MEASURES TO PREVENT THE NEGATIVE EFFECTS OF NOISE

Dzhiyanboev Sirojiddin Valievich
JizPI, Uzbekistan, Department of "TVM", Ph.D. assistant professor
Nuridinov Abulqosim Abdusattarovich
JizPI, Uzbekistan, Departments of "TVM", researcher.
E-mail abdulqosim328@gmail.kom

"Transport engineering" department This article provides the development of guidelines and application of their results into production in order to improve the timely operation of road safety and transportation road transport.

Keywords
car, traffic safety, road movement, vibration, construction, noise.

Technical and organizational measures will be taken to protect the population from the noise of cities. Engineering and technical measures (noise barriers, acoustically rational planning of buildings, use of noise extinguishers in ventilation and air conditioning systems, acoustic norms of rooms, etc.) and theoretical calculation of noise barriers toreduce noise should be carried out on special screens and green areas. [1] As an organizational measure, any traffic on highways should be restricted to no more than 80 dBA during the day. The noise level of the accommodation should be limited as much as possible, and in exceptional cases it is carried out only by the bodies of the Agency of the Republic of Uzbekistan for Communication and Information, and accordingly, residential buildings within 2 meters,The boundaries of densely populated areas and residential buildings of micro-districts, the territory of sanatoriums and other noisy facilities shall not exceed the levels established for these areas.[2].

At the same time, the level of vibration noise of the car design to the environment remains a problem to some extent.

The problem of noise reduction has been attracting scientists, business people and legislators. It is no secret that reducing the noise emitted by household appliances, cars, industrial equipment- increasing its safety, convenience and competitiveness is one of the most pressing issues today.

Hundreds of scientists and specialists have been involved in the reduction of noise, a large amount of experience and scientific data, technical solutions, interesting scientific works have been involved.

Sensitive results have been achieved through experiments created and produced in this field by several generations of scientists and inventors.
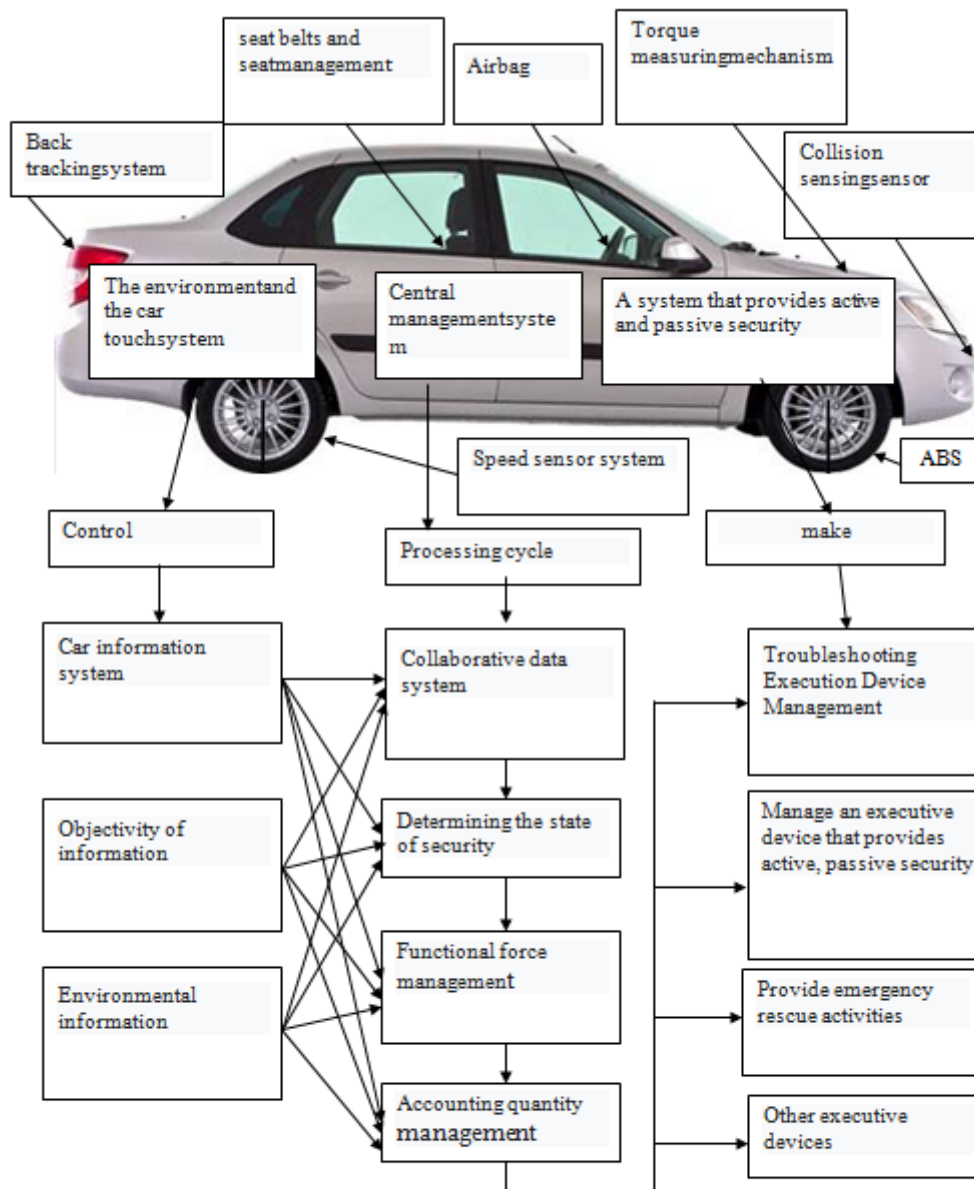


1Figure. Car traffic analysis

Based on the above motion analysis, it is necessary to eliminate the vibrational noise generated by the constructive features in the control of the motion system during movement.

Switch off vibration noise.

During the movement of the car on the road there is a change in the dynamic properties due to the factors affecting it, and noise due to vibration.During the movement of the car, vibration dampers are effective in extinguishing vibration noise (in pumps, shock absorbers in the engine). An analysis of this process is given below. In this case, the mass of vibration damping-m, virginity-k, serves to extinguish the vibration noise during direct motion.

The excitation force generated in this case is evaluated by the law of bending F F_0 * sin .

In this case, taking into account that the m-vibration quenching mass and k-virginity correspond to the ω-vibration frequency, $\omega = \omega_0$.
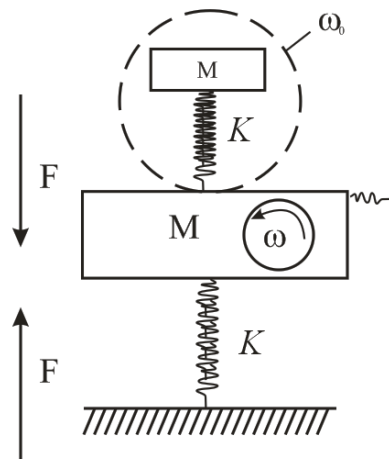

2Figure. Schematic diagram of dynamic vibration suppression

As can be seen from the picture above, the amount of noise increases mainly due to the occurrence of certain vibrations in all structural elements of the car during movement.

Recommendations for protection against vibration noise for this purpose:

- reducing the source of vibration (improving car design, static and dynamic balancing of rotating parts of the car).

- extinguishing vibrations (increasing the efficiency of biting with the road surface of the car).

- vibration protection (application of vibration protection of tires, hydraulic, pneumatic and springs).

- protection against friction vibrations (use of materials to protect against internal friction).

- use of special protective equipment (increase the effectiveness of elements that protect against friction, vibration, wear).
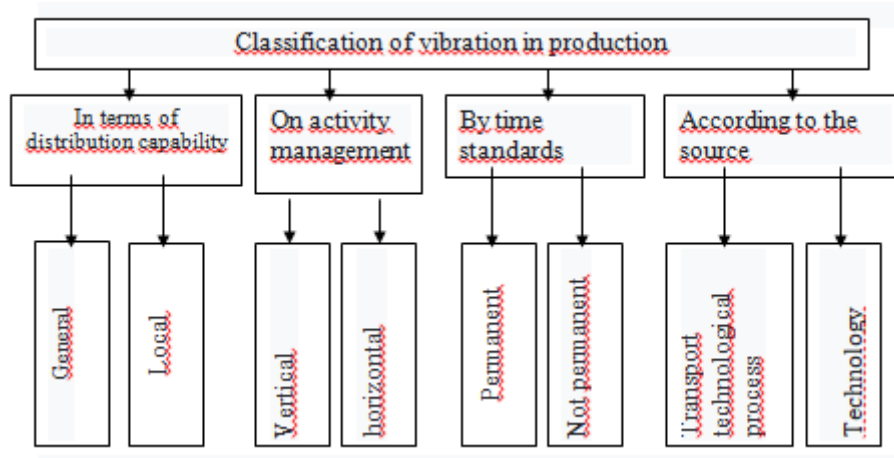
3Figure. Vibration classification

Vibration and noise requirements according to vibration classification:

- the sound pressure level in the workplace must meet the average geometric frequency requirement, with the workplace being 50 dBA;

- use of sound-absorbing materials to reduce the frequency in the workplace to a frequency of 63-800 Gts using maximum silencing;

- The layer of additional sound-absorbing material to form 15–20 sm.

Noise regulation.

The sanitary norm is set as follows:

1. . The pressure is determined on the noise meter scale as required by the standar.

| Fields	Time of day, 7^{00}-23^{00}	
	$L_{кг}$	L_{max}
Service area	40	55
In the area	55	70
In the waiting area	60	75

- the amount of noise is measured within 30 minutes using a noise meter during the manufacturing process

- the equivalent noise level is determined as follows;

а) the noise level is measured every 5 seconds.

б) the average pressure of the noise is determined by the value L_1.

c) $L_1 = 10 \ L_r(0{,}001 * E_{тc} * 100 / L_1)$ L_1- measurement time (during exposure).

2) theoretical determination of the magnitude of the impact of the noise

$$D = \int P_2(t)dt < P_{ruxsat} \cdot T$$

Where T is the exposure time, P_{is} - the allowable sound pressure, Pa

Sources of noise in road transport

- mechanical noise - occurs on the outer surface of the car, equipment, details and general construction.
- aerodynamic noise occurs during the exhaust process (combustion of fuel in compressed air, injector spraying or exhaust gas exhaust).
- electromagnetic noise is generated due to the magnetic force in the elements of the electromechanical device (starter, generator and other consumers).
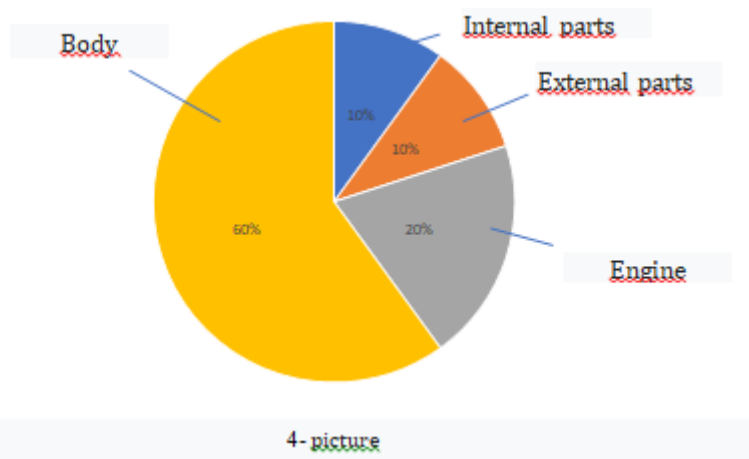
4- picture

4- picture

As can be seen from the picture above, the main noise-emitting elements correspond to 60% of the body volume. This is mainly due to the influence of various factors on the operation of doors, wing buffers and fasteners.

20% of the noise in the engine is due to the deterioration of the oil quality and the reduction of the level due to the deterioration of the belt tension due to shocks in the gas distribution, the crankshaft mechanism and the combination of parts in the systems.

In the internal parts of the transmission, the formation of shocks in the transmission, friction clutch, gearbox, main transmission parts is due to the loss of oil layer from the surfaces of lubricating parts, wear of shock absorbers, springs, brake pads, cylinder liners, steering gear parts.

10% of the external parts are mainly due to the reaction forces transmitted by the shock forces transmitted through the tires.

Recommendations for reducing noise from the car.

- increase the accuracy of car production;

- heat treatment of impact surfaces;

-creation of oil layers on the surfaces of parts and improving the balance quality of rotating parts;

- replacement of noisy materials.

Evaluation of noise coefficient.

The level of noise when vehicles are moving on the roads depends on the source of external noise and noise. This dependence depends on the Kω-amplification coefficient. The noise coefficient is in turn evaluated by the power of the noise (N).

The noise level is evaluated in the following sequence.

1. Determining the average level of noise.

L_A=86,6 dBA

2. The average exposure time of the noise level is determined as follows (L_{A1}=10).

t=5,3 s

3. The amount of noise affected over a period of time is determined as follows.

$$\Delta L_A = 28,4 \; dBA$$

4. Error correction is defined as follows. n=20

$$10L_{dn} = 13 \; dBA$$

5. The level of noise generated during the operation of road transport is determined as follows.

$$L_{avt} = 86,8 - 28,4 + 13 + 3 = 74,4 \; dBA$$

While this in turn meets the existing quantity demand standards, the following equivalent cost of road transport is required to be assessed.

The equivalent amount of noise is estimated as follows.

$$L_{ekv} = 101 \cdot L_d \left[\frac{10^{0,1L_{At}}}{T \cdot V_i} \cdot (V_i \cdot t_i + 0,6 \cdot r_0) \right]$$

Here LA_i is the noise level of 86.6 dBA, the duration of the exposure time of the T-30 min noise, t_i -0.3 s is the time traveled by the vehicle, Vi is the speed of movement m / s, r_0 is the distance between the wheels r_0 = 2.5 m.

Suggestions to limit the composition of traffic, including restricting the movement of trucks and speeds of cars, have been emphasized by many experts, and again the noise level is found to depend on parameters of traffic flow such as intensity, speed and traffic composition.

REFERENCES:

1. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on amendments and additions to the Rules of the Year (Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to further improve the road safety system of the Republic of Uzbekistan" dated May 19, 2018 No 377) Tashkent. , Resolution No. 292 of April 9, 2019

2.Soliev EA, Kulmukhammedov J.R., Adilov OK, Nazarov K.M. "Rules of the road and the basics of first aid." T. Xondamir- press. 2014y 108-p.

3.Adilov O K Mahamadaliev ZT Mirzaev D O' ANALYSIS ON ROAD NOISE PROTECTION. IN THE FIELD OF ENGINEERING COMMUNICATIONS

INTRODUCTION OF INNOVATIVE TECHNOLOGIES PROBLEMS AND SOLUTIONS International scientific-practical conference on

MATERIALS. PART I (2020, May 21-22) 67-70 b Samarkand-2020