



## IMPORTANCE OF RAILWAY SAFETY OF THE REPUBLIC OF UZBEKISTAN

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### Abstract

This article provides information on the strengthening of transport security in recent years. Transport security has become one of the most pressing problems worldwide. Especially railway transport communications have always been and will be a high-risk area. Today, the creation of an increasingly branched and complex transport infrastructure requires solving security problems and is of particular importance, since it is the most important element of modern civilization as a whole. The article also presents the objects of protection - from the individual through society to the political system, as well as factors that endanger vital interests individual, state, society. The article also contains methodological formulations that make it possible to build a state legal mechanism for ensuring security.

**Keywords:** transport security, risk management, dangerous consequences, emergency, system security, reliability theories, time interpretation of risks, chains of events.

### Introduction

Transport has an active influence on the state of economic, political, social, military, technological and other components of national security [1]. The national security of the Republic of Uzbekistan significantly depends on ensuring transport security. Issues of strengthening transport security in recent years have become one of the most pressing problems throughout the world. Transport communications have always been and will be a high-risk area. Today, the creation of an increasingly ramified and complex transport infrastructure requires solving security problems and is of particular importance, since it is the most important element of modern civilization as a whole.





The problem of transport security is inextricably linked with the problem of life safety and survival of the world community, since they are the main reason for the existence of mankind [2].

Security, as such, should be considered as a complex system, which includes components from different spheres of human activity, society, the state and the entire world community.

According to representatives of science, politics, and education who study economic, medical, food, biological, military security - all this, in a scientific sense, should be interpreted as systemic security. Transport safety is no exception and a scientific and methodological approach on a formalized basis should be developed for its study, allowing to give and predict a quantitative assessment of hazard and safety. There must be a unified methodology, scientific, methodological and analytical apparatus, which would be the basis for use in various fields and sectors of activity by researchers, engineers, technologists and practitioners [3,4,5].

In the last two decades, publications on security problems have appeared in our country and abroad, indicating that in this area of science, scientists and practitioners are showing interest in the ideas of the processes of creation and development of security theory, and above all on a fundamental mathematical basis. There is a shift in emphasis in the study of methods for assessing the influence of external factors on the causes of disasters, accidents and incidents.

It is proposed to predict the risk of incidents in advance. Therefore, one of the main directions recently has been the use of the managed risk method. In transport, the concept of "risk management" has not yet been sufficiently studied and researched. Prominent scientists of the Republic conducted their research in this area.

Active measures to ensure railway safety in suitable and mountainous areas consist of creating a safety management system, the purpose of which is to maintain the protection system. The created security maintenance system must monitor the state of the object and the environment surrounding the object, and thus the principle of protection will be implemented [6].

The relevance of the problem of railway safety from emergency situations lies in the fact that the technological space is currently poorly structured, because it is not always possible to manage the technology process due to the strong impact on it of making a profit in production, competition, etc.

In this regard, the technological space is poorly organized. With his created technological potential, man is not able to influence the development of natural and man-made disasters, and therefore to control them. An unmanaged technological space is dangerous, since its lack of structure reduces the ability to predict its





development, and therefore control. It follows that technological development must be introduced into a controlled corridor [7].

The fact that safety and especially system safety is especially important and relevant is evidenced by the adoption of the Law of the Republic of Uzbekistan called “On Railway Transport”. The law defines security: “as the protection of the vital interests of the individual, society and state from internal and external threats.” The law optimally represents the objects of protection - from the individual through society to the political system. Threats are regarded as factors that pose a danger to the vital interests of a person, the state, and society. In general, the law contains methodological formulations that make it possible to build a state legal mechanism for ensuring security. However, the law is a declarative document, leaving a wide field of activity for the specification and scientific substantiation of the proposed proposals or postulates.

Preservation of the security space, reflected in the law, requires a definition of the concept of “system security”, which should include all types of danger, such as state, military, economic, social, financial, environmental, legal, scientific and educational, personal, agricultural, biomedical and of course transport.

Each of the listed dangers has its own functional model at its core, reflecting the professional side of the system’s functioning, and should be built according to a hierarchical principle from a large scale to a personal one.

Despite the different content (professional) of the listed dangers that make up system security, their formalized description can be carried out using a single methodological approach. Using this approach when analyzing hazards makes it possible to establish general patterns of hazard occurrence, regardless of their functional affiliation. The safety property allows an object to be reliably protected from hazardous influences.

I would like to emphasize that the opinion about the equivalence of security and reliability of the system is not entirely correct. Reliability is determined by probabilistic indicators characterizing the system’s response to failure, i.e. an event that consists of disruption of the system due to changes in its parameters, sudden or gradual failures [8].

It is known that the mechanism of reliability theory is as follows. Based on the statistical characteristics of the failure of elements, the reliability indicator of the system is determined in the form of a function that describes the operability of the system in case of failures. This dependence allows you to recalculate the initial data into the resulting criterion.





The theory of reliability is based on an event as a one-time act, which allows, in the case of many repetitions, to determine the probability of its consequences [9].

The fundamental principle of safety theory is that it is unacceptable to proceed only from the multiplicity of phenomena that have dangerous consequences. One catastrophe is enough to destroy the system. System security is based on the need to monitor dynamic processes, and not just monitor individual events.

From the above it follows that methodologically the theory of security is broader than the theory of reliability, therefore it will be used to study individual aspects of security.

In the theory of system safety, when studying the risks of crashes, accidents, disasters, there is a need to search for other methods for assessing danger or safety outside the framework of reliability.

At the same time, the concept of risk as the probability of danger with damage was adopted several decades ago in reliability theory. Currently, the interpretation of risks, especially manageable ones, is based on the concepts of chains of events and their various measures, not only probability [10].

To ensure the safety of the railway in mudflow-prone areas of the Republic, it is necessary to substantiate effective methods and means of increasing the safety and sustainability of the functioning of railway transport in emergency situations.

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