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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
(Twenty-second session, 2-6 December 2002
agenda item(4 (b))

NEW PROPOSALS

New issues

Dangerous Goods List, Wetted Explosives

Transmitted by the expert from the International Air Transport Association (IATA)

IATA presented this paper to the ICAO Dangerous Goods Panel working group (WG 02) in Frankfurt, on September 19, 2002. After discussion, IATA was invited to present the paper to the Sub-Committee for consideration. Some States indicated they had not had sufficient time to consult with the appropriate experts and that they would wish to submit comments. In order not to unduly delay submission of this paper, it is submitted in the form it was submitted to ICAO and may be revised once comments have been received.

Background:

1.1 Reference is made to the report of ICAO DGP/18, Appendix C, Amendments to Table 3.1 - Dangerous Goods List. In this report, new UN numbers for Division 4.1 substances (wetted explosives) were added to the Dangerous Goods List. In analyzing the new additions, anomalies were found that are discussed hereafter. As these anomalies stem from the UN Orange book (12 edition) the

1.2 The wetted explosives under review are indicated in the following table:

Ref #	Status	UN No.	Name	Class or Division	SP	Passenger Aircraft			Cargo Aircraft	
						PG	PaxP	Qty	CarP	Qty
1a	Existing	0154	**Picric acid,** dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
1b	New	3364	**Picric acid, wetted** with not less than 10% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
2a	Existing	0154	**Trinitrophenol,** dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
2b	Existing	1344	**Trinitrophenol, wetted** with not less than 30% water, by mass	4.1	A40	I	416	1 kg	412	15 kg
2c	New	3364	**Trinitrophenol, wetted** with not less than 10% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
3a	Existing	0155	**Picryl chloride**	1.1D		FORBIDDEN			FORBIDDEN	
3b	New	3365	**Picryl chloride, wetted** with not less than 10% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
4a	Existing	0155	**Trinitrochlorobenzene**	1.1D		FORBIDDEN			FORBIDDEN	
4b	New	3365	**Trinitrochlorobenzene, wetted** with not less than 10% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
5a	Existing	0209	**TNT,** dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
5b	New	3366	**TNT, wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg
6a	Existing	0209	**Trinitrotoluene,** dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
6b	Existing	1356	**Trinitrotoluene, wetted** with not less than 30% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
6c	New	3366	**Trinitrotoluene, wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg
7a	Existing	0214	**Trinitrobenzene**, dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
7b	Existing	1354	**Trinitrobenzene, wetted** with not less than 30% water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
7c	New	3367	**Trinitrobenzene, wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg
8a	Existing	0215	**Trinitrobenzoic acid,** dry or wetted with less than 30% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
8b	Existing	1355	**Trinitrobenzoic acid, wetted** with not less than	4.1	A40	I	416	0.5 kg	416	0.5 kg

Ref #	Status	UN No.	Name	Class or Division	SP	Passenger Aircraft			Cargo Aircraft	
						PG	PaxP	Qty	CarP	Qty
			30% water, by mass							
8c	New	3368	**Trinitrobenzoic acid, wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg
9a	Existing	0234	**Sodium dinitro-o-cresolate** dry or wetted with less than 15% water, by mass	1.3C		FORBIDDEN			FORBIDDEN	
9b	Existing	1348	**Sodium dinitro-o-cresolate**, **wetted** with not less than 15% water, by mass	4.1 & 6.1 (sub risk)	A40	I	416	1kg	412	15 kg
9c	New	3369	**Sodium dinitro-o-creosolate**, **wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg
10 a	Existing	0220	**Urea nitrate** dry or wetted with less than 20% water, by mass	1.1D		FORBIDDEN			FORBIDDEN	
10 b	Existing	1357	**Urea nitrate, wetted** with not less than 20% water, by mass	4.1	A101	I	416	1kg	412	15 kg
10 c	New	3370	**Urea nitrate, wetted** with not less than 10% water, by mass	4.1		I	416	0.5 kg	416	0.5 kg

1.3 In comparing the existing wetted explosives in the 2001-02 ICAO Technical Instructions with the new UN entries mentioned in the DGP/18, the following inconsistencies were found:

a) Of the ten (10) new wetted explosives entries, only four (4) had Special Provision A40 assigned, i.e. UN 3364 (Picric acid and Trinitrophenol) and UN 3365 (Picryl chloride and Trinitrophenol). It was also noted in DGP/18, Item 2.4.8.6 that Special Provision A40 (SP 28 in the UNCOE) would be assigned to all the wetted explosive entries. That was not followed through for UN 3366, 3367, 3368, 3369.

b) On a similar note, the new entry for Urea nitrate (UN 3370) was not assigned the Special Provision A101 as the similar existing Urea nitrate entry (UN 1357).

c) The existing wetted explosive Sodium dinitro-o-cresolate UN 1348 (Ref #9b) requires a water concentration not less than 15% and is classified under Division 4.1 with a toxic sub-risk (6.1). The new entry UN 3369 (Ref #9c) has a water concentration not less than 10% but is classified under 4.1 only. UN 3369 is more concentrated than the existing wetted explosive UN 1348, but does not have the sub-risk 6.1.

d) Three (3) new Division 4.1 entries (UN 3366, 3367 and 3368) have identical packing group, packing instruction and quantity limitations for passenger and cargo aircraft as the existing Division 4.1 entries (UN 1356, 1354 and 1355, respectively) with the only difference being the water concentration. The new entries require a water concentration not less than 10% while the existing entries require a water concentration not less than 30%. In addition, the Division 1.1D entries of these substances (UN 0209, 0214 and 0215) require a water concentration less than 30%.

The various water concentrations of the same substance overlap and cause confusion. For example, if one was to ship such a wetted explosive with 35% water concentration, both the new and existing Division 4.1 wetted explosives would apply. However in this case, the packing instructions and quantities would be the same. But if one was to ship a wetted explosive with 20% water concentration, both the new Division 4.1 wetted explosive and the existing Division 1.1D wetted explosive which is completely forbidden would apply. Hence, the need for clarification.

e) There are three (3) cases with double nomenclature entries (Ref #1-6). Picric acid (Ref #1) with Trinitrophenol (Ref #2), Picryl chloride (Ref #3) with Trinitrochlorobenzene (Ref #4) and finally TNT (Ref #5) with Trinitrotoluene (Ref #6). Most entries in the Dangerous Goods List make reference to the proper chemical name.

f) Trinitrophenol (Ref#2) has three different entries for various water concentrations, however Picric acid (Ref#1), the same substance, has only two entries. The same case applies to TNT (Ref#5) with Trinitrotoluene (Ref#6). It is proposed to add UN 1344 (Ref#2b) as an entry under Picric acid and to add UN 1356 (Ref#6b) as an entry under TNT.

2. PROPOSAL

2.1 The following proposals are described below to resolve the inconsisties listed above in 1.3.

a) Add Special Provision A40 to UN 3366, 3367, 3368 and 3369.

b) Add Special Provision A101 to UN 3370.

c) Add sub-risk 6.1 to UN 3369.

d) It is proposed to amend the water concentration of the new UN wetted explosive entries (UN 3366, 3367 and 3368) and to delete the othername description of the Division 1.1D entries for UN 0209, 0214 and 0215. This would eliminate the water concentration overlap. Please refer to the table below for the proposed modifications:

Ref #	Status	UN No.	Name	Class or Division	SP	Passenger Aircraft			Cargo Aircraft	
6a	Existing	0209	**Trinitrotoluene**	1.1D		FORBIDDEN			FORBIDDEN	
6b	Existing	1356	**Trinitrotoluene, wetted** with 30% or more water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
6c	New	3366	**Trinitrotoluene, wetted** with not less than 10% but less than 30& water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
7a	Existing	0214	**Trinitrobenzene**	1.1D		FORBIDDEN			FORBIDDEN	
7b	Existing	1354	**Trinitrobenzene, wetted** with 30% or more water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
7c	New	3367	**Trinitrobenzene, wetted** with not less than 10% but less than 30& water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
8a	Existing	0215	**Trinitrobenzoic acid**	1.1D		FORBIDDEN			FORBIDDEN	
8b	Existing	1355	**Trinitrobenzoic acid, wetted** with 30% or more water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg
8c	New	3368	**Trinitrobenzoic acid, wetted** with not less than 10% but less than 30& water, by mass	4.1	A40	I	416	0.5 kg	416	0.5 kg

After reviewing the proposed changes above, the need for the existing Division 4.1 entries (UN 1356, 1354 and 1355) requires clarification. Their parameters remain the same as the new entries of UN 3366, 3367 and 3368 with the only difference being the new 10% water concentration. A clarification by the UNSCOE explosive experts is required.

e) It is proposed that Picric acid, Picryl chloride and TNT refer to their respective proper chemical name. Please see table below for the modifications.

1a	Existing	Picric acid, dry or wetted with less than 30% water, by mass, see **Trinitrophenol,** dry or wetted with less than 30% water, by mass (UN 0154)
1b	New	Picric acid, wetted with not less than 10% water, by mass, see **Trinitrophenol, wetted** with not less than 10% water, by mass (UN 1356)
3a	Existing	Picryl chloride, see **Trinitrochlorobenzene** (UN 0155)
3b	New	Picryl chloride, wetted with not less than 10% water, by mass, see **Trinitrochlorobenzene**, wetted with not less than 10% water, by mass (UN 3365)
5a	Existing	TNT, dry or wetted with less than 30% water, by mass, see **Trinitrotoluene**, dry or wetted with less than 30% water, by mass (UN 0209)
5b	New	TNT, wetted with not less than 10% water, by mass, see **Trinitrotoluene, wetted** with not less than 10% water, by mass (UN 3366)

f) It is proposed to add the following two entries in Table 3.1:

- Picric acid, wetted with not less than 30% water by mass (UN 1344); and
- TNT, wetted with not less than 30% water by mass (UN 1356).
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	Add	Picric acid, wetted with not less than 30% water, by mass, see **Trinitrophenol, wetted** with not less than 30% water, by mass (UN 1344)
	Add	TNT, wetted with not less than 30% water, by mass, see **Trinitrotoluene, wetted** with not less than 30% water, by mass (UN 1356)

2.2 According to the DGP/18 Report, Item 2.4.8.6, the ICAO Secretary was asked to raise the issue of UN 0209, 1356 and 3366 for resolution by the UNSCOE explosive experts. It appears this issue is still pending.

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