

Issues from GRB 66th sessions

Geneva, 4-6 September 2017

ECE/TRANS/WP.29/GRB/64

ASEP-05-04

GRB 66th

- AIWG for ASEP report to GRB :
 - **ECE/TRANS/WP.29/GRB/2017/5** - (IWG on ASEP) Proposal for Supplement 3 to the 03 series of amendments to Regulation No. 51
(included in ECE/TRANS/WP.29/GRB/2017/6 - (Germany and OICA) Proposal for Supplement 3 to the 03 series of amendments to Regulation No. 51 (Noise of M and N categories of vehicles))
 - **GRB-66-14** (IWG ASEP) Status report

Report of GRB 66th session

ASEP

- On behalf of IWG ASEP, the expert from France presented its status report to GRB (GRB-66-14). In particular, IWG ASEP had agreed to propose some improvements in the current Annex 7 as soon as possible, as laid down in ECE/TRANS/WP.29/GRB/2017/5, and then to develop a more general and strategic approach of revising Annex 7.

→ Issue(s) for IWG ASEP : Agreement of GRB on Revision strategies

Revision strategies for ASEP (**GRB-66-14**)

The revision of Annex 7 :

- should address environmentally relevant situation.
- should cover typical on-road operation until driving conditions with extreme accelerations in an extended speed range representative for urban and suburban traffic.
- should allow to check a wide variety of operating conditions : from cruise to full acceleration, from low speed to legal suburban traffic speed.
- shall not replace Annex 3 stringency.
- should permit to check the acoustic response of the vehicle to acceleration (higher acceleration, higher SPL / lower acceleration, lower SPL).
- should permit to extrapolate the physical behaviour of the vehicle sound from annex 3 type approval test results.
- shall be applicable by UN R59 to replacement equipment.

Revision strategies for ASEP (**GRB-66-14**)

- ASEP should have one single assessment method
- ASEP shall be applicable to all vehicles but evaluation should be graduated from “no doubt” vehicle, “normal” vehicle, high powered vehicle and vehicle equipped with variable geometries and active sound systems.
- Annex 7 should be simplified as possible for workload and analysis.

Revision strategies for ASEP (**GRB-66-14**)

Control range

- Control range should be representative for the driving conditions as outlined in the scope :
- Control range under review :
 - **Speed** : < 20 km/h , > 80 km/h (to 100 km/h ?)
 - **Engine speed** : > n_{BB_ASEP} (max 90% of S)
 - **Gear** : All gears (bigger gear ratio range)
 - **Load** : From cruising to partial load
 - **Acceleration**
- Control range could be extend but limited practically by methods and facilities available

Revision strategies for ASEP (**GRB-66-14**)

Limit concept

- The limit concept should be defined by a « Full » vehicle sound model :
- $L_{\text{model}}(v, N, a) = L_{\text{tyre}}(v) \ll + \gg L_{\text{PowerTrain}}(N, a)$
with $L_{\text{PowerTrain}}$ ranges from L_{crs} to L_{wot}
- $L_{\text{asep}}(v, N, a) \leq L_{\text{model}}(v, N, a) + \text{Margin}$
- After model is established, limits (margins) shall be defined.

V : Speed ; N : Engine Speed ; a : Acceleration

Revision strategies for ASEP (**GRB-66-14**)

Test methods

- Tests methods shall be developed for :
 - Partial throttle,
 - Higher speed than 80 km/h and lower speed than 20km/h,
 - Indoor alternative.
- Tests methods shall be developed for all vehicle designs with focus on AT, HV, ...
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Report of GRB 66th session

ASEP Current procedures revision

- Given a large number of amendment proposals to Regulation No. 51, including the ones transmitted by the Informal Working Group (IWG) on Additional Sound Emission Provisions (ASEP) (see para. 12 below), GRB consolidated and provisionally adopted these proposals, as contained in Annex II. **At the same time, GRB was not in a position to reach consensus on whether or not the adopted proposals would require a new series of amendments and/or transitional provisions. GRB decided to come back to this issue at its next session in January 2018.** Meanwhile, the secretariat was requested to submit, in December 2017, the adopted text (Annex II) to WP.29 and AC.1 for consideration and vote at their March 2018 sessions as a draft Supplement 3 to the 03 series of amendments to Regulation No. 51, upon the understanding that any possible modifications, to be decided by GRB in January 2018, could exceptionally be submitted to WP.29 as a corrigendum or addendum to the original WP.29 document.

Report of GRB 66th session

ASEP Current procedures revision

Backfire

- **The experts from Germany, Japan, Sweden and Switzerland supported this amendment proposal in the form of a supplement.** The expert of the Russian Federation supported the proposal as a supplement and agreed that Regulation No. 51 and the ISO standard should be aligned.
- **The expert from Italy expressed concerns about the suggested extension of the sound pressure level measurement to line BB' plus 20 m, with the aim to properly assess the possible "backfire". According to him, this modification would be a new requirement which should be introduced by means of a new series of amendments with transitional provisions, rather than by a supplement [..].** He also pointed out that the above modification would need to be accompanied with a similar change in the relevant ISO standard.
- **The experts from France and EC were of the view that a new series of amendments would be more appropriate.**

Report of GRB 66th session

Backfire

→ Issue(s) for IWG ASEP :

- Additional information on Backfire and transitional provisions should be discussed and conclusions should be reported to GRB.

Report of GRB 66th session

Indoor

- The expert from ISO proposed to introduce an option of indoor testing, according to standard ISO 362-3, in Annex 3 to Regulation No. 51 (ECE/TRANS/WP.29/GRB/2017/8). This proposal received comments from the experts of France, Netherlands, Poland, Spain, Sweden and OICA. **GRB decided to revert to the proposals at the next session and invited all experts to study the document and to send their questions and comments to ISO.**
- Issue(s) for IWG ASEP : Indoor alternative should be discussed and conclusions should be reported to GRB.

Report of GRB 66th session

Noise emissions of L category

The expert from EC introduced the ongoing study on Euro 5 sound level limits of Lcategory vehicles (GRB-66-15) with the aim to investigate the potential for new sound limits of L-category vehicles. He explained that the study takes into account the evolution of sound levels of road vehicles (actual vehicle testing), citizens' needs and stakeholders interest (feedback gathering), and technical and economic feasibility in the medium term (cost-benefit analysis). **The experts from Germany, Netherlands and OICA pointed out that only reducing the sound limits for new vehicles would not achieve the desired results unless accompanied by measures to combat illegal aftermarket products (silencers).**

The expert from Germany highlighted the existing problems with and possible solutions for the noise emissions of L-category vehicles, including non-original replacement exhaust silencer systems (NORESS) (GRB-66-12). **According to him, there was a gap between quiet vehicles during the type approval process and loud vehicles on the streets, because of manipulation with silencers, loopholes and grey areas in the United Nations and the European Union (EU) regulations.**

Report of GRB 66th session

Noise emissions of L category

The expert from EC proposed amendments to Regulation No. 9 with the aim to introduce ASEP requirements for L4 and L5 category vehicles with the power-to-mass ratio (PMR) of more than 50 W/kg (GRB-66-10).

→ Issue(s) for IWG ASEP : ASEP for L category is not in the current ToR of the group but problematic is the same. Possibility of joined work should be discussed and conclusions should be reported to GRB.