

## **Coupling force control – ECE R13**

### **(Proposal from the Danish delegation)**

#### **1. Proposal**

Brake compatibility between truck/tractor and trailer is enhanced by narrowing the limits for coupling force control systems which at present are allowed to override the compatibility bands with no restrictions and with indication only by a control lamp at large values of compensation. The proposal addresses this issue.

#### **2. Justification**

Various studies and results from annual periodical technical inspections as well as experiences reported from IRU (International Road Transport Union) call for focus on reduced maintenance costs for heavy goods vehicle combinations and enhanced and more consistent brake performance of trailers in particular.

The European Truck Accident Causation Study [1] found technical failures in 5.3% of all main causes for traffic accident with trucks, and that queue accidents accounted for 20.6% of all accidents. Brakes can play a role in these accidents.

A Danish study [2] of brake performance of heavy goods vehicle combinations found that most heavy trucks performed well as only 4% were under-performing. However major problems were identified regarding brake performance of trailers as 38% did not meet legal requirements.

The EU General Safety Regulation 661/2009 requires AEBS (Automatic Emergency Brake System) for trucks type approved from 01.11.2013. Well functioning wheel brakes are a prerequisite for obtaining the safety benefit.

Indications show that the limits for coupling force control system are too lenient which results in the possibility for overcompensation. This proposal also limits a strategy by some manufactures to start compensation before an actual need has been discovered. This compensation is a challenge for the brake compatibility and can result in overloading of the trailer brakes.

#### References:

- [1] International Road Transport Union and European Commission Directorate General TREN, 2007: European Truck Accident Causation Study.
- [2] Danish Road Safety and Transport Authority and Applus, 2005: Investigation of brakes of heavy vehicles.

## PROPOSAL

Paragraph 5.2.1.28.5., amend to read:

**5.2.1.28.5. The coupling force control system shall tend to minimise the coupling force. Max. allowed compensation by the coupling force control system is 100kPa below the lower limit of the compatibility band and 100kPa above the upper limit of the compatibility band as specified in Annex 10. If this compensation causes the operating point to lie outside the compatibility band as specified in Annex 10 for the motor vehicle the yellow warning signal specified in paragraph 5.2.1.29.1.2 shall be activated. After recoupling no compensation is allowed before the coupling force control system has registered a difference between the braking rates of the vehicles in the combination.**

Diagram 1

Revised

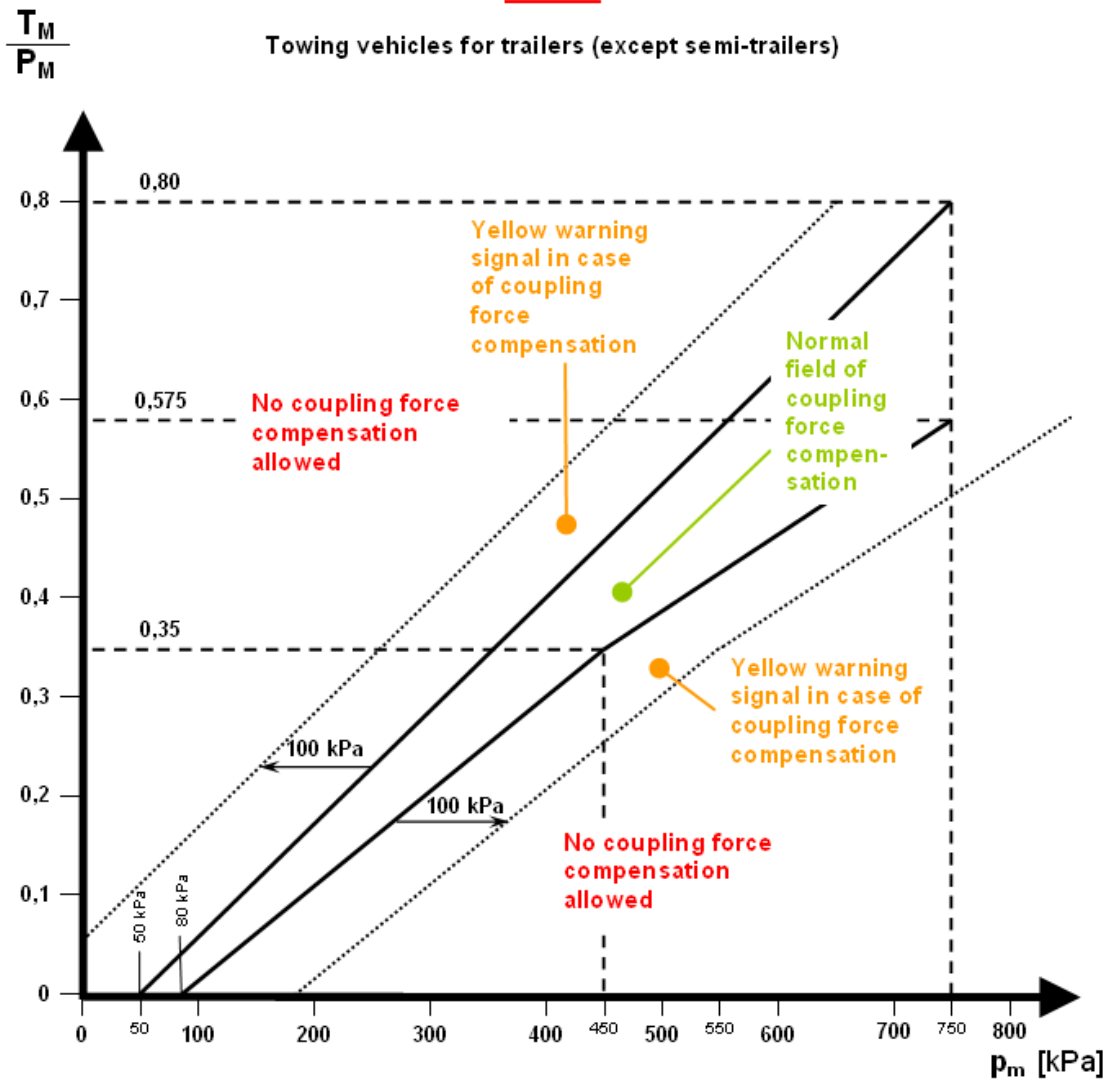


Diagram 2

Revised

Tractive units for semi-trailers

