

A CONTRIBUTION TO ANALYSIS OF BUS PASSENGER VIBRATIONAL COMFORT

Authors

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Abstract

The objective of this research is to consider parameters of vibrational comfort as related to the bus layout, i.e. effect of the position of power train, speed and road surface in order to delineate the essential steps in the design process contributing to the vehicle's comfort thereafter. Objective methods of analysis were applied within the experimental research in order to conceive how the bus layout, i.e. position of the power train, affects parameters of passenger vibrational comfort. Two basic bus layouts were subjected to the analysis: one with the power train installed in the rear overhang of the bus and the other with the underfloor engine installation in the wheelbase area. Selected variables were recorded in various service conditions: at three different spots in the bus, on three types of road surface and four different constant speed regimes. Axles, engine and bus floor accelerations were measured so as to enable “step-by-step” analysis of vibration paths and help identify relations of characteristic vibration frequencies to the specific disturbance sources. The experimental results are given in a graph form showing the influence of various relevant parameters on passenger vibrational comfort.

Keywords

bus, vibration, comfort