Background information for ICCT's proposal to amend the UN Regulation No. 51

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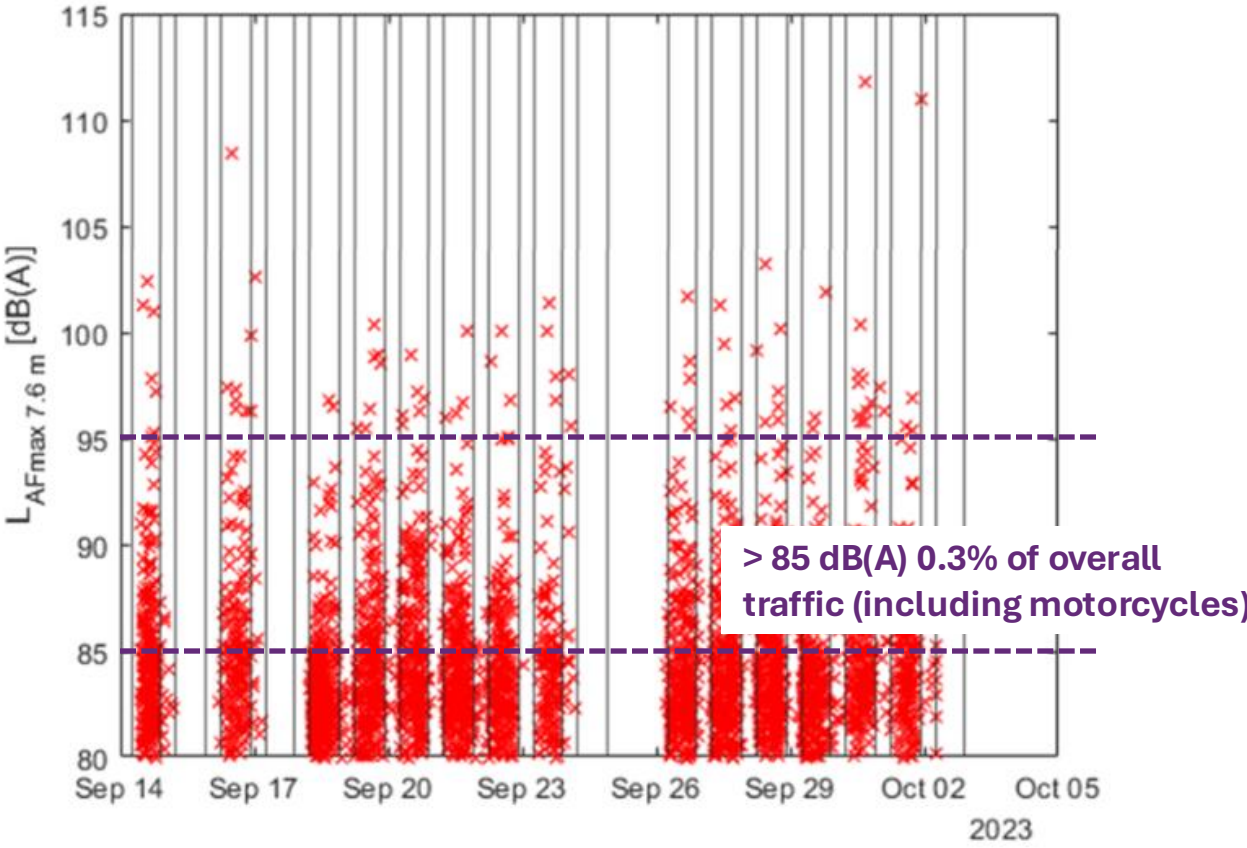
ICCT's Proposal

- Not-To-Exceed (NTE) limits
  - 85 dB(A) at 7.5m within the *Annex 7* and *Annex 9* control range
  - 95 dB(A) at 7.5m beyond the ASEP and RD-ASEP control range (up to 80 km/h within *Annex 7* and 100 km/h within *Annex 9*) or in real-world operating conditions (for easier enforcement)
- Strengthened defeat device clause to safeguard consistent performance in real-world and testing conditions
- Other suggestions
  - NTE limits for stationary vehicle sounds

Objective 1: Safeguard public health in urban environment by limiting excessive vehicle noise

- An additional uniform maximum sound limit ensures that the vehicles does not emit noise at levels harmful to human health.
- Annoyance, a WHO indicator for measuring adverse health impacts of noise and which accounts for a number of diseases linked to noise, is associated with 95 dB(A).
- 85 dB(A) at 7.5m amplified to > 96 dB(A) at 2m, a distance at which pedestrians in urban environment are exposed to vehicle noises.



Noise camera test in Geneva – Rue de Lyon 50km/h, BAFU (2024)

Objective 2: Enhance efficiency and effectiveness of surveillance and enforcement mechanisms

- A single maximum limit provides clear, technologically neutral and quantifiable benchmark for effective market surveillance and enforcement efforts.
- Use of the ASEP curve (Annex 7) and the expected sound model (Annex 9) is complicated for non-experts.
- Current approach and that in preparation (*Annex 7* and *Annex 9*) set sound emission limit based on parameter among which speed and acceleration.
- Allows non-compliance detection through roadside enforcement, noise radar, or in-service conformity testing.
- Reduces administrative burdens for enforcement authorities.

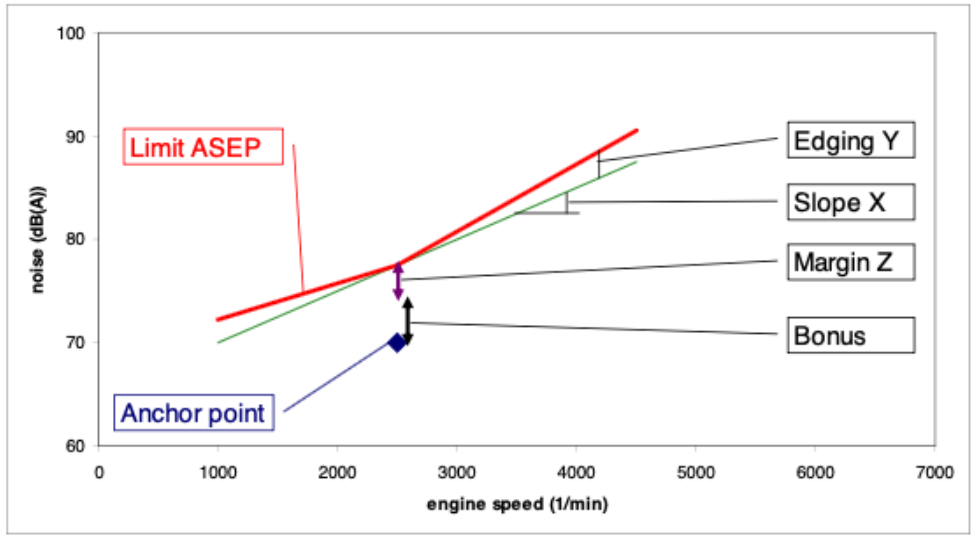
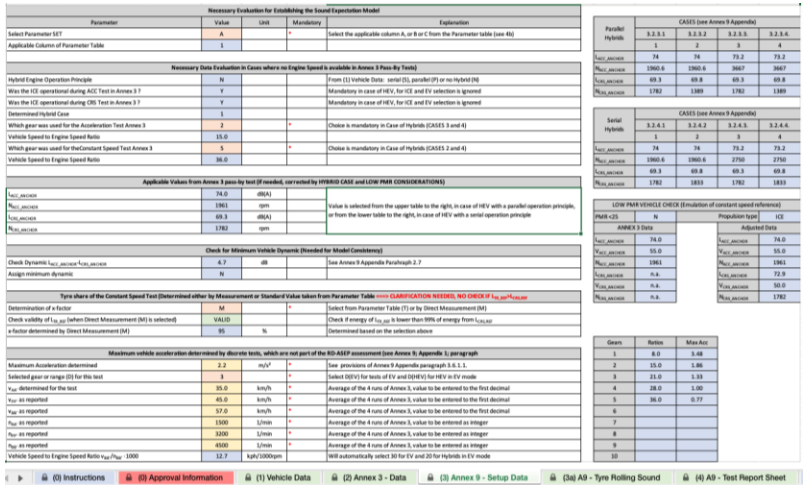


Figure 1: ASEP proposal of the GRBIG; sketch of the limit curve and the different coefficients which determine the stringency.

Kortbeek and de Graaff (2009)



Necessary Evaluation For Establishing the Sound Expectation Model – Annex 9

Objective 3: Promote transparency and accountability in regulatory processes and industry performance

- Enables citizens, local communities, and other organizations to better understand how the vehicle noise is regulated.
- Empowers citizens to advocate for healthier urban environments and promotes citizen participation in noise monitoring.
- Improves accountability from both regulators and manufacturers

Soundless.app

Paragraph 6.2.3. Defeat device

The vehicle manufacturer shall not intentionally alter, adjust, or introduce any mechanical, electrical, thermal, or other device or procedure ~~solely~~ for the purpose of fulfilling the sound emission requirements as specified under this Regulation**.** ~~which is not operational during typical on-road operation.~~

- **"Solely** for the purpose of fulfilling the sound emission requirements" can permit the use of a device or procedure used not only to meet the requirements but also for other purposes, such as to protect vehicle components or performance.
- "**which is not operational during typical on-road operation**" allows the use of device in a small subset of conditions prescribed in the type-approval test, which are hardly encountered in real-world driving.

Other suggestions to amend UNR 51

- *Annex 9*
  - Widened performance range from 35 m^2/s^3 to 55 m^2/s^3
  - Expanded engine speed range of a vehicle to 100% of S
- *Paragraph 6.2.2.*
  - NTE limit of 95 dB(A) for vehicle stationary sounds within the Annex 3 control range
  - NTE limit of 110 dB(A) for vehicle stationary sounds beyond the Annex 3 control range (e.g. snap free acceleration test)

Thank you for your attention!

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