Maatwerkadvies Verkeersemissies

Title

Noise emission of Land Rover off-road vehicles in relation to proposed revision of EU limit values

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Introduction

In Amendment 51 formulated in document A7-0435/2012 of the European Parliament (dated 21.12.2012) the most recent proposal for revised limit values for noise emission of road vehicles has been laid down.
Some concern has arisen whether off-road vehicles produced by the Land Rover Company could fulfill these requirements without serious technical difficulties.
The EU Circa data base of vehicle noise emission data that was used as a basis for the VENOLIVA study [1] has been consulted to find useful information to evaluate the question stated above.

Available information

In the EU Circa data base four vehicle types produced by Land Rover were found. One type was specified as a Range Rover and was equipped with a 5L petrol engine. The noise emission of this type tested according to the new test method B was 70 dB(A). The three other types were indicated as types LA and LS and were equipped with a 5 L petrol engine or a 3 L Diesel engine. The noise emission of these types according to test method B was 69 dB(A).

Trade_mark	commercial-_name	Model-_year	Category	Capacit-_engine [cc]	max_-power-engine [kW]	type_-engine	vehicle-length [m]	Vehicle-mass [kg]	Tyre_mark	meth_A Test result [dB(A)]	meth_B-LURBAN [dB(A)]
Land Rover	LM.Range Rover	2010	M1G	4999	283	petrol	4.967	2707	Continental	71	70
Land Rover	LA	2010	M1G / N1G	4999	276	petrol	4.835	2685	Goodyear	70	69
Land Rover	LS	2010	M1G / N1G	2993	180	diesel	4.788	2714	Continental	71	69
Land Rover	LS	2010	M1G / N1G	4999	276	petrol	4.788	2571	255/50r19	71	69

Comparison with proposed limit values

For passenger cars with off-road capacity (M1G vehicle category) the proposed future limit values for test results according to method B will be 69 dB(A). Three of the four vehicles would comply with these requirements. The Range Rover type would be 1 dB(A) too high. As these limit values will come into force only 6 years after publication and at that point in time only for new vehicle types, there does not seem to be a technical problem for the off-road vehicles produced by Land Rover to comply with the future limit values. The 1 dB(A) overrun of the limit value can easily be corrected by minor alterations of the design.
If the LA and LS types would be sold and delivered as vans (N1G vehicle category) the applicable limit value would be 71 dB(A), so no problem would exist for such variants of the tested vehicles.

Further evaluation

The Land Rover types available in the database do not include the utility vehicle type Land Rover Defender, which is frequently used by emergency services, forest management and the military. Consequently, no test results are available to assess the possibility of this type of off-road vehicle to fulfill the future noise limits. This type, with a 2.2 L diesel engine, is less heavily powered than the vehicles types found in the data base.
According to the information on the Land Rover website the difference in noise production during 'drive by' between the currently marketed Land Rover Defender and the Land Rover Discovery with the 3L Diesel engine is 2 dB(A). This would imply that the noise emission of the Land Rover Defender tested according to method B would be 71 dB(A).
Assuming that these vehicles will be primarily marketed as vans (N1G category), they would already now comply with the limit value of 71 dB(A).
In case the Defender is marketed as passenger car the applicable limit value would be 69 dB(A) and the assumed test result would exceed this value with 2 dB(A). As the limit value would be valid only for new vehicle types in the first phase of the enforcement this overrun of 2 dB(A) may be corrected for in a new vehicle design without significant technical problems. This is demonstrated by the fact that the heavier powered Land Rover types with a 3 L Diesel engine already now comply with this limit value.

Conclusion

The concern that Land Rover off-road vehicles would have serious technical problems to comply with the proposed future limit values for noise emission is <u>not</u> supported by the information available in the EU Circa database and the information given on the Land Rover website.

References

[1] F. de Roo, M.G. Dittrich, P.J.G. van Beek, C. Bosschaart, G.B. Derksen and M. de Kievit, VENOLIVA - Vehicle Noise Limit Values - Comparison of two noise emission test methods, TNO report MON-RPT-2010-02103, Delft, The Netherlands (March 2011).