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INFLUENCE OF HOT CLIMATE AND CAREER CONDITIONS ON THE PERIODICITY OF TECHNICAL SERVICE AND VEHICLE DIAGNOS IS BELAZ-75131

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Abstract: The influence of a hot climatic condition, which reaches about +45 ° C in summer, and the conditions for transporting heavy and loose rock masses in coal pits, on the operational properties of the BelAZ-75131 quarry dump truck (with a carrying capacity of 130 tons) has been studied. Recommended implement the process of carrying out TO-0 when the car reaches 100 hours of operation, which will include diagnostic operations and replacement of elements if necessary.

Keywords: dump truck, career conditions, hot climate, technical service, frequency, correction, diagnostics, repair.

Modern open pit mines have to move significant volumes of minerals and especially overburden (up to hundreds of thousands of cubic meters per day). Transportation of overburden and minerals is one of the most labor-intensive processes in the technological complex of open-pit mining. The cost of moving the rock mass is 40-50% of the total cost of stripping in a quarry. With the help of quarry transport, the rock mass from excavator faces is moved to unloading points. Career transport has a number of the following features that distinguish it from public transport. Loading and unloading points constantly change their position, following the mining front. The cycle of discontinuous mining vehicles (BelAZ dump trucks) consists of loading operations, movement with cargo, unloading and reverse movement empty. Transportation from a quarry occurs, as a rule, on a large slope during the development of both deep and upland deposits. For the productive use of mining and transport equipment (excavators and rolling stock), it is necessary to mutually agree on their parameters. The main requirements for quarry transport are: ensuring the specified cargo turnover; uninterrupted work; possibly less labor intensity of works for technical service and repair; traffic safety. The development of the production and technical base and its infrastructure is a guarantee of the uninterrupted operation of transport and a pledge to increase the economic efficiency of the enterprise. and upland deposits. For the productive use of mining and transport equipment (excavators and rolling stock), it is necessary to mutually agree on their parameters. The main requirements for quarry transport are: ensuring the specified cargo turnover; uninterrupted work; possibly less labor intensity of works for technical service and repair; traffic safety. The development of the production and technical base and its infrastructure is a guarantee of the uninterrupted operation of transport and a pledge to increase the economic efficiency of the enterprise. and upland deposits. For the productive use of mining and transport equipment (excavators and rolling stock), it is necessary to mutually agree on their parameters.

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Technological calculation at the enterprise JSC "Uzbekugol" is carried out in order to design the production base of a quarry ATP. Here, the number of maintenance personnel is justified, technological equipment is selected, the areas of motor depots are calculated, and other issues related to maintenance are resolved. Since the main vehicle of the enterprise under consideration is a vehicle of the BelAZ-75131 type with a carrying capacity of 130 tons, the rest of the vehicles belong to a technologically compatible group, so we carry out calculations as one group of vehicles.

Mining dump trucks BelAZ-75131, load capacity 130 tons. put into operation in 2019 and registered and supervised by the engineering and technical service.Mileage from the beginning of operation to the present time of this group of vehicles is from 121,000 to 186,500 hours. Due to the regular organization of maintenance with diagnostics, all mining cars are serviceable except for one that turned over. According to the manufacturer's recommendations, the frequency of the first maintenance (TO-1) is 250 hours, and TO-2 - 500 hours. TO-1 is organizedtaking into account the annual mode of operation of the BelAZ-75131 mining dump truck at the Angrensky open pit coal mine, and work is carried out during non-working hours for the dump truck - inter-shift time. TO-2 is carried out mainly in one day shift with an annual regime of 305 working days. The current repair zone (TR), as a rule, works in two shifts, of which all production and auxiliary shop divisions and current repair posts work in one (day) shift. In the second shift, guard work is carried out on the current repair of mining dump trucks, the need for which is revealed during diagnostics, maintenance or at the request of the driver.

Features of the operating conditions of vehicles in the region of Central Asia are made up of a number of factors that affect the functioning, technical condition and reliability of vehicles operated in the region. These include weather and climatic factors, the level of solar radiation, air dustiness and others. Of these factors, when studying the technical condition of mining dump trucks, the temperature regime of the atmosphere in the region and the dust content of the outside air affect. Uzbekistan

has a very significant influx of solar energy. In the hottest months, the high noon position of the sun is 70º above the horizon at the latitude of the Tashkent region, and in winter 25º; the annual number of sunshine is 3000 hours (2 times more than in Moscow). In general, during the year the amount of heat coming from the sun, in the form of direct radiation, reaches 100-120 thousand cal/cm2.

The territory has vast loess plains, the so-called steppes and clayey deserts. Such soil of the region creates favorable conditions for significant air dustiness and frequent occurrence of sandstorms, especially in summer.

The dust content of the air begins to rise from April, and in June it becomes significant. With an increase in air temperature, a moisture deficit appears, which leads to the drying of the soil and with an increase in wind speed, dust storms form. The wind speed, for example, in Kokand is more than 15 m/s, and in Bekabad it reaches up to 40 m/s, in Bukhara 56, Nukus - 176, Termez - 110, Fergana - 62 and in Tashkent - 34 m/s. The concentration of dust in the air reaches 6 g/m3.

The results of the spectral analysis of the filter elements of engines, which were trained at machine test stations in various regions of the CIS with a certain operating time (moto-hours), showed that under the conditions of the Central Asian machine test stations, the filter elements prematurely lost their throughput. In addition, studies of the inorganic part of the sediments on the surface of the filter elements gave the content of the following elements in percent:

Si - 4.0 ... 22.0;	Fe–6.5 ....22.5;	Al– 9.5 ... 13.5;
Ca–3.4 ...12.5;	Cu–0.5...5.0;	Mg–1.4 ... 5.5;
Na- 7.6 ... 15.5.		

To them, you can add dust generated during loading and unloadingminerals and especially overburden.Thus, the place of work of quarry carsJSC "Uzbekugol", has certain unfavorable conditions, especially in summer, which complicate operation. Therefore, as our research has shown, for the smooth operation of transport, it was often necessary to changecar tires brand 33.00 R21 4 pcs each, filters (oil), repair kit for almost all vehicles.

Based on the analysis of financial resources for the implementation of the TS and the repair of the enterprise JSC "Uzbekugol", as well as the number of downtime of mining dump trucks BelAZ-75131, it is proposed to introduce the process of carrying out TO-0 (100 moto-hours). This maintenance will include the following diagnostic operations and, if necessary, replacement processes for the following items:

1. Engine maintenance: oil change, filters
   - Motor oil
   - Oil filter
   - Fuel filter
   - Cooling system filter
   - Checking the condition of all belts
   - Checking the status of the fan
   - Lubricate all points according to the lubrication chart

2. Oil change in dump truck units (with tank flushing):
   - Electric motor-wheel reducers
   - Combined hydraulic tank
3. Check the coolant level in the engine cooling system and top up if necessary.
4. Adjustment of the gap between the liners and ball bearings of the suspension cylinders.
5. Tightening external threaded connections of the suspension, steering, brake systems.
6. Replacing the filter element in the oil tank of the integrated hydraulic system.
7. Replacement of the filter element of the filter installed in the pressure line of the pump.
8. Cleaning the drain magnetic plugs of the tank, the magnets in the suction pipe of the pump and the drain manifold.
9. Checking the condition of cable glands and locks of the power cabinet for dust tightness.
10. Cleaning the inside of the power cabinet from dust.
11. Inspect inside the power cabinet for possible damage.

Conclusion. Testing of the recommended system for carrying out TO-0 in a mining enterprise gave positive results: downtime for repairs has decreased, which ensures that annual volumes of mining and overburdening of rocks and minerals are completed within the established time frame.

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