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Team Interaction Air Traffic Controllers during the Performance of Duties in Extreme Situations

Peculiarities of air traffic controllers' work are analyzed, main components of readiness to interact in teams and criteria of effectiveness to work correctly under extreme circumstances are represented.

Air traffic controllers process a large amount of information, often under limited and time-poor conditions, while simultaneously performing many professional tasks: receiving information, encoding and decoding data, and distributing and received information. The preparation factor in the performance of professional duties is important for reducing errors, so it is necessary to analyze the issue of readiness to perform duties of air traffic controllers. So, it is about the readiness of a group of people for complex operational activity, which complicated by extreme situations, where the decision is usually made quickly and must be correct because people's lives depend on the ability to act in an extraordinary situation and a constructive decision.

In the most general form, an extreme situation is defined as a complication of living conditions and activity that has acquired special significance for a person or a group of people. Every situation has a subject, so any extreme situation demonstrates the unity of the objective and subjective. The objective includes extremely complex external conditions and activity processes, while the subjective includes the psychological state, attitudes and ways of acting in dramatically changed circumstances. A subject-object relationship exists when a person performs a task in an extreme situation. This task reflects the objectively difficult conditions of the subject's activity.

It is necessary to distinguish between the concepts of "extreme situation" and "extreme behavior". The development of complex individual characteristics necessary to withstand professional stress in the extreme situations, and is the reason for resistance to stressful impact. The researchers single out the professional qualities necessary for effective team interaction: energy, decisiveness, high self-control, the ability to make quick decisions, ability to make quick decisions, the ability to act in a non-standard environment that changes quickly, simultaneously performing various activities, the ability to predict changes in situations and the expected result of actions, endurance, courage, initiative, high stress resistance, high adaption skills. These qualities are formed in the process of performing professional duties.

Based on the approaches of many researchers to the structure of readiness to overcome extreme situations three main components of readiness of team members to act in the event of emergency are identified [1]:

- 1) the motivational-volitional component is the main component of any activity that includes a system of motives, the ability to regulate and control mental states that determines the nature of a person's further activity when performing professional tasks;
- 2) cognitive component consists of a system of knowledge regarding action algorithms in the event of extreme situations, subjective perceptions and connections with the performance of professional tasks in extreme situations;
- 3) activity component refers to the practical implementation of official tasks in difficult operational circumstances, particularly during decision-making, organizing the activities both individually and in groups.

Let us consider what is meant by "team interaction". The relevance of the issue is explained by the following circumstances:

- in all spheres of human activity there are more and more situations and tasks that require high efficiency, professionalism, clarity of thinking of not only one specialist but several ones especially in aviation sphere;
- the issue of team professionalism is becoming more and more urgent especially in the field of aviation.

The concept of "team interaction" refers to joint, interconnected, coordinated and directed activities of various subjects to achieve common goals and solve problems arising in joint activities. Also, team interaction should be understood as responsible cooperation that is built in the unity of dialogues and communication of team members, constructive discussion of problems and their possible solutions, the process of influencing each other, personal mutual enrichment and development of team members when they get social experience from communication.

There is a need for a special type of relationship namely acceptance of each other, a high level of motivation, common group values and versatile cooperation. Thus, it can be noted that the concept of interaction in a team contains indispensable characteristics: "common goal", "interaction in activity", "common result". Therefore, team interaction is a special type of relationship based on personal acceptance of each other, mutual respect and recognition, a high level of motivation, common group values and versatile business cooperation characteristic of team members.

Scientists who studied team interaction (V. Zhuravlyov, A. Malysheva, V. Okuneva, K. Shakhmaeva and others) identified the following skills that contribute to effective teamwork: cooperation with other team members, planning and execution of teamwork, mastering methods of joint activity, the ability to work in team dynamics and the ability to perform duties of group members successfully and on time.

The conducted analysis of the definitions and concepts of team interaction makes it possible to determine the main criteria for the effectiveness of such work in extreme situations:

- professionalism of each team member
- positive constructive interaction
- focus on team success

- the ability to take concerted actions aimed at a positive result

Some researchers in this field name the following criteria: value-motivational unity; high level of personal initiative and responsibility of each team member; concertation of team members on productive activities; presence of a positive psychological atmosphere where mutual respect, trust and recognition of the competence of each team member prevail. Unlike normal group, teams that cooperate in extreme conditions must demonstrate psychological stability, which includes the level of team spirit, the motivational background of the team, the level of adaptability to real operating conditions, the level of effectiveness of team communication, and the level of well-being and stability of team members. In addition, the members of the team that operates in extreme situations have high stress resistance and high adaptation skills that corresponds to the characteristics of the working conditions of air traffic operators.

According to the International Civil Aviation Organisation (ICAO) [2], more than 80% of all plane crashes are related to people. And if we are talking about accidents where the reason is the language factor, the main reason is the psychological component of the human factor [3]. As the passenger capacity of airplanes increases, the risk of human disasters increases. More than 800 people died in three-scale aviation disasters in history [4], – cases where the use of language has led to tragedies.

Air traffic operator training obviously includes fundamental training in English communication. Meanwhile, the inability to maintain radio communication in emergencies where normal phraseology is not suitable is often an issue to be considered when training future air traffic operators, especially when English is not their first language.

As the analysis of aviation disasters has shown, the main reason is not simply the low level of English language proficiency of air traffic operators but the inability to use their skills and knowledge during emotionally stressful circumstances. The task of language is the correct transmission of information and its proper interpretation. Ambiguous, misleading or poorly constructed communication in combination with expectations are considered elements of many accidents [5], as well as psychological unpreparedness to use a foreign language in non-standard circumstances [5].

When studying ICAO documentation, accident reports and scientific publications, typical problems of radio exchange and communication in general are revealed, especially when there is a need to use plain English. A number of researchers, such as T. Tarnavska, L. Baranovska, N. Glushanytsia, S. Yagodzinsky, list the following problems:

- misinterpretation of transmitted messages (for example, due to the expectation of additional information)
- ineffective aviation language radio communication between non-English speakers causing “code switching”

The awareness that it is necessary to speak a foreign language in extreme situations reduces the motivation to perform complex tasks and increases the already high level of stress which reduces memory, attention and prevents quality

performance of work, it also prevents the effective implementation of basic duties related to the profession. Thus, the ability to accurately control air traffic, especially in emergency situations, directly depends on how reliable radio communication is, which in turn depends not only on the technical knowledge of the future air traffic controller but also on his ability to communicate professionally with all participants in the service space.

Conclusion. Considering all peculiarities about the air traffic controllers work we focus on the following competencies of air traffic controllers:

- understanding of different types of human behavior when working in a team;
- understanding the style of behavior that is the characteristic of leaders and group interaction in a team;
- prevent mistakes (functional and personal skills);
- guarantee safety and efficiency of functioning;
- offer and receive help;
- be aware of your strengths and weaknesses;
- take advantage of new opportunities for self-expression; respond to proposals made by team members.

It is worth noting that the work of air traffic controllers requires long-term concentration, observation and attention, therefore, the above qualities and competencies are very important for the correct operation of the air traffic controller. In the process of professional activity, the qualities of an air traffic controller are transformed into a system of professional qualities that ensure the successful formation of professional skills necessary for the performance of duties in extreme situations.

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