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

Sub-Committee of Experts on the Transport of Dangerous Goods **15 November 2011**

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Item 5 of the provisional agenda
Electronic data interchange for documentation purposes

Electronic data identification

Transmitted by the expert from the United Kingdom

Introduction

1. The Sub-Committee has been appraised of the work being undertaken by the International Air Transport Association (IATA) on a pilot project for e-freight for dangerous goods transport (see UN/SCETDG/39/INF.34 for the latest update. At the same time, in the context of the European RID/ADR/ADN Joint Meeting, a Working Group has been established to look at the possible application of transport telematics for the safe and secure transport of dangerous goods by road, rail and inland waterways (see INF.7 submitted to the September 2011 Joint Meeting). In both cases, the work is some way off reaching a conclusion. One of the things that both work streams have in common is how to identify electronically specific information related to the transport of dangerous goods.

2. There are, of course, numerous commercial applications that provide or support the provision of electronic information for consignors, carriers and others in the logistics chain involved in the transport of dangerous goods.

3. Part of the challenge that all participants in such processes face is exactly what information can be or is required to be transmitted and received electronically. In many cases, such as the generation of a transport document, there is a considerable amount of information that is required and in other cases, such as providing remotely only the key information about a particular consignment to emergency responders necessary to ensure the correct response to an incident. An important challenge that needs to be addressed in many instances is how to encode the words and numbers associated with dangerous goods information into an electronic message of itself a necessarily limited in nature that converts such information into the form of an electronic code that can be read electronically and then converted back into the full form of the data transmitted.

4. Given the global and multi-modal nature of the need to utilise electronic data on the transport of dangerous goods, it would be to the benefit of all users if an appropriate body could provide a simple harmonised system for identifying electronically key transport of dangerous goods data elements. Clearly the body best placed to undertake such a function is the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods. The UN Secretariat might also act as a central repository of assigned identifiers for the purposes of the transport of dangerous goods, irrespective of mode.

5. The most important data relating to a particular substance or article is presented across each row of the Dangerous Goods List in Chapter 3.2 of the Model Regulations. If

this data could be encoded into an electronic 'short-hand', a great deal of useful information could be passed utilising the limited availability of data fields in many diverse systems. This could be achieved if a so-called primary key for the identification of information providing an unequivocal identification of each row in the Dangerous Goods List (DGL) could be assigned. In order to be clear, this is no way changes or affects the current, or future, assignment of the four digit UN number to substances or articles.

6. Clearly, this is an issue which will need detailed consideration and consultation with the modal bodies before it could be finalised. In particular, the modal bodies would need to address where there are differences between their own regulations and the Model Regulations. This paper should, therefore, be considered as an initial thought-starter. The expert from the United Kingdom invites initial reactions and later written comments to enable further development for the next session of the Sub-Committee.

Proposal

7. In the view of the expert of the United Kingdom this could be simple to achieve by applying a five digit alphanumeric (thereby avoiding confusion with the UN number) primary key shown in italics under each UN identification number in Column 1 of the DGL.

8. An example of how this would appear in the Dangerous Goods List is given below:

UN No. and data key	***Name and description***	***Class or division***	***Subsi-diary risk***	***UN packing group***	***Special provi-sions***	***Limited and excepted quantities***		***Packagings and IBCs***		***Portable tanks and bulk containers***	
								Packing instruction	**Special packing provisions**	**Instruc-tions**	**Special provisions**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7a)**	**(7b)**	**(8)**	**(9)**	**(10)**	**(11)**
-	**3.1.2**	**2.0**	**2.0**	**2.0.1.3**	**3.3**	**3.4**	**3.5**	**4.1.4**	**4.1.4**	**4.2.5 / 4.3.2**	**4.2.5**
0004 *00001*	AMMONIUM PICRATE dry or wetted with less than 10% water, by mass†	1.1D				0	E0	P112(a) P112(b) P112(c)	PP26		
0005 *00002*	CARTRIDGES FOR WEAPONS with bursting charge†	1.1F				0	E0	P130			
0006 *00003*	CARTRIDGES FOR WEAPONS with bursting charge†	1.1E				0	E0	P130 LP101	PP67 L1		
0007 *00004*	CARTRIDGES FOR WEAPONS with bursting charge†	1.2F				0	E0	P130			
0009 *00005*	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge†	1.2G				0	E0	P130 LP101	PP67 L1		
0010 *00006*	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge†	1.3G				0	E0	P130 LP101	PP67 L1		

UN No. and data key	*Name and description*	*Class or division*	*Subsi-diary risk*	*UN packing group*	*Special provi-sions*	*Limited and excepted quantities*		*Packagings and IBCs*		*Portable tanks and bulk containers*	
								Packing instruction	**Special packing provisions**	**Instruc-tions**	**Special provisions**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7a)**	**(7b)**	**(8)**	**(9)**	**(10)**	**(11)**
-	**3.1.2**	**2.0**	**2.0**	**2.0.1.3**	**3.3**	**3.4**	**3.5**	**4.1.4**	**4.1.4**	**4.2.5 / 4.3.2**	**4.2.5**
0012 *00006*	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS†	1.4S			364	5 kg	E0	P130			
0014 *00007*	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK or CARTRIDGES FOR TOOLS, BLANK†	1.4S			364	5 kg	E0	P130			

9. This illustrates that the primary key is simply a numeric code that is applied sequentially to each row of the existing DGL in the Model Regulations. The primary key numbers are independent of their sequential position in the DGL (i.e. primary key numbers remain stable, even if inserts are made into the DGL by sub-dividing an existing entry for a particular UN number e.g. by adding additional Packing Group). The example shown below illustrates immediately how a substance with the same UN number and Proper Shipping Name can be differentiated easily by having a different primary key (the numbers used are simply examples):

1866 *00868*	RESIN SOLUTION, flammable	3		I		500 ml	E3	P001		T11	TP1 TP8 TP28
1866 *00869*	RESIN SOLUTION, flammable	3		II		5 L	E2	P001 IBC02	PP1	T4	TP1 TP8
1866 *00870*	RESIN SOLUTION, flammable	3		III	223	5 L	E1	P001 IBC03 LP01	PP1	T2	TP1

10. Whilst this system would work well enough for the Model Regulations, how would this is transferred to the modal regulations when it is known that a modal DGL is not exactly the same as that which appears in the Model Regulations? It is proposed that the other modal bodies assign the same primary key to each row where the key multi-modal information (UN number, PSN, Class, PG, Special Provisions) is identical to that which appears in the Model Regulations. By way of example, primary key identifier 00001, which is assigned to UN 0004, AMMONIUM PICRATE, dry or wetted with less than 10% water, by mass† can be applied to the same entry in the IMDG Code, RID/ADR/ADN and the ICAO TIs (although in the later case only the UN number and PSN are common as this substance is forbidden for transport by air).

11. Where a modal body has an additional entry that does not appear in the Model Regulations or where the same entry is significantly different, this can be assigned a primary key identifier that is unique to that entry by using sequentially pre-determined letters unique to that mode. One way of achieving this would be to use the first character in the five digit identifier to determine which mode the code belongs to. If, for example and

purely for illustrative purposes, the entry for UN 3166 ENGINE, INTERNAL COMBUSTION were different in each mode it could be assigned a mode specific primary key identifier. So, the identifier for this same entry might be:

For UN: 02493 which is simply the sequential number for that row;

For IMDG: A0123 where A indicates sea transport and the entry is the 123rd unique identifier used in the IMDG Code;

For RID: B0095 where 5 indicate rail transport and the entry is the 93rd unique identifier used in RID;

For ADR: C0089 where C indicates road transport and the entry is the 89th unique identifier used in ADR;

For ADN: D0156 where D indicates inland waterway transport and the entry is the 156th unique identifier used in ADN;

For ICAO: E0331 where E indicates air transport and the entry is the 331st unique identifier used in the ICAO TIs.

Even the IATA “Regulations could be catered for:

For IATA: F0479 where F indicates IATA air transport and the entry is the 479th unique identifier used in the IATA “Regulations”. Similarly other recognised DGL lists, such as CFR49, could be assigned an identification letter.

12. A suitable description of the primary key identifier will, of course, need to be included in the explanation of Column 1 in 3.2.1 in due course.