

The object of research is railroad passenger transportation.

The subject of research is a change management system.

The problem to be solved is to improve the efficiency of railroad transport enterprises in the field of passenger transportation by introducing a change management system.

In the study, the concept of the formation of a change management system in the field of passenger transportation of railroad transport in Ukraine under wartime conditions was devised. Since the conditions of war refer to a variety of emergencies, the concept of “emergency situation”, its types, characteristics, and signs that describe its existence are considered. The conditions of emergencies are defined.

The properties of total and hybrid war affect the fundamental features of the state management of railroad passenger transport in Ukraine, the work of state departments and railroad passenger transport management enterprises. Taking into account the peculiarities of each type of war and the principles of the state, a system of interconnection of the features and principles of the state management of railroad passenger transportation with possible aggressive changes under wartime conditions was built.

Such a system is the core of the devised concept of formation and modeling a change management system in the field of railroad passenger transportation in Ukraine under war conditions. Within the framework of the concept, a strategy is formed – a set of actions during an emergency of a military nature.

Based on this concept, in the future, it is possible to construct stages of research, the existence of which could make it possible to build a model of the concept, namely the processes of forming a system of changes

Keywords: railroad passenger transportation, the concept of formation of a change management system under wartime conditions

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THE CONCEPT OF FORMING A SYSTEM OF CHANGE MANAGEMENT IN THE DOMAIN OF RAILROAD PASSENGER TRANSPORTATION IN UKRAINE UNDER THE CONDITIONS OF WAR

Volodymyr Bobyl

Doctor of Economic Sciences, Professor, Head of Department*

Oleksii Matusevych

Corresponding author

PhD, Associate Professor*

E-mail: alex_m73@meta.ua

Maryna Dron

PhD, Associate Professor

Department of Financial Management, Accounting Analytics and Business Monitoring**

Artem Taranenko

Postgraduate Student

Department of Economics and Management**

*Department of Finance, Accounting and Psychology**

**Ukrainian State University of Science and Technologies

Lazaryana str., 2, Dnipro, Ukraine, 49010

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1. Introduction

Every enterprise, especially transport enterprises, in modern conditions needs to adapt to the external environment in a timely manner in order to maintain its competitiveness and improve work efficiency. Such actions relate to the ability to adapt to the conditions of an emergency, a variant of which is the war between Ukraine and the Russian invading forces. Thus, companies are obliged to change. First of all, this applies to transport enterprises, especially railroad ones. It should be noted that rail transport is capable of transporting goods and passengers in sufficient quantities. Among the types of transportation, railroad passenger transportation in Ukraine is of interest because under wartime conditions there is a basic need for the safety of citizens and their protection.

Increasing the competitiveness and stable operation of railroad transport enterprises in the field of passenger trans-

portation, especially in wartime, is impossible to imagine without increasing the efficiency of its management and applying changes. Therefore, it is necessary to consider the prerequisites for building a change management process at railroad transport enterprises under emergency conditions, war conditions.

Management must determine new directions for the development of the enterprise, which must be implemented through change management. It should be noted that the conditions of existence predetermine the construction of a strategy, a set of actions during an emergency, the components of which should be included in the methodology of development and implementation of the system of changes in the domain of passenger transportation of railroad transport of Ukraine.

Methodology is interpreted as knowledge about the method of activity as such, which includes principles, methods of activity and knowledge. Therefore, it should include

the concept of formation and modeling of the change management system in the field of railroad passenger transportation under wartime conditions. On the basis of such a concept, it is possible to design stages of research that could allow building a model of the concept, namely the processes to construct a system of changes.

Therefore, it is a relevant task to investigate the development and implementation of a system of changes in the domain of railroad passenger transportation in Ukraine under wartime conditions.

2. Literature review and problem statement

Many scientists pay considerable attention to solving the problems of increasing the efficiency of railroad transport enterprises. This especially applies to the issue of implementing a system of changes in the field of railroad passenger transportation. Implementation of changes may concern the external and internal environment of the enterprise. One of the forms of change can be reformation of railroad transport. In turn, the reformation will help improve the efficiency of railroad transport enterprises in the field of passenger transportation with the aim of increasing performance indicators and ensuring a high level of competitiveness. This is possible in peacetime. One way or another, such opinions are noted in works [1–10].

For example, work [1] analyzed the dynamics of using the transit potential of the transport system of Ukraine and proposed the formation of a logistics-information-innovation-marketing center to increase the level of competitiveness of enterprises. But the issues of using such centers under conditions where the capabilities of the network of international transport corridors are limited remain unresolved. The reason for this may be the presence of emergencies. Regulation of this issue is possible through change management.

In work [2], it is indicated that the management of changes in railroad transport enterprises can include strategic development, reformation, development of new services, formation of new divisions, adaptation of passenger transportation to EU requirements. However, issues related to taking into account aggressive external factors that affect these components of change management remained unresolved. That is why it is expedient to conduct a study aimed at increasing the efficiency of railroad transport enterprises in the field of passenger transportation under wartime conditions.

Methodological foundations of state regulation of railroad transport development are defined in work [3]. The research was carried out in the context of the development of the transport market of Ukraine. It focuses on increasing the efficiency of railroad transport enterprises in peacetime and does not take into account the possibility of emergencies. Therefore, such studies need clarification. How, for example, should one act under wartime conditions.

In works [4, 5], a study of the application of elements of marketing and logistics under conditions of reforming railroad transport was carried out with the conclusion of the influence of coordination and interaction of different modes of transport on the volume of railroad passenger transport. But there is not enough information about the influence of coordination and interaction of different modes of transport on the volume of railroad passenger transportation and logistics. Especially under conditions of an emergency and the impact of aggressive changes. While some factors can be

taken into account in peacetime, then in wartime it is very difficult, and often impossible.

In work [6], the principles of determining the main functions of railroad hubs are specified. Hubs are very important when used as logistics centers. This is especially important in wartime. However, in the realities when the research was conducted, such factors were not taken into account.

In [7], it is determined how risk management and insurance is carried out in railroad transport in connection with possible changes under conditions of reform. But factors of aggressive changes under wartime conditions were not taken into account. In this area, the materials of work [8] on determining the features of management at railroad transport enterprises are additionally useful. However, they relate mainly to the issue of personnel management. This is useful information, but it should be appropriate to study taking into account not only internal but also external factors.

Such practical results of the above-mentioned studies regarding the improvement of the efficiency of the functioning of railroad transport enterprises within the framework of change management are extremely relevant. However, in general, it should be pointed out that the research needs to be deepened since it was carried out taking into account the increase in the competitiveness of passenger transportation and did not take into account the peculiarities of wartime.

Works [9, 10] consider the peculiarities of social relations under conditions of the war in Ukraine. First works aimed at adapting the work of enterprises under wartime conditions appear but there are not enough of them. There is insufficient information regarding the clarification of the prerequisites for the formation of a methodology for the development of a system of changes in the field of railroad passenger transportation under wartime conditions.

Work [11] notes the problems of optimizing the structure of passenger transportation. They are based on user data research but cover only part of the European area.

In [12], the subject of the study is the evaluation of passenger railroad transportation under different market conditions, but extraordinary conditions are not taken into account.

Paper [13] examines the effectiveness of using old railroads and insufficient attention is paid to the development of the application of logistics centers.

Work [14] examines the impact of railroad reform on the development of tourist travel. In case of war, this is so interesting, but there is useful information about the possibility of developing logistics for the wartime period.

On the example of papers [15, 16], it is possible to study the possibility of conducting tenders for railroad services in peacetime. This will provide an opportunity to explore new elements of familiar tools for saving money for reforms and changes in railroads during the war.

Works [17, 18] show the vertical and horizontal separation in management in the European railroad sector and the impact on change management. This is not much adjusted to the way it is carried out in Ukraine, and factors of aggressive changes during an emergency are not taken into account.

Paper [19] examines issues of (de)regulation of railroads and the impact on the efficiency of their work in Europe. In [20], an analysis of the efficiency of the volume of transportation on European railroads was carried out. The review of these works shows that insufficient attention is paid to the issue of change management in the field of railroad passenger transportation.

In [21], an analysis of transaction costs on European railroads was carried out. It shows some of the possible costs that may arise.

The results of the above-mentioned works also show the lack of consideration of the peculiarities of wartime. However, they make it possible to take into account the features in the functioning of railroads under emergency conditions when managing individual aggressive changes.

The goal of change management under emergency conditions should be:

- improvement of passenger transportation and railroad operations in general;
- improvement of transport logistics of railroad passenger transportation;
- the best use of human capital in order to obtain competitive advantages for railroads;
- reducing the unprofitability of passenger transportation and increasing the efficiency of their activity.

Despite the large number of publications on the economic problems of the development of railroad transport, the issue of preserving the effective functioning of the railroad industry under conditions of an emergency, a type of which is war, needs to be considered.

The result of the review of the above works is the systematization of local problems:

- 1) low transit potential of the transport system in Ukraine;
- 2) there is a narrow spectrum of finding means for change management at railroad transport enterprises in the field of passenger transportation;
- 3) low level of development of logistics and management, which affects the volume of railroad passenger transportation;
- 4) inefficient use of railroad hubs;
- 5) the presence of risks of railroad passenger transportation under conditions of reform and under wartime conditions.

The existence of the above problems affects the general unsolved problem – the inefficiency of the functioning of railroad passenger transportation. The possibility of solving both individual and general problems is the development of the concept of the formation of a change management system in the field of railroad passenger transportation under wartime conditions.

3. The aim and objectives of the study

The purpose of our study is to devise conceptual solutions for the construction of a change management system in the field of railroad passenger transportation under the conditions of war in Ukraine. This will make it possible to increase the efficiency of railroad transport enterprises in the field of passenger transportation by introducing a change management system.

To achieve the goal, the following tasks were set:

- to reveal the concept of “emergency” and define war as its type;
- to determine the features and principles of state management of railroad passenger transportation under wartime conditions;
- to design a system of interconnection of features and principles of state management of railroad passenger transportation with possible aggressive changes under wartime conditions;
- to define the strategy of organizing a set of actions within the framework of change management in the field of railroad passenger transportation under wartime conditions.

4. The study materials and methods

The object of research is railroad passenger transportation; the subject of research is a change management system.

The main hypothesis of the study assumes that there is an influence of aggressive changes in the management of railroad passenger transportation on the principles of state management of them under wartime conditions.

Since it is the conditions of war that can be attributed to emergencies, it is necessary to investigate this concept. It is necessary to provide a description, to consider the types and signs that determine its existence. It is necessary to determine the conditions of emergencies. In the future, it is necessary to form a strategy (set of actions) regarding the construction and modeling of the change management system in the field of railroad passenger transportation under wartime conditions, which will form the basis of the corresponding concept.

At the same time, it is considered appropriate to apply some methods of theoretical research.

System-process approach. According to it, an enterprise or organization is considered as a set of interrelated elements that are oriented towards achieving certain goals and are closely intertwined with the outside world. At the same time, this is done with the interpretation of management as a series of directly interconnected actions, each of which is already a process. In the study, this refers to the peculiarities of the state management of railroad passenger transportation in accordance with individual special organizations specific to the railroad industry.

Analysis. This is a method of cognition by means of which it is possible to dismember a separate object into its component parts for the purpose of its detailed and comprehensive study. An example of application can be the disclosure of the concept of “emergency”.

Synthesis. It is a combination of abstract aspects of the subject and its reflection as a concrete integrity. This method of studying the object consists in the single and mutual connection of its parts. It helps in the construction of a change management system.

5. Results of studying the system of changes in the field of passenger transportation of railroad transport

5.1. Disclosure of the concept of “emergency” and definition of war as its type

An emergency (EM) is a violation of the normal conditions of life and activity of people, caused by an accident, epidemic, natural disaster, etc. That is, it is a phenomenon in which numerous losses occur in the national economy, and first of all, human life is destroyed [22].

Such a feature of an emergency as the uncertainty of management should be taken into account.

Signs of an emergency are:

- presence or threat of death of people, possible significant deterioration of their living conditions;
- economic losses;
- significant deterioration of the environment.

Emergencies can be classified according to the degree of spread, the nature of the origin, the amount of material damage, human losses. There is a resolution of the Cabinet of Ministers of Ukraine No. 1099 dated July 15, 1998 “On the procedure for the classification of emergencies”. In accordance with this resolution, the following emergencies (EMs) are distinguished [22]:

1) emergencies of a military nature are situations that are associated with the consequences of the use of conventional weapons or weapons of mass destruction;

2) emergencies of a natural nature are situations that are associated with the occurrence of dangerous phenomena of a natural nature;

3) emergencies of a socio-political nature are situations that are associated with threats of a terrorist nature or illegal actions of an anti-constitutional nature;

4) emergencies of a man-made nature are situations that are associated with accidents or catastrophes at engineering structures, buildings, etc.

Also, there are 4 levels of emergencies [23]:

1. An emergency at the national level, which is evolving on the territory of two or more regions.

2. Emergency at the regional level, which develops on the territory of two or more administrative districts.

3. Emergency at the local level, which goes beyond the boundaries of a potentially dangerous object.

4. An emergency at the object level, which unfolds on the territory of the object.

It should be noted that to determine the level of emergency situations, such factors are considered as:

- territorial distribution and volumes of material and technical resources, which are necessary to eliminate the consequences of an emergency;

- the number of people who were injured or died, whose living conditions were violated as a result of the emergency.

The war should be considered separately as a kind of emergency in which Ukraine found itself. War is the maximum deviation from the norm in the development of social and political processes. It is necessary to consider such types of war as “total war” and “hybrid war”, compare them, and integrate the peculiarities of relations under wartime conditions into the concept of construction and modeling of the change management system in the field of railroad passenger transportation.

The degree, scale, and nature of the hostilities testify to the total nature of the war, aimed at the destruction of the Ukrainian people. It is a war in which countries use all available resources, infrastructure, and methods to defeat the enemy. Moreover, all the resources of society are mobilized for the struggle and war is given priority over non-combat needs. It is a war that is not limited in terms of weapons used, territory or combatants. However, there is also such a concept as “hybrid war”, which was more often used at the beginning of the Russian-Ukrainian war in the United States of America [9].

The fundamental difference between a hybrid war and a total war is the veiling of aggressive military actions by a foreign state. Namely, conflicts arise in any part of the territory at any time. Moreover, there is a threat to the objects of production infrastructure in the first place. They are the main elements of ensuring the effective conduct of hostilities.

Emphasis on emergencies, and war conditions as a variety, is placed because they are the cause of aggressive changes that must be taken into account.

5.2. Determining features and principles of state management of railroad passenger transportation under wartime conditions

The main feature of the life of the state in wartime is a change in the state management of economic sectors.

It is necessary to single out some features of the functioning of the state management of individual sectors of the

economy during wartime. For example, management of the railroad industry.

Let's highlight the main features:

- state management of emergencies;

- centralization of management;

- directive management style;

- increasing the responsibility of management personnel;

- rationing of all resources and the planning and distribution method of managing the economy.

Among the proposals for the management of railroad passenger transportation within the framework of change management, the following should be highlighted:

1) construction of an additional, parallel structure of power, which is based on an extraordinary legal basis instead of a normative legal basis;

2) the presence of a rigid hierarchy.

This approach will make it possible to obtain leadership clarity, efficiency, and dynamism. Thus, emergency state management has positive aspects.

It should be remembered that under wartime conditions, the functioning of the state administration mechanism undergoes certain changes. And, thus, the management of such changes is a primary task in order to strengthen the system of public administration and strengthen the administrative and command direction.

Under wartime conditions, the following principles should be the priority organizational principles for building a mechanism of state management of railroad passenger transportation:

- unity of state, political and military leadership;

- taking into account the specifics of railroad industry management;

- centralization of management; strict responsibility of officials;

- management efficiency; linear control system for the purpose of ensuring control over railroad passenger transportation.

It should be added that the management mechanism works under conditions of uncertainty, which forces strategic decisions to be made on the basis of unreliable and incomplete information. Thus, the effectiveness of the state management mechanism may decrease. Therefore, there is a need to find ways to optimize the state management mechanism.

With regard to railroad passenger transport, it should be noted that in wartime it is necessary to combine the efforts of various departmental bodies in order to combine management tasks. They include:

- railroad troops;

- DP “Ukrzaliznytsia”;

- military commissariats;

- non-state companies – passenger transport operators.

5.3. Construction of a system of interconnection of features of state management of railroad passenger transportation with aggressive changes

On the basis of the above information and the materials of work [24], possible aggressive changes can be formed. Aggressive changes should be taken into account, and they should be worked on when carrying out railroad passenger transportation under wartime conditions. At the same time, it is necessary to take into account the peculiarities and principles of state management of railroad transportation, Fig. 1. Aggressive changes are applied because they are relevant in wartime. There are aggressive economic and organizational changes.

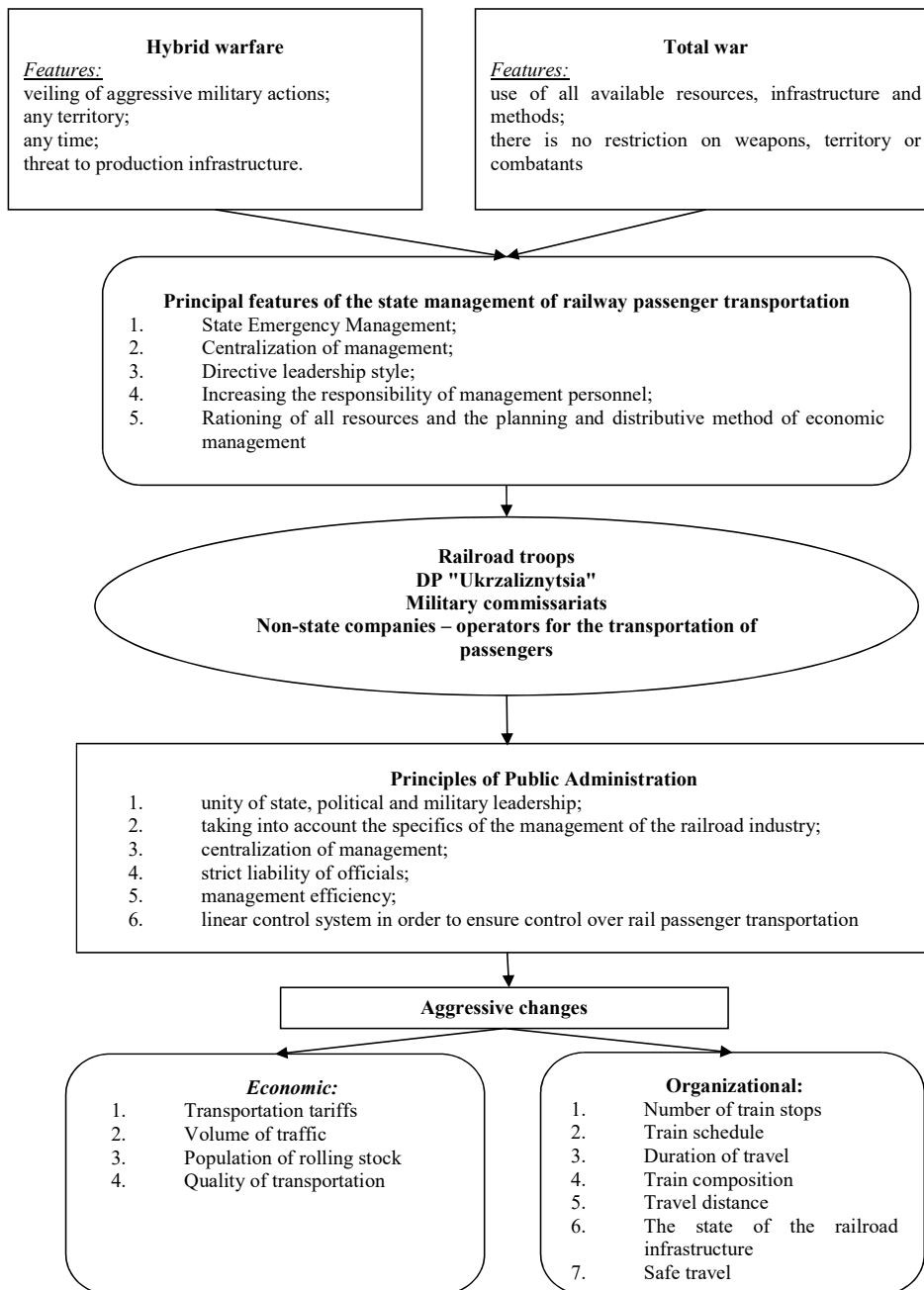


Fig. 1. Peculiarities, principles of state management of railway passenger transportation and possible changes under wartime conditions (authors' work based on [24])

The economic ones influence:

- amount of transportation tariffs;
- volume of transportation;
- population of rolling stock;
- quality of transportation.

Aggressive organizational changes affect:

- the number of train stops;
- train schedule;
- the duration of the trip;
- composition of the train;
- travel distance;
- state of railroad infrastructure;
- trip safety.

The developed system should be the key to the construction of the concept of formation and modeling of a

change management system in the field of railroad passenger transportation under wartime conditions.

5. 4. Determining the strategy of organizing a set of actions within the framework of change management in the field of railroad passenger transportation under wartime conditions

The next step in determining the concept of the formation of a change management system should be the formation of a strategy – the organization of a set of actions during an emergency of a military nature in the field of railroad passenger transportation, Fig. 2.

The following should be highlighted in this set of actions:

1. Formation of theoretical and conceptual foundations for managing changes in railroad transport enterprises in the field of passenger transportation. This step should include theoretical and conceptual approaches to the study of change management, analysis of the functions, principles, and mechanisms of change management, as well as the definition of the stages of change management and its purpose.

2. Development of conceptual principles for managing changes in railroad transport enterprises in the field of passenger transportation must include:

- study of European experience in managing changes of railroad transport enterprises in the field of passenger transportation;
- analysis of the state of railroad passenger transportation in Ukraine in peacetime and during military operations;
- determination of the stages of the change management process at railroad transport enterprises in the field of passenger transportation under wartime conditions;
- development of principles for managing changes at railroad transport enterprises in the field of passenger transportation under wartime conditions.

3. Formation of methodological foundations and methodological approaches to the evaluation of characteristics and modeling of the system of changes in the field of passenger transportation of railroad transport. This step should include the formation of methodological aspects of the devel-

opment and implementation of a system of changes in the field of passenger rail transport. Further, the development of theoretical foundations, methodical approaches, modeling of the processes of formation of the change management system, formation of a methodical approach to measurement and evaluation of the effectiveness of processes in the change system is envisaged.

4. Development of models and methods for evaluating characteristics, forecasting, and planning of change management in the field of passenger rail transport under wartime conditions. This step assumes:

- development of change management criteria at railroad transport enterprises in the field of passenger transportation;
- methods of evaluation of change management measures;
- formation of a system of methodical approaches to change management;

– definition of a change management model at railroad transport enterprises in the field of passenger transportation during wartime.

5. Determination of scenarios and decision-making procedures in the management of changes at railroad transport enterprises in the field of passenger transportation under wartime conditions. First, at this step, the methods and models of decision-making in the management of changes at railroad transport enterprises in the field of passenger transportation should be determined. Next, it is necessary to form a concept of change management at railroad transport enterprises in the field of passenger transportation, and to determine what it gives. To investigate the mechanisms of innovative development of change management, to develop socio-economic state and regional policy in the context of change management at railroad transport enterprises in the field of passenger transportation.



Fig. 2. Scheme of forming a strategy for the organization of a set of actions within the framework of change management in the field of railroad passenger transportation under wartime conditions

6. Discussion of results of investigating the system of changes in the field of passenger transportation of railroad transport

The concept of “emergency” and its characteristics were revealed. The types and signs that determine its existence are indicated. This explains the subsequent definition of war as a kind of emergency. The features of hybrid and total war, which affect the state management of railroad passenger transportation, are determined. This determines the determination of the priority organizational foundations for the construction of the mechanism of state management of railroad passenger transportation.

It is taking into account the principles and features of the state management of railroad passenger transportation that will help close some problems in wartime:

1) increase the transit potential of the transport system of Ukraine;

2) the application of “aggressive changes” will help improve change management at railroad transport enterprises in the field of passenger transportation;

3) to improve: logistics of railroad passenger transportation and risk management with insurance in railroad transport.

Summarizing the characteristics of the types of war, state organizations related to railroad passenger transportation together will help form a single system. This will be a system of interconnection of features and principles of state management of railroad passenger transportation with possible changes under wartime conditions, which is shown in Fig. 1.

Such a system is the core of the development of the concept of formation and modeling of the change management system in the field of railroad passenger transport under wartime conditions (Fig. 2). It is this concept that is a logical continuation of research in this area since a strategy is formed within its framework – a set of actions during an emergency of a military nature.

Based on this concept, in the future, it is possible to form stages of research, the existence of which will allow building a model of the concept, namely the processes of forming a system of changes.

Among the features of the proposed approach in this study, the following should be noted.

In contrast to [1], in which the issues of the use of logistics and information centers under conditions of limited capabilities of the network of international transport corridors due to the presence of emergencies remained unresolved. Railroad transportation management will not be efficient enough without the application of change management. So, for example, in works [4, 5], in which the influence of coordination and interaction of various modes of transport on the volume of railroad passenger transportation was determined, the impact of aggressive changes, which in turn is possible in emergencies, was not taken into account. In works [9, 10], which consider the peculiarities of social relations under wartime conditions in Ukraine, the first components of the change management system appear. However, these prerequisites are not enough to form the concept of organizing a system of changes in the field of railroad passenger transportation under wartime conditions. At the same time, it is necessary to take into account the importance of the materials of work [24], in which the types of changes were considered.

Limitations of the current study include the following:

- application of previously recognized aggressive changes, according to [24];

- the changes should be specific to passenger rail transportation;

- methods of reforming railroads should correspond to the peculiarities of wartime and take into account the prerequisites for building a change management mechanism according to the materials [10].

Disadvantages of the current study include the following:

- only the main examples of aggressive changes are taken into account;

- not universality – the research concerns passenger railroad transportation;

- typical of wartime conditions.

7. Conclusions

1. The studied types, levels, and factors of emergencies will allow a more reasonable approach to the definition of war as a type of emergency. An emergency of a military nature affects the safety, quantity, and quality of passenger transportation. Studying the types of war helps determine the relevant aspects, features of state administration in wartime.

2. The assumption that the application of aggressive changes in such an existing direction as “Management of changes in enterprises” helps effectively manage transportation in wartime, makes it possible to determine the principles of state management of railroad passenger transportation. The main thing is to combine the efforts of various departmental bodies, organizations, and enterprises with the aim of combining management tasks.

3. The development of a system of interconnection of features and principles of state management of railroad passenger transportation with possible aggressive changes under wartime conditions is the result of bringing the following components together. Among them, the characteristics of types of war, enterprises, and state organizations related to railroad passenger transportation should be noted. This system should be the core in the development of the concept of formation and modeling of the change management system.

4. During the development of the concept of the formation of a change management system, a strategy was devised for the organization of a set of actions in the field of railroad passenger transportation, which will make it possible to increase the efficiency of the activities of railroad transport enterprises under wartime conditions.

Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial, personal, authorship, or any other, that could affect the study and the results reported in this paper.

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Data availability

The manuscript has associated data in the data warehouse.

Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

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