



Ing. Aleš Krejčí

**Finanční aspekty rozvoje české železnice pro regionální rozvoj**  
**Financial aspects related with a development of Czech railways for regional development**

Czech railways is looking for ways of funding its development in case of revitalisation of stations and both purchase and modernization of vehicles. One of possible ways represents EUROFIMA with its low-costs money. The State by means of Ministry of Transport has initiated the Programme for purchase and renewal of rolling stock in regional railway passenger transport. It became involved by means of state guarantees for bank credits only in former times. Czech railways considers also other possible sources of money, e.g. Public Private Partnership, leases or European Union Funds. The functionality of passenger transport system based on public service contracts should be improved by means of new Public passenger transport act which should codify mutual competencies, rights and duties between ordering authority and transport operating company.

Ing. Pavel Šiman, CSc.

**Možnosti úspory trakční elektrické energie a motorové nafty závislé na železniční infrastruktuře**  
**The possibility save energy and oil depending on railway infrastructure**

The paper deals with calculations of possible energy and oil savings, which depend on railway infrastructure conditions. Calculations are made as software simulations for timetable scheduling "SENA". In particular are explored low-speed track sections, energy recovery during braking and usage of ATO (automatic train operation).

Ing. Miloš Futera - Ing. Marek Neustadt

**Činnost OSS jako nástroje pro usnadnění přístupu dopravců na evropskou železniční infrastrukturu**  
**OSS as a tool for facilitating entrance of carriers on an european railway infrastructure**

The article describes a present situation in an offer of European infrastructure managers for international railway traffic, mostly describes development, structure a achievements of association RailNetEurope (RNE).

In the second part of the article there is compiled a present state of activities of OSS department in the Czech Republic. The authors describes there areas of activities of OSS as in implementation of European experience and processes settled in RNE so in methods of capacity allocation and following changes of workflow and IT systems in České Dráhy as a railway infrastructure operator.



Ing. Vlastimil Polach, Ph.D.

**Centrální dispečerské pracoviště Přerov - pilotní projekt**  
**Central supervisory workbench Přerov - the pilot project**

Delegation of the interlocking system operation from particular intermediate, branch and junction station to one area control centre is a breakthrough in the quality of the transport processes control. Necessity of a quality transport processes control increases together with increasing line service load and with growth of speed. The control of railway traffic in bigger areas, including branch and junction stations, brings higher efficiency of decision-making, because only such model of control can include all key transport elements. It is necessary for providing of maximum operability in bigger areas to correctly apply supporting technical instruments and transport technologies. Remote control of interlocking system with direct connection with information and control systems of railway transport allows the maximum utilisation of information flows related with the transport processes control.

Ing. Radim Procházka

**Systémové vlaky Českých drah, a.s.**  
**System trains of České dráhy, a.s.**

System trains of České dráhy, a.s. represent a new product of an international freight transport in the Czech Republic. The paper defines a conception of system trains, its benefits for customers and introduces 3 system trains which were given into operation services during period 2003 – 2006 with a trade mark: Carpáthia Express, Adria and Italia for a direct connection of the Czech Republic to Romania, Croatia and Slovenia/Austria/Italy.

doc. Ing. Aleš Filip, CSc. - Ing. Jiří Suchánek

**Certifikace satelitního signálu GALILEO pro železniční aplikace**  
**Certification of the GALILEO Signal-In-Space (SIS) for railway safety related applications**

This paper deals with certification of the GALILEO Signal-In-Space (SIS) for railway safety related applications. At first, derivation of basic SIS safety related requirements is investigated for aeronautical applications. A brief explanation, which are the main requirements, is followed by the rationales for their derivation in terms of accuracy, integrity and continuity. Then the relation among the accuracy of train position determination, integrity risk, protection level and alert limit is demonstrated by means of the practical example concerning train routing detection on the switch.



The inclusion of the GALILEO SIS quality measures among the attributes of railway dependability and safety is also proposed. Finally, there are outlined main objectives included in new R&D project proposal, submitted to the Ministry of Transport, whose solution should answer the two fundamental questions: 1) What to certify? and 2) How to certify?

Ing. Jiří Krupica

**Vyšetřování elektromagnetické kompatibility drážních zařízení v oblasti vysokofrekvenčního rušení**  
**The analyse of electromagnetic compatibility of railway devices**

The article analyses electromagnetic compatibility problems in their whole commonness, both from technical and biological view. The specific section is dedicated to specific railway electro-technical devices.

Ing. Tomáš Krčma

**Použití simulace pro studium spolupůsobení trolejového vedení a vozidlového sběrače**  
**Analysis of an interaction between overhead contact line and pantograph using simulation**

This article introduces the usage of generic simulation programs, such as Simulink or Femlab, for overhead line and pantograph dynamic behaviour analysis. First two parts describe suitable physical models, as well as their mathematical equivalents. The main part of the article is focused on the verification of the model, its input and output variables, and presentation of the results of simulation. As a conclusion, typical simulated waveforms of the contact point height and the contact force magnitude are used to explain main features of dynamic interaction between overhead contact line and pantograph.

doc. Ing. Hlava, CSc. - Ing. Radovan Doleček, Ph.D.

**Připnutí LC větví FKZ k přípojnicí 27 kV trakční napájecí stanice**  
**Connection of the Filtration LC Branches to the Traction Voltage Busbar 27 kV of the Traction Substation**

The paper deals with the transient currents and voltages arising after the connection of the filtration LC branches to the traction voltage 27,5 kV, 50 Hz. Generally true formulas for these currents and voltages calculation are deduced and the results are illustrated in the numeric example supplemented by timing diagrams layed out by simulation SW SPice.



Ing. Pavel Bartoň

**Provoz jednotného dohledu ICT služeb pro ČD a SŽDC provozovaných na  
telekomunikační infrastruktuře obou subjektů  
Running of the infrastructure for providing ICT services for ČD and SŽDC**

The whole spectrum of operations done during the running of the infrastructure for providing ICT services is the global task and in this way it should be accepted. The running of fractional management systems for each type of infrastructure without connectivity to operative databases doesn't guarantee sufficient flexibility and optimization of operation costs. The building of the central Umbrella management system for ICT services guaranteeing, which is based on such various technologies like the telecommunication technologies owned by CD or SZDC are, is definitely the very expensive task and before its implementation must be done preliminary customer expectances analysis. That is the reason why cooperation between CD and SZDC seems to be the optimal way to supply ICT services for all users working on the Czech railway.

Ing. Karel Martinec - Ing. Jan Pospíšil

**Datové tržiště nákladní přepravy  
The Data Warehouse of Freight Transportation**

The data warehouse of freight transportation (DTNP) is one of several modules of the Decision Support System (IS PRM) which offers a quality, comprehensive, formally integrated and in real-time available information on freight transportation of Czech Railways. It covers a whole range of statistical evaluation of realized transportations. For its operation, it uses data from primary and other cooperating systems, which it processes further and ensures its presentation to users in the form of elementary and cross queries (tables) and map outputs.

Bc. Marek Binko

**Pražský diametr  
Prague diameter**

This article is focused on a solution of problem – coexistence of two central railway stations in Prague with a respect on passenger rail transport system. The author briefly analyses works which were realised on this topic in the last period and introduces own proposals. Searching a solution he focuses on a function of suburban and city transport in a territory above all.



Ing. Lukáš Týfa, Ph.D.

**Určení délky traťových úseků bez znalosti jejich projektu  
Specification of the length of the track sections without knowledge of their  
project**

It's necessary to know the length of the track sections in the stage of the study and consideration of the railway network reconfiguration in the rural area, because it is the input to the optimisation algorithm. It isn't possible objectively specify this data, because doesn't exist the projects of all connections among the monitor points. There is author's own method in this paper which estimates real length the track sections by an expert subjective qualitative evaluation the ground configuration between every two points and air length between every two points. It's used the suitable characteristics of the half an ellipse graph.