

Transmitted by the expert from China

Informal document **GRB-56-07**
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 agenda item 3(b))

**Proposal of new sound limit values to the draft 03 series of amendments
 to UN regulation No. 51**

Vehicle Category	Sub-category	Limit value (Phase 1st)	Limit value (Phase 2nd)
M1*	GVW < 2 500kg or seats number < 6	72	Reserved
	Others	73	
M2	GVW < 3 500 kg	74	
	Others	76	
M3	Vehicle length < 7 500mm	78	
	7 500mm ≤ Vehicle length < 10 000mm	80	
	10 000mm ≤ Vehicle length	81	
N1	----	74	
N2	GVW < 5 000 kg	78	
	Others	79	
N3	GVW < 17 000kg	81	
	Others	82	

Additional items (All the three additional items can be accumulated.):

- 1. All vehicle categories use more than one drive axle during the test, the limit values +1 dB;**
- 2. All vehicle categories with more than two axles, the limit values +1 dB;**
- 3. * M1 categories vehicles with the PMR values higher than 120 kW/t, the limit values +1 dB.**

The analysis of limit value submitted by China, Japan and limit values of ECE R51-02 and GB 1495-2002

Vehicle Category	Sub-category	Limit value dB(A)			
		Suggestion of China (Phase 1 st)	Suggestion of Japan (Phase 1 st)	ECE R51-02 series	GB 1495-2002 (2005 edition)
M1 ^{*[1]}	GVW < 2 500kg or seats number < 6	72 ⁺¹⁺¹	72 ⁺¹ / 73 ⁺¹ / 75 ⁺¹	74 ⁺¹⁺¹⁺¹⁽⁺²⁾	74 ⁺¹⁺¹⁺¹⁽⁺²⁾
	Others	73 ⁺¹⁺¹			
M2 ^[2]	GVW < 3 500 kg	74 ⁺¹	72 ⁺¹ / 74 ⁺¹	76 ⁺¹ / 77 ⁺¹	76 ⁺¹ / 77 ⁺¹
	Others	76 ⁺¹	75 ⁺¹	78 ⁺¹ / 80 ⁺²	80 ⁺¹ / 83 ⁺²
M3 ^[3]	Vehicle length < 7 500mm	78 ⁺¹	76 ⁺²⁺² / 79 ⁺² / 80 ⁺²		
	7 500mm ≤ Vehicle length < 10 000mm	80 ⁺¹			
	10 000mm ≤ Vehicle length	81 ⁺¹⁺¹			
N1	----	74 ⁺¹	74 ⁺¹ / 72 ⁺¹ / 74 ⁺¹	76 ⁺¹ / 77 ⁺¹	76 ⁺¹ / 77 ⁺¹
N2	GVW < 5 000 kg	78 ⁺¹	77 ⁺¹ / 78 ⁺¹	77 ⁺¹ / 78 ⁺¹ / 80 ⁺²	81 ⁺¹ / 83 ⁺¹ / 84 ⁺²
	Others	79 ⁺¹			
N3	GVW < 17 000kg	81 ⁺¹	80 ⁺² / 82 ⁺²		
	Others	82 ⁺¹⁺¹			

Additional items (All the three additional items can be accumulated):

- 1. All vehicle categories use more than one drive axle during the test, the limit values +1 dB;**
- 2. All vehicle categories with more than two axles, the limit values +1 dB;**
- 3. * M1 categories vehicles with the PMR > 120 kW/t, the limit values +1 dB.**

^[1] There are nearly no passenger cars with PMR values higher than 120 kW/t manufactured in China.

^[2] There are nearly no M2 / M3 / N2 vehicles with more than one drive axle manufactured in China.

^[3] The M3 categories with the length > 13 meters always have more than two axles manufactured in China

Appendix

Explanations for the sub-categories suggestion from China

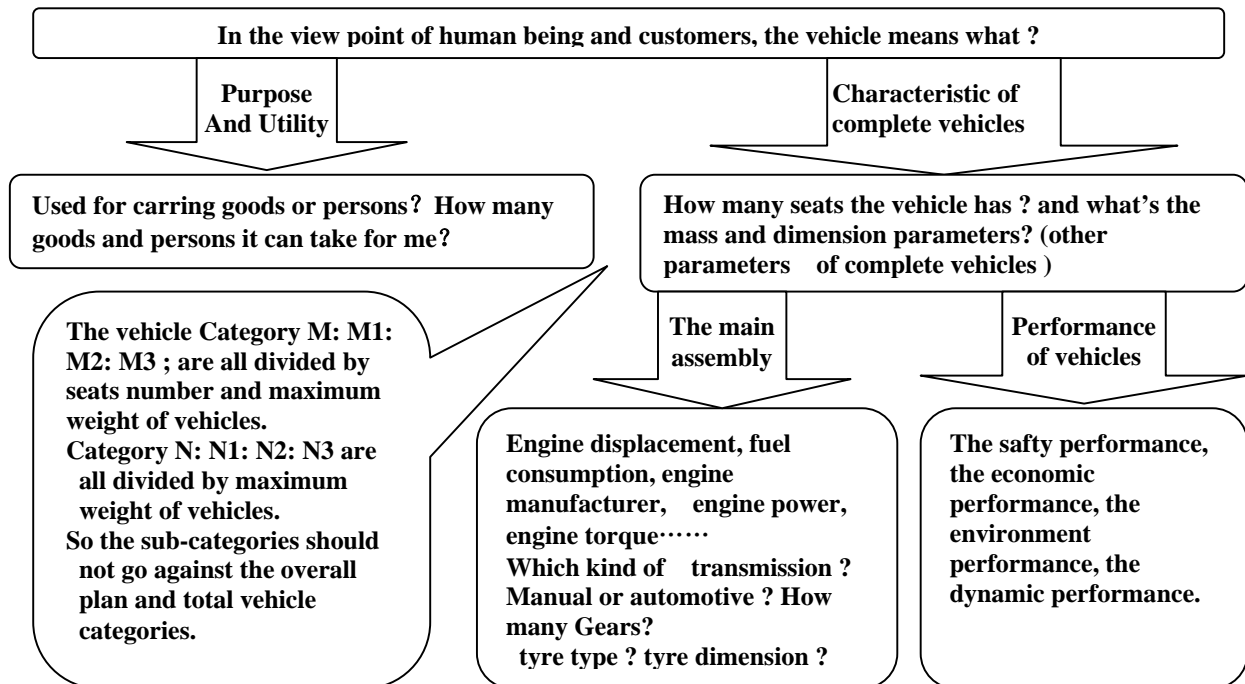


Figure 1 Thinking models - HUMANBEING CENTER

Conclusion:

1. I have ever browsed the Germany Constitution (Chinese edition), the first part is all about the human rights and the equality between different persons, when we decide the sub-categories we should better choose the view point of human being. Use the utility, purpose, maximum weight, seat number or the cargo capacity. This should be considered as the mainstream thinking models.
2. We can not use the mechanical thinking models instead of the human thinking models. There is a famous America movie called < Spider Man>, and there is a famous dialogue “with great power comes great responsibility”, that does not mean “with great money comes great engine, and with great engine power comes great pass-by noise”, the equality of the regulations must be ensured firstly.
3. The government of China does not encourage the high engine displacement and high energy consumption vehicles.
4. The noise is a kind of pollution, and is now a more and more serious question in China. Some noise can not been avoid for the normal running of urban and some noise is just been made for fun or just shows the owners of vehicles are special, we should treat them separately, avoid and forbidden the non-necessary noise first, manage and improve other traffic noise like buses and coaches, and finally have a better acoustic environment.
5. The vehicles which frequently appear in the urban areas should been managed more strictly in the noise field, so the limit values for all M categories should been more strict.

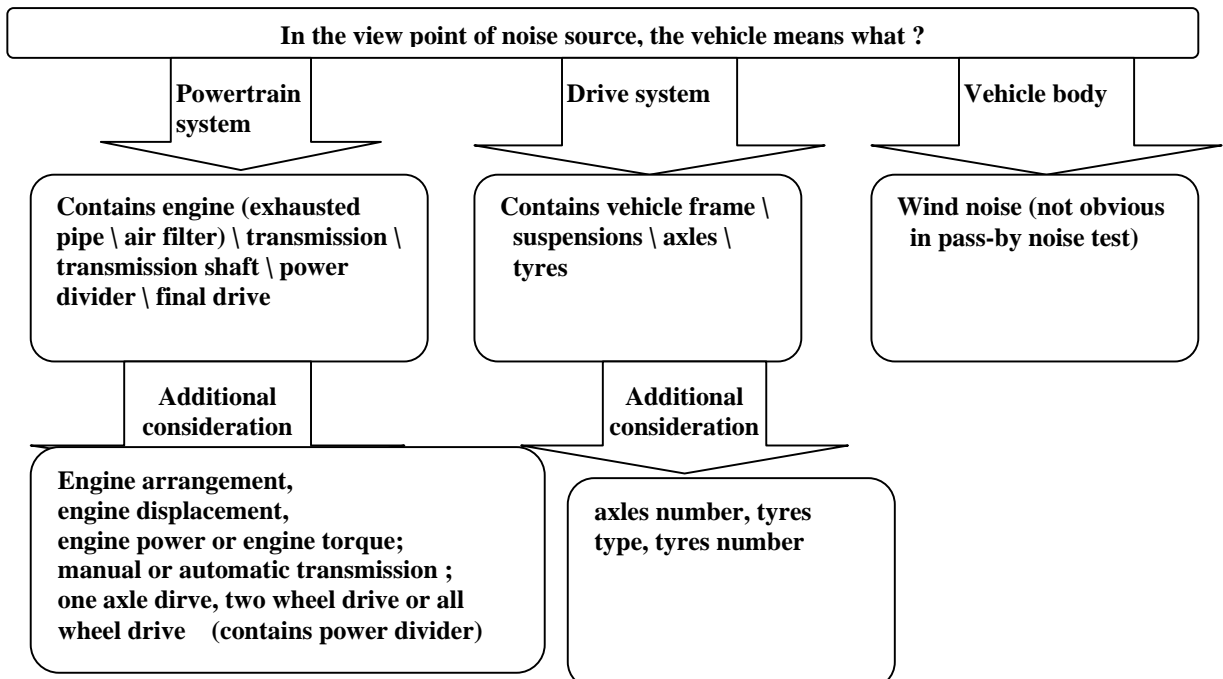


Figure 2 Thinking models –NOISE SOURCE

Conclusion:

1. Only the mainstream is not enough, so maybe we need some additional considerations, in the view point of noise source. We need some more consideration for the more than one axle drive vehicles, high engine performance vehicles, the axle number and tyres number.
2. The engine power is just one parameter of engine, and we should not only consider the sub-categories of complete vehicles with a single parameter of engine. That means we should not use the part instead of the whole.
3. The theoretical basis of ECE R51 – 03 Series and ISO 362-1:2007 is that the engine noise is not the only main noise source of vehicles, so the new test method considers the noise of the powertrain and the drive systems. So, when we set the limit values we should also consider the structure, arrangement and main noise source of complete vehicles.
4. I have ever browsed the Constitution of Japan (English edition), it says “We believe that no nation is responsible to itself alone, but that laws of political morality are universal”, I agree with it, so we should consider the sub-categories and limit values in the view point of all the human being but not only the benefit of any single country or any single region.
5. Although there are nearly no passenger cars with PMR values higher than 120kW/t manufactured in China, but there are also some realistic problems, the noise of sports and luxury cars have high engine power and high noise. And there was a German philosopher called Georg Wilhelm Friedrich Hegel ever said “All that is real is rational; and all that is rational is real”, so maybe we can control the noise of this kind of vehicle with some additional items, but not set all the vehicles sub-categories using the engine power method. We can have some other better and more neutral methods for the sub-categories.