Reversing Alarm of M- and N-Vehicles
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Present Situation (1)

Most vehicles above 3,500 kg are equipped with a Reversing Alarm.

Reversing Alarm equipment also available for Retrofit.

Strictly spoken reversing alarms are forbidden at some CP (e.g. Germany, because no other audible signals beside horns are allowed; § 55 StVZO).

Vehicle equipment often is based on the conditions of the Employer's Liability Insurance Association.
Present Situation (2)

Because

- **Using-Conditions differ** (wide range: extreme loud to very quiet) and
- the **effect of insurances** ("a lot helps a lot"),

the **existing reversing noise level is based** on the ambient noise of **highway construction areas.**

Because of this, existing **Reversing Alarms are very loud**
Present Situation (3)

No specific harmonized standards or requirements were found.

We found only a few national laws.

E.g. Austria: § 18 KDV (“Warning devices”).
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Problems

1. Reversing Alarms actually have **no harmonized limits** (Min. and Max.)

2. In **urban and quiet areas** Reversing Alarms are **too loud** (many complaints)

3. During **10.00 pm & 7:00 am** Reversing Alarms are **much too loud** (many complaints)

4. Reversing Alarm is a **substitute** for AVAS at the **UN-Regulation QRTV**. This makes no sense, if there are **no Minimum limits** of reversing alarm!
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Solutions

**Harmonization of Reversing Alarm under the 58-aggrement**

Harmonization could be based on existing national requirements

Solutions without audible features could be incorporated

Reversing-Alarm as part of UN-R 28 “Audible Warning devices (AWD)”
Solution Details (1)

Scope of Reversing Alarm inside UN-R 28 (AWD): N3 & M3 [& N2] vehicles for the carriage of passengers or goods

Component-Approval & Approval of Fitting on the vehicle (like AWD)

Component: Min-/Max-Levels, Frequencies; Microphone-distance 2 m (Laboratory- or Outside-tests; like AWD component)

Vehicles: Min-/Max-Levels, Microphone-distance 7 m; height of 0,5 - 1,5 m (Outside-test; like AWD-mounting on the vehicle)
Solution Details (2)

4 stage approach (Selectable Sound Pressure level (SPL))

**Normal level:** Urban-Area (SPL: Min. 68 dB(A) & Max. 78 dB(A))

**High level:** Road-Work-Area (SPL: Min. 80 & Max. 94 dB(A))

**Low level:** Quiet-Area (SPL: Min. 52 dB(A) & Max. 58 dB(A))

**Night-switch Off:** Deactivation of Sound (Recommendation: can be used from 10:00 pm - 5:00 am), if hazard warning lights will be activated automatically by using reversing gear
Solution Details (3)

After restarting the vehicle the “Normal level” noise has to be activated again!

Also allowed:

Automatically Level Adjustment: 5 dB(A) + 2 dB(A) above Ambient Noise between an Ambient Noise of 50 and 105 dB(A)

Reversing alarm is not necessary, if a vehicle is equipped with a Rear-View-Camera in accordance to 2003/97/EC or UN-R 46 Revision 5

Rear view camera has to be activated automatically by selecting the reverse gear
Conclusion

If these main ideas would be accepted, Germany and OICA would try to prepare an informal document “Reversing Alarm” based on UN-Regulation No. 28 for next GRB-Session.
Thanks for your attention!