

PROPOSED AMENDMENTS TO REGULATION N°13

This document amends document ECE/TRANS/WP.29/GRRF/2009/14. The changes compared to this latter document are marked in bold and strike-through characters.

A. PROPOSAL:

Paragraph 5.2.1.30.6., amend to read (inserting also a reference to the existing footnote 10/):

"5.2.1.30.6. Electric regenerative braking systems as defined in paragraph 2.21., which produce a retarding force upon release of the **accelerator control** ~~throttle pedal~~, may generate the signal mentioned above at decelerations above **1.3 m/s²**. However, **the signal shall be suppressed at the latest when the deceleration has fallen below 0.7 m/s²** 10/.

10/ At the time of type approval, compliance with this requirement shall be confirmed by the vehicle manufacturer."

B. JUSTIFICATION:

The proposal above changes "throttle pedal" into "accelerator control", suggests a deceleration threshold of 1.3 m/s² instead of [1.0] m/s² and improves the wording of the suppression provision.

The first amendment is an obvious alignment of the vocabulary aiming the consistency of the text throughout the regulation.

The second amendment aims to make the threshold deceleration more relevant for daily traffic. The intention is to illuminate the stop lamps when the vehicle is braking, for obvious safety reasons, and in the same time to avoid too frequent stop lamp illumination that provoke safety counter-effects. The particularity of the vehicle categories covered by UNECE R13 is a wide range of weight according to the different categories, i.e. from light N1 (< 3.5 tonnes) to heavy N3 (> 12 tonnes). In addition, the same vehicle, within its category, can have a weight varying within a range of 1:2.5 according to its load. As it is not possible to define within a regulatory text a deceleration threshold for each particular case, the proposed solution is to let some flexibility to the manufacturer, but impose a lower threshold that can be the best compromise in real traffic. The general principle is, as in the case of Emergency Stop Signal (ESS), that no stop lamp illumination can occur below that lower threshold. The text is hence aligned on the provisions for ESS.

The graph below shows the decelerations achieved by a common M1 vehicle, unladen, diesel combustion engine, upon release of the accelerator control inside the whole possible speed range for each gear. The two proposed deceleration values (namely 0.7 m/s² and 1.3 m/s²) are indicated by the red lines. This graph clearly shows that the natural engine/rolling resistance deceleration is always below the required **generation** value (1.3 m/s²), and is nearly always below the lowest required **suppression** value (0.7 m/s²). The range between the lower and the upper value is necessary to avoid flickering of the stop lamps when the vehicle decelerates around the threshold value. This implies that the proposed amendments for the

regenerative braking won't have any adverse effect on safety because no stop lamp will illuminate at decelerations in the range of the natural engine brake of a common combustion engine.

OICA is confident that the proposed amendments to regulation UNECE R13 will improve road safety for vehicles with electric regenerative braking which currently represent a small market share. However, because of their environmental benefit, OICA believes that the market share of those vehicles will increase in future.


