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ІНТЕЛЕКТУАЛЬНІ ТРАНСПОРТНІ ТЕХНОЛОГІЇ

VI МІЖНАРОДНА НАУКОВО-ТЕХНІЧНА КОНФЕРЕНЦІЯ

ПРОГРАМА КОНФЕРЕНЦІЇ



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**Тези доповідей 6-ої міжнародної
науково-технічної конференції**

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Збірник містить тези доповідей науковців вищих навчальних закладів України та інших країн, підприємств транспортної та машинобудівної галузей за чотирьма напрямками: розвиток інтелектуальних технологій при управлінні транспортними системами; транспортні системи та логістика; інтелектуальне проектування та сервіс на транспорті; функціональні матеріали та технології при виготовленні та відновленні деталей транспортного призначення.

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Firstly, the accumulation of fatigue stresses and structural damage in the tread rubber compound. These factors gradually weaken the material, accelerating the wear process.

Secondly, the increased uneven wear along the tread length leads to variations in the rolling radius. Depending on the relationship between the change in rolling radius and the movement of the wheel, abrasive or fatigue wear becomes more pronounced.

Thirdly, the acceleration of tire deformation in the tangential direction also contributes to tire wear.

Fourthly, uneven tire tread wear, where the tread wear is from a higher point to a lower point from the front to the rear edge, is often seen on the heel and toe of the tires. This situation is caused by uneven tire pressure or differences in tire diameter in a dual tire setup.

- [1] Ayhan E. E. From ports to prosperity: Leveraging maritime sector for poverty reduction //Journal of Marine and Engineering Technology. 2023. T.3. №. 2. С. 99-109.
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ОЦІНКА НАДІЙНОСТІ ПОРТОВИХ СІДЕЛЬНИХ ТЯГАЧІВ СИСТЕМ МЕТОДАМИ СТАТИСТИЧНОГО МОДЕЛЮВАННЯ

ASSESSMENT OF THE RELIABILITY OF PORT TRUCK TRACTORS USING STATISTICAL MODELING METHODS

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The continuous operation of port tractors is very important for the efficiency of terminals, the port, and logistics in general [1,2]. These machines are necessary for moving cargo inside and outside the port. Given their operation, which includes

frequent stops, heavy loads, and short work cycles, it is crucial to assess their reliability and predict potential failures or the need for maintenance.

Due to their constant operation in harsh marine conditions, port tractors are subjected to significant loads, which ensures their high reliability and productivity [2-5]. Based on this, the following complex tasks become relevant: improving the quantitative methods for assessing the reliability of truck tractors.

When 40 identical truck tractors used in four Black Sea ports for transporting containers and other cargo were inspected, minor differences in mileage were noted.

The purpose of the work was to study changes in the technical condition of Volvo, Man, Scania and Mercedes-Benz tractors during operation, as well as to determine the least reliable units, assemblies and parts.

Research has shown that under heavy-duty operation of tractors, the distribution of time to failure for different units follows a normal, log-normal, or gamma distribution. Failures are caused by the cumulative effect of many independent factors, each of which has a small individual impact.

Processing and analyzing the collected data allows you to anticipate the amount of repair work required, as well as to plan the need for labor, production facilities, materials, and spare parts, which is crucial for effective production management and reducing vehicle downtime.

Assessing the reliability of port truck tractors using statistical modeling methods is an important tool for improving the efficiency of port processing lines.

- [1] Ayhan E. E. From ports to prosperity: Leveraging maritime sector for poverty reduction //Journal of Marine and Engineering Technology. 2023. T.3. №. 2. C. 99-109.
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