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IMPROVING THE EFFICIENCY OF TRANSPORT OPERATIONS IN THE LOGISTICS SYSTEMS OF THE AGRO-INDUSTRIAL COMPLEX

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One of the strategic tasks of the functioning of road transport is the development and implementation of efficient technologies and transport and logistics processes aimed at reducing the costs of transporting goods and improving the quality of transport services [1]. Improving the efficiency of the logistics of the agro-complex is possible if there is a well-functioning transport and logistics system that will reduce the unit transportation costs per unit of output. The development of motor transport infrastructure is an integral part of ensuring the efficiency of the main production of all agricultural enterprises and the agro-industrial complex as a whole. Therefore, the issue of increasing the efficiency of technological processes in the transport and logistics system in its interaction with the agro-industrial complex is relevant and in demand [2].

In agro-industrial production, in view of the peculiarities of its functioning, a significant list of transported goods is specific, road transport of goods is, as a rule, part of the beginning, continuation or end of the pre-production process, the direct production of any agricultural product, its processing and sale [3].

Currently, regional approaches are becoming increasingly important to ensure the efficiency of the operation of freight road transport based on the principles of its system-synergetic integration into transport and logistics systems and the transition from the processes of purely physical transportation of goods (transportation) to the processes of providing transport and logistics services. This involves the oncoming movement of the interacting parties: the creation by the customer of cars (consumers of auto services), for the haulier of the necessary conditions for the latter to display effective logistics activity; the ability of a haulier to effectively use these conditions for the manifestation of logistics activity and the organization of the entire complex of transport and logistics processes for each serviced enterprise and the agro-industrial complex as a whole.

An important condition for ensuring the efficiency of the system, maintaining its process-oriented environment and self-regulating processes is information support, which is built taking into account the real capabilities of the system and the relationship of the main processes of transport services. This information will allow creating conditions conducive to the timely transportation of goods, speeding up their delivery, reducing the cost of transportation of both an individual enterprise and the agro-industrial complex as a whole, taking into account the transport needs of personal subsidiary plots and farms.

A variety of conditions in which agricultural enterprises operate and a wide standard size of their products contribute to the formation of tasks of varying complexity. Therefore, the existing management system of the transport system of the agro-industrial complex is influenced by many factors, such as: timeliness of delivery, transportation safety, quality of transport services, and the environmental aspect. Determination of these factors and their ranking will improve the technology of transport system management on the basis of system-target and functional-technological approach.

An analysis of approaches to assessing the level of competitiveness of motor transport organizations in the agro-industrial complex shows that the above indicators do not allow for a comprehensive and objective assessment of their activities in the service market, therefore, it is necessary to establish an integral indicator that includes competitiveness criteria: the efficiency of agro-industrial complex maintenance, marketing effectiveness and financial stability.

References.

1. Vojtov, V., Kutiya, O., Berezhnaja, N., Karnaukh, M., Bilyaeva, O. Modeling of reliability of logistic systems of urban freight transportation taking into account street congestion.

Eastern-European Journal of Enterprise Technologies. Vol. 4, no. 3 (100), pp. 15–21. 2019. https://doi.org/10.15587/1729-4061.2019.175064.

2. Muzylyov, D., Shramenko, N., Karnaukh, M. (2021) Choice of Carrier Behavior Strategy According to Industry 4.0. In: Ivanov V., Trojanowska J., Pavlenko I., Zajac J., Peraković D. (eds) Advances in Design, Simulation and Manufacturing IV. DSMIE 2021. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-030-77719-7_22.

3. Dmitriy Muzylyov, Andrey Kravcov, Mykola Karnaukh, Natalija Berezchnaja, Olesya Kutya. Development of a methodology for choosing conditions of interaction between harvesting and transport complexes. Eastern-European Journal of Enterprise Technologies 2 (3), 11-21. 2016.

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ORGANIZATION OF CARGO TRANSPORTATION IN THE TRANSPORT AND LOGISTICS SYSTEM

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The analysis of the conditions of the functioning of transport systems shows that the implementation of constantly growing needs for the transportation of goods and passengers at a high level of motorization is accompanied by significant transport costs, losses of material, financial and labor resources [1]. Therefore, the main trends in the development of methods and means of managing transport systems consist in more efficient use of the existing infrastructure in order to compensate for the negative effects of sharply increasing volumes of traffic on social and environmental processes [2].

However, at the current stage of the development of transport systems at all hierarchical levels, contradictions have intensified, connected, on the one hand, with significant achievements in the field of information technologies, computer equipment, means of communication, navigation, information collection and processing, and technical means of organization traffic, and on the other hand, with the lack of the necessary amount of scientific knowledge to use the entire range of functional capabilities of new technologies in the organization of transportation and traffic. Solving this problem becomes particularly relevant against the background of general global trends manifested in the development of intelligent transport systems (ITS) - a complex of integrated means of traffic and transportation management based on high technologies, methods of modeling transport processes, organization of information flows in real time [3].

The main directions of the development of intelligent transport systems allow solving the task of dynamic provision of information about the traffic route, organization of priority route traffic, prevention of traffic jams, detection of traffic accidents and elimination of their consequences, information provision of all participants of the transport process at a new level. Thus, intelligent transport systems are an effective tool for managing infrastructure and resources, allowing to increase mobility and transport accessibility, the efficiency of using the transport network, and road safety.

One of the main conditions for the effective use of ITS functionality is their integration. The basis for the creation of ITS is the existing automated traffic management systems, route traffic management systems, automated traffic accident detection systems, route navigation systems, road network management information systems and other road traffic and transportation management subsystems. The specified systems and decentralized information databases are combined to function in a common ITS.

Since most of these tasks are complex, models of the theory of transport flows must be integrated in such a way as to solve the tasks of organizing transportation and traffic, developing the transport system, assessing the quality of the functioning of the transport system, and predicting traffic conditions. Virtually all models, including micromodels of car traffic, must be adapted to network-level applications. Given the stochastic nature of road traffic, the dynamics of changes in parameters in time and space, the process of qualitative assessment and forecasting of changes in