Proposal for amendments to ECE-TRANS-WP29-GRPE-2019-02e

The text reproduced below was prepared by the IWG on Worldwide harmonized Light vehicles Test Procedure (WLTP). The modifications to the current text of Amendment 5 of GTR 15 are marked in bold for new or struck through for deletion.

Proposal

II. Text of the global technical regulation, 3. Definitions, amend to read:

"3.5.9. "Predominant mode" for the purpose of this UN GTR means a single driver-selectable mode that is always selected when the vehicle is switched on, regardless of the driver-selectable operating mode in operation selected when the vehicle was previously shut down, and which cannot be redefined or switched to another mode. After the vehicle is switched on, the predominant mode can only be switched to another driver-selectable mode by without an intentional action of the driver.

Correction/justification: Clarifies when a predominant mode can be switched to another driver-selectable mode.

Proposal

II. Text of the global technical regulation, 5. General requirements, amend to read:

"5.4. Petrol Fuel tank inlet orifices"

Correction/justification: The title has been amended to include not just petrol but also ethanol.

Proposal

II. Text of the global technical regulation, 5. General requirements, amend to read:

"5.5.1. The manufacturer shall authorise modifications if those modifications are necessary for the diagnosis, servicing, inspection, retrofitting or repair of the vehicle."

Correction/justification: Minor language improvement.

Proposal

II. Text of the global technical regulation, 5.8. General requirements, amend to read:

"5.8. Road load matrix family

The road load matrix family may be applied for vehicles designed for with a technically permissible maximum laden mass ≥ 3,000 kg."
Vehicles with a technically permissible maximum laden mass $\geq 2500$ kg may be part of the road load matrix family provided the driver seat R-point height is above 850 mm from the ground.

“R-point” means “R” point or “seating reference point” as defined in paragraph 2.4. of Annex 1 to the Consolidated Resolution on the Construction of Vehicles (R.E.3.).”

Correction/justification: The road load matrix method was intended to cover vehicles that have a maximum permissible laden mass just below 3 tons, e.g. for administrative reasons. The wording "designed for" was open to interpretation by some authorities. A solution was reached by deleting "designed for" and including vehicles with a maximum permissible laden mass of $\geq 2500$ kg but satisfying the requirement that the R point of such vehicles must be at least 850 mm above ground in the road load matrix method.

Proposal

*Annex 2, paragraph 2.(j).* amend to read:

"MC is the technically permissible maximum laden mass of the combination (see paragraph 3.2.27. of this GTR), gross train mass (gross vehicle mass + max. trailer mass), kg."  
Correction/justification: MC may not necessarily be the sum of gross vehicle mass and maximum trailer mass. For example, a vehicle may have a technical permissible maximum laden mass of 3500 kg and may be able to tow a 3500 kg trailer but the clutch can only take a combination of 6000 kg (on e.g. a 12% gradient).

Proposal

*Annex 2, paragraph 4.(a).* amend to read:

"Gears used during accelerations or constant speed sections at vehicle speeds $\geq 1$ km/h shall be used for a period of at least 2 seconds."

Correction/justification: From the WLTC and gear shift task force. Eliminates the use of a gear for only one second.

Proposal

*Annex 4, paragraph 4.3.1.4.2., amend to read:

"$p_j = \frac{h \times \sigma_j}{\sqrt{n \times \Delta t_j \times \Delta \theta}} \leq 0.030$"  
Correction/justification: The original equation led to an incorrect dimensional analysis.

Proposal

*Annex 4, paragraph 4.3.1.3.5., new paragraph:*

"4.3.1.3.5. It is recommended that coastdown runs should be conducted successively without undue delay between runs. If there is a delay between runs (e.g. for a driver break, checking vehicle integrity, etc.), the vehicle shall be warmed up again as
described in paragraph 4.2.4. and the coastdown runs shall be re-commenced from this point."
Correction/justification: Allowing for interruptions during coastdown runs using stationary anemometry.

Proposal

Annex 4, paragraph 4.3.2.4.4., new paragraph:

"4.3.2.4.4. It is recommended that coastdown runs should be conducted successively without undue delay between runs. If there is a delay between runs (e.g. for a driver break, checking vehicle integrity, etc.), the vehicle shall be warmed up again as described in paragraph 4.2.4. and the coastdown runs shall be re-commenced from this point."
Correction/justification: Allowing for interruptions during coastdown runs using on-board anemometry.

Proposal

Annex 4, paragraph 4.3.2.6.3., amend to read:

"Using a linear least squares regression technique, all data points shall be analysed at once to determine \( A_m, B_m, C_m, a_0, a_1, a_2, a_3 \) and \( a_4 \) given \( M_{me} \), \( \frac{dh}{ds}, \frac{dv}{dt}, v, v_r, \) and \( \rho \)."
Correction/justification: In the name of consistency, the variable for the effective mass of the vehicle shall be written \( m_e \) and not \( M_e \).

Proposal

Annex 4, paragraph 4.3.2.6.7., amend to read:

"Given \( M_{me} \), \( \frac{dh}{ds}, \frac{dv}{dt}, v, v_r, \) and \( \rho \), \( A_m, B_m, C_m, a_0, a_1, a_2, a_3 \) and \( a_4 \) shall be determined."
Correction/justification: See above for paragraph 4.3.2.6.3.

Proposal

Annex 4, paragraph 4.5.5.2.1., amend to read:

"\( c_1 \) is the coefficient of the first order term as determined in paragraph 4.4.4. of this annex, \( \text{Nm/(km/h)} \). \( \text{Nm/(h/km)} \).
\( c_2 \) is the coefficient of the second order term as determined in paragraph 4.4.4. of this annex, \( \text{Nm/(km/h)}^2 \). \( \text{Nm/(h/km)^2} \).
Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 5.1.2.1., amend to read:
"c₁ is the first order running resistance coefficient, Nm/(km/h), and shall be set to zero;

c₂ is the second order running resistance coefficient, Nm/(km/h)², as defined by the equation:"

Furthermore in the same paragraph:
"c₂ᵣ is the second order running resistance coefficient of the representative vehicle of the road load matrix family, N/(km/h)²,"

Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 5.2.2, amend to read:
"f₁ is the first order road load coefficient, N/(km/h), and shall be set to zero;

f₂ is the second order road load coefficient, N/(km/h)², defined by the following equation:"

Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 6.5.2.3.2., amend to read:
"If coasting down in opposite directions is not possible, and the equation used to calculate ∆tᵢⱼ in paragraph 4.3.1.4.2. of this annex shall not apply."

Correction/justification: Minor language improvement.

Proposal

Annex 4, paragraph 7.3.2., amend to read:
"The vehicle coastdown mode shall be approved and recorded by the responsible authority and its use shall be recorded."

Correction/justification: Minor language improvement.

Proposal

Annex 6, paragraph 2.6.4.3., amend to read:
"The extent of such additional preconditioning shall be recorded by the responsible authority."

Correction/justification: The responsible authority will record numerous procedural items and as such they must not be listed individually.

Proposal

Annex 6, Figure A6/6, amend to read:
Correction/justification: The original diagram did not have x and y axes labeled.

Proposal

*Annex 6, Appendix 1, paragraph 3.2.,* amend to read:

"Calculation of exhaust and CO₂ emissions, and fuel consumption of multiple periodically regenerating systems"

Correction/justification: Language improvement (correctness, consistency).

Proposal

*Annex 6, Appendix 1, paragraph 3.2.,* amend to read:

"The calculation of Kᵢ for multiple periodically regenerating systems is only possible after a certain number of regeneration events for each system."

Correction/justification: Language improvement (correctness, consistency).

Proposal

*Annex 7, paragraph 3.2.3.2.2.3.1.,* amend to read:

"For the purpose of the interpolation method, the aerodynamic drag of optional equipment within one road load family shall be measured at the same wind speed, either \( v_{\text{low}} \) or \( v_{\text{high}} \), preferably \( v_{\text{high}} \), as defined in paragraph 6.4.3. of Annex 4. In the case that \( v_{\text{low}} \) or \( v_{\text{high}} \) does not exist, (e.g. the road load of \( V₁ \) and/or \( V₂ \) are measured using the coastdown method), the aerodynamic force shall be measured at the same \textbf{one} wind speed within the range \( \geq 80 \text{ km/h} \) and \( \leq 150 \text{ km/h} \). For Class 1 vehicles, it shall be measured at the same wind speed \textbf{lower than or equal to} \( \leq 150 \text{ km/h} \)."
Correction/justification: For consistency with the rest of GTR 15, the terms $v_{\text{low}}$ and $v_{\text{high}}$ are not italicised. Furthermore, the second and third sentences have been rewritten in the sake of clarity.

Proposal

Annex 8, paragraph 3.4.4.2.1.2.(b), amend to read:

"$d_{\text{DS1}}$ is the length of dynamic speed segment 1, km;

$d_{\text{DS2}}$ is the length of dynamic speed segment 2, km;"

Correction/justification: Consistency in the use of dynamic speed segment.

Proposal

Annex 8, paragraph 4.5.1.5., amend to read:

"The linearity of charge-sustaining CO$_2$ mass emission for vehicle M shall be verified against the linearly interpolated charge-sustaining CO$_2$ mass emission between vehicle L and H over the applicable cycle by using the corrected measured values referring to the step 6 used $M_{\text{CO}_2,\text{CS},c,6}$ of Table A8/5 of this annex.

Correction/justification: Error in transferring text from the author."