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STRESS MANAGEMENT METHODS FOR EMPLOYEES OF THE ENGINEERING ENTERPRISE OF THE RUSSIAN INDUSTRIAL COMPLEX

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ABSTRACT

The article is devoted to the problem of stress management in the employees of the Russian industrial complex. The results of a study conducted at a machine-building plant located in the Urals (Russia) are presented. On the example of the basic organization, the authors conducted sociological and economic studies, identified stress or conflict situations that cause stress in the employees of the enterprise. The research is systematized the most typical stressors for the main staff and proposed a scientifically-based set of measures to reduce the identified stress - factors.

INTRODUCTION

One of the most important qualities of a modern leader is his ability to manage stresses in the workforce. No work process can do without certain stresses, which has a highly negative impact on the performance of professional tasks. A manager at any level must be able to manage stress management techniques in order to minimize their adverse effects.

The production work of employees of the Russian industrial complex is among the most emotionally stressful activities and belongs to the group of professions of increased risk of frequent health problems. As a result, stress-sustainability research and the development of ways to manage stress in industrial enterprises is considered one of the most pressing scientific and practical tasks (Mikhailov, 2019).

In order to develop recommendations to reduce stress levels, employees of the industrial complex conducted a sociological study among the staff of one of the Ural engineering plants in November 2018. The methods of scientific research were (Fontana, 1989):

- Questioning.
- Semi-formalized interview.
- Testing on the "Professional Stress Scale" by D. Fontana.

MATERIALS AND METHODS

The authors of the study involved 40 employees of one of the production units of the basic organization. Of these: 17 men, and 23 women between the ages of 26 and 65. The sociological study was conducted in three stages, the first of which was a questionnaire. When asked about the length of service, 40% of respondents said that they have more than 15 years of experience, 37.5% have work experience from 10 to 15 years, 15% have experience of 5-10 years and 7.5% - from 3 - 5 years. This information demonstrates that the research unit has, on the one hand, professional personnel, proven time and experience, and on the other hand - attracts young professionals to work in order to gain the experience of a new generation, innovative approaches to work. It was also revealed that 35% of respondents had a secondary technical education and 65% had higher education. Respondents' opinions about the management of the company were distributed as follows: 85% are quite their management and 15% are not satisfied. The vast majority of disgruntled workers turned out to be young employees with less than five years of experience. They were asked to comment on their response. It turned out that in general this category of staff lacks independent work, trust on the part of management and attention to their success. They are loaded with routine work, and on the introduction of new technologies, the development of equipment and new projects they either do not have enough time, or they bypass it. The company's management is used to trusting the experience of generations, rather than innovation.

To the question of the authors of the article: "Do you think about changing profession?" 87.5% of respondents gave a negative answer, and the remaining 12.5% of employees said that they did not think about it. To the question "Is the work difficult for you?" 82.5% gave a negative answer, and 17.5% - positive. It turned out that the work is difficult mainly for employees with more than 15 years of experience. They commented on their response as follows: they experience difficulty in their work because of moral exhaustion and exhaustion, emotional fading. One employee of the company mentioned the fear of reduction because his age reaches the maximum level for the age of the engineer.

LITERATURE REVIEW

The problem of stress management at the workplace has been the subject of research by foreign and domestic scientists for more than eighty years. Traditionally, it is customary

to highlight the following approaches to stress research: biological, psychological and organizational.

As part of the biological approach, first of all, it is necessary to highlight the concept of stress of the Canadian scientist Hans Selye. He was one of the first to define stress - "the body's non-specific response to any claim against it" This definition indicates that stress can be associated with both negative and positive emotions. In the course of his experiments, H. Selye highlighted the following phases of stress development: anxiety response, resistance phase, exhaustion phase. If stress does not develop beyond the resistance phase, it is temporary, and if the development reaches the phase of exhaustion – chronic (Selye, 1976).

H. Selye's theory is limited solely to biological study of stress, i.e. studying the body's response to any external influence. Subsequently, this idea was developed in the works of C. Cooper and P. Legeron, where stress at work is considered both as a motivator and as a condition that has a negative state on the health and productivity of the employee (Cooper & Kelly, 1993).

In the 1970s and 1980s, the theory of psychological stress was developed, founded by the American psychologist Richard S. Lazarus. In his theory, he considers stressors (lifestyle, environment) along with psychological features of a person. According to this theory, in a stressful situation, a person's ability to control an irritant rather than the physical abilities of his body is crucial. In other e., stress is considered as a psychological state, which includes both cognitive and emotional components. Interacting with the environment, the individual evaluates the situation, and if he defines it as stressful, he chooses a certain strategy of confrontation - coping strategy, and then - again assesses the situation and concludes about the effectiveness of the chosen strategy. According to R. Lazarus coping strategy are key and they are aimed at reducing or eliminating stress. They appear as offensive (active actions), ignoring, or escaping. Subsequently, this classification was expanded to 14 types of individual Flexible coping strategies (Lazarus, 1999).

British psychologist Tom Cox made a significant contribution to the development of the theory of psychological stress. He sees coping strategy as a mechanism to protect the individual against the non-standard situation. T. Cox focuses on analyzing the process of interpreting the situation and deciding whether to use resources to protect (Cox, 2013).

British researchers C. Mackay and C. Cooper have proposed a model of the occurrence of work stress, which is based on the balance between requirements and resources. In turn, they are divided into internal and external. Disruption of this balance leads to stress.

In parallel with transactional stress theories, interactionist theories of stress have been developed. These theories focus more on studying the psychosocial effects of the environment on the occurrence of stress. The work environment is seen as a source of stress, and one element of the analysis of work stress is the interaction between the individual and the work environment. Accordingly, organizational stress is seen as a discrepancy between an individual's abilities and the requirements of the work environment.

Different models of stress study have been developed as part of interaction theories. In particular, researchers from the University of Michigan J. French, R. Caplan and R. Harrison have developed a model of conformity of the individual and the environment - "Person-Environment-Fit." This model sees stress as a result of a lack of compliance between the requirements of the work environment, its benefits and the individual. The requirements of the work environment may be, for example, the duties of the employee, and the benefits of the work environment - the ability in a certain position. This model

was preceded by the environmental (environmentalism) theory of S. Cobb, according to which, mental disorders (including stress) were considered in their relationship with the environment, and not individually. The "Person-Environment-Fit" model focuses on the study of working stress and thus develops an environmental theory.

In the 1990s, researchers Robert Karasek and Tores Theorell developed the "Job strain model. This model addresses two main factors in the work environment that determine work stress: the level of control of the individual over the situation at work (freedom of decision-making) and the requirements of the work environment. On the basis of these two factors, four types of work were highlighted: monotonous work, grueling work, simple work, dynamic work. Monotonous work involves small requirements for the employee and a low degree of influence on the situation. In the 1990s, researchers Robert Karasek and Tores Theorell developed the Job strain model. This model addresses two main factors in the work environment that determine work stress: the level of control of the individual over the situation at work (freedom of decision-making) and the requirements of the work environment. On the basis of these two factors, four types of work were highlighted: monotonous work, grueling work, simple work, dynamic work. Monotonous work involves small requirements for the employee and a low degree of influence on the situation (Karasek & Theorell, 1992).

Swiss psychologist Johann Siegrist has proposed a different model for considering stress at work as part of an interaction (interaction) approach. He suggested that the work stress was due to a mismatch between the effort and the compensation received. The effort is seen as a moral and physical resource that the individual uses to overcome the various requirements of the workflow. Such resources include: additional responsibilities, physical activity, timing, etc. Compensation is seen as a reward that an individual receives as a result of the effort expended. Compensation can be shown in the form of salary increases, respect for colleagues, promotion. J, Siegrist also highlighted another element: the cost of psychological energy arising from a high employee incorporation into the workflow. The employee experiences stress when compensation does not correspond to the amount of effort spent (Siegrist, 1996).

Among the representatives of the interactionist approach should also be singled out Russian researchers, in particular, A.B. Leonova, who proposed his own definition of organizational stress - "a complex state that arises as a reaction to factors of increased tension and any kind of impact of the internal/external environment experienced by the collective entity and hinders the effective functioning of the entire organizational system". This definition emphasizes the impact of the work environment not only on the individual employee, but also on the organization as a whole. In the study of organizational stress, A.B. Leonova proposes to take into account the following levels: individual level of employee, level of working group, level of organization. At the individual level, the motives and emotions of the employee are investigated, and at the level of the working group - team cohesion and management style. The level of the organization involves the study of the organizational culture. A.B. Leonova proposed a model of systemic diagnosis of organizational stress. This model involves conducting research using various psychological tests adapted to Russian organizations (Leonova, 2009).

Transactional stress theories and Interactionist theories of stress based, first of all, on the principles of psychology, and, accordingly, they are attributed to the psychological approach. In the 90s of the 20th century, a new approach to the study of stress was developed - organizational. In this approach, working stress is seen primarily as a social problem and, accordingly, management practices are based on social factors. Work stress is due to the social nature of its consequences and is determined by factors that are often not subject to individual control. Stress has negative effects not only on the health of employees, but also reduces self-esteem and satisfaction with work. Stress also affects

productivity, provokes labor conflicts, and increases the number of absenteeism. The risks of stress are exposed to representatives of all professions. At the same time, studies show that mental health workers are more stressed. A distinctive feature of the organizational approach is the consideration of the possibilities of managing stress on the part of the organization. In other course, the organization is seen not only as a system that creates stressful situations, but also as a system capable of regulating internal conditions. In this regard, the main resource that can overcome stress at work is a certain way built management structure in the organization. In organizational theories, the main focus is on the requirements of the organizational environment (the individual's environment), the main elements of which are set aside: the requirements coming from the organization system. The resources that the individual possesses; The balance between the needs of the external environment and the individual's resources; effects of stress. The French researcher P. Legeron notes that organizational stress levels are more amenable to study and manage than individual stress levels. This is because the impact on sources of stress is possible at the organization level. The organization creates conditions that contribute to or hinder the development of physical, psychological and behavioral stress control competencies. He highlighted the following areas of development of stress research at work:

- 1. Estimated stress focuses on developing methods for assessing stress levels.
- 2. Organizational stress concrete measures are proposed to build management strategies.
- 3. Managerial stress determining the balance between the benefit of the company and the well-being of employees.
- Individual stress is aimed at developing an employee's competence to overcome stress.

Taking into account the above directions, Legeron P. forms a set of activities aimed at monitoring and managing stress on the part of the organization. According to him, it is impossible to completely exclude stressors in the labor organization. Moreover, a certain level of stress is not critical and can motivate and promote professional development. C. Cooper and S. Palmer offered their own model of stress in the workplace. The key to this model is the organizational culture, which is interpreted as a component of potential stressors and includes a wide range of characteristics of employee interaction practices.

A. Bakker and E. Demerouti have proposed a "resource requirements" model that assumes not only negative, but also positive indicators of the employee's condition. This model is based on the idea of a balance between work requirements and individual resources. However, resources are divided into external (proposed by the organization) and internal (psychological resources of the employee). The ratio of an employee's external and internal resources determines the level of his stress and motivation. Organization, on the one hand, is a source of stress or, on the other hand, it provides an opportunity to deal with them (Bakker & Demerouti, 2001). As part of the organizational approach, different classifications of organizational stress factors have been proposed. In particular, Legeron P. singles out stressors related to: the content of the work, the organizational context of the work, the professional and psychological qualities of the individual, the relationships within the organization.

In turn, C. Cooper and J. Marshall has offered a more comprehensive list of stressors: stressors associated with employee duties; Employee status Employee career development Relationships in the workforce; organizational structure and psychological climate. Some researchers single out role conflict as a stress factor. A person simultaneously enters a certain number of social groups, in each of which he occupies different social statuses and performs different social roles. Social roles, in turn, involve role-playing and role-playing behavior. Role conflict arises as a result of a person's lack

of understanding of his status in a certain social group, as well as as a result of the divergence of his role-playing behavior and expectations on the part of others.

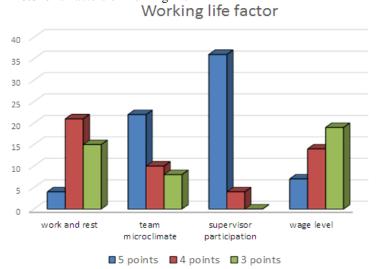
As a stress factor, researchers often note macrosocial aspects. In particular, Gubert Landier sees stress as a result of the following stressor groups: psychological, organizational and social. It refers to the social factors of the individual's lifestyle, which in turn are connected not only with work, but also outside it. He also offered an analysis of organizational "symptoms" of stress demonstrating the organization's "disease". Among such symptoms, he singled out - a decrease in the level of employee involvement in the labor process. The decrease in the level of involvement is associated with the general trend of individualization of labor relations, declining confidence in trade union institutions and collective action. This is reflected in labor conflicts in which Gubert Landier highlights the trend of transition from collective forms of conflict to individual ones. This trend is due to the liberalization of the labor sector. Individualization of labor relationships leads to the fact that workers try to cope with stress alone, as a result, reducing their involvement in the labor process.

Another version of the classification of organizational stress factors was proposed by Dominique Chouani.re. In particular, he singled out: factors related to general changes in the field of work; Factors associated with increasing individualization in the process, increased responsibility, use of technical means of communication, client requirements, etc.; Staff management factors Factors related to relationships at work; factors related to living conditions. This classification emphasizes that stress in the workplace is determined not only by internal organizational conditions, but by general changes in the field of work.

So, the organizational approach to stress research emphasizes its social nature, but at the same time takes into account the individual-personality characteristics of the person. This approach is most effective for the study of stress problems in modern organizations, including in industrial enterprises.

RESULTS AND DISCUSSION

Respondents were asked to rate the factors of their working lives on a five-point scale (Pic. 1).



Picture 1. Factors of working life

It turned out that half of the respondents (51.2%) assesses the mode of work and rest on a score of 4 points, 36.9% - by 3 points and 12.2% on the highest mark of 5 points. This fact demonstrates that in general the employees of the company are satisfied with the mode of work and rest, but always want work and rest to be in balance on the scales. It should be noted the unity of opinion in the assessment of working conditions: All 100% of respondents estimated working conditions by a maximum of 5 points. Many in addition left a comment and expressed gratitude to the management of the company for creating a pleasant off-duty atmosphere and recreation room. They also thanked the management for the purchase of modern coffee - a machine and new comfortable furniture. These facts tell us that the management of the company cares about the working conditions of the staff. More than half of respondents (55%) estimated the microclimate (social-psychological climate) in the team on the score of 5, 25% - by 4 points and 20% - by 3 points. It also turned out that, despite the specifics of the heavy engineering enterprise, the head of the unit successfully applies elements of democratic management style. There is a joint activity, the position of the leader - "in the group": 90% of respondents rated joint activity with the leadership on the highest score -5 and 10% - by 4 points. The issue of insufficient wages of industrial workers has long been and has already become firmly among the permanent ones. That is why almost half of respondents (47.5%) rated the level of wages at "satisfactory" (3 points). At "good" (4 points) rated 35% of workers, which indicates that the salary is satisfied, but it would be possible to get rewarded for their work and more.

The majority of respondents (80%) assess the atmosphere in the team of the plant as favorable and friendly. The responses of the unit's staff to the question of the stressful incidents in which they had been involved were quite interesting. Some of the employees, who low-rated the microclimate in the team, confirmed their opinion and attitude. However, conflicts tend to occur at the interpersonal level and are largely constructive (Band & Tustin 2011). It was also found that respondents experience approximately equally stress from both personal (52.5%) and organizational (47.5%) and organizational (47.5%), factors (Pic. 2).

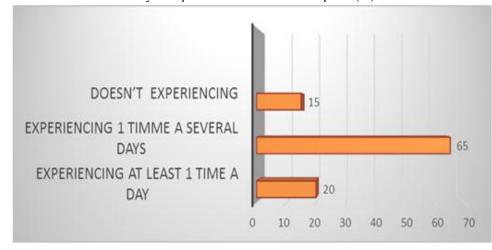
50.00%
40.00%
30.00%
20.00%

PERSONAL FACTORS

ORGANIZATIONAL FACTORS

Picture 2. The degree of influence of personal and organizational factors on professional stress.

A fifth (20%) of the respondents experience stress at least once during the working day, 65% experience stress not every working day. 15% believe that stress does not experience at all (Pic. 3).



Picture 3. How often do you experience stress in the workplace (%)?

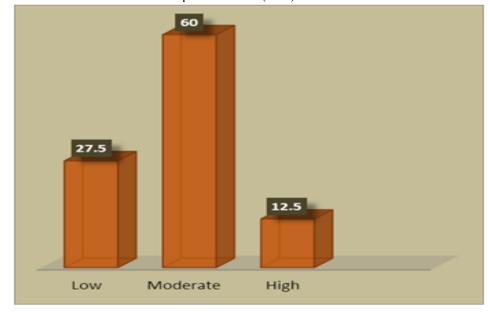
To the question "Do you go to work willingly?" the authors of the article received the following answers: 70% of respondents answered that it happens depending on the mood and almost a third (30%) - willingly go to work. a couple of times a week, you're losing your strength. This is mainly the case for workers over the age of 50.

To the question "Is work in an industrial enterprise a key stressor for you?" respondents responded positively, 22.5% found it difficult to answer. The remaining 10%, answered that work in the engineering industry is not a leading stress factor. They commented on the fact that their work includes not only performing direct duties, but also many other tasks, which in turn can affect the psychological and emotional state of the employee. To the question "Are there public events with the collective after hours?" the overwhelming number of respondents (80%) replied that the manager was not paying due attention to it, and the remaining 20 per cent mentioned that most of the activities were not taking place.

The next stage of the study involved testing the 40 respondents we selected using the method of British psychologist David Fontan - "The Scale of Professional Stress." This technique allowed to determine the total level of professional stress and to analyze the degree of undesirable effects of stress on the employee. The methodology is a questionnaire consisting of 22 questions, among which there are questions (1, 2), where you need to choose the option that is most typical; unambiguous questions - either "yes" or "no" (3, 4, 5, 7, 10, 13, 14, 15, 18, 19, 20); 3 answering questions where the respondent must choose the one that expresses his opinion the most and corresponds to reality (6, 8, 9, 11, 12, 16, 17, 21); and the question is the self-assessment scale (22). The key to the scale of professional stress was used in interpreting the results. Points for all 22 points were added up.

The test found that the average results of female and male employees did not exceed 25 points. This indicates, on the whole, a moderate level of stress. Based on d. Fontana's professional stress scale (Brynien, 2006), we have divided the results of our study into three levels of occupational stress (Figure. 4):

- Low 11 (27.5%).
- Moderate level 24 people (60%).
- High 5 people (12.5%).



Picture 4. General level of occupational stress (in %).

Low level is characterized by the fact that professional stress is not a problem in work, activity is characterized by activity and satisfaction. Moderate levels are typical for a busy and well-working professional, but prolonged exposure to moderate stress leads to reduced performance and negative effects on the individual body (Fapohunda & Tinuke 2012). As a result, you need to reduce stress. A high level defines stress as a problem that leads to an unchanging negative result and requires corrective action. The longer you continue to work with this level of stress, the harder it will be to adjust the employee's style of activity. In this regard, a thorough analysis of professional life is needed (Pflanz & Ogle 2006).

After testing on the method of D. Fontana was conducted a semi-formalized interview, which allowed to identify the following features of professional stress of the industrial complex worker (Stecher & Rosse 2007):

- Frequent decline in forces.
- Headaches and dizziness.
- Fatigue and lack of energy.
- Insomnia at night.
- High dedication and emotional exhaustion.
- Inability to stop thinking or experiencing the events of the past day.
- A sense of empathy and deep empathy.

Some of the main stress or stress factors in the company's employees' activities were also clarified. One of the stress factors of professional activity is not always a favorable psychological atmosphere in the team of the plant, which is determined by such a circumstance as: conflict horizontally, in the system "colleague" - "colleague" specifics of the activity. Respondents are also among the most common stressors of professional activity: exceeding the amount of work allotted for this time (information stress); young professionals are under-estimated work (Jayashree, 2010).

The results of the study show the need to develop and implement a set of stress prevention interventions. Overcoming stress involves joint efforts of the manager and employees and may include a set of measures such as:

- Social support.
- The possibility of relaxation.
- Personal wellness and self-learning programs.

A key role in managing stress is given to controlling their level, which is carried out by tracking the manifestations of characteristic signs of stress. To do this, psychologists working in the enterprise should use psychodiagnostic techniques. This will allow you to pay attention in time to the existing stress or stress factors that bother staff. They should monitor the level of the employee's condition leading to stress.

The study developed the following recommendations to reduce stress levels in workers of the machine-building plant:

- 1. Make available and constant feedback with the management of the firm, provide advice in person or with the help of an HR specialist.
- 2. Support their employees, pay attention to the success of young professionals. The sense of importance of work can be realized by giving the employee the opportunity to expand the number of work skills, certainty of work tasks, increasing their importance. To do this, we propose to introduce anonymous questionnaires of employees at the end of the past month, during which the work of each employee will be evaluated. As a result of the evaluation, it will be possible to improve employees by directing to the necessary trainings, training, courses.
- 3. It is worth paying attention to the out-of-work activity of the staff, the atmosphere in the team and conflicts among subordinates. In order to effectively influence the creation of a favorable moral and psychological climate in the team, it is necessary to establish a system of communication. An organized method of interpersonal contact can be used to prevent conflict situations from occurring.

The event's authors' suggestions include:

- Holding sports competitions between different groups of staff. Nothing unites the team better than a single goal and conditions of competition. In this capacity, sporting events are perfect.
- Collective trips to nature. Depending on seasonal and weather conditions, at least
 once every six months. Informal environment always helps to find common ground,
 to distract from work problems and contributes to the search for common interests,
 areas of contact of human behavior.
- 4. Provide employees with the opportunity to play sports, as the level of physical activity has a significant impact on the stressful state of the employee.
- 5. To conduct training on the "Time Management" course, as the problem of lack of time is considered to be a leading prerequisite for growing anxiety.
- 6. An important step to do with the head of the stress reduction unit on his employees is to communicate the stress reduction methods that the employee is able to use in relation to himself. Ways to reduce tension can be presented in a comic form on banners that can be placed in the rest rooms, or, if the working situation permits, in the workplace. You can also use mini-memos in the workplace. Proposed interventions include: "qigong" breathing techniques; exercise; "growing a garden" at home, in the workplace, in the country, in the yard; communicating with wildlife; listening to music watch your favorite shows, movies; reading books and proper nutrition.
- 7. In addition to standard trainings to conduct art therapy (watching videos or presentations), use vocal therapy, sounds of nature, meditation, type of training concentration, used for health purposes, to work out control over the flow of their thoughts and emotions and auto-training (acceptance of self-suggestion). It is also advisable to conduct aroma therapy: the presence of plants with a pleasant but not intrusive smell or aroma lamp in the rest rooms will help to improve mood and reduce nervous tension.

CONCLUSIONS

Thus, the study identified stress or stress factors in the defense industry. The data have allowed to organize the most typical stressors for staff and to develop an informed set of measures to reduce the identified stress - factors. Further research is expected by the authors to conduct in the direction of studying the socio-psychological situation in the Russian enterprises of the aviation and rocket and space industry.

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