

keep track

Customer magazine of the Rhomberg Sersa Rail Group

// “The ‘24/7’ railway is our aim too” –
Interview with Garry Thür, pages 6_7

// Synergies for the customer’s benefit –
The Rhomberg Sersa Rail Group
continues to grow, pages 20_21

// Everything from one supplier –
Total project management at the
Heitersberg tunnel, pages 30_31



Moving forward with innovation

Dear readers,

“Standing still is the opposite of progress.” Rarely has an adage held more truth than this one in our industry’s current situation. The railway is moving. A lot is happening currently, particularly in the field of technology and digitalisation. It is important that all players recognise and accept the trends and developments, and convert them into practical commercial products and services – without losing sight of the basics.

We see the move towards digitalisation as a huge opportunity for us and our customers. Take diagnostics: based on our products in the field of data collection and surveys and, above all, on our competence and experience in analysis, we make systematic use of the options provided by the new technologies for the benefit of our customers and in so doing stimulate the development and improvement of railway infrastructure worldwide.

Solutions are also in demand for work in other track-related areas. Whether the question is one of cost efficiency, speed, comfort or safety – we continue to drive the development, and hence the success, of the railway. That applies to slab track just as much as it does to ballast cleaning, surveying and rail welding.

Our aim is to extend our technological leadership, which, without any doubt, we already enjoy in the field of switch point renewal, and thereby to continually improve the railway as a service for and together with our customers.

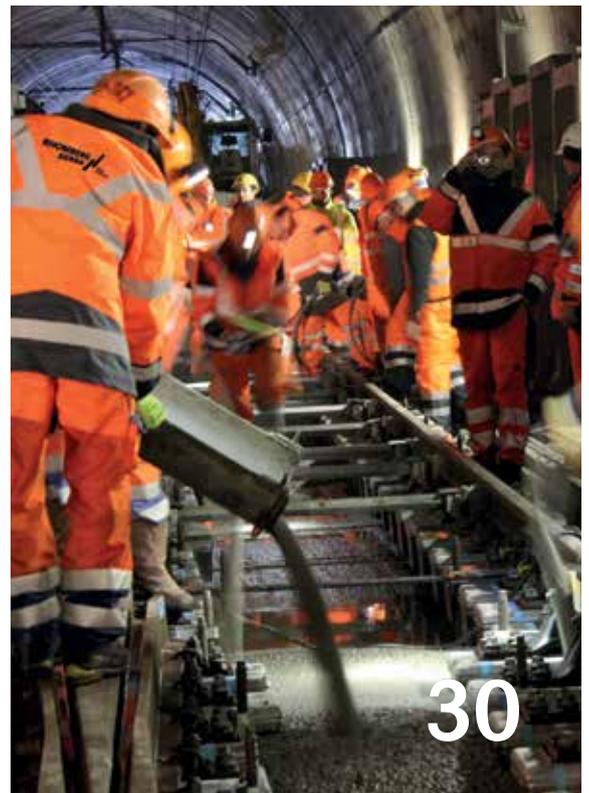
In this spirit we hope that you will enjoy the read!

Yours,

Konrad Schnyder
President Owner Board
Rhomberg Sersa Rail Group

Hubert Rhomberg
CEO
Rhomberg Sersa Rail Group





Published by: Rhomberg Sersa Rail Group GmbH, Mariahilfstrasse 29, 6900 Bregenz/Austria, Telephone +43 5574 403-0, Fax +43 5574 403-309; Würzgrabenstrasse 5, 8048 Zurich/CH, Telephone +41 43 32223-00, Fax +41 43 32223-08, info@rhomberg-sersa.com, www.rhomberg-sersa.com **Photos** Rhomberg Group, Rhomberg Sersa Rail Group, Matthias Manhart (Sersa Group AG), Shutterstock **Responsible for the content** Matthias Moosbrugger (Head of Marketing & Communications), Benedikt Krauss (Project Manager), Torben Nakoinz (Text), **Design** Claudia Kaufmann **Conception and design cover page** die3, Agentur für Werbung und Kommunikation, Dornbirn/AT **Translation** Dogrel AG Communication/CH, Kate Forrester (Rhomberg Rail Australia) **Printed** on Balance Silk **Declaration** in accordance with §25 Media Act Keep Track is published once per year with a circulation of 4,500 copies (AT/CH/D) and 1,000 copies (AUS/CAN/D/UK) **Note** In Keep Track of the Rhomberg Sersa Rail Group the use of male language forms is intended to be of equal standing to the female language form and is only used for the purpose of simplifying the content.

Editorial	3
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Rhomberg Sersa International

Focus on technology, innovation and products

“The ‘24/7 Railway’ is our aim too”	6_7
PALAS test in Russia	8_9
Dual-mode works better	10
Understanding your railway network	11
Allegra CAPRICORN	12_13
All services to the “right and left of the track”	14_15
ZOKA: Safety in the Brenner	16_17
Slab track: Intelligent, versatile, efficient and solid	18_19

Company news

Synergies for the customer’s benefit	20_21
Rhomberg overhead contact wire installation	22_23
Rhomberg Rail Australia is expanding	24_25
Valuable training and development	26_27
Extension building at Bahnbau Wels	28
More room for growth	28

On location

Safe, modern, Simplon	29
Everything from one supplier	30_31
Standardisation of tunnel restoration	32
Foundation stone laid	33
Switch point renewal	34_35
North American premiere	36
Mission possible	37
All good things come in threes	37
Electrification of “German Unity” in full swing	38_39



“The ‘24/7 Railway’ is our aim too”

// Even before the merger in 2012, the Rhomberg Sersa Rail Group succeeded time and again to advance rail-bound infrastructure with innovative products and services – the SLS Sersa Second Life System®, the holistic switch point renewal and the slab track systems are just some examples. How does the company manage to be continually innovative? Garry Thür, the member of Group Management responsible for the railway technology specialist’s research and development, provides the answers.

Mr Thür, is the Rhomberg Sersa Rail Group simply lucky again and again, or is your management of innovation based on a plan?

G.T.: (laughs) You probably always need a bit of luck, but of course, our developments are the result of a planned procedure. Fortunately, even before our merger, both Sersa and Rhomberg had a very similar innovation philosophy. This can be summarised in one sentence: we undertake development for, and above all with, our customers. This generates many ideas during a contract. Our track adjustment system, now called RhoTAS, is an example in point. Using this system years ago, we managed to double our daily construction work output along the Cologne-Rhein-Main high-performance section. This was done, in part, by pre-adjusting the tracks which meant that they could be used at an earlier stage, during installation. We have had a few such success stories.

“We believe that many optimisations and improvements have a bigger effect than what are sometimes called innovation breakthroughs.”



What is your next big thing? What can customers look forward to?

We believe that many optimisations and improvements have a bigger effect than what are sometimes called “innovation breakthroughs”. We therefore have numerous products and services that will bring about noticeable improvements and cost advantages in their respective areas. One of the foremost is DIAGNOSTICS, our survey and asset management system which can be used to support our customers in optimising the track over the long-term and to improve cost efficiency. In the slab track field, we are developing our toolbox with IVES, V-TRAS and others. Our plan here is to be able to offer a genuine alternative to ballast for selected applications and to cost-efficiently renew existing slab tracks which have been in service for a long time while still operational.

“It is our aim to help our customers make their investments in a more effective and cost-efficient manner.”



Looking forward to the future: Garry Thür, member of Group Management at the Rhomberg Sersa Rail Group

Where is the journey heading?

The purpose of a railway is to run and to transport goods and people from A to B. Therefore blockage and downtime periods are detrimental and unpopular. Today, with modern technology and our know-how, we are in a position to significantly reduce these periods – a trend that will continue. In this respect, our objective is identical to that of our customers; we are aiming for ‘Railway 24/7’ – (i.e. a means of transport that can deliver top performance around the clock). This will make it necessary to offer not only products but complete solutions. The question is: How can infrastructure be optimised over the entire life-cycle? The aim is to offer customers an all-round, no-worries package, from the detection of weaknesses to the planning and implementation of construction, service and maintenance measures.

Do you not worry that you will lose out on the traditional side of business?

No, definitely not. On the one hand – thanks to our commitment – construction, service and maintenance work will be completed in a shorter time. On the other hand, rail traffic will continue to increase. Overall, the level of investment in this field will remain the same, if not increase. It is our aim to help our customers make their investments in a more effective and cost-efficient manner.



*Russian tamping machine
with PALAS*



*Survey team
with DIGIBAR*



*Test section
at the Black Sea*

Fact Box

PALAS:

With ground-breaking innovations and in-house developments in survey technology, Sersa is setting new standards for the systematic maintenance of tracks and switch points. The PALAS system sets new standards in continuous, absolute track measurement and is specially designed for the complex requirements of state-of-the-art levelling, track adjustment and tamping machines.

- Precise reinstatement of the absolute track geometry.
- Continuous absolute measurement and control of the tamping machine, and digital data flow to the railway company.
- Survey measurements and track adjustment in one process.
- Can be fitted to new and existing tamping machines by well-known manufacturers.

HERGIE/DIGIBAR:

The HERGIE track measuring system is a special measuring system for the highly precise positioning and checking of tracks in real time. The system includes a radio-controlled automatic tachymeter that measures the position and vertical level of the track, as well as additional sensors for banking and gauge. The system is available as a measuring trolley (DIGITROLLEY) or as a track measuring bar (DIGIBAR), both offering the same functionality.

- Mobility and flexibility: the individual components of the measuring system can be carried by one person with transport by estate car also possible.
- Straightforward operation and maximum accuracy through precise mechanics and highly precise sensors makes it a total station of the top-most precision class and all-weather electronics.
- Application for pre-measurement, track adjustment and documentation.
- Analysis to individual customer requirements.

Introducing innovations to new markets is not easy. A step-by-step process is a good approach that helps to build trust in new, unfamiliar systems. Following an invitation from RZDSTROY, the Russian partner of the Rhomberg Sersa Rail Group, a specialist railway technology team carried out tests on a section near Sochi in October 2014 using the tried-and-tested PALAS, MEPHISTO and DIGIBAR measuring systems. The tests were completed under the leadership of Matthias Manhart, Rhomberg Sersa Technology, with the support of colleagues from RTE Technologie GmbH. An excerpt from the team's diary:

PALAS test in Russia – a diary entry

05.10.2014 – Journey

The journey via Moscow to Sochi was pretty much in accordance with the flight schedule. From Sochi, a taxi took us to our hotel in Lazarevskoye, which we reached at two o'clock in the morning.

09.10.2014 – Measurements and first tamping

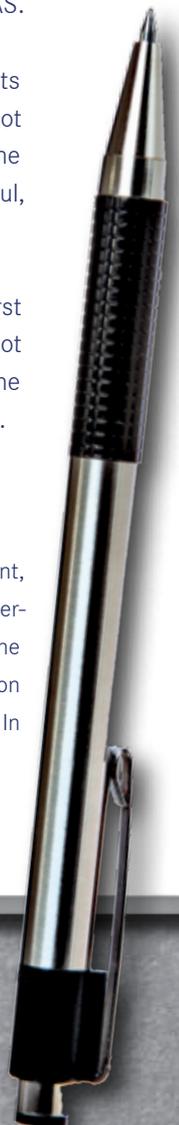
The objective for this day: verifying the definitive absolute track route and first tamping of the track with PALAS.

Two teams marched out with the HERGIE and DIGIBAR systems to carry out tests and training. During the tests with HERGIE, it unfortunately emerged that there were additional problems. The data communication did not work and there were also no useful values for the gauge width. However, the system was ready for use by the evening when it was possible to configure HERGIE accurately. The measurements using DIGIBAR were successful, and the team managed well over 300 metres per hour with control measurements.

By contrast, the start with PALAS was slow and it took an hour for us to reach the test section. We drove our first straight 200 metre section and risked a first tamping action. We discovered quite soon that the machine did not lift the rail. An analysis showed that we used the wrong leading sign – the matter was not clearly described in the description. It took us just over ten minutes to make the change in the software. The second test started well.

16.10.2014 – On the test stand

Today is all about the 40-guest visit which included Mr Gapanovich, Senior Vice President of our partner and direct client, RZDSTROY. Once the guests arrived, we tamped one section with PALAS and answer questions. The tamping worked perfectly and with very good accuracy except at one section where we had to carry out large shifts and lifts. Here the machine once again did not carry out all the corrections and there wasn't enough ballast. We had to tamp this demonstration section twice. During the first pass we were able to carry out the large shifts and lifts in addition to the correction to the camber. In the second pass, we were able to move the track very accurately to its final position.



Dual-mode works better

// The Rhomberg Sersa Rail Group is extending its fleet of machines with a new dual-mode vehicle, thus expanding its range of services to customers.

As of now, the Group's subsidiary, Sersa Technik AG, will be able to complete orders in the narrow gauge and normal gauge field even better, faster and cheaper for its clients throughout Switzerland. The new machine can be driven on the road to the construction site, where it is then placed on-to the track and can travel along the track to where it is needed. In this process, which takes about five minutes, the vehicle is lifted at the rear and aligned to the track axis using the drives of the rail wheels. The front of the vehicle is then aligned to the track axis taking the load off the front tyres. This process of moving the vehicle on-to the track also works well at small railway crossings because the rear rail chassis can be turned by 90 degrees. Where there is access to the construction site from the side, the work can also be carried out from a position next to the track.

Another advantage of the new vehicle is that the movement along the rail can be controlled from the basket. This means that the work team does not need an additional driver, resulting in cost savings in the overall package.

FACT BOX

Gauges:	1435 mm/1000 mm
Max. working height:	18.40 m
Max. reach:	13.00 m
Max. load on platform:	320 kg
Total weight:	18 t
Kw/HP:	235/320



Mercedes Actros 1832, aerial platform and "SRT" track motion chassis.



The tamping machine of Sersa Maschineller Gleisbau AG is able to collect network data.

Do you understand your railway network?

// To understand the railway network and to continually plan its maintenance and renewal is a challenge – particularly for smaller railway systems. An ideal aid for this demanding task is the IRISSYS measurement database which the Rhomberg Sersa Rail Group uses to save and evaluate customers' measurement and system data.

IRISSYS is independent of measurement suppliers and systems, and has been used for many years in large railway networks in Europe. Now the Rhomberg Sersa Rail Group is also making the use of this practical aid available to smaller railways.

The customer hires, from a pool, the necessary space in the measurement database that suits his network. These are based on the linear objects. The measurement and system data for these are stored. The system allows different customer-specific evaluation

processes, for individual errors through to the condition of the network, on the basis of standards and railway-specific definitions. For example, the customer can calculate quality marks for his railway network. Furthermore, individual additional services can be ordered, such as the import of customer measurement data and customer-specific evaluations. A consultancy service is also available for the analysis of measurement data and the planning of maintenance and renewal, as well as for a maintenance strategy. Access to the data and evaluations is available

at any time via the internet. The data is the customer's property and the Rhomberg Sersa Rail Group ensures the operation and back-up of the data in the measurement database. "The planning process for maintenance and renewal uses a combination of evaluated measurement data from the database as well as expert knowledge," explains Patricia Marty, the person with product responsibility at the Rhomberg Sersa Rail Group. "Furthermore, the time required for planning is greatly reduced compared to what was done previously."

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The planning process for maintenance and renewal uses a combination of evaluated measurement data from the database as well as expert knowledge.



Patricia Marty
Sersa Maschineller
Gleisbau AG

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Allegra CAPRICORN

// Finally in service from the end of June: the new CAPRICORN type RM76 ballast cleaning machine. The quality of the renovated line is significantly improved and the work is done more efficiently and precisely.

The machine, a result of the many years of experience of the head of metre gauge conversion, Armin Tschümperlin, and the expert knowledge of the machine manufacturer, Plas-ser&Theurer, has just recently reached the area in Switzerland where it will be deployed. There, the new member of the Sersa fleet was received by the “CAPRICORN team” and immediately subjected to thorough testing. The team, consisting of Roberto Panicke, Thomas Hardegger and Hendrik Beger, has been trained especially for the new machine and has already worked successfully with its predecessor, the C312 ballast cleaning machine with a 1000 mm gauge.

Key CAPRICORN facts:

The machine was specifically designed for use in mountainous regions and can operate without problem on gradients of up to 70% and a track radius of down to 45 metres. A number of new features, such as the new ballast feed

from an attached silo car, the formation planer or geotextile installation, can be incorporated in this innovative machine. Alongside the new R20RD ballast regulating machine introduced in 2014, it is part of a modern machine fleet for narrow-gauge track renewal.

FACT BOX

Buffer to buffer length:	35 500 mm
RM distance between pivots:	14 650 mm
BSW distance between pivots:	11 000 mm
Total weight:	124 t
Motor rating:	840 kW
Max. travel speed:	60 km/h



The Capricorn in the famous Montebello bend with the Morteratsch glacier in the background.



The Capricorn on Rhätische Railway's land/water viaduct, which became a UNESCO world heritage site in July 2008.



All services to the “right and left of the track”

// Rhomberg Bahntechnik has now been independently active in what is referred to as the railway infrastructure business for four years.

Based on the experience with large cooperation projects such as the BLS Lötschberg base tunnel or the tunnel infrastructure for the Brenner approach line for the Austrian Railway (ÖBB), Rhomberg Bahntechnik and RK safetec, subsidiaries of the Rhomberg Sersa Rail Group, have successfully established themselves organisationally and personally in this new market sector. The intention is to continue along this path with equal success: “An important component of our strategy is the systematic accumulation of competence in all services in this field,” explains Markus Loef, Head of the infrastructure business unit at Rhomberg Bahntechnik. “This means that we can continue

as a reliable and valued partner to our customers in the installation, servicing, repair and maintenance of the electronic infrastructure.” The first steps have now also been taken in Germany. Based on experience gained by Rhomberg Bahntechnik in the implementation of installations in the medium and low-voltage range, of switch point heating systems, railway station systems, and lighting systems, the Energy Supply business field was able to establish itself in the new market of local transport systems with railway power supply systems using the RhoSA direct current switching system developed in-house. With a development time of less than a year,

the first installation at the Rheinbahn in Düsseldorf, is proof of this competence and is equally as impressive as the subsequent projects for Stadtwerke Bonn, the Bochum-Gelsenkirchen street railway, the Cologne transport company, and the Frankfurt transport company. The main focus of the work is on the implementation of specific customer requirements, including the replacement of existing installations and systems that are subject to on-going operation. Complex technical solutions can be effectively implemented in small and large projects, making use of the existing knowledge and capabilities in the group of companies. The strong compe-



tence of our RK safetec colleagues in the field of communication and automation was an important prerequisite for the deployment of the newly developed visualisation and control technology solution for the remote control and remote monitoring of energy supply systems in local transport.

Beyond country boundaries

Furthermore, Rhomberg Bahntechnik is systematically expanding its range of operations across country boundaries, either by organic growth or via acquisitions. With the help of internal training and joint projects, such as the installation of electrical 50 Hz systems in the VDE8.1 project, it was possible to extend the Essen colleagues' existing pre-quotation qualification for the installation of switch point heating systems to the infrastructure project business field. In doing so, it is now

possible to cover several regional market areas. The award to the Rhomberg Sersa Rail Group of four contracts from seven lots for the "electric switch point heating systems" framework contracts by Deutsche Bahn speaks for itself. The fact that the cooperation works successfully in many ongoing individual projects is demonstrated by projects such as the "ESTW Untere Lahn", the 3-track 50 Hz upgrade of the section from Freilassing to Salzburg, and the low-voltage tele-communications and fibre-optic cable installations at the "Messe" city railway in Freiburg. The experience of RK safetec in the field of communication technology infrastructure for tunnel projects has led to the formation of the "Telecommunication" business field, which – just three months after its formation – has managed to successfully acquire its first project.

“

An important component of our strategy is the systematic accumulation of competence in all services in this field.



Markus Loef
Head of the Infrastructure business unit, Rhomberg Bahntechnik

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Our services in detail

Prime and general contractor/project management

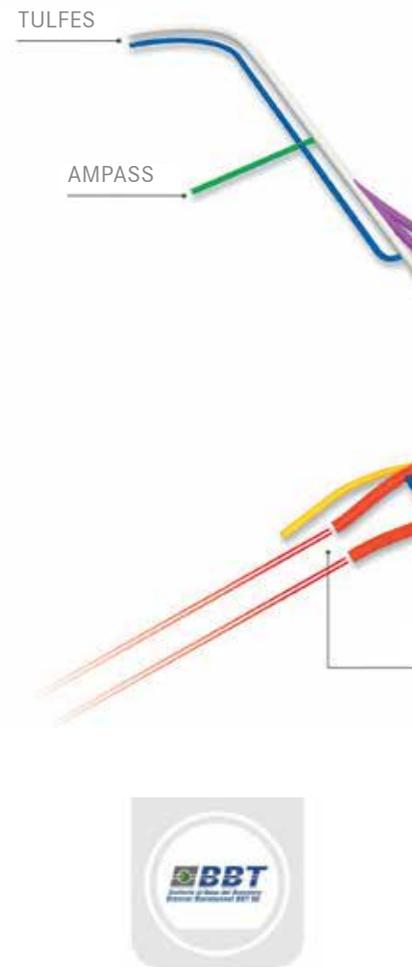
Electro-technical infrastructure	Railway power supply	Electro-mechanical infrastructure	Communication technology
Earthing systems	Direct current switching systems	Ventilation systems	Telecontrol engineering
Lightning protection systems	Medium and low-voltage systems	Extinguishing water systems	Network technology
Switch point heating systems	Rectifiers and transformers	Pump systems	Telephone systems
Lighting systems	Network replacement systems	Doors/gates	Radio technology

ZOKA: Safety in the Brenner base tunnel

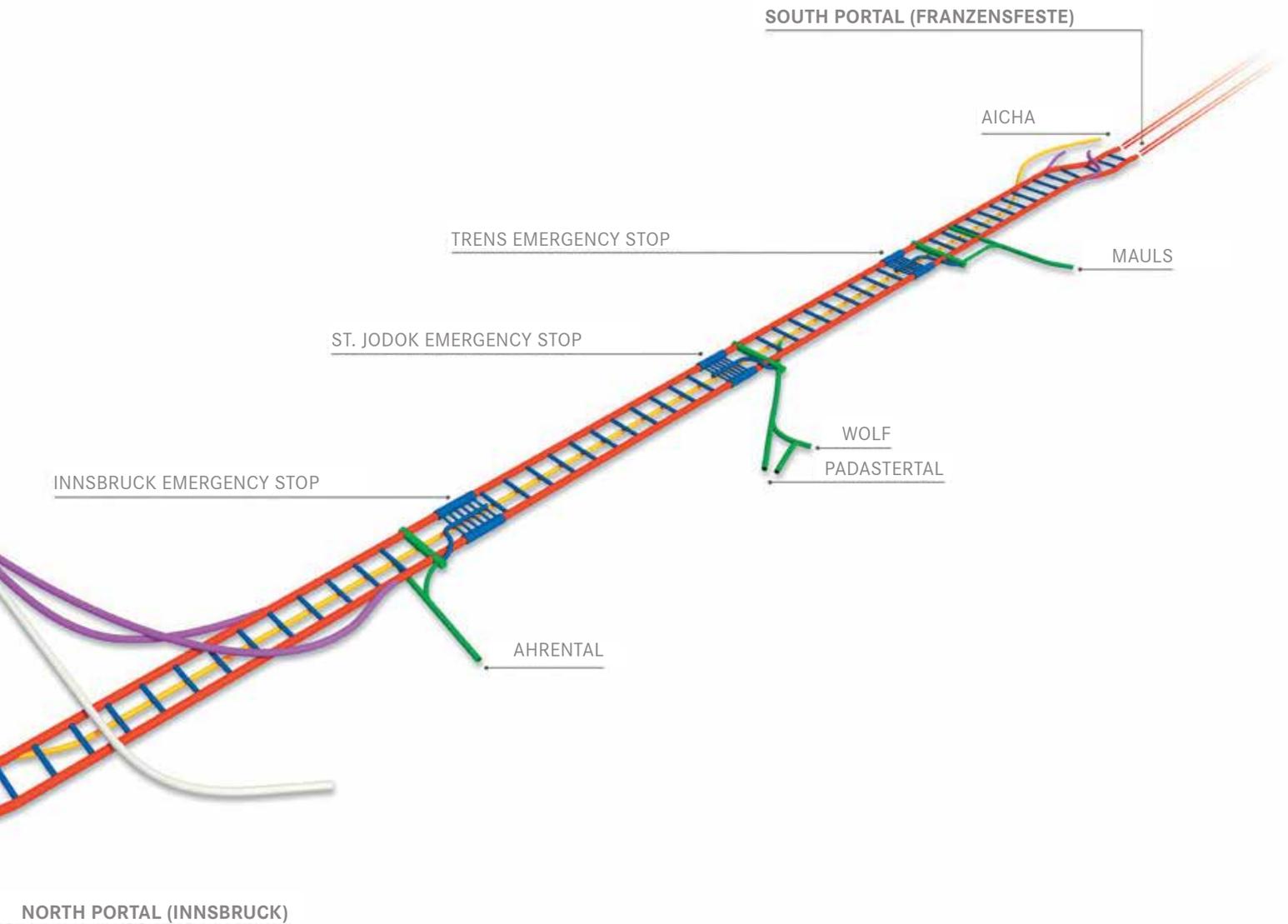
// RK Safetec has been the communications and safety specialist on construction sites since 2011.

RK safetec GmbH was formed when Rhomberg Bahntechnik and K.E.M Montage GmbH formed a consortium in order to provide the necessary safety and communication during the construction of the approach to the Brenner base tunnel (BBT). In 2011, this consortium then became the basis for the specialist company for construction site management. Today, this young subsidiary company of the Rhomberg Sersa Rail Group is still involved in the large Brenner project. It started in 2008 with making the approach line in the Unterinntal route project secure. The briefing was to reliably supply the construction site with power, light and communication options, and to provide security for the site access and a means of locating personnel in the tunnel. The tunnel construction consortium was so impressed with the results and by the system itself that they wanted to

use it for the Brenner base tunnel as well. This has since led to work on the BBT “Sill/Ahrental”, “Ampass”, “Wolf II” and current “Tulfes/Pfons” sections - the largest shell construction contract awarded in this project to date. For RK safetec, the project includes the infrastructure installation and responsibility for the new sections, as well as for the underground sections with existing infrastructure meaning all sections on the Austrian side are RK safetec’s responsibility! The services include: access control (barrier systems with RFID control, video monitoring); the location of personnel in the tunnel; communication technology (network on fibre-optic cable basis, WLAN coverage, emergency telephones, 70 cm radio); and alarm systems (emergency buttons, visual and acoustic signalling and monitoring of the cross-tunnel gates).



LEGEND	
Main tunnel tubes	█
Lateral access tunnels	█
Exploration tunnels	█
Rescue tunnels	█
Connection tunnels	█
Innsbruck railway bypass	█



FACT BOX

Z (access):

In order to monitor all access points, to check all access authorisations and produce an automatic access protocol, RK safetec equips construction sites with barrier systems, doors and gates, as well as revolving gates and video monitoring.

O (localisation):

An intelligent localisation system provides information at all times about which persons or vehicles are present in the individual construction zones and in which direction they are moving. In this way, all persons can be quickly localised in emergency situations.

K (communication):

Modern technology is used for the reliable exchange of information and data. RK safetec provides perfect equipment to the construction site, including landline and emergency telephone sets, GSM or WLAN radio networks, digital or analogue bundle radio systems and options for regular access to the data network.

A (alarm system):

In an emergency, all persons present in the tunnel or in buildings can be sent an alarm message from the central control station – using visual and acoustic alarm devices and a range of different alarm levels. Measures for additional safety include the monitoring of air quality values and other emergency indicators.



Slab track: Intelligent, versatile, efficient and solid

// The Rhomberg Sersa Rail Group is firming up its competence and technology leadership in the field of ballastless track construction.

The railway technology specialist's slab track system (IVES) is soon to be approved by the German Federal Railway Office (EBA). At the end of last year, the system passed all required tests with flying colours at the renowned Institute for Traffic Route Engineering of Munich Technical University. Presumably this means that it will be possible to officially use the IVES system in the Deutsche Bahn AG network.

"The successful achievement of this milestone is the prerequisite for our submission of an application for approval to the EBA," says Stefan Knittel happily, who is responsible for research and development related to IVES. "It ensures that many technical risks are precluded and gives the system international recognition and acceptance." The product is based on the experience, competence and know-how acquired by the engineers of the Rhomberg Sersa Rail Group in the course of their many years of involvement with high-speed sections such as Cologne to Rhein/Main (Germany), Lötschberg (Switzerland) and Unterinntal railway (Austria). During the development phase, the components, materials and work processes that combined the simplicity and robustness of bottom-up systems were investigated and matched with the high precision (which can be more easily achieved) of top-down systems.

The result is a technically and commercially optimised construction method which not only reduces the cost of slab track in the common application areas, but also allows much wider use of the technology as an alternative to ballast road-bed construction.

In England, NetworkRail has been experiencing the advantages of the IVES system on a section that has been operating with IVES and having positive results since 2014.

The advantages of the slab track system:

Intelligent

- Flexible adaptation to the technical status at the place of installation based on its relatively straightforward and practical construction: structural layers and structural elements can be manufactured on-site anywhere.
- Flexible adaptation of the amount of work to the project conditions based on simple installation steps: IVES can be installed with simple technical means as well as with a high degree of mechanisation.

Versatile

- The application is largely independent of the type of rail traffic (full railway, city railway, low or high-speed...)
- Practical adaptation of the individual components to the track configuration thanks to the straightforward design of structural elements.

Efficient

- Increased availability of components through straightforward, standardised design of the structural elements.
- Universal layout of components or adaptation with relatively little effort.
- High degree of mechanisation.
- Problem-free interruption of the installation process due to the work steps being independent from a time point of view.
- Short waiting periods between installation steps.
- The construction rail can be used for transport purposes in almost all installation phases.
- The completed track can be used at an early stage, the timing of which is pre-defined.

Solid

- Consistent high quality.
- Functional, high-quality material.
- Tried-and-tested materials and components.

“

This successful achievement ensures that many technical risks are precluded and gives the IVES system international recognition and acceptance.



Stefan Knittel
Head of Rhomberg Rail
Consult GmbH

”

Synergies for the customer's benefit

// The Rhomberg Sersa Rail Group continues to grow – the Swiss/Austrian railway technology company has acquired the track system business of Balfour Beatty Rail GmbH (Germany) as well as JumboTec GmbH (Germany) and Balfour Beatty GmbH (Austria). In Canada, Sersa Total Track was fully integrated into the Group. The customers are the winners.

The Group's range of services is increased by new acquisitions in the fields of "hiring and maintenance of track construction machines" and "overhead contact wire". The presence in the German and Austrian markets is also expanded. This is the basis for the Group's systematic next step to becoming a full service provider. It also means that its customers will be able to benefit from an improved service portfolio and valuable synergies.

600 new experts

In February 2015, the Rhomberg Sersa Rail Group acquired three business units of the British infrastructure company, Balfour Beatty, in Germany and Austria. This increased the number of staff at the railway technology specialist by about 600, bringing the total workforce of the Rhomberg Sersa Rail Group to 2,500. The new colleagues contribute additional competence and contacts to the Rhomberg Serssa Rail Group. Now customers throughout Germany, Austria and Switzerland can obtain competent "track construction" and "overhead contact wire" services, as well as the maintenance and hiring of track construction machines, from one supplier. "We are looking forward to serving our customers even more comprehensively and cost-efficiently in the future," says Konrad Schnyder, President of the Owner Board of the

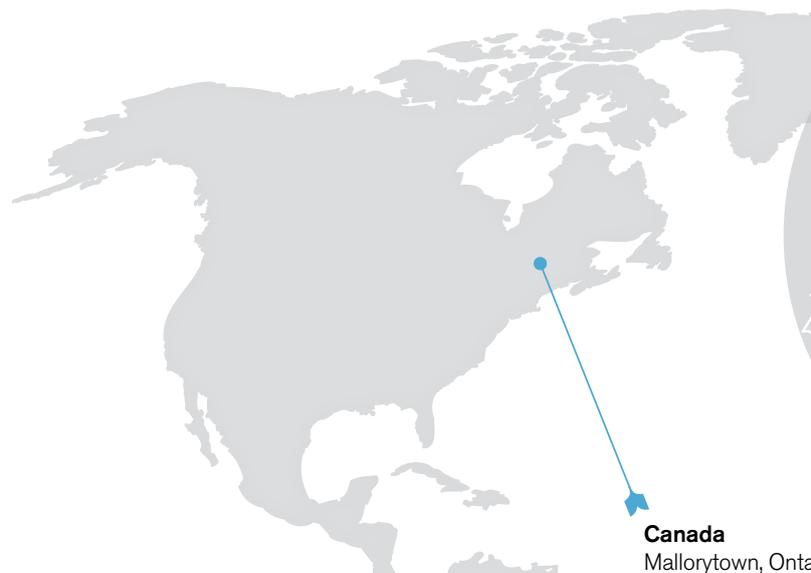
Austrian/Swiss railway technology specialist.

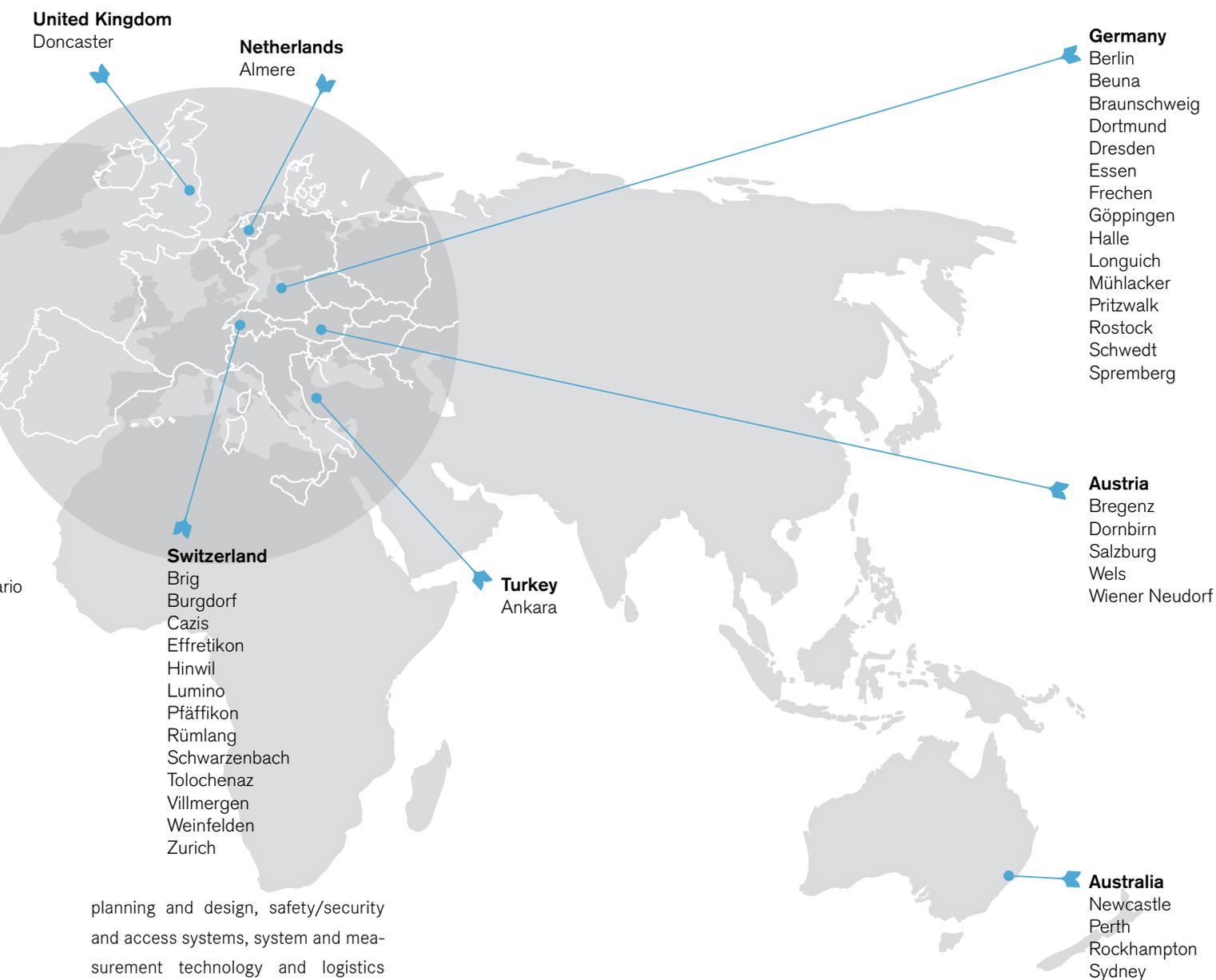
Total Track in Canada

As of now, the Rhomberg Sersa Rail Group is sole owner of Sersa Total Track in Canada. The full service provider for railway engineering now holds 100% of the shares.

Sersa Total Track works mainly in the Ontario and Quebec regions and specialises in mechanised track construction and maintenance, as well as switch point renewal, "we look forward to continuing Sersa Total Track Canada's success story with our highly specialised services under our sole responsibility," explains Hubert Rhomberg, CEO of the Rhomberg Sersa Rail Group. With its workforce of about 50, the company has turned over just under 11 million Canadian dollars in the past year.

With this extension of competence and services, the Rhomberg Sersa Rail Group sets a strong marker for the development towards full service provider in railway engineering. The Group offers its services through the Group or its individual companies and provides a nearly complete range of services in the fields of railway infrastructure and service in the core markets of Germany, Austria and Switzerland. The portfolio covers track construction, track renewal and maintenance and the restoration of railway tunnels and switch points, electromechanical and technical infrastructure, traction power supply and communication technology through to consultancy,





planning and design, safety/security and access systems, system and measurement technology and logistics services. The full service provider in the field of railway engineering stands out for its innovative products such as slab track systems and the SLS Sersa Second Life System®. The focus is on customer-oriented and tailor-made solutions for local and long-distance railway systems, goods transport sections and private infrastructures. These are implemented by the company as prime or general contractor.



Installation of the entire street lighting system along Wiener Ringstrasse in front of Vienna Town Hall.

Rhomberg overhead contact wire installation: New specialises in the Bahnbau Wels Group

// At the beginning of the year, Bahnbau Wels acquired the overhead contact wire business of Balfour Beatty GmbH (Austria).

The company changed its name from Balfour Beatty GmbH Austria to Rhomberg Fahrleitungsbau GmbH and became part of the Bahnbau Wels (BBW) organisation. Headquartered in Wiener Neudorf the company specialises

in overhead contact wire installation and electrical infrastructure and has successfully completed numerous projects in local and long-distance rail transport. Examples include the conversion and installation of overhead contact



Installation of a switch frame at Amstetten railway station, Austria.



The headquarter at Wiener Neudorf, Austria.

wires at the largest Austrian goods railway station, Vienna Matzleinsdorf, as well as those at the new Vienna main railway station. An example of stationary systems, and the company's most recent reference project, is the installation of the indoor and outdoor substation of the Fritzens/Wattens substation in Tirol. The most important projects currently under construction are the electrification of the St. Pölten goods train bypass and the modification of the overhead contact wire system at the Amstetten railway station.

The range of services of the new Bahnbau Wels subsidiary include the electrification of sections and railway stations, the renewal of overhead contact wire systems, the installation of optical fibre cable, the installation of switch point control systems and street lighting systems. In addition, Rhomberg Fahrleitungsbau undertakes the revision of local

transport lines and transmitter masts and supplies AC and DC substations, electric train preheating and low voltage distribution systems, power supply cabinets and 50 Hz energy technology systems such as tunnel lighting systems, cable carrier systems and low and medium voltage systems.

An experienced team of about 70 members of staff ensures that customer projects are expertly planned and completed. "We are very happy that – after a very long and uncertain disposal process – we have found a new home with the Bahnbau Wels group where we are given the opportunity to contribute our abilities to the overall portfolio," says Harald Schwarz, Managing Director of Rhomberg Fahrleitungsbau GmbH.

Rhomberg Rail Australia is expanding

// Rhomberg Rail Australia (RRA) is now also represented in Queensland.

Rhomberg Rail Australia (RRA) is now represented in Queensland: In September 2014 the Australian subsidiary of the Rhomberg Sersa Rail Group acquired a complete track construction team with crew vehicle and welding equipment from Rockhampton. That was combined with the opening of a branch in nearby Gracemere. “These are very interesting times for us in the Queensland market,” commented Tim Horan, Manager for strategy and development at RRA, with respect to the expansion. “We are now better placed to respond to the demands from Aurizon, Pacific National and Queensland Rail and to offer them high-quality service and the same quality of maintenance and construction, for which we are known in the other regions of Australia.”

First projects

At the beginning of the year, Aurizon published a comprehensive invitation to tender in Queensland with the objective of putting together a group of specialised sub-contractors. RRA was selected as one of two members of this group for track work. The first major project undertaken by this group organisation was the renewal of rails in the Blackwater system between Duarina and Wallaroo. In that system, four bends with considerable rail wear had been detected; the rails had to be replaced within just three days. In total, 3,385 km of rail had to be replaced, including the exchange of all pads and de-stressing work with Vortok

E-Clip rollers. Aurizon is currently in the test phase with the Vortok roller system, and this project was one of the first in which the rollers were used to de-stress the rails. This method ensures minimal resistance between rail and pad and thereby makes the de-stressing process more precise.

“We carried out all works to the full specification, in the given time window and without defects,” commented Horan. “Aurizon was impressed by Rhomberg’s experience and efficiency at all levels, which is a fantastic compliment for our team and our company culture. We feel encouraged to think that we will win and successfully complete many other large projects in Central Queensland.”

“

These are very interesting times for us in the Queensland market.

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Tim Horan
Manager for strategy and development at Rhomberg Rail Australia





From left: Tim Horan (Manager Strategy & Development, Sydney), Adam Butcher (Supervisor, Rockhampton), Garry Thür (CEO International Rhomberg Sersa Rail Group), Konrad Schnyder (President Owner Board), Rod Sweeney (Manager, Queensland) and Bren Vamadevan (Project Manager, Rockhampton)





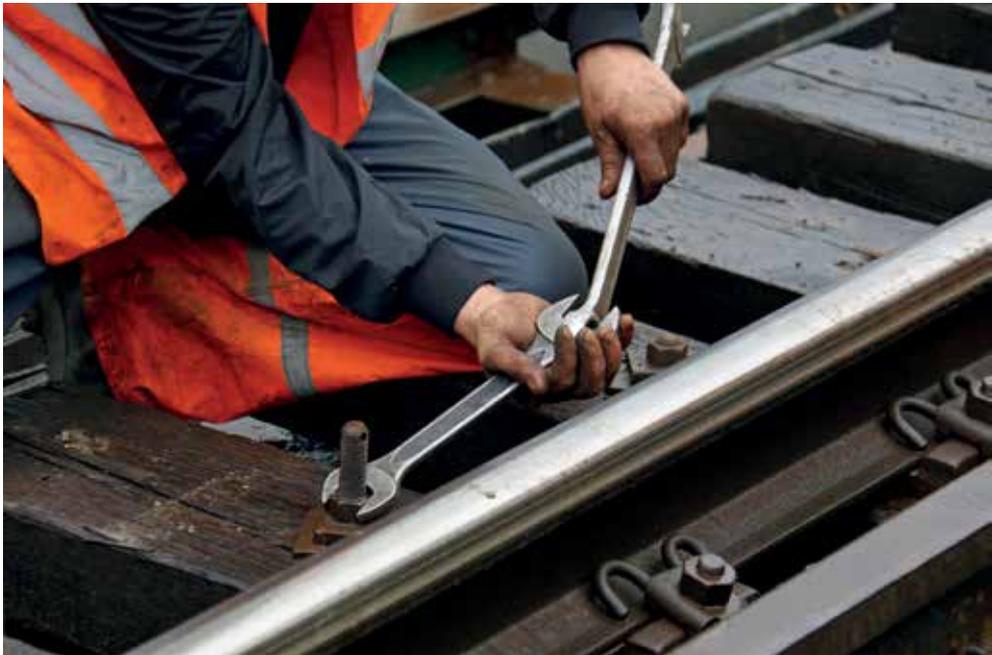
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Only the systematic identification, recording and passing on of knowledge and experience, and planning for the replacement of the workforce in the future in good time, can effectively counteract the erosion of expert knowledge.

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Dagmar Daniel
Head of Training & Seminars,
RS Gleisbau



Valuable training and development

// New Rhomberg Sersa Rail Goup subsidiary, RS Gleisbau, has been conducting the Railway seminars since 1994. Coming under the Rhomberg Sersa Rail Group umbrella in 2015, the objective of the new member is to support railway companies in maintaining and expanding specialist knowledge within the company.

The Railway seminars are based on a large portfolio of resources in terms of training and development in all areas of railway engineering, design and maintenance. In addition, the RS Gleisbau experts support their customers with the creation of knowledge banks, for example with the help of company-specific manuals or digital databases.

Another emphasis is on specific training; companies can send staff to obtain qualifications as switch point fitters, switch point mechanics or works managers for non-public railways. In addition, RS Gleisbau organises individual company training and coaching. Speakers are members of the company itself or experts from universities, federal authorities or legal firms. The range of services is aimed at infrastructure and transport companies and state railways, as well as authorities, associations, local authorities, consulting engineers, construction companies and industry.

Forums – highlights of the year

The “City Railway Forum” and the “Railway Forum”, which, have been taking place regularly at different venues since 2005, are highlights of the year. In 2015, the first forum was held in Munich on 21-22 May and addressed current trends in local public transport. The second forum, on 19-20 November, will take place at the same venue and will focus on developments in railway operation.

“In addition to continuous development, it is essential for the future of the business to safeguard our internal company knowledge because with every member of staff leaving the company there is a risk that valuable information is lost,” explains Dagmar Daniel, Head of Training & Seminars at RS Gleisbau. “Only the systematic identification, recording and passing-on of knowledge and experience, and planning for the replacement of the workforce in the future in good time, can effectively counteract the erosion of expert knowledge.”

FACT BOX

For information on the entire program, please visit:
www.bahnwege-seminare.de

Other contact details:

RS Gleisbau GmbH
Training Centre
In den Kreuzfeldern 2
D-54340 Longuich (near Trier)
T +49 6502 9941-66
E info@bahnwege-seminare.de



Extension building at Bahnbau Wels

// Bahnbau Wels has occupied its new building on the site of the Wels company.



Expansion on the Bahnbau Wels company site: the new building is available for maintenance work and winter repairs.

This extension building of the specialist track construction company is a response to both the number and dimensions of track construction machines constantly increase.

As of now, this third building is available for maintenance work and winter repairs in addition to the two existing buildings. The new building consists of a maintenance shed and a shed for cleaning track construction machines. The maintenance shed is equipped

with three tracks, one of which has a repair pit. The cleaning shed has one track and is available for cleaning track construction machines and shovel excavators. By extending the roofed-over area, additional shed tracks with a length of 155 metres are created. In addition, two overhead cranes with a capacity of 16 tonnes each have been installed to support dismantling and fitting work.

More room for growth

// At the end of last year, Sersa Total Track and Rhomberg Sersa Rail Canada moved to a new works facility. The reason: the continuous growth of the subsidiaries of the Rhomberg Sersa Rail Group.

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Another milestone in the development of our company.

”



Chris Grill
Vice President Consulting & Sales
Sersa Total Track

Moving to the new offices, created space in the railway shed which can now be used for repairs to the continually growing fleet of vehicles of the company's own track construction machines.

The new building for the Management and the Commercial Department is located just a few hundred metres from the railway shed. "For us, the move is another milestone in the development of our company in the North American market," says Vice President Chris Grill.





Producing a 60° bar anchor, middle section (collar niche 2, Simplon tunnel IIb).

Safe, modern, Simplon

// Since 2012, the companies of the Rhomberg Sersa Rail Group have been modernising the Simplon tunnel between Switzerland and Italy. This includes upgrading the safety system and installations as part of the Simplon LEDIR consortium.

Back in December, Phase 3.2 – installation and 132 kV cables in the left-hand tunnel tube – was successfully completed without defects, in spite of the very short time available. This was followed in February and March 2015 by Phase 4 in which the self-rescue measures were upgraded to the latest standards. This contract carried out by the “Infrastructure” business field of Rhomberg Bahntechnik, comprised the installation of the self-rescue devices, and the commissioning, testing and documentation of the entire project. The project included items such as illuminated handrails, tunnel orientation lighting, cross-tunnel and niche lighting, alarm systems and escape route signage.

Overall, the main work performed by the Simplon LEDIR consortium included construction work for the self-rescue measures, for lowering the base, the replacement of switch points and drainage installations, as well as construction work for the medium and high-voltage systems. In order to be able to complete the project according to schedule, work took place in two shifts. The four trains drove into the tunnel

in the evening in the appropriate sequence; they then progressed step by step before they emerged again the following morning. Work in the tunnel proceeded in two subsequent shifts – in this way it was possible to keep the construction time as short as possible. During the afternoon, during the “logistics shift”, the demolition material was unloaded from the construction trains and new materials were loaded. All processes were perfectly timed to dovetail. The high degree of detailed planning of all work processes ensured that the correct quantity of the required material was available at the right train during the logistics shift. The organisational and logistical arrangements applied not only to the main construction work to be carried out by the Simplon LEDIR consortium, but also to third-party supplies and the SBB specialist services. The project required very tightly organised work in partnership with the other parties involved to complete the daily construction processes.



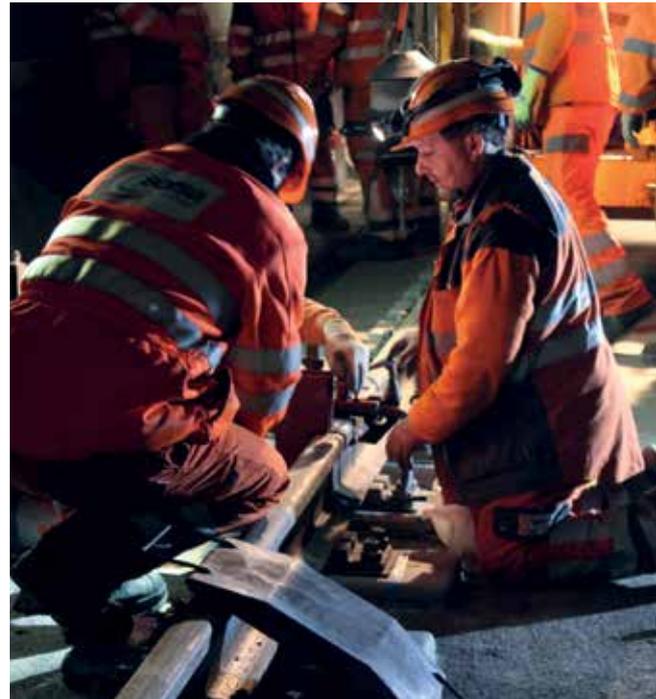
RHOMBERG
SERSA

Everything from one supplier

// As a result of the SBB project tender procedure, the Rhomberg Sersa Rail Group was awarded the contract for the overall project at the Heitersberg tunnel, a main transport artery of the SBB railway network.

On this occasion, the entire project was placed with one contractor. The work took place on one of the busiest sections in Switzerland, with very restricted space for working and to a very tight schedule. The contract included the construction work, the coordination of logistics and responsibility for safety during the restoration work in the tunnel and in directly adjoining areas. The project started with the successful deployment of the RhoSAS track alignment system at the Zurich diameter line. This gave important decision-makers at SBB sufficient confidence in this method of modifying slab track installations which, in turn, led to good cooperation and excellent results in accordance with the budget and given deadlines.

During the 56-hour blockage periods the group was able to remove a switch point and transition sections, cut back the existing rail support slab, install the new switch point, align it and cast it in concrete. Rhomberg Sersa Rail Group provided all the safety personnel required for safe processing of the construction work and the three construction trains with a length of up to 160 metres. Rhomberg Sersa Rail Group was also responsible for rail welding and survey activities with the required technologies and alignment systems. Furthermore, it was possible to convince the client of the reliability of the company's in-house safety/security access control system, ZOKA, by RK safetec GmbH.



Preparation for rail welding work.

FACT BOX

- Removal and installation of 4 LVT 900 m switch points, including switch point set boxes.
- Cutting back the concrete slab supporting the rails.
- Installation of the new switch points and casting in concrete.
- Logistics coordination of the overall project.
- Coordination of all safety/security issues of the overall project, in parts in workplace coordination with an adjoining construction site.
- Provision of the ZOKA safety/security access control system.
- Execution of survey work.
- Execution of rail welding.



Workers during the alignment of a switch point.

Standardisation of tunnel restoration

// Rhätische Bahn (RhB) is currently trying to standardise the maintenance procedure for railway tunnels. The objective is to create regular construction processes and to reduce costs.

The restoration of the approx. 108 year-old and 334 metre-long Glatsheras tunnel is currently underway. The “normal construction method” developed by RhB is to be applied. Close-out of the entire project, from preparation through to completion of the tunnel, has been scheduled for 2017. Rhomberg Bahntechnik and Sersa will be in charge of the entire restoration, together with a partner. The work involves the demolition of the existing structure, an enlargement of the cross-section by about 20% and the new tunnel construction. All work has to be carried out during night-time blockage periods while operations are ongoing.



Lowering a track using the special TYREX metre gauge machine.



Foundation stone laid

// Long-term master contract for track construction machine services in Switzerland.

At the end of 2015, after eight years, the current agreements between the Rhomberg Sersa Rail Group companies Sersa Maschineller Gleisbau AG (SMG), Sersa Group AG (Switzerland), Sersa Technik AG and the “Alpha Rail Team/DB Bahnbaugruppe” consortium with SBB AG/BLS AG will come to an end. In order to continue without interruption, SBB, BLS and TPF have offered four different lots for tender. The companies of the Rhomberg Sersa Rail Group have been successful in bid-

ding for the new award of master contracts for track construction machine services in Switzerland. The business units were able to successfully bid for parts of all four lots. The main appeal of the Rhomberg Sersa Rail Group was the excellent work carried out for the client in previous years.

In the context of a demanding environment and exacting competitive conditions at home and abroad, the companies of the Rhomberg Sersa Rail Group – primarily Sersa Switzerland – have

achieved a positive result overall in this tender procedure for track construction machine services. Thanks to their magnificent effort, they have laid one of the foundation stones for the further development of the company.



Switch points set for renewal

// Rhomberg Sersa Rail Group implements its innovative technology for renewal of switches and crossings in the United Kingdom through the formation of a joint venture with Amey Rail. As AmeySersa, they were awarded the contract for Northern Alliance Switches and Crossings (S&C) Renewals. AmeySersa will introduce a new construction methodology into the UK based on the Swiss experience of the Rhomberg Sersa Rail Group. The technique shortens installation time and saves money.

The S&C Northern Alliance performance-based contract awarded by Network Rail is worth approx. GBP 550 million over a period of ten years. The AmeySersa joint venture will be working across two-thirds of the country starting from a corridor out of London's Kings Cross Station and covering North-England, Northern Wales and Scotland.

The company, which specialises in railway engineering, will use its innovative Sersa technology for the complete renewal of switch points in the UK for the first time. In this process, these sensitive interfaces of the track network are replaced in one operation making renewal considerably quicker and requiring a smaller team on site. The track can operate again immediately after the new switch points are complete. This greatly reduces both the risk of track closures and their duration. By combining the efficient, sustainable and innovative methods for track renewal from continental Europe with the excellent engineering and network knowledge in the United Kingdom, AmeySersa is hoping to bring about a step change in the industry.

Garry Thür, member of Group Management, explains: “We have been successfully using this innovative and revolutionary method for the complete renewal of switch points in continental Europe for several years. Therefore we are extremely pleased to bring this core competence to the United Kingdom in an alliance with Network Rail and our partner Amey. It will allow us to make a sustainable contribution to increased efficiency.”

“

We are extremely pleased to bring one of our core competences to the United Kingdom in an alliance with Network Rail and our partner Amey.

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Garry Thür
Member of Group Management
Rhomberg Sersa Rail Group



North American premiere

// The Rhomberg Sersa Rail Group has deployed its “GRail1” rail grinding vehicle for the first time, and successfully, on the North American continent: on the largest local North American transport network in Toronto.

The client is the Toronto Transit Commission (TTC), which commissioned the Austrian/Swiss railway engineering specialist to repair certain sections of its 200 km-long track network using the company’s newly developed system.

The machine has been specifically designed for local transport enterprises. It has extremely low noise and dust emissions, and placing it on tracks and removing it again only takes a few minutes. This means that tramway trains can continue at the scheduled times while grinding work is carried out.

The premiere in Toronto will not remain the only contract; the TTC management was very impressed by the performance and quality of the work carried out by the machine and team, which led to Rhomberg Sersa Rail Canada receiving another contract – from May 2015, additional tramway tracks will be ground.

FACT BOX

- Length: 4845 mm
- Width: 1900 mm
- Height: 2450 mm
- Max. load per axle: 3300 kg
- Grinding stones: 6, optionally 8
- The machine and grinding stones are operated by an electric motor.
- The width of the gauge is adjustable (1000–1668 mm).
- Execution of rail welding.



The machine has been specifically designed for local transport enterprises. It has extremely low noise and dust emissions, and placing it on tracks and removing it again only takes a few minutes.

Mission possible

// The blockage intervals were tight, but the scope of services was wide: the switch point modification at the Zeithain intersection of the main line between Leipzig and Dresden was a real challenge for Sersa Germany – but it was successfully completed. Even the client would not have taken a bet on it.

Nine 500 m switch points and a crossing had to be completely renewed. The Sersa team was given only very tight blockage periods in which to complete the job. For example, the second construction phase was only 74 hours with 11.5 of those consecutive. A special feature of this project was the fact that switch points with split long sleepers had to be installed. That meant 29 sleepers for each switch point. The solution: during the first construction phase, only part of the long sleeper was installed (for

the through track). During the second phase, the remaining sleepers were installed and each sleeper was bolted with two bolts. Then the switch point connections could be fitted.

The client, Deutsche Bahn AG, was aware during preparation and at the consultation stage that the available time slots were very tight. At the end, the persons responsible were all the more pleased about the fact that the schedule was maintained to the minute.



New for old: a total of nine 500 m switch points and one crossing had to be completely renewed.

All good things come in threes

// Die The Rhomberg Sersa Rail Group won three contracts in Ottawa against tough competition. The deciding factor was the convincing combination of quality and price.

Sersa Total Track will construct an overtaking rail along the Beachburg subdivision for VIA Rail Canada Inc., the operator of Canadian intercity passenger rail services. This involves 760 metres of new track construction with two electric No. 12 type switch points with the rail being continuously welded. In addition, Sersa Total Track is responsible for the signal technology and civil engineering structures.

The railway engineering expert has been awarded two further contracts for bypasses consisting of 600 m

of new track with horizontal sweep. The client for one of the contracts, along the Smiths Falls subdivision, is Cavanagh Construction. The client for the other contract is R.W.Tomlinson along the Beachburg subdivision. In both cases, new bridges are to be built with the contract for Cavanagh Construction also including the construction of two railway crossings. Marko Pohlmann, President of Sersa Total Track, is pleased about the awarded contracts: “This shows that the work of Sersa Total Track is

recognised in Canada. For us, this motivates us to continue to improve our services and performance.”

“

The award of the contracts demonstrates that the work in Canada is being recognised.

”



Marko Pohlmann
President
Sersa Total Track





Electrification of “German Unity” in full swing

// Rhomberg Bahntechnik is responsible for the installation of 50 Hz electrical systems in three lots of the “German Unity No. 8” transport projects.

“Following our large projects in Switzerland and Austria, we are now pleased to say that we have been awarded the contract for a project in Germany,” says Georg M. Gabler, Managing Director of Rhomberg Bahntechnik, during the celebratory placement of the first transformer cubicle along the rail section of the “German Unity No. 8” transport project. The event celebrated the beginning of the electrification of the 107 km-long section between Ebensfeld and Erfurt.

After a positively completed pre-qualification procedure with Deutsche Bahn, the Rhomberg Sersa Rail Group company won all three lots of the tender procedure for 50 Hz electrical installations along the north, middle and south sections.

The main part of the work is currently proceeding and is expected to be completed in September 2015. The contracts include a large part of the electric infrastructure of the tunnels and open sections. In addition to the planning and design, various safety-related installations such as the emergency lighting, evacuation route signage, including the energy supply, are to be completed in the many tunnels (a total of approx. 40 kilometres of main tunnel) as well as in the rescue tunnels and chambers. In front of the rescue areas and portals, concrete structures will be erected to house switch installations, including low-voltage and



A road crane unloads one of the numerous transformer cubicles between Ebensfeld and Erfurt.

medium-voltage switch systems. Additional work such as the installation of switch point heating systems will be carried out externally.

When all the work is completed, the current travel time of nearly six hours will be reduced to about four hours. “The biggest challenges in this project are the tight schedule and the logistics for the 107 km-long construction site,” says Andreas Förster, Head of the Infrastructure business unit at Rhomberg Bahntechnik.

FACT BOX

- Contract volume: about EUR 19.2 million.
- No. of concrete cubicles with switch systems: 58.
- No. of emergency lighting units: approx. 3,600.
- No. of light fittings: approx. 6,980.
- Cable: approx. 440,000 m.
- No. of switch point heating systems: 68.

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Following our large projects in Switzerland and Austria, we are now pleased to say that we have been awarded the contract for a project in Germany.



Georg M. Gabler
Managing Director of
Rhomberg Bahntechnik

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