

Proposal for amendments to ECE/TRANS/WP.29/GRRF/2008/2 (Brake Assist Systems)

This document is a proposal for amendment to the Brake Assist proposal of document ECE/TRANS/WP.29/GRRF/2008/2 and concerns Brake Assist Systems of Category A with the evaluation of performance being made on line pressure as an alternative to deceleration.

A Proposal.

Add an additional paragraph 3.2.5. and amend the title of Figure 1 to read Figure 1a and add an additional Figure 1b.

“3.2.5. As an alternative, which can be selected by the manufacturer, the pedal force figures for F_T , $F_{ABS,min}$, $F_{ABS,max}$ and $F_{AB,extrapolated}$ may be derived from the brake line pressure response characteristic instead of the vehicle deceleration characteristic. This shall be measured as the brake pedal force is increasing.

3.2.5.1. The pressure at which ABS cycling commences during the procedure set out in Appendix 1 to this Annex to determine the level of a_{ABS} , shall be noted and averaged.

3.2.5.2. The threshold pressure P_T shall be stated by the manufacturer.

3.2.5.3. Figure 1b shall be constructed to define the parameters set out in paragraph 3.2.5 above.”

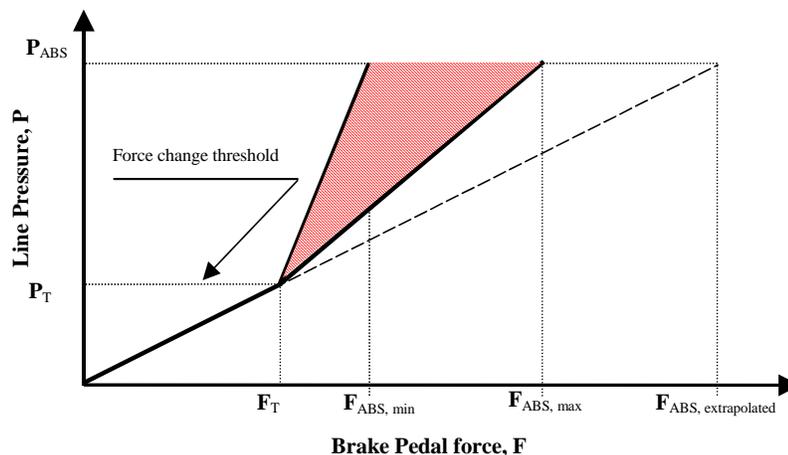


Figure 1b

B Justification.

Problems experienced, particularly with heavier vehicles such as large vans, result from vehicles without brake assist, not following the dotted linear projection of braking performance with increasing pedal forces, that is suggested in Figure 1(a).

This is because the practical deceleration characteristic tends to be curved downwards rather than being linear as shown in Figure 1(a) which increases the task faced by a BAS booster.

The use of brake assist, formed from an Optimised Dual-rate Brake Booster, achieves a counteraction to this curving performance. Whilst the driver does not perceive a sudden jump in deceleration above F_T , increasing pedal effort does show a significant increase in the ratio of brake line pressure increase against pedal force increase. This allows the driver to achieve maximum (ABS limited) braking performance on the dry surface, with a pedal effort which is more than 40% less than would be the case with a standard brake booster.

With heavier vehicles, this should qualify as an acceptable BAS.

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