



Bundesministerium
für Verkehr und
digitale Infrastruktur

Informal document **GRB-64-06**
(64th GRB, 5–7 September 2016,
agenda item 2)

Reversing Alarm of M- and N-Vehicles

Contents:

1. Present Situation

2. Problems

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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)

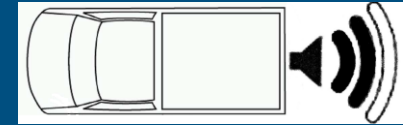
**Component: Min-/Max-Levels, Frequencies; Microphone-distance 2 m
(Laboratory- or Outside-tests; like AWD component)**

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

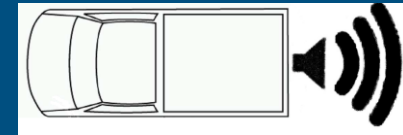
Solution Details (2)

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

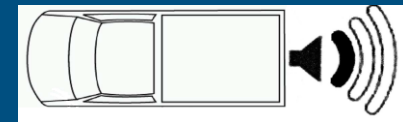
Normal level: Urban-Area (SPL: Min. 68 dB(A) & Max. 78 dB(A))



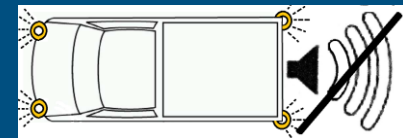
High level: Road-Work-Area (SPL: Min. 80 & Max. 94 dB(A))



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

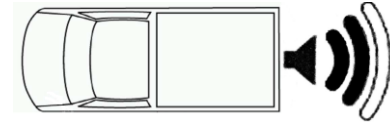


Night-switch Off: Deactivation of Sound (Recommendation: can be used from 10:00 pm - 5:00 am), if hazard warning lights will be activated automatically by using reversing gear



Solution Details (3)

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



Also allowed:

Automatically Level Adjustment : $5 \text{ dB(A)} \pm 2 \text{ dB(A)}$ 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!