ABSTRACT

Topic relevance. Today, road transport are an important role in determining the agenda and organization of cargo transportation planning in the Armed Forces of Ukraine, namely for military air defense forces of the country. There is a need to improve planning and accounting organization of road transport for air defense military unit, reducing the number of cars and trains operated daily, increasing the efficiency of their use, strengthening discipline transport of goods and passengers by road military unit. Control of shipments, conducted for the military defense of the Armed Forces in peacetime and wartime.

Thesis connection to scientific programs, plans, and topics. The thesis was prepared according to the scientific research plan of the Applied Mathematics Department of the National Technical University of Ukraine "Kyiv Polytechnic Institute."

Research goal and objectives. The aim of the thesis is to develop a unified system of a motor unit of the military defense of the Armed Forces.

To accomplish this goal, the following objectives were reached:

– the theoretical solution to problems motor control unit of the military defense of the Armed Forces;

– discussed means of implementing motor control problems of the Armed Forces;

– reasonably methods and tools for solving this problem;

– unified management model designed motor unit of the military defense of the Armed Forces;

– designed software;

– developed software.

Object of research is the methods, models and controls a motor unit of the military defense of the Armed Forces.

Subject of research is mathematical model of the motor control unit of the military defense of the Armed Forces.

Methods of research. To solve this problem, the following methods: the method of branches and boundaries, greedy algorithm, the traffic problem, the mathematical model of the traveling salesman problem, genetic algorithm, inventory control theory, queuing theory, methods of determining the effectiveness of management.

Scientific contribution consists of the following:

- first developed a unified model of the motor control unit of the military defense of the Armed Forces, which has no analogues;

- first unified model based motor control system of air defense military unit AFU integrated into GIS.

Practical value of obtained results. A unified model that can be used to drive a motor unit of military defense. Unified model will increase the efficiency of road transport air defense military unit.

Approbation of the thesis results. Basic ideas and results of the research were presented at the IV International scientific conference of young scientists and students "Actual problems of modern technology", held 25 - 26 November 2015 in Ternopil National Technical University named after Ivan Puluy [1].

Publications. The results of the thesis described in scientific publications and theses of international conferences, the article of the scientific journal "Visnik TNTU."

Keywords: standardized model, control system, mathematical model, motor unit.