# ANALYSIS OF NOISES IN VEHICLES

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*ABSTRACT*

*Car exploitation in the process many negative effects to the body brings, these inside a person to the organism effect slow but complicated very serious estimated traffic noise today's in the day solution to be done necessary has been current from problems is considered*

**Key words:** *noise, acoustics, road noise, noise swallow tools, panel.*

**Introduction**

Car exploitation in the process many negative effects to the body brings, these inside a person to the organism effect slow but complicated very serious estimated traffic noise today's in the day solution to be done necessary has been current from problems is considered

From cars coming out external and internal noises not only road movement participants - driver, passenger and pedestrians for perhaps to the road approach in the regions lives people serious for _ danger cause emits

To the noise against struggle automotive industry industry current and complicated from problems is one Car harvest who does noise his reliability, performance process and efficiency such as quality indicators effect shows. Cars noise level low is important ergonomic and ecological criterion is the world vehicles on the market technical in terms of perfection and competitiveness determiner quality from the indicators is one Cars acoustic characteristics international to standards compatibility his the world in the market competitiveness increases [1].

**Search methods**

To research according to, long time during norm from the border increased noise under the influence of lived people central nerve system activity from violation suffering smokes _ Them alertness, alertness, quickness fatigue, headache _ such as to the circumstances face come [3]. Big noise under the influence of of a person nerve systems tension, heart blood vein diseases, hearing of the body activity decrease such as harmful to diseases reason will be Research that's it showed that at 88 dB noise ( bus in the cab ) of the driver thinking capacity by 10%, if 95 dB by 20 % decreases [2].

Noise sources the first in line car to the interior salon strong noise transmits _ Noise driver attention lower and faster to be tired and to exhaustion reason will be Movement during of the driver attention decline, tiredness and very a lot cases sleeping stay horrible road traffic accidents cause to exit reason is happening

Cars on the road movement during and his engine work stand up in the process strong noise appear will be and surroundings to the environment spreads . From cars coming out noise quantity his on the roads movement during, continuous way getting stronger goes _ Car noise exploitation in the process to increase, car ways movement in the flow appear divisor the most main noise sources calculated - car engine noise, transmission noise, aerodynamic noise and car wheels from friction appear will be
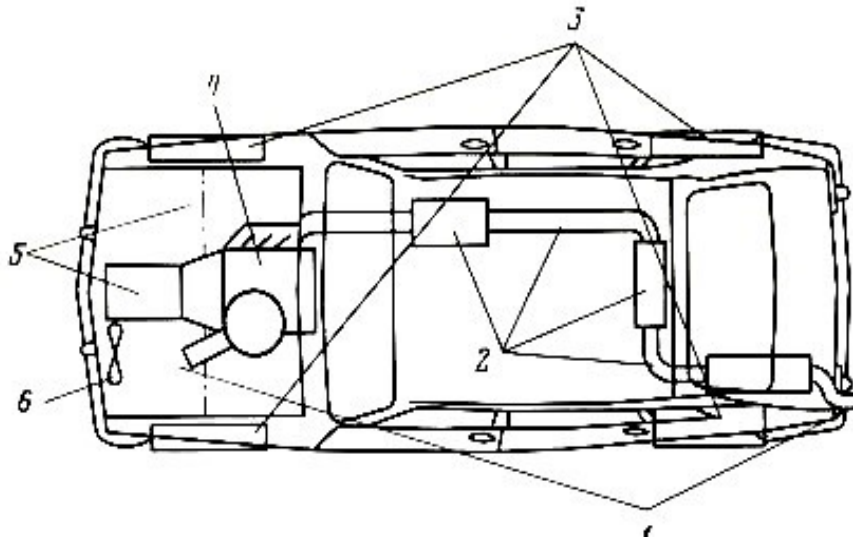
**1 – picture . Modern motor vehicle of models noise sources**

*1-Air to engine  input and waste gases exit holes ; 2- noise fire extinguisher ; 3-wheels; 4th engine; 5th transmission; 6th fan.*

Motor transport of means external to the environment spreading sound energy ( Motor transport tools external noise - $W_a$ ), Vehicle tools acoustic power balance equation as follows present to be done can :

$$W_a = W_e + W_{tran} + W_{road} + W_{g'} + W_{aer}, kW, \qquad (1)$$

Here, $W_e$ - engine system and of aggregates sound power;

$W_{tran}$ – transmission parts harvest who does noise power;

$W_{road}$ - road coating unevenness because of Motor transport tools body and walking parts in nodes harvest to be impulse and of vibrations sound power;

$W_{g'}$ – road coating with dynamic in friction tire sound power;

$W_{aer}$ – moving Motor transport tools external the surface with flowing passing the air flow harvest who does sound power.

In construction appear to be noise of the car movement during more will increase, to this of the car movement speed and on the road movement speed big effect shows [11] (Fig. 1).
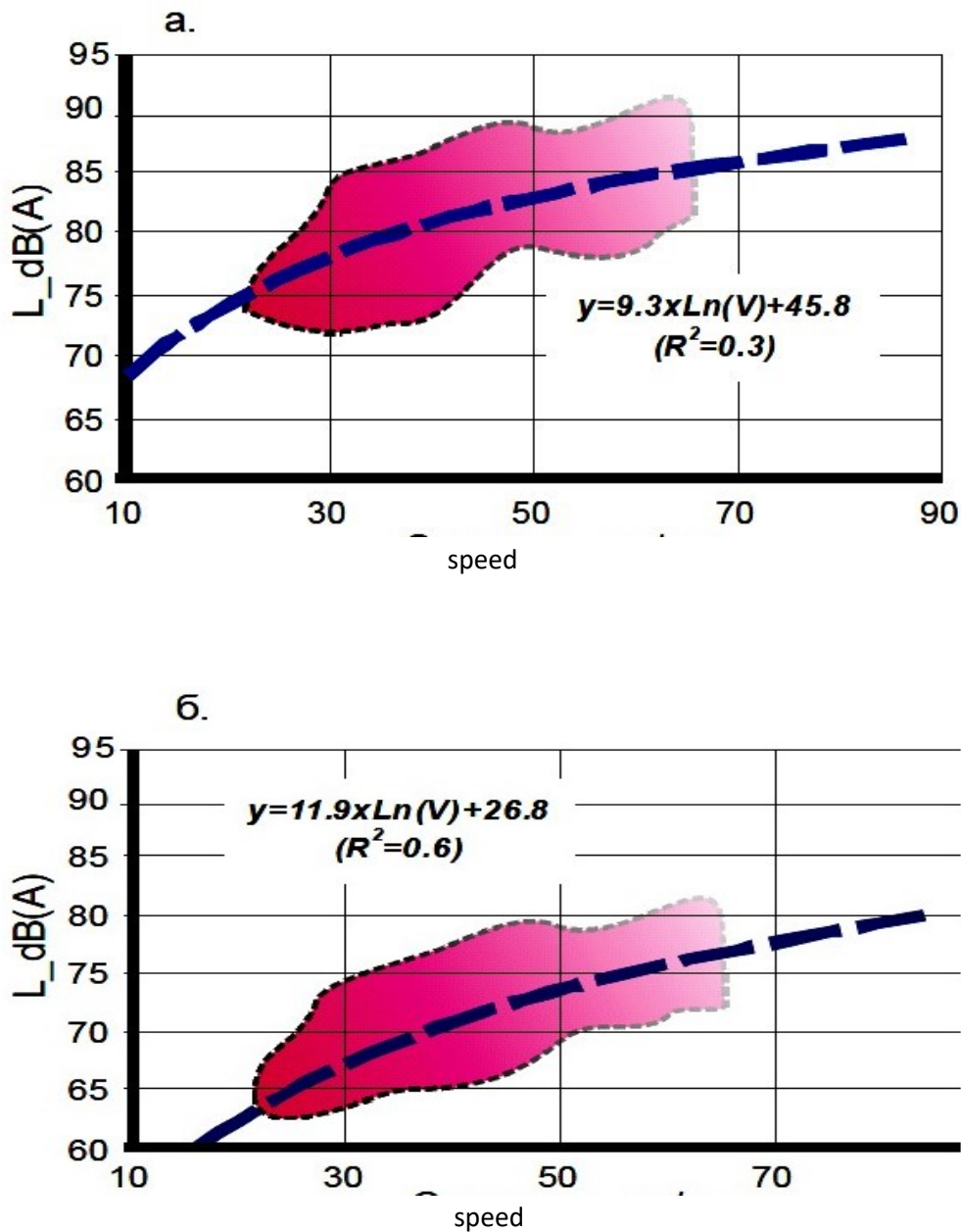
**a.**

$$y = 9.3 \times Ln(V) + 45.8$$
$$(R^2 = 0.3)$$

speed

**б.**

$$y = 11.9 \times Ln(V) + 26.8$$
$$(R^2 = 0.6)$$

speed

*Figure 1. Load(a) and light (b) cars of speed to the noise effect ( noise level at a distance of 10 m when detected )*

With that together movement in the flow there is engine power high and heavy heavy trucks existence is also noise level to strengthen reason will be.

Noise the amount measure tests international standards based on is held, in which of the car noise issuer parts noise degrees whole in the case of a car internal and external noise cause releases. Normal operation of the engine processes and another of aggregates in moderation work test from the results received noise to know from quantity can.

This in case IoD accuitic balance power equation as follows in appearance will be:

$$W_e = W_{corp} + W_{koll} + W_{mod} + W_i + W_o + W_{ven} \pm W_{MB}, kW, \tag{2}$$

Here,

$W_{corp}$- Yes body walls and his suspension aggregates harvest who does Titrator of surfaces sound power;

$W_{coll}$ - waste gases release system from the collector harvest has been sound power;

$W_{mod}$ - input system in the structure of modules sound power;

$W_i$ – input;

$W_o$- waste gases release in the system gases out in sending gas dynamic of noise sound power;

$W_{ven}$ – engine cooling system in the radiator ventilator from circulation harvest to be gas dynamic of noise sound power;

$W_{MB}$ – Motor transport tool in the engine compartment of the body sound devourer constructive of elements (negative hint) or reinforced resonant the air elements with in the equipped engine compartment (positive hint) sound of power size.

**Results**

Presentation of the total acoustic noise emitted by a common engine in the form of an acoustic power balance of individual sources makes it possible to analytically determine the amount of acoustic emission energy from each source.

Low noise cars are today's market demand. A long trip with a high level of noise quickly tires the driver and reduces traffic safety. The complex use of vibration and sound-absorbing materials allows to increase the level of acoustic comfort. There are consequences due to the appearance of noise in cars. As a solution to this, acoustic noise can be solved most effectively with the help of modern soundproofing materials

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