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EAST UKRAINIAN NATIONAL UNIVERSITY  
Department "Logistics management  
and traffic safety in transport»

PJSC «UKRZALIZNYTSIA»  
Regional branch «Donetsk railway»

MANAGEMENT UKRTRANSBEZPEKA  
IN LUHANSKAYA REGION

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AND EDUCATIONAL SPACE.  
INNOVATIONS OF TRANSPORT.  
PROBLEMS, EXPERIENCE, PROSPECTS**

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## COMPARISON OF THE EMISSION STANDARDS OF POLLUTANTS FROM EXHAUST GASES DIESEL LOCOMOTIVE ENGINES

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According to the Transport Strategy of Ukraine till 2020 one of the key principles is to ensure environmental safety, mandatory compliance with environmental standards and regulations when conducting activities in the field of transport [1].

In rail transport the main sources of air pollution are diesel engines (internal combustion piston engine) locomotives.

In the field of railway transport in the country has a number of standards governing the emission standards of pollutants from exhaust gases diesel locomotive engines, the requirements for gas analyzers to monitor emissions from transport and others [2-5]. In many countries, standards of pollutant emissions from engine exhaust gases of vehicles have undergone significant changes, so you need a comparison with regulations regarding the standards and methods for determining emission.

In Ukraine in terms of rail transport with environmental safety industry standard operating GSTU 32.001-94 emissions of pollutants from exhaust gases diesel locomotive engines. Norms and determination methods

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[2]. Under this standard, emission standards, this value average performance specific values  $E_{CO}$ ,  $E_{CH}$ ,  $E_{NOx}$ ,  $E_{PM_{10}}$ , g / (kWh), according to a diesel engine service life (up to two years and more than two years).

In Russia 1.07.1997. was enacted GOST R 50953-96 standard «Emissions of harmful substances and smoke of exhaust gases of main and shunting diesel locomotives. The norms and methods for determining» [6]. This standard establishes standards and methods of determining emissions of pollutants from exhaust gases and smoke new after construction and in use of locomotives to steady their work.

Normalized maximum allowable content  $C_{NOx}$ ,  $C_{CO}$ ,  $C_{CH}$  in the exhaust gases (volume fraction,%, or mass concentration, g / n × m<sup>3</sup>). Tests carried out on five modes that will match the load to idling, partial and full power.

From 01/01/2009 Russia replaced the standard ГОСТ Р 50953-96 for a new standard ГОСТ Р 50953-2008. Emissions of harmful substances and smoke of exhaust gases of main and shunting diesel locomotives. Norms and methods of determination [7]. This standard establishes standards and methods of determining emissions of pollutants from exhaust gases and smoke exhaust gas of diesel locomotives to steady their work. In the updated standard normalized volume fraction of the maximum allowable content C % of nitrogen oxides NO<sub>x</sub> (converted to NO<sub>2</sub>), carbon monoxide CO and hydrocarbons C<sub>n</sub>H<sub>m</sub> (calculated on C<sub>3</sub>H<sub>8</sub>) depending on the setting year in production and post - 2001, with 2006 and 2011. Tests carried out in three modes, must meet the load at idle, partial and full.

From 07/01/2014 in the countries of Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan and Uzbekistan enacted interstate standard GOST 31967. Internal combustion engines piston. Emissions of harmful substances with exhaust gases. Norms and methods of determination [8]. Tse standard should be widened on the wikis of gas-suspended shkidlivykh rechovin with ventilation gases at the spent stand of the whip-buoy novices that capitally inspects the vessels, diesel locomotives and promises of piston engines in the internal zgoriannya and set the norms and methods of viznachennya. Zgidno with him normuyutsya boundary admissible value pitomih serednogo-zvazheni wikidiv oksidiv nitrogen (NO<sub>x</sub>) in the reduced to NO<sub>2</sub>,  $e_{NOx}$ , g / (kW hour), carbon monoxide (CO),  $e_{CO}$ , g / (kW hour), hydrocarbons (CN) at reduced to CH<sub>1,85</sub>,  $e_{CH}$ , g / (kW hour) in exhaust gases during engine bench testing them according to the setting, the engine production (up to that point of 2016 ).

So established that in different countries, different approaches to rationing maximum allowable pollutant content in the exhaust gases of diesel

engines, which in turn leads to finding ways to bring the standards and methods of calculation to common standards.

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### ABOUT CREATION OF NEW BOGIE OF THE RAILWAY FREIGHT CAR

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Over a decade, the world's leading research centers have been engaged in improving the running gear of freight cars. For Europe, these studies are carried out within the framework of the EU Road Map, according to