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**COMMITTEE OF EXPERTS ON THE TRANSPORT  
OF DANGEROUS GOODS**

**Sub-Committee of Experts on the  
Transport of Dangerous Goods**  
(Eighteenth session, 3-14 July 2000,  
agenda item 5 (a))

**MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS  
ON THE TRANSPORT OF DANGEROUS GOODS**

**Listing and classification**

**Water-wetted and phlegmatized explosives**

**Transmitted by the expert from the United Kingdom**

During the finalisation of the UN packing instructions in the last biennium a series of anomalies in the UN text for water-wetted explosives were identified. A partial solution (editorial) enabling the UN secretariat to finish the 11th edition was identified but following discussions it was agreed that there was a classification difficulty and that some long-term solution was required.

This paper identifies a number of classification and packaging problems. It is a revision of the UK's earlier paper, ST/SG/AC.10/C.3/1999/80, presented during the December 1999 Sub-Committee meeting. It takes into account comments from other experts at that meeting and also the proposals from the expert from the USA in his paper ST/SG/AC.10/C.3/1999/85 and written comments received from other experts since the last Sub-Committee session.

**A. CLASSIFICATION**

A difficulty arises in assessing which United Nations numbers should be assigned to certain water-wetted explosives of Class 1 which, by Special Provisions 15 and 18 can be considered as substances of Division 4.1 which can be carried in the restricted quantities specified in those Special Provisions.

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**Special Provision 15** applies to UN numbers 0154, 0155, 0209, 0214, 0215 and 0234 and reads:

“ For small quantities of not more than 500 g per package, this substance with not less than 10% water, by mass, may also be classified in Division 4.1, subject to packing instruction P406.”

**Special Provision 18** applies to UN Number 0220 and reads;

“ For quantities of not more than 11.5kg per package, this substance, with not less than 10% water, by mass may also be classified in Division 4.1, subject to special provisions with respect to packaging.”

In RID/ADR (1999 Editions and Restructured text), these 7 substances have been included in Class 4.1, using the same UN numbers as if they were in Class 1. In the IMDG code, the 7 substances have been included on the same page and under the same UN Number as the equivalent water- wetted explosive rightly classified as Class 4.1. The situation has therefore arisen that in RID/ADR the same UN Number has been used in two Classes and in the IMDG Code, the same UN Number appears to be used in one Class for two differing Proper Shipping Names. To give as an example;

Substance	UN	RID/ADR	IMDG Code
TRINITROPHENOL, dry or wetted with less than 30% water, by mass	Division 1.1D UN No 0154	Class 1, item 4 Division 1.1D UN No 0154	Class 1 Division 1.1D UN No 0154
TRINITROPHENOL, WETTED with not less than 30% water, by mass	Division 4.1 UN No 1344	Class 4.1, item 21 (a)1 UN No 1344	Class 4.1 (p 4180) UN No 1344
TRINITROPHENOL, WETTED with not less than 10% water, by mass	Division 4.1 By SP 15 UN No?	Class 4.1, item 21 (a)2 UN No 0154	Class 4.1 (p 4180) UN No 1344?

49 CFR has no special provision shown against UN number 0154 but does include the equivalent of Special Provision 15 in its Special Provision 23 against UN Number 1344.

The difficulties outlined above do not impact on the ICAO Technical Instructions since water wetted explosives of Class 1 are forbidden by air.

The same anomalies as shown for Trinitrophenol in the Table above will also be found for the other 6 water- wetted explosives.

If the RID/ADR route were to be followed then the UN would be allowing Class 1 numbers, which are a unique group, to apply to another Class. The expert from the United Kingdom suggests that this would appear to set a precedent which the UN would not necessarily want to follow, for any Class, when the UN number is perhaps the information of most help in an emergency. However within RID /ADR the problem has at least been recognised and an attempt made to address it. In the circumstances the UK believes the preferred option would be to create proper Division 4.1 entries for these 7 water- wetted explosives by creating new separate entries.

## Proposal

1. Allocate a new UN number to the existing UN numbers 0154, 0155, 0209, 0214, 0215 and 0234, amend the proper shipping names to indicate "wetted with not less than 10% water by mass" and assign to them PP 24 (suitably amended to take account of the new UN numbers.)  
For example:

3XXX	TRINITROPHENOL, WETTED with not less than 10% water by mass	4.1	PG 1	P406 PP24
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(this would then be similar to the approach adopted for UN numbers 0401 and 2852)

2. Allocate a new UN number to the existing UN 0220 UREA NITRATE, amend the proper shipping name to indicate "wetted with not less than 10% water by mass" and add a new PP XX (based on PP24 but with a weight restriction of 11.5kg)
3. Special Provisions 15 and 18 should be deleted from Chapter 3.3 and from all the UN numbers against which they appear.

If deemed necessary the United Kingdom is prepared to assist the Secretariat in formulating the detailed amendments to the Model Regulations.

## B. PACKAGING

Packing Instruction 406 will apply to the following UN numbers:

UN number	PG	SP	PP
1310	I	28	24/44
1322	I	28	44
1336	I	28	
1337	I	28	
1344	I	15/28	24/44
1347	I	-	25/44
1349	I	28	44
1354	I	15/28	24
1355	I	15/28	24
1356	I	15/28	24
1357	I	18/227	
1517	I	28	44
2852	I	114	24
3317	I	28	44
1320	I	28	44
1348	I	28	24
1571	I	-	
1321	I	28	44
3344	II	272/274	44
2907	II	127	44

**The problems and proposed solution:**

1.SP28: As SP 28 addresses water-wetted explosives, SP 28 is relevant to certain substances to which it is not assigned at present.

Proposal: Add SP 28 to UN Nos. 1347,1357, 1571 and 2852

2. Two substances are solids and therefore SP 28, which is assigned to them at present, is not relevant. A solid phlegmatizer is used and a loss of a volatile phlegmatizer is not possible.

Proposal : Delete SP 28 from UN 2907 and UN 3344.

3. The current SP 227 reads:

"This substance may be carried under provisions other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert material the content of urea nitrate may not exceed 75% by mass and the mixture shall not be capable of being detonated by the Series 1, type (a), test in the Recommendations on the Transport of Dangerous Goods, Manual Tests and Criteria, Part 1."

The first sentence is surely the same on SP28 (see above). The second sentence may be relevant to UN 2907.

Proposal: Delete first sentence to align with the proposal at 1 above.

Finally, most of the water-wetted explosives are currently assigned to Packing Group 1. Two, however, UN 2907 and 3344, are assigned to Packing Group II. This appears to be on the basis that over-confinement may be a problem. Perhaps these should more properly be assigned on the basis of classification criteria to PG 1. They could be assigned to Packing Instruction P 406 with a new PPXX " For UN numbers 2907 and 3344 packagings shall meet the Packing Group II performance level. Packaging meeting the test criteria of Packing Group 1 shall not be used" . UN 2907 is permitted in IBCs. Thus IBC06 should attract a similar Packing Provision. The Sub Committee is invited to discuss this approach.

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