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HYGIENIC ASSESSMENT OF NOISE INDICATORS IN MACHINERY FACILITIES

Xadjayeva U.A.
Tashkent State Medical University

Abstract
Mechanical Engineering The enterprise is characterized by abnormal working conditions that negatively affect the health of its employees and their working conditions. According to the results of the study, in order to improve working conditions, it is recommended to use personal protective equipment for workers, use noise-absorbing devices made of rubber materials, and conduct medical examinations of workers in accordance with Order No. R 200 in order to reduce the intensity of noise and vibrations in the workplace.

Keywords: Mechanical engineering enterprises, noise, frequency, working conditions.

Introduction

One of the most important indicators of public health is the health of the working-age population, which determines the quality of labor resources, labor productivity, and the value of gross domestic product. Preservation and strengthening of the health of the working-age population is one of the most important social problems that must be solved by state policy, since the socio-economic development and national security of the country depend on it [**Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**]. The use of machine molding, sand casting machines (peskomets), vibrating screens, etc. poses the issue of combating noise for occupational hygiene. According to some authors, the widespread use of electric welding instead of riveting and stamping of metal products has eliminated noise, but electric welding is accompanied by the release of dust and gases. When welding with electrodes containing manganese, fluorine and other components in the coating, special hygiene measures are required to prevent the release of highly

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toxic electric welding aerosol containing up to 7-8% manganese oxide into the environment. Semi-automatic and automatic welding with a flux layer, which is increasingly being introduced into the mechanical engineering industry, as well as many other types of electric welding and welding surface coating operations, also require special hygiene measures.

The purpose of the research:
To study the working conditions of workers at the Tashkent Mechanical Plant in Tashkent, identify harmful and dangerous factors, develop health measures to increase the working capacity of workers, improve working conditions, and prevent illness.

Research object and methods:
Noise level measurement was carried out in accordance with SSBT 12.1.050-86 "Methods for measuring noise in workplaces". The sound pressure level was measured in workplaces using the SVAN-943 instrument. The results obtained were evaluated in accordance with SanQvaM No. 0325-16 "Permissible sanitary standards for noise levels in workplaces".

Results and their discussion:
One of the unfavorable factors of production for a number of professionals in machine-building enterprises is the influence of noise. A complete study of the technological process in machine-building enterprises and the types of devices used, their location in the workshops, makes it possible to identify the main sources of noise. Examples of such sources include metal pressing, grinding, cleaning, and mechanical parts assembly workshops. It was found that the level of noise generated by the operation of the above devices and machines depends on the number of simultaneously operating machines, their technical condition and design.
As a result of a series of examinations, it was determined that the physical factor under study in the workplaces of machine-building enterprises is of a mechanical type by origin, high-frequency by frequency composition, wide-band by spectral

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composition, and non-continuous by time characteristics. When assessing noise, taking into account the level and time of exposure, and in accordance with the legal document Sanitary Rules and Norms 0325-16 "Sanitary Standards of Permissible Noise Levels in Workplaces", a hygienic assessment of noise levels was given.

There are several workshops in the Tashkent Mechanical Plant, which conducts scientific research, and the machines operating in all parts of the mechanical assembly workshop of this enterprise are a source of noise. The following are directly involved in controlling this equipment: a program-controlled machine tool adjuster and manipulator, a mechanical assembly fitter, a test driver, a metal, casting, product and spare part cleaner, The results of the scientific study show that the highest levels of noise exposure were observed in workers such as painters, cleaners of metal, cast products and spare parts (96.3±0.56), test drivers (86.2±0.48), and mechanics. It was determined that the equivalent noise level in the following professions was 85.3±0.42 dBA, respectively. These indicators indicate that the RED is 16.3; 2 and 5.3 dBA higher than the above-mentioned San Q and N (Table 1). We can see that the sound level in the workplaces of the transporter, proofreader and chemical analysis laboratory assistant in this enterprise did not exceed the permissible level. (Table 1).

Table-1 Classes of working conditions depending on the level of noise in production

Harmful factors	Labor conditions class					
	Permission done - 2nd grade	Harmful – class 3				Class 4 (father dangerous, extreme)
		3rd grade Level 1	3rd grade Level 2	3rd grade Level 3 harmful (severe)	3rd grade Level 4 – very harmful (very heavy, dangerous)	
RED increased						
Noise: - maximum increase in sound pressure level in any octave, dB	RED	<10	20	30	40	> 40
- equivalent sound level, dBA	RED	5	15	25	35	>35

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Table-2 Noise level indicators at main workplaces in the mechanical engineering industry, dBA (M±m)

No.	Work places	RED	Sound level , dBA (M ±m)	Impact duration (hours %)	Labor conditions class
1	Software to management has sometimes and manipulators adjuster (guillotines)	80	81.8±1.62	80	3.1
2	Mechanical collection works locksmith	80	85.3±0.42	80	3.1
3	Tester driver (tractor)	80	86.2±0.48	80	3.1
4	Metal , casting , products and caution parts cleaner (fine) from details cleaning)	80	96.3±0.56	80	3.2
5	Painter (with sprayer)	80	83.0±0.82	80	3.1
6	Transporter (cargo carrier)	80	80.17±1.05	80	3.1
7	Proofreader	80	79.2±0.75	80	2
8	Chemical analyses laboratory assistant	80	61.7±3.15	80	2
9	Electricity gas welder	80	81.3±0.84	80	3.1
10	Operator (small parts cleaning machine)	80	82.3±0.99	80	3.1

Table-3 Mechanical engineering of enterprises main work in places working release of noise frequency according to description , dB

Work places	Octave in the range middle frequencies , Hz							
	31.5	63	125	250	500	1000	2000	4000
	Noise average level , dB							
Painter (with sprayer)	9 5	90	85	82	78	73	70	68
Tester driver (tractor)	75	9 0	87	78	80	75	7 2	71
Mechanical collection works locksmith	72	85	84	80	79	7 8	7 3	6 9
Metal , casting , products and caution parts cleaner (fine) from details cleaning)	85	93	85	88	80	7 6	73	7 1
SanQvan 0325-16	107	95	87	82	78	75	73	71

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Noise spectral the composition analysis to do this showed that the noise of the most high-level metal, casting, products and caution parts cleaner profession owner's usable machines next to high at frequencies record Spectral to the description according to, yield was noise 800-1000 Hz at frequencies sound of energy maximum to the level reaches. According to SanQvaM No. 0325-16 according to , metal , casting , products and caution parts cleaners work in places noise frequency range 250-100Gs by 1-6dB , Mechanical collection works locksmith work in place all at frequencies voice pressure level high indicators 1-3 db to , Tester driver (tractor) work activity during noise frequency 2-32dB , Painter (with sprayer) work in the process and noise frequency level 2-12 dB increased record was done .

Research results this determined that the organized at the facility permission done noise from the level exceed departure and his/her increase other harmful factors with complex impact harvest to do with is expressed , this and workers organism functional in the state to changes take is coming.

Thus, a hygienic assessment of working conditions in the main workshops of a machine-building enterprise showed that production processes are characterized by a large volume of work performed, a variety of operations, and the impact of negative factors, including noise, on employees of various professional groups. A study of working conditions in existing workshops at machine-building enterprises made it possible to assess the harmfulness and dangerousness of the main professional groups and the workplaces in which they work.

Conclusion:

In conclusion, noise affects the working conditions of workers in mechanical engineering enterprises. In order to prevent these factors, it is advisable to develop preventive health measures to maintain the health of workers, improve working conditions, and increase their work capacity.

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