

Psychological stability of the staff members of logging enterprises as a key resource for work under extreme conditions

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Abstract. The article deals with the problems of increasing the efficiency of wood resources processing. It shows the developed methodical approach to increase the processing efficiency. It consists of five stages, which all are disclosed in detail providing examples. Approbation of the proposed approach justifies the expediency of its use and substantial economic benefits for wood processing enterprises.

Keywords: *extreme conditions, psychological stability, recruitment, training, personal qualities*

I. INTRODUCTION

The success of a modern logging enterprise is determined by many factors. One of the most important of them is staff efficiency. In extreme conditions of the forest, stress is a common phenomenon. The ability of workers to cope with it determines their productivity. Psychological stability is formed individually for each person. However, you can list some general factors that affect its acceptable level. These factors include education, upbringing, life experience, qualifications, social activity and work experience under extreme conditions. The last one is extremely important. When one gets into the conditions of distance from civilization for hundreds of kilometers, reformation of the strategy of person's behavior takes place. Defence mechanisms are displayed actively. The body and the whole human essence strain to return to a comfortable environment and make their lives as easy as possible. The signals of this process are the reduction of the desire to work and real productivity, conflicts with colleagues, withdrawing into oneself, etc. This goes against the needs of a logging company. Its main goal is to maximize the potential of the employee [1].

The best option for an enterprise to solve this problem is to hire the most experienced staff. However, in practice it is extremely difficult to perform. Another solution is to create the most comfortable working conditions. Partly it is

performed with using modern logging equipment. However, outside the cab of the vehicle, the worker falls into an aggressive environment again. Creating a home environment in the forest is an unrealistic thing to do. Having the limits of that kind, the optimal way to solve this problem is to form working groups for further working together in the forest area according to their psychological compatibility [2]. This is quite a challenge. Nevertheless, increasing productivity to a maximum level leads to substantial economic benefits. Some of the funds from this income can be redistributed to attracting high quality resources. In this case, it means not only qualifications, but also the psychological compatibility and sustainability of the whole group of workers [3].

II. MATERIAL AND METHODS

The study involved 10 logging companies and more than 200 employees. The main research methods: analytical, expert, mathematical processing of expert data, modeling and social forecasting. Basic psychological techniques:

- 1) Test "Psychological stability" by Kulikova L.V..
- 2) Methodology "Prognosis" (Military Medical Academy. S.M. Kirov).
- 3) Methods of diagnosis of personal neurotic by Boyko V.V.

III. RESULTS AND DISCUSSION

During the study, the following results were obtained:

- A. *The key skills of the workers allowing them to solve complex problems in a forest with maximum productivity were identified.*

As a result of the correlation analysis, it was revealed that in addition to the general qualifications and experience of workers, psychological qualities are important for the efficiency of labor. In particular:

1) *Active attitude to the life situation.* 12% of respondents have high results on this scale, which indicate that they have an active, optimistic attitude towards the life situation, have a willingness to overcome obstacles, a belief in their capabilities. They have a predominant feeling of strength to overcome obstacles and achieve their goals. They are distinguished with the highest labor productivity.

The number of employees with low results on this scale is 25%. These are people with a passive attitude towards life, with a predominance of a pessimistic position, disbelief in the possibility of successful overcoming of obstacles.

The majority of those respondents (62%) has an average level of optimism, activity and self-confidence.

2) *Vitality.* 81% of respondents have high results for the indicator. They are workers who, in a situation of stress, experience a feeling of increased strength, readiness for work, including long-term one. They are characterized by high activity, a sense of inner concentration, strength and energy.

In 6% of the cases, low vitality is found, it reveals fatigue, productivity-challenged state, apathy, inertia, low efficiency, and high fatigability.

13% of respondents have average rates of vitality, working efficiency, fatigue.

3) *Calmness, lack of anxiety.* The overwhelming majority of forest workers (94%) showed greater confidence in their abilities and capabilities. Only 6% of respondents have a tendency to anxiety in different life situations, they constantly see a threat to their well-being and prestige without a clear awareness of its sources, they expect events with an unfavorable outcome. These workers cause the greatest discomfort for their colleagues.

4) *The stability of the emotional tone.* In 75% of the cases, a positive emotional tone prevails, and there is a calm course of emotional processes. They have high emotional stability. In a state of emotional agitation they maintain the adequacy, mental self-regulation of behavior and activity. In 25% cases there is some changeability in mood, in some situations they become irritable and have a negative emotional tone. These people cause conflict situations between colleagues.

5) *Satisfaction with life in general (the process of self-realization).* 80% of respondents showed satisfaction with life in general, its progress, the process of self-realization, in general, with how their life goes. These people are able to take responsibility, make their choice. They have a rather high assessment of personal success. 20% of respondents have some difficulties in the process of self-realization, they do not highly appreciated their personal and professional success.

According to the results of this methodology, it can be concluded that the majority of the workers surveyed (70%) are dominated by personal qualities, which are components of psychological stability which is necessary to work in extreme conditions. At the same time, about 12% of respondents have a destructive effect on colleagues, as a result only 15% of staff demonstrate the highest productivity. About 40% of the cases endure active psychological

influence of colleagues. They directly pointed out this fact during the study.

B. *A psychological portrait of an employee engaged in extreme conditions of logging was developed.*

Through the diagnosis of psychological stability, special importance was given to the so-called neuropsychic instability, which is a reflection of the mental and somatic level of the individual's health. Neuropsychic instability reveals the risk of maladjustment of the personality under stress. In order to diagnose it, we used the "Prognosis" method, designed for the initial selection of people with signs of neuropsychic instability, and the risk of maladjustment under stress.

The results of the study showed that 5% of the respondents have a high level of neuropsychic stability, 56% have a good level of it. This suggests that these workers are unlikely to have neuropsychic disruptions and they can be recommended for specialties requiring high level of neuropsychic stability. For 34% of respondents who have a satisfactory level of neuropsychic stability, the overall prognosis is favorable, but under extreme conditions neuropsychic failures are likely to happen. This fact must be taken into account in the distribution of responsibilities and the formation of working groups. 5% of respondents showed unsatisfactory neuropsychic stability, which indicates a high probability of neuropsychic disruptions. They are contraindicated to work in extreme conditions and they also need additional medical examination by a neuropathologist [4].

During the study of the level of personal neuroticism using the methods of V.V. Boyko, we found that 90% of those respondents had a low level of neuroticism. This indicates that such professional and personal qualities as emotional stability, a positive background of experiences, initiative, self-esteem, independence, and social courage can be easily found in these workers of the logging complex [5].

Thus, summing up the results of our research, we can state that our hypothesis has been confirmed. The vast majority of workers of logging enterprises with rotational forms of labor in areas equated to the Far North that took part in the research, identified such professional and personal qualities as good psychological stability, emotional stability, life satisfaction, self-reliance, optimism, energy and active in overcoming life and professional difficulties. In other words, they have formed psychological stability as a personality quality, what allow them to cope with the stressful conditions of their extreme work.

At the same time, 10% of respondents are not only unsuitable for work under extreme conditions, but also reduce the productivity of a large part of the rest of the workers.

Another important feature of the psychological portrait of the staff members is the desire to work with people whose psycho-emotional state is close to them. When those people work in the same brigade, there is an increase in both individual and collective productivity.

C. *An algorithm for staff recruitment for logging enterprises was developed.*

During the study, consultations with the management of enterprises were held, an analysis of the economic results of

the staff work was made and the information obtained during psychological tests were processed. As a result, an algorithm (sequence of actions) for recruiting staff members for a logging company was formed:

1) Preparation for recruitment. Setting up general requirements for the position, posting a vacancy.

2) Attraction of candidates and initial selection. Attraction of known sources (labor market, former employees, shift workers, former colleagues of the current staff, etc.) is to be held in order to offer the potential candidates the position in the company. Primary elimination process is carried out on the formal grounds - the qualification for the position.

3) Interview and psychological testing. All candidates must pass both a personal interview and psychological testing to identify personal qualities and the formation of a psychological portrait.

4) Making decision of choosing staff from the potentially eligible candidates. Forming a list of potential candidates from psychologically stable individuals.

5) Formation of the group to work in extreme conditions of the forest from the number of available and selected staff members. In this case, if new staff members have greater suitability than those who have already been working, the preference should be given to the first ones.

6) The work of the brigade in the forest area and the appraisal of the effectiveness of their labour. According to the results of the work, an analysis of the working efficiency and psychological stability / compatibility of staff members in the working groups should be carried out.

D. Trainings for improving interaction skills under stress were developed.

In particular, training on the development of psychological stability of forest area workers was developed and tested. The aim of it is to develop qualities that increase the effectiveness of their work in extreme conditions.

The main aim of the training program is the developing of self-control skills, resistance to stress, the ability to get into a resource state at any time and keep to it. In the course of the training, the methods of rapid stress relief are worked at, as well as the formation and usage of the state in which we operate most effectively [6].

While the creating the training we used the conceptual basics of the developing of appropriate skills, i.e. we built our training upon the fact that overcoming stress can be learned the same way as any other skill.

The main idea of emotionally focused stress management is that the employee may not be able to control the stressor, but he can learn how to control his reaction. For this purpose, we use the techniques that can be effective in focusing on emotions such as: deep breathing; training for progressive muscle relaxation; visualization.

The purpose of the training is to teach the methods of active self-regulation, the formation of emotional resistance to extreme conditions, and the ability to get rid of the consequences of overstrain. The training program includes [7]:

- Practical analysis of the psychological characteristics of a person's condition in an extreme situation: panic, shock, stupor, motor agitation, hysteria, aggression.
- Identification of personal qualities that determine a person's behavior in an extreme situation.
- Identification of individual ways of coping with a difficult life situation (coping strategies) using the WCQ methodology.
- Identification of the leading psychological defence mechanisms: regression, denial, suppression, compensation, projection, substitution, etc.
- Testing the methods of self-regulation of mental states.
- Testing techniques of emergency psychological assistance in an extreme situation: applying on oneself and on a colleague.
- Testing methods of avoiding and resolve conflict situations in the working group.
- Formation of active skills of interaction under stress.

The program is designed for 5 classes, which were held for two weeks in groups of 8-10 people in a special room. Training classes are based on the active work of all participants. The time of each class is 60–90 minutes.

Professional and personal qualities formed during the training [8]:

- emotional stability in any situation;
- ability for rapid emotional recovery;
- initiative, active attitude to life;
- ability to work in a team in extreme situations;
- ability to resolve conflicts.

The main conclusion of the research is that it is necessary to take into account the individual characteristics of the staff when organizing the brigade form of work. Collective work in extreme conditions significantly affects the psychological stability and working efficiency of staff.

IV. CONCLUSION

The study obtained the following results:

- 1) *The key skills of workers allowing to solve complex problems in the conditions of the wood with the maximum productivity are revealed.*
- 2) *The psychological portrait of the worker occupied in extreme conditions of logging is developed.*
- 3) *The algorithm of selection of the personnel of forest enterprises.*
- 4) *Trainings have been developed to improve the skills of interaction under stress.*

The results of the study are important for both theoretical science and practical work of logging enterprises. At the moment, the proposed recommendations are being tested on a number of real enterprises. The first results are extremely promising.

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