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**SUSTAINABLE DEVELOPMENT
OF AUTOMOTIVE INDUSTRY**

Proceedings of Papers



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MVM2012-058

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NOISE EMISSION WITH ASPECT OF VEHICLES FLEET STRUCTURE – THE CASE OF SERBIA

ABSTRACT: In every day's traffic, vehicles are becoming older and noisier. Motor vehicles noise emission is examined by authorized laboratory before vehicle is placed on the EU market. In addition, each vehicle must meet the standards applicable to noise emission, according to specific vehicles categories. The problem represents the fact that noise, sampled on technical inspection, is not measured because noise tests are too complicated (necessary conditions cannot be achieved). Determination of noise quantity, emitted by vehicle is determined based on personal observations of person responsible for technical inspection. An additional problem is failure to log data in technical documentation on vehicle and also in base of registered motor vehicles. This paper only analyses participation of certain categories of vehicles in traffic, with certain noise emissions based on production year, from point of appropriate application permissible noise emissions regulations.

KEYWORDS: The structure of the fleet, noise, vehicle categories

INTRODUCTION

The rapid development of traffic in the last ten years caused a progressive deterioration of environmental conditions which are fully shown in a very complex and urban traffic conditions. Traffic noise caused by road traffic is a significant source of noise in cities, compared with other noise sources such as industrial noise, noise caused by air traffic, railway noise, etc. [1]. The studies conducted in several countries in past few decades have shown that noise has bad influence to the work activity of the population as well as to the disruption of sleep and generally to poor quality of living [2]. From the above mentioned reasons, it is necessary to control the noise generated by traffic.

Looking from the aspect of noise control and management, first it is necessary to know what the exact level of noise is. This can be done by measurements in the field or on the basis of a model for prediction of noise. Noise produced by traffic flow includes the emission of noise emitted by individual vehicles in the flow, moving in a specific order and the rules of flow. The most effective way to reduce noise emitted by vehicles is to control noise at source, or for the vehicles to become quieter. In most vehicles the noise emitted by the vehicle comes from the engine cooling system and fan, exhaust system, tires and aerodynamics of the vehicle [3]. Here it can be seen that the level of noise at the source depends on the producer of your vehicle. In one category, the same type of vehicle, even when it comes from the same brand, it possible to define certain subcategories of different emitting noise which will depend primarily on the number of different factors, such are, for example the type of car (sporty, luxury, city, economic and so on), engine power and its capacity, vehicle weight, tire size and type, and size and type of exhaust system which, also, depends on weight, size and design of the vehicle, all this can vary and so on [4]. Given the permanent changes that occur in the development of motorization and road traffic, and given the level of knowledge achieved so far, on the impact characteristics of the composition of the flow conditions of the traffic, it is safe to say that the influence of flow characteristics in terms of traffic and therefore noise levels on the network, is

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