



## European Noise Thresholds Put in Question

A recent study demonstrates that lower noise exposure limit (55dB) used for the drawing up of the maps of the major noise sources across EU leads to a large underestimation of the noise annoyance indicators. Dropping of this lower limit for the next round of noise mapping in 2012 will be crucial to define adequate long-term noise pollution reduction measures.

As the first step in dealing with noise pollution issues, the 2002 EU Directive on Environmental Noise requires the draw up of strategic noise-maps across EU by 2007. It is expected that such noise maps will be crucial for the future management of noise pollution and its health effects.

According to the directive, the noise-maps should include the major noise sources for which the level of noise emission equals or exceeds the lower limit of the harmonized day-evening-night levels (DENL) of exposure fixed at 55 dB in the EU.

However, in a recent study, Dutch researchers pointed out that annoyance also occurs below 55dB, as calculated by the conventional DENL-annoyance models. Consequently they compared four main noise annoyance indicators calculated from noise maps for the city of Leiden (Netherlands) with and without 55 dB restriction.

Calculations in Leiden show that taking only noise exposures with  $DENL \geq 55$  dB into account will lead to a large underestimation of the noise annoyance indicators varying from 32% for the percentage of highly annoyed to 48% for the percentage of little annoyed population.

They also compared the effect of hypothetical reduction of noise emission on the annoyance indicators and demonstrated that the ranking of different noise abatement strategies can be affected by the 55dB restriction.

According to the authors, the choice for the lower DENL limit of 55 dB is possibly made because many calculation methods, used for the current noise mapping, are not particularly accurate at lower noise levels. Since the calculation methods are developing and will probably be more accurate in the future, they suggest that the lower limits could be dropped for the 2012 round of strategic noise mapping.

Although the results presented in their study involve the particular noise situation of the city of Leiden, the Dutch scientists believe that the dropping of noise exposure limits would be advisable in order to get a clear picture of the noise annoyance across Europe and to define adequate noise pollution reduction measures in the future.

**Source:** Borst H.C. & Miedema H.M.E (2005) "Comparison of noise impact indicators, calculated on the basis of noise maps of DENL", *Acta acustica united with acustica*. 91 (2) 378 – 385

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