Висновок. Таким чином, тепловий потік, відповідає фактичної теплової потужності пристрою та перевищує значення номінальної потужності, вказане виробником для всього діапазону коливань температури, в середньому на 23 Вт (або 11% у номінальних умовах).

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OPTIMALITY CRITERIA FOR TRANSPORT LOGISTICS OF PRODUCT MOVEMENT IN THE ELEVATOR

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The analysis of methods of construction of transport logistics routes of the elevator complex was performed to determine their shortcomings and promising ways to optimize the existing management system. As a result, a new method of constructing technological transportation routes was determined, which is based on the application of relevant criteria.
Keywords:*optimal route, minimum energy, minimum grain loss, control algorithm, elevator logistics.*

Statement of the problem, analysis of the latest research and publications. The main goal of transport logistics is to solve the problems of laying out transportation routes that would ensure the minimum distance of transportation, the minimum time of equipment involvement for the transportation process, and the minimization of costs for moving products [1]. The main method for solving this problem is the traveling salesman method, which has become widely used in the development of transport routes for transporting products to consumers, the content of which is to find the shortest route for moving products for a given number of points without crossing transport lines that form loops of the route, taking into account profitability criteria, which consist in the time of movement, the cost of transportation, the length of transportation [2].

The purpose of research. To analyze the possibility of improvement and the influence of certain criteria on the transport logistics of the elevator.

Research result. In Figure 1, we can see the dependence of the optimization route on the optimization criteria, which in turn help to lay the appropriate transportation route. In [3] it was noted that using optimization criteria, we can choose a more appropriate transportation route from pre-programmed ones. Despite the fact that this application of the criteria is effective, nevertheless, taking into account the need to improve technological indicators and reduce the resources spent, the idea arises to apply the specified criteria at the time of laying the transportation route. That is, the transport route will be built in real time, based on the given criteria and received information about the state of the equipment, which will make it possible not only to build the route, but also to change it depending on the needs. By changing the criteria, we can build alternative transportation routes that will differ from the standard ones, this opportunity will give us greater mobility at the same costs.it is necessary that the grain be of the necessary export quality, and for this it is often necessary to artificially mix different batches, which is possible by laying alternative routes.

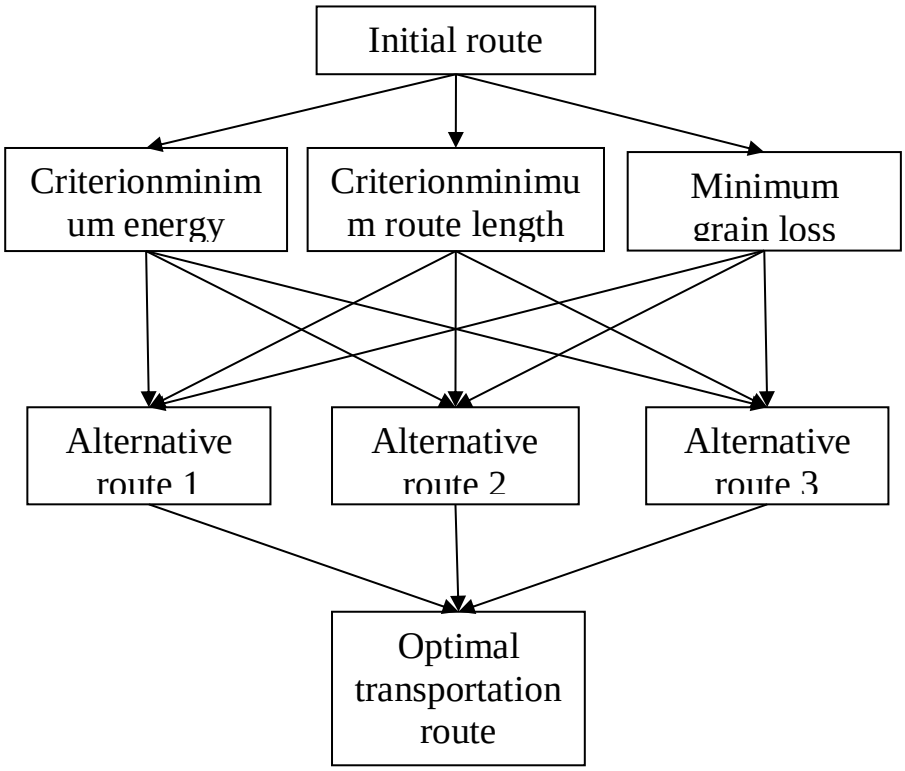

Fig. 1. Scheme of connections of optimization criteria and laying of alternative transportation routes

Also, considering grain batches, it can be mentioned that the grain that goes for export requires higher quality, in this case, using the criteria of minimum loss of grain and the length of the route will give us the opportunity to lay out a route along which the fighting coefficient of the grain will be reduced, which will increase its quality indicators.

Using the specified construction principleof technological routes [2,3], can also be used to solve the problem of building an alternative transportation route, which will take into account not only the previously indicated optimality criteria, but also the criteria of the length and time of transportation, which will give us the opportunity to increasedownloadenterprises. And sha prominent process of modeling the optimal route of transportation, increases the speed of loadingtransport equipment, which in turn leads to increased efficiency at the same capacities.However, the solution to this taskpossible based on the creation of a multi-criteria optimization algorithm.

Conclusion. Having analyzed the modern methods and control systems of the technological processes of grain transportation on the elevator, the main shortcomings were identified, which to one degree or another affected the productivity and quality of the technological process. To eliminate the identified shortcomings, the need to use criteria that would provide the necessary conditions for optimizing the transportation route was determined. Optimization means the construction of a shorter and more productive transportation path that would ensure efficiency and economy, using appropriate criteria. The following criteria were chosen: minimum total transportation time, minimum route length, energy efficiency, and minimum grain losses.The application of this method makes it possible to determine the technological route of grain movement from the selected routes, using the principle of optimality and taking into account the program-logical technological blocking of influences on the technological process and its quality indicators.

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