YA Tarnovo. - Tambov, 2001. - 33 p.

Article posvyaschena analysis work and loading regimes engines samohodnыh lesnыh machines with tselyu method of application definitions tselesoobraznosty regulation-power engines эtyh machines otklyuchenyem otdelnыh workers cycles for Improvement s Ekonomicheskie and ecologically indicators.

Tractor, engines, diesel mode, Downloads, toplyvnaya эkonomychnost, holostoy Hod.

The paper presents the analysis of operation modes and load of mobile forest machines engines. It is done with purpose of determination of suitability of application of method of power regulation multicylinder diesel engines of these machines by means of separate working cycles swiching-off for improvement of their economic and ecological indicators.

Mobile forest machine, tractor, engine, diesel, mode, loading factor, fuel efficiency, idling.

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MAIN AREAS OF IMPROVEMENT vehicle maintenance in agriculture

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The analysis of measures to reduce transport costs for cooperative maintenance of vehicles in agriculture and improvement of the basic principles of cooperative forms of vehicle maintenance in agriculture Ukraine.

Car, maintenance, repair, garage nekompleksnyy, transport costs.

Problem. It is known that the most effective form of maintenance (MOT) cars cooperative enterprises is a form of participation of regional stations and vehicle maintenance (STOA). Increased centralization of operations and repair of rolling agricultural sector allows, on the one hand, reduce the total cost of material and technical basis, wage costs, spare parts, materials, energy and other resources, to reduce the

negative impact on the process MOT environment, improve the quality of repair and service work. On the other hand, leads to a significant increase in traffic of vehicles and their components for STOA and specialized repair company. Currently, one of the main factors limiting the effectiveness of cooperative forms of vehicle maintenance APC, there are significant transport costs associated with the movement of vehicles on farms and STOA back for maintenance. We call such moving car technology.

Due to the constant increase in the cost of fuel a steady trend of rising costs of these technological transportation.

Under the recommended radii centralize the cost of fuel it takes to transport vehicles to Stoa, not only can significantly exceed the effect of centralization, and the cost and maintenance of a certain type.

So important is the problem of finding ways to improve the co-operative form that would allow technology to significantly reduce transport costs.

Analysis of recent research How to optimize maintenance of machinery in agriculture are devoted prof. Ludchenka OA, prof. Moon M. Sci. Naumenko AA, prof. Sidashenka AI and other scientists. However, they considered methods of organization, in which the company centralized service delivered by the machine as a whole, rather than some of the elements.

PThe results of research. You can define the following ways to cut costs on transportation technology associated with the delivery of rolling stock on the Stoa.

1.Increase the value of vehicles operating time between failures due to a renovation of rolling stock and improve the quality of performance of repair and service work.

2.Ontechnological unity Haulage car at Stoa of Haulage for cargo (laden) in the district center, which is usually located Stoa.

3.Work at STOA during-2 related ongoing repairs with replacement units and units that do not residual life.

4.The increase in the total amount of maintenance, running on

5.STOA, the share of past labor to create exchange fund units and units (AV) for fleet households served.

In this economy takes SCHTO, SO-1 and rolling stock assembly and dismantling, lubricating and adjusting if necessary work associated with the replacement AB. and STOA-2 carries cars, creating AB exchange fund and deliver them to the farm. Analyze given way.

The first way requires substantial investments in renovation of rolling stock. Given that about 80% of cars in agriculture worn, the process of renovation fleet AIC can be quite lengthy. With the current

level of wear rolling stock required minimum rate of renewal shall be 20% per year. Make it at present farms financially able.

The second is more than 90% of the works and repair of rolling stock running in garages farms with outdated equipment in the absence of modern diagnostics and skilled performers. Therefore, you should not expect an increase and a gradual decrease in operating time between failures cars.

The second way has some potential due to the presence of stable freight traffic between farms and towns. On farms in the district center carrying crop production and livestock, and from the district center - industrial products, fuel, construction materials, fertilizers, etc. However, the organization related to the Stoa races associated with a number of objective difficulties of technical and organizational problems. When you achieve the best possible value ratio related races technological transportation costs can be reduced by only 5.12%. This path can be regarded as a subsidiary.

The third way can lead to losses related to the insufficient use of the residual life of AB vehicles.

The fourth way can be considered one of the most promising ways of increasing the efficiency of cooperative service vehicles AIC. To do this, farms created and provided by means of appropriate exchange fund Stoa AB. Shipping remfondu for STOA and refurbished modular units in the economy made the station. As a result, you can significantly reduce the transportation costs of the so-called technological movement of rolling stock.

Reduce transport costs and losses from idle cars under repair is achieved by the fact that the STOA to perform routine repairs not delivered the car in general, and its teams units that need restoration. When used for transporting data precast units of vehicles carrying small transport costs are reduced by an order; the station in the economy can simultaneously carry not one but several components and assemblies. Reducing losses from rolling stock being repaired due to a significant reduction in downtime of vehicles in queue while waiting for repairs at the Stoa and time Mr.**and transportation to the last station. Reduce transportation costs can use rozvizno-assembly route.**

Nowadays Principles of car repairs aggregate-node method developed primarily for large ATP performing their own entire volume of repair and service work.

Note that fleets farms are characterized by a small number of cars (10-30 units) located in nekompleksnyh garages. Therefore, they can not be applied organizational principles aggregate-node method of repair, major characteristic of ATP. It is advisable to apply techniques based on

the optimal distribution of the scope of work and responsibilities between the repair and the serving base farms and STOA district.

In establishing the types of repairs, it is appropriate to perform Stoa, as optimality criterion should be used at least annual unit purchase cost of repair and maintenance of equipment and technology in the economy and the Stoa.

Specific annual cost of acquisition and maintenance of process equipment repair and characterize their share to the one-repair *and*ies team unit vehicle.

These unit costs *Fhi* for the fleet of agricultural enterprises and STOA -FS_{and} determined in accordance with the formulas:

$$\Phi_{гі} = \frac{a \cdot Ц_0 + З_в}{N_{г\,і}} \text{ (грн/ремонт)}, \quad (1)$$

$$\Phi_{сі} = \frac{a \cdot Ц_0 + З_в}{N_{с\,і}} \text{ (грн/ремонт)}, \quad (2)$$

where *and* - Depreciation for renovation and refurbishment of equipment;

Tso - The carrying cost of the equipment, rub .;

Nhi and Nsi - Annual repairs *and*ies team alone performed under the farm and STOA

N_{Guy} <Nsi

Ze - The amount of current annual cost to operate the equipment that do not depend on the degree of loading, USD ..

It costs the state inspection instruments, calibration, seasonal maintenance, and so on.

The difference between the specific costs of maintenance and repair of equipment in th team units in the economy and the Stoa is the value of annual losses *Stumps* lack of loading equipment on the farm.

Stumps = Fhi - Fsi, (USD) (3)

Given the formulas (1) and (2) we get:

$$П_{ні} = \left(a \cdot Ц_0 + З_в\right)\frac{1-\alpha}{N_{гі}} \text{ (грн)} \quad (4)$$

$$\alpha = \frac{N_{гі}}{N_{сі}}, \quad (5)$$

The second multiplier in parentheses right side of equation (4) describes the level of underemployment repair and manufacturing equipment on the farm.

In determining the feasibility of centralizing certain repairs to existing Stoa captured specifications for motor vehicles, quality repairs and downtime reduction factor car in for STOA.

In the case of centralized repair relatively inexpensive modular units such as generator, starter clutch and others, in order to reduce downtime Car recommended in each sector to create the necessary

supply of these modular units and related costs to consider it. In other cases, you should take into account losses from idle cars associated with the delivery of replacement fund for technical exchange office Stoa and repaired components and assemblies with STOA in farming.

In view of the above analysis of the economic feasibility of centralized perform certain repairs can be set to STOA by comparing losses from insufficient load-repair process equipment used in the performance of the service and st team units in the economy, with transportation costs and repair fund refurbished AB and costs the maintenance of the exchange fund.

The value of the unit cost of transportation *and*ies team unit defined by the formula:

$$З_{тр.i} = \frac{2R\,C_n}{n}\ (грн), \qquad (6)$$

where *R* - Distance from the farm to the STOA km (radius centralization repair);

Cn - The cost per km car carrying maintenance fund and refurbished units (nodes), rub ..;

n- The average number of modular units carrying while on the vehicle.

Radius centralized repair work will be enhanced mainly by increasing the cost of equipment, power Stoa number of units and repair fund transported simultaneously. Radius centralization will decrease with increasing value other **km car carrying maintenance fund and refurbished prefabricated units.**

Consider how it will affect the distribution volume of repair work between management and STOA time between failures host vehicle and such factors as concomitant replacement Stoa while on a planned maintenance-2 **components and assemblies that are the results of diagnosis have resource close to the limit.**

When the quality of maintenance on STOA (coefficient *k*) and operating time between failures of modular units of the car, ie decrease in the flow parameter bounce *w*Radius centralization of repairs increases.

Go to the aggregate-node method car repairs associated with the need to make some changes in the project organization and management of technical service road transport APC. The essence of these changes is as follows.

In the administrative area (region) farms and STOA a system of cooperative vehicle maintenance. The system on a contractual basis are garages farms and STOA district-repair process agribusiness. The purpose of this system is to supply high (set) coefficient of technical

readiness of vehicles served with minimal cost money and material resources.

The system is based on cooperation with STOA garages farms with optimal distribution between work and functions. Organizational and technical management operation of the system it is advisable to put Stoa.

In this system, garage farms perform replacement of modular units repaired at Stoa or based on new exchange fund units and units. The decision to replace the unit accepted the fact of his refusal or results of diagnosing performing Stoa.

Nekompleksni garages must have parking lots maintenance vehicles, equipped with movable floor lift, lifting other means, a mechanized tool to perform assembly and dismantling of equipment for lubricating work, and so on.

STOA shall ensure garages farms exchange fund units and units by repair on its own or in specialized repair shops.

For this station provide technical exchange, dispatching service, delivery service AB in the economy, expanding repair station modular units of rolling stock.

Conclusions

1. This paper summarizes theoretically and experimentally tested scientific problem solving to optimize economic feasibility of centralization in Ukraine AIC Stoa certain types of repair works cars.
2. In spite of increasing transport costs for maintenance of cooperative road transport AIC promising implementation of aggregate-node method of permanent repair of rolling stock farms involving STOA district. This makes it possible to significantly reduce the transportation costs of the car and eliminate them just waiting for repairs at Stoa.
3. To implement the aggregate-node method nekompleksnii garage farms must be equipped with parking spaces for performing assembly and disassembly work with modern equipment and have the exchange fund. In STOA necessary to organize technical exchange, dispatching service and service delivery of repaired components and assemblies in the farms, to expand the repair station components and assemblies.

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Obosnovano Using aggregate-nodes method of repair of automobile transport selskohozyaystvennыh enterprises and Basic Principles of organization kooperatyvnoy forms tehnycheskoho Maintenance of cars on the basis of known method.

Automobiles, Tehnicheskoe Maintenance, Repair potochnыy, nekompleksnыy garage transportnыe costs.

In paper is modular-nodal method of repair of motor transport of the agricultural factories and main principles of architecture of the co-operative shape of engineering service of cars on basis of given method is justified.

Car, engineering service, continuous repair, not complex garage, cost of transportation.

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Movement of material particle on the rough disks

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The equations of motion of a particle on the surface of a flat and conical disks that rotate around a vertical axis in a rectangular Cartesian and curvilinear (polar and cylindrical)

coordinate systems. These equations pass one another and in the equations of motion of a particle on the surface of the cylinder which rotates confirming their authenticity.

The movement material particle drive.