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ANALYSIS OF THE CONTAINER TRANSPORTATIONS BY RAILWAY IN UKRAINE

Favorable geographical position of Ukraine on the map of Eurasian continent stipulates its enormous potential as the transit country, country the bridge between the West and the East, the North and the South. Rapid development of the container transportation requires corresponding national solutions for achieving economic progress in the increase of the cargo traffic. The given research studies the process of the containerization on the railway transport of Ukraine. In the process of the research main factors proving the necessity of the introduction of larger volumes of the container delivery by the railway transport are determined. The relevance of the container system of cargo delivery in the context of the international transportation is studied. Indices of the container transportation volumes on the European market of the transport services are considered. Basic advantages and disadvantages in the process of the container transportation are determined. The analysis of the studies, devoted to the container transportation, showed that the problems of its efficient realization in Ukraine, the countries of Eastern Europe and complex procedures of the implementation are not completely studied. The results of the investigations represent mainly technical and technological aspects of the multimodal transportation, problems of the economic safety are not considered. On the base of the research, carried out it is determined that the development of the system of the container transportation by the railway transport in Ukraine is a rational means of improving the quality of cargo transportation organization., which due to the economic efficiency will reduce not only the expenses for cargo transport but also the time for handling operations. For Ukraine the container transportation is the prerequisite of the sustainable development of the transport complex in the context of both internal and international communication, as such type of the transportations allows the usage of the intermodal kinds of transportation, that, in its turn, will improve the interaction of various types of transport.

Key words: rail way transport, containerization, multimodal transportation, container, cargo traffic flow.

Introduction

Container transportations is one of the most important reserves of the productivity improvement and reducing the cost of cargo transportation. Taking into account the characteristic features of geopolitical location of Ukraine the improvement of the transport system in the context of cargo transportation efficiency increase, including the container transportation, is of great importance. The actuality of the research is stipulated by the growth of the volume of the container transportation in the recent decade. In the last five years this growth has taken place as a result of the active development of the economy of China and other countries of South-Eastern Asia as well as due to production outsourcing to this region. In this connection many countries pay great attention to the construction of the reliable transport bridges between the East and the West, in particular, to the development of the container transport system [1], the container cargo delivery system as the transport component. **The aim of the paper** is the study of the necessity of the container transportation development by the rail way transport in Ukraine. The task of the study is the analysis of the efficiency of the introduction of large-scale container transportation by the rail way transport in Ukraine in the contest of the improvement of the quality of the cargo traffic flow organization.

Analysis of the recent studies and problem set up

As compared with the European Union the system of the container transportation by the railway transport is not well-developed in Ukraine as well as in greater part of the post-Soviet countries [2]. The development of the railway infrastructure of Ukraine is focused on the increase of cargo traffic

flow by means of the all-purpose vehicles. This is explained by the fact that the covered railroad car, low-sided car can be loaded or unloaded at any place – railway stations, approach lines, that does not limit the process of cargo delivery by the railway transport. It should be noted, that the technology of the containers handling has its specific features, requiring the corresponding equipment for performing safe handling operations but as a result, the owner of the cargo gets considerable advantages, such as: time reduction for handling operations, reduction of trains downtime and cost reduction of transportation services.

Foreign experience confirms that in the sphere of transport one of the main factors of the efficiency increase is the development of the container transportation and provision of its sufficient stability. In this connection we would like to mention the works of T. Brands, E. Berkum [3], L. Wismans, M. Blimer [4], S. Hammadi, M. Ksouri [5] and others.

Strengthening of the positions at the domestic transport market with the introduction of modern logistic mechanisms and multimodal delivery on the conditions of the formation of the favorable economic environment is studied in the works of the domestic specialists [6 – 12]. However, the presented results of the study show mainly technical-technological aspects of multimodal transportation but the problems of the economic safety are not highlighted. Problems of determination of the set of principles dealing with the organization and realization of the international transportation by different transport facilities, that is the basis for the provision of the economic security of the supply chains in multimodal cargo transportation both on operational, tactical and strategic levels are outside the attention. Problems of the container transportation planning efficiency at the railroad enterprises were also studied by Kharchuk O. G. and Kurmaz J. V. [13]. The paper considered the efficiency of the container transportation due to the convenience and economic efficiency as well as popular, convenient and safe kind of any goods delivery, the possibility of container transportation combining with various kind of transport is determined, the advantages of the containerization and factor blocking the development of the container transportation are defined.

Okorokov A. M. in the paper «Analysis of the prospects of the container transportation market development in Ukraine» stated that taking into account the European choice of Ukraine, its desire to integrate into the European transport and trading space, container railway transportations become the necessary element of the transport system and important indicator of its development. The author noted that the development of the container transportation system is impossible without the harmonic development of all types of transport, organization of the coordinated interaction between them, establishing of the acceptable and economically substantiated level of the tariffs and legislative protection of the shippers [2].

Materials and methods of investigation

Container transportation is a system of the cargo delivery by means of different kinds of transport, using universal modules – container [13]. Characteristic feature of the container transportation is that the cargo in the containers can be transported without the package or in workshop package material, loading of the container is carried out at the warehouse of the shipper and the unloading is carried out at the warehouse of the consignee without rehandling and reweighting of cargo in the route, providing the delivery of the cargo «from door to door» both in the direct and intermodal connection. Transportation of the cargo in the containers enables to mechanize and automate the handling operations by means of fork lift trucks, cranes, hoists and reduce the time for handling operations, decrease the expenditures for packing materials for cargos, reduce the expenditures for the construction of the sorting platforms and warehouses for storage of the cargoes, etc. [13 – 14].

In 2019 Joint-Stock Company «Ukrainian Railways» announced that the container transportations occupy 1.7% of the total volumes of the freights, carried by the railway transport (in 2018 this index was 1.5%, in 2017 – 1.1%). During 9 months of 2019 278.5 thousand of containers in TEU

equivalent were carried across the territory of Ukraine by the railway transport, it is 10.2% more than the volume of the transportation during the analog period of the previous year [15]. This information confirms the trend of increasing the container transportations by the railway transport of Ukraine, but at the same time, analyzing the index of the container transportations in Germany and Italy (Fig. 1), it should be noted that the system of the container transportations in Ukraine, unfortunately, does not correspond to modern requirement, regarding cargo delivery.

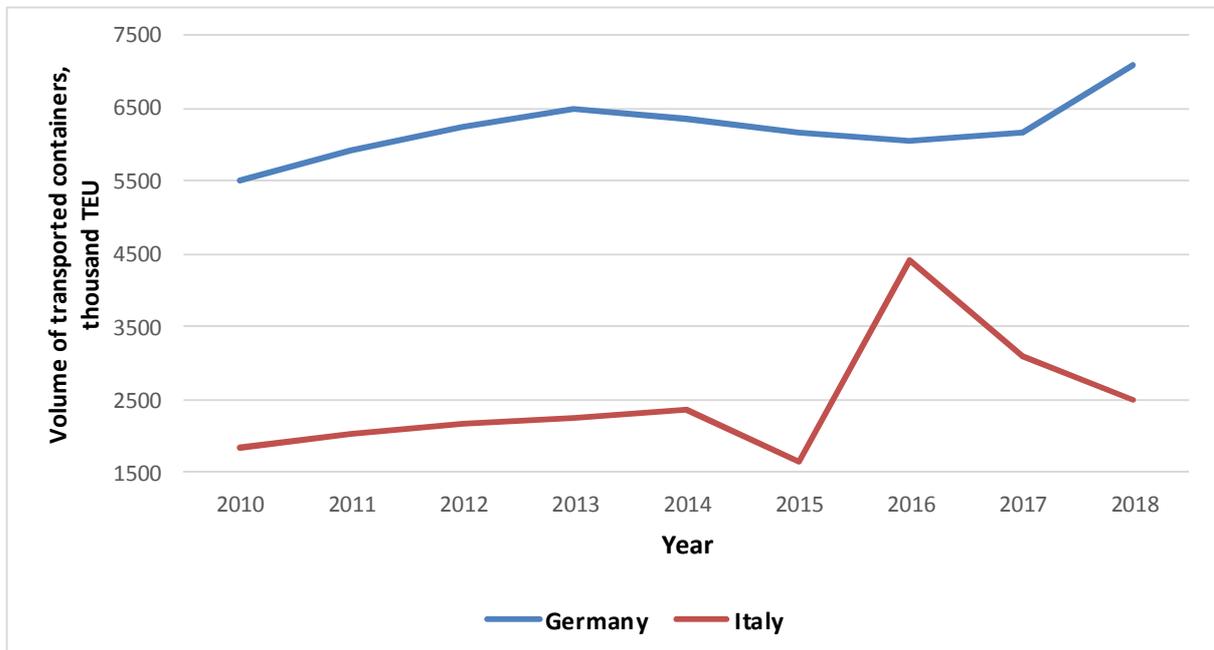


Fig. 1. Volume of the container transportation by the railway transport in Germany and Italy [16]

Thus, at the European market of the railway transportations the largest volume of the container transportation belongs to Germany, this country in 2018 realized more than 7 million TEU (twenty-foot equivalent unit – conventional unit of measurement of the capacity of cargo transportation facilities, i. e., containers). Regarding the annual indices of the container transportations by the railways of Ukraine in 2019, more than 384 tsd TEU were transported, it is 14.64 % more than the indices of the containers transportation in 2018 [15]. The given index represents approximately 6 % of the annual volume of the containers transportation by the railways of Germany, that is why, the problem of the introduction of the large-scale containers transport by the railway transport of Ukraine is of great importance.

Taking into consideration the favourable geographical position of Ukraine, it is worth mentioning the actuality of the usage of the container transportation system in the context of the international transportation.

Railway system of Ukraine is an important part of the European-wide railway system: several important railway transportation corridors crosses Ukraine, among them the direction Baltic Sea-Black Sea and Transcaspien international transport corridor should be noted. Also direct cargo transportations to Poland, Belarus, Moldova, Hungary, Slovakia, Rumania should be mentioned. As a result of active development of the international trade Ukraine is an important territorial link for the realization of the large-scale transit transportations from China to the countries of the Central and Eastern Europe. Sufficient level of the realization of the above-mentioned cargo traffic requires the construction of the efficient system of the container transportation which, on one hand, will allow to perform these transportations rapidly and cost-efficiently and, on the other hand – will provide reliable level of the transport and accompanying services.

The advantages and disadvantages of the container transportations should be determined. Economic efficiency of the container transportation is the following:

- 1) low cost of the transport and handling of the cargoes;
- 2) reduction of the down-time of the all-purpose vehicles for the handling operations;
- 3) reduction of the labour consumption of the handling operations;
- 4) high production efficiency of the machines and mechanisms for handling operations as a result of the complex mechanization of handling operations;
- 5) reduction of the terms of the cargo transportation from the place of their manufacture to the place of the consumption;
- 6) decrease of the expenses for packing materials fabrication;
- 7) versatility: usage of the unified module makes possible to transport the containers by any kind of the land, air or water transport;
- 8) high storegeability of the cargo, being transported (against bad weather conditions and plundering);
- 9) simplification and cheapening of the transport-expedition operations;
- 10) possibility of the transportation of the sizable quantities of cargo.

The drawbacks of the container transportation system are the following:

- 1) the need of powerful, expensive handling complexes;
- 2) the need of the capital investments in the production of the containers;
- 3) the need to return the empty containers or the search of the cargo for their loading.

The essence of the container transport system is that the cargo is transported from the initial to final point in the container, which in the transfer points is transferred from one type of transport to another, usage of the containers is most efficient in case of the multimodal transportations, as it greatly reduces the time of the loading from one type of transport to another and minimize the risk of the cargo damage in the process of the handling operations.

Introduction of the considerable volume of the container transportation is closely connected with the national system of the International Transport Corridors (ITC). Ukraine can participate in the formation of ITC, using the advantages of its geographical position – location at the intersection of the world trading and transport routes and obtain currency earnings for the transit services. In the given context the transport infrastructure is of great importance. The development of the transport infrastructure may become the main factor that will enable to involve the transport operators, performing the container transportation from China to European countries using more western routes: this is not about the sea ports but about the creation of the land transfer points on the borders with Poland, Slovakia and Belarus which could provide the transshipment of the container cargoes.

Conclusions

The analysis of the modern state of the world market of the container transportations showed the strong trend to the increase of the cargoes volume, transported in the containers. This is explained by the fact, that the containerization allows to improve considerably the efficiency and compatibility of the enterprises, operating in the logistic sphere, that is very important in the conditions of market economy. The development of the system of the container transportation by the rail- road transport is a rational method of increasing the quality of cargoes transportation organization, this method, as a result of its economic efficiency, will reduce not only the cargo transportation expenditures, but also the time, needed for handling operations. For Ukraine the container transportation is the basis of the sustainable development of the transport complex in the context of both internal and international communication as a container transportations assume the usage of the multimodal traffic, in its turn, this will lead to the efficient interaction of different kinds of transport.

In spite of the positive experience, obtained in the sphere of realization of the international container transportation, general volumes of the transportation, carried out recently, constantly decrease. A number of factors influence this decrease, in particular, general reduction of the volume of container transportation in the Black Sea Region, as well as negative results of the reforms in the

sphere of the rail-road management system. Transition of the rolling equipment from the inventory rolling stock to the private one caused the emergence of the additional dealers in the sphere of the freight cars usage, as a result the cost of the rolling stock usage increased by 50 %.

Thus, if Ukraine wishes to maintain the existing positions at the market of the container transportations and involve the additional cargoes traffic, it is necessary to perform measures, aimed at improvement of the different sphere of the railway operation. In particular, it is expedient to create more favorable social climate, introduce the policy of openness and flexibility, regarding the clients. This also concerns both the tariff policy and the problem of the transport organization, introducing modern logistic methods and all-round information support of the consigner in real time mode. Otherwise, favorable conditions, needed for the increase of the volume of container transportation by the railway transport, existing nowadays, will be lost and the shippers will use the truck transportations.

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