TRANSPORTATION SAFETY MANAGEMENT FOR TRANSPORT SYSTEM IN RUSSIA

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ABSTRACT

The authors consider and evaluate the system of the tasks related to transport safety and strengthening of control and supervisory activities. With this approach, not only a certain factor dependence of the risk zones on updating of control and supervising functions of state structures is identified, but also the need is revealed to create a reliable, safe information system capable of providing a scientific analysis with full-scale and objective data.

Keywords: transport, safety, risk zones, emergency factors, analytical information, reliability, scientific and methodological center.

Background. *The development of the transport system, the increase in the number and variety of logistic chains, the entry of new participants in the transportation process, the introduction of modern technological schemes and technical devices [1] raised for the transport community and government bodies responsible for organization of trouble-free work, the question of providing necessary level of safety and security while reducing administrative burden on the business.*

In this regard, the Presidium of the Council on strategic development and priority projects organised under the auspices of the President of the Russian Federation on December 21, 2016 approved the program «Reforms of control and supervisory activities», where the main target indicators are identified:

- *reducing the level of damage to legally protected values (human life and health) by 50 %;*
- *reduction in the level of material damage caused by controlled types of risks by 30 %;*
- *reducing the administrative burden on organizations and citizens engaged in entrepreneurial activities by 50 %;*
- *improving the organization of control and supervisory activities, including the increase in the quality index of the administration of control and supervisory functions by 200 %.*

Objective. *The objectives of the authors is to consider the issues related to identification of risk areas in the transport system.*

Methods. *The authors use general scientific methods, comparative analysis, evaluation approach, scientific description.*

Results.

I.

To achieve the targets set by the reform program, the following measures are planned:

- *introduction of a risk-based approach in implementation of control and supervisory activities;*
- *introduction of a system for evaluating the effectiveness and efficiency of control and supervisory activities;*
- *introduction of a system of comprehensive prevention of violations of mandatory requirements;*
- *systematization, reduction in the number and updating of mandatory requirements;*
- *introduction of effective staff policy mechanisms in the activities of control and supervisory bodies;*
- *introduction of a system for prevention of corruption in the control and supervisory activities;*
- *automation of control and supervisory activities;*
- *improving the quality of implementation of control and supervisory powers at the regional and municipal levels.*

The principal basis for achieving the targets is provided by measures focusing on concentration of limited state resources in areas of maximum risk, optimization of their use, collection and analysis of information about controlled entities and formation of a risk management system.

At the same time, taking into account the functions assigned to control and supervisory authorities to monitor compliance with the law, it is proposed to reduce the number and update the mandatory requirements. However, the resolution of this issue is the «crown» of the work on technical analysis and comprehensive substantiation of the possibility of changing mandatory requirements through the use of new technologies and technical means (the competence of the scientific community), toughening the level of acceptable risks (the competence of civil society), changing the conditions of functioning and management environment responsibility (the competence of the state body).

In other words, the real competence of state bodies is limited exclusively to technical actions on the regulatory legal consolidation of requirements motivated and grounded by the scientific community, guaranteeing the provision of operational safety in accordance with the priorities of civil society.

The issues of collecting and analyzing information about the subjects of the risk zone and the features of their economic activity also have a number of nuances that do not allow them to perform this function in a highly effective manner within government bodies.

Functional duties, conditions and principles of administering the affairs by government bodies, moreover, combined with the presence of bureaucratic procedures, do not allow the state apparatus to reliably solve safety problems. The existing potential of information and analytical systems without the appropriate support of the research community, timely updating the risks and factors that pose a safety risk, is becoming a tool for generating internal reports and on-call plans that remain outside the real problems of the type of activity being controlled.

This fact is vividly confirmed by the publications of the analytical center under the government of the Russian Federation, which carries out information and analytical support and expert support for implementation of the program «Reform of Control and Supervision Activities». The most common information and analytical tools that are used when making management decisions at the state level are standard office application tools (MS Excel or equivalent), 28,6 % of federal executive bodies and 45,4 % of regional bodies do not have other tools. It is significant that 79,6 % of public authorities use information and

analytical tools for generating reports, while only 44,8 % and 11,5 % for respectively forecasting and modeling. At the same time, 59,5 % say that the functionality of the complex of available funds is sufficient for implementation of their activities [2].

In this regard, it is important to shift the emphasis towards enhancing the efforts of the scientific and expert environment, as well as to maximize the involvement of civil society in the overall system to improve the safety of the transport complex, in order to achieve safety targets.

II.

The analysis of world experience, best practices and concepts of safety with regard to various modes of transport showed the need for organizing at the state level a system search for emergency factors and development of measures to eliminate or level out their consequences.

The mentioned problem is common for all modes of transport and is caused by the following factors:

• accidents continue to occur, despite the existence and implementation of numerous rules and regulations;

• the persons involved in the incident are usually reluctant to disclose the information to the organization that conducts the investigation and is part of the regulatory body;

• investigative organizations sometimes uncover flaws in the work of the regulatory body itself, which can lead to: a) conflicts of interest; b) a crisis of confidence; c) opportunities to intervene in the process of providing information in the field of safety.

To identify accidents, it is necessary to create a database where the most complete information about traffic accidents and incidents will be stored (incident here is any event other than a traffic accident that could affect the safety of the vehicle operation).

The efficiency of the database being created directly depends on the volume and quality of data [3, 4] provided by the transport industry actors and integrated into the common dynamic system of hazards and risk assessment. The results of the investigation of traffic accidents, the picture of the state of the transport infrastructure, vehicles and safety management systems of business entities should be accumulated [5].

The system calculates and predicts changing risk factors which are based on aggregated data from investigations of accidents and control and supervisory measures taken, the technical condition of vehicles and infrastructure, the safety management systems of the transport industry and voluntary reports, as well as provides assessment of the impact of optimization and improvement of technological production processes conducted on the basis of the introduced innovations.

Taking into account the general principles of ensuring transport safety (legality, continuity, integration into international systems, respect for the balance of interests of individuals, society and the state, responsible interaction of transport system subjects and authorities), as well as ideas and provisions of the theory of universal quality management, ISO 9000 quality standards, including in terms of ensuring maximum independence and objectivity of the analytical information provided, the optimum point of accumulation of the required information can be located at scientific institution only. After all, the state body is associated primarily with punitive functions. This leads to the fact that a significant proportion of information about emergency factors does not come to it or comes in a distorted form. The commercial structure is profit-oriented and is not interested in revealing negative information, which entails additional costs for the business. An important factor is the fact that the integrity of information accumulated by state bodies and commercial structures is threatened in the event of their reorganization or the termination of their activities.

Another critical aspect in ensuring safety has always been and remains the human factor, which is directly influenced by the level of knowledge and experience of a specialist, his qualification and psychological preparedness. This indisputable fact testifies to the need not only of a powerful information base for scientific research, but also of using it for high-quality training of profiled specialists.

III.

Considering that the transport safety system is a whole complex of administrative, organizational and technical measures, and accounting also for a set of previously expressed arguments, it seems expedient to create scientific methodical center for transport safety and give it the status of the parent specialized institution to solve existing problems, and to develop system scientific approaches of revealing and preventing emergence of transport safety risk zones.

The experience of such work carried out by international organizations in the field of flight safety has shown that such a safety management system can work effectively only with sufficient information support. In a number of countries, attempts have been

made and are being made to increase the flow of information emanating mainly from the employees of the transport system and characterizing cases of operational safety violations. In this regard, measures are being developed and applied in practice to reduce the fear of criminal responsibility for reporting violations in the work of any link within the transport system. Providing such an approach and increasing the guarantee of anonymity of messages, processing and analysis of data on safety threats are performed by an independent third party.

The undoubted factor of successful activity of the center is its maximum autonomy from government bodies and administration. Moreover, in the eyes of society, it should not be associated with the state apparatus. A prerequisite should also be provided to ensure confidentiality by depersonalizing information sources.

Conclusion. *Taking into account the above, as well as the obligatory presence of a powerful research potential for systems analysis, competencies for formation of an appropriate regulatory legal framework, development of comprehensive measures and preventive measures, as well as the indispensable requirement of ensuring that the level of training of specialists meets the current safety requirements [6–8] most acceptable platform for creation of the scientific and methodological center of the claimed type is Russian University of Transport (MIIT) – one of the oldest technical universities of the country, founded in 1896.*

The main tasks of the center should be:

1. Development of a database on traffic accidents and incidents.

2. Organization of a system of voluntary reporting of incidents.

3. Identification of emergency factors and development of recommendations for their prevention.

The center should operate under the patronage of the Ministry of Transport of Russia and the Federal Service for Supervision of Transport as bodies that determine state policy in the area and carry out special licensing, control and supervisory functions, as well as with participation of civil society institutions as partners of announced reforms.

The organization of a scientific and methodological center for safety in transport at the initial stage of its activity will already allow interested state authorities to have additional, highly reliable information about emergency factors on roads, water and air lines, which will significantly increase the efficiency of public administration. In fact, public authorities will meet continuous scientific support in making safety decisions. Manufacturers of vehicles and equipment will receive a source of objective information about the real quality of their products. Society, all citizens will have the opportunity to participate indirectly in improving transport safety and, consequently, their personal safety.

The results of the work of the center may eventually become the basis for developing and updating of a state program to improve transport safety.

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