

ANALYSIS OF THE NEGATIVE CONSEQUENCES OF THE OPERATION OF CARS OPERATING AT LOW TEMPERATURES

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Abstract: Currently, the main factors that negatively affect the resource of the car engine in the automotive industry are a drop in oil temperature, cold air and fuel entering the engine, a decrease in the overall thermal regime of the engine, an increase in resistance in tires and transmission, and also an increase in aerodynamic resistance[1-3].

Keywords: temperature, engine, cylinder, piston.

The main factors that have a negative effect on the resource of a car engine are a drop in oil temperature, cold air and fuel entering the engine, a decrease in the overall thermal regime of the engine, an increase in resistance in tires and transmission, and also an increase in aerodynamic resistance. As a result. The so-called "fire-up" consumption and the consumption during the later period of operation are increased. When analyzing the increase in ignition consumption, it should be noted that a large part of the consumption corresponds not only to the ignition period, but also to warming up the engine after it[4-6]. Engine cold during ignition. there will be a thin film of oil that is quite durable. After the engine has been running for a few seconds, this thin film of oil heats up and begins to erode under the simultaneous influence of a chemically aggressive environment, and the rate of erosion increases because the new oil droplets have not yet arrived sufficiently. Then, as the engine and oil heat up, the rate of consumption decreases.

For example, consumption during ignition and warm-up constitutes about 7% of the total consumption of diesel engines of trucks during operation[7-9]. The individual consumptions are equal to the consumptions when it travels 18-26 km of road as a result of its operation. After starting the engine, if the warm-up mode is broken, or if

the crankshaft speed is increased too early, the long-term use in the idle speed mode can cause the ignition consumption to increase by 8-12 times. The engine starts cold. When it is removed, gasoline and water vapor condensates are rapidly added to its oil, increasing the wear of cylinder and piston rings. The source of condensation is air and combustion products of hydrocarbon fuels. Therefore, the amount of water condensate mainly depends on the temperature at the head of the engine and the mode of its heating, and it depends less on the humidity of the air. This condensate slowly evaporates from the oil composition, especially in winter, when the temperature regime of the engine decreases. Gasoline condensate formed as a result of the collision of fuel with unheated engine parts is added to the oil. due to its expansion, it is lost quickly. Heavy fractions, including sulfur compounds, remain in the oil, accumulate and increase corrosion processes[10-13].

A decrease in air temperature has a negative effect on the engine not only during ignition and warm-up, but also during the initial periods of movement. This is due to a decrease in engine temperature and an increase in load. For example, when the temperature of the cooling liquid is 40 °C, the corrosion of the cylinder liners increases 4 times faster than under normal temperature conditions (70-85 °C), and when it is 50 °C, it increases by 2 times[14-16].

The average stress on the motor can increase by 25% or more due to the decrease in air temperature from 0 to -40 °C and the resulting increase in tire rolling resistance, transmission losses, and aerodynamic resistance that increases with speed. Also, using cars in sub-zero temperatures increases fuel consumption. This situation is due to the slowness of fuel vaporization and spraying, its incomplete combustion, long engine operation in low and unstable modes, additional fuel consumption for heating, increased resistance due to oil spillage in transmission units, wheel rotation in winter and due to the increase in air density due to the increase in aerodynamic resistance. Especially when the air temperature is low, the amount of fuel used to warm up the engines and tires of cars that have been left in open storage areas for a long time is significant. The amount of fuel lost due to total stoppages (i.e. warm-up of the engine after a short stop, warm-up of the unit and tires after a stop) is exactly in driving modes and the air temperature is -40 °C It is from 2.6 to 9% for non-stop traffic, and around 2.5% outside the city[18-19].

REFERENCES:

1. Abdusamat Y., Nigora A., Javohir X. ПОВЫШЕНИЕ КРИТЕРИИ ОЦЕНКИ ЗНАНИЙ СТУДЕНТА ОБЪЕКТИВНО С НАУЧНЫМИ ИССЛЕДОВАНИЯМИ INCREASING ASSESSMENT CRITERIA OF THE STUDENT KNOWLEDGE OBJECTIVELY WITH SCIENTIFIC RESEARCH //Журнал выпускается

ежемесячно, публикует статьи по естественным наукам. Подробнее на [www. t.](http://www.t.) – Т. 2. – С. 118.

2. Юлдашев А. Avtomobillarning erkin va majburiy tebranishlar sinovi apparati (tm 155) yordamida tahlil qilish //Scienceweb academic papers collection. – 2022.

3. Yuldashev A., Abdumuminova N., Xalimov J. ПОВЫШЕНИЕ КРИТЕРИИ ОЦЕНКИ ЗНАНИЙ СТУДЕНТА ОБЪЕКТИВНО С НАУЧНЫМИ ИССЛЕДОВАНИЯМИ //Точная наука. – 2018. – №. 26. – С. 113-115.

4. Melikuziev, A., Xalimjonov, E., Qobuljonov, M., & Rasulov, S. (2022). IMPROVING THE PERFORMANCE OF THE FUEL INJECTION SYSTEM. Development and innovations in science, 1(14), 10-14.

5. Bakirov L. Y., Soliyev A. F. TRANSPORT VA PIYODALAR HARAKAT OQIMINING JADALLIGI VA TARKIBINING O ‘ZGARISHI //Journal of new century innovations. – 2023. – Т. 25. – №. 3. – С. 53-55.

6. Soliyev A., Raximbek X. TRANSPORT VOSITALARI KONSTRUKTIV XAVFSIZLIK TIZIMLARINI JORIY ETISHNING TASHKILY VA HUQUQIY ASOSLARI TAXLILI

7. O‘G M. Z. A. R. et al. MAHALLIY ASHYO VA ENERGETIK RESURSLARDAN FOYDALANIB YANGI GETEROKOMPOZIT POLIMER MATERIALLAR YARATISHNING ISTIQBOLLI TEXNOLOGIYALARI TAHLILI //MASHINASOZLIK ILMIY-TEXNIKA JURNALI. – 2023.

8. O‘G M. Z. A. R. et al. Avtomobillarning plastmassa detallari tarkibini o'rganish va tahlil qilish //MASHINASOZLIK ILMIY-TEXNIKA JURNALI. – 2023.

9. Mamasoliyev B., Melikuziev A., Sotvoldiyev O. Research of Factors Affecting the Cylinder-Porshen Group Work Process //Texas Journal of Engineering and Technology. – 2022. – Т. 7. – С. 8-12.

10. Melikuziev A. et al. IMPROVING THE PERFORMANCE OF THE FUEL INJECTION SYSTEM //Development and innovations in science. – 2022. – Т. 1. – №. 14. – С. 10-14.

11. Sh.A. Temirov., «Enhanced mechanical transmission drives agricultural machinery» “International Journal of Innervations in Engineering Resarsch and Technology – ISTC – 2K20” www.ijert.org. Vol. 29, No. 9s, (2020), pp. 5870-5875.

12. Xalilbek o'g'li X. E. ICHKI YONUV DVIGATEL DETALLARINI QURUM BOSISHINI TEKSHIRISH //World scientific research journal. – 2023. – Т. 18. – №. 1. – С. 110-115.

13. Xalilbek o‘g‘li X. E. MOTOR MOYLARIDA BO ‘LADIGAN O‘ZGARISHLAR VA ULARNING XIZMAT QILISH DAVRI //Mexatronika va robototexnika: muammolar va rivojlantirish istiqbollari. – 2023. – Т. 1. – №. 1. – С. 321-323.

14. Xalilbek o'g'li X. E., Bobirxon o'g'li U. B., Xalimjonov E. X. LOGISTIK KORXONALAR FAOLIYATINI O'RGANISH VA ULARNING SAMARADORLIGINI OSHIRISH JARAYONLARI //Лучшие интеллектуальные исследования. – 2023. – Т. 8. – №. 4. – С. 89-92.

15. Xalilbek o'g'li X. E., G'anijon o'g'li V. J., Xalimjonov E. X. CHORRAHALARDA TRANSPORT VOSITALARINING TIRBANDLIGINI O'RGANISH VA TAHLIL QILISH //Лучшие интеллектуальные исследования. – 2023. – Т. 8. – №. 4. – С. 99-104.

16. Xalilbek o'g'li X. E. et al. SHAHAR MARKAZLARIDAGI CHORRAHALARDA YO'L TRANSPORT HODISALARINI VUJUDGA KELISHIDA SVETOFORLARNING O'RNINI //Лучшие интеллектуальные исследования. – 2023. – Т. 8. – №. 4. – С. 93-98.

18. Azimov, T., Raximov, A., & Tursunboyev, L. (2023). SONLAR BILAN BELGILANGAN PROEKSIYALAR. Евразийский журнал академических исследований, 3(2 Part 3), 68-72.

19. Erkinjon o'g'li, T. L. (2023). TRANSPORT OQIMINI BOSHQARISHNI ZAMONAVIY USULLARI. Mexatronika va robototexnika: muammolar va rivojlantirish istiqbollari, 1(1), 343-345.