Some proposals of interpretations on UN R51.03 following GRB-64-15 - (France) Some proposals to improve efficiency of road vehicle noise regulations

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Transmission Set Up of the representative vehicle

“If the vehicle allows different transmission setups like automatic or manual gear selection and/or different software programs or modes (e.g. sporty, winter, adaptive) leading to valid accelerations, the vehicle manufacturer shall prove to the satisfaction of the Technical Service, that the vehicle is tested in the mode which achieves an acceleration being closest to \(a_{\text{wot ref}}\).”

→ Could we consider that the mode which usually achieves an acceleration being closest to \(a_{\text{wot ref}}\) is locked-gear (using 1 gear with \(a_{\text{wot ref}} \pm 5\%\) or 2 gears).
Transmission Set Up of the representative vehicle

- Could principle be extend to transmission variant in a vehicle type?

⇒ For a vehicle-type which can equipped either with locked or with non-locked transmission, could we recommend that the vehicle shall be tested **only in locked gear** instead of both with locked and non-locked gear.
Transmission Set Up of the representative vehicle

“The vehicle transmission, gear, or gear ratio may be controlled by electronic or mechanical measures to avoid the activation of a kick-down function.

Therefore, it is permitted to establish and use electronic or mechanical devices, including alternate gear selector positions, to prevent a downshift to a gear ratio which is typically not used for the specified test condition in urban traffic.”

→ Could we precise the use of electronic device by manufacturer to test in alternate gear?
Transmission Set Up of the representative vehicle

“The vehicle transmission, gear, or gear ratio may be controlled by electronic or mechanical measures to avoid the activation of a kick-down function.”

How to define Kick-down function?

• Gear shifting
  – x gear shifting or
  – gear shifting to a gear ratio which is typically not used for the specified test condition in urban traffic

• Notch on pedal position close to end position

• ...

→ Could we precise kickdown function?
Mass of the representative vehicle

• The test mass has to be measured with +/- 5% compared to target mass.

• Mass is not part of the Vehicle Type definition. In that case the representative vehicle selected for testing could be for example, a 5 seats or 7 seats, with or without option, ...

→ There is not only one mass in running order (target mass) but a range of mass in running order.
Could we consider range of \( m_{ro} \)?

Could we precise how to select representative vehicle regarding range of \( m_{ro} \)?

e.g.

\[
\text{Mass of the representative vehicle} \\
\begin{align*}
&\quad + x \% \\
&\text{M RO max} \\
&\quad - x' \% \\
&\text{M RO min} \\
&\quad + y \% \\
&\text{Mass of the representative vehicle}
\end{align*}
\]

How to consider PMR, \( a_{wot\,ref} \), \( a_{urban} \), \( L_{urban} \) calculation... regarding \( m_{ro} \) range?