

# ETRTO POSITION

41<sup>st</sup> GRB Meeting  
Geneva 22/02/2005



# Amendment of UN/ECE Regulation 51-03

## ETRTO Position

**The tyre should not be doubly legislated unless the new amended vehicle noise regulation 51 takes into account the limit(s) for the tyre in a harmonised way with the current Tyre/Road Noise Directive & ECE/Regulation 117.**

**Any tyre type fulfilling the requirements of EC/Dir 2001/43 & UN-ECE/Reg 117 must be acceptable for conducting the vehicle homologation.**



## AMENDMENT of UN/ECE REG 51

- **Referring to Paragraph 2.2.2 Footnote 1**  
**The tyre contribution for overall sound emission being important, this Regulation has taken into account the tyre/road sound emission regulations**

**Full coherence between ECE/Regulations 51-03 and ECE/Regulation 117 needs to be addressed**



## **Limits for the New Amd. UN/ECE Reg. 51-03**

**The new method has a different approach for the evaluation of the vehicle sound overall emission & is not correlated to the current one.**

**Therefore the limits for the new method should be established taking into account the new testing conditions only .**

**ETRTO has established a procedure  
to evaluate the coherence  
between the 2 Regulations.**



# COHERENCY BETWEEN TYRE & VEHICLE REGULATIONS

**Power Train Contribution**  
50%

**Tyre Contribution**  
50%

**Power Train/Tyre ratio**  
50% - 50%

**Corresponds Power Train Contribution**

**72 dB(A)**

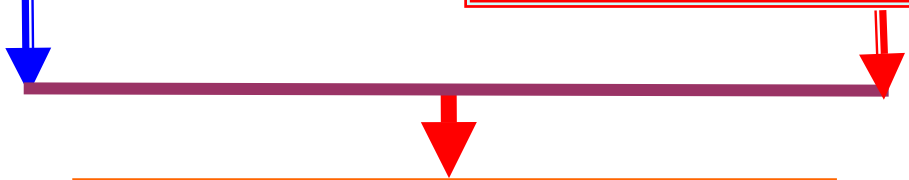
**Tyre Rolling sound Emission**  
76 dB(A) \* @ 80 kp

⇓

**70dB(A) @ 50 kph**  
+ (~1,5 to 2) dB(A) (tyre torque)

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**72 dB(A)**



**Limit for the overall Vehicle Sound Emission (Power Train / Tyres ratio)**  
50% -50%

**75 dB(A)**

\* To cover all tyre sizes that can fit M1 vehicles the highest tyre limits of ECE/Reg 117 is considered



Proposed Limits  
versus  
EC/Dir 2001/43 & ECE/Reg 117



# French proposition for M1 vehicle category

**Unique limit for gasoline & diesel vehicles :**

**→ 73 dB(A)**

- **Off-road & sports category:**

*Limits to be proposed after their definition is clarified??*



## Possible Impact of the French proposition on ECE/Reg 117

<b>M1 vehicles</b>	<b>Sound level limits dB(A)</b>
<b>ECE/Reg 51-03 M1 M1 sportive M1 off-road</b>	<b>73 ? To be defined ? To be defined</b>
<b>Impact on Reg 117 Highest Limit C1(e) 76</b>	<b>M1 = -2 dB(A)  ~74</b>

Clear definition  
is needed  
for  
M1 sportive  
&  
M1 off-road





## German proposition for M1 category

<b>CATEGORY</b>	<b>STEP 1 dB(A)</b>	<b>STEP 2 dB(A)</b>	<b>STEP 3 dB(A)</b>
<b>M1</b>	<b>71</b>	<b>70</b>	<b>69</b>
<b>M1s</b>	<b>73</b>	<b>72</b>	<b>71</b>
<b>M1o</b>	<b>72</b>	<b>72</b>	<b>71</b>

The basis for the definition of M1s & M1o needs to be clarified

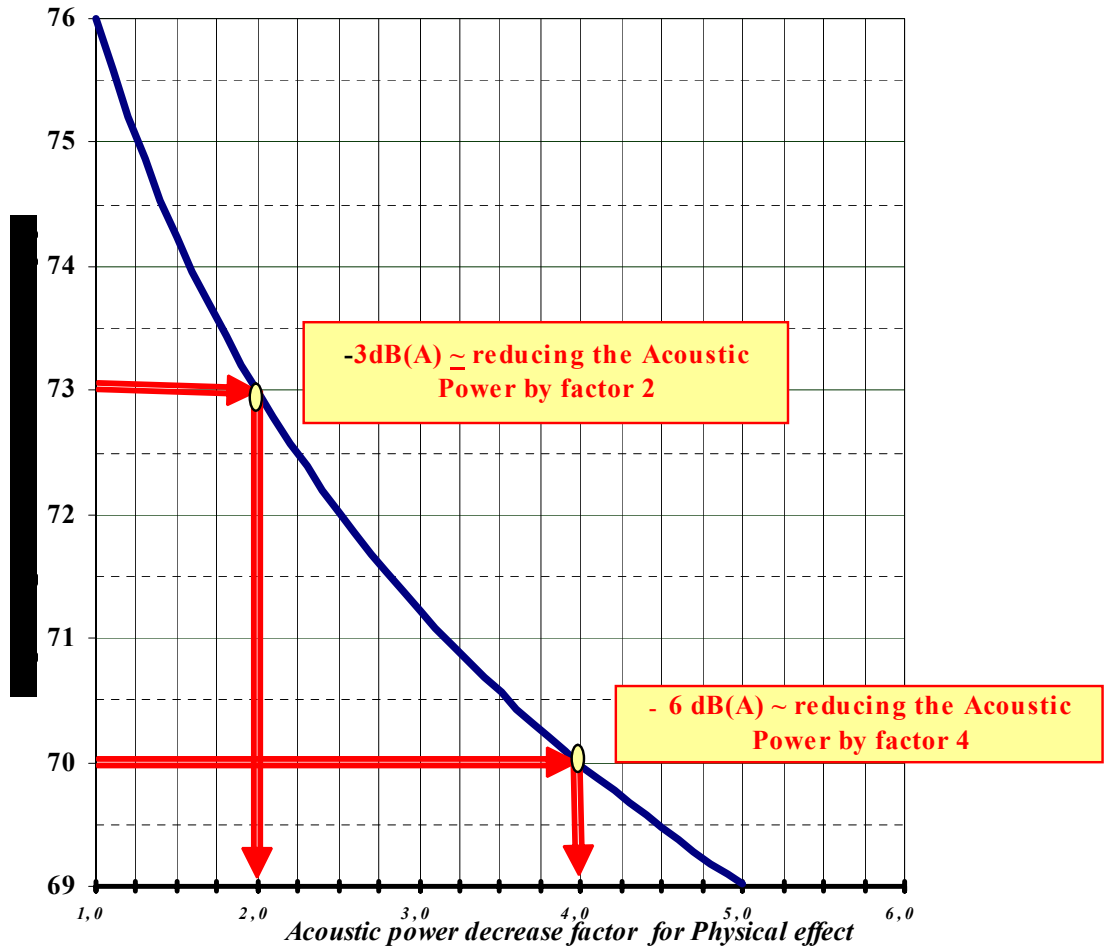


# Possible Impact of the German proposition on Tyre Dir 2001/43 & ECE/Reg 117

M1 vehicles	Sound level as Step 1 dB(A)	Sound level as Step 2 dB(A)	Sound level as Step 3 dB(A)
Limits for Reg 51.03	71	70	69
<b>Impact on Reg 117 Highest Limit C1(e)</b>  <b>76</b>	<b>-4 dB(A)</b>  <b>~72</b>	<b>-5 dB(A)</b>  <b>~71</b>	<b>-6 dB(A)</b>  <b>~70</b>



Acoustic Power ratio v.s. Acoustic effect (dB(A)decrease)



Is it realistic to require in the future that four tyres would have the same rolling sound emission as only one today?



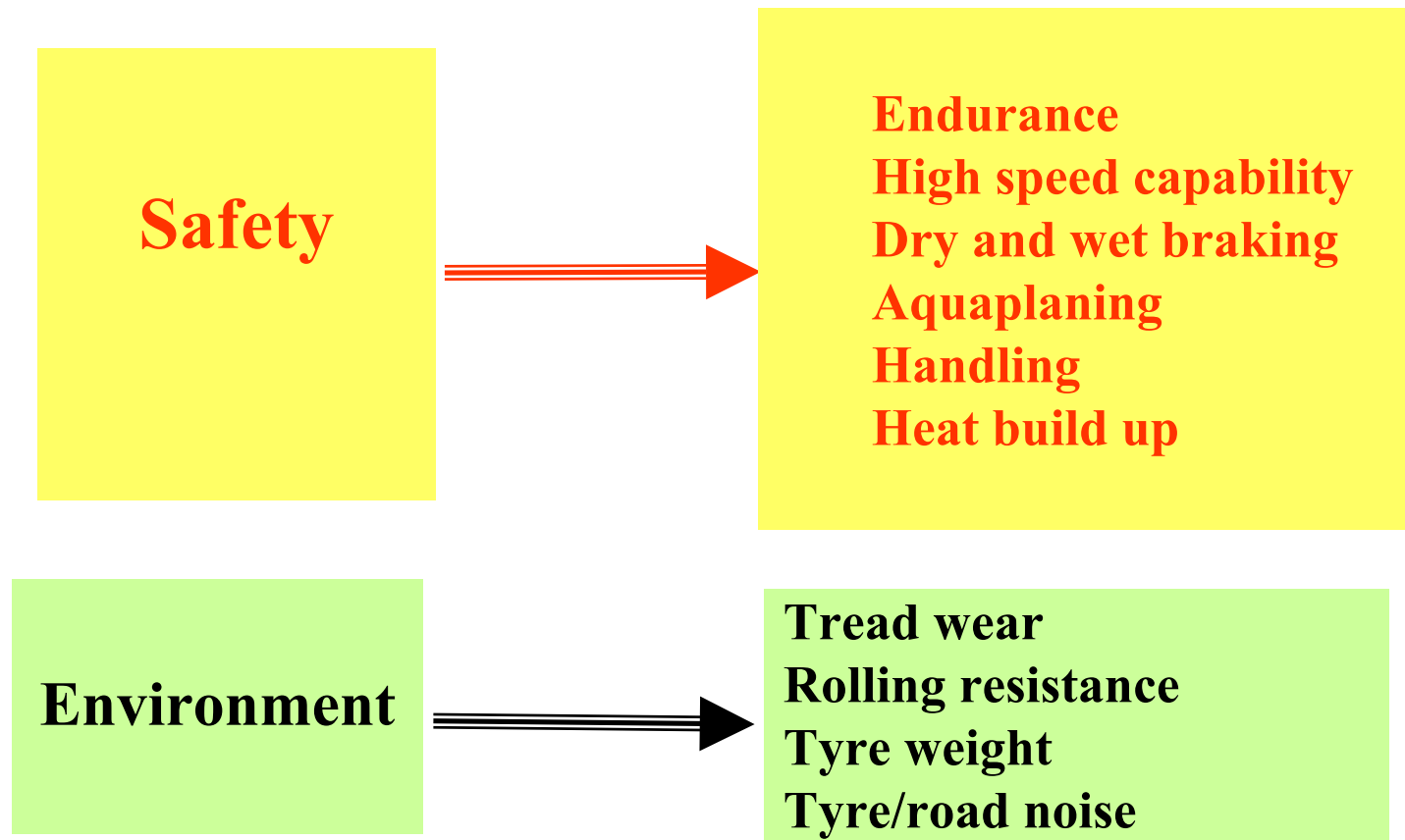
# Feasibility & Economic impact

As already practiced for many regulations we request that a feasibility study & a cost benefit analysis be performed.



# The Compromise to achieve

- The challenge is to build a tyre whose performance characteristics (especially safety related) are all maximized:



# Legislation for Tyre Rolling Sound Emissions

## Points to consider

- **Improvements in technology allow today's tyre industry to better manage the interactions between SPL & wet braking distance.**
- **If limits for SPL are reduced significantly then there is a risk that tomorrow's tyre industry will no longer be able to manage the tradeoffs.**
- **Focusing on SPL might jeopardise other safety or environmental performances.**
- **The level of any performance criterion is the result of the compromise chosen for the other criteria whether legislated or not.**
- **Care has to be taken when fixing limits based only on the analysis of the tyre rolling sound emission values of a sample of vehicles without considering the whole population of vehicles & tyres.**



# Legislation for Tyre Rolling Sound Emissions

## Points to consider

- **Current & future trends in vehicle design entail larger & wider tyres.**
- **For the moment the benefits in sound level reduction according to the UN-ECE Reg 51.03 have not been demonstrated on the public roads.**



THANK YOU

