



Ing. Jaroslav Kocourek

**Význam železničních tranzitních koridorů v České republice pro růst objemu
a kvality mezinárodní nákladní přepravy**
**The importance of railway transit corridors in the Czech Republic for the
volume increase and quality improvement of international freight transport**

The author of this paper shows, for the first time using the actual statistical data, the favourable influence of the modernizing of the railway transit corridor Děčín – Praha – Česká Třebová – Brno – Břeclav on the increase of a number of freight trains at the Děčín and Břeclav border crossings as well as the favourable influence on the increase in the pick-a-back transport, especially the unescorted transport of ISO containers. The author thus proves the efficiency of resources invested in the modernizing. However, on the other hand, he points out the imperative to modernize the lines Praha – České Budějovice – Linz and Praha – Plzeň – Cheb – Nurnberg, including the sections with our neighbours, because since the enlargement of EU on 1 May 2004 the mobility of people and goods has increased and it would be practical to solve it by means of railway transport.

Ing. Jaromír Bittner

EUDD – jednotné evropské stanoviště strojvedoucího
EUDD – European Driver's Desk

The paper studies the development of the European driver's desk EUDD. The uniform desk represents one of the many necessary conditions for interoperability of driving vehicles. The article mentions the advantages the uniform desk has brought to the Czech Railways and outlines the difficulties the EUDD had to overcome – e.g. different countries have a different placement of the desk compared to the engine axis. Further, the article describes the individual stages of the EUDD project – from the definition of requirements through solution proposals, development of individual components up to testing and evaluation. A substantial part of the article is dedicated to the actual description of the EUDD design. At the close, the author provides his own experience from visiting the EUDD simulator and drive simulation.

Ing. Jiří Landa – Ing. Luboš Kříž

Změna ve způsobu vzdělávání na Českých drahách
The educational method change in the Czech Railways

The Czech Railways is the largest national railway carrier and operator of the vast majority of railway networks in the Czech Republic. Regarding the volume of transported goods in the international freight transport the Czech Railways ranks 4th in Europe. Through e-learning, the Czech Railways has ensured the obligatory training for more than 16,000 employees. Gradually the company is integrating other



fields of education within the electronic training and is establishing the complex system of "blended learning", encompassing classical teaching, study of asynchronous courses, asynchronous and synchronous electronic communication and knowledge sharing, up to application of simulators. Thanks to this method the company has managed to actively involve the students in the training, the need to commute to participate in the training has gradually minimized, the education and qualification of employees has increased as well as their self-confidence and ability to accept changes and new systems.

Ing. Stanislav Gregora, Ph.D. – doc. Ing. Jaroslav Novák, CSc.

**Modernizace trakčních pohonů vozidel elektrické trakce
The modernizing of tractive drives of electric traction vehicles**

The article discusses the generation development of tractive drives and their conceptual solution. The main focus of the article primarily lies in the tractive drives of engines without commutators. The conclusion analyses the actual description of vehicles with asynchronous drive operated by the Czech Railways and Czech transporters.

doc. Ing. Ivan Konečný, CSc. – Ing. Petr Hloušek, Ph.D.

**Vybrané problémy EMC hnacích vozidel a kolejových obvodů
Selected issues of EMC driving vehicles and track circuits**

This paper describes the disturbing influences to the track circuits and particularly the issue of disturbance of the reverse tractive current of the driving vehicle. The methodology innovation of measuring and evaluation of reverse tractive current parameters is covered in detail. At this point the method of processing and evaluation of measuring are described, including a comparison of their characteristics with respect to this application. The methods of Short-Time Fourier Transform (STFT) and Continuous Wavelet Transform (CWT) were chosen because it considers the analysis of a non-stationary signal.



doc. Ing. Karel Hlava, CSc.

Důsledky nesymetrie fázových reaktancí obou sekcí transformátoru dvanáctipulzního usměrňovače ČD z hlediska jeho EMC vůči napájecí síti a trakčnímu vedení

The consequences of the imbalance of phase reactances of both the converter sections of the twelve-pulse rectifier with respect to its EMC towards the feeding network and tractive line

The study analyses, using the simulation method, the situation when the phase reactances of both sections of the twelve-pulse tractive rectifier of the Czech Railways without zero reactance coil do not have, as a result of different values of voltage, for a short time in both secondary coils the same values. The findings cover three areas, as follows:

- Spectrum of rectified output voltage;
- Spectrum of total primary current;
- Distribution of loading current to both sections of the rectifier.

RNDr. Jaroslav Bárta, CSc. et al.

Využití geofyzikálních metod pro ověřování stavu železničních tratí – informace o výsledcích grantu MD ČR

The application of geophysical methods in verification of railway track conditions – information regarding the results of the grant awarded by The Ministry of Transport of the Czech Republic

Pursuant to the decision on the provision of special-purpose financial resources of the Ministry of Transport and Communications of the Czech Republic, the company G IMPULS Praha spol. s r.o., together with co-researcher The Faculty of Natural Science at the Charles University carried out the research project: Application of geophysical methods in verification of conditions of the Czech Railway railway tracks. The project was initiated in March 2001 and finished in December 2003. The principal task of the project was to find out which geophysical methods are suitable for diagnostics of railway tracks and what may be the benefit. Another goal was to produce a small seismic vibrator and test its use in practice. The tasks were fulfilled. The conclusions of the research shall be used in the planned "Instructions on how to use geophysical measurements" designed for railway employees.