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MODERNIZACE ŽELEZNIČNÍ SÍTĚ ČD THE CZECH RAILWAYS SYSTEM MODERNIZATION

The article deals with the principles of modernization of the Czech Railways system. The modernization focuses first of all on four main railway corridors. The article gives the parameters of modernization and describes the method of project schedule coordination with railway systems of neighboring countries and the procedures of securing the coordination. For the modernization projects of Corridors I and II that have already been negotiated through by the Czech Republic Government the article describes also the method of financing and the anticipated implementation period. The two remaining Corridors (III and IV) will be modernized after 2000, and the commencement of building the new high-speed railways lines that would be connected to those of European system is envisaged for the period after 2005.

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ZABEZPEČOVACÍ TECHNIKA PRO KORIDORY SIGNALLING SYSTEMS FOR CORRIDOR LINES

This article is devoted to technical conception of signalling systems for corridor lines of Czech Railways which should be applied at present and in the near future. As this is a long-term matter, changes brought about by new advanced systems are taken into account.

Ing. Karel Hlava, CSc.

DŮSLEDKY ZÁKONA č.222/1994 Sb. NA NAPÁJECÍ SOUSTAVU KORIDORŮ CONSEQUENCES OF LAW No. 222/94 COLL. TO CORRIDOR POWER SUPPLY SYSTEM

The character of traction electric power demand for the supply of railway lines, so called "corridors" shows certain differences from the demand character for supply system of classical lines.

This also involves specific requirements for the quality of the demand claimed by individual suppliers of electrical energy in accordance with the law No.222/94 coll. to improve the electromagnetic compatibility (EMC) of traction equipment in the supply network.

Both on the part of the Czech Railways as the user of electrical energy and also on the part of electrical energy suppliers, every effort is being made to meet these requirements in an optimum way under existing technical and economic conditions.



The contribution brings information separately for both traction current systems used on main railway lines of the Czech Railways (ČD) because their features are entirely different from EMC point of view.

There is also a discussion about the approach accepted by the Czech Railways for this sphere in a form of construction of filter-compensation equipment which is considered as adequate solution from the time and financial factors. Also the features of newly developed driving vehicles are dealt with - such types which would better comply with the conditions for quality demand of traction electrical energy.

doc. Ing. Jiří Izer, CSc. – Ing. Jaromír Zelenka, CSc. – Dr. Ing. Petr Doležel

**PŘÍSPĚVEK K PROBLEMATICE CHARAKTERISTIK KONTAKTNÍ GEOMETRIE
VE VZTAHU DVOJKOLÍ KOLEJ
CONTRIBUTION TO THE PROBLEM OF CHARACTERISTICS OF CONTACT
GEOMETRY IN RELATIONSHIP WHEEL SET – RAIL**

This contribution highlights the definition and the importance of individual characteristics of contact geometry in relationship wheel set - rail for comparison and evaluation of actual relationships arising during the operation - or for comparison of types of driving gauges. The main purpose of the contribution is to introduce KONTAKT 3 software for the evaluation of mentioned values, which has been elaborated under cooperation with DBAG at the Faculty of Transportation Means of Jan Perner at the University Pardubice, Department of Transportation. Now the equipment is in practical use at the DB Test Center in Minden.

Ing. Zdeněk Hřebíček, CSc.

**OPTIMÁLNÍ ZPŮSOBY PODBÍJENÍ, ZHUTŇOVÁNÍ A STABILIZACE KOLEJE
OPTIMUM METHODS FOR TAMPING, COMPACTING AND STABILISATION OF
RAIL**

The work center of the Railway Research Institute in Brno in cooperation with the Institute of Railway Constructions at the Technical College is now dealing with the problems of optimum approach to renewal of geometric rail position with the emphasis on economic aspects.

The acquired knowledge was utilized in the design of optimum composition of machine lines for processing of regulations for the renewal of geometric rail position on line sections in operation.

In subsequent stages of task solution the emphasis is primarily laid on the renewal of geometric rail position in modernizes lines and in turnouts with cement sleepers.



doc. Ing. Pavel Zvěřina, CSc.

**STABILITA GEOMETRICKÉ POLOHY VÝHYBEK NA MODERNIZOVANÝCH
TRATÍCH**
STABILITY OF GEOMETRIC POSITION OF TURNOUTS ON MODERNIZED LINES

The stability of geometric position of turnouts is one of the basic conditions of safe railway operation on modern lines. By means of geodetic monitoring of space shifts on selected points on rail turnouts with respect to adjacent fixed points, it is possible to derive the pattern of force impact in individual stretch of rails cause by temperature changes and operation influences.

Ing. Antonín Vymětal

PODKLADNICOVÉ UPEVNĚNÍ KOLEJNIC S DISTANČNÍMI KROUŽKY
SOLE-PLATE FASTENING OF RAILS WITH DISTANCE RINGS

The research results of superstructure behavior performed in the late eighties and early in the nineties for the Czechoslovak Railways were reflected in the requirement to eliminate vertical movement of a sleeper in the region of rail lifting wave and to reduce the static and dynamical effect between sleeper bed and gravel ballast as a condition for enhancing the stability of geometric position of rail and decreasing of maintenance costs.

On the basis of these requirements, indirect fastening of rail bed with distance rings and spring penefoil washers was developed which represents a new approach to solution of superstructure design. This fastening decreases static and dynamical effect from traffic to railway superstructure and substructure and at the same time secures the separation of vertical movement of rail and sleeper in the region of rail lifting wave.

On tested sections measurements were performed with this type of fastening and the behavior of rail, as a whole, was monitored. The results show that this type of rail fastening increases the stability of geometrical position of rail together with the reduction of maintenance costs.