

COMPUTER TECHNICS AND INFORMATION TECHNOLOGIES IN WORKING SYSTEMS IN TRANSPORTATION

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Abstract: *The modernisation of road, rail, air, and water transportation is one of the countries' priorities, given its importance in the Czech Republic, the European Union, and in the world, currently. The issues of computer technics and information technologies in the current situation and future prospects. The role of computer technics and information technologies in the modernisation of transportation. The working systems in transportation. The application of computer technics and information technologies into present working systems in transportation and the creation of new working systems with computer technics and information technologies. The role of worker in the working system with computer technics and information technologies. The issues of human, social, and technical requirements in the working systems. The optimization of the working systems with computer technics and information technologies in the practice. The role of the working systems optimization in the practice for human and safe operation in transportation. The implementation of safe health care practices in working systems with computer technics and information technologies in transportation. The knowledgeability and the training of employers, employees, and related persons in issues of working systems with computer technics and information technologies in transportation in the practice. The significance of the knowledgeability and the training of individuals in the issues of working systems in transportation. The methods for ensuring the knowledgeability and the training in the practice. The current situation in the Czech Republic and other countries of the European Union. The legislative requirements and the options of support in the above mentioned field in the practice. The need for law amendments pursuant to the requirements of the current scientific knowledge and the practice.*

Keywords: TRANSPORTATION, COMPUTER TECHNICS, INFORMATION TECHNOLOGY, WORKING SYSTEMS, HEALTH, TRAINING, LEGISLATION

1. Introduction

The demands for transportation are still increasing. For fulfillment of these demands it is essential to modernize transportation. Computer technics and information technologies have important role during the modernization of transportation. Currently, the intensive development is being in progress in all types of transportation.

Computer technics and information technologies are being applied into existing equipments or new equipments are being constructed over a period of the modernization of transportation. During constructing of new equipments with computer technics and information technologies new working systems are being created. Within application of computer technics and information technologies into the existing equipment the type of working process could be changed.

During design and application of new equipments with computer technics and information technologies into the existing equipments in transportation there is necessary to pay attention to the role of worker in working system and respect human, social and technical requirements.

2. Prerequisites and means for solving the problem

The global importance of transportation and communication is still increasing. With the development of technology, commerce and tourism in the 2nd half of the 20th century, most countries of the world have experienced a fast growing demand for transport and the increasing demand of travelers and transporters for transport reliability. The automobile and air transport operators have adapted to these requirements in a versatile manner. Rail transport has also had to start offering their customers higher traveling speed, reliability, sufficient range of connections, comfort and complex range services.^[1] In the Czech Republic the progress of transportation is also in motion.^[2] In the Czech Republic not only important and major transportation intersections are being modernize, but also regional railways, which are crucial for transport services. The aim of experts from Faculty of Transportation, the Czech Technical University in Prague is focused against neglecting regional railways. They project the optimal arrangement from point of view of health protection, traffic fluency and increasing attractiveness for passengers.^[3]

These specialists occupy themselves with the modernization of dispatcher buildings and other facilities^[4], which constitute for public passengers interface with surrounding around the railway (halls etc.), where services could be provided for passengers continuously.^[5] In practice modernizations of transportation were different extent of improvements, sometimes only partial defects were eliminated and sometimes the complete revitalization of substantial extent was accomplished.^[6]

By all these modernizations the computer technics and information technologies are applied in different degree. During the implementation of all projects there is necessary to ensure appropriate health protection.

The progress in transportation has the important advantage not only for the Czech Republic, but also it also has transnational consequences. The Czech Republic occupies a strategic position in the centre of Europe, which also predestinated it to be at the centre of big events and crossroad of important routes. But if it does not react quickly to the changes taking place in the rail transport in the neighboring countries (especially in German and Austria), which are, and any other things, substantially increasing the qualitative and capacitive level of their railway line infrastructure, the natural potential of the advantageous positron will remain unused, and this will reflect in the declining level of the whole economy.^[1]

Modernization of transportation is connected with application of computer technics and information technologies thereby also creating new working systems and changing existing working systems. Elements of working systems are technical, organizational, and human factors, which have influence on working behavior and satisfaction of people. By project of new working system and application of computer technics and informational technologies into existing working systems there is essential to exercise scientific knowledge and practical experience with the aim of maximizing satisfaction of human and creating optimal working conditions with regards to satisfaction, safety and health of workers including developing of all current proficiency and acquiring new proficiency with reference to technological and economic efficiency and performance.

The optimization of working conditions in transportation is very important for traffic safety. Working systems calls for a realization of adequate precautions in field of health protection.

3. Solution of the examined problem

In new and changed working systems at work places in transportation there is essential to create optimal working conditions. The optimal working conditions are important from the point of view both traffic safety and type of working system. Further it is essential to realize appropriate health protection with reference to type of working system. The requirements for health protection in transportation are administered according to the norms of the law in force. Legislation specifies basic requirements for health protection with reference to types of working systems. (For example legislation regulates basic requirements for health protection at work with computer technics and information technologies. In addition to legislative requirements there is even so still possible support health protection, which has the aim to improve health conditions of workers. In addition to legislative commitments in force there could be as well realized the appropriate form of health protection support.

During realization of health protection and health support the knowledgeability for all involved people. In the Czech Republic this knowledgeability is provided by training of workers, which is a part of study at universities and in the technical field. Significant part of employees in transportation is graduates of the Czech Technical University in Prague. CVUT Prague's curriculum includes subjects, which deal with public health protection in transportation. Graduates exploit their obtained knowledge after entering professional practice. There is a possibility of expert consultations.

The Czech Republic continues in realization of health protection the period when two neighboring states – Bohemia and Slovakia had been connected in one state – the Czechoslovak Republic. Therefore the similar situation is in the Slovak Republic. In the Slovak Republic significant part of experts working in transportation has been graduated from one of faculties at University of Žilina. University of Žilina's curriculum also includes subjects, which deal with health protection and there is a possibility of expert consultations in this field.^[7] The Slovak legislation specifies the requirements for health protection.

Legislation regulates basic requirements for health protection at work with computer technics and information technologies. Continuously the new actual requirements for health protection (for example appropriate furnishing of work places, including of work breaks). In the future it is necessary continuously to improve legislation on the basis of practical experience (progress of information technologies is a issue in the latest years) and on the basis of increasing scientific knowledge.

4. Results of discussion

During application of computer technics and information technologies into working systems through modernization of transportation it is always essential to deal with influence of work on health. By creating new working systems or changing existing working systems it necessary to focus on factors of working environment and working process and attract attention to influences of environment on human. Realization of adequate form of human health protection. Ensuring sufficient knowledgeability for all involved people about health protection issues. Updating of legislation in harmony with new scientific knowledge.

5. Conclusion

During application of computer technics and information technologies through modernisation in transportation new working system are being created. Working systems and existing working systems are being changed. Even then the type of working system could be changed.

In the Czech Republic at work places in transportation there is currently realized health protection. The requirements for health protection are administered according to legislation. Except commitments from legislation in force that could be realized appropriate health support at work places in transportation. In the Czech Republic the issues of health protection and health support is included in universities curriculum and workers are being trained by training systems. In transportation the issues of health protection could be consulted with experts in field of health protection and health support.

Similar situation is in other countries. In transportation the direct influence on workers' health is positive reflected on traffic safety.

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