

Comments on Changes to the Requirements for Warning Signal Generation Associated with Excessive Coupling Force Control as Proposed by Denmark in ECE/TRANS/WP29/GRRF/2012/12

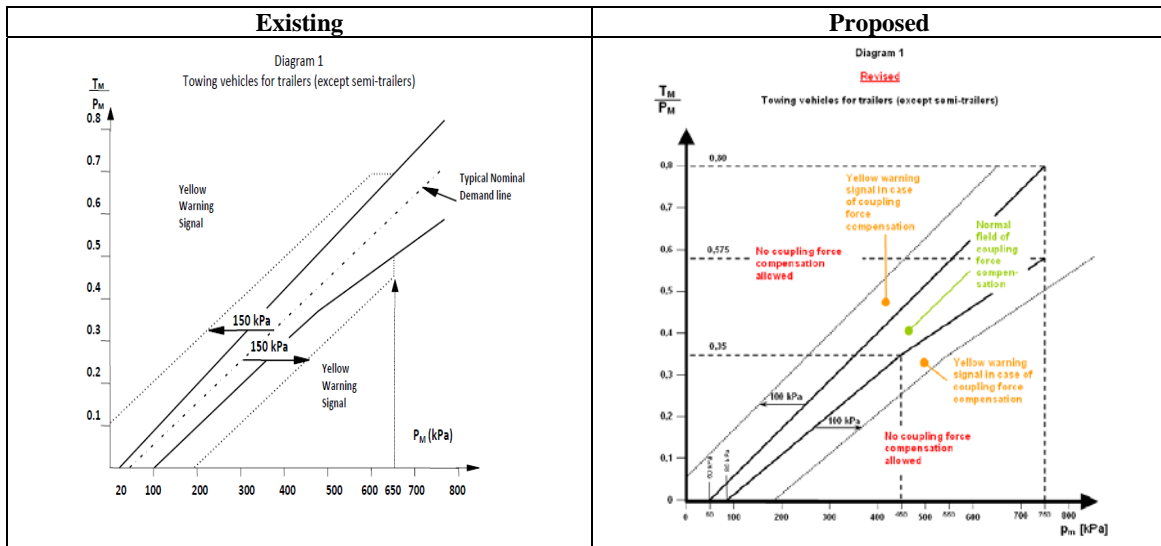
Introduction:

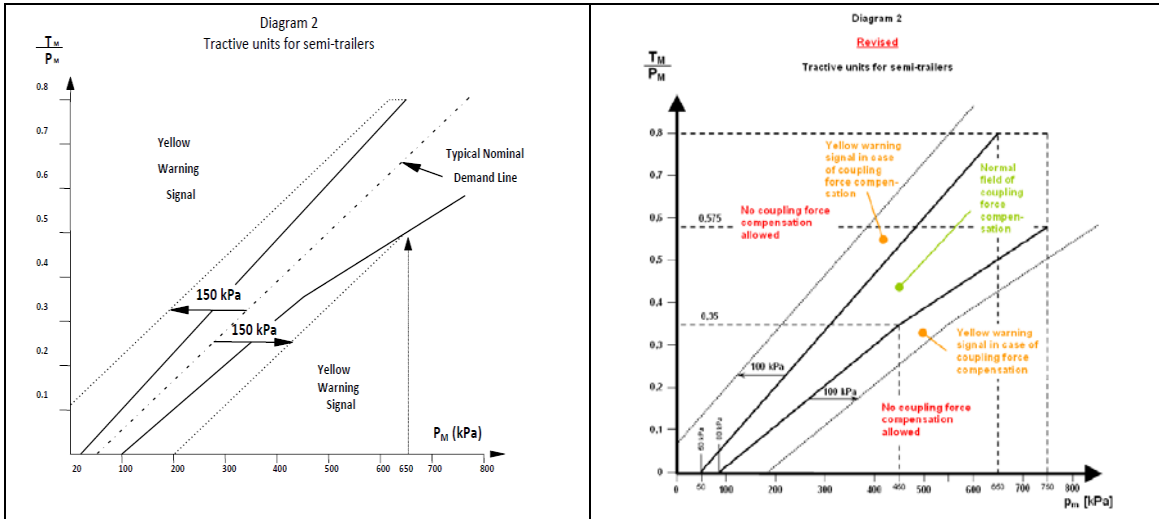
At the 71st GRRF Denmark submitted Document GRRF-71-18 the content of which has been consolidated into ECE/TRANS/WP29/GRRF/2012/12. For ease of understanding industry comments on the proposal to amend the requirements when a driver warning signal must be generated should excessive coupling force control be applied by the towing vehicle is considered independently.

Discussion:

Currently a warning signal shall be generated, as specified in paragraph 5.2.1.28.5 of ECE Regulation 13 and is illustrated by Diagrams 1 and 2 within the Regulation. ECE/TRANS/WP29/GRRF/2012/12 proposes that the warning signal should be generated when the coupling force control applied by the towing vehicle results in the braking performance of the towing vehicle exceeding the upper or lower lines of the respective compatibility band. The compatibility bands being amended as proposed in ECE/TRANS/WP29/GRRF/2012/12 and previously in GRRF/71/19.

The following diagrams compare the existing and proposed requirements associated with excessive coupling force control being applied and when the subsequent driver warning shall be displayed:





Currently the driver warning signal is not generated until the coupling force control function adjusts the braking performance of the towing vehicle by +/- 150kPa from the “nominal demand line” which is the design braking performance of the towing vehicle relative to coupling head pressure. The proposal from Denmark is to significantly reduce the amount of compensation that may be applied before a driver warning signal is generated.

It is well documented that the majority of brake applications on heavy commercial vehicles are within the coupling head pressure range up to 200kPa. Therefore if the design braking performance was such as to be in the centre of the compatibility band at a coupling head pressure of 200kPa the amount of coupling force control adjustment permitted before a driver warning signal is generated would be +/- 30kPa which in real terms means a reduction of 80% (150kPa to 30kPa). At brake demands below a coupling head pressure of 200kPa the pressure differential before generation of the warning signal would gradually reduce to a minimum value of 15kPa, equivalent to a 90% reduction in the tolerance. Equally should the “nominal demand line” approach either the upper or lower lines of the compatibility band the tolerance when a warning for excessive coupling force control being applied could reduce to zero.

As the amount of actual compensation is based on the difference in dynamic braking performance between towing vehicle and trailer, a change in the load condition of the towing vehicle or trailer (e.g. truck changes from laden to unladen, while trailer remains fully laden or the trailer is unloaded/exchanged), could result in a different compensation value being applied. Therefore, in the course of a working day, the driver could be faced with a situation, under the proposal from Denmark that the warning signal is at times “on” and at other times “off” while the basic braking performance of the towing vehicle has not changed.

The impact of such a change would be that the warning signal which is generated to indicate “excessive” coupling force control adjustment would be illuminated at a high frequency and result in driver/operator complaints which in turn would lead to the coupling force control function being switched off.

In consequence it is considered by CLEPA, OICA and CLCCR experts that the proposal from Denmark would have a detrimental impact on braking compatibility. In consequence it is recommended that the requirements for coupling force control as currently specified within ECE Regulation 13 should remain unchanged.