TECHNICAL SCIENCES

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STATEMENT OF THE TASK ON DEVELOPMENT OF THE MATHEMATICAL MODEL OF PREVENTION OF EMERGENCY SITUATIONS OF THE TERRORIST NATURE IN RAILWAY TUNNELSE

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Annotation: The paper considers the solution of the problem of increasing the efficiency of the process of prevention of terrorist emergencies in the tunnels of railway transport. Within the framework of the set scientific task the current state of the issue of formation of the mathematical apparatus of methods of counteraction to emergency situations of terrorist character in railway tunnels is analyzed. The research task has been set.

Key words: emergency, mathematical model, warning technique, railway tunnels, explosive device

One of the most important elements of the critical infrastructure of any state is the objects of transport infrastructure [1, 2]. Ukraine is no exception. Moreover, the high percentage of technical neglect and the lack of adequate funding for infrastructure upgrades leads to the acceleration of hazardous phenomena at these

facilities [3]. Factors of anthropogenic impact on the safety of critical railway infrastructure play a special role. The latter include possible terrorist acts [4, 5].

Analysis of the consequences of terrorist emergencies at railway facilities, both in the leading countries of the world and in developing countries and Ukraine, proves that the emergency process in case of detection of an explosive device at the facility is determined by the following chronology of interdependent events, namely: search and identification of the explosive device, localization and neutralization of the explosive device, actions after the end of works which in case of emergence of an emergency situation are followed by additional measures for its elimination.

On the other hand, the analysis of the existing technical equipment of special services of Ukraine for neutralization of terrorist devices at railway transport facilities shows the lack of effective engineering and technical means and, accordingly, methodological support, namely a set of methods to prevent terrorist emergencies. using explosive devices at railway facilities [6].

From now on, there is a problem of forming effective methodological approaches, mathematical models and methods for preventing terrorist emergencies at railway facilities, the implementation of which will further develop a number of modern devices to minimize the possible negative consequences of emergencies.

Accordingly, researchers in the field of civil security face the scientific task of determining the conditions for the formation of a mathematical model for the prevention of terrorist emergencies in railway tunnels, in the interests of building an appropriate methodology for the practical implementation of innovative technical devices and modern approaches to their practical application.

To achieve the set scientific task it is necessary:

1. To analyze the current state of the issue on the formation of the mathematical apparatus of methods of counteracting terrorist emergencies in railway tunnels.

2. To determine the physical field and conditions of formation of the mathematical model of prevention of emergencies of terrorist character in railway tunnels and the corresponding technique on its basis.

3. To determine the basic mathematical equations of the mathematical model of prevention of emergencies of terrorist nature in railway tunnels.

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