

O'ZBEKISTON RESPUBLIKASI TRANSPORT VAZIRLIGI



**TOSHKENT DAVLAT
TRANSPORT UNIVERSITETI**
Tashkent state
transport university

YOSH ILMIY TADQIQOTCHI II- Xalqaro ilmiy-amaliy anjumani



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O‘ZBEKISTON RESPUBLIKASI TRANSPORT VAZIRLIGI
O‘ZBEKISTON RESPUBLIKASI OLIY VA O‘RTA MAXSUS
TA‘LIM VAZIRLIGI
TOSHKENT DAVLAT TRANSPORT UNIVERSITETI

*“YOSH ILMIY TADQIQOTCHI” II XALQARO ILMIY-AMALIY
ANJUMANI MAQOLALAR TO‘PLAMI*

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MONITORING EMERGENCIES OF RAILWAY FACILITIES

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Abstract: *Information on the current state and characteristics of the organization of rescue and emergency work in the elimination of emergency situations in railway transport is reviewed and summarized. Used domestic and foreign scientific publications, regulatory documents and other sources on rescue and emergency rescue operations after emergency situations in railway transport.*

Keywords: *emergency situations, railway transport, features of the organization, emergency-rescue work, fire train.*

МОНИТОРИНГ АВАРИЙНЫХ СИТУАЦИЙ ЖЕЛЕЗНОДОРОЖНОГО СООРУЖЕНИЯ

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Аннотация: *Рассмотрены и обобщены сведения о современном состоянии и особенностях организации аварийно-спасательных работ при ликвидации чрезвычайных ситуаций на железнодорожном транспорте. Используются отечественные и зарубежные научные публикации, нормативные документы и другие источники по аварийно-спасательным и аварийно-спасательным работам после чрезвычайных ситуаций на железнодорожном транспорте.*

Ключевые слова: *чрезвычайные ситуации, железнодорожный транспорт, особенности организации, аварийно-спасательные работы, пожарный поезд.*

Introduction. Present day As for railway transport, Uzbekistan is the leading industry in the road transport complex. It provides more than 45% of freight and about 30% of passenger traffic carried out by all modes of transport. Russia occupies one of the leading places in the Eurasian continent in terms of cargo transportation, second only to Chinese and Indian railways [1,2,3]. The speed of work of the railway transport of Uzbekistan requires a harmonious combination of the technical development of the rolling stock and railway infrastructure with the improvement and reorganization of the system of prevention and elimination of the consequences of emergency situations in transport[4,5,6].

After the reform of the railway management system, there was a need to develop new management, technical and technological solutions. They should include fundamental changes in the organization of the work of enterprises that are part of the railways, including the improvement of the system of prevention and elimination of accidents and disasters on the railways. It is also worth noting the unsatisfactory condition of the departmental access railways, which carry hazardous, fire and explosive materials [7,8]. In addition, the causes of accidents in railway transport can be complex meteorological conditions, human factors (errors in use, applicable rules, instructions, violations of norms, unauthorized interference, etc.), as well as terrorist activities. In such conditions, the level of emergency risk in railway transport is quite high. Therefore, it is necessary to be prepared to eliminate the consequences of traffic accidents, disasters, fires and other emergency situations [9,10,11].

The purpose of the work is to review information on the current state and characteristics of the organization of rescue and emergency work in the elimination of emergency situations in railway transport[12,13,14].

Research method. The basis of the research is the systematization, comparative analysis and generalization of literary and legal sources devoted to information about emergency situations that occurred in railway transport, as well as the characteristics of the organization of rescue and emergency work in eliminating their consequences. Studied [15,16,17].

Research results and their analysis. The analysis of the reviewed literary sources showed that the causes of accidents in railway transport are often derailment of rolling stock, collisions, collisions with

barriers at intersections, fires and are explosions directly in the carriages. Leaks and explosions occur during the transportation of dangerous goods such as liquefied gases, flammable, explosive, and toxic substances, which lead to pollution of the area. Washout of railways, landslides, floods are not excluded [18,19,20].

Accidents are divided into the following categories:

- collision and derailment of railway traffic ;
- accidents at railway crossings;
- accidents with dangerous goods;
- fires and explosions.

Accident signs (consequences) - collision of railway rolling stock with other railway rolling stock, with a vehicle during train or shunting operations, equipment or other actions , railway at a train or railway station is the derailment of rolling stock. The study of many accidents accompanied by fire has shown that the emergency situation is much more complicated as a result of burning, and in cases where effective fire fighting measures are not applied, the development of this fire creates conditions under which the size and consequences of the accident will increase significantly [21,22,23].

Each accident can have two main stages of development.

1. Accident without fire (collision, overturning of the car, derailment, spillage or release of dangerous goods, etc.).

2. An accident accompanied by fire (burning of tanks, burning of bulk or liquid products, burning of passenger and other vehicles and stationary structures).

The characteristics of railway transport that should be taken into account in the planning and organization of rescue operations in emergency situations are as follows:

- large mass of rolling stock (the total mass of a freight train is 3-5 thousand tons, the mass of a passenger train is about 1 thousand tons, the mass of one tank is 80-100 tons);
- high speed of rolling stock (up to 200 km per hour), and the emergency braking distance is hundreds of meters;
- the presence of dangerous road sections on the route (bridges, tunnels, descents, ascents, crossings, crossings);
- availability of high-voltage electric current (up to 30 kV);
- the influence of the human factor on the causes of the accident (locomotive management, employees, dispatching service);
- risk of various damaging factors and their combination;
- lack of access to the scene of the accident for rescuers, firefighters, specialists (swamps, bushes, high banks; a large number of railway tracks at large stations and intersections) [24,25,26].

In the case of terrorist acts, accidents occur in railway transport: bridges, railways, wagons, power transmission towers and other facilities and structures are destroyed. In order to safely conduct emergency recovery operations, the first priority is to search for and defuse munitions and explosives. Special sapior units should be involved in such work. In order to eliminate the consequences of derailment of one rolling stock at the stations, emergency and rescue teams are organized by the Railway Transport Department [27,28]. There are rescue trains under the direction of the Directorate of Railway Transport to deal with the consequences of derailment and collision of rolling stock , as well as to provide assistance in the event of a natural disaster [29,30].

Summary. Based on the analysis of the causes of traffic accidents occurring in railway constructions, including the transportation of dangerous goods, it can be concluded that a significant part of these accidents occurs as a result of commercial failures of freight wagons, catastrophic wear and tear of the main equipment . On the other hand, the cause of accidents in railway transport is the violation of safety requirements, which in turn causes great material damage.

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