

**THE PROBLEM OF WORKERS PROFESSIONAL DISEASE ARISE
IN CONNECTION WITH DISPARITY OF THEIR
PSYCHOPHYSIOLOGICAL PREPARATION TO REQUIREMENTS
OF CERTAIN LABOUR ACTIVITY RESEARCH**

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Summary: In the article the analysis of the traumatism condition is conducted on enterprises, reasons of workers professional diseases origin and grounded obligatory psychophysiological examination introduction necessity on the enterprises of Ukraine. Fig. 4. Ref. 15.

Key words: labour protection, worker, traumatism, professional disease, psychophysiological examination.

INTRODUCTION

On the modern stage of labour protection development its European model expressly determines measures on the improvement of labour protection and worker health protection in the workplace in accordance with a directive № 89/391/ ECC [<http://zakon.rada.gov.ua>].

The dynamics of professional diseases did not especially change in the last few years. From labour medicine Institute of AMS in Ukraine data an index of professional morbidity frequency on 10 thousands workers in 2005 was 4,61. Among 38 Europe countries on the professional morbidity indexes Ukraine occupies 21 place, while, for example, Denmark which occupies the firstplace on frequency of professional morbidity registers 438,6 cases on 100 thousands of workers [B. Panov, 2008].

Every year in the world, according to information of IOW, approximately 270 million accidents, related to implementation professional duties, and 160 million professional diseases are registered. Almost 354 thousands of workers perish on a production, from them in countries with the developed market economy – 16,2 thousands, in former social countries – 21,4 thousands, in China – 73,6 thousands, in

Indium – 48,2 thousands, in other countries of Asia and Pacific ocean – 83 thousands, in countries Near east – 28 thousands, in the countries of Africa in the south of Sahara – 54,7 thousands, in the countries of Latin America and Caribbean pool – 28,6 thousands. Unfortunately, about 12 thousand of died – children. It is also necessary to take into account the amount of workers which got professional disease and were excluded from a production process, for example, in 2004 2,2 million persons are incorporated, thus 32% the oncologic made, 23% – warmly vascular, 19% – traumatology, 17% are infectious diseases. As a result of illness every day in the world is absence on the workplace about 5% labour force. Through charges, related to the industrial accidents, lost to 1250 milliards dollars, or about 4% of world gross domestic product [Labour safety, 2008].

Professional activity of workers of many branches of industry remains dangerous, without regard to technical progress, as related to mobilization of functional backlogs, and in many cases passes in extreme and emergency situations, that requires enhanceable physical and emotional firmness. Exactly such workers which are added an enhanceable risk for a health require the special attention from the side of the state. Ukraine for the amounts of mortal accidents on 1000 workers substantially (negatively), as an analysis of the state of industrial safety testifies, exudes between the economic developed countries and former socialistic countries of Europe (Ukraine – 0,104, countries with a market economy – 0,038, former socialistic countries of Europe – 0,053). According to [A. Ena, 2008] Ukraine occupies the second after Portugal on a traumatism and 20 place after China for deaths of people on a production.

Most failures happen through fault of human factor. Results of analysis of production traumatism and death rate from industrial accidents for 2000-2006 in Ukraine confirm, that reason of plenty of accidents are mistakes of workers, through what every year injured to 75% and all of about 80% victims perished, group accidents also took a place through fault of «human factor» – 75-85% (after statistical materials of Ukrainian State mountain industrial supervision bulletins).

RESEARCH OBJECT

Every year, in spite of measures which are conducted in different countries, level of production traumatism, in including mortal investigation, and the amount of professional diseases grows [Labour Safety, 2008]. It concerns those countries, where sufficient attention spared this problem. In the field of labour protection examined all questions, related with the psychophysiological state of worker. In the economic developed countries health of worker is a necessary condition which directly influences on a production process and quality of mined-out products: «a diseased producer can not produce quality commodity».

The purpose of the article is necessity of introduction obligatory psychophysiological examination on the Ukrainian enterprises research.

RESULTS OF EXPERIMENTAL RESEARCH

For the last decades dynamics of revealing professional diseases in Ukraine differs fluctuations. So in 1993-1995 there was its increase, related to passing an Act «About a labour protection», which gives a right for the patients to get a substantial financial indemnification of the health damage, but to 2000 – diminishing in connection with stopping of regressive payments for professional disease. However from 2001 with entering into the arm of the law «About obligatory state social security from an industrial accident and professional disease, that resulted in the loss of capacity» there was growth of professional morbidity level again (fig. 1).

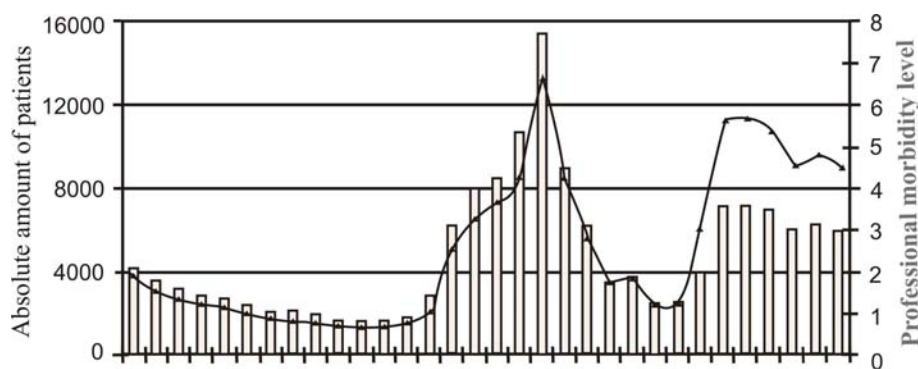


Fig. 1. Absolute amount of patients (□) and professional morbidity level in Ukraine on 10 thousands workers (—) (1976-2007)

The professional morbidity indexes in the highly developed countries of the world serve as evidence of it. According to [A. Basanets, 2008] every year in Ukraine 6-8 thousands of professional diseases are registered with fluctuations in different years from 2,5 to 15,5 thousand Sanitary-hygenic description of supervision objects specifies on an amount:

- workers on the objects of supervision;
- objects which are under control of Statesanepidemservice;
- objects which answer the requirements of sanitary norms (fig. 2...4).

At the same time in Russia – 10-12 thousands, in Japan – 15 thousands, in the USA – 190 thousands are registered diseases accidents. If in Ukraine a level of population professional diseases on 100 thousands of workers was 13,3, on the whole in the countries of Europe – 30,1.

Among diseases the first place is occupied by illnesses of breathing organs (pnevmokonios, chronic bronchitis), then disease of the bone-muscularsystem and connecting tissues, oscillation illness, by the way professional diseases of skin are almost not registered. The most accidents of professional diseases and poisonings is registered in the Dnepropetrovsk, Donetsk, Lugansk and Lviv regions. Basic branches in which found out the biggest amount of professional diseases are machine-building, metallurgical, coal industry.

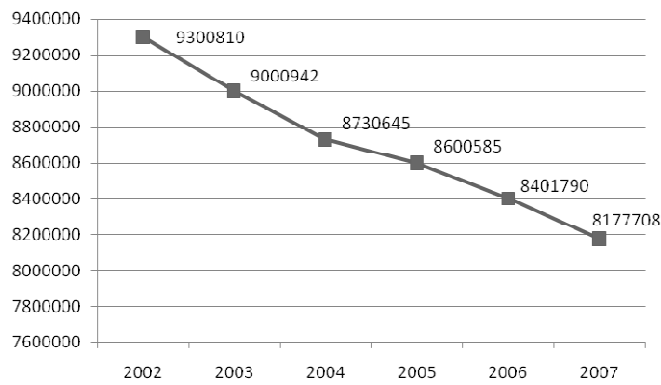


Fig. 2. An amount of workers is on the objects of supervision (2002-2007)

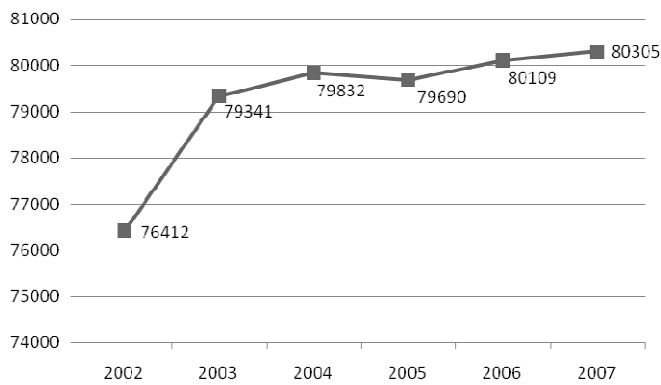


Fig. 3. Amount of objects which are under control Statesanepidemservice (2002-2007)

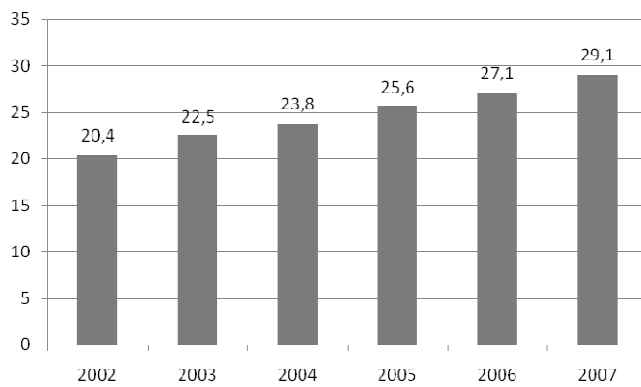


Fig. 4. Amount of objects (%) which answer the requirements of sanitary norms

In connection with an economical situation which was folded in Ukraine, the brightly expressed forms of chronic diseases and disability which comes as a result of the ill-timed measures use are all more frequent registered, thus among the persons of young capable working age. Transformation, which is observed in character, flowing and terms of professional diseases development related to diminishing of technological actions intensity, increase of psychoemotional tension level and decline the physical loadings. In same queue, modern pattern of production change, unwillingness of employers instrumental in the exposure of professional diseases on the their development early stages, for avoidance of additional charges on treatment and rehabilitation of a victim, incuriosity of workers in the exposure of professional diseases through possibilities to lost a job is reasons of low exposure and registration of professional diseases.

As a rule, an accident rate and traumatism through fault of «human factor» is conditioned: by insufficient motivation of observance of safety; by the low level of professional preparation on questions of workers safety; admitting to implementation risky jobs of people with the enhanceable traumatism risk, psychophysiological qualities of which do not answer the requirements of certain labour activity; by the presence of factors which reduce reliability and safety of worker activity (fatigue, exhaustion, excitation et ctr.).

As practice shows, in Ukraine of expense on measures in relation to a labour and prophylaxis of accident rate and production traumatism protection in once or twice below than financial losses from failures. In spite of that during realization of any measures it is necessary to take into account financial charges, much major to spare the special attention the social consequences of failures and catastrophes – loss of health, life of citizens and country labour potential, increase of incomplete families amount and children-orphans. Combination of ecological and professional factors with psychological overloads, from data of WOH, is reason of most diseases. Approximately 30-50% workers of the developed countries grumble about stress overloads to the parahypnosiss, depression, cardiovascular pathology.

Analysis and research of practical results which are conducted in the different countries of the world, show a dependences of the state of health and capacity of workers on their psychophysiological qualities high degree, that testifies about expedience on enterprises with the enhanceable level of production danger psychophysiological selection and psychophysiological examination. Such approach, as developed countries experience testifies, results to diminishing of the technical systems depending on appearance and terms of activity accident rate level on 40-70%, diminishing of technogenic catastrophes amount – on 20-25%, decline of traumatism level as a result of «human factor» – on 40-45% [A. Ena, 2008].

A professional psychophysiological selection and psychophysiological examination is the problems of «human factor» directed on a production and substantially influence decision on the production increase of strength security, maintainance of workers health.

The enhanceable danger works are characterized by the psychophysiological factors of production danger presence – physical (static and dynamic overloads, hypodynamia) and psychological (mental overstrain, labour monotony, emotional

overloads, overstrains of analyzers). The indicated factors draw change in the human state under act of weight and labour tension.

The enhanceable danger works implementation and such which require a professional selection, as a rule, foresees the presence of permanent or temporal harmful or dangerous factors which can be conditioned:

- by the deficit of information for making a decision;
- by physiology discomfort – disparity of labour terms normative requirements;
- by the deficit of time for making a decision and implementation of actions;
- by enhanceable complication of task;
- by the presence of the real threat to life or health;
- by the enhanceable cost of erroneous actions;
- by less congestion information (sensory deprivation);
- by the overload of information.

These terms quite often provoke exceeding of physiology norm at implementation of professional duties which are accompanied maximal tension of physiology and psychical functions. In the case of disparity of psychophysiological professionally important qualities of worker quickly a capacity goes down the requirements of profession, gross violations, erroneous actions, are assumed, blowing off activity et ctr. Such activity is characterized mionectic reliability and efficiency, and the state of worker – by the enhanceable risk of accident origin, although some time the professional duties implementation can take a place noninfringement and derangements due to the permanent overstrain of the regulator organism systems. But by the result of such state proof functional changes development, boundary disorders which hardness to find out at an ordinary medical review can become very quickly. The protracted flowing of such unfavorable situation draws development of different diseases, in thereby except for the enhanceable risk of workers psychophysiological qualities diseases origin which answer the profession requirements not fully, there is an enhanceable risk of accident origin.

For example, to the loss of ability with the proper speed and exactness to react on external influences, that promotes the risk of accident origin conducts violation of connection between the sensory and motive centers of the nervous system for workers higher departments. And also experiencing of danger feeling can strengthen failings which arise up concertedly, co-ordinations of motions. Such violations often appear in co-ordination of especially exact and difficult hands motions.

The change of emotional processes also influences on probability of accident origin. For example, emotional instability, unexpected changes of gladness and spite, sharp emotional reaction, is enhanceable on insignificant external irritations strengthen propensity of worker to the threat of accident origin and diminish his protected.

Psikhofiziological examination is conducted on the basis of statistical calculation the developers of the program "The Programmatic test complex for the professional psychophysiological selection of specialists, busy on works with an enhanceable danger", producer the State enterprise the "Main educational-methodical center of Ukraine State mountain industrial control".

At the special statistically grounded algorithms of decision approval it is possible to get the most reliable forecast estimation of worker activity progress and reliability. In a conclusion, which is given after passing of worker psychophysiological examination

about accordance to the professional requirements to implementation of enhanceable danger works and such which need professional selection, a group PFO is specified and recommendations are given in relation to accordance to the professional requirements for indicated works implementation. For present moment utilize 4 groups of PFO admittance after marks:

1 group PFO: 56-80 – it is an excellent result, sufferet to implementation of the indicated works;

2 group PFO: 50-55 – it is a good result, sufferet to implementation of the indicated works;

3 group PFO: 45-49 – it is a satisfactory result, sufferet to implementation of the indicated works, but it is recommended to get the repeated examination in 1 year;

4 group PFO: below 45 – it is an unsatisfactory result, not recommended to implementation of the indicated works.

Conclusion of psychophysiological examination of worker about accordance to the professional requirements to implementation of enhanceable danger works and those which need professional selection, has recommendation character and necessarily given at passing of medical reviews the certain categories workers in obedience to [Order HSM, 2007; Order HSM, 1994; Order HSM, 1995].

During the research leadthrough with SE Lugansk ETC NSEI FS and LS statistical information (tab. 1) was got in relation to the amount of workers which passed psychophysiological examination in the last few years.

Table 1. **The results of workers psychophysiological examination passing, busy on works of enhanceable danger in a period from 01.04.2006 to 01.04.2010 [Letter, 2010]**

	01.04.2006-01.12.2006	01.01.2007-01.12.2007	01.01.2008-01.12.2008	01.01.2009-01.12.2009	01.01.2010-01.04.2010	In total
1 group PFO	222	216	141	83	36	698
2 group PFO	819	3032	5106	3511	1610	14078
3 group PFO	557	1610	1931	1333	583	6014
4 group PFO	194	436	408	229	78	1345
People passed in total	1792	5294	7586	5156	2307	22135

The modern development stage of this researches direction characterizes the accumulation of actual material and wideuse of psychophysiological selection for the practical tasks decision [Andrianova, 2011]. In Ukraine first officially "List of works, where necessary a professional selection" was ratified the order of Health protection ministry and State mountain industrial control in 23.09.94 № 263/121, also became the important stage of professional selection system introduction [Order HSM, 2007].

The psychophysiological examination combine the problems of medical, biological and psychological branch of science and practice. As a result in 2008 organization and order of psychophysiological examination leadthrough for the normative settlement the project of separate normative act – «Order of organization and leadthrough of psychophysiological workers examination was developed for implementation of enhanceable danger and such which require a professional selection

works» with claim of it the general order of Health protection ministry and State mountain industrial control, however now so remained in the stage of project.

Actual subsequent scientific developments, directed on technology of the psychophysiological testing perfection, psychophysiological state monitoring and register of workers for enhanceable danger works implementation and such which require a professional selection [Krushelnitska, 2000; Dushkov, 2002; Agapov, 1991; Klimov, 1991].

On the way of economic and social development of our state non-acceptance of effective measures serves as a substantial obstacle for the improvement of workers health in Ukraine. In this connection there was a necessity of measures complex program development, directed on the professional disease prophylaxis and making healthy of labour terms, and also perfection of medical- social help in the real economic terms.

SUMMARY

It is set as a result of the executed research, that financial losses, which are tested by enterprises in case of accidents or failures occurring as a result of insufficient psychophysiological preparation which does not answer the requirements of certain labour activity, more than charges are on the professional selection leadthrough. Therefore the got results specify on expedience of psychophysiological examination leadthrough necessity on the enterprises of all patterns of ownership and production industries.

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**ПРОБЛЕМЫ ВОЗНИКНОВЕНИЯ ПРОФЗАБОЛЕВАНИЙ РАБОЧИХ В СВЯЗИ
С НЕСООТВЕТСТВИЕМ ИХ ПСИХОФИЗИОЛОГИЧЕСКОЙ ПОДГОТОВКИ
ТРЕБОВАНИЯМ ОПРЕДЕЛЕННОЙ ТРУДОВОЙ ДЕЯТЕЛЬНОСТИ.**

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Аннотация: в статье проведен анализ состояния травматизма на предприятиях, причин возникновения профессиональных заболеваний работников и обоснована необходимость внедрения обязательной психофизиологической экспертизы на предприятиях Украины.

Ключевые слова: охрана труда, работник, травматизм, профессиональное заболевание, психофизиологическая экспертиза.