2: Assess the *efficiency* and *effectiveness* of the ECOSOC Committee and UNECE efforts to contribute to harmonising national and international regulations with the Model Regulations annexed to the United Nations Recommendations on the Transport of Dangerous Goods:

To what extent have national regulations applicable to inland transport and legal instruments applicable to international transport have been brought into line simultaneously or completely with the UN Model Regulations?

To what extent have the ECOSOC Committee and UNECE efforts in this regard promoted the application of the United Nations Recommendations and UNECE legal instruments in a) UNECE member States, and b) all UN member States? What particular areas of work contributed to harmonisation? What areas of work have been less effective?

How can further harmonization and implementation be improved or achieved?

Question 3: Evaluate the global and regional *impact* of United Nations agreements and recommendations for the transport of dangerous goods:

To what extent are the United Nations Recommendations on the Transport of Dangerous Goods implemented globally? What are the impacts on multimodal transport (e.g. economic consequences, delays, etc.)?

To what extent have the UNECE legal instruments for inland transport i.e.: road and inland waterways transport (ADR/ADN) and RID for rail transport been implemented and/or been used as models for the development of national/regional legislation in countries which are not Contracting Parties?

To what extent are the United Nations regulatory and capacity building activities on transport of dangerous goods by inland modes of transport are effective regionally and worldwide?

How well are the governance structures aligned with the market trends of growing transport of dangerous goods on roads, railroads and inland waterways?

To what extent have the United Nations Recommendations and the UNECE legal instruments concerning the transport of dangerous goods contributed to international cooperation in this field? Are there any areas for improvement?

How could awareness on the United Nations Recommendations, ADR, ADN and RID be raised in developing countries/regions worldwide? How could their implementation be encouraged? What would be the specific role of UNECE and the transport subprogramme in particular, to raising this global awareness?

V. Methodology

The evaluation will build on existing reviews and relevant information gathered previously to minimize duplication in the data-gathering phase. This shall include information from United Nations sources (e.g. background information provided by the secretariat, information available from other UN bodies or agencies) as well as from other national or international governmental bodies or stakeholders (e.g.: non-governmental organisations).

The evaluator shall provide the secretariat with an inception report within the first two weeks of his/her assignment outlining the final methodology to be conducted to facilitate agreement with the secretariat on the proposed approach to the work. In particular, the evaluator will provide specific methodology for measuring the impact of the activities serviced by the UNECE secretariat and of related recommendations and legal instruments

A. A **desk review** will be conducted of:

- Mandates, legal instruments, and regulations provided on the UNECE [website](#) as regards the documentation of the UNECE bodies or ECOSOC Committees dealing with the development of transport of dangerous goods regulations, their status of implementation, etc.
- The [biennial reports of the Secretary-General](#) to the ECOSOC on the work of the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals.
- Relevant mandates and reports of other organizations active in international cooperation on these issues. The available documents will be provided to the evaluator by the secretariat.
- Any other documents requested by the evaluator for the purpose of conducting the review, if available within the UNECE secretariat.

B. **New data** will be gathered from both internal, and external stakeholders:

- Electronic surveys of relevant stakeholders will be conducted. The evaluator will propose an appropriate methodology during discussions with the secretariat in the inception phase. The secretariat will provide the evaluator with the details of stakeholders relevant to the agreed methodology. Consideration shall be given to the equitable geographical coverage of the evaluation.
- The evaluator will interview relevant UNECE staff working in the area of work of the evaluation based on a methodology to be defined by the evaluator.

VI. Evaluation Schedule

It is expected that the evaluation be completed in a period of two months. The final report is due by 30 October 2015.

A. Preliminary research: To be agreed with evaluator

B. Inception report: Two weeks following the start of work

C. Data Collection: May-June (TBC)

D. Data Analysis: July-September (TBC)

E. Draft Report: 15 October 2015

F. Final Report: 30 October 2015

Consultation between the secretariat and the evaluator on any issue related to the evaluation may be facilitated at any time.

Consultation with an informal advisory group comprised of a restricted number of delegates during forthcoming meetings (ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods, WP.15 and/or RID/ADR/ADN Joint Meeting) may also be envisaged.

At the end of the evaluation period, the evaluator shall prepare a final report. The evaluation report shall be written in English, following the template for evaluation reports in UNECE (to be provided by UNECE upon signing of the contract).

VII. Resources

An expert evaluation consultant will be engaged to conduct the evaluation under the management of the Transport Division. One P5 staff, Mr. Olivier Kervella, Chief of the Dangerous Goods and Special Cargoes Section, Transport Division, will manage the exercise..

VIII. Intended Use/Next Steps

The results of the evaluation, together with its conclusions and recommendations, will be communicated to the UNECE Working Parties dealing with the transport of dangerous goods and to the ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods for information. They will be used to assess the level of implementation of the UNECE agreements and UN Recommendations on the transport of dangerous goods worldwide, as well as the relevance and efficiency of current working practices. The evaluation report and the management response by UNECE will be publicly available on the UNECE website.

Provisional Timetable for the Review ⁵¹

Week beginning	Action
TBC	Desk Review
TBC (2 weeks after the start date)	Inception report
May 2015	Development of survey to stakeholders
June 2015	Interviews with stakeholders
July – September 2015	Data Analysis
15 October 2015	Draft report submitted to UNECE
30 October 2015	Final report submitted to UNECE

⁵¹ Final timetable to be agreed following engagement of the evaluator.

Annex D Bibliography

Regulations

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

UN and UNECE Documents

Recommendations on the Transport of Dangerous Goods – Model Regulations

Review of the implementation of OSCE Commitments in the economic and environmental dimension – Transport of Dangerous Goods

ECOSOC resolution (E2015/66) Resolution adopted by the Economic and Social Council on 8 June 2015 on the recommendation of the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (*E/2015/66*)

TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR GLOBAL ACTION Final draft of the outcome document for the UN Summit to adopt the Post-2015 Development Agenda

Directive 2008/68 of the European Parliament on the inland transport of dangerous goods (O.J.L260, 30.09.2008)

Resolutions adopted by the General Assembly 64/255. Improving global road safety,

Resolution adopted by the General Assembly on 10 April 2014 68/269. Improving global road safety

ADR Road map for accession and implementation

Self Evaluation for the 2002 – 2003 cycle Evaluation of the Activities Relating to the Transport of Dangerous Goods Regulations UNECE, Transport Divisions

Programme of Work Biennial Evaluations – Results of the survey

ECE/TRANS/WP.15/190/Add.1 Terms of Reference of Procedure of the Working Party on the Transport of Dangerous Goods (WP15)

UNECE Questionnaire on Performance Indicators (2008)

European Union and EEC Documents

Evaluation of EU policy on the Transport of Dangerous Goods since 1994 (TREN/E3/432003) published 2005

Stocktaking study on good practices in CBRN transport security: Final report
HOME/2010/ISEC/PR/038-A1(2012),

Final Report HCDG Study EU Ref: TREN/07/ST/S07.76239 (2008)

Analysis of the interaction and coherence between railway and dangerous goods legislation in the
European Union (MOVE/D3/2011-409) Final Report (2012)

Statistical Surveys

United States: 2012 *Hazardous Materials* 2012 Economic Census *Transportation* 2012
Commodity Flow Survey

Top Consequence Hazardous Materials by Commodities and Failure Modes PHMSA(USA) Issue 2,
2011

United States 2007 Economic Census Transportation Commodity Flow Survey

United States 2012 Economic Census Transportation Commodity Flow Survey

US Department of Transportation Pipeline and Hazardous Materials Safety Administration
Transportation of Hazardous Materials 2009 -2010

Eurostats: <http://ec.europa.eu/eurostat/help/first-visit/statistics>

WHO Road traffic deaths data by country: <http://apps.who.int/gho/data/node.main.A997>

Accident Reports

NTSB Air Accident Report Pan American World Airways 707-312 N458PA, November 3 1973
(published 1974)

Closure of the River Rhine at the Lorelei: Estimate of Impact and Allocation of Damage

Dangerous Goods Related Incidents and Accidents in the Baltic Sea Region (DAGOB 7:2007)

Guides to the regulations

*The list below should be seen as indicative it is not comprehensive but illustrates availability of
material.*

Many government web sites provide guidance
The following websites have guidance material

<http://www.icao.int/safety/DangerousGoods/Pages/Guidance-Material.aspx>

This site has a number of guides on various issues including lithium batteries

<https://www.iata.org/whatwedo/cargo/dgr/Pages/index.aspx>

This site has a number of guides on various issues including lithium batteries

Other publications include

http://apps.who.int/iris/bitstream/10665/149288/1/WHO_HSE_GCR_2015.2_eng.pdf

Infectious substances

Shipping Limited Quantities Labelmaster Chicago USA

Lithium batteries Labelmaster Chicago USA

Internationally Harmonized Regulatory Framework Labelmaster Chicago USA

Guides on the transport of aerosols from the FEA and British Aerosol Manufacturers Association

Guides on security

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

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

http://www.iru.org/index/cms-filesystem-action?file=en_pdf_publication/Security%20Guide_goods_eng.pdf **IRU**

<http://www.cifmd.fr> **CIFMD**

www.ecta.be **ECTA**

www.uic.asso.fr/download.php/colpfer/colpomember_security_RID_eng.doc **UIC/COLPOFER**

Annex E Communications with stakeholders

The poor response to the questionnaire placed limitations on the consultant's ability to communicate with stakeholder. The following is a summary of communications

Informal lunchtime working group with SCETDG delegates 22 June 2015 included Austria, Belgium, Netherlands, Sweden USA and NGOs from AEISIG and IATA.

Governments

Brazil

Israel but did not respond to requests

USA

IGO

ICAO

UPU

NGO

DGAC

ICIBCA (Mr Wybenga ex US DOT and Vice Chairman of SCETDG)

IRU

SAAMI

Individuals

Mr J Hart previous chairman

Mr L Grainger Chairman 1986 - 1996