

*Ryszard Chmielewski, Paweł Muzolf, Stanisław Sancewicz: **Deterioration Assessment of a Selected Steel Railway Bridge** (Ocena zużycia technicznego wybranego stalowego mostu kolejowego)*

The paper presents assessment methodology for steel railway bridge. Degradation of considered railway bridge due to the effect of track misalignment was taken into account. It should be noted that with the decrease of span stiffness due to corrosion, the phenomenon of twisting occurred, and therefore the lateral forces underwent increasing. It is recommended to use the findings presented in this paper to conduct inspections of railway bridges as a supplement to the procedures described in PKP PLK manual Id-16.

Keywords: deterioration assessment, degradation, steel railway bridge, bridge maintenance

*Magdalena Garlikowska, Piotr Gondek: **Problems Concerning Railway Accidents Relating to Suicides and Trespassing the Track in Prohibited Places** (Problematyka wypadków kolejowych związanych z samobójstwami i przechodzeniem przez tory w miejscach niedozwolonych)*

In article were discussed some problems related to suicides and trespassing on railway property. There were causes and effects of these accidents mentioned. There were prevention measures proposed.

In chapter 1 were found basic information about project such as: aim, steps while in chapter 2 – review of basic statistical data related to analyzed problem from different European and Non-European countries.

In chapter 3 were discussed suicides on the tracks. There were some trends in behaviours of suicides characterized, for instance differences between women and men, the day of the week, time of the day or reason. Next there were prevented measures divided into hard and soft .

In chapter 4 were discussed trespasses analogously.

The last chapter has been dedicated to the consequences of railway accidents in different aspects: mental, organizational and financial.

In summary were contained research conclusions and premises for improving of situation and safety on the tracks.

Keywords: suicide, trespassing, railway accidents

*Maciej Górowski, Tomasz Ozon: **First Polish Tramsimulator in Terms of Training and Research** (Zastosowanie pierwszego polskiego symulatora tramwaju w procesie szkoleń i badań naukowych)*

The article presents the assumptions and the construction of the first Polish tram simulator with respect to the applied technical solutions related to the use of equipment for training and research. Fair reflection of the cab and the steering position of an actual tram accompanied by appropriate software, provides realistic sensations occurring while driving a real tram. The advantage of the use of simulators in the training process is the ability to simulate all kinds of events and phenomena, which in real life would be difficult to obtain, and even endanger safety.

Keywords: simulator, tram, training

Władysław Koc: **Shaping of the Turnout Diverging Track with Linear Curvature Sections** (Kształtowanie toru zwrotnego rozjazdu z odcinkami krzywizny liniowej)

The paper shows the analytical method of shaping the diverging track of railway turnout with linear curvature sections. Presented method significantly differs from the typical method of diverging track shaping based on single arc (without transition curves). The problem of the curvature distribution was identified with the use of differential equations. The resulting solutions for each area of curvature distribution are of universal nature for instance the ability of assuming any values of curvature at the beginning and ending of the turnout. The method of creating the specified solutions is illustrated by the example of the algorithm leading to specify the value of turnout crossing angle and the ordinate of the ending (with and without the crossing angle change).

Keywords: railway turnouts, curvature modelling, calculation of horizontal ordinates

Marceli Lalik: **Selected Issues Concerning the Assessment of the Rolling Stock Conformity to TSI PRM No 1300/2014** (Wybrane zagadnienia związane z oceną taboru zgodnego z TSI PRM nr 1300/2014)

The article presents selected issues concerning the assessment of the rolling stock conformity to Commission Regulation No 1300/2014, inter alia in the scope of imprecise or incorrect translation of the requirements, possibility of using the „old” interoperability constituents in the vehicle construction and the possibility of using restrictions and conditions in the EC certificate of conformity.

Keywords: interoperability, TSI PRM, conformity assessment, railway transport, rolling stock

Thomas Nickel, Rainer Puschmann: **TSI Energy 2015 – Reference Parameters for Overhead Contact Lines**

The useable contact wire lateral position, determined in accordance with TSI ENE 2015 and EN 15273, based on the displacement of the pantograph in relation to the track axis, may be reduced by 16%. This reduced lateral position results in up to 8 m shorter span lengths for DB’s standard contact line types and, therefore, in increased capital costs. The reasons are the reference parameters for the lateral displacement of vehicles, established for the determination of the infrastructure gauge, also provide for vehicle inclination on straight tracks, to improve reliability. These reference parameters have been empirically derived from conditions in existing railway infrastructure. However, for new installations these provisions are not necessary. The TSI Energy 2015 should be corrected such that contact line designs with proven performance over long periods can also be used in the future.

Keywords: overhead contact line, interoperability, technical specification of interoperability, energy subsystem, conventional railway, high-speed railway, mechanical kinematic gauge of pantograph, electrical kinematic gauge of pantograph

Thomas Nickel, Rainer Puschmann: **Technical Specification Energy 2015 – Harmonized Design of Overhead Contact Lines**

The Technical Specification for Interoperability of the Energy subsystem of the railway systems in the European Union was published in December 2014. This Technical Specification came into force on January 1, 2015 and replaced the individual Technical Specifications for the interoperability of conventional and high-speed railway systems in force to date. The document stipulates detailed rules for the design of the mechanical-kinematic gauge of the pantograph and the maximum lateral deviation of contact wires. The harmonized stipulations result in planning data for contact lines which differ from design values obtained previously. Furthermore the article identifies necessary supplements for the next Technical Specification for Interoperability of Energy subsystem.

Keywords: overhead contact line, interoperability, technical specification of interoperability, energy subsystem, conventional railway, high-speed railway, mechanical kinematic gauge of pantograph, electrical kinematic gauge of pantograph, supplements of Technical Specification for Interoperability of Energy subsystem