

PREPARATION OF FUTURE PILOT CADETS TO SURVIVE IN EXTREME  
CONDITIONS

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**Abstract.** This article examines the training of future pilot cadets for survival in extreme conditions. The study focuses on developing essential survival skills, physical endurance, and psychological resilience in emergency situations. The importance of integrating theoretical knowledge with practical and simulation-based training is emphasized. The findings highlight effective approaches to improving pilot preparedness and enhancing safety within aviation education systems.

**Keywords:** pilot cadets, extreme conditions, survival training, emergency situations, safety.

**Аннотация.** В статье рассматриваются вопросы подготовки будущих курсантов-пилотов к выживанию в экстремальных условиях. Особое внимание уделяется формированию практических навыков выживания, развитию физической выносливости и психологической устойчивости в чрезвычайных ситуациях. Обосновывается необходимость сочетания теоретического обучения с практическими и симуляционными тренировками. Результаты исследования могут быть использованы для совершенствования системы авиационного образования и повышения уровня безопасности полётов.

**Ключевые слова:** курсант-пилот, экстремальные условия, выживание, подготовка, чрезвычайная ситуация, безопасность.

**Annotatsiya.** Ushbu maqolada bo'lajak uchuvchi kursantlarni ekstremal sharoitlarda omon qolishga tayyorlash masalalari tahlil qilinadi. Tadqiqotda favqulodda vaziyatlarda hayotni saqlab qolish ko'nikmalarini shakllantirish, jismoniy va psixologik barqarorlikni rivojlantirishning ahamiyati yoritiladi. Shuningdek, tayyorgarlik jarayonida nazariy bilimlar va amaliy mashg'ulotlar uyg'unligini ta'minlash, simulyatsion mashqlar orqali real vaziyatlarga moslashuv darajasini oshirish zarurligi asoslab beriladi. Maqola aviatsiya ta'limi tizimida xavfsizlikni ta'minlashga xizmat qiladi.

**Kalit so'zlar:** uchuvchi kursant, ekstremal sharoit, omon qolish, tayyorgarlik, favqulodda vaziyat, xavfsizlik.

### Introduction

The issue of ensuring flight safety in modern aviation is one of the priority areas. Despite the rapid development of aviation technologies, the risks associated with the human factor, natural and climatic conditions, and technical malfunctions have not been completely eliminated. Especially in emergency and extreme situations, the correct decision-making, physical and mental endurance of pilots are of decisive importance in saving human life. Therefore, preparing

future pilot cadets for survival in extreme conditions is an important component of the aviation education system.

The concept of extreme conditions includes the occurrence of unexpected situations during or after a flight, including forced landing, aircraft failure, getting into unfamiliar territory, sudden changes in climate, and the need to act in conditions of limited resources. In such situations, not only the pilot's professional knowledge and skills are tested, but also life experience, psychological preparation, and stress resistance. In this regard, survival training requires a comprehensive, integrative approach, not limited to technical skills.[5; 88]

Today, in aviation education, special attention is paid to flight techniques, navigation, and safety rules during the training of pilot cadets. However, there are also cases where practical training in survival in extreme conditions is not sufficiently systematized. As a result, in emergency situations, the mental state of some pilots may deteriorate, which may lead to difficulties in correctly assessing the situation and making quick decisions. This significantly reduces the likelihood of survival.[4; 156]

Therefore, the effective use of modern pedagogical technologies, simulation exercises, and psychological training in preparing future pilot cadets for extreme conditions is of urgent importance. Gaining experience in conditions close to real situations through practical training increases cadets' self-confidence and helps them correctly carry out the sequence of actions in dangerous situations. This article highlights the relevance of these issues and the scientific and pedagogical significance of preparing future pilots for survival in extreme conditions.

### **Literature review and research methodology**

The issue of preparing future pilot cadets for survival in extreme conditions is one of the current areas of study at the intersection of aviation pedagogy, military psychology and security sciences. Foreign and domestic research on this topic is mainly focused on the issues of professional training of pilots, skills to act in emergency situations and stress resistance.

In particular, the studies conducted by J. Salas and E. Maurino substantiated the impact of pilots' decision-making processes and survival skills on safety in extreme situations (Salas, Maurino, Human Factors in Aviation, 2010). In this work, it was emphasized that simulation training increases adaptation to real situations. Also, in R. Jensen's research on aviation safety, the decisive role of the human factor in emergency situations has been scientifically proven (Jensen, Aviation Psychology, 2012).[2; 189]

This issue also occupies an important place in the research of local scientists. In particular, A. Kadyrov emphasizes the need to form psychological stability in the process of training aviation personnel (Kadyrov A., Fundamentals of Professional Psychology, Tashkent, 2018). In the works of M. Kholikov, survival training in emergency situations is interpreted as a unity of physical, psychological and theoretical components (Kholikov M., Safety and Emergency Pedagogy, Tashkent, 2020).[6; 56]

In addition, survival training is specifically mentioned as an important area of pilot training in regulatory documents developed by the ICAO (International Civil Aviation Organization) (ICAO, Safety Management Manual, 2018). These sources confirm the scientific and practical significance of the topic and serve as a theoretical basis for research.[7; 224]

This study used several scientific methods based on a comprehensive approach. First, through the analysis of scientific literature on the topic, theoretical views on the preparation of future pilot cadets for survival in extreme conditions were summarized. This method made it possible to identify existing scientific approaches and problems.

Observation and interview methods were used as empirical research methods. The process of practical training conducted in aviation educational institutions was observed, and the reaction of cadets to extreme situations and the sequence of actions were analyzed. Through interviews, the attitude of instructors and cadets to this preparation was studied. Their opinions on the subject were studied.

Also, the effectiveness of traditional and modern training methods was assessed using comparison and generalization methods. Methods of logical analysis and systematization were used in analyzing the research results. This methodological approach made it possible to achieve the research goal and draw scientific conclusions.

### **Analysis and results**

The survival readiness of future pilot cadets in extreme conditions is one of the important factors in ensuring aviation safety. During the research, it was found that the effectiveness of survival readiness is not determined only by theoretical knowledge, but is closely related to the psychological stability, physical fitness and ability to make quick decisions in emergency situations of cadets. Only when these aspects are combined with each other will the pilots' adaptation to real extreme situations be high.

According to the results of the analysis, traditional training programs mainly focus on technical knowledge and flight rules, and the psychological aspects of survival in extreme conditions are not sufficiently covered. This situation can lead to an increase in the stress level of cadets and a slowdown in the decision-making process in case of emergency situations. Therefore, it was determined that it is necessary to introduce stress management, self-control in dangerous situations, and psychological adaptation exercises into the training process.

The observations made showed that simulation training significantly increases the level of cadets' readiness for extreme conditions. Simulator training, which is close to real conditions, allows cadets to experience emergency situations in a safe environment. As a result, they learn to overcome fear and hesitation that may arise in real situations in advance. This is considered an important factor that increases the chances of survival.

During the analysis, it was determined that physical training is also of particular importance. Withstanding situations such as prolonged hunger, cold or heat, and water shortage in extreme conditions requires physical fitness. Along with physical training, it was observed that teaching cadets the skills of moving in a natural environment and surviving with minimal means gives effective results. These skills strengthen the cadets' self-confidence and develop their ability to act independently.

The results of the analysis also showed that teamwork is of great importance in survival training. In extreme situations, acting as a group, properly distributing tasks, and providing mutual assistance increase the likelihood of survival. Therefore, it is recommended to widely

introduce team training and role-playing exercises in training sessions. This will form social skills such as leadership, responsibility, and mutual trust in cadets.

Based on the results of the study, it can be noted that preparing future pilot cadets for survival in extreme conditions should be a systematic and continuous process. The expected result can be achieved only when theoretical knowledge, practical training, and psychological training are carried out in a coordinated manner in this process. The use of modern pedagogical technologies and innovative approaches is of great importance in this.

In general, the results of the study show that improving the survival readiness in extreme conditions, while ensuring the safety of pilots, serves to increase the overall reliability of the aviation system. Scientific and practical research conducted in this area enriches the content of aviation education and creates a basis for further strengthening the professional competence of future pilots.

### Conclusion

The fact that the survival readiness of future pilot cadets in extreme conditions is of great strategic importance in ensuring aviation safety was substantiated within the framework of this study. Although technical means and flight systems are improving in modern aviation, the human factor occupies a leading position as a decisive factor in emergency situations. Therefore, the issue of training pilot cadets for extreme situations should be an integral part of the aviation education system.

The results of the study showed that the survival readiness process is effective only if it is organized on the basis of a comprehensive and systematic approach. The combination of theoretical knowledge, practical exercises and psychological training develops in cadets the skills to make the right decisions in emergency situations, manage stress and control themselves. In particular, simulation exercises allow them to gain experience in an environment close to real conditions, which increases the confidence of cadets and their level of adaptation to dangerous situations strengthens.

The conclusions confirm that physical fitness is one of the important factors in survival in extreme conditions. The physical fitness of cadets increases their ability to withstand difficult conditions such as cold, heat, hunger and water shortage. At the same time, the development of practical skills such as survival with minimal means, movement in the natural environment and finding a safe place increases the independence of cadets.

Within the framework of this study, it was found that teamwork is also of particular importance. In extreme situations, acting as a group, mutual assistance and a sense of responsibility significantly increase the likelihood of survival. Therefore, it is recommended to widely use team exercises and role-playing games during the training process. This approach serves to form leadership qualities and social competencies in cadets.

In general, improving the readiness of future pilot cadets to survive in extreme conditions is an important task aimed at improving the quality of aviation education, ensuring flight safety and saving human life. When the scientific and practical recommendations developed in this direction are applied in aviation educational institutions, the professional training of future pilots



will be further strengthened and the opportunities for effective action in emergency situations will expand.

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