

## **Preliminary results of noise level measurements inside passenger buses in southern province of Sri Lanka**

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Commuters who use public buses including luxury ones to travel long distances often complain loud noise as a major disturbance to their journey. This study presents preliminary results of measurements of noise level distribution inside passenger busses operated in southern province of Sri Lanka. According to WHO guidelines, prolonged exposure to high levels of noise (>70 dB(A)) could cause physical and psychological problems and exposure to noise levels greater than 85 dB(A) could result in hearing loss. Diffuse field noise measurements in 104 randomly selected buses were taken using a B&K Type-2250 hand held analyzer. Several noise descriptors including  $L_{Aeq}$ ,  $L_{Cpeak}$  and  $L_{AFmax}$  were measured in front, middle and back of fully seated buses.  $L_{Aeq}$  values of all buses in the sample were found to be greater than 70 dB(A) with audio system turned on. Noise levels were found to be greater than 75, 80 and 85 dB(A) in about 80%, 42% and 10% of the buses, respectively. The contribution from the audio system to the background noise level inside buses was found to be about 5-10 dB(A).  $L_{Cpeak}$  values about 110 dB(A) levels have been measured which were mostly due to modified horns of buses. The noise is found to be predominantly generated by acoustic waves of frequencies in the range 12 to 200 Hz and such low frequency noise is known to cause more health problems than noise due to high frequency sound waves. This study suggests the necessity of introducing noise monitoring and regulatory systems for busses, especially, for audio systems and horns, and conducting awareness programs for bus operators.

Key words: Audio system, noise descriptor, passenger buses, noise level

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