



Ing. Jaroslav Grim

**VUZ se stává notifikovanou osobou v rámci evropského železničního systému  
VUZ became a notification body within the European railway systém**

The article comprises basic information relating to the preparation and fulfilment of essential legislative conditions for obtaining statute of authorized or more precisely notified subject, which is eligible for the activities with products, components and subsystems of European railway system conformity assessment, in accordance with Government Regulation No 133/2005 Coll. and Act No 22/1997 Coll., respectively in relation to the ÚNMZ decision for granting this authorization to the Railway Research Institute, joint stock company.

Dr. Ing. Roman Štěřba

**Financování dopravních služeb ve veřejném zájmu  
Financing of transport services in public interest**

There are two dominant providers of public passenger transport services in public interest in the Czech Republic – Czech Railways (ČD) and Prague Public Transit Co. (PPT). Both companies are owned by public sector. The State holds full share in the ČD and the Capital Prague holds full share in the PPT. Actually it seems to be several differences enforced in recovery of losses relating to the activities performed on basis on public service contracts. The most important dissimilarity consists in admission of declared loss.

Jitka Češková

**Co je program Leonardo da Vinci Evropské komise a příklady projektů s účastí  
Českých drah, a.s.**

**What is European Commission programme called da Vinci and examples of  
projects with Czech Railways participation**

The article gives brief information about the European Union Education Programme – Leonardo da Vinci. There are described some other projects in which the Czech Railways take part at present.



Ing. Danuše Marusičová

**Strategie rozvoje projektu ERTMS v České republice v letech 2007 – 2013  
Development strategy for ERTMS project in the Czech Republic 2007 – 2013**

Development strategy for ERTMS project in the Czech Republic as the common document of České dráhy, a.s. and Správa železniční dopravní cesty, s.o. is introduced in this paper. The strategy contents parts devoted ERTMS application (GSM/R as well as ETCS) in the Czech Republic during the period under consideration at the infrastructure as well as at the rolling stock including the proposal of telematic applications realisation.

Dr. Ing. Aleš Lieskovský - Dr. Ing. Ivo Myslivec - Ing. Pavel Špaček

**ETCS a AVV - spolupráce, nikoliv konkurence  
ETCS and AVV - cooperation, not rivalry**

The paper deals with mutual cooperation between train protection system ETCS and AVV, which is the system for automatic train operation and which is used on vehicles of Czech railways. Although the external expressions of both systems are similar, each device has its own purpose different from the other one and that is why one device cannot substitute the other one. But the difference in purposes makes the ideal couple of these two devices, when they supplement each other and together they provide the system for automatic safe train driving.

Ing. Petr Červinka

**Zavedení technických specifikací interoperability pro telematické aplikace v  
nákladní dopravě u ČD, a.s.  
Introduction of TAF for telematical application in freight transport in Czech  
Railways**

TAF implementation is compulsory for all railway undertakings and infrastructure managers in EU countries. Strategic European Deployment Plan should be elaborated until January 2007. If railway companies would fail to establish this Plan, then ERA will take action. TAF deployment without parallel change of business processes would just increase cost. Rational implementation of some TAF functions may ensure return of investments and will increase quality and reliability of freight transport. Czech Railways do all needed arrangements for introduction of TAF.



Ing. Jaroslav Koziol - Ing. Martin Kopecký

**Ústřední dirigování vozů  
Central steering of cars**

Provision of required car for loading is the most difficult part of whole rail freight transport. ČD has decided to go by way of centralization of activities into one steering centre with several working sites which are managing freight rolling stock as product (so according to the car series). With regard to high-level requirements to the information inputs and support from new working sites, at the same time new information system was realized. This new information system maximally facilitates executing of all important activities. Simultaneously with this information system, module of mathematical optimalization of empty cars equilibrium on the ČD net was introduced.

Ing. Michal Palán

**Bezkontaktní čipové karty Českých drah  
Proximity Integrated Circuit Cards and their application in Czech Railways**

This paper deals with Proximity Integrated Circuit Cards and their application in Czech Railways. In the first part, it deals with smart cards generally, with their history and technical development. In the second part, the worldwide most used MIFARE standard is focused. The third part informs about the MIFARE DESFire type, which the Czech Railways have chosen for their „In-karta“ product. In the last part it presents the Modrá karta (Blue Card) project.

Ing. Jiří Krupica

**Zpětný vliv trakčních měníren Českých drah vůči napájecí síti 22 kV, 50 Hz  
Reverse effect of Czech Railways traction substations towards supply network  
22 kV, 50 Hz**

The article deals with the possibility of fulfilment of standards and requirements set by electricity suppliers at DC supply substations. Harmonic currents of traction rectifiers are main criterion. The paper consists of two parts – theoretical part and part based on experimental activity of TÚČD.

Experimental works came to the observation that reality differs from the theoretical premises. Values set in standards just result from these theoretical premises. With regard to the fact that the analysis of the results from the experimental works was carried out nearly from 240 thousand data, we can consider them as representative. On this account this analysis can be recommended for the appraisal of reverse effects of current elements harmonic TNS DC for supply network, both for reconstruction of present TNS and for drafting of new TNS.



doc. Ing. Karel Hlava, CSc. - Ing. Radovan Doleček - Ing. Ondřej Černý

**Poměry při zkratu na trakčním vedení jednofázové soustavy 25 kV, 50 Hz**  
**Conditions at short circuit on traction mains of single-phase system**  
**25 kV, 50 Hz**

The paper deals with analysis of voltage and current at the supply substation output of single-phase system 25kV, 50 Hz ČD when short circuit at the beginning and at the end of current supplied section. Short circuits are simulated for single-track and double-track of current supplied section. A traction main is studied as long main and influence of Filter-Compensation Equipments is observed. There is proved dependence of over voltage on current which is being switched off by vacuum switch.

Ing. Radovan Doleček - Ing. Ondřej Černý - doc. Ing. Karel Hlava, CSc.

**Přechodné jevy při provozování filtračně kompenzačních zařízení na ČD**  
**The traction substation operation with Filter-Compensation Equipment (FCE)**

The paper has been solving the problem of the traction substation operation with Filter-Compensation Equipment (FCE). The main objective is to explain transient effects which arise during real operating and failure states of FCE. Firstly, detail analysis of traction circuit is carried out then design of these transient effects is conducted by computer simulation from which individual modeling traction circuit are designed. These tractional models present input data for simulations by PSpice version 9.1. Critical states are deduced from current and voltage knowledge which present simulative program output. Electric values gained by analysis of these states are used as input parameters for design of traction circuit protections. This design of protections is able to utilize for traction substation design with FCE.

doc. RNDr. Jaroslava Machalíková, CSc. - doc. Ing. Jaromíra Chýlková, CSc.  
- Ing. Renáta Šelešovská, PhD.

**Tribotechnické aplikace vybraných instrumentálních metod**  
**Utilization possibilities of advanced instrumental techniques**

The paper deals with the utilization possibilities of advanced instrumental techniques – Fourier transformation infrared spectroscopy, analytical ferrography and voltammetric methods, in analysis of conveyance oils. The results of the wearing of motor and gear oils study are presented.



Ing. Milan Kučera

**Požadavky na provádění a materiál železničních ocelových mostů  
Requirements for construction and material of rail steel bridges**

The paper acquaints with system of professional competence proving for construction of rail steel bridges structures. Further the paper names part of modifications and problems which must be taken into account when selecting fundamental material for rail steel structures is proceeded. To these changes also enterprise technical rail infrastructure legislation must react both on the side of SŽDC s.o., and on the side of ČD a.s. That is why fundamental amendment of section 19 – Steel bridges and structures TKP works of state railways (which will replace present section TKP works of ČD) is being processed in 2006.

Ing. Roman Adamek

**Podložky pod ložnou plochou pražce a jejich pozitivní vliv na geometrickou  
polohu koleje  
Mats under loading area of sleeper and their positive influence to the track  
geometric position**

Increase of the speed on the railways in the Czech Republic imposes harder conditions for specific structural element in superstructure of the track and for quality of ballast. Operation problems also involve increased speed which gradually contributes to the decline of track geometric position. The use of the USP in the track construction should be guarantee for slow decline of geometric position and extension of maintenance and renewal cycles on the railways in the Czech Republic.