

SUMMARIES

ARTICLES

Szymon Klemba: Concept of Otwock – Karczew Railway Line With the Passenger Flows Transport Forecast

The article presents the concept of constructing a railway line between Otwock and Karczew, with the prospect of extending it to Konstancin-Jeziorna, developed as part of an in-house project by the staff of the Railway Track and Operation Department of the Railway Research Institute. The article first addresses the transport circumstances of Karczew and the genesis of the concept, then presents the assumptions and options for the proposed new railway line, including the assumed organisation of train traffic. It also proposes the creation of a circular high-speed railway line. It briefly characterises the methodology for developing transport forecasts and presents exemplary results.

Keywords: railway transport infrastructure, organization of railway transport, transport forecasting

Jacek Kukulski: Modernisation of the Dynamometer Stand for Testing the Friction Pairs of the Railway Brake at the Railway Research Institute

The article outlines the modernisation work carried out at the Rolling Stock Testing Laboratory of the Railway Research Institute. The modernisation, conducted in 2023, focused on the dynamometer stand for testing the friction pairs of railway brakes. The stand was built in the 1990s at the then Railway Scientific and Technical Centre. To carry out the modernisation, Terms of Reference (ToR) were prepared and funding was obtained from the RPOWM programme, as well as from the Institute's own resources. One of the reasons for undertaking this modernisation project was the limited capacity of the tests performed at the stand, the wear and tear of the electronic components and the automation, including the stand control. The article discusses the scope of the modernisation and the results of abbreviated verification tests as required by the IRS 50548 standard for UIC-approved stands. The presented test results were obtained before and after the modernisation of the stand.

Keywords: braking stand, dynamometer tests, friction pair

Janusz Poliński: Desirable Directions of Development of Railway Transport in Poland Part II – Freight Transport

The article deals with issues related to rail freight transport in Poland. The first part of the article discusses factors influencing the quality of freight transport. It identifies licensed

freight carriers and their shares in the transport market. It also delineates the present state of different segments within the railway freight transport market, detailing their rolling stock requirements and how these are influenced by both linear (railway tracks) and point infrastructure (freight facilities), which generate the transport goods. The second part of the article lays out necessary steps for the development of rail freight transport. It emphasises the urgent need to develop a strategy for the expansion of freight facilities. This strategy should provide the basis for an infrastructure and technical action plan to meet the targets set by the EU for diverting freight from road transport by 2030 and by 2050. The recommendations highlight the importance of substantial, general, infrastructural, and rolling stock initiatives to ensure the assumed future leading role of this mode of transport in freight transport.

Keywords: rail transport, linear infrastructure, point infrastructure, rolling stock

Artur Rojek: Simulation of Performance Parameters of the Electric Traction Power System

The article concerns the simulation of the performance parameters of the railway traction power system. It presents the requirements for simulation programs, the method of mapping the parameters of the power supply system and traction network, the parameters of the lines and the vehicles moving on them. It describes how simulations are performed, the values calculated and characterises the output data obtained. Finally, it presents examples of results obtained from simulations and the application of such calculations.

Keywords: electric traction power supply system, mean useful voltage, supply system performance

RESEARCH INFORMATION

Renta Barcikowska: Research and Development Related to Railway Infrastructure

The aim of this information is to provide an insight into the issue of obtaining funds by the Railway Research Institute. The funds have been allocated for research and development activities within the so-called "Joint Research and Development Venture", prepared by the National Centre for Research and Development (NCBR) and PKP Polskie Linie Kolejowe (PKP PLK S.A.).

Keywords: research institutes, projects, research and development