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THE PSYCHOPHYSIOLOGICAL BASICS OF WORK SAFETY

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Abstract. *The paper presents the theoretical groundwork of people's safety in the working environment observed from the psychophysiological point of view. This aspect was considered through the characteristics and influence of the psychic processes, traits and states on the individual safety during the work. Bearing in mind that each person is different and represents a distinctive and unique person that is structured in a specific and special way, the knowledge of the psychophysiological characteristics of people is a crucial factor for professional safety.*
Specifically, worker traits such as individual differences, personality, emotions, knowledge, cognition, and similar, influence employees activities and behaviour, as well as and the outcome of their work in terms of safety – whether or not an occupational injury or accident occurred or whether there was a possibility of threats. Through the study of the psychophysiological features of a human, i.e. its psychic characteristics, processes, and personality, it is possible to a certain extent to influence the improvement of the safety parameters in the workplace as well as the efficient functioning of the "man-production environment" system.

Key words: *Safety, psychological states, psychological processes, personality traits.*

1. INTRODUCTION

According to the World Health Organization, accidental mortality occupies the third place, after cardiovascular and oncological diseases [6]. However, elderly people die predominantly from diseases while the employed, young and middle-aged suffer from work-related accidents. We can add severe ecological consequences to this as a result of technical disasters caused by human fault [8]. Therefore, the role of the human factor in occupational safety is very important, particularly the psychophysical characteristics of the culprit and the victims of an accident [1]. In this connection, the basis of the psychophysiological aspect of occupational safety is a division between psychology and

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physiology where the laws of origin and the functioning of the psychological reflection of an individual's objective reality in occupational safety are studied.

The human body consists of organs, which are interconnected and connected with the environment, forming a natural human system of protection against dangerous and harmful factors. However, such a system cannot always provide the necessary safety conditions in the techno-sphere, so it is necessary to know the characteristics of a person and his/her role in the safety systems in order to create better safety systems, i.e. the means of collective and individual protection. A person in the safety system can have three roles: an object of safety, a regulator (i.e. a means of safety), and a source of danger.

2. SAFE WORK - PSYCHOPHYSIOLOGICAL ASPECT

Psychology is a science of psychic reflection of reality in the process of human activity. It has several aspects – the psychology of work, engineering psychology and psychology of safety. Psychology of work studies the psychological aspects of work, whereas engineering psychology deals with the processes of information interaction between the man and technical systems, as well as the requirements for machines and tools construction in line with psychological characteristics of man. On the other hand, the psychology of safety studies the psychological causes of unfortunate events, i.e. causes that depend on man, and tries to find the adequate methods and means of protection.

In practice, it is of utmost interest to discover the psychological causes of accidents. In that sense, the most frequently asked questions could be the following ones: Why do people who are inherent in the self-defense instinct and self-sustainment often become the cause of their own injuries? Why do people who recognize danger often act contrary to common sense and become the victims of accidents? Why do some people get hurt more often than others? The answers to these and many other similar questions should be sought in the human psyche.

The syndrome of accident proneness, where a person experiences an accident several times, was originally described during the First World War. This distinctive syndrome was very interesting to psychiatrists and psychoanalysts, since it demonstrated a pattern of unconscious deviant and self-destructive behavior. However, this pattern of deviant behavior has never been medicalized [3].

During 1926, two publications emerged, describing the syndrome of accident proneness. The authors of the first were Farmer and Chambers, who designated this phenomenon as cowardice of accidents [9], while the author of the second publication was Marbe, who gained the greatest glory in studying the question of the impact of individual characteristics of man on unfortunate events [11]. The latter identified this phenomenon as the inclinations towards the accident, and in his theory it was determined that certain people were born with a natural predisposition to have more injuries due to accidents, which was conditioned by their innate ability to adapt. People who adapt more easily are usually at a lower risk, while people who are struggling to adapt seem to stumble. Marbe's theory has been criticized for the lack of experimental evidence and the low statistical significance of the results.

The question of the impact of human psycho-physiological traits on the causes of accidents is very complex. Bearing in mind the advanced theoretical attitudes regarding the psychophysiological factors that affect traumatism, we can list the anomalies of the

analyzers. For example, for the sound analyzer the basic traumatogenic feature is deafness. Deafness is linked with the following unpleasant consequences: incorrect determination of the sound source, untimely and improper recognition of the sound signal, as well as the absence of sound sensing perception. The basic traumatogenic features of the visual analyzer relate to Daltonism, chicken blindness, adaptation to light, visual illusion and stroboscopic effect. Psychological traumatic factors can be the disposition of thought, memory, perception, attention and emotionally willing spheres. Today, in the structure of the psyche connected with consciousness and behaviour, three components are distinguished: psychic processes (perception, attention, thinking, memory, etc.), characteristics (temperament, character, etc.) and states (fatigue, psychological tension, stress, paroxysmal state, medical, narcotic or alcoholic asthenia, etc.).

3. Psychological Processes and Their Influence on Safety

Psychic processes constitute the basis of psychic activity and represent a dynamic reflection of action. Without them, it is impossible to form knowledge and acquire a life experience. There are intellectual, emotional and willing psychic processes (sensation, perception, memory, etc.). Memory is the character of storing and retrieving information directly related to safety. Memory is closely related to forgetfulness, which is the process during which, as a matter of course, or permanently, totally or partially lost what was remembered. Forgetfulness is determined by the Ebbinghaus rule - the majority of the forgetting occurs within the first 9 hours as the retention drops to about 35%.In order to "fill in" the lost information, it is necessary to organize and implement permanent or periodic training of workers.

Attention is the focus of consciousness on certain objects that have a stable or situational significance for the individual, as well as the awareness of consciousness that implies an elevated level of sensory, mind or driving activity. To draw attention to the danger, we use different means: sound, visual, etc. Visual safety information is presented in the form of posters, inscriptions, signs, light signals, etc. Sensory information, mostly visual, sensory and tactile, becomes effective through perception (observation).

Observation is a polysensory reflection of an object or occurrence in the consciousness of a human during their direct interaction with sensory organs. Perceptual images have essentially polysensory character because they contain information from several types of analyzers (visual, sensory, tactile) and provide a choice of solutions that are directly related to the thinking. The concept of thinking is understood as a process of cognitive activity characterized by a generalized and indirect reflection of an action.

A wrong solution can arise from an incorrect assessment of the situation, insufficient experience, poor understanding of the information received, etc. A wrong decision can lead to accidents, and accidents associated with accidents. Together with the verbal-minded level, an emotional-sensual sphere plays an important role in the decision-making process, which includes feelings, emotions, emotions, mood, and will.

Feelings are, in the consciousness of an individual, an operational reflection of real relationships, i.e. the need for important objects. Feelings perform a signaling and regulatory function in the mutual relationship between the subject and the environment. The basic feelings that can lead to traumatic situations are the feeling of alienation from reality

(autism), false fear (phobia), etc. The forms of changing feelings are emotional tone, emotions, affections, and moods.

An emotional tone is a kind of emotional coloration of the variability of psychological processes. Traumatic factors of emotional tone are idiosyncrasies, i.e. physiological, physical, or psychic hypersensitivity to some kind of stimulus. On the other hand, a positive tone that arouses due to emotionally appealing sounds, smells, colors, and movements reduces the degree of risk and reduces fatigue. These phenomena are based on the aesthetic formation of working zones - colorful and adequately lit space, functional music, photo design, etc.

Emotions represent the direct experience of any feelings. The basic types of emotions are pleasant and unpleasant. Pleasant emotions (skill, joy, enthusiasm, excitement, etc.) motivate for active action, overcoming the obstacles and eliminating the patterns of danger, while unpleasant emotions (fear, anxiety, fear, etc.) are characterized by giving up fighting, closing in oneself, lack of willingness, etc. Emotions are associated with temperament and character. Emotional manifestation is especially important in certain types of responsible occupations, such as a pilot or a surgeon. Emotions are closely related to the effects, i.e. emotional processes that man quickly manipulates, which are shifting sharply and characterized by significant changes of consciousness and disturbance of control of the action (lack of self-control). Affects serve as the main emotional traumatic form. Stupor (numbness) or faintness may occur in a state of affect such as, for example, despair. After an excited affection, an acute shock may occur suddenly, which is characterized by paleness, weakness, immobility, lethargy, etc. Accordingly, individuals who are prone to affection should not be given specific responsibility.

Mood is generally an emotional condition that is characterized by the removal of separate psychological processes and behaviors. Mood is rarely an emotional basis for traumatic situations. However, a longer emotional negative mood can lead to frustration, i.e. the states of impossibility of active action in the presence of objectively unbearable or subjectively accepted difficulties, which weakens the body and may be the cause of an accident.

Will is a form of psychological activity that involves the regulation of behavior, tendencies and instincts. Will provides an organization of various activities in accordance with consciously set goals. Basic willing actions are awareness, the determinism of life circumstances and personality traits. The basic element of a willing act is an act of will.

4. PSYCHIC PROPERTIES AND EMPLOYEE SAFETY

The basic psychic characteristics that affect the safety of a person are character and temperament. Character implies the universality of individual-psychological traits that are expressed in typical, given-personality modes of action in certain circumstances. The physiological basis of character is the dynamic stereotype. A series of personality traits of a person is combined into symptom complexes or factors that form the structure of the character in its entirety. Today, there are many variants of multifactorial character structures, tested by, for example, Cattell's 16 Personality Factor Model [4]. For the topic considered, the following factors are important: shyness - boldness, rudeness - solvability, rigidity - plasticity closely related to the emotional-willed sphere. In addition, character is important for professional orientation and career choice.

A certain approach towards safety activity is temperament which implies a combination of the characteristics of a man such as, for example, the intensity, speed, tempo, rhythm of psychic processes and states that depend on the individual features of nervous system as well as the strength, mobility, and excitement of an individual. According to the temperament, the cholera is irritable, impulsive, unresolved in emotions, with frequent changes in mood, a fast-talking man; melancholy is a man of a weak type of nervous system, very sensitive, insulting, the one who deeply lives but is able to feel and absorb more information than others, which makes him get tired more quickly; phlegmatic is a man with slow reactions, cold-blooded, steady in his feelings, thoughtful in action and speech; sanguine person is a balanced man, active, mobile, easy to resist unpleasantness and misfortune, and practical.

Unlike a socially acquired character, temperament is genetically conditioned and can have some significance for developing traumatic situations over a longer period of time, unlike character. For example, it is known that under unpleasant circumstances, melancholy often becomes a victim of one's own fear, rather than cholera or sanguine person.

Safety is influenced by the psychic characteristics conjoined under the term phobia, in particular: agoraphobia – the fear of open spaces and crowds (people); acrophobia – the fear of heights; claustrophobia – the fear of tight (narrow) space; pantophobia – the fear of the everything that might happen; pseudophobia - the fear caused by the events that had happened, etc.

5. Mental Conditions and Human Safety

The psychic state of a man is a relatively stable structural organization of all components of the psyche which performs the function of active interaction of a man with an external environment, which at that time is represented by a concrete situation. Mental conditions are characterized by diversity and temporary character, and they define the specificities of psychic activity at a specific time and can positively or negatively influence the course of psychic processes.

In the work process, the reaction of an organism to external actions does not remain constant. The organization seeks to adapt to changing work conditions and to overcome difficulties and hazards. The state of psychological tension, called stress, was developed by Selye [12]. Stress in work, depending on its level, causes very different, sometimes opposite results.

Stress is expressed in the general adaptation syndrome as a necessary and useful reaction of the organism to stimulation and responses related to stress conditions. Stress as an answer implies an arsenal of physiological, behavioral and cognitive reactions aimed at restoring homeostasis (equilibrium state of the inner environment of the organism) [5]. Despite generally accepted stress discomfort, it is important to emphasize that a certain dose of stress is essential to life [14].

However, between the level of stress and the activation of the nervous system that derives from it on the one hand and the results of work on the other, there is no proportional dependence. At the beginning of the 20th century, Jerks and Dodson addressed this issue. They experimentally showed that with the growth of the activation of the nervous system to a certain level, the productivity of behavior increased, while with the further increase in activation it began to decline [16].

Stress has a positive impact on the results of work (mobilizing the body and contributing to overcoming the resulting obstacles in work) only until it exceeds a certain critical level. When this level is exceeded, stress exerts a negative influence on intellectual functioning - analytical thinking, problem-solving and decision-making. Stress has a restrictive effect on analytical thinking, making the person inflexible. Consequently, flexibility is reduced as well as the capacity to evaluate and review alternative actions. Long-term and mid-term perspectives are also affected, leading to consequences of actions and decisions that are not properly assessed. Decision-making risks which are limited to short-term solutions to immediate problems, tend to be linear, refer only to partial problems as they occur, rather than considering the broader perspective needed to manage the more complex events [13].

Stress that exceeds the critical level is called distress. Tomasevskij emphasizes that in a complex work-related stress situation, the signals are wrongly evaluated, the worker ceases to notice important indicators of the machine's operation and the control of the work process is disturbed [15]. So, while stress caused by the complication of working conditions does not exceed a certain level, it contributes to overcome the difficulties. However, all this is achieved through the mobilization of the resources of the organism and the type of work in which the necessity for such mobilization arises quite often, which negatively affects human health. Debshlag points out that it should not be allowed to create long-lasting extreme situations at work but that they can only be accepted as exceptional cases [2]. He believes that the normal load of workers and their required work readiness is provided at 40-60%, and in special cases, short-term, at 80% of the maximum load. The remaining 20% of the authors consider it as a reserve to be used in case of extreme need (life threats).

Debschlag lists six groups of production stressors - the negative factors commonly encountered by a worker in a modern company:

1. The intensity of work
2. The pressure of time factors (campaign work, urgent work on performance, etc.)
3. Isolation of workplaces and inadequate contact between the workers (operators in a modern company are often distant from one another, they are located in isolated rooms)
4. Monotonous work (on a conveyor belt, on instrument panels)
5. Inadequate motion (the operator is in a state of readiness for hours, while without the need to move.)
6. Different external influences (noise, vibrations, high temperatures, etc.)

Accordingly, the hyper mobilization of the organism leads to excessive forms of a psychological condition called distress or excessive forms. Two types of excessive mental tension can be distinguished - slowing and exciting. Slowing type is characterized by impotence and slow motion. A specialist is not able to perform professional activities with ease and the speed of reverse reactions is reduced. The process of thinking slows down, the recession worsens, while absent-mindedness and other negative signs are not the characteristic of the person in question at rest. On the other hand, the exciting type is exemplified by hyperactivity and voice trembling. Operators check the condition of the instruments, repair their clothes, rub their hands, communicate with people around them, they are irritable, scared, rude and offensive. Excessive forms of psychic tension are often the cause of operator’s wrong actions and behavior in a complex situation. Long-term psychic tension, especially its excessive form, leads to a pronounced fatigue state.

Long-term exposure to stress can lead to psychic tension and may result in the appearance of fatigue. Fatigue is the temporary state of an organ or the whole organism characterized by reduced working ability due to prolonged or excessive load. We can distinguish between physical and psychological fatigue. The signs of neurosis such as absent-mindedness, distraction and difficulty to concentrate usually occur in severe cases of fatigue [17].

The most common psychological condition that leads to accidents is a psychic strain, i.e. the state of elevated psychophysiological activity and non-adaptive behaviour caused by the factors which are considered severe in case of a particular person. This strain can lead to a stressful response where workers experience physical and psychological symptoms [7].

Mental conditions, according to the level of stress, are the most important indicators in terms of efficiency and work safety. The moderate strain is accompanied by moderate changes in the physiological reactions of the organism, exhibited by a good subjective feeling, as well as stable and safe execution of the actions. Increased stress occurs when work is performed in extreme conditions and it requires maximum strain of physiological and psychological functions, usually above the physiological limits. Extreme working conditions are defined in terms of deviation from the norm and disagreement between capacity and demand, which indeed causes stress [10]. The adverse factors that increase stress include physiological discomfort, biological fear, lack of maintenance time, increased difficulty of the task, increased importance of wrong actions, the existence of relevant disturbances, failure due to objective circumstances, decision information deficit, sensory deprivation, information overload, conflict conditions, etc.

Stresses can be classified according to those psychic functions that are mostly engaged in doing work and whose changes are most pronounced in unfavorable conditions. Intellectual stress is the strain caused by frequent engagement of intellectual processes for the purpose of fulfilling work obligations, solving tasks and problems related to the work process. Sensory stress is caused by suboptimal operating conditions of sensory and perception systems and occurs in case of great difficulty in understanding the information. Monotony is the stress caused by the uniformity of the actions performed, the inability to shift attention, the increased demands for both concentration and stability of attention. Politony is the stress that is caused by the necessity of frequent transfer of attention and in unexpected directions.

Physical stress is the strain of an organism caused by an increased burden on the locomotor system of a person. Emotional stress is caused by conflicting conditions of increased probability of occurrence of a hazard, unexpectedness or other types of long-lasting tension. Exaggeration of expectations is the stress caused by the necessity to maintain the readiness for work. Motivational stress is related to the battle of the motives, with a choice of criteria for decision making. Fatigue is an anxiety associated with the temporary reduction of working capacity caused by long-lasting work.

6. Special Psychic Conditions

Along with fatigue and stress, special psychic conditions include paroxysmal disorders of consciousness, mood swings, conditions related to the taking of psychotropic agents (stimulants, tranquilizers, alcoholic drinks, etc.). Paroxysmal conditions are characterized by the loss of consciousness from a few seconds to several minutes, for example. The

causes of such conditions are diseases, monotonous work and work at night. Psychogenic mood changes occur under the influence of stressful conditions and tragic events. The mood disorder is manifested through apathy, languor, impotence, difficulties in shifting attention and slowing down of thinking speed, deterioration of self-control which can be the cause of injuries at work.

Practical experience shows that taking light stimulants (tea, coffee) helps to combat sleepiness and can contribute to increased workability in a short period of time. The use of tranquilizes - preparations that relieve psycho-emotional stress conditions is a particular problem because they can reduce psychological activity, slow down the reaction, and induce apathy and drowsiness. At the beginning of their use, active stimulants (pervitin, phenamine) help increase employees' work ability on the one hand but have a very negative impact on the psychological safety in the workplace. However, as time passes by, they begin to have a negative effect (the deterioration in subjective feelings, reduced mobility and reaction speed), which often leads to behavioral errors and accidents. Persistent factors that increase individual exposure to hazards and make mistakes include the use of alcoholic beverages. Even minor use of alcohol increases the likelihood of occurrence of unfortunate events because alcohol affects the operation of the nervous system and man's behavior: there is a motor disorder; man responds to external influences more slowly, or too fast; oscillations become chaotic and less manageable; there is a distortion of critical thinking, a person makes quick conclusions or ruthless decisions. Nowadays, drunkenness and alcoholism are the main causes of injuries in the workplace. From the occupational safety position, the hangover is of particular importance. Since it occurs in days after drinking alcohol, it reduces man's ability to work and leads to slowing down and reducing prudence.

Paroxysmal interruptions in operator activity can be the cause of disastrous consequences, especially for drivers in road traffic, construction workers, installers and builders working at altitude. Modern means of psychophysiological research enable detection of a person with a hidden tendency towards paroxysmal states.

Nothing less dangerous is *affective states* (affect - an explosion of emotions) that result from insults, insults, professional failures, and home quarrels. Man's psychological (emotional) narrowing of consciousness leads to a human condition. Accidental movements, aggression, and destruction are observed. Persons who are prone to affective conditions are included in a category with an increased risk of injuries and should not be given responsible tasks.

In addition, it is possible to develop the following reactions: a conflict - a reaction that arises when a person must choose between two needs that act simultaneously. In terms of occupational safety, such a situation happens when it is necessary to take into account the requirements of production safety. In the cases of frustrations, repeated failures or in an emergency, a person might give up his/her goals.

Anxiety (anxious expectation) is an emotional reaction to danger. A person is not able to determine the object or reasons of this state. A person who is in an anxious state is much more inclined to commit mistakes or dangerous procedures. Fear is an emotion that arises in situations where the biological or social existence of an individual is threatened and is directed at the source of real or fictitious danger. Functionally, fear serves as a warning for the coming danger, and encourages the search for diverse ways to avoid it. Also, fear varies in a wide range of nuances (apprehension, fear, frightfulness, horror). Despair is an unconditional, reflective "sudden fear". Apprehension is contrary to it, it is always associated with an understanding of the dangers, occurs slowly and last longer. Horror is the highest degree of fear and repression of fear by fear.

Understanding danger can cause different forms of emotional decisions. Their first form, the reaction of fear, is expressed in stiffness, trembling and inadequate procedures. It develops through the mechanism of passive-defensive reflex. This form of reaction to danger has a negative effect on the work. Frequently expressed fear can improve the functional state of the cortex and, in combination with cognitive processes, manifest itself as "reasonable fear" in the form of appreciation and caution.

Panic is one of the forms of fear. Panic is a complex, transient, psychological-behavioral phenomenon that can be manifested at the individual and group level [18]. As such, it negatively affects man's work. In a panic, fear reaches the power of affect and can impose stereotypical behavior (escape, stiffness, defensive aggression). When considering the impact of panic on the movement of man, the following mistakes should be identified: the action is not carried out - panic leads to total chaos. These cases are often referred to as "stiffened", "scared" (or surprise); in the automatic order of the process there is a void, and man real moves become superfluous in a concrete situation; the reaction to panic is expressed in the form of instinctive protection movements that do not yet meet the objective requirements for protection. The man continues to perform automatic actions without any changes, instead of interrupting or modifying them.

The state of panic is the transmission mechanism through which the subjective individual factor acts to create or develop a dangerous situation. The aforementioned factors continuously or temporarily increase the possibility of a dangerous situation or an accident. However, this does not mean that their actions always cause a dangerous situation or an accident.

7. Psychological Methods of Improving the Employee Performance

People usually compromise their safety either due to their ignorance, the lack of desire or inability to comply with safety responsibilities. Bearing in mind that man is characterized by three functional parts of human action (motivational, orientation and executive), the disturbance of any of these parts distorts the overall effect. The disturbance of the motivational part of the action is manifested by the fact that a person does not want to fulfill certain functions or operations. The distortion can be relatively constant (a person does not assess the danger, does not comply with working and technical regulations, etc.), and temporarily (a person is in depression or under the influence of alcohol, etc.). The distortion of the orientation part of the action is manifested in the lack of knowledge about the rules governing the functioning of technical systems and norms and their fulfillment in a safe manner, while the violation of the executive part of the act is manifested by non-fulfillment of the rules (instructions or regulations) due to the non-conformity of the psychic and physical possibilities of man. Such disagreement can be permanent (for example, poor coordination and poor concentration) and temporary (fatigue, reduced work ability, health deterioration, stress, alcohol abuse, etc.).

This classification represents the possibility to take certain preventive measures through various methods: education and raising awareness on motivation (training, practice for orientation), professional selection and medical examination.

One of the basic measures for preventing injuries at work is training and consolidation of knowledge and skills. Learning about safety is done by transferring experience consisting of

knowledge and skills. Considering that the psychomotor base of safety consists of skills such as automatic actions, as well as operations as algorithmic effects, we will consider training skills.

The formation of skills as an element of the cognitive-orientational part of the activity goes into four stages: determining the facts (cognitive stage); preparatory stage (analytical stage); standardizing (synthetic stage); and a variation stage (situational stage). The largest number of accidents occurred at the preparatory stage. In the synthetic stage, there is a secondary increase in the number of cases due to excessive adaptation. In the situational stage, the psychology of work safety is of interest, the interference of skills, that is, their genuine transfer (for example, when replacing a control panel or changing road traffic regulations). In the development of professional skills, there is a rapid improvement in skills in the initial phase. However, in the initial training stage (preparatory and standardization), a significant number of accidents has been recorded. In these stages, it is necessary to practice a complex culture of activity, including its technological and safety aspect. If the trainings do not bring any added value, it is necessary to seek new ways of mastering skills and apply new methods of training.

8. CONCLUSION

For the human-productive system to function effectively and protect human health and its safety, it is necessary to ensure the adequate conformity between the working environment and man. By studying and analyzing the characteristics and the way in which psychic processes, characteristics, and psychic states influence the employee behavior, it is possible to directly influence their safety during the work process. Because everyone is unique in terms of personality, attitudes, and habits, it is evident that psychophysiological characteristics strongly influence the safety of the work environment. By professional selection, training, and continuous improvement, it is possible to promote the safety of the work process by selecting adequate jobs and tasks for the appropriate persons, working conditions, working hours, shifts, etc.

In order to eliminate the psychological causes of accidents, it is necessary to apply technical-organizational methods, as well as education and training for safe behavior in the work environment. These activities should be continuous, carefully planned, well-organized and promoted in order to achieve the highest level of occupational safety and health as one of the most important interests of community and society.

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PSIHOFIZIOLOŠKE OSNOVE BEZBEDNOSTI I ZDRAVLJA NA RADU

U radu su prezentovane teorijske osnove bezbednosti ljudi u radnom okruženju posmatrane sa psihofiziološkog aspekta. Ovaj aspekt je analiziran kroz karakteristike i uticaj psihičkih procesa, osobina i stanja na bezbednost individue tokom rada. Imajući u vidu da je svaki čovek različit i da predstavlja svojstvenu i jedinstvenu individuu koja je strukturana na specifičan i poseban način, poznavanje psihofizioloških karakteristika ljudi predstavlja presudni faktor za profesionalnu bezbednost. Naime, osobine radnika kao što su individualne sposobnosti, karakterne crte ličnosti, emocije, znanje, veštine itd., utiču na njihove postupke tokom procesa rada stvarajući razlike u ponašanju i ishodu procesa rada – da li je ili nije nastala povreda ili nezgoda na radu odnosno da li je postojala mogućnost za nastanak narušavanja bezbednosti i zdravlja zaposlenih. Kroz proučavanje psihofizioloških osobina čoveka tj. njegovih psihičkih osobina, procesa i ličnosti, moguće je u određenoj meri uticati na poboljašanje parametara bezbednosti na radnom mestu kao i na efikasno funkcionisanje sistema „čovek – proizvodno okruženje“.

Ključne reči: *Bezbednost, psihička stanja, psihički procesi, osobine ličnosti.*