Eshimov Sodiq Saydulla o‘g‘li
Master's student, Termez State University of Engineering and Agrotechnology
Karshiev Faxriddin Umarovich
Acting Professor, Doctor of Technical Sciences (DSc), Termez State University
https://orcid.org/0009-0003-3067-7418

INCREASING THE EFFICIENCY OF AUTOMOTIVES THROUGH RECONSTRUCTION OF AUTOMOTIVE TRANSPORT ENTERPRISES

Abstract. This article considers ways to increase the efficiency of road transport by reconstructing them based on an analysis of the technical and operational condition of motor transport enterprises in the Republic of Uzbekistan. The issues of equipping the technical service and current repair system with modern technologies, increasing environmental safety, reducing fuel consumption and extending the service life of cars are analyzed. The practical recommendations presented in the article are aimed at optimizing the diagnostics, washing, cleaning and repair systems of cars.

Key words: motor transport enterprises, reconstruction, technical maintenance, efficiency, diagnostics, technology.

ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ АВТОМОБИЛЕСТРОЕНИЯ ПУТЕМ РЕКОНСТРУКЦИИ ПРЕДПРИЯТИЙ АВТОТРАНСПОРТА

Абстрактный. В статье рассматриваются пути повышения эффективности работы автомобильного транспорта путем его реконструкции на основе анализа технико-эксплуатационного состояния автотранспортных предприятий Республики Узбекистан. Анализируются вопросы оснащения системы технического сервиса и текущего ремонта современными технологиями, повышения экологической безопасности, снижения расхода топлива и продления срока службы автомобилей. Представленные в статье

практические рекомендации направлены на оптимизацию систем диагностики, мойки, очистки и ремонта автомобилей.

Ключевые слова: автотранспортные предприятия, реконструкция, техническая эксплуатация, эффективность, диагностика, технология.

Introduction. Currently, road transport is gaining importance as an integral part of the economic system. Population growth, expansion of industry and trade, and increased demand for transport are leading to an increase in the number of cars. At the same time, the technical condition of transport enterprises, service infrastructure and management systems are not always ready for these changes. Most of the existing road transport enterprises in our country are not equipped with modern technical equipment, and their production bases do not meet modern technological requirements. This negatively affects the efficiency of vehicles.

Research methodology According to the analysis, currently more than 40% of trucks in Uzbekistan have a service life of more than 10 years.

The fact that most of the existing vehicles do not receive timely and full technical maintenance, outdated spare parts and ineffective diagnostic systems leads to the following reasons:

-Increased fuel consumption (up to 10–15%);

-Decreased reliability (an average of 2.3 failures per 10,000 km);

-Excess of harmful gases emitted into the environment, in particular, by 1.5–2 times.

In terms of reconstruction directions and technical solutions, it is advisable to carry out the reconstruction of motor transport enterprises through re-equipment in the following areas:

Upgrading of technical service (TS) workshops:

Computerized diagnostic stands (OBD-II, 3D Scanner)

Accurate and quick detection of malfunctions, reducing the risk of improper repairs.

Increases work efficiency by 25%.

Hydraulic lifting lifts

Increases the safety and speed of repair work, allows for the effective use of labor.

Figure 1. Computerized diagnostic stands

OBD-II

Modernization of washing and cleaning systems:

Tunnel-type automated washing systems

Allows cleaning of 8–10 trucks per hour.

Water savings: 30–40%

Workforce: 1 person instead of 2

Contactless washing technology

Does not damage varnish and paint surfaces, environmentally friendly.

Water recycling systems

Allows 70% of water to be reused in each washing cycle.

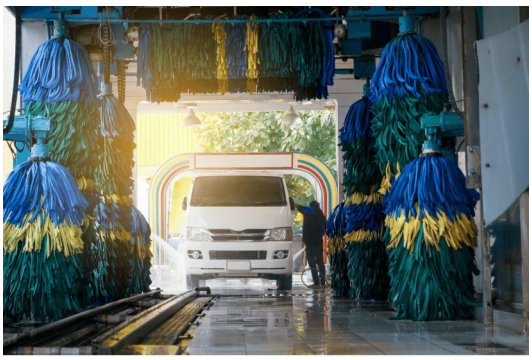

Figure 2. Tunnel-type automated washing systems

Equipment for repair shops:

Lathes (CNC type)

Precisely prepare various metal parts, reduce procurement costs.

Hydraulic presses and welding machines

Improve the quality of mechanical repair work.

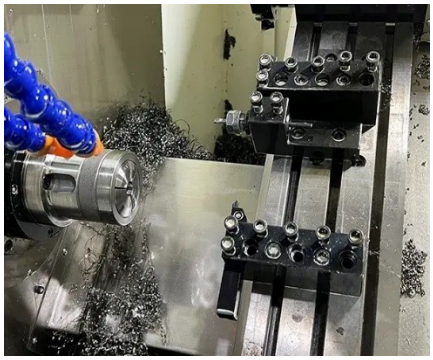

Figure 3. Lathes (CNC type)

Recommendations:

- It is necessary to organize the T&C workshop for each motor transport enterprise as a minimized automated complex;

- Financing of technologies to be reconstructed through investment programs by the state and private sector;

- Encouraging local manufacturers to produce modern equipment;

- Digitalization of T&C processes and introduction of monitoring platforms.

CONCLUSION. Reconstruction of motor transport enterprises will increase the technical efficiency, environmental safety, service life and economic efficiency of vehicles. This process is theoretically based, proven by practical examples, and is considered an important promising direction for implementation in the conditions of Uzbekistan.

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