Possible Future Tyre Noise limits

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GRB 61, January 2015
Presentation informal doc GRB-61-03
Content

• Noise in Europe, 2014
• Benefits better tyres
• Current tyre noise limits
• Costs and Benefits
• GRB
Noise in Europe 2014, EEA

• 25% of EU citizens over 55 dB (WHO threshold)
• Environmental noise is linked to 10,000 premature deaths a year in EU
• Road traffic is the main source of noise in Europe
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Triple-A tyres – benefits for environment, noise, safety and economy

Results of ‘Potential benefits of Triple-A tyres in the Netherlands and the EU, a study performed by order of the Dutch Ministry of Infrastructure & Environment

source: www.garageadrem.nl
1 Extra fuel costs per year (17000 km/yr)

2 Extra braking distance wet road at 80 km/h (Braking distance A=27 m)

3 Noise*
- A: 2 times as quiet
- B: average
- C: 2 times as loud

*Doubling noise is 3 dB
<table>
<thead>
<tr>
<th>Potential benefits in the EU</th>
<th>Energy</th>
<th>Safety</th>
<th>Noise</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual fuel savings [ billion l]</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>17</td>
</tr>
<tr>
<td>Annual CO₂ reduction [ MtCO₂]</td>
<td>42</td>
<td>-</td>
<td>-</td>
<td>42</td>
</tr>
<tr>
<td>Reduced number of fatalities</td>
<td>-</td>
<td>2567</td>
<td>-</td>
<td>2567</td>
</tr>
<tr>
<td>Reduced number of serious injuries</td>
<td>-</td>
<td>12353</td>
<td>-</td>
<td>12353</td>
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<tr>
<td>Reduced number of slight injuries</td>
<td>-</td>
<td>19631</td>
<td>-</td>
<td>19631</td>
</tr>
<tr>
<td>Reduced number of highly annoyed people [ millions]</td>
<td>-</td>
<td>-</td>
<td>8.2</td>
<td>8.2</td>
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<tr>
<td>Reduced number of annoyed people [millions]</td>
<td>-</td>
<td>-</td>
<td>13.0</td>
<td>13.0</td>
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<tr>
<td>Reduced number of highly sleep disturbed people [ millions]</td>
<td>-</td>
<td>-</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Reduced number of sleep disturbed people [ millions]</td>
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<td>-</td>
<td>6.1</td>
<td>6.1</td>
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<tr>
<td>Annual cost savings [ billion €]</td>
<td>13</td>
<td>10</td>
<td>11</td>
<td>34</td>
</tr>
</tbody>
</table>
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Tyre noise limits, Evaluation based on sold Tyres in the Netherlands

C1 noise, influence of time
C1 tyres ≤ 245 mm width

- ETRTO data 2007 (avg = 71,5 dB(A))
- Label data Nov 2013 (avg = 69,9 dB(A))

Noise emission (dB(A))
C1A tyres (≤185) noise, relative to limit
data from 2013 label database
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Rolling resistance

\[ y = 5.5375x + 103.46 \]

\[ R^2 = 0.0266 \]
Noise (class)

\[
y = 8.463x + 108.65 \\
R^2 = 0.0239
\]
Noise (dB(A))

\[ y = 3.9276x - 151.45 \]

\[ R^2 = 0.045 \]
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GRB

• Better tyres have major benefits
• Better tyres are widely available
• Better tyres do not cost more
• Momentum and time
• Potential amendments to Regulation R117