

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.

Drevetskyi 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

CONTENTS

Albeschenko D., Popchenko E, Sotnikov D. OPTIMIZATION METHODS FOR DETERMING NOISE IN THE PROCESS OF CERTIFICATION OF WHEELED VEHICLES	13
Antonova G. ENGLISH FOR SPECIFIC PURPOSES WRITING SKILL FORMATION	15
Arsentieva O. DEFINITION OF THE NATURE OF LABOR LAW PRINCIPLES	17
Artemenko O., Volodarec N. HEATING OF THE DIESEL LOCOMOTIVE IN WINTER	19
Asmankina A., Loria M. AUTONOMOUS APARTMENT ENERGY CONTROL AND MANAGEMENT ENERGY SUPPLY COMBINED SYSTEMS.....	21
Babushkin G., Kuz'kin O., Kaplunovska A. FORMALIZATION OF MICRO-LOGISTIC INDUSTRIAL TRANSPORTATIONS CONTROL SYSTEM.....	24
Baranov I., Baranova V., Taratoryna A., Korolenko T. INCREASING CONSUMER PROPERTIES REGULATED CROSSROADS OF CITY STREET AND ROAD NETWORK.....	25
Baranov I., Bragin N., Korsun T., Pasechnik O. SELECTION RATIONAL VARIANT NETWORKING PLAN FORMATION OF ONE-GROWING TRAINS	27
Barvina N. EXTRACURRICULAR ACTIVITY OF THE STUDENTS OF NON-HUMANITARIAN SPECIALTIES IN THE UNIVERSITY THEATRE STUDIO.....	29
Belovol A., Vasilenko O., Tkachenko M., Gorobets V. MAJOR TRENDS OF THE DEVELOPMENT OF SOLAR ENERGY IN CONDITIONS OF TRANSITION PERIOD OF UKRAINIAN ECONOMY	32

3

Globalization of scientific and educational space. Innovations of transport.
Problems, experience, prospects.

4) they are obligatory, that should be considered in process of adopting labor legislation, during providing of labor and collective agreements, adopting of labor house rules and other local regulations. The principles are based not only on the law regulations, but also determine the order of their adoption. In particular, one of these principles is participation of labor collective in developing and adopting of local acts, its right to form trade unions, etc.;

5) have regulatory and axiological meaning.

Thus, the principles of labor law have several important functions in the regulation of labor relations. Species diversity of institutions of labor law and labor relations determine the existence of a system of principles that necessitate their systematization. Conducting of such systematization may be the focus of further researches in this sphere.

References:

1. Kolodii A. M. Pryntsypy prava: geneza, poniattia, klasyfikatsiia ta realizatsiia / A. M. Kolodii // Almanakh prava. – 2012. – Vyp. 3. – S. 42-46.
2. Pravoznavstvo. 2-he vyd. navch. posib / V. V. Moldovan, L. I. Chulinda. – K. : Tsentri uchbovoi literatury, 2010. – 184 s.
3. Eromenko V. V. Poniattia pryntsypiv trudovoho prava ta yikh zastosuvannia / V. V. Eromenko // Vcheni zapysky Tavriiskoho natsionalnoho universytetu im. V. I. Vernadskoho. Serii: Yurydychni nauky. – 2009. – T. 22 (61). – № 2. – S. 163-176.

HEATING OF THE DIESEL LOCOMOTIVE IN WINTER

Artemenko O., Volodarec N.

Ukrainian state university of railway transport

Analysis of measures to improve the efficiency of technical operation of shunting locomotives showed that a large percentage of the fuel consumption is warming up on diesel in the winter. The existing systems of heating, though reduced fuel consumption, but not fully at the moment solve this problem. The new locomotives use modern systems of heating. But they are expensive and adapted for new locomotives. Therefore, the development of rational system of heating of fuel is important.

For preliminary evaluation of different systems of heating have developed a mathematical model that describes the process of warming up of diesel locomotive chme3 dynamics. Therefore thermal processes are con-

19

sidered as discrete and continuous. They are measured in units of power. It was decided that at the beginning of heating diesel heating temperature of the diesel was equal to the water temperature at the outlet of the diesel engine. During the warm-up water temperature at the outlet of the diesel engine is determined using the following formula 0K:

$$T_{\text{out}}(\tau) = T_{\text{ex}}(\tau) + \frac{Q_B^{\text{d}}(\tau) + Q_B^{\text{N}^2}(\tau)}{G_B \cdot C_{pm}} \quad (1)$$

where G_B - the second water flow through the engine, kg/s, $Q_B^{\text{d}}(\tau) = Q_T q_B(\tau)$ - energy dissipation in water from diesel, kW, $Q_B^{\text{H}}(\tau) = P_{T \in M}$ - energy dissipation in the water from the diesel heater, kW.

The water temperature after the refrigerator, K,

$$T_{\text{cool}}(\tau) = T_{\text{out}}(\tau) - \frac{Q_M^{\text{axk}}(\tau) + Q^{\text{cool}}(\tau)}{G_B \cdot C_{pm}} \quad (2)$$

Numerical determination of process variations in the dynamics warm-up was performed by the method of elementary balance, whereby the water content in the process of heating for step bills on time has a discrete temperature value are equal.

At the beginning of the warm-up water temperature at the inlet to the diesel matters $T_B = T_{\text{exid}} = T_B^{\text{min}}$. The water temperature at the outlet of the diesel and the water temperature after the refrigerator is determined from the expressions (1) and (2). Setting the water temperature at the output of the diesel in the new value of the outlet temperature from the fridge, finish the calculation of duration $\tau_{\text{y}} = M_B / G_B \cdot c$, where M_B is the mass of water in the cooling system of a diesel engine, kg; G_B - performance water pump on the warm-up phase, kg/s.

The temperature of the coolant is determined at discrete cycles, which gives the possibility of calculation by setting the dependence $T_B = f(\tau)$.

To reduce the amount of calculations and experiments and most economical of their conduct, applied the method of mathematical planning. Mathematical planning of experiments were performed according to the orthogonal plan of the second order in three variables are varied at three levels.

Verification of developed model for the calculation of heating diesel is based on the main provisions of the thermal transfer of the masses. The

adequacy of the model was carried out by matching the experimental and theoretical dependencies for different ambient temperatures T_0 and the rotational speed n of the crankshaft of a diesel engine with a power and a diesel heater $P_{m/n} = 0$.

The simulation values of power of the diesel heater to warm the diesel engine of the locomotive CHME3 should be in the range of 35-70 kW as the most rational for Ukraine with the medium seasonal air temperature during the cold period of the year within 263 0K.

AUTONOMOUS APARTMENT ENERGY CONTROL AND MANAGEMENT ENERGY SUPPLY COMBINED SYSTEMS

Asmankina A., Loria M.

Volodymyr Dahl East Ukrainian National University

Tariffs increase is one of main modern Ukrainian problems, therefore there is a necessity for the energyindependent, autonomous systems creation which will be controlled and managed remotely. The combined systems creation, able to work remotely and regardless of direct energy resorses, will result in the considerable protected level increase from tempreture overfalls and overfalls in the electric system instability.

The aim of research is suggested to combine a few systems types, with the distance control. We will consider the systems in the differentiated kind. The first is dwelling apartment heating system. The dwelling apartment heating and cooling system is exactly that buildings engineering providing industry, in which principles «Intelligent building» or «clever house» began inculcated at first, because it is a main buildings exploitation expenses item. An expencive equipment and editing must be counted on enough large burn-time on a refuse. The heating system must provide correct temperature in a house, reacting on a drop in temperature or thaw. Taking into account a temperature outside a house, the system must regulate work of all heater elements so that in an apartment a temperature remained a maximally comfort and optimum. The space-heating system with a built-in intellect will allow substantially to save money facilities. The heating market equipment makes gaudy advantageous price suggestions, and prices on energoresursy grow steadily. Warm is given by a pump through distribu-