



Ing. Libor Lochman, Ph.D.

CER: Společenství evropských železničních a infrastrukturních podniků
CER: The Community of European Railway and Infrastructure Companies

The article briefs about the The Community of European Railway and Infrastructure Companies (CER), the leading European railway organisation, based in Brussels and representing the interests of its members to the European Parliament, Commission and Council of Ministers as well as to other policymakers and transport actors. Among the CER members Správa železniční dopravní cesty (SŽDC), České dráhy (ČD) and OKD Doprava can be listed. CER's main focus is to promote a strong rail industry that is essential to the creation of a sustainable transport system which is efficient, effective and environmentally sound.

Ing. Jiří Havlíček

Reforma UIC – vývoj v letech 2006-2010
Reform of UIC – Development within 2006-2010 years

The International Union of Railways (UIC) is a traditional railway organization whose original mission has been exclusively the technological unity (interoperability). Simultaneously with the first steps of EU towards the liberalization of the railway market in Europe UIC had to adept itself on the new situation – top responsibility in the technological policy shifted to Brussels (creation of European Railway Agency – ERA). UIC seeks its role a.o. in the world activities. Due to bad coordination of European and world activities and due to the management mistakes UIC reached the deepest crisis in its history. It resulted into a provisional administration, UIC members had to mobilize all their forces to save UIC and to focus on the key issues of the rail sector.

Ing. Ivo Hruban

Železniční dopravní infrastruktura a kvalita v dopravě
Railway transport infrastructure and transport quality

The paper deals with the current theme, namely with the quality problems in railway transport. The author proceeds from general approaches to specific conclusions. The contribution highlights the need for cooperation between managers of transport infrastructure and carriers in implementing the measures the level of provided quality.



Ing. Mgr. David Krásenský – Ing. Miroslav Klapka

Inovovaná železniční mapa RailMap jako integrální součást jednotné báze informací ERIC
Innovated railway map RailMap as integral part of uniform information base ERIC

The article emphasizes the importance of the ground information, not only for the processes of planning freight transport in the usual sense, but also for the preliminary planning and deciding upon the railway transport. Then it describes the tool ERIC (European Rail Information Centre) and railway map RailMap, which comprises its integral part and which thanks to its unique properties has gained multiple awards, both domestic and international ones. At the conclusion, the authors pinpoint also the ways of future developments of both information tools.

prof. Ing. Vlastislav Mojžíš, CSc. - Ing. Josef Bulíček - Ing. Edvard Březina, CSc.

Výsledky projektu RACIO
The project RACIO results

The basic information about results of solution of the project RACIO (Rationalization of transport infrastructure extend) is denoted in the paper.

Ing. Jiří Konečný – Ing. Jiří Šašek, Ph.D.

Zkoušky jednotného stanoviště strojvedoucího v rámci projektu EU EUDDplus
Uniform driver's desk trials in terms of the EU project EUDDplus

The paper attends to the project EUDDplus (European Driver's Desk Advanced Concept Implementation – Contribution To Foster Interoperability) and describes arrangement of the uniform driver's desk how is described in the Leaflet UIC 612-0. Further two different designs of driver's desk at reference electric locomotives are described there (Škoda Transportation - 380 and Alstom Transport - PRIMA II) and tests which were carried out in terms of at the Test Centre VUZ in Velim and the test circuits in Wegberg-Wildenrath.



doc. Ing. Jaromír Zelenka, CSc.

**Hodnocení vodicích vlastností lokomotivy v obloucích velmi malých poloměrů
podle nové vyhlášky UIC 518:2009**
**Assessment of locomotive guiding behaviour in small-radius curves according
to the new UIC Code 518:2009**

This article follows the article published in the VTS ČD No. 28/2009. The article deals with analysis of the assessment of the guiding behaviour of the diesel-electric locomotive CZ LOKO in small-radius curves ($250 \text{ m} < R < 400 \text{ m}$) according to the new UIC Code 518/2009. The assessment is realized through the calculation of the quasistatic loading force acting on the outer wheel of the first wheelset passing through small-radius curves. The assessment of this quantity is realized depending on the supposed weight of the locomotive and for the various combinations of wheel and rail profiles (for the various characteristics of wheel-rail contact geometry).

Ing. Ondřej Černý, Ph.D. – doc. Ing. Radovan Doleček, Ph.D.
– doc. Ing. Jaroslav Novák, CSc.

**Synchronní motory s permanentními magnety pro trakční pohony kolejových
vozidel**
**Synchronous motors with permanent magnets for traction drives at rail
vehicles**

The paper deals with problems of traction drives with permanent magnet synchronous motors. These low-speed motors enable the implementation of traction motors with small dimensions where the torque is transmitted directly without gearbox to the axles or wheels of vehicles. This solution represents compact drive unit with simplified mechanical part and higher efficiency which is used at road and rail vehicles at the last years.

Ing. Michal Satori

**Frekvenční závislost chyby převodu a úhlu přístrojových transformátorů
s izolačním napětím 123 kV v rozvodně 110 kV,
trakční napájecí stanice 25 kV, 50 Hz**
**Frequency dependence of transfer and angle error of instrument transformers
with insulation voltage level 123 kV in distribution plant 110 kV,
traction substations 25 kV, 50 Hz**

Distributor of electric power fitted traction substations 25 kV, 50 Hz with active and reactive static electric meters, which could analyse percentage content of voltage or current harmonics in the connection point. Measured input of static energy meters are instrument voltage and current transformers with insulation voltage level 123 kV,



which are located in distribution plants 110 kV of traction substations 25 kV, 50 Hz. These instrument voltage and current transformers have defined maximum limits of transfer and angle error, but by condition of sinusoidal waveforms of primary voltage and current. Aim of this work is review frequency dependent transfer and angle error by instrument voltage and current transformers with insulation voltage level 123 kV by measuring higher voltage and current harmonics.

Ing. František Rajský

Porovnání výsledků simulace a experimentálního měření harmonických frekvencí

Comparison of results of simulation and experimental measurement harmonic frequencies

This thesis deals with the problems of "Modeling and simulation of processes in the electric energy distribution network". Because of the wide scope of this subject, the term of simulation are narrowed to the simulation of electric energy quality. The focus was especially on voltage and current harmonics. A place of railway traction current network connection is chosen as a modeled and measured point of the distribution network. Data gained from simulations of standard situations in direct-current and alternating current traction network are compared with the data gained from real measurements. These data are compared with the standards and regulations concerning electric energy quality.

Ing. Ladislav Mlynařík

**Model dvanáctipulzního usměrňovače
Model of 12 pulse rectifier**

This paper talks about laboratory model of 12 pulse rectifier. This model will be created in laboratory of Department of Electrical and Electronical Engineering and Signalling in Transport of DFJP of Univerzity Pardubice. There are described possibilities of laboratory lessons for students in this text. In the third part is made the proof of elimination of upper harmonics in primary current.



Ing. Jiří Soukup – Ing. Armin Delong

**Dynamický zkušební stav
Dynamic Test Bed**

The paper informs on present scope of accredited and unaccredited trials realized on the Dynamic test bed (DZS) on the Test centre Velim of Výzkumný Ústav Železniční, a.s. (Railway Research Institute, j.s.c.) and its equipment. DZS prepares trials not for railway industry only but intends also to enlarge their diversification in accordance with clients' requirements from a broad industry production spectrum.