

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

107th session

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Geneva, 11-15 November 2019

Item 5 (a) of the provisional agenda:

**Proposals for amendments to annexes A and B of ADR:
construction and approval of vehicles**

Report of the second informal WP.15 Working Group meeting on “Clarification of 9.3.4.2 ADR”

Transmitted by the Government of Germany

Bonn, 1 to 2 October 2018

Federal Ministry of Transport and Digital Infrastructure (BMVI)

Current state of affairs

1. The Chairman explained that, in the framework of the Informal Working Group’s mandate given by WP.15, the general discussion on the clarification of the requirements in 9.3.4.2 of ADR is to be continued.

Discussion on EX/III vehicles in 9.3.4 of ADR

2. In order to work on this mandate given by WP.15 in a manner that is likely to achieve results despite the difficult initial situation, the Chairman asked the ADR contracting parties which participate in the Working Group how to approach the discussion. After a tour de table the parties agreed on the way forward. The Working Group agreed that a provision should be added to the ADR setting general requirements for the body of EX/III vehicles. Subsequently, it is to be tested whether the requirements of this provision are met on a case by case basis. Standard and sample structures meeting these requirements are not excluded under this approach.

3. The discussion within the Working Group on general specifications of the material to be used in an EX/III body including the setting of a limit value, which guarantees in particular the possibility of conducting checks, for instance in a testing procedure, was very time-consuming and complex, and results differ.

4. It is therefore desirable to continue the discussion on which heat load will be used as a basis for the heat input. The specifications resulting from the discussion should, if possible, also contain insulation capacity specifications and it should be possible to set up appropriate testing procedures. In the tests, it should also be checked whether, at the inner wall surface of the EX/III body, a certain temperature is not exceeded after a certain time. Standard 13501 Part 1 and 2 outline such testing procedures in parts, but for the characteristics of building components exposed to fire.

5. The Materials Testing Institute for Building (MPA) has carried out such tests with the results to be found in the consultancy study entitled “Orientierende Brandprüfung nach DIN EN 13823: 2002:06 (SBI-Prüfung)” (in German). Standard 13823 was used to evaluate material properties and there is a description of the testing procedure. If we want to make sure that this standard can be used in application by analogy for the requirements in 9.3.4.2,

we need to clarify relevant questions regarding the energy of the fire during the fire exposure and its consequences, i.e. what is the maximum temperature that may be reached on the inner surface of the vehicle body.

6. At the 2017 November meeting of WP.15, Germany presented a summary of this consultancy study by the MPA as INF.5 (ECE-TRANS-WP15-103-GE-inf5e) and the consultancy study itself is annexed to INF.5 in German.

7. Having this in mind, the Working Group, after an exchange of views on potential further steps, agreed, first of all, against this background, to discuss 9.3.4.1 and 9.3.4.2 one by one (see Annex I: Draft amendments to 9.3.4.1 ADR). In the discussion, the original text of the 2001 ADR was taken into consideration to understand the development of the text over time.

8. With the exception of the last sentence, the Working Group agreed on a linguistic clarification of 9.3.4.1 and regarded this as an opportunity for WP.15 to make an amendment based on the text proposals provided by the Working Group.

9. The Working Group's discussion on 9.3.4.2, however, proved to be much more difficult, multi-layered and complex.

10. The Working Group discussed a new text proposal for 9.3.4.2 based on the old 2001 ADR text, according to which the increase of the internal temperature as the walls are exposed to external flames over a period of 15 minutes is limited to a maximum of 120°C. However, the Working Group did not reach a final agreement on this matter. After an exchange of views, it was agreed that this provision must be complemented with information on the testing procedure and the evaluation of test results. The attempt of the Working Group to clarify by means of quoting a standard was unsuccessful. The actual goal, to make a statement on how to prevent heat transfer from the outside to the inside, could not be achieved.

11. Different approaches regarding this issue were discussed. Positions differed on how to approach the insulation capacity requirements of the body.

12. One option would be to approach this issue by taking a closer look at the concrete risk of a tyre fire. Another option would be to make a reference to another legal sphere which does not cover all of our questions, but provides us with clearly comprehensible values as well as testing and evaluation procedures. The second part of standard 13501 already quoted in 9.3.4.2 provides the basis which, in the course of further discussions, could be considered in order to add this basis in application by analogy to the ADR. This part of the standard could be referred to in order to describe the requirements for the insulation characteristics of the body, which have not yet been defined.

13. Experts from the Federal Institute for Materials Research and Testing (BAM), for instance, who deal with fire investigations, could be consulted in order to assess the fire. Regarding the testing procedure for components, classification societies may provide us with further resources as they have gained experience in fire safety requirements in maritime transport.

Conclusions of the meeting

The Working Group reached the following final results:

14. The Working Group states that, in general, sparking and electrostatic discharge do not pose a risk in the transport of explosive substances if the substances are packaged in conformity with the regulations.

15. The Working Group discussed 9.3.4.1 and possible amendments to clarify it. Previous discussions in within the Working Party should be taken into account.

16. The Working Group discussed 9.3.4.2 and agreed that metal, for instance, is accepted as a material used for the internal structure of a vehicle. It is further deemed necessary that, in 9.3.4.2, all relevant characteristics of the body regarding its material properties are to be described, as it is currently done with the quoting of the standard.

17. The Working Group further considered it appropriate to set a limit value for the internal temperature because of the decomposition characteristics of explosives. It agreed that the duration of 30 minutes as the value for the maximum heat input should be considered further. However, the informal working group has not reached an agreement on setting a maximum value for the heat load, which reflects the limitation of the internal temperature in the vehicle body, in order to prevent the explosives from decomposition.

18. The Working Group concluded that the mandate given by the Working Party cannot be met in this framework of discussions. Further expert opinions on the topics mentioned earlier, such as the description of the requirements for EX/III bodies in order to assess a fire, will be necessary.

19. Different approaches regarding this issue were discussed. Positions differed on how to approach the insulation capacity requirements of the body. One option would be to approach this issue by taking a closer look at the concrete risk of a tyre fire. Another option would be to make a reference to another legal sphere which does not cover all of our questions, but provides us with clearly comprehensible values as well as testing and evaluation procedures. The second part of standard 13501 already quoted in 9.3.4.2 provides the basis which, in the course of further discussions, could be considered in order to add this basis in application by analogy to the ADR. This part of the standard could be referred to in order to describe the requirements for the insulation characteristics of the body, which have not yet been defined.

20. The Working Party will be informed, on the basis of an informal document about the results of the 2nd meeting of the informal working group held in Bonn, on 1st and 2nd October 2018. To this end, Germany will submit the minutes of the meeting, after coordinating them with the participants, to the November 2019 session of the Working Party for further deliberations.
