



Ing. Aleš Bartheldi, Ph.D.

**Spravedlivé zpoplatnění silniční a železniční dopravy  
Equitable Charging for Road and Rail Transport**

The article deals with the charging system of the road and rail transport and the mutual disproportions between the user charging and exploited services that have a direct relation to entire costs, generated by users of the road and rail infrastructure. This article disseminates the results of the dissertation thesis, which was elaborated and defended by the author in February 2009. Final results of 4 different variants of the analysis model are deeply analyzed and own recommendations are defined for the future pricing reform of road and rail transport.

Ing. Peter Šišolák

**Pohled na posuzování shody komponentů interoperability a ověřování  
železničních subsystémů  
A View of Assessing Conformity of Interoperability Components and Certifying  
Rail Subsystems**

In the article is introduced the area of conformity assessment in railway sector. There are in a simple form described the reasons of conformity assessment, used procedures and issued documents by independent bodies and manufacturers to declare the conformity. At the end of the article author describes the present status in Slovak republic on the fields of conformity assessment and process of Notified Body creation.

Ing. Aleš Márovec - RNDr. David Žák, Ph.D.

**Železniční bezdrátová přenosová síť  
Railway Communication Network**

The article introduces the Railway Communication Network [RCN]. The goal of RCN is to allow reciprocal communication of stationary and mobile applications. Applications don't need to establish connection, select accessible networks, make routing decisions and etc. Entire communication is based on TCP/IP standard. The first part of the article describes RCN features, RCN structure and state of RCN implementation in České Dráhy, a.s. (Czech Railways, joint stock company). Second part of the article describes transition to dynamic addressing. The goal of this change is to use, in the framework of the open architecture of communication infrastructure, more sorts of mobile networks (GPRS, EDGE, CDMA and LTE) and wireless networks (WiFi, WiMax, etc.) in order to ensure data communication.



Ing. Michal Krbec - Jiří Vrba - Petr Smýkal - Ing. Oldřich Herman

**Zkušenosti s rutinním provozem informačního systému ÚDIV  
Experience with Routine Operation of the ÚDIV Information System**

This paper provides summary information about the development and the present state of the system wagon management by IS ÚDIV (Central informational system for operating control of railway goods wagons) under the conditions of ČD Cargo, a.s.

Ing. Jakub Pěchouček - Mgr. Dušan Pouzar

**Vyhodnocení kvality nových vzdělávacích technologií v rámci projektu 2Train  
pro strojvedoucí je u konce  
Quality Evaluation of New Training Technologies Within the 2Train Project for  
Drivers Has Ended**

The reader can find results from each evaluation studies that were placed in several training centres of Transport Training Institute during October and November 2008. Individual results can be perceived as an instruction for future expansion of drivers' training both in preparation and in regular knowledge examination of experienced drivers. The aim of the article is not to evaluate individual results but to get general information about the whole evaluation that train drivers found as a very strong contribution.

Finally the reader has the possibility to find the description of the evaluation process carried out in DB's training center in Fulda (Germany), where two Czech train drivers have participated on the German's evaluation process.

Ing. Rudolf Mrzena

**IDS a drážní doprava - prostředek udržitelného rozvoje dopravy  
IDS and Rail Transport – a Mean of Sustainable Transport Development**

The article deals with relative and absolute transport impact on the environment and possibilities of decreasing negative impact of transport on the environment. It demonstrates technical, technological and urban options, especially in relation to rail transport which has – especially with electrical traction – the best conditions for decreasing energy exigence of transport and thus negative impacts of transport on the environment.



Ing. Martin Jacura - Bc. David Poschl - Ing. Lukáš Týfa, Ph.D.

**Vyhodnocení ankety mezi cestujícími za rok 2008 o akceptaci zpoždění  
a rozvázání přípojových vazeb**  
**2008 Evaluation of the 2008 Passenger Inquiry on Accepting Delays and Train  
Connections Disturbance**

This paper contributes to a discussion on important and up-to-date problems from passenger transport – maintaining train connections in case of the train delay. The authors describe by math detriment of individual passengers' groups in case of a timetable breach. The authors made a public inquiry on websites to obtain an idea about the passengers' sensitivity to train delays. The conclusion of the public inquiry is presented in this article.

Ing. Radim Brejcha

**Výpočet provozních intervalů na tratích řízených podle předpisu SŽDC (ČD) D3**  
**Calculation of Operation Intervals on Lines Controlled in Accordance With  
Regulations of SŽDC (Railway Infrastructure Administration) (ČD) D3**

The paper deals with questions of capacity of regional railway lines operated by the Regulation for simplified operation of railway transport. The analysis of utilized methodologies leads to a conclusion that these methodologies are not suitable for capacity estimation in the frame of current conditions anymore. The paper analyses interlocking service procedure and especially their time exigence.

doc. Ing. Radovan Doleček, Ph.D.

**Simulace přechodných stavů při zkratu na trakčním vedení**  
**Simulation of Transient States During Short-circuits on the Contact Line**

The paper deals with simulations of transient effects on the traction system AC 25 kV, 50 Hz by computer support. The current situation of railway technology is very complicated and sophisticated both from the viewpoint of railway infrastructure and from the viewpoint of transport means.

The main problem are short-circuits on contact lines. These effects can occur during failure states of traction circuit. It is necessary to know the exact behaviour of the contact line for adjusting operation protection.



doc. Ing. Karel Hlava, CSc. - Ing. Michal Satori - Ing. Tomáš Krčma

**Analýza poměrů při použití ukolejňovacího lana v železniční stanici  
Conditions Analysis for Bare Earthing Conductor Use in Railway Stations**

The paper deals with analyses of voltages on the bare earthing conductor connecting the masts and ports of the overhead contact line at the railway station. Introduction of this earthing conductor can exclude individual spargaps connecting the mast or port with the rail. Simulation results are recapitulated in diagrams useful for the chosen input circuit values and for the chosen faulty current 1000 A. The method of the diagrams utilisation is described in the final part of the paper.

RNDr. Michal Tesař - doc. Ing. Ondřej Jiroušek, Ph.D. - Petr Štěpánek

**Numerické modelování hodnot elektrické permitivity štěrkového lože a  
možnosti využití výsledků pro správu železničních tratí  
Numerical Modelling of Ballast Electrical Permittivity Values and Possibilities of  
Using Results for Rail Lines Control**

The article presents possibilities of obtaining the relationship between variables for projecting and ensuring timely ballast maintenance on railway lines by using non-destructive monitoring - GPR technology. The problem is solved numerically as the magnetic wave propagation problem. Finite-difference time-domain method (FDTD) is used to obtain the relationship between variables describing the ballast bed (permittivity of the rock, porosity of the ballast bed, degree of the ballast fouling, water content in the fouling) and resulting permittivity. Permittivity of the ballast bed is calculated based on the time needed for the EMG wave to travel through the ballast bed. Using this approach it is possible to determine design graphs than can be useful for the Railway Infrastructure Administration to measure the degree of ballast fouling or for the needs of maintenance planning and increasing the lines' state of operation.

Ing. Jan Kůrka

**Hodnocení stávajících konstrukcí zděných mostů na základě dlouhodobého  
sledování stavebního stavu  
Assessing Current Construction of Masonry Bridges Based on Long-Term  
Following of their Structural State**

This paper is focused on actual needs to make standard of practice for investigating an existing arch railway masonry bridge for further assessment. There are possibilities for utilization of monitoring results for assessment in case of investigation data absence. An important option is assessment based on a satisfactory past performance according to ČSN ISO 13822, chapter 8.



Šárka Bérova

**Nová vizuální identita ČD Cargo**  
**New Visual Identity of ČD Cargo**

This article introduces the new visual identity of ČD Cargo, a.s. The company visual style follows the basic elements and their utilisation is strictly defined and demonstrated in a graphics manual. The visual style lately became one of the most important communication tools towards the public. It is very important to determine an option not only for ČD Cargo, but also for each entity, to consider carefully the entire economical, business and functional impact of the visual change of the company while implementing its new visual style. For that reason one of the essential steps is to exactly determine the implementation plan in the beginning of the project. The submitted document shows the approach of ČD Cargo, a.s. to the new visual style solution and to its application and was this company able to achieve since its establishment.