prof. Ing. Tatiana Molková, Ph.D. – prof. Ing. Vlastislav Mojžíš, CSc.

Čtvrt století Dopravní fakulty Jana Pernera Univerzity Pardubice (A quarter of a century of the Jan Perner Transport Faculty of the University of Pardubice)

On the occasion of the 25th anniversary of the establishment of the Jan Perner Transport Faculty of the University of Pardubice, the paper briefly deals with the arising of the Faculty, its present situation (in both the education and research areas) and outlines further prospects of the Faculty.

Ing. Jiří Pohl

Energetické aspekty moderní železniční dopravy (Energy aspects of modern railway transport)

The current form of transport, typically observed at transport of passengers and goods with a predominant share of cars is unsustainable already in quite a near time horizon due to its high energy demands. The fact is that it is connected not only with global exhalations which irreversibly damage climatic conditions on our planet, but also with local exhalations damaging people's health. Technological innovations feature a large potential in sustainable mobility of the future. New technologies increase attractiveness of railway transport, which is a condition precedent of the arising of extra-modal energy savings. At the same time they increase its energy efficiency, which is a precondition of the arising of intra-modal energy savings.

Ing. Tomáš Konopáč

ERTMS jakožto nedílná součást řízení a zabezpečení moderní železnice v České republice (ERTMS as an integral part of management and control of modern railways in the Czech Republic)

Both the basic pillars of the European Rail Traffic Management System (ERTMS), i.e. Global System for Mobile Communication – Railways (GSM-R) and European Train Control System (ETCS), have become a common standard in the field of railway control command and signalling in recent decades. Although the deployment of ERTMS is mainly associated with the issue of the railway interoperability introduction in the railway sector, its significance for the Czech Republic is much more essential. The GSM-R system has been installed and commonly used in railway infrastructure and on trains for many years, whereas ETCS has just begun to be intensively implemented in operation applications. ETCS is a relatively complex electronic system, which has an incomparably higher level of functional performance compared to the national train protection system known as LS. It brings a significant possibility of increasing the railway transport safety. The technically and functionally advanced train protection system brings new technical and technological requirements, for example from the viewpoint of configuration of the railway infrastructure, in order to properly use its properties and to minimise possible constraining effects on the railway capacity.

Ing. Marie Vopálenská

Interoperabilita evropského železničního systému a postup aplikace Technického pilíře 4. železničního balíčku EU (Interoperability of the European railway system and development of application of the technical pillar of the 4th Railway Package of the European Union)

In the 1990s the European Community (EC) started to deal with the declining share of railway in the transport market of Europe and adopted a number of measures for the support of the railway transport market position. Among the most important measures it is necessary to mention the decision focused on solution of the railway system interoperability as a condition necessary for removal of barriers impeding fluent transport between individual states and hindering the improvement of its quality for customers. The EC defined Interoperability of the railway system in its legislative documents as: “the ability of a rail system to allow the safe and uninterrupted movement of trains which accomplish the required levels of performance for these lines. This ability depends on all the regulatory, technical and operational conditions which must be met in order to satisfy the essential requirements”. Interoperability on the railway within the meaning of this definition means compatibility of vehicles and of the infrastructure, as well as of communication and information systems of various participants of railway operation. The article represents basic legislative European as well as national documents which have already been adopted within the framework of the above mentioned objective and which are up-to-date also at present.

Ing. Tomáš Rolník

Jízdy dvoucestných vozidel HZS na síti SŽDC při zajištění záchranných a likvidačních prací z hlediska dopravní technologie (Driving of two-way vehicles of the Fire Brigade on the SŽDC network in the provision of rescue and accident consequence removal works in terms of transport technology)

The article deals with the transport technology of two-way vehicles. The article describes the principles of its security and organisation of the ride from the point of re-railing to the point of intervention.

Ing. Petr Kolář – Ing. Michal Pavel – Jaroslav Hokeš

Kooperativní inteligentní dopravní systémy na železničních přejezdech (Cooperative intelligent transport systems on railway level crossings)

The article deals with the use of cooperative intelligent transport systems at railway level crossings. SŽDC, cooperating with AŽD Praha and RADOM, is involved in the project "C-ROADS Czech Republic" where the aim of their cooperation is to develop, design, install (on a pilot basis) and test a C-ITS system that would transmit information to road vehicles approaching to a railway level crossing about its location and especially that the level crossing device is in a warning state, which helps to timely warn the driver approaching the railway level crossing. Assuming a successful

pilot verification and test operation, and if the safety analysis does not reveal any unacceptable risks, this system may become an important contribution to increasing safety at railway level crossings.

Ing. Ladislav Novák

Pětapadesát let provozu fenomenální řady lokomotiv ČME3 (Fifty-five years of operation of the legendary ČME3 locomotive series)

In 2018, fifty-five years will have passed from the birth of the legendary ČME3 (ChME3) series shunting diesel locomotives, which hold the world record in exporting the largest number of locomotives to a single customer. Their reliability and popularity have resulted in the continuous operation of the majority of ČME3 locomotives until today, far surpassing their planned service life. The paper also discusses the development of the ČME3T (ChME3T) modification, which changed theoretical propositions on EDB, by the effective use of the electrodynamic brakes in shunting locomotives.

Ing. Miroslav Šídlo

Zahájení procesu řízení rizik při provádění technických změn na železničních subsystémech (Commencement of the risk management process during execution of technical changes in railway subsystems)

This article focuses on one of the ways to launch a risk management process for proposed changes in railway subsystems and on the activity and responsibility of the change designer. The start of the process has been described together with the guiding of a simple form of identification of predicted hazards, which is not only creation of a document, but also application of the entire range of analytical procedures, the examples of which have been presented.

Bc. Martin Král – Ing. Jakub Dufek – Ing. Lukáš Čejchan

Železniční nákladní koridory (RFC) (Railway freight corridors (RFC))

On the basis of Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight, the obligation to establish and operate Rail Freight Corridors (abbr. RFC) has been imposed on the EU Member States involved. The RFC corridors routing has been updated by way of Annex II to Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility. The objective of the EU Regulation implementation is to create a platform for effective coordination of infrastructure managers, capacity allocation bodies, railway undertakings, terminals and other entities in order to simplify procedures for operating international transport of freight trains in Europe and

to provide services of a better quality in terms of transport times, reliability and regularity of freight traffic. The paper provides a basic overview of RFC corridors with an emphasis on four corridors routed across the territory of the Czech Republic, information on products offered by the Corridor One-Stop-Shop (abbr. C-OSS), information systems used, corridors' organisational structure and their involvement in activities in other organisations and platforms.