

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

PJSC «UKRZALIZNYTSIA»
Regional branch «Donetsk railway»

MANAGEMENT UKRTRANSBEZPEKA
IN LUHANSKAYA REGION

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

THESES
OF INTERNATIONAL SCIENTIFIC CONFERENCE
3-12 May 2017
Dresden (Germany) - Paris (France)

ORGANIZING COMMITTEE

Chairman of Organizing Committee

Nosul'ko Alexander - First Deputy Head of Regional branch «Donetsk railway» PJSC «Ukrzaliznytsia»

Vice-chairman

Galugan Volodymyr - Head of department of management Ukrtransbezpeka in Luhanskaya region.

Members of organizing committee

Chernetska-Biletska Natalia - Professor, Head of department "Logistics management and traffic safety in transport", Volodymyr Dahl East Ukrainian National University.

Ramazanov Sultan - Professor, Honored Scientist of Ukraine, Ukraine Excellent Education, honorary Professor of Volodymyr Dahl East Ukrainian National University, Professor of "Information systems in economy", KNEU named after V. Hetman.

Dreveskyi Volodymyr - Professor, Vice President of Engineering Academy of Ukraine, head of automation, electrical engineering and computer-integrated technologies, National University of Water Management and Nature.

Prikhodko Sergei - Professor, Vice-rector for scientific and pedagogical, Ukrainian State University of Railway Transport.

Viktor Tkachenko - Professor, Head of Department "Traction rolling stock of railways", State Economy and Technology University of Transport.

Babushkin Gennady - Professor, Head of Department "Transport Technologies" ZNTU.

Nesterenko Galina - Ph.D., Associate Professor of department Management of operational work on the railways DNURT named after Ac. V. Lazaryan.

Lebed Irina - Ph.D., Associate Professor of department Transport Technology NTU.

Scientific secretary

Shvornikova Anna - Ph.D., Associate Professor of department "Logistics management and traffic safety in transport", Volodymyr Dahl East Ukrainian National University.

Technical secretary

Miroshnykova Mariia - assistant of department "Logistics management and traffic safety in transport", Volodymyr Dahl East Ukrainian National University.

Executive editor: Chernetska-Biletska N., Head of Department "Logistics management and traffic safety on transport" of the Volodymyr Dahl East Ukrainian National University.

Recommended for publication by the Academic Council of the Volodymyr Dahl East Ukrainian National University (protocol № 9 from March 31, 2017)

Globalization of scientific and educational space. Innovations of transport. Problems, experience, prospects: thesis, 3-12 May 2017, Dresden (Germany) - Paris (France) / Executive editor: Chernetska-Biletska N. – Severodonetsk: Volodymyr Dahl East Ukrainian National University, 2017.

© Східноукраїнський національний університет імені Володимира Даля, 2017
© of the Volodymyr Dahl East Ukrainian National University, 2017

Tartakovsky E., Gorobchenko A., Antonovych A. THE EVALUATION OF THE "DRIVER-LOCOMOTIVE" ERGATIC SYSTEM PERFORMANCE QUALITY	187
Tartakovsky E., Sumtsov A., Artemenko O., Bragin N. CONDITION AND TRENDS RENEWAL OF DIESEL LOCOMOTIVES IN UKRAINE	190
Tkachenko S. USE OF GENETIC ALGORITHMS FOR SOLVING THE PROBLEM OF OPTIMIZATION OF INTERCITY FREIGHT TRAFFIC USING ROAD TRANSPORT	193
Troyan A., Muzykin M. ENERGY EFFICIENCY MANAGEMENT OF TRAIN TRAFFIC VOLUME AS A MEANS OF IMPROVING TRANSPORTATION PROCESS	195
Turpak S., Vasilyeva L., Lebid H., Padchenko O., Sidorenko Yu. OPTIMIZATION OF THE RAILWAY TRANSPORTATION SCHEDULE OF METALLURGICAL ENTERPRISE	197
Fomin A., Braykovska N., Nechyporuk A., Kovalchuk G., Fomin V. ECONOMIC EVALUATION OF USING UPGRADED HOPPER CARS FOR TRANSPORTATION OF HOT PELLETS AND AGGLOMERATE OF 20-9749 MODEL	199
Fomin O., Logvinenko O., Burlutskyi O. SYNOPSIS OF THE THERMAL METHOD FOR STRAIGHTENING TECHNOLOGICAL-DEFORMED CAR PARTS	201
Fomin A., Stetsko A. THE STRUCTURING POSSIBILITIES OF RESISTANCE OF USE TANTINIUM LOAD WAYS THE OPPOSITE OF THE STRESS AND/OR STRAIN STATE OF WAGON DESIGNS	204
Kharlamov P., Kharlamova E. ROLLING STOCK MAINTENANCE SCHEDULING OPTIMIZATION	206

- DETUT, 2014. – Vip. 25. – S. 92 – 99. – (Seriya «Transportni sistemi i tehnologiyi»).
3. Tartakovskiy E., Improving the process of driving a locomotive through the use of decision support systems [Text] / E. Tartakovskiy O. Gorobchenko, A. Antonovych //Eastern-European Journal of Enterprise Technologies. – 2016. – T. 5. – №. 3 (83). – C. 4-11.
 4. Gorobchenko, O. M. Vznachennya korisnosti diyi intelek-tualnogo agenta keruvannya ruhom poyizdu. [Tekst] / O. M. Gorobchenko // Tezi dopovidey 71 Mizhnarodnoyi naukovo-praktichnoyi konferentsiyi "Problemi ta perspektivi rozvit-ku zaliznichnogo transportu", 14-15 kvitnya 2011 r. – D.:DNUZT, 2011. – S. 63.Servis na transporte : ucheb. poso-bie dlya stud. uchrezhdeniy vyssh. prof. obrazovaniya / [V.M.Nikolashin, N.A.Zudilin, A.S.Sinitysi na i dr.] ; pod red. V.M. Nikolashina. — 4-e izd., pererab. — M. : Izdatelskiy tsentr «Akademiya», 2011. — 304 s.

CONDITION AND TRENDS RENEWAL OF DIESEL LOCOMOTIVES IN UKRAINE

Tartakovskiy E.¹, Sumtsov A.¹, Artemenko O.¹, Bragin N.²

¹*Ukrainian State University of Railway Transport*

²*Volodymyr Dahl East Ukrainian National University*

Inventory traction rolling stock fleet in Ukraine in 2488 constitute main and shunting diesel locomotives, including locomotives is used 1343. Over 95% of inventory fleet of diesel locomotives has worked established manufacturing plants normative service life and need immediate replacement or overhaul of renewal [1 - 3].

Currently, the park main railway locomotives Ukraine, most of which made for 1970 - 1980 years, is in this state:

- M62 diesel locomotives for cargo - 46 units. All M62 from 1990-1996 years operated outside the regulations set by the manufacturer of the life that is 20 years old. The current operation is possible through a package of measures to extend the maximum possible service life of 40 years. In 2015 60% of the fleet of locomotives M62 requires a complete write-off.

- other locomotives series - 916 units (2TE116, 2TE10, 2M62, TEP70). In 2010 the number of locomotives depreciated reached 743 units, or 81% of the said park. But extended for 20 years the life of these series

2020 will not be reached. At the same time predicted that some of the locomotives will be written off because of poor technical condition.

- locomotive TEP-150 - 4 units. All locomotives of this series produced for 2005 - 2009 years in operation and do not need replacing in the next 20 years [1].

So fleet with 966 units of freight and passenger diesel locomotives operated outside the regulatory deadline of 290 units, or 30% of the fleet.

Park shunting diesel locomotives consists of different series, but the vast majority of them in diesel locomotives CHME3 different indexes. In total, the park contains 1554 such locomotives. [1]

Over 90% of shunting diesel locomotives chme3 operated outside the regulatory deadline of service, which is 25 years (Fig. 1). Only CHME3E diesel locomotives operated on the verge of normative lifetime, but they've appointed a resource in the next 3 years. Further operation of diesel locomotives CHME3 possible through a package of measures to extend the maximum possible service life of 40-50 years [1, 2].

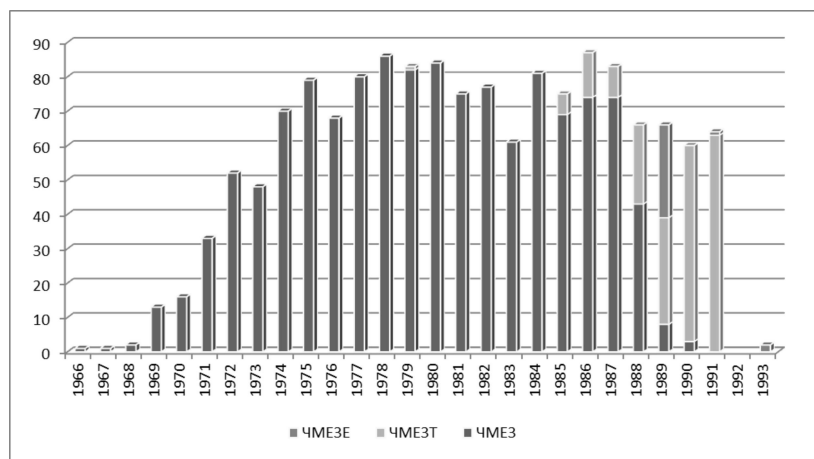


Fig.1. Distribution of diesel locomotives fleet by year CHME3 building

Maneuver diesel locomotives other series 24 units (13 units, THM23 9 units, THK2 1 units, THK21 1 units, TEM103) do not require write-off by 2020. Diesel locomotives series CHME2 operated in locomotive depots mainly for their own needs for 2015 - 2020 should be removed from the inventory of the park because of the high degree of wear and run out of regulatory and extended service life [1, 3].

Thus the technical state fleet of locomotives is unsatisfactory. The bulk of the locomotives are depleted and in need of updating, especially shunting locomotives. Thus there is a practical need for renewal of locomotives to meet the needs of traffic and shunting work. For this there are two main areas: the purchase of new units or upgrade existing ones. Due to insufficient amounts of funding programs purchase new locomotives series of national railways is the most promising replacement of obsolete, having exhausted its resources, locomotives by their partial or comprehensive modernization.

Studies show [4-11] recent comprehensive modernization is becoming larger volumes and is the most promising area of renewal of the locomotives.

References:

1. Integrated program rolling stock Ukraine in 2008 - 2020. [Text]. - Kiev: UZ, 2009. - 300 p.
2. Belous Y.A. The results of the locomotive of the economy in 2012. [Text]. / Y.A. Belous. // Lokomotiv-inform 4, 2013 - p. 22 - 24.
3. Sergienko N.I. The rolling stock of Ukraine's railways: the state and prospects. [Text]. / N.I. Sergienko. // Carriage Park 6, 2011. - p. 11 to 22.
4. Horunzhyj S.V. Modernization of locomotives M62 on the railways of Ukraine. [Text]. / S.V. Horunzhyj, A.L. Sumtsov, A.M. Zenkovsky, O.V. Kamchatnyj. // Proceedings of Ukrainian State Academy of Railway Transport, 2011. - Vol. 127 - c. 122 - 126.
5. Tartakovsky E.D. Prospects for modernized locomotives M62 [Text] . / E.D. Tartakovsky, A.P. Falendysh, A.L. Sumtsov, S.O. Mikheev. // Proceedings of Donetsk Institute of Railway Transport. - 2012. - №32. - p. 155 - 157.
6. Pavlyuchenko S.N. Modernization as a profitable investment [Text]. / S.N. Pavlyuchenko. // Lokomotiv-inform 9, 2007 - p. 8 to 13.
7. Kritsky S.V. Diesel locomotives M62: some facts and reflections [Electronic resource]. - Access mode: <http://perecheek.narod.ru/mashki>.
8. Falendysh A.P. Analysis of upgrade options diesel locomotives series chme3 [text]. / A.P. Falendysh, A.L. Sumtsov, A.V. Klimenko. // Proceedings of Don-IZT 2013 - Vol. 36 - p. 162 - 166.
9. Skala B., Frank V. Modernization of the ChME3 - new opportunities. [Text]. / B. Scala, V. Frank. // Lokomotiv-inform 4, 2006. - p.20 - 24.
10. Skala B., Frank V. Modernization of ChME3 - new opportunities [Text]. / B. Skala, V. Frank. // Lokomotiv-inform 5, 2006. - p.20 - 25.
11. Ilin Yu. Upgrade or buy? [Text]. / Yu. Ilyin. // Transport 10, 2011. - p. 5 - 6.