A. Ischenko, Bachelor student,
K. Kuzmin, Bachelor student,
O. Kravchenko, PhD in Engr., Prof., research advisor
N. Krushynska, lecturer, language advisor
Zhytomyr State Technological University

DETERMINATION OF KEEPING STORAGE PARTS AT CAR ENTERPRISE WAREHOUSE

Keeping the rolling stock of motor vehicle in an efficient condition is provided by the fund spare parts. The size and nomenclature of reserves play an important role of transportation costs. Therefore there is an acute problem in the feasibility of storing parts, components or aggregates in storages of enterprises. Determining of the problem will save the company's resources. Criteria approach of company's work quality indicators can be taken for calculation methodology basis.

To calculate the amount and list of funds of vehicles spare parts there are a lot of methods based on an average mean life, account of various operational factors etc. New approaches of forecasting spare parts demand are based on hybrid neutral networks with the help of statistical data.

While forming spare parts storage it is necessary to consider the cost of details necessary for routine maintenance and replacement (lubricants, brake pads, batteries, tyres etc.) Therefore the method should take into account limited financial resources available to support the enterprises warehouse of spare parts to allocate these resources for planned repairs and provision of spare parts for unplanned substitutions which principles of determining, nomenclature and quantity are fundamentally different.

One of the main characteristics of motor work transport undertaking is the coefficient of technical readiness of automobile which is defined in detail of *i* type as the relation of time intact work t_{iwork} to the amount of intact work time t_{iwork} and downtime $t_{irepair}$ of automobile taken on some calendar dates.

Due to random nature of these values they are accepted as the average (for all vehicle of this type), values in the expression for the coefficient $k_{i.}$ Moreover, the readiness coefficient for the entire vehicle *k* is determined on a "weak link", for instance:

$$k = \min_{0 \le i \le n} k_i$$

Previous calculations show that the lack of details in a warehouse can make significant change of availability factor and thus violate the restrictions adopted in practice $k \ge 0{,}86$. Therefore there is a task to use the criterion that displays the details of the storage type in a warehouse especially as real time of waiting the replacement part may differ from standard.

The example of changes in technical readiness of one hundred and sixty Mercedes-Benz Actros 1844 LS vehicles led us to the conclusions about the feasibility of storing spare parts in stocks.

The results of calculations determining the appropriateness of storage details of the car Mercedes-Benz Actros 1844 LS

Detail	Delivery time, hour	Price, hryvnya	Breakage probability	Expediency
Cylinder sleeves ICE	24	8131,26	0,0000319	Not to save
Thermostat	1	276,72	0,0000536	Not to save
Bearing generator	24	1136,04	0,0000578	Not to save
Pneumatic spring	24	5243,04	0,0000666	Not to save
Caliper brakes	336	30235,56	0,0000531	To save
Injectors	336	16458,72	0,0000587	To save
Brake control module	336	22313,34	0,0000600	To save
EPS block (modulator of gear box)	336	3816,54	0,0000951	To save

Table1

The proposed method can be used in determining the optimal nomenclature and amount of spare parts for motor companies.