

EDITORIAL

- 3** *Dr.-Ing. Eberhard Jänsch, Editor-in-Chief, DB Netz AG and Willy Waßmuth, Projectmanager, Eurailpress*

FOREWORD

- 7** *Prof. Dr.-Ing. Jürgen Siegmann*
Maintenance and Renewal of Track

INTRODUCTION

- 8** *Prof. Dipl.-Ing. Dr. Peter Veit*
Track Quality – Luxury or Necessity?

ARTICLES

- 14** *Dr. Bernhard Lichtberger*
The Track System and Its Maintenance

- 23** *Dipl.-Ing. Hans Bachmann, Dipl.-Ing. Ekkehard Lay, Dipl.-Ing. Heiner Huesmann*
Requirements met by Advanced Railway Track Systems: Maintenance and Cost Effectiveness

- 29** *Dipl.-Ing. Klaus Riebold*
Heavy-duty Track Machines – an Overview

- 37** *Ing. Rainer Wenty*
Latest Developments in Track Rehabilitation and Maintenance

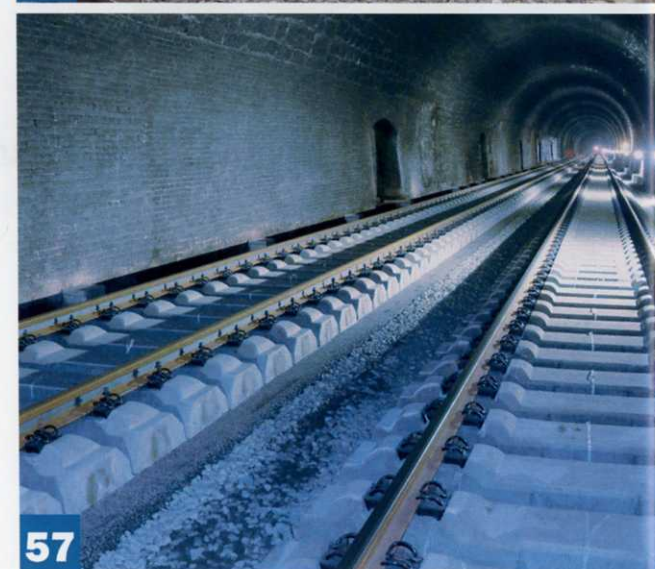
- 44** *Peter Ziegler*
New Paths in Rail Maintenance

- 48** *Klaus Stahl, Jochen Kabisch*
Sustainable Quality on the Track Network by Planned Rail Head Treatment

- 51** *Dipl.-Ing. MBA Stefan Knittel, Ing. Christian Schreiber*
Renovation of Railway Tunnels under Operation

- 57** *Dr.-Ing. Stephan Freudenstein, Thomas Silbermann*
Renewal of the Brandleite tunnel with GETRAC® Ballastless Track System on Asphalt

- 62** *Dipl.-Math. Ulrich Völter jun.*
Automatic Geomonitoring: Realtime-Monitoring of the Lainzer Tunnel





67



72

*Prof. Dr.-Ing. Ulrike Weisemann,
Em. Prof. Dr. Klaus Lieberenz*
67 Track Formation and Earthworks – Geotechnical Problems and Solutions in Route Upgrade Works

Dipl.-Ing. (FH) Reinhold Rensing
72 BWG's System Turnout as Part of a Trackway Managed under LCC Aspects

Dipl.-Ing. Dr. Rudolf Schilder, Dipl.-Ing. Dirk Diederich
76 Installation Quality of Slab Track – A Decisive Factor for Maintenance

*Dipl.-Ing. Gerd LeDosquet, Dipl.-Ing. Frank Pawellek,
Dr.-Ing. Frank Müller-Boruttan*
79 Monitoring of the Running Quality: the Lasca® System

Advertisers' Index

| | |
|---|-----------------------|
| BWG GmbH & Co. KG, Butzbach | 71 |
| DVV Media Group Eurailpress, Hamburg | 6, 21, 35, 49, 56, U3 |
| Huesker Synthetic GmbH, Gescher | 69 |
| Innotec GmbH Europe, Worms..... | 81 |
| Intermetric GmbH, Stuttgart..... | 65 |
| Plasser + Theurer GmbH, Wien..... | 13 |
| Rail.One GmbH, Neumarkt | U2 |
| Rhomberg Bahntechnik GmbH, Bregenz | U4 |
| Robel GmbH, Freilassing..... | 43 |
| Vogel & Plötscher GmbH & Co. KG, Breisach | 27 |

Imprint

RTR – Specials will publish from time to time important developments and technologies for modern railway business.

Publishers:

Dipl.-Ing. Roland Heinisch,
Board member Deutsche Bahn AG, Berlin/Frankfurt
Dipl.-Ing. Armin Keppel,
President Federal Railway Authority of Germany, Bonn
Dr.-Ing. Dieter Klumpp,
Board member Association of Railway Industries in Germany (VDB), Berlin
Prof. Dr.-Ing. habil. Jürgen Siegmann, Technical University, Berlin

Editor-in-chief:

Dr.-Ing. Eberhard Jänsch, German Railways (DB Netz AG)
Tel.: +49 (0) 69 265 31899, Email: eberhard.jaensch@bahn.de

Projectmanager:

Willy Wassmuth, Darmstadt
Tel.: +49 (0) 61 62-91 35 00, Email: willy.wassmuth@t-online.de

Publishing house:

DVV Media Group GmbH
DVV Rail Global | Eurailpress
Nordkanalstrasse 36, D-20097 Hamburg
P.O. Box 101609, D-20010 Hamburg
Telephone: +49 40 23714-03
Telefax: +49 40 23714-259
info@eurailpress.com
www.eurailpress.com

CEO DVV Media Group:

Dr. Dieter Flechsenberger

Publishing Director DVV Rail Global:

Detlev K. Suchanek
E-Mail: suchanek@eurailpress.com

Advertising Director:

Silke Härtel (resp.)
Tel.: +49 40 23714-227, E-Mail: haertel@eurailpress.com

Subscription and distribution:

Riccardo di Stefano (resp.),
Tel.: +49 40 23714-101, E-Mail: distefano@eurailpress.com

Reader and subscriber service:

Tel.: +49 40 23714-260, Fax: +49 40 23714-243
E-Mail: service@eurailpress.com

The regular Journal Railway Technical Review (RTR) is published four times a year, with one edition per quarter.

The publication dates for 2007 are:
March, May, September and October

Subscription rates:
Germany: € 48,- incl. postage, plus VAT;
Europe: € 48,- plus € 4,50 Postage;
World: € 48,- plus € 8,50 Postage.
Single copy price: € 12,50 (incl. VAT).

Subscription terms: the minimum subscription period is one year. Subscriptions may be terminated at the end of any subscription period by giving six weeks' notice. The publishers accept no liability if it is impossible to publish the magazine on account of force majeure or any other cause beyond their control.

Copyright: the magazine and all the individual articles and illustrations contained in it are protected by copyright. It is not permitted to reproduce or distribute any part of this magazine without the publishers' prior written permission. This prohibition extends, in particular, to any form of commercial copying, inclusion in electronic databases or distribution on CD-ROMs or DVDs.

Layout and Production:

Axel Pfeiffer, E-Mail: pfeiffer@eurailpress.com

Print:

TZ-Verlag & Print GmbH, Roßdorf

Member:



RTR – Railway Technical Review was established in 1960 and is published in 2007 in Volume 47.
ISSN 0079-9548

Copyprice for the Special: € 25,- incl. VAT plus postage

ISBN for the Special: 978-3-7771-0367-9

Internet: www.eurailpress.com/rtr