

Proposal for an amendment to ECE/TRANS/WP.29/GRVA/2020/34 regarding global technical regulation No. 8 (Electronic Stability Control Systems)

Below are suggested modifications to the text of document ECE/TRANS/WP.29/GRVA/2020/34, marked in bold and with strikethrough.

I. Proposal

Paragraph 7.9.4., amend to read:

7.9.4. The steering amplitude of the final run in each series is the greater of 6.5 A or 270 degrees, provided the calculated magnitude of 6.5 A is less than or equal to 300 degrees. If any 0.5 A increment, up to 6.5 A, is greater than 300 degrees, the steering amplitude of the final run shall be 300 degrees.

If the above calculated steering amplitude of the final run is greater than the maximum operable steering wheel angle determined by design of the steering system, the final angle amplitude for the series test shall be **greater than 98 per cent** of the maximum operable angle.

II. Justification

- 1) Demonstrating the safety impact: While the intent of this proposal may well be warranted, supporting information or data is needed to illustrate the potential impact of the proposal on safety, specifically the portion limiting the final amplitude to “greater than 98 per cent” of the maximum operable steering wheel angle.
 - a) While this proposal seems innocuous on the surface, we are concerned that this may imply that certification testing can stop before reaching the steering limits, which would prevent the demonstration of a fulsome safety test.
 - b) A sensitivity analysis is needed to demonstrate if or how safety may be affected by limiting the final amplitude to “greater than 98 per cent” of the maximum operable steering wheel angle.
 - 2) Demonstrating the need: In reference to the justification of the proposal, paragraph 7(d) of document ECE/TRANS/WP.29/GRVA/2020/34, it is indicated that the reason for proposing “greater than 98 per cent” is to allow for robot overshoot during testing, so that the robot does not stop functioning during the testing phase.
 - a) Each test facility will experience different tolerances and robot setup challenges based on their equipment and needs.
 - b) The experience with ESC testing at Transport Canada has resulted in the ability to conduct the test with an accuracy of plus / minus one degree at all angles, therefore able to target at least 99.6 per cent of a 270 degree steering wheel angle input, compared to 98 per cent as proposed.
 - c) While we have tested over 92 vehicles to date, none were limited by the maximum operable steering wheel angle. We are not aware of such steering systems on vehicles in production today.
 - 3) It must be made clear that it is the responsibility of the manufacturer to ensure that the ESC system operates in a safe manner throughout the vehicle’s full steering capability, including up to the maximum operable steering wheel angle if that is the case.
 - 4) While the intent of this proposal may well be warranted, at this time we believe the reference to “greater than 98 per cent” should be removed and that this is an issue that would be best addressed at the respective test facilities.
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