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WISSENSCHAFT UND TECHNIK IM XXI
JAHRHUNDERTS**

**WIRTSCHAFT, MANAGEMENT UND MARKETING, TOURISMUS, BILDUNG,
PSYCHOLOGIE, GEOGRAPHIE, PHILOLOGIE, GESCHICHTE, KUNSTGESCHICHTE**
*THE LEVEL OF DEVELOPMENT OF SCIENCE AND
TECHNOLOGY IN THE XXI CENTURY*

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KAPITEL 5 / CHAPTER 5⁵

TRUCK TRANSPORTATION IN UKRAINE: IMPACT ON ECONOMIC DEVELOPMENT, PROBLEMS AND PROSPECTS

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Introduction.

Transportation has always played a significant role in the development of the economy of any country. An important task of the transport sector is the development of all types of transport, as well as the elimination of problems that arose as a result of Russia's military aggression against Ukraine. It must be said that certain problems are observed in the transportation of goods by all types of transport.

Many Ukrainian and foreign scientists were engaged in the study of various aspects of these problems. Thus, the problems and prospects of the development of the transport infrastructure of Ukraine, as well as the experience of foreign countries, are considered in the works of V.M. Kumanova, K.O. Tyulkinoi [1], O. Kalchenko, A. Belorus [2], M.V. Halkevich [3]. The key aspects of transport logistics in the conditions of the COVID-19 pandemic were studied in the work of O.Ya. Kobylyukh, O.B. Girna, L.I. Gaev [4]. Interesting studies of the development of entities and the formation of the levels of the world transport system in the conditions of globalization were conducted by T.G. Ostapenko, N.P. By grafting [5].

Analyzing the situation for the period from 2017 to 2021, it can be seen that the dynamics of freight transportation by various modes of transport was unstable (Table 1).

Table 1 – Dynamics of cargo transportation in Ukraine (million tons)

Means of transport	Years				
	2017	2018	2019	2020	2021
All types of transport	1582	1643	1579	1641	...
including					
terrestrial	1576	1637	1573	1635	...
- railway	339	322	313	306	314
- automobile	1122	1206	1147	1232	...
- pipeline	115	109	113	97	78
water	6	6	6	6	5
- marine	2	2	2	2	2
- river	4	4	4	4	3
air	0,1	0,1	0,1	0,1	0,1

Compiled by the authors based on [6].

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Thus, freight transportation by all modes of transport as a whole increased from 1,582 million tons in 2017 to 1,641 in 2020. However, a certain decrease was noted in 2019 (to 1,576 million tons). Similar dynamics were observed in individual modes of transport. So, in particular, transportation by land transport increased from 1,576 million tons in 2017 to 1,635 in 2020. The figures for freight transportation by water transport are stable, but their share in the total amount is insignificant.

Road transport occupies the largest share in the structure of freight transportation. A large share of cargo to the EU goes through Poland. Poland is the main transit country for Ukraine's entry into EU markets. However, the limited number of permits for transportation to Poland leads to significant losses for Ukrainian operators and increased downtime of trucks. Obtaining a sufficient number of permits from Poland is crucial for meeting the demand for transport services of EU countries. The annual need for transport permits to enter Poland is 240,000, while Poland has reduced the number of permits issued from 260,000 in 2015 to 200,000 in 2018 and to 160,000 in 2019-2020 [7].

Another problem in the field of road freight transportation is the migration of drivers and the lack of qualified personnel in the field of logistics. The idle time of trucks of Ukrainian road carriers has increased to approximately 20% due to a lack of permits. Currently, each truck can make 25 trips per year, while in previous years there were 35. This situation has a negative effect on truck drivers. They cannot gain the minimum number of working hours and therefore immigrate to Poland and the Baltic countries in search of better prospects. According to estimates, about 40,000 drivers have already left Ukraine, and about 85% of drivers working in Lithuania are Ukrainians [8].

In addition, cross-border transactions are inefficient. The average waiting time at border crossing points is 2-3 days. The delay on departure is an average of 2 days, then on entry to Ukraine - 1 day. This means that, on average, about 15% of the 14 days of transit time (a standard round trip for EU-Ukraine transport) is spent at the border and another 1-2 days (about 10%) at customs for customs clearance at the destination. As a result, about 25% of the time is spent crossing the border and going through customs procedures at the destination. The European Business Association (EBA) appealed to the Council of Europe, Ukrainian and Polish state structures with a call to establish communication and cooperation in order to resolve the issues of queues for cargo transportation at the borders [9].

The situation worsened significantly with the start of a full-scale war on the territory of Ukraine. At the customs checkpoints between Ukraine and Poland, significant queues of goods have formed. The duration of crossing the border by trucks



with products subject to inspection by veterinary control services is ten days. The waiting time for the crossing of other cargo ranges from five to ten days or more. However, according to Ukrainian legislation, customs clearance of cargo must be carried out within four hours from the moment of arrival at the checkpoint. The list of goods subject to exclusion is quite comprehensive and is prescribed in the Customs Code. However, these regulations are difficult to implement, as the EU is extremely slow in completing the formalities, in particular due to the recent strike by Polish carriers near the border. This resulted in a queue of 3,500 cars piling up at the Yagodin checkpoint. "Krakivets-Korchava" PE passes approximately 117 trucks per day, although earlier this indicator reached 440 trucks. The situation is no better at other checkpoints. All this affects doing business in Ukraine, Ukrainian and European supply chains. For Ukraine, these are direct losses amounting to hundreds of thousands of euros per month, the reason for changing routes and possible duplication of business branches in other countries, etc.

Such delays lead to direct losses for EU countries. A significant number of shipments delayed at crossing points are goods bound for a number of EU countries (in transit through the Republic of Poland). These are, in particular, cargoes of production enterprises with European investments, which carry out processing operations of the same European goods on the territory of Ukraine.

The situation at the border can provoke disruptions in supplies to partners, production failures in Poland, or even a partial stoppage of production.

Speaking about the interconnectedness of the economies of Ukraine and EU countries, in particular Poland, it is worth considering the statistics of the Polish Ministry of Agriculture, according to which in 2022 the country exported agricultural products worth EUR47.6 billion, which is 26.7% more than last year, when it imported agricultural products (raw materials from Ukraine) - by EUR7 billion more, increased the export of meat and meat processing products by 37% and the export of grain and cereals by 40%. This effect can be explained by the re-export of Ukrainian products. And the main sales market is the EU countries, where 29% more exports went in 2022 [10].

Such a situation at customs undermines the possibility of applying the Agreement between Ukraine and the EU on the carriage of goods by road transport, as well as the Regulation of the European Parliament and the Council No. 2022/870 on temporary measures to liberalize trade. Due to the impossibility of carrying out transportation or delivery of cargo within a reasonable time, the liberalization of transportation and the reduction of customs duties cease, unfortunately, to fulfill the mission for which they were introduced.



It is extremely important to continue to work together and in harmony, as this creates additional added value - both for products, and for business development, and for the economies of countries in general. Ukraine can help create this added value.

The need to improve the regulatory framework in the field of road transport and to introduce a licensing system for domestic transportation is ripe.

An important issue is also the aging of the vehicle fleet, which leads to breakdowns of vehicles, road accidents, delays in the delivery of goods and an increase in transport costs.

Weight restrictions for transportation on the "last mile" are one of the serious obstacles to increasing the competitiveness of not only road, but also intermodal transport. The most important type of return cargo in Ukraine is heavy raw materials, as a result of which rail transportation of cargo in containers is preferred. However, due to weight restrictions, the delivery of containers to domestic terminals and back is limited to 44 tons (the maximum permissible total weight of container trucks on the roads of Ukraine), which is not enough for the transportation of heavy containers, but is necessary for weight control and road safety.

The condition of the roads is one of the most problematic areas of the road industry in Ukraine, especially in the south, where the roads leading to the border with Moldova and Romania are in very poor condition (except for the Odesa-Reni highway). This significantly increases the operational and service costs of trucks, especially for the transportation of oversized cargo, for which the quality of the roads is crucial.

Transportation by rail occupies an important place in the general structure of freight transportation.

Low reliability and quality of railway services, which is caused by a low level of security and safety of cargo, as well as delays in the delivery schedule, which is caused by insufficient capacity of the railway infrastructure at the approaches to ports, a lack of rolling stock and a low level of provision of railway services [11].

The adoption of the Law "On Railway Transport" is of crucial importance for the future of railway transport in Ukraine. This law introduces significant changes in the development and institutional organization of the rail transport sector, establishing a number of provisions that will allow for the modernization and liberalization of the sector. In addition, it will meet the requirements of the Ukraine-EU Association Agreement.

An important factor for improving the quality of railway services and promoting the development of modality in Ukraine is the renewal of rolling stock, especially freight locomotives. The railway park of Ukraine is extremely outdated and significantly worn out. Almost 96% of the locomotives are over 25 years old, and their



wear rate is 93-97%. Planned maintenance of rolling stock is carried out depending on the number of kilometers traveled by the rolling stock or according to the schedule. In general, rolling stock maintenance facilities are in poor condition, equipped with outdated equipment and are not suitable for servicing new modern rolling stock.

It is necessary to pay attention to the improvement of train traffic management. Currently, the management of train traffic is decentralized, the operation of most control centers is controlled at the regional level, and dispatch services control the operation of small local stations. Train traffic management, traffic regulation and schedule changes are still done manually by tracking the actual train schedule and comparing it with the theoretical schedule. As a result, the system becomes more difficult to manage, reduces the ability to respond in the event of an incident, and generally reduces security.

The volume of international container railway transportation services remains low. In the period from 2017 to 2019, the volume of international rail container transportation in Ukraine gradually increased. It is necessary to continue expanding these services in order to ensure regular and reliable transport connections between Ukraine and its main trade partners. Intermodal rail transport must be competitive with road transport in terms of reliability, flexibility, speed and cost.

It is important to pay attention to the implementation of services that contribute to the development of modality. The possibility of introducing new railway services between Ukraine and the EU countries using interchangeable bodies and ROLA should be considered to create new opportunities for transshipment of goods from road transport to rail. ROLA is also an effective alternative to overcome the problem of lack of transport permits with Poland. The lack of transport permits leads to a significant loss of income for Ukrainian logistics operators and an increase in truck idle time.

The development of new international rail transport with EU countries, especially with Poland, Germany, the Netherlands and the Baltic countries, as well as the TEN-T Rhine-Danube corridors are the most promising directions that should be developed in cooperation with private operators. The development of rail container connections with these trade partners will allow optimizing the export of heavy raw materials from Ukraine and provide an attractive alternative for imports, as well as transit from the European deep-sea ports of Hamburg and Rotterdam to Ukraine [12].

Freight transportation by water transport amounted to 6 million tons in 2017-2020 and 5 million tons in 2021. Before the war, 75% of foreign trade was in seaports, which were blocked after February 24, 2022. Therefore, import and export flows had to be directed to river ports and land routes, in particular, to motor vehicles. According to the State Statistics Service, in 2021, motor vehicles transported almost 1 million tons



of goods in international trade.

Among them are food, cigarettes, furniture, wood, paper, metals. Agricultural products accounted for 5% of transportation, the same amount for coke and fuel. Due to the war, the distribution of products changed significantly. In particular, the volume of supplies of agricultural products has increased - Ukraine traditionally exports the most of them.

The main problems of freight transportation by water transport are the lack of intermodal connections with the main container ports, especially with the ports of Odesa, which reduces the efficiency of port operations, as well as the reliability of intermodal services. High port fees increase the costs of shipping companies, hinder the growth of competitiveness of ports and negatively affect transit through Ukraine. Administrative barriers, including passing customs procedures at ports, increase the waiting time for cargoes, as well as the idle time of vehicles.

The need to simplify procedures through the development of the "Single Port Window" is ripe, important for the implementation of the possibility of transparent control in ports and simplification of administrative procedures. Thanks to the implementation of such systems, Ukrainian ports will be able to better plan transport operations between the port and the hinterland, thereby easing / reducing traffic congestion in and around the port, as well as more effectively plan further logistics operations.

Internal water transportation is inefficient, which is caused by the limited capacity of the locks and the limited depth and capacity of the canals.

In addition, the infrastructure of river ports is outdated. The condition of many facilities in the river ports of Ukraine, with the exception of grain and container terminals, is characterized by outdated and worn-out port equipment: only grain terminals were built less than 20 years ago, all other port facilities (equipment and infrastructure) are over 50 years old. There are no container terminals in river ports, which hinders the development of competitiveness of inland water transport and limits the development of intermodal transportation.

The total volume of cargo air transportation is 0.1 million tons per year during the studied period.

The main problem is the lack of a strategy for the development of cargo air transportation, which is necessary to determine the most priority directions for the development of cargo air transportation in Ukraine.

It is necessary to attract international cargo air transport operators to Ukraine to support the development of this sphere.

It is worth paying attention to logistics and intermodal transportation.



An important problem is the lack of a developed logistics infrastructure. To date, there are no integrated logistics facilities in Ukraine (for example, logistics centers and clusters), which prevents the transformation of the logistics system of Ukraine from a point-to-point model to a hub-and-spoke model with the development of centralized strategic networks to distribute cargo instead of relying on direct route operations that can be inefficient. Ukraine needs to implement measures aimed at creating multi-purpose state logistics platforms of various sizes and functions, provided with appropriate functional capabilities, as well as physical conditions to promote the development of intermodality and wider use of rail transport, as well as organizational conditions to increase the competitiveness of independent intermodal companies that work on these logistics platforms.

In addition, it is necessary to develop a network of domestic container terminals. The insufficient capacity of the existing container terminals and their condition cannot meet the future growth potential of intermodal transportation in Ukraine. It is necessary to analyze the increase in the capacity of terminals to ensure regular rail connections between ports and the main production markets, as well as consumption centers in Ukraine, and to ensure the economic efficiency of cargo transportation without intermediate transshipment operations.

The lack of access of private companies to the provision of intermodal services is also an obstacle to successful development. The limited access of private operators to intermodal transportation limits private investment in intermodal transportation and hinders increased competitiveness. It is necessary to develop attractive programs for the involvement of private operators in the field of transport and logistics. Such a policy will give confidence to the private sector regarding the development of logistics infrastructure projects based on public-private partnership.

The need to improve national legislation for the development of multimodal transportation is ripe. In addition to Directive 92/106/EC on the establishment of common rules for certain types of combined transport of goods between member states, there are a number of relevant EU policies and rules in the field of rail and road transport that Ukraine must implement in accordance with the Ukraine-EU Association Agreement and which are of crucial importance for the development of intermodal transportation in the country.



Conclusions.

In the field of logistics, insufficient development of competences. Qualified specialists are critically important for the development of logistics in Ukraine. Knowledge in the field of logistics and understanding of the implementation of the best international practices are very important for the development of the transport industry of Ukraine. It is necessary to improve the education system in the field of logistics to ensure the training of specialists with the necessary managerial and technical skills to meet the needs of the future logistics market.



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