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Reports of informal working groups

Report of the informal working group on carriage in bulk

Transmitted by the Government of the United Kingdom on behalf of the working group[1, 2]

Summary

Explanatory summary: This document presents the report of the informal working group on carriage in bulk. The report summarises the discussions of the working group on the principle of revising the bulk code system, and the detail of integrating VV/VW codes into the BK code system. Conclusions of the working group are also presented.

Action to be taken: None.

Related documents: ECE/TRANS/WP.15/AC.1/2011/16 Indicative text on the revision of the system of bulk codes in RID/ADR/ADN

[1] In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para.106, ECE/TRANS/2010/8, programme activity 02.7 (c)).

[2] Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2011/15.

Report

1. The working group met in London from 4 to 6 October 2010 under the chairmanship of Jeff Hart (United Kingdom) and was attended by representatives of Belgium, Germany, France, Netherlands, Poland, Romania, Spain, Sweden, United Kingdom and the following non-governmental organizations: International Union of Railways (UIC) and International Association of the Body and Trailer Building Industry (CLCCR).

2. The working group agreed on the agenda and terms of reference. The documents on the agenda for discussion were as follows:

(a) ECE/TRANS/WP.15/AC.1/2010/25 and informal documents INF.3 and INF.14 (United Kingdom) of the March 2010 Joint Meeting;

(b) Informal document INF.20 (UIC) of the March 2010 Joint Meeting;

(c) Informal document INF.33 (Portugal) of the March 2010 Joint Meeting;

(d) Comments paper from Hungary on ECE/TRANS/WP.15/AC.1/2010/25;

(e) Comments paper from Romania on ECE/TRANS/WP.15/AC.1/2010/25;

(f) Discussion document from the United Kingdom.

3. The working group began with the Chair giving a brief history on the two systems currently in use; the RID/ADR system of using VV/VW special provisions and the system derived from the UN Model Regulations which uses BK codes. The VV/VW special provisions have been developed on an ad-hoc basis over time with no record of the intent and principles behind the system and there does not seem to be a rationalised approach. The UN system was developed more recently through a working group in the framework of the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods with the intention of being multi-modal. Currently it covers a limited range of substances but once the system had bedded down for a few years then additional substances could be added on a case by case basis.

4. The discussion of the working group on the principle of harmonization included arguments for and against harmonization. The following main points were raised:

- Although some felt that harmonization of the two systems was unnecessary on the grounds of safety, as they felt that the existing dual system has existed for years without problem, others felt that the VV/VW system was not fit for purpose.
- The International Maritime Dangerous Goods (IMDG) Code also has not adopted BK1 (sheeted bulk containers), which some believed makes true harmonisation impossible. Others argued that the IMDG code may introduce BK1 in the future and this should not preclude the use of BK1 and BK2 as provided for by the UN Model Regulations. The IMDG code currently only allows bulk transport for a very limited range of substances. This may be reviewed in the context of possible future revision of the UN Model Regulations.
- As BK1 and BK2 do not contain much detail a compromise should be made to incorporate more of the detail contained in the VV/VW system e.g. substance specific provisions. The necessary detail would then be included as a special provision but not in the current VV/VW form.
- There was general agreement that the reasons for some of the content of the VV/VW provisions were not generally known. However, the proposals contained within ECE/TRANS/WP.15/AC.1/2010/25 needed further work and examination.

- It was agreed that no changes to the existing BK system of RID/ADR would be proposed by the working group as this should be undertaken at the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods level. Any perceived inconsistencies relating to provisions in the UN Model Regulations would be discussed but referred to the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods for consideration.
- It was noted that some substances could only be carried in bulk in the BK system and that some parts of the VV/VW provisions were identical to those in the BK system.
- There was general agreement that the bulk provisions could be made clearer, rationalised, and more modern and user-friendly.

Containers not conforming to the International Convention for Safe Containers

5. It was recognised that if the VV/VW system was removed and subsumed in some way into the BK system then when bulk transport involved a container which did not fulfil the requirements of the International Convention for Safe Containers (CSC), competent authority approval would be required. This caused concern for some as it was felt that this was not currently required and would have cost and resource implications for competent authorities. However, some argued that the approval process did not need to be an onerous task for the competent authority (Germany and the United Kingdom presented their newly developed approval systems for the groups information) or as an alternative, a common approval process could be written into RID/ADR to reduce their burden further.

6. The working group felt that in order to progress their work further an agreement was required on this principle. It was therefore agreed by a majority of the working group to develop text for RID/ADR which would include criteria for an approval process for BK containers which would avoid the need for each RID/ADR competent authority to develop their own approval criteria and process.

7. With this agreement reached between the majority of participants, the working group proceeded to examine each VV/VW code allocation with reference to ECE/TRANS/WP.15/AC.1/2010/25.

VV1/VW1

8. These codes have no special requirements and are generally assigned to Class 4.1 Packing Group III substances with two exceptions: UN No. 1408 Ferrosilicon (Class 4.3) and UN No. 3077 Environmentally hazardous substance, solid, n.o.s (Class 9). It was noted that sheeted small containers seemed to be excluded but no one could explain this or prove why their use may be unsafe.

Conclusion: 1) With the exception of one participant it was agreed to apply BK1 and BK2 to the substances currently assigned VV1/VW1. This provision would also include small containers.

VV1/VW1 and VV5/VW5

9. This combination has only been allocated to one substance, UN No. 3170, Class 4.3, Packing Group III. It was noted that BK1 and BK2 had already been allocated to this entry but that the two VV/VW provisions contradict each other. VV5/VW5 specifies that "specially equipped" wagons should be used but it was not known what this meant; in addition they should be "closed hermetically". However, the term "closed hermetically" is not defined.

Conclusion: 2) The term "specially equipped" appears in a number of VV/VW codes but it is not defined anywhere. There was no understanding of what this term means within the working group.

Conclusion: 3) With the exception of one participant the working group agreed to maintain the existing BK code allocation.

VV2/VW2

10. These have been allocated to only one entry UN No. 1334, Class 4.1 Packing Group III. It was questioned why this was different from other 4.1 Packing Group III substances? The provisions specify that metal and a non-combustible sheet is to be used. However it was noted that the packing instructions for this product (P002, IBC08 and LP02) do not specify this requirement. It was also noted that the IMDG Code mentions that naphthalene emits flammable vapours.

Conclusion: 4) It was decided to maintain the BK1 and BK2 allocation and add a special provision that surfaces in contact with the substance should be metal.

VV3/VW3

11. These are assigned to three UN numbers from different classes and packing groups. It is not clear why there are differences between the road and rail provisions. VW3 additionally specifies that suitable measures need to be taken to prevent any loss of contents, particularly liquid. Both provisions call for "adequate ventilation" which the working group felt was a necessary condition in addition to the BK1 and BK2 provisions which could be specified for these substances using a special provision.

Conclusion: 5) BK1 and BK2 are to be assigned to these substances.

Conclusion: 6) A special provision is to be allocated for these substances which specifies that ventilation is a requirement.

Conclusion: 7) The United Nations Sub-Committee of Experts on the Transport of Dangerous Goods will be asked to look into a requirement for "adequate ventilation" for certain substances and provision for "leakproof or rendered leakproof, for example by use of a stout inner lining" for UN No. 3175.

VV4/VW4

12. These have been assigned to Class 4.2, Packing Group III substances. Again, there was a requirement to use metal containers but these provisions also limited some entries to carriage as solid waste only. As these substances were self heating it was decided that the metal requirement would need to be retained but it was agreed that a non combustible liner could be used instead.

Conclusion: 8) BK1 and BK2 are to be assigned to these substances.

Conclusion: 9) A special provision is to be allocated to these substances which specifies that metal containment or a non combustible liner is required.

Conclusion: 10) The Joint Meeting is to decide on whether it is necessary to limit transport in bulk of the eight listed entries to solid waste only.

VV5/VW5

13. These have generally been assigned to Class 4.3, Packing Group III entries with the exception of two Packing Group II substances. It was proposed to apply BK2 to these substances. The Chair questioned what was meant by "hermetically closed" as it is not

defined in RID/ADR. Some felt that it was a more stringent term than "watertight" and as the substances covered produced dangerous gases when in contact with water they felt it was necessary to retain this provision. It was suggested that this could be covered by a special provision.

Conclusion: 11) The Joint Meeting is to consider developing a description of what "hermetically closed" means, particularly for bulk transport.

Conclusion: 12) Assign BK2 to Class 4.3 Packing Group II and III and add a special provision for Packing Group II and Packing Group III entries which specifies "hermetically closed".

VV5/VW5 and VV7/VW7

14. These have been assigned to two Class 4.3 Packing Group III substances (UN No. 1405 and UN No. 2844). The working group questioned why VV7/VW7 requires the substance to be in pieces and why these entries are treated differently to other substances in the same class and packing group? It was felt that the surface area of pieces rather than powder led to the difference in the provision for these substances. Their physical state leads to their classification.

Conclusion: 13) For both entries assign BK1 and BK2 when the substance is in pieces but in other forms they should be assigned BK2 only.

Conclusion: 14) Assign the special provision which specifies "hermetically closed" to these entries for carriage in BK2.

VW6 and VV3

15. These have been assigned to one substance, UN No. 3170, Class 4.3 Packing Group II. It was questioned why the Packing Group II version of UN No. 3170, did not attract the provision of hermetically closed whereas the Packing Group III version does (see paragraph 9). As VW6 and VV3 contained opposing provisions, it was agreed that their current allocation makes no sense.

Conclusion: 15) As with the other Class 4.3 substances it was agreed that this substance would be allocated BK1 and BK2 when in pieces and BK2 when in other forms.

VV7/VW7

16. This code applies to UN No. 1405 Calcium silicide, Class 4.3, Packing Group II.

Conclusion: 16) Treat the same as other Class 4.3 substances and the secretariat will be asked to find the original documents on this item to establish the reasoning behind its and other Class 4.3 substances allocation to these provisions when in pieces.

VW8/VV8

17. These have been allocated to Class 5.1 Packing Group II and Packing Group III entries. Two issues were identified from these provisions, firstly the construction requirements specified and secondly that for transport by road a "full load" is required. For the first issue the general requirements of 7.3.2.5 and 7.3.1.6 already cover compatibility issues for the substance and the container which has a similar meaning to the text for the VW8/VV8 provisions. It was felt however that the text of 7.3.2.5 could do with some amending to specify that the substance cannot come into contact with any combustible material. For the second issue, although "full load" is defined in 1.2.1 it was recognised that it is old text and perhaps not necessary. The working group was split on whether the

existing text of 7.3.1.12 when used in conjunction with 7.3.1.7 makes the "full load" provision unnecessary.

Conclusion: 17) The meeting will recommend BK1 and BK2 with a suggestion to the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods that changes to 7.3.2.5 are made.

Conclusion: 18) Further clarification was needed on the original intent of these provisions.

VW9 and VV3

18. These are allocated to three Class 9, Packing Group II and III substances. The working group was unsure why there were differences between the road and rail provisions and the second sentence of VW9 is only relevant for Class 8 substances. There were also questions over why ventilation was a requirement.

Conclusion: 19) These substances should be assigned to BK1 and BK2 and it should be checked whether ventilation is necessary.

VV9/VW9

19. These have been assigned to Class 6.1 Packing Group III and Class 8 Packing Group II (3 entries) and Packing Group III substances. The main issue identified was that these provisions required containers for Class 8 substances to be equipped with a suitable and sufficiently stout inner lining to prevent long-term corrosion (although this is not stated in the text). Spain felt that BK1 should not be allowed for fine grained substances of Class 6.1 as sheeted containers might be affected by wind. Spain may submit a paper to the Joint Meeting suggesting the removal of provisions which allow transport in sheeted containers.

Conclusion: 20) The majority agreed to assign BK1 and BK2 to these substances.

Conclusion: 21) A proposal to amend 7.3.2.8 of the UN Model Regulations should be made to stipulate the requirement for a suitable and sufficiently stout inner lining for Class 8 to protect both the bulk container and the transport unit from corrosion damage.

VV10 and VW10

20. These have been assigned to two UN numbers, UN Nos. 3243 and 3244 which were already assigned with BK1 and BK2. The main concern here was to ensure that the containers were leakproof as the substances contained liquids.

Conclusion: 22) The working group agreed that the same special provision be assigned to these substances as for UN No. 3175 (see paragraph 11) specifying that containment was required to be leakproof or rendered leakproof.

VV11 and VW11

21. These provisions are assigned to UN No. 3291, Clinical waste, Class 6.2 Packing Group II which has already been assigned to BK2. The Chair drew attention to the comments sent by Hungary regarding the costs of using the BK system instead of VV/VW for UN No. 3291 and others sympathised with their view. It was argued however that 7.3.2.6.2 already includes comprehensive requirements for UN No. 3291. Concern centred on the "hermetically closed" requirement in VW11 and the "airtight connections" requirement of VV11. During discussion it was clear that the working group required more information on how competent authorities were currently complying with VV11 and VW11.

Conclusion: 23) It was agreed to leave this debate pending until healthcare professionals in competent authorities can be consulted. The Joint Meeting should then decide on what the bulk transport provisions for UN No. 3291 should be.

VV12 and VW12

22. These have been assigned to one entry, UN No. 3257 Elevated temperature liquid, n.o.s. There was no intention to replace these with a BK code but instead have the current text as a special provision which is based on the text in special provision 232 of the UN Model Regulations.

Conclusion: 24) The content of VV12 and VW12 will be retained but entered as a special provision in Chapter 3.3.

VV13/VW13

23. These have also been assigned to one entry, UN No. 3258 Elevated temperature solid n.o.s. The debate mirrored that for VV12 and VW12 above.

Conclusion: 25) The content of VV13 and VW13 will be retained but entered as a special provision in Chapter 3.3.

VV14 and VW14

24. These have been assigned to four entries of Class 8, used batteries. There was no suggestion to allocate a BK code to these entries but to introduce a special provision for carriage in bulk.

Conclusion: 26) The content of VV14 and VW14 will be retained but entered as a special provision. The location of this text is yet to be decided upon.

VV15 and VW15

25. These have been assigned to four entries of Class 9, Packing Group II covering polychlorinated biphenyls etc. The working group noted that some of the text had recently been updated at the Joint Meeting for entry into force in 2013. In principle these substances were similar to inert solids containing toxics and corrosives (see paragraph 20) and they could be allocated BK1 and BK2.

Conclusion: 27) The majority accepted that these entries can be assigned BK1 and BK2 with a special provision containing the detail of the concentration limits required and a provision for "leakproof or rendered leakproof, for example by use of a stout inner lining".

VV16 and VW16, VV17 and VW17

26. All of these provisions have been applied to Class 7 entries. As the current text of these provisions already refers to another section of RID/ADR (4.1.9.2.3) it was felt that they were superfluous.

Conclusion: 28) For these entries "see 4.1.9.2.3" will be inserted into Table A.

Location of new special provisions in RID/ADR

27. After a lengthy debate over the most suitable location for the new special provisions and taking into account who would need to use them and the need for them all to be located in the same place, it was agreed that the new special provisions should go into Chapter 7.3 of RID/ADR and therefore be referenced in column 17 of Table A. The working group did not decide on how these special provisions would be numbered or referenced but suggested examples included:

- BKe 1, 2, 3 etc.
- K1, 2, 3 etc.
- BKSP 1, 2, 3 etc.

Location of RID/ADR bulk codes

28. As BK codes were already included in column 10 of Table A for multi-modal transport in bulk which was also aligned with their referencing in the UN Model Regulations, there was resistance within the working group to remove these codes from Column 10. The working group agreed that there was a need to differentiate between transport in bulk which was permitted multi-modally and transport which was only permitted by road and rail.

29. The working group concluded that multi-modal bulk transport would continue to be referenced in Column 10 of Table A and Column 17 would be used to reference bulk provisions which permitted transport by road/rail only. This would ensure that all bulk provision information relating to road and rail transport could be found in one place in RID/ADR.

Containers not conforming to the CSC and Competent Authority Approval Scheme

30. Concern had been raised in the working group that if the VV/VW system is removed from RID/ADR and is replaced with the BK system then the competent authority would incur additional costs and resources in order to approve BK containers which do not conform to the CSC. Under 6.11.4.4 these containers are subject to approval by the competent authority which includes designating a code for the type of container (i.e. BK1 or BK2) and the requirements for inspection and testing as appropriate. When using the VV/VW system, this competent authority approval is not required.

31. One participant expressed the opinion that the majority of the "non CSC containers" would be the load compartments of vehicles and wagons. As the approval would only deal with the strength and mechanical resistance of those compartments and their accessories, it was argued that the rules for approval would be independent of the dangerous properties of the goods (comparable to the provisions of 6.11.3.1 to 3 for the CSC-containers) and that ADR/RID would therefore surpass its competence (which lies with Vehicle Regulations administered by the World Forum for Harmonization of Vehicle Regulations (WP.29) and with the Convention concerning International Carriage by Rail (OTIF).

32. The working group discussed removing the burden on competent authorities by developing technical specifications within RID/ADR for the approval of non CSC containers. Some felt that it would be impossible to include all the necessary technical data for all types of container. General requirements for non CSC containers are already contained within 6.11.4.2 which was considered insufficient to allow competent authority approval by some working group participants.

33. It was suggested that there was no reason why the text contained within 6.11.3, the requirements for the design, construction, inspection and testing of CSC containers, could not be the requirements for any type of container (specifically 6.11.3.1.3 up to 6.11.3.2.3). This text has already been agreed and as such could provide the technical specification for non CSC containers. It was recognised that initially this text would be for road and rail transport only. On the question of how to reference the criteria for containers to avoid the need for competent authority approval, draft text for 6.11.4 of RID/ADR was developed. This specified the construction requirements of these containers by referencing existing construction standards such as International Union of Railways (UIC) leaflets. Where construction standards are not available, the general provisions of 6.11.4.2 together with 6.11.3.1.3 up to 6.11.3.2.3 would be used as base requirements.

34. Some delegates disagreed and pointed out that these base requirements were deemed insufficient to start with, and that appropriate construction standards will not be available in a lot of cases (e.g. for road vehicles).

Transitional measures

35. The original proposal from the United Kingdom in ECE/TRANS/WP.15/AC.1/2010/25 was to allow existing bulk containers to be used for the rest of their life as long as they are still fit for purpose. The new BK provisions would be included in the 2013 edition of RID/ADR/ADN but compliance with them would not be a requirement until 1 July 2015.

36. The majority agreed with these transitional measures but it was felt that there was a need to identify or mark bulk containers which were being used under the old system. To prevent the need for this it was agreed that old bulk containers could be re-assessed e.g. within five years, and could then be used under the new bulk provisions. If the bulk container is not re-assessed within this time then it can no longer be used for transporting dangerous goods in bulk.

Marking

37. Containers which conform to the CSC are required to be marked with a safety approval plate. Currently there is no requirement to mark non CSC containers under Chapter 6.11.4 or containers which use RID/ADR bulk transport provisions. It was argued that manufacturers of bulk containers could be required to contact the competent authority when a new design type of bulk container is developed in order to obtain a unique identifier number from the competent authority. It is then the manufacturer who declares conformity with RID/ADR and not the competent authority.

38. Some participants stated that it would not be an onerous task for the competent authority to establish a similar process as has already been developed for the transport of fireworks. This also ensures that competent authorities can have as much or as little involvement as they like in the notification process.

39. A majority of the working group agreed that such a system could be set up for the marking of BK containers.

Transport document

40. The working group was of the opinion that the statement "Bulk container BK(x) approved by the competent authority of…", which is required for bulk containers conforming to 6.11.4, need not be introduced for carriage in bulk according to 7.3.3, in spite of the fact that this will create a disharmony with the UN Model Regulations.

Conclusion of the working group

41. The report, including outstanding issues, will be submitted to the Joint Meeting for consideration at the March 2011 meeting.

42. The United Kingdom will prepare a draft proposal for amending the regulations, according to the outcome of the discussion in the working group and highlighting where text will depend on decisions of principle that need to be taken by the Joint Meeting. Following comment on the draft text circulated after the working group meeting, it would be open to one or several participants to submit this text as a formal proposal to the March 2011 Joint Meeting.

43. This draft text is submitted to the Joint Meeting in document ECE/TRANS/WP.15/AC.1/2011/16