

11 November 2019

Agreement

Concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations*

(Revision 3, including the amendments which entered into force on 14 September 2017)

Addendum 50 – UN Regulation No. 51

Revision 3 - Amendment 5

Supplement 5 to 03 series of amendments – Date of entry into force: 15 October 2019

Noise of M and N categories of vehicles

This document is meant purely as documentation tool. The authentic and legal binding text is: ECE/TRANS/WP.29/2019/4/Rev.1.



UNITED NATIONS

* Former titles of the Agreement:

Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958 (original version); Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, done at Geneva on 5 October 1995 (Revision 2).

Supplement 5 to the 03 series of amendments to UN Regulation No. 51 (Noise of M and N categories of vehicles)

Insert new paragraphs 11.10. and 11.11. to read:

- "11.10. Until May 1, 2020 Supplement 4 does not apply to existing approvals, originally granted prior to the date of entry into force of Supplement 4.
- 11.11. Until May 1, 2020 Supplement 5 does not apply to existing approvals, originally granted prior to the date of entry into force of Supplement 5."

Annex 3, Appendix,

Figure 4c, amend to read:

"Figure 4c

Flowchart for vehicles tested according to paragraph 3.1.2.1. of Annex 3 to this Regulation
– Gear selection using locked gear PART 2"

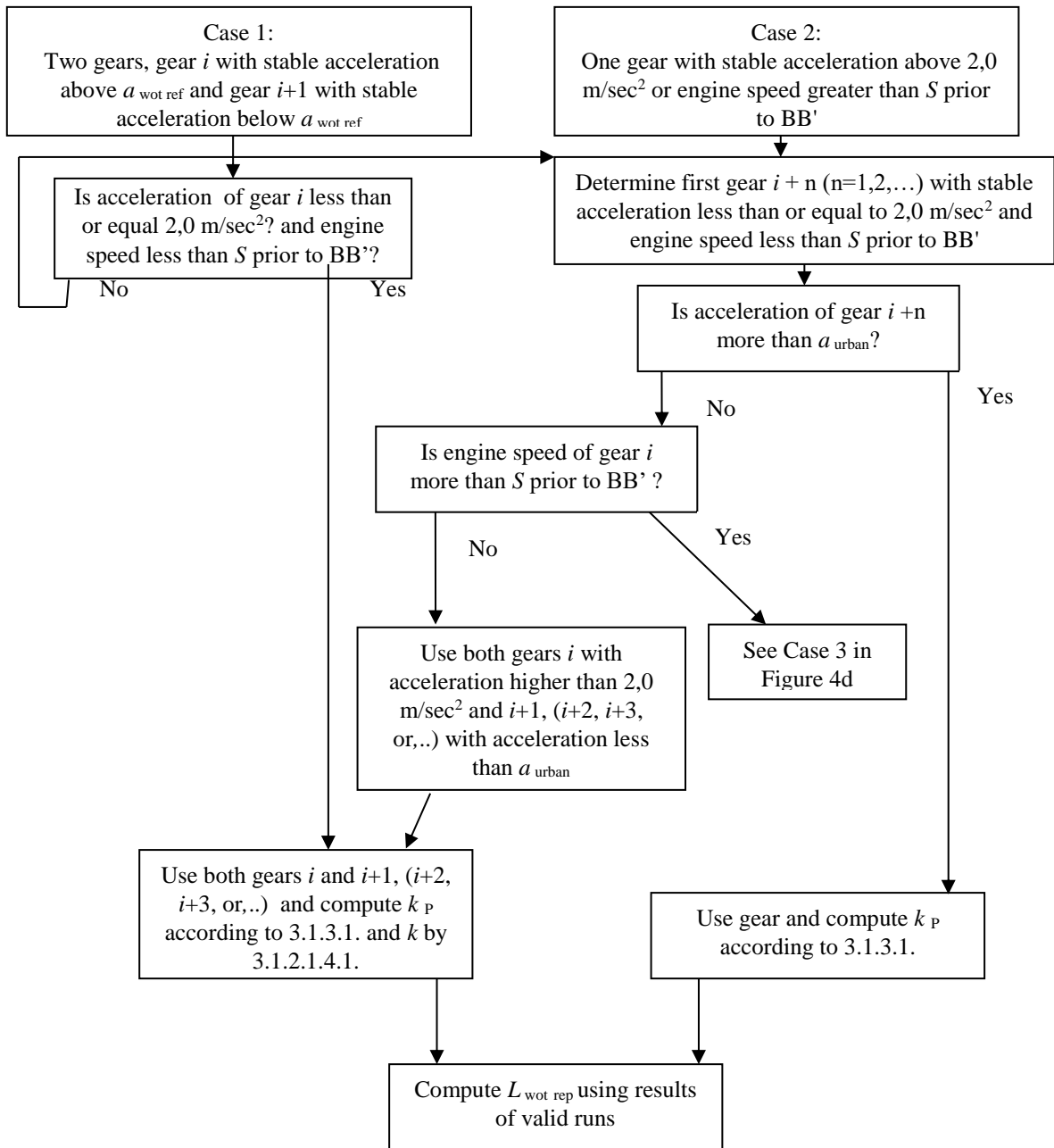


Table 1, amend to read:

"Table 1.

Examples for Devices and Measures to Enable a Vehicle Tested within the Acceleration Boundaries

No.	Impact	Sub No.	Measure	Additional Requirements
1	Lock of a discrete gear ratio	1*	A discrete gear ratio can be locked by the driver	none
		2	A discrete gear ratio is available onboard, but is not available to the driver. Locking can be activated by the manufacturer with an on board (hidden) function or with an external device	none
2	Controlled gear shift management: Applicable to transmissions which cannot be locked, or where no locked gear provides a valid test result	1*	Kickdown is deactivated	none
		2	Gear shift change(s) can happen during the test, gear shift is controlled by activation of an internal function or external device	Acceleration** shall be between a_{urban} and $a_{wot,ref}$, not exceeding 2.0 m/s ² .
3	Defined partial load driving ****	1	Acceleration is limited by a mechanical device	Defined acceleration** shall be between a_{urban} and $a_{wot,ref}$, not exceeding 2.0 m/s ² . For ASEP**, the anchor point parameter are calculated by: $L_{anchor} = (L_{test} - k_p * L_{crs}) / (1 - k_p)$ with $k_p = 1 - a_{test} / a_{wot,ref}$ and $a_{wot,ref}$ according to 3.1.2.1.2.4. but not higher than 2.0 m/s ² $n_{anchor} = n_{bb,test} * 3.6 / v_{bb,test} * (a_{wot,ref} * (20 + 2 * 1) + 192,9)^{0,5}$
		2	External Programming for partial load acceleration ***)	
4	Mixed Solution (Mode): This measure will be a mix of the above solutions combined in a specific mode	1*	Mode is available onboard and can be selected by the driver	none
		2	Mode is available onboard and can only be activated by the manufacturer with a hidden function or an external device	none
		3	Mode is not available onboard, an external software overrides the internal software	Acceleration** shall be between a_{urban} and $a_{wot,ref}$, not exceeding 2.0 m/s ² .

* Comment: This is a standard situation, already covered by the Regulation text.

** Applicable to vehicles of category M₁, N₁ and M₂ ≤ 3,500 kg.

*** Partial load shall be achieved by simulation of the travel restriction of the accelerator. It is not allowed to interfere with the engine control management.

**** Applicable to vehicles of categories M₁, N₁ and M₂ ≤ 3,500 kg, for the further calculation of L_{urban} in Annex 3 the sound level measured under partial load shall replace the sound level under wide open throttle.

The achieved acceleration under partial load during the test shall be used for the calculation of the part power factor k_p instead of a_{wot,ref}.

The test procedure and the data processing follow the same principle. Although it is tested in partial load, symbols x_{wot} (e.g. L_{wot}, a_{wot}, ...) shall be used."

Annex 7, paragraph 5.2, amend to read:

"5.2. The determination of gear α is as follows:

$\alpha = 3$ for manual transmission and for automatic transmission tested in locked position with up to 5 gears;

$\alpha = 4$ for manual transmission and for automatic transmission tested in locked position with 6 or more gears. If the acceleration calculated from AA to BB + vehicle length in gear 4 exceeds 1.9 m/s^2 , the first higher gear $\alpha > 4$ with an acceleration lower than or equal to 1.9 m/s^2 shall be chosen.

For vehicles tested under non-locked condition, the gear ratio for further calculation shall be determined from the acceleration test result in Annex 3 using the reported engine speed and vehicle speed at line BB'."
