

warning machines about their malfunctions. All this data will prevent equipment downtime and greatly speed up the work of the logistics department.

Currently, some enterprises use GPS monitoring systems, and all statistical data prove that this system should be implemented in agriculture.

In general, the operation of this system is simple and convenient and does not require special training. On the portable monitor, which is installed in the driver's cabin, the lines of movement of the machine are automatically calculated and projected based on data on the width of the machine. This monitoring system is a very promising and progressive solution for logistics operations. These technologies, keeping pace with progress, will lead to stable growth and development of agricultural enterprises.

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IMPROVING THE EFFICIENCY OF THE TRANSPORT AND LOGISTICS SYSTEM WHEN DELIVERING GRAIN CROPS FROM THE FIELD

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One of the most important directions in the development of the transport system is the optimization of cargo flows and the improvement of the level of interaction between modes of transport. Route shipments of mass cargo allow to synchronize the operation of road transport with railways and ports [1]. Existing forecasts of the dynamics of grain market balance indicators indicate the possibility of increasing the volume of production and export of grain and entering new sales markets [2].

Increasing the production, consumption and export of grain with modern capacities for its storage and transshipment, as well as increasing the throughput of the transport and logistics system (TLS) due to the construction, reconstruction and technical re-equipment of agricultural and port elevators - terminals and the use of advanced transport technologies is in the national interest state for the long term and increases the competitiveness of grain producers [3].

Changes in the economic model of the grain market revealed the inconsistency of the existing TLS of grain transportation to the growing needs in transportation, including: low intensity of grain cargo processing at elevators due to outdated equipment; insufficient total capacity of elevators in grain production areas and in the immediate vicinity of transport hubs leads to an increase in transportation time and costs; in peak periods of one-time presentation of grain cargoes for transportation by shippers, transport networks work at the limit of their capabilities, there is a shortage of grain wagons and locomotives at stations to ensure uninterrupted transshipment of grain, and the use of road transport for distances of more than 500 km is economically inefficient; due to the shortage of port capacities, transshipment prices are increasing and the competitiveness of exported grain is decreasing.

Based on the above, research in this direction is due to the need to significantly reduce infrastructural limitations and the share of logistics costs when supplying grain for export and are relevant and in demand.

The construction of a balanced system of transport, elevator and terminal capacities, which allows meeting the needs of domestic and foreign markets, is aimed at solving two main tasks: ensuring the country's internal needs for grain and increasing grain exports.

However, the formation of the grain market with an export economic model revealed the need for extensive development and the inadequacy of grain logistics infrastructure. The main infrastructural objects of the grain logistics system are elevators, which perform the functions of storage and distribution centers that form regional grain cargo flows. The development of TLS for grain transportation should provide for the consolidation of grain shipment points for rail transport in grain-producing regions and the routing of transportation to sea ports. It is necessary to introduce routed road trains, increase transshipment capacities, and develop the track management of elevators.

The formation of the export logistics system, based on the harmonization of elevator capacities with the use of loading and unloading routes, corresponds to the best global practice of mass transportation of grain and will create sustainable incentives for the development of its production.

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