

3rd HGV Compatibility Ad-hoc Working Group Meeting **Report to GRRF**

At the request of GRRF a 3rd meeting between Industry and Government representatives was held on the 22 May 2002 to continue discussion on the subject of HGV Compatibility.

The meeting was attended by representatives from the motor vehicle manufacturers, the trailer manufacturers, the braking system manufacturers and the component suppliers. Government representatives were present from the UK, Denmark, Netherlands, France and Germany.

There was an open and frank exchange of views. The representative from CLCCR reported on the Joint Industry meeting held earlier and identified the following points relating to in-service testing and UNECE Regulations that had been agreed as needing addressing:

In-service Checks

- 1) Ensure that at least one axle of a laden vehicle generates a braking force before a coupling head pressure of 1 bar is achieved.
- 2) Define a brake performance window at low demand pressure that could be applied as a means of setting up a vehicle.
- 3) Define a method of checking the point at which a braking force is generated.
- 4) Introduce a pre delivery inspection or end of production line check on all vehicles to ensure that the compatibility requirements or predefined performance window is fulfilled.
- 5) Check of the load sensing settings against the settings stated on the vehicle load sensor information plate.
- 6) Individual countries to ensure that tow vehicles and trailers are electrically connected using an ISO 7638 connector.

UNECE Regulation 13 amendments.

- 1) Introduce provisions to ensure that the existing compatibility requirements are fulfilled at the time of vehicle Type Approval by actual evaluation. Particular attention should be put on the low-pressure performance.
- 2) Decide whether dynamic load transfer should be taken into account when determining the tractor compatibility.
- 3) Provisions should require that braking commence at a maximum coupling head pressure of 1 bar irrespective of load and fitment of ABS.
- 4) Provisions for coupling force control should include a test to check the base requirement of reducing the difference in dynamic braking rate between tractor and trailer.
- 5) Define a method of checking the point at which braking force is generated.
- 6) Removal of the dotted line from diagrams 2 and 3 in Annex 10.

The representative from CLCCR advised the group that the Joint Industry group had decided to form a smaller (7 people) editorial working group to prepare proposals amending the Regulation to address these points.

These points were well received by the group. The UK delegate supported Industry's approach because they wanted to introduce a test at the vehicle annual inspection that would check the compatibility requirements. Also there were still indications that motor vehicles were not complying with the Type Approval requirement at production that needed resolving.

Delegates from the Motor Vehicle Manufacturers accepted that they had maintenance problems that were causing particular concerns with disc braked trailers. Part of the problem was identified as the vehicle purchaser specifying cheaper, lighter parts to reduce the initial cost or to increase the potential payload. Smaller brakes and wheels were being used but consequently proved more costly to maintain due to the increased work rate demanded from them. Vehicle manufacturers have a duty to advise the customer of the correct specification.

In view of the potential for component damage and reduced brake performance as a result of brake pad wear it was generally agreed that a trailer warning system was needed. This raised difficulties concerning the trailer since the yellow warning lamp could only be used for non prescribed faults when the vehicle was stationary. One delegate from the motor vehicle manufacturers agreed that work would have to be carried out on the ISO 11992 standard to provide the driver with information on trailer brake pad wear. A representative from the trailer industry considered it more important to ensure compatibility was achieved rather than warn the driver of pad wear. It was suggested that Industry should develop a suitable system for trailers and make appropriate proposals to GRRF. In the interim this could be achieved by fitting a display panel or warning lamp on the trailer.

Failure to use of the ISO 7638 connector to provide a dedicated power supply for the ABS/EBS was identified as a source of problems. Only the UK had instigated any legislation mandating the use of the connector.

The UK delegate was adamant that the vehicle construction requirements should result in establishing an easy method by which compatibility could be checked during the annual inspection. His view was that by checking brake threshold pressure to ensure that a brake force was generated by 1 bar the inspection authority would have confidence that compatibility would be achieved. This instigated heated discussion during which it was established that at type approval it was necessary for only one axle on the vehicle to achieve a braking force by 1 bar in order to fulfil the requirement. In certain circumstances axles were exempt from generating any brake force. It was agreed that any amendment to the Regulation should include clarification of this point.

It was suggested that it would not be possible to measure the on-set of braking on a roller test bench. To complicate the matter a delegate from the motor vehicle manufacturers informed the meeting that currently it was not possible to measure the threshold pressure on an EBS motor vehicle because the pressure was only correct in a dynamic condition.

The UK delegate agreed to ask the British Vehicle Inspectorate to conduct a small series of vehicle tests to establish threshold pressures on a range of current vehicles. This would be carried out on laden, non-EBS vehicles and performed by raising the axle and turning the wheel by hand. Measurement of the brake efficiency at 1.5 bar coupling head pressure would also be made.

Discussion were drawn to a conclusion with a general understanding that confirming threshold pressures alone would not result in an improvement in compatibility just as simply narrowing the corridors would not achieve the result. A change to the design requirements together with an established inspection procedure at type approval and annual inspection would offer the best approach.

There was a general view that too much emphasis was put on the theoretical calculations presented at Type Approval to indicate that the vehicle complied with the compatibility curves. Type Approval was becoming the process of verification of the calculations presented. There are many difficulties in demanding a dynamic test as part of the approval process but these are not insurmountable. The vehicle manufacturer could provide a vehicle combination for test or the approval authority may have to supply a laden trailer that would generate the dynamic load. A representative from the motor vehicle manufacturers stated that the data they used came from a competent system manufacturer and the data was verified by many hundred thousand kilometres of testing. The Industry Editorial group would consider the practicality and necessity of introducing a compatibility test at type approval.

Although there is still a difference in view between the motor vehicle manufacturers and the trailer manufacturers the gap is rapidly closing. The idea of a smaller editorial group from all areas of industry to prepare papers for discussion was well received.

The Industry Editorial Group was planning to meet during June. The 4th Ad-hoc Working Group meeting was arranged for 3 September to consider papers prepared by the editorial group and to produce a progress report for submission to the September session of GRRF.

Note subsequent to the meeting on 22nd May.

The Industry Editorial Group met in June and has generated papers for discussion within Industry. These papers will be finalised at a further meeting on the 25 September and discussed by the full industry group on the 17 October, therefore a formal discussion by the Ad-hoc Working Group could not take place before GRRF.

In view of this time scale I propose CANCELLING the meeting for 3 September and suggest holding the next Ad-hoc Working Group meeting on **30 October**. This allows sufficient time to prepare formal documents for discussion at the February 2003 session of GRRF. The last day for documents to be received by the UN for inclusion in that meeting is 15 November 2002.

Would Mr Fontaine (OICA) please make the necessary changes.