

УДК 656.13-057.12:331.81/.82:616-085

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*The characteristic is given to working conditions of drivers of passenger motor transport of a big city, identified specific harmful factors influencing on level of weight and intensity of their work, with using of modern hygienic methods of research are revealed.*

**Keywords:** *drivers of passenger motor transport, the working condition, factors of the occupational environment, health.*

Everywhere, the work of bus drivers is considered as one of the most intense and responsible jobs due to very high level of nervous and emotional tension and highest attention and responsibility demanded from them. The data on hygienic assessment of working conditions of public bus drivers is incomplete. At the same time, high psychological tension of drivers is caused by a whole set of factors of psychological load. The leading role in it belongs to control of traffic, an information volume in eye viewing area of drivers. The information receiving by driver comes not only from bus's control panel, but also from movement environment. Cars, pedestrians, a road condition, traffic signs include a big number of the basic objects of supervision by. At various times days the number and character of separate objects of supervision change, as defines their importance. So, in rush hours the number of cars and pedestrians sharply increases, and at long-distance roots some time the lack of information leads to monotone [2].

The psychological stress caused by the intensity of received information is aggravated with the additional information from bus cabin, from passengers in connection with sale of tickets, coupons, etc. that can increase driver's nervous and emotional stress.

Driving involves the work of muscles of hands, feet, neck and a trunk for maintenance of a working sitting pose, and at turns of a head for the review of bus doors in a passengers landing time.

Physical factors such as air temperature, humidity and velocity cause various reactions of a body during different seasons of year, thermal resistance of clothes, load and intensity of work.

The basic sources of pollution of the air in a bus cabin by toxic substances are the engine, a case, the carburetor, petrol tank, air of a roadside zone; cargo and passengers. Certainly, main pollutant is exhaust gases from the car engine, gases and dust getting to a cabin from roadside zone.

In air of the bus cabin 3-6 fold excess of oxide carbon of maximum concentration limit, of nitrogen dioxide, sulfur and soot dioxide is observed. At the same time, even rather small toxic substances concentration, especially in a combination to other occupational, can negatively effect on a body of drivers and, hence, lower safety of traffic [5].

Noise and vibration are adverse occupational factors in bus cabins. Noise levels in cabins of buses makes 71 dBA, and broadband vibration on workplaces is represented by the maximum value in frequencies 1-125 Hz, especially 2-8 Hz [5].

Thereupon, the necessity of the study of study physical, chemical factors of the occupational environment is obvious, as well as the study of basic physiological indicators of an organism and disease of bus drivers in the conditions of a city with highly polluted environment and overloaded traffic for undertaking preventive recommendations.

The work of bus drivers is characterized by influence of a complex of adverse factors, such as nervous and emotional pressure (urgent decision-making, the analysis of the situation on roads and forecasting in shortage of time, responsibility for safety of passengers, etc.), physical pressure, of some physical factors (noise, an infrasound, general and local vibration, temperature), etc. Thus disregard of hygienic standards on workplaces of drivers remains stably high and makes under separate factors from 56,0 % to 82,3 % and more [1, 2]. Adverse working conditions are risk factors for health of workers, promote general and professional pathology among them [3, 4].

The workload and working conditions of Almaty city bus drivers had been studied. following parameters have been estimated:

Most of drivers have a two-shift operating mode which is characterized by the early beginning of work in 1st change and its late termination in 2nd change. From the physiological point of view, the early beginning and later the termination of changes breaks biorhythms of the person and demands from an organism of reorganization of a daily stereotype.

According to chronometrical monitoring, time for the basic work of city bus drivers makes 80.0-85.0 % depending on intensity of a transport stream, road conditions, weather conditions and other factors. Time for breaks during the spring-and-summer period of year is more (to 10.0 %) than in fall-and-winter (to 5.0 %) due to increase in time of the basic work and repair at lines during the winter period.

Throughout all their work, bus drivers are focused over objects of the information both out of a cabin, and in bus salon, therefore «duration of the focused attention» makes also 80.0 – 85.0 %. So the work of city bus drivers is characterized by high degree nervous-emotional pressure and can be classified as "harmful", i.e. 3 class, 2nd hazard degree.

In their work of the driver of the city bus level of its emotional intensity is influenced by mutual relations with passengers: reception of payment for journey, occurrence of various conflict situations. Along with it transportation of a large quantity of people in difficult city conditions brings considerable degree of risk in character of work of the driver and assigns to it the big responsibility for safety of passengers and safety of the car.

Besides, intensity of work of drivers of city buses is caused by a stream of the information arriving from the environment of movement, from the car and passengers. The size of this pressure is connected with quantity and character of the arriving information through visual (system of means of display of the information), acoustical (sound signals, noise), tactile, olfactory and other analyzers (smells, vibration etc.).

Specially developed questionnaire had been spent poll of drivers by us. According to this poll it is established that the majority of drivers (93.0 %) mark occurrence during change more than 8 conflict situations which are caused or their professional work which is connected with other participants of movement (actions of pedestrians, drivers of other vehicles), or passengers in bus salon.

The work load of city bus drivers is assessed as "harmful" (3 class – 3<sup>rd</sup> degree).

The public bus driver's job is one of the most intense and responsible work. It is known that it is connected to enormous nervous and emotional load, demands of constant concentration of attention. The main task of rationing the work of bus drivers is to achieve and maintain high working efficiency throughout all day shift and to preserve their health [1].

Important condition of trouble-free operation of bus drivers is their good health. Diseases influence on their work capacity and quite often may cause a road accident.

Careful medical control of their health is established not everywhere (as it is done, for example, in aircraft and railway transportation). Operative and basic pre-trip medical control (the general and special) has crucial importance. Unfortunately, special services of the city bus enterprises aren't equipped by necessary modern devices for health diagnostics. Some time bus drivers underestimate consequences of the indisposition or deliberately hide it from medical workers.

It is known that even the most "easy" diseases negatively influence working capacity. During sick period, drivers have sharply decreased attention and impellent reaction speed, coordination of movements, accuracy and speed of the actions connected with driving. Chronic diseases also can raise frequency of accidents. Such illnesses of drivers as epilepsy, diabetes and cardiovascular diseases raise risk of accidents. The drivers suffering these illnesses get to road accident approximately 2 times more often than healthy. The decrease in working capacity of the driver can come also as a result of reception of many medicines [1].

Among the causes of temporary disability, respiratory diseases are on the first place, traumas and accidents are on the second, and cardiovascular disease are on the third place. The cardiovascular disease are caused as mentioned above are evoked by high nervous and emotional tension, hypodynamia, hypokinezia in a combination to noise, vibration, infrasound, and toxic substances [2].

Thus listed all above shows that the problem of occupational hygiene and health of city bus drivers is extremely actual. Especially when domestic and foreign publications open this problem not completely.

Thereupon, it is obviously necessary to study physical, chemical factors of the occupational environment, the basic physiological indicators of an organism and disease of city bus drivers in the conditions of a city with high polluted environment and the transport overload of highways and to develop recommendations for optimizing their working conditions.

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Алматы Қаласының автокөлік жүргізушілерінің еңбек жағдайынЫң сипаттамасы

**Түйін:** әдеби шолуда қалалық жолаушылар автокөлігтері жүргізушілерінің еңбек жағдайына байланысты негізгі проблемаларды қозғайтын мәліметтер келтірілген; жүргізушілердің өндіріс ортасындағы организмнің физиологиялық параметрлеріне, жүйке-эмоциялық күштенуге және басқа да денсаулық көрсеткіштеріне әсер ететін түрлі факторлары қарастырылады.

**Түйінді сөздер:** жолаушылар автокөлігінің жүргізушілері, еңбек жағдайы, өндірістік орта факторлары, денсаулық.

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## Характеристика условий труда водителей автотранспорта г. АЛМАТЫ

**Резюме:** в литературном обзоре приводятся данные, касающиеся основных проблем, связанных с условиями труда водителей городского пассажирского транспорта; рассматриваются различные факторы производственной среды водителей, влияющие на физиологические параметры организма, нервно-эмоциональное напряжение и другие показатели здоровья.

**Ключевые слова:** водители пассажирского транспорта, условия труда, факторы производственной среды, здоровье.