OTIF

ORGANISATION INTERGOUVERNEMENTALE POUR LES TRANSPORTS INTERNATIONAUX FERROVIAIRES

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TO THE GOVERNMENTS OF THE MEMBER STATES OF OTIF

Report of the special meeting of the RID Committee of Experts' working group on tank and vehicle technology

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1. At the 8th session of the RID Committee of Experts' working group on tank and vehicle technology (Munich, 14 and 15 June 2007), it was agreed to carry out a derailment test to prove that the derailment detector trips reliably at speeds between 35 and 40 km/h (see paragraph 12 of report OTIF/RID/CE/GT/2007-A). In connection with this, a draft proposal from Germany was to be discussed. This proposal to the RID Committee of Experts proposed the inclusion in RID of a requirement to equip tank-wagons with derailment detectors (see paragraph 13 of report **OTIF/RID/CE/GT/2007-A**).

2. The derailment test was carried out by the Technical University of Berlin on 12 October 2007 on behalf of the manufacturers, Knorr-Bremse. Following the test, there was a discussion in the working group on tank and vehicle technology led by the deputy chairman of the working group, Mr A. Bale, **United Kingdom**.

3. The following States watched the test and took part in the discussions at this session: Germany, Italy, Netherlands, Sweden, Switzerland and United Kingdom. The International Union of Railways (UIC) and the International Union of Private Wagons (UIP) also took part (see Annex **1**).

Presentation of the test and test results by the Technical University of Berlin

4. Professor M. Hecht (TU Berlin) reiterated the objective of the test performed, which was to demonstrate the functional capability of the EDT 101 and to gain knowledge of how **wagons** perform in the event of a derailment.

   The rear bogie of the tank-wagon to be derailed was placed on two assister rails, while the rest of the train (locomotive, barrier wagon, front bogie of the tank-wagon to be derailed and the following barrier wagon) ran on the normal rails. The assister rails were placed as close as possible to the normal rails in order to prevent lateral overriding of the buffers and the end of the assister rails were in the form of a ramp in order to guide the derailed bogie into the ballast bed as gently as possible.

   One test was carried out with all empty wagons and one with a loaded wagon between two empty barrier wagons. The test with all empty wagons was carried out the day before, 11 October 2007. The train composition reached 50 km/h when empty and 48 km/h with the loaded wagon.

   Accelerometers were fitted to the vehicle to be derailed so that the ideal position for the derailment detectors could be determined.

   In the test with empty wagons, the main brake pipe was opened by the derailment detector around 0.2 seconds **after the** derailment.

   The other main results of this test will be submitted in an informal document for the next session of the RID Committee of Experts.

5. With regard to the representative of Sweden's continuing doubt as to whether the EDT really fulfilled the requirements of UIC leaflet 541-08 in respect of low temperatures (-40 °C), Professor Hecht explained that the spring damper system of the ballast bed that was absent from the ground in permafrost conditions would partly be compensated for by the lower sensitivity of the EDT at low temperatures. However, the extent to which the EDT would compensate for this could not be confirmed.

Presentation of a draft proposal for the next session of the RID Committee of Experts by the representative of Germany.

6. The representative of Germany introduced his draft proposal for the next session of the RID Committee of Experts, which had been sent to the working group participants before the meeting. He made clear that this was a simple proposal, which referred to UIC leaflet 541-08 with regard to the technical details. For the time being, it was only proposed that new-builds for certain dangerous goods should be fitted **with derailment detectors**, as not all aspects of this new technology were known yet. In order that the conformity of different systems could be assessed, a later date (1 January 2011) could be considered for the entry into force of this new requirement concerning fitment.

7. The representative of Switzerland said he would welcome an extension of this new requirement to all dangerous goods tank-wagons, perhaps with gradual implementation (1 January 2011 for very dangerous substances, 1 January 2013 for all dangerous substances) as in the case of energy absorption elements. In connection with this, he pointed out that in Switzerland, **more than 600** dangerous goods tank-wagons had been fitted with derailment detectors since 2002 and thus sufficient experience in practice **would be** available. He pointed out that retrospective fitting would cost four to five times more than fitting new-builds with detectors.

8. Although the extension to all dangerous goods tank-wagons proposed by the representative of Switzerland was supported by **some** other delegations, the working group preferred at this stage to follow a more cautious approach on the basis of the draft German proposal, as there had not yet been enough experience with the EDT 101. However, the representative of Switzerland was asked to submit his further reaching request in an informal document for the RID Committee of Experts **if he so wished**.

9. In order to enable other systems to be developed and tested as well, the working group agreed that this new measure should be included in the 2009 edition of RID, but with a date of entry into force of 1 January 2011. As with special provision TE 22 (energy absorption elements), the new requirement for derailment detectors and the transitional provision should be restricted to tank-wagons for **very dangerous** substances carried in the liquid state and gases.

10. The manufacturer, Knorr-Bremse, considered that for derailment detectors, the same interval between inspections as for the maintenance periods for vehicles was sufficient. As the derailment detector would be a vehicle component, the inspection should be carried out as part of the vehicle maintenance and not as part of the periodic tank inspection.

11. Before the new requirements entered into force, locomotive drivers should be trained in what to do in the event of a detector tripping. In addition, the representative of Sweden considered that a provision should also be provided at that time specifying when the locomotive driver was allowed to deactivate the derailment detector in the event of a false activation.

Annex 1

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