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The latest news & reviews from the industry

***Inside:***

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***Plus:***

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Rail Freight***

***The Infrastructure  
Progress Report***

***The Policy Update***

**Issue Four 2019 – Railway Interchange**





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**RAILWAY** 2019  
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AREMA | RSI | REMSA | RSSI  
Minneapolis, MN  
22.-25. September 2019  
Stand No. 3119

**WINDHOFF**  
**Bahn- und Anlagentechnik GmbH**

Hovestraße 10  
48431 Rheine  
Germany

T +49 59 71 58 0  
E [info@windhoff.de](mailto:info@windhoff.de)  
[www.windhoff.com](http://www.windhoff.com)



# Letter from the Editor

Railway Interchange will take place in Minneapolis on 22–25 September. It is held every two years in cities around the US. In this magazine you can read an in-depth look at the events taking place at the show, which this year also features an outdoor track display.

We have also spoken with Ted Greener and Ian Jefferies from the Association of American Railroads on the future of freight and their goals for their attendance at Railway Interchange.

We are taking a look at some of the major North American rail infrastructure projects that are currently on-going. Ottawa's Confederation Line is the most far along of all of these, with a scheduled opening date of 14 September 2019 so that by the time Railway Interchange rolls around, it will have been up and running for more than a week with Alstom Citadis Spirit rolling stock. Ottawa will be the first city to have the Spirit, followed by the province of Ontario.

We also want to update you about policy. What funding has been issued? What approvals given? Where are there disputes? Like with our infrastructure Progress Report, we focus on the North American region. You may be aware that on this occasion we are publishing two magazines almost simultaneously – the other being our Trako (Poland) magazine, due to be published on 9 September. That issue focuses on the infrastructure and policy developments in the European region.

As you may or may not know, we are also giving our website a major revamp and that is something we

have been working on really hard behind the scenes for months now. We really hope you like the new look and functionality as we are always striving to provide the best-possible user experience and customer service. However, the new look is not the only thing we've been working on. We have some very exciting projects in the pipeline with regards to our technical capabilities. That's all I'm able to reveal at the moment. As always, we love hearing your feedback!

We are publishing issue 6 of our magazine on 11 November. We're heading Down Under for this one, for AusRail Plus. The show itself will take place 3–5 December. If you would like to be represented on our website or in this magazine, please contact Andrew Lush at [al@railway-news.com](mailto:al@railway-news.com).

Please enjoy our 4th issue of 2019!

 railway-news.com

## ANDREW LUSH

Director  
[al@railway-news.com](mailto:al@railway-news.com)

## JOSEPHINE CORDERO SAPIÉN

Editor-in-chief  
[jcs@railway-news.com](mailto:jcs@railway-news.com)

## NICOLA BROWN

Head of Sales  
[nb@railway-news.com](mailto:nb@railway-news.com)

## AMBER GUY-KEMP

Head of Client Content  
[agk@railway-news.com](mailto:agk@railway-news.com)

## GUY RAYMENT

Graphic Design

## FIONA FLYNN

Digital Marketing  
[ff@railway-news.com](mailto:ff@railway-news.com)

## A2B Global Media Ltd

Third Floor  
11–15 Dix's Field  
Exeter EX1 1QA  
United Kingdom

**Office:** +44 (0)1392 580002

**Mobile:** +44 (0)7432 725001

**Email:** [info@railway-news.com](mailto:info@railway-news.com)

**Website:** [www.railway-news.com](http://www.railway-news.com)

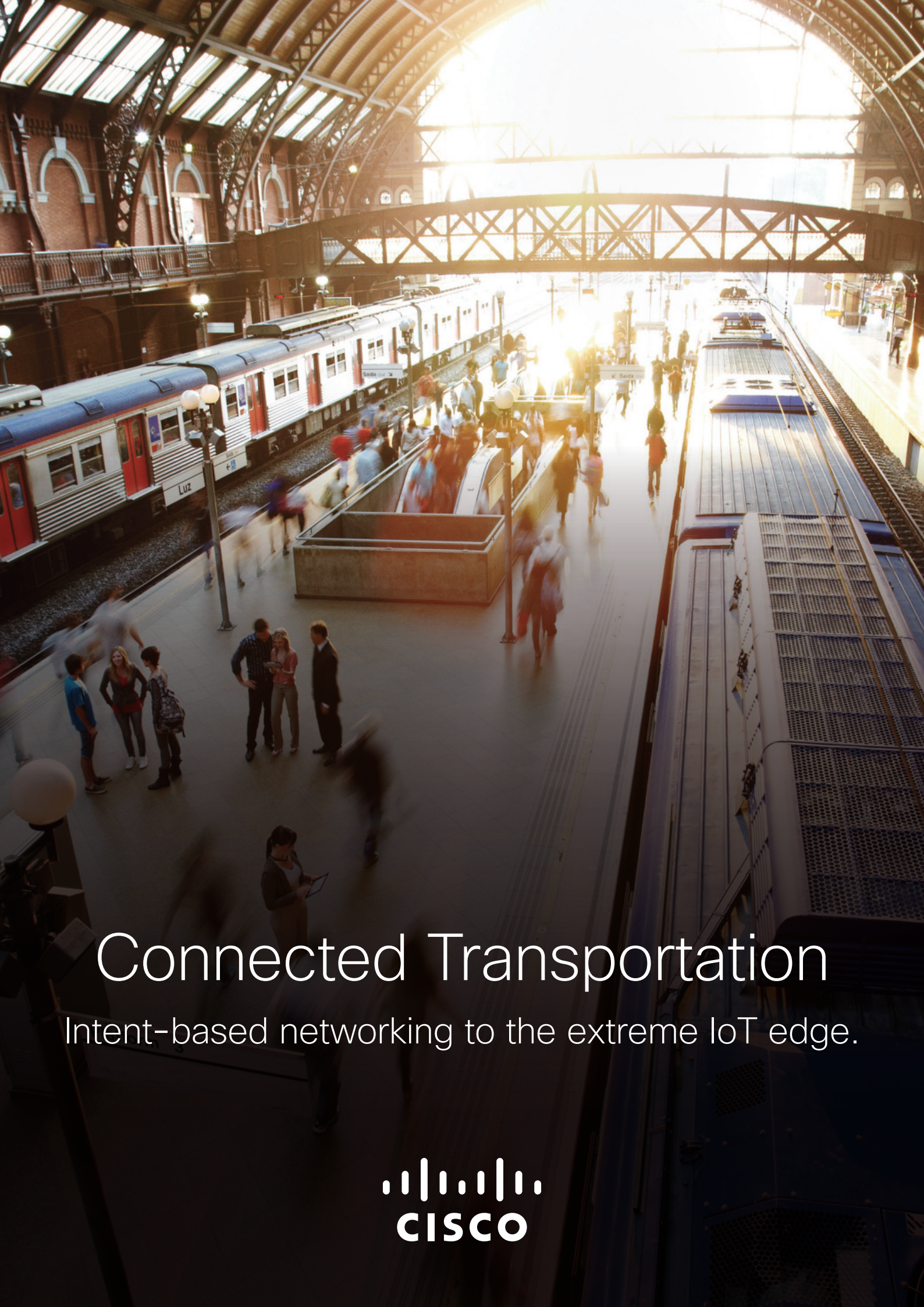
If you would like to submit editorial content, or you are interested in giving an interview for the magazine, please contact **Josephine Cordero Sapién**.

If you would like your company to join Railway-News's online platform, please contact **Andrew Lush**.

To subscribe to our newsletter, visit  
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COVER: The Amtrak Empire Builder in Glacier National Park © Loco Steve CC BY 2.0





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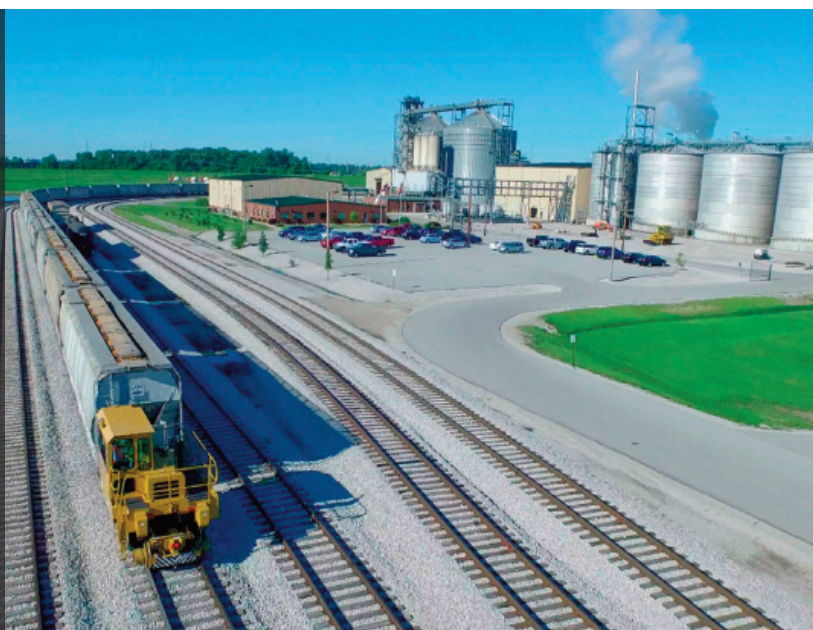
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# Railway Interchange 2019

**Where:** Minneapolis Convention Center,  
Minneapolis, USA

**When:** 22–25 September 2019

**22 Sep:**

9am–5pm event registration

11am–5pm outdoor tracks open

1pm–5pm indoor halls open

**23 Sep:**

6:30am–6pm event registration

8am–11:30am & 1pm–6pm

indoor halls open

9am–5pm outdoor tracks open

**24 Sep:**

7am–2pm event registration

8am–3pm indoor halls open

9am–4pm outdoor tracks open



Entrance to Convention Center courtesy Meet Minneapolis



Lightrail at Targe Field Station  
Downtown Minneapolis

Photo by Metro Transit Courtesy of  
MeetMinneapolis

Hosted by the RSI, REMSA and RSSI, Railway Interchange takes place every two years in changing locations around the US. Every other time it is hosted, it also features an outdoor rail yard exhibit. 2019 is one of those years! The outdoor exhibit is hosted by REMSA and will take place at the BNSF Northtown rail yard. As in 2015 the event is being hosted in Minneapolis. Its primary goal is to bring rail industry professionals together and is the largest railway exhibition and technical conference in North America.

## A Look Back at Railway Interchange 2017

46 different countries were represented at RI 2017 with an attendance breakdown of 13% international, 87% US. Exhibitors, who came from countries such as Germany, Russia and Australia, broke down roughly evenly into

three categories: maintenance of way; communications and signalling; and rolling stock manufacturers and parts, repair and leasing.

2017 saw a total of 738 exhibitors, of whom 15% were international. More than 8,000 people registered to attend the show. And they were presented with many opportunities while they were there, both professionally and educationally with more than ten hours of networking and more than 150 technical seminars.

## What's in Store at Railway Interchange 2019

The major difference to 2017 is this year's outdoor track display, featuring industry big names such as BNSF Logistics, Plasser American Corporation, Robel, Trackmobile and more.

Each Railway Interchange the Rail Supply Institute (RSI), REMSA and Railway Systems Suppliers, Inc. (RSSI) have their own hall in which rail businesses and organisations can exhibit.

## Keynote

The keynote speaker for 2019 is Vernice Armour, America's first African American female combat pilot. The keynote will take place in the auditorium on 23 Sep at 11:44am. Known as FlyGirl, Vernice Armour is well-versed in addressing corporate, STEM-centric and female executive and entrepreneur audiences.

## 2019 AREMA Conference

The 2019 AREMA Conference is held in conjunction with Railway Interchange. It is designed to give rail industry members an opportunity to deepen their knowledge and technical





expertise. It will also allow them to expand their network and exchange ideas. Attendees will learn about the latest technologies and innovations. With more than 80 technical presentations and 3 educational seminars, this conference will have something for everyone.

## RSI Educational & Technical Training Conference

The RSI Educational & Technical Training Conference aims to educate participants on new technologies and trends in the rail

industry. There will be more than 50 educational sessions on subjects such as railcar maintenance, rail operations, air brake technologies, and leadership in the rail industry. A number of different associations and bodies will deliver the content for these informative sessions. They are the Railway Supply Institute, the Air Brake Association, the International Association of Railway Operating Officers, the League of Railway Women, the Locomotive Maintenance Officers Association and the Railcar Technical Services Association.

## The Learning Lab

The RSI Rail Learning Lab is located in booth 3058. Each session lasts between 20 and 30 minutes. Teaching topics focus on emerging issues, regulations, products, research and more from a non-technical perspective. The sessions on 22 Sep will cover: wheel set maintenance, freight car repair, and railcar innovations in a PSR (precision scheduled railroading) world.

On 23 Sep they will be: safety cultural experience, insight and evolution, digital transformation in the railway industry, transforming





*Spoonbridge and Cherry*  
© Photo courtesy of Meet Minneapolis

railroad policy and investment, AAR's Train Control and Communications Operations committee (TCCO) update on industry research, and supplier diversity.

Lastly, on 24 Sep, the sessions will cover: investor perspectives on the rail industry, digital human modelling for the optimisation of user-centred railway product design, innovation and technological change in railroading, and optimising rail equipment to meet shippers' needs.

## Crucial Conversations

Taking place in three 45-minute sessions on Tuesday, 24 Sep, Crucial Conversations is a course teaching us how to talk when the stakes are high. Based on the book with the same title, it teaches skills for creating alignment by fostering open dialogue around high-stakes, emotional or risky topics. Learn how to speak and be heard. Sessions 1–3 start at 12:30pm, 1:30pm, and 2:30pm.

These events presented here are just some of the activities Railway Interchange is hosting. More

sessions are hosted by the International Association of Railway Operating Officers (IAROO) and the Locomotive Maintenance Officers Association (LMOA). There are breakfasts and lunches, panel discussions and the RSI Annual Membership Meeting. And that's before you've even gone around the exhibition and networked with existing and potential customers and colleagues. So we hope you have a very fruitful Railway Interchange 2019!



# ROBEL. Whatever the task.

For over 100 years Robel's principal business has been the design and construction of railway maintenance and renewal machines and systems.



*Less noise, no exhausts, minimal hand arm vibration: The battery powered Robel vertical tamper corrects track level errors in no time, going easy on ballast and sleeper.*



From its base in Freilassing, Germany, Robel employ a workforce of over 570 people dedicated to supply the best quality, safest and most user-friendly solutions worldwide for the construction and maintenance of railway infrastructure.

Coming September, full scale evidence of this claim is provided during a three day in-house exhibition at the company's own premises in the South of Bavaria.

As Robel take a pride in working with their customers, listening to their requirements and developing just the smart solution needed, this factory show is the ideal ground for future projects. Hence, this year's motto "Open House to the Future" will be the programme.

### Safe & smart: Hand guided machines

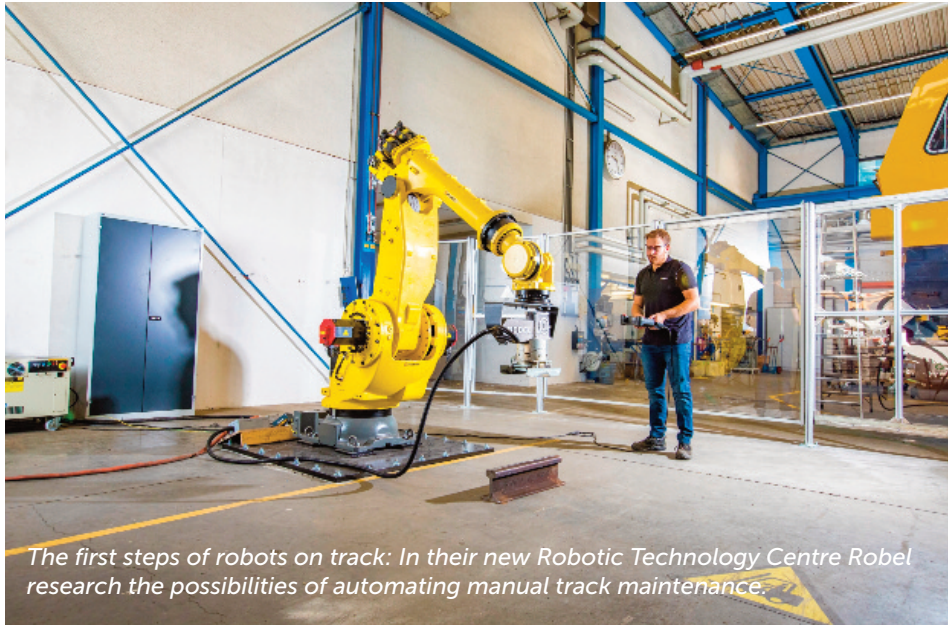
Key to Robel's technologies is innovation. For quite some time now, the development focus for the Machinery & Tools design team centres on eco-friendly battery and hybrid power concepts with less/zero emissions and reduced noise pollution. Workforce safety and welfare are of the uppermost consideration with all that Robel designs. Working with end users, Robel develops machines with optimum ergonomics, light weight and with the lowest hand arm vibration impact.

As a result, Robel's "battery powered family" is expanding fast: The company started as a pioneer in 2013 with a rail drilling machine and an impact wrench with modular rechargeable battery packs. With the addition of a band saw and the battery version of the renowned Vertical Tamper, there are already four battery powered hand-guided machines available with a proven track record for a range of uses in track maintenance:

- **RODRILL B** makes 60 rail holes of 32 mm (1 1/4") diameter taking just 20 to 30 seconds per hole.
- **ROMPACT B** is a lightweight, flexible impact wrench with a battery capacity sufficient to deliver 500 fasten/unfasten cycles to a torque of up to 1800 Nm (1330 ft-lb).
- **ROSAW B** does 20 cuts per band/battery charge, is strong enough to cut all grades and cuts normal grade rail in about 1½ minutes. Still, the machine is ten times quieter than a comparable cutting device with combustion motor.
- **ROTAMP B** is with 25 kg (54 lbs) not only a lightweight, but corrects track level errors in less than 2 minutes.

The newest development in this field has its premiere on track in September: At the in-house exhibition, ROCUT B, the new "green" rail cutter will be part of a workshop demonstrating the spot repair worksite of the future – realized with battery powered machines only.





The first steps of robots on track: In their new Robotic Technology Centre Robel research the possibilities of automating manual track maintenance.

## Fast & Efficient: Track vehicle systems

As rail operators strive for greater productivity, cost efficiency and safety, Robel, with their range of larger on track maintenance vehicles and systems, find new ways to protect operators from the dangers of direct track contact and heavy manual labour.

- **RORUNNER, a multi-purpose power car, which works with transport wagons and a range of work modules to undertake**

**a range of transport, haulage and on track maintenance work activities.**

- **ROMIS, the mobile maintenance system, is a self contained workshop on wheels. The system has a fully integrated power supply for transit and worksite requirements, staff welfare and workshop facility, a storage vehicle with integral gantry cranes and a work unit allowing workers safe access to the track from inside the train. The enclosed working area offers full protection from**



Top quality rails from rolling mill to the track bed: Robel rail exchange systems deliver and recover long welded rails fast and safe.

**trains on adjacent lines and the affects of the weather.**

- **ROREXS rail exchange systems deliver and recover long welded rail strings up to 500 m (550 yds) in length and can transport up to 48 rails. Many automated features, including rail clamping, roller gates and end walls, offer ground breaking levels of both safety and productivity.**

As automation gradually finds it's way into maintenance systems, Robel is already one step ahead and now looks to pioneer the work of robotics and AI technology in the field of railway track maintenance: At the in-house show in September, two robots will have their premiere in the brand new Robel R&D centre. In special workshops, members of the railway industry are going to meet with scientists and Robel engineers to define the future fields of application for robots on track.

## Competent & Certified: The Service One-Stop Shop

Robel service delivers support across the full range of small and large railway construction machines with the key European workshop approvals from Germany, France, the UK and Scandinavia. The performance includes training, supply of spare parts, machine fault repair, full maintenance servicing schedule, retrofit and revisions. Robel Service & Support also has in it's portfolio the Axle Competence Centre. From there Robel delivers all aspects of axles, wheelsets and bogie overhaul, repair, inspections and also fabrication. So Robel



covers the full service range required for rail maintenance throughout Europe – it's up to the customer to determine the scope of services required. During the in-house exhibition in September, Robel offers special "Retrofit" workshops. There, the customer is provided with all the information necessary to decide about the cost-efficiency of a full refurbishment of their existing track vehicles.

ROBEL In-House Exhibition,  
September 17 – 19/2019,  
[www.robел.com](http://www.robел.com)

## Discover the quality of Robel at Railway Interchange

Robel safety, quality and user friendliness are now also available in America: The Robel North America Corporation (RNAC) based in Chesapeake, Virginia distributes a selection of hand guided machines such as vertical tampers, grinding and drilling machines in the United States and Canada. RNAC president Chris Drew, well known in the US track construction sector, is the strong motor for the future success of Robel in the States. Meet Chris, the Robel team from Germany and the new Robel machines at Railway Interchange from 22nd to 25th September in Minneapolis. RNAC have two booths indoor REMSA 1020 and the out-side off track booth 113 where they will be demonstrating the equipment with emphasis on tamping with a special tamping box that shows how efficient the ROBEL tampers are in the field.

[www.robел.us](http://www.robел.us)



*New for old: During a Retrofit in the Robel service centre, the vehicle is dismantled, assemblies are reconditioned, components renewed and functions upgraded to up-to-date standard.*





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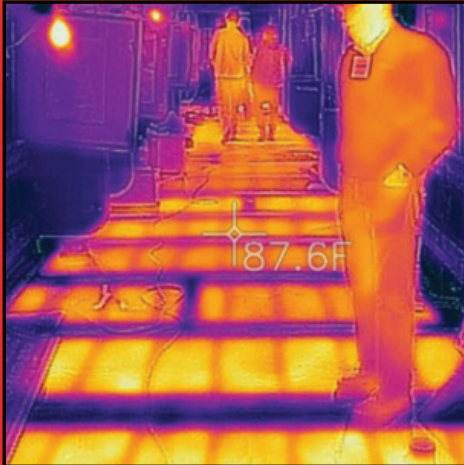
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# The Future of Rail Freight:

## A Conversation with Ted Greener and Ian Jefferies from the Association of American Railroads

The Association of American Railroads, which represents major freight railroads in the US, Canada and Mexico as well as Amtrak and regional commuter railroads, is headquartered in Washington, D.C. It lobbies Congress on behalf of the railroad industry.

*The AAR is exhibiting at Railway Interchange 2019 at booth 3227 in the RSI section. Speaking about their objectives for the show, AAR Executive*

*Director, Public Affairs, Ted Greener said,*

"Similar to the RailxTech event, we hope to showcase the technology our members are using on the network to improve safety and efficiency and assist workers on the network. We will do so with





virtual reality and interactive simulators.”

***Ted Greener spoke to Railway-News about AAR’s policy focuses for the short and longer-term. He said:***

“Broadly speaking, the industry is focused on modernising the regulatory regime at the U.S. Department of Transportation and Federal Railroad Administration that naturally has old roots given how long the industry has been operating. But that must not be a reason for complacency by the government, as years of prescriptive regulation has compounded and threatens the competitive viability of the industry moving forward. As we look at a rapidly changing freight market that will ultimately feature new technologies such as

platooning trucks, we are pushing for a performance-based regulatory structure that incentivises innovation. Prescriptive policies, like efforts in the U.S. House of Representatives to require at least two people in the locomotive on all freight railroads, typify the misguided policy that we are fighting against.

More specifically, the AAR and its members are focused on:

- *Maintaining the existing, balanced economic regulatory policies enacted in 1980. The current regulatory framework protects rail customers against unreasonable railroad actions while allowing railroads to earn enough to make massive investments into their private 140,000-mile network. These investments ensure freight rail remains America’s critical connector. While they may be*

*nearly 40 years old at this point, there is nothing structurally wrong with the system that allows U.S. freight railroads to compete as private businesses and price service based on market demand. In short, we must never become a full-on utility.*

- *Freight railroads support Congressional ratification of the U.S.-Canada-Mexico Agreement (USMCA) agreed upon by negotiators from the three North American nations. And, we are pushing for Congress to ratify the deal to provide valuable certainty in the market. The pact includes important updates to the North American Free Trade Agreement (NAFTA), a wildly successful agreement that has expanded economic opportunity in the U.S. for railroads and their customers. Today, some 42 percent of rail traffic is directly attributable to trade, with much of that*





BNSF locomotives at Glacier Park Montana © Loco Steve CC BY 2.0



***occurring across the continent due to the interconnected nature of the North American rail network. The industry broadly supports free and open trade, opposing policies that restrict access to global markets, including the application of tariffs that impose additional costs to rail shippers and industry business operations.***

The AAR is also working in its capacity to help shape the next surface transportation bill in Congress. The industry has a host of priorities, including increased support for modernising grade crossings to facilitate better safety, and supporting funding for Amtrak and other passenger railroads. At the core of our agenda we are pushing for a true user-fee system on highways that would restore integrity into its funding

mechanism – the Highway Trust Fund. The current underpayment by road users, especially commercial trucking, has required a transfer of some \$144 billion in General Funds to the HTF over the past ten years. Consequently, the rail sector is perennially placed at an unfair competitive disadvantage.”

However, the AAR has had some key successes:

“The AAR recently filed a petition for rulemaking asking the Surface Transportation Board to establish new procedural rules requiring that: (1) when the Board issues a notice of proposed rulemaking it will include a cost-benefit analysis (“CBA”) of the proposed rule and reasonable regulatory alternatives, and that if the Board adopts a final rule it will update its CBA and consider costs and benefits; (2)

the Board specifically consider the cumulative impact of a proposed rule in light of existing regulatory burdens; and (3) the Board use reliable data that reflects market realities, including up-to-date data.

In addition, the AAR recently held its second RailxTech event on Capitol Hill where policymakers and staff experienced freight rail technology first-hand and spoke one-on-one with the freight rail employees who develop and deploy technology that enhances network safety and efficiency. Eight railroads, TTCI and AskRail provided interactive demonstrations of railroad technology. More than 300 people attended the event.”



## ***Ian Jefferies, President and CEO of the AAR takes a look back at the start of America's railroad industry:***

"A single golden spike driven into the ground at Promontory Point, Utah, 150 years ago this past spring in many ways represented the vision of America at the time.

A vast country still finding its way in the world and healing from a civil war needed unity and craved a path to prosperity. The Golden Spike connecting East and West and establishing the nation's first transcontinental railroad provided a moment to celebrate and a path forward. With this singular achievement on May 10, 1869, America's railroads ushered in a new era of commerce, community and connectivity.

No one that day could have envisioned the 2019 version of freight railroads. Locomotives then fuelled by coal and wood would one day give way to an American industry now driven by sonar, infrared lasers, ultrasound and drones. A sparse network that tapped the telegraph to expand would become a 140,000-mile digital rail network that today harnesses big data. Nineteenth-century Americans could not have imagined a 21st-century system that has become the world's model of safety, sustainability and efficiency."

## ***Asked in what main ways rail is changing, Ted said:***

"Incorporating technology into all facets of the operations is part of a larger transformation occurring in which railroads place even greater emphasis on productivity, efficiency and making the most of existing capacity. Through new apps and continued dialogue with

customers, railroads are very much part of the highly competitive shipping sector and are doing their part to give customers the information they need to thrive."

Ian Jefferies too highlighted the role of technology. Focusing on its contribution to safety, he said: "I'm proud to work in an industry whose people are committed to an unparalleled culture of safety. They never rest and never stop evolving and applying innovative technologies to make a safe industry ever safer. Even as a train moves along the tracks at speed, sonar and ultrasound are scouring train components from the ground; meanwhile, drones are employed to inspect the rail network from above. This is how we keep 30,000 locomotives and 1.6 million railcars safely moving on the tracks each day. Freight rail has, over the past few decades, invested hundreds of billions of dollars in private capital — not taxpayer dollars — to become the technology-driven workhorse for

the global economy. This stands in stark contrast to the publicly funded infrastructure systems for the nation's highways and transit systems that stagger helplessly from one funding crisis to the next. Rail does it differently, and for good reason.

Those who know freight rail have heard us talk about our focus on safety, sustainability and efficiency. Our mission has not changed, but we are always seeking new tools to do our jobs better. And though I could give you a white paper's worth of data to illustrate the value of our industry's investments, these three eye-openers provide a window into freight rail's remarkable achievements:

- **Safety:** *2017 rail safety data continues to show that recent years have been the safest on record for the rail sector, with the train accident rate down 23% since 2008.*



CN Freight Train in Minnesota © Jerry Huddleston CC BY 2.0



• **Sustainability:** Railroads moved one ton of freight an average of 479 miles per gallon of fuel in 2017, double the average in 1980. Moving goods by rail instead of over the highways reduces greenhouse gas emissions by 75%. That's good for our communities and for the planet.

• **Efficiency:** Rail shippers pay, on average, about 46% less today (adjusted for inflation) than they did more than 35 years ago. This will be especially significant as the nation's economy expands.

Freight rail's economic impact is clear. In 2017 alone, our sector generated roughly \$220 billion in economic activity while supporting 1.1 million jobs. This is only possible because a balanced regulatory environment has given railroads the room to invest, improve and thrive. We have

resisted — and will continue to resist — one-size-fits-all policies that hinder modernisation, and we'll support policies that embrace the future rather than fight it."


**Speaking about his own role at the AAR, Ian Jefferies had a positive view:**

"I am privileged to help lead this industry as the President and CEO of the Association of American Railroads (AAR). What's particularly exciting to me is not just what freight rail has achieved throughout our nation's history, but what our member railroads are doing now to transform their operations to drive the economy and serve the American people. Together, freight railroads are moving us into the future.

I begin my tenure at a time when freight railroads are working to meet the demands of a world that is changing not by the year, but by the minute. International trade and consumer expectations have seen our industry expand and advance at a stunning pace over the past few decades. Rail traffic in the U.S. has increased 84% since 1981, though the network size has remained stable. Looking ahead, the Federal Highway Administration predicts total U.S. freight shipments will increase 37% between now and 2040. I am confident we will be able to meet that demand because our industry plays the long game.

My path to AAR involved work in industries and institutions that bring people together to make things happen. A tech start-up early in my career provided a window on innovation and





connection in the private sector. My work in government — from a mayor's office to the U.S. Senate Commerce Committee, the Department of Transportation and the Government Accountability Office — gave me a first-hand look at how policymakers' decisions affect people and their communities.

Through those jobs — which spanned the world of international trade, infrastructure, economic development and multiple modes of transportation — I gained a well-informed understanding of the unique contributions of America's freight rail system. From the moment I stepped foot into AAR, and reaffirmed over the years, I saw how member railroads are committed to safety, excellence and investment in the infrastructure and technology that makes our network the best on

the planet by far. Because of the criticality of our industry to the nation's people and economy, we also play an integral role in building consensus and know what's needed to get things done."

***At the beginning of our conversation Ian Jefferies pondered the early days of American rail freight. With his appointment as President and CEO of the AAR, he also drew a personal arc between the past, present and future:***

"I can't help but think about the future of freight rail when I ponder the future of our country. The world's largest economy needs the most reliable and efficient engine on the planet, and with freight rail, the United States has that engine. Our country never

stops creating or imagining or doing. While the story of the Golden Spike inspires us, even today, I know that freight rail will never be satisfied with yesterday and is ever transforming with an eye toward tomorrow.

When I think of our industry, I think of my family. My great-grandfather worked for the Southern railroad, and I recall my grandfather's hobby room stocked with model trains, books, videos and other train memorabilia. My family's love of trains can be traced generations back, and my Dad also caught the train bug. The imprint on me was unmistakable, and the passion still lives in my own house and with my own children. Trains are in the fabric of families like mine, generation after generation."



# Dina Consulting & Design, LLC produces a number of different products for your railway applications.

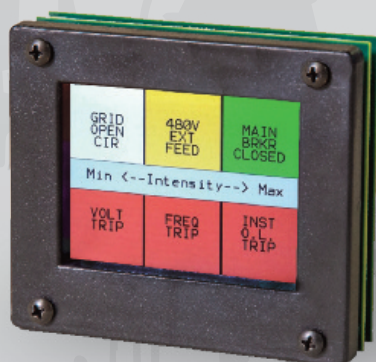
## Our Locomotive Solutions at a Glance:



### • Locomotive Isolated Power Supply LCD-1201375

#### **74VDC-24VDC 33A DC to DC Converter**

A power supply for electric windscreen wipers. Also suitable for application of engine controllers requiring 24VDC. The operating input voltage is 43-85VDC. A compact unit, it is easy to install in the HEP cabinet, high-voltage cabinet and shortnose. Comes with low-voltage dropout protection set 29VDC. It can run continuously with zero load, meaning there is no minimal load required.



### • LCD Indicator Light Panel LCD-1201916

This device monitors locomotive health. It can display faults to the engine or any other control system encountering problems. The engineer will be shown all necessary information during operation. This indicator light panel is a direct replacement for the EMD egg crate-style indicator panel.

There are options when it comes to its installation. It can be installed in the high-voltage cabinet, the control stands, auxiliary cabinets or the head-end power cabinet. Thanks to the adjustable liquid crystals, the system is suitable for both low and high-lighting conditions. Has a touch-screen interface.



### • 24VDC Power Supply LCD 1202027

#### **DC to DC Converter**

In locomotive operations, this power supply unit is typically used as a 24VDC wireless switch, a 24VDC layover indication control voltage or any other 24VDC output, inductive/resistive, 120watt load.

It can be installed in high-voltage cabinets, control stands, and auxiliary cabinets where lower voltages are required.





## • Locomotive Layover Battery Charger LCD 1205100

**480VAC / 575VAC to 74VDC**

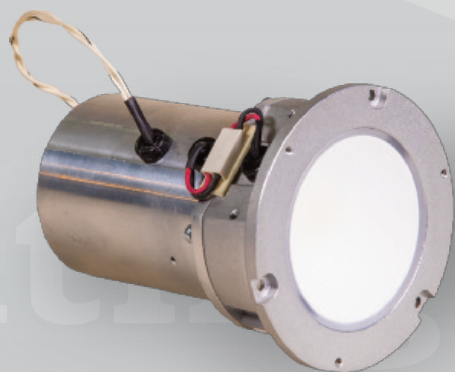
This rigid battery charger can easily be adapted for any commuter locomotive. Use it to replace and upgrade existing units. Instead of running the engine to keep the battery charged, our solution connects to track power, keeping batteries and auxiliary systems running at full capacity. This layover battery charger replaces the KBC battery charger product line.



## • Locomotive Isolated Power Supply LCD-1208308

**74VDC–24VDC 16A DC to DC Converter**

A solution to power 24VDC locomotive systems. Its compact nature means it fits well in the control stand, the HEP cabinet, the high-voltage cabinet and the shortnose. It comes complete with low-voltage dropout protection set 29VDC. It can run continuously with zero load. Input voltage is 30–90VDC. It has a 30s under-voltage protection for ECM startup cranking voltage droop.



## • Emergency Cab Light LCD-1208328

**90min Backup Battery**

The emergency cab light is used in coach cars. It turns on when power is lost. It will run for 90 minutes, which gives passengers time to exit the vehicle in the event of loss of power or an accident. Our lights will provide illumination for 3 hours. Recent US regulations require all coach cars to be fitted with emergency lighting. Dina Consulting & Design is the only American company offering convenient single-housing lights. This simplifies installation and keeps costs to a minimum.

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Locomotive Consulting | New Product Design | Parts & Service



# Trackmobile

A Leader in Safety  
and Innovation



In 1947, the mobile railcar mover was invented as a solution for moving materials and equipment that didn't involve using the temperamental in-plant locomotive. The birth of the first Trackmobile was an exercise in innovative problem-solving, a tradition that the company has maintained to this day.

A look over Trackmobile's Options Catalogue reveals one area that has been a particular focus of innovation and excellence: safety measures. All machines are made with slip-resistant decks, steel bar grated ladder treads, and abundant front, rear, and lateral LED lights for maximum operator and ground crew safety. More impressive is the patented Safe-T-Vue Camera System, featuring an in-cab 10" full color camera display that shows a 360°



surround view of the machine, which comes standard with every machine. Other standard safety features include an impact sensor with impact monitoring history, the MAX-Trac Automatic Traction Control System, the MAX-Tran Automatic Weight Transfer System, electronic speed control, neutral braking, and hydraulic lockout. Even without delving into the abundance of additional safety features that can be added to a machine, it's apparent that a great deal of time and development has been invested in making sure that every Trackmobile contributes to overall workplace safety. The ease and well-being of the end user is at the forefront of Trackmobile innovation, and it shows.

One of the most popular safety options that Trackmobile offers is the GCS Ground Control System, which facilitates ground crew operations with emergency braking capabilities. With an operating range of more than 1200 feet, the pocket-sized radio remote is used to apply brakes in an emergency. The frequency-hopping technology doesn't require an FCC license to use and allows a groundsman to activate both machine and train-air brakes, while shifting the transmission into neutral. Also based on radio transmission is the Remote Control System, which takes the concept of the GCS a step further: in addition to controlling the brakes, the Remote Control system gives the operator the ability to control engine throttle, forward/reverse motion, machine raising and lowering, the front and rear coupler (knuckle opening, raising/lowering, and traverse) and the air horn. In essence, a user could control all essential machine functions from the ground, without ever stepping into the machine.



The Remote Control System can be used, among other things, to combat operator fatigue, a common hazard that is also addressed by Trackmobile's Vigilance Control System. When long shifts and hectic operation are the norm, the Vigilance Control System can be an invaluable addition, as it constantly monitors operator activity and sounds an alarm if there has been no activity for 40 seconds. After a further 5 seconds with no activity, the system puts the machine into an emergency stop mode, with both sets of brakes applied, the transmission shifted to neutral, and the air horn activated. Whether the source of the hazard lies in the operator or the application, Trackmobile works to be a step ahead.

Innovation and safety aren't Trackmobile's only commitments—they also value quality and quality management. Trackmobile earned the ISO 9001:2015 Quality Management System certification, which is based on a wide array of quality management principles, like a strong customer focus, clear documentation processes, internal organization, and continual improvement. In short, this means that, in addition to delivering a quality product, Trackmobile has a system in place for getting

feedback from customers and using that feedback to improve their machines and procedures through a clear and well-documented process. Innovation doesn't happen overnight, nor is it solely the result of brilliant engineering minds sitting around a drawing board—it also comes from finding out what end users want and what issues they might be having, then finding new ways to deliver. And as the industry leader with majority market share and a documented history of end users reporting 97% uptime, it's safe to say that Trackmobile does deliver.

Trackmobiles are sold by an international distributor network with more than 100 facilities and over 300 factory-trained service technicians in North America alone. Find a distributor in your location now and reach out for a free site survey, a safety evaluation, and an in-person demonstration. Our dealers offer 24-hour emergency service by dedicated technicians using factory-direct parts. Find out if a Trackmobile power, safety, and reliability could be an asset to your facility today





# The Policy Update



US Capitol © Pierre-Selim  
CC BY-SA 2.0

## United States

The Federal Railroad Administration (FRA) has issued a Notice of Funding Opportunity (NOFO) for the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program. The current August funding for capital rail projects is for 244 million USD. These funds are there to increase rail transportation safety, efficiency and reliability. Projects eligible for this funding are those that address congestion challenges, highway-rail grade crossings, upgrades to short-line railroad infrastructure, the relocation of railway lines, improvements to intercity passenger rail capital assets, and the deployment of railroad safety technology. Positive Train Control is one of the projects that has received CRISI funding in recent years.

## Canada, Ottawa

The City of Ottawa applied to the Canada Transportation Agency to construct an extension to the Trillium Line. To assess the application, the Agency examined whether the City had sufficiently consulted with the Indigenous population who might be affected by the extension, whether the extension would cause significant negative environmental effects, and whether the planned route of the extension to the Trillium line is reasonable. Following an investigation, the Agency has found that the Trillium Line extension does not breach Aboriginal rights, that sufficient consultation has taken place. Furthermore, the extension is not likely to cause significant adverse environmental outcomes and it is reasonable. Consequently the Transportation Agency approves the Trillium Line extension.

## Canada, Vancouver

In January 2019 the Canadian Transportation Agency opened an investigation into whether BNSF, CN and CP breached their level of obligations in the Vancouver, BC, area between October 2018 and January 2019. It has found that neither BNSF nor Canadian Pacific breached their level of obligations, but that Canadian National did. It did so by announcing and imposing embargoes on wood pulp shipments without making reasonable efforts to deal with the challenges of the matter first. The Canadian Transportation Agency has ordered CN to produce an annual plan in August (for three years) for its traffic in the Vancouver area with a view towards avoiding and minimising embargoes.

## Canada, Montréal

The City of Montréal filed an application with the Canadian Transportation Agency against Canadian Pacific Railway Company to obtain authorisation to construct five level crossings for pedestrians and cyclists and to apportion the construction and maintenance costs. The Canadian Transportation Agency ruled in June 2019 that two of the crossings would not be suitable at-grade, and would therefore have to be grade-separated. The City of Montréal will bear the full construction and maintenance costs for these. Further, the City of Montréal will be allowed to construct the other three crossings at grade, but will again be fully responsible for the construction and maintenance costs.





Pacheco Pass Rendering © CAHSR

## United States

The Federal Railroad Administration has made 272 million USD in funding available for ten rail projects in ten states. These funds will be allocated through the FRA's State of Good Repair Program (SOGR Program). It is intended to rehabilitate and repair railway infrastructure in the US. The two biggest recipients were North Carolina, with a grant approval of up to almost 77 million USD for the acquisition of 13 new passenger coaches for the Piedmont service and an expansion of the Charlotte Locomotive and Railcar Maintenance Facility. The new coaches would replace rolling stock from the 1950s and 60s.

Massachusetts was awarded a maximum of just over 41 million USD for the replacement and upgrading of signals, switches, track, power systems and related infrastructure at 'Tower 1', an important rail network junction at the Boston South Station terminal.

## United States, California

Following the threat, issued in February 2019, that the Trump Administration would cancel a 929 million USD grant for California's high-speed rail project, it made good on that blow in May. A further threat, that it would try and grab back 2.5 billion USD in funding already paid out, was reiterated. Governor Newsom has vowed to fight the decision in court, calling the action "illegal and a direct assault on California".

## United States, Canada

The relationship between shippers and Class 1 railroad operators is not an entirely happy one. In May the Surface Transportation Board (STB) held a hearing on fines and charges levied against shippers, which shippers thought were punitive and arbitrary. Of the seven Class 1 railroads in the US and Canada, Kansas City Southern was considered by shippers to have the fairest practices. An example problem is bunching. If a shipper orders a certain number of cars from a railroad, they might not arrive when the shipper wants but several hours earlier or later. If the shipper doesn't have time to process them there and then, the shipper is charged a demurrage fee, even though the railroad didn't deliver on time. Other factors, such as the weather, also contribute to bunching due to no fault of the shipper. Such a negative relationship between shippers and railroads is not helpful in trying to encourage a modal shift to rail for freight.

## United States

The American Short Line and Regional Railroad Association (ASLRRA) issued a statement in response to the US Senate Finance Committee report examining various tax credits. The ASLRRA said that the short line railroads depended on the 45G (short line) tax credit in order to maximise investment. Chuck Baker, ASLRRA President, said: "The residual benefits of dollars spent on railroad infrastructure include employment and growth in the railroad supplier community and the regional economies as more businesses locate because of rail options." There are more than 600 short line railroads in the US.



# Train Tracking using Frauscher Axle Counters



## Grade Crossing Control Systems:

### Increased Availability with Frauscher Axle Counters for Crossings using Track Circuits

- The Frauscher Advanced Counter FAdC is not affected by rusty rails, snow, road salt, flooding, debris or conductivity
- No drilling of rail required to install Wheel Sensors RSR180
- Flexible and configurable outputs including relay and Ethernet-based solutions
- Vital, SIL 4 fail-safe system that detects trains up to 280 mph
- Remotely accessible diagnostics for preventive maintenance with the Frauscher Diagnostic System FDS reduces overall costs and worker time on track

## Application Options:

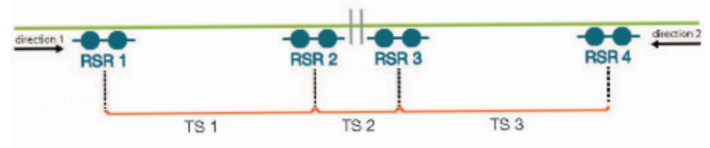
### 1. In DC track circuit-activated crossings, the replacement of only the island circuits with axle counters

- Island circuits are the most challenging part of DC track circuit-based crossings, since they easily collect road salt and debris

- In this application, only the island circuit (middle track section) is replaced with two Wheel Sensors RSR180 (TS 2 in figure below)

### 2. Full replacement of DC track circuits that activate crossing

- Axle counters interface with existing crossing controllers using the optocoupler, relay or Ethernet outputs
- The DC track circuits in the crossing are replaced for all track sections (TS 1, TS 2, TS 3 in figure below)



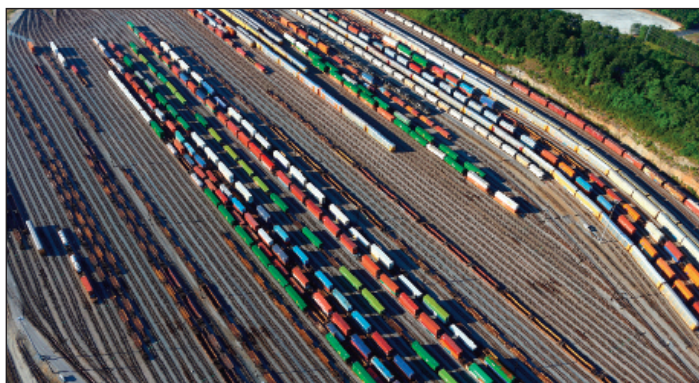
TS Track section  
RSR Wheel sensor

## Switch Point Protection & Yard Automation

### Increasing Uptime, Reliability & Worker Safety

- Use of wheel sensors and axle counters in yards where hand-thrown switches and manual routing procedures are being utilized can improve efficiency and safety
- The Frauscher Advanced Counter FAdCi system offers switch and flank protection, zero speed capability and handling of vehicle wheel rocking
- Offers quick release of switches after traversing to route next train, provides flank protection to switches, and tracks axle counts within configurable track sections
- Provides high uptime and availability in busy yard environments – increases safety as workers are not required on track for switching maneuvers





## Application Options:

### 1. For fully automated yard applications:

- The FAdCi is a vital, SIL 3 fail-safe axle counter, used in conjunction with the Wheel Sensor RSR180
- FAdCi detects trains from zero speed to 50mph
- Minimal maintenance is required
- The FAdC is also available, offering SIL 4 fail-safe protections and train detection from zero speed to 280mph

### 2. In switch point protection only applications:

- The Frauscher Wheel Sensor RSR110 is installed around each switch
- Train detection can occur via analog signal. Digital output is also available

## Track Circuits vs. Axle Counters

### Track Circuits

- Reliability can decrease due to unavoidable factors such as flooding, snow, road salt, rusty rails, debris, etc.
- Installation and especially life-cycle maintenance costs are high
- Track section length is limited to two miles maximum
- Frequent maintenance and train passage required (every few days) to prevent rusty rails and decreased conductivity
- Drilling of the rail and insulated rail joints are required for installation. Insulated rail joints are expensive to maintain
- Wiring could make removal of track circuit difficult, so damage may occur during routine track maintenance
- Capabilities include track vacancy detection, rail break detection (if clean break) and cab signalling

### Axle Counters

- Virtually immune to environmental factors such as flooding, snow, road salt, rusty rails, debris (can be affected by metallic debris), etc.
- Low installation, maintenance and life-cycle costs
- Track section length is theoretically unlimited, depending on network structure (important for dark territory applications)
- Low maintenance requirements due to remote calibration and diagnostics, reducing need for regular maintenance. Train passage required only once in two years
- Wheel sensors are attached to the rail, without drilling, with the rail claw. Each sensor can be installed in about five minutes
- The rail claw will permanently attach the sensor to the rail; however, it can also be easily removed, height adjusted or relocated if needed for track maintenance
- Capabilities include track vacancy detection, determination of speed, train direction and number of axles

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# Finding the Right Solution for Every Workshop with WINDHOFF

## Experts in Workshop Equipment

WINDHOFF Bahn- und Anlagentechnik GmbH, Germany, develops and manufactures workshop equipment for the inspection and maintenance of rail vehicles worldwide, tailored to the requirements of each individual customer.

WINDHOFF delivers underfloor lifting systems and lifting jacks for the inspection, maintenance and repair of multi-part trainsets, elevated track systems, equipment such as bogie-measuring stands, bogie changers, working platforms and wheel set turning devices, traversers, turntables and buffer stops in retractable and movable design. More than that though! The company also provides full planning and system management services for major construction projects.

The WINDHOFF shunting sector

covers dedicated solutions for state or industrial railway operations and for the special demands of quayside railways, starting with simple rope winches, rope traction and shunting systems with slingchains as well as solutions with wheelset carts or buffer wagons. In addition to that customers can select from a range of battery-powered RAIL/ROAD or RAIL-BOUND shunting vehicles. The flexibility with which rail-road shunting vehicles (ZRW) can be used makes them ideal for shunting in ports, private transshipment and company sites and on small railway networks. The emission-free vehicles can be used flexibly and are able to mount and/or dismount from the rails at any location with a closed track.

Due to the vehicles' full rubber tyres and related friction value  $\mu$ ,

traction can be increased to the maximum – even on wet rails. Compared to conventional diesel locomotives, maintenance costs can be reduced by up to a factor of 10, not least because electric vehicles are usually only serviced once a year.

### Only Short Workshop Times Are Good Workshop Times

For the set up of modern rail depots, the conceptual planning component is the essential factor for efficient and economic work. Specialists analyse all work steps and requirements in order to bundle the optimal logistical layout and the most effective equipment into a reliable cost and time schedule.





*Traverser: Pitless Design,  
Double Track 2 x 65 tons,  
CRRC Chicago, USA*



*WINDHOFF Double Anvil Hybrid Lifting Jacks provide the  
lifting comfort of in-floor train hoists with integrated body  
supports (SBS Transit Ltd, Singapore)*

In addition to the general requirements, the WINDHOFF specialists manage the country-specific approval procedures and regulations as well as the homologation for the licencing, supervisory and approval authorities.

WINDHOFF Germany has been a globally operating manufacturer with a broad portfolio of technologically sophisticated products in the railway vehicles, rail and shunting technology sectors since 1889.



*The mobile wheelset rotating device  
supports visual inspections*



*WINDHOFF Wheel set drop and bogie  
drop, Al-Nariyah, Saudi Arabia*

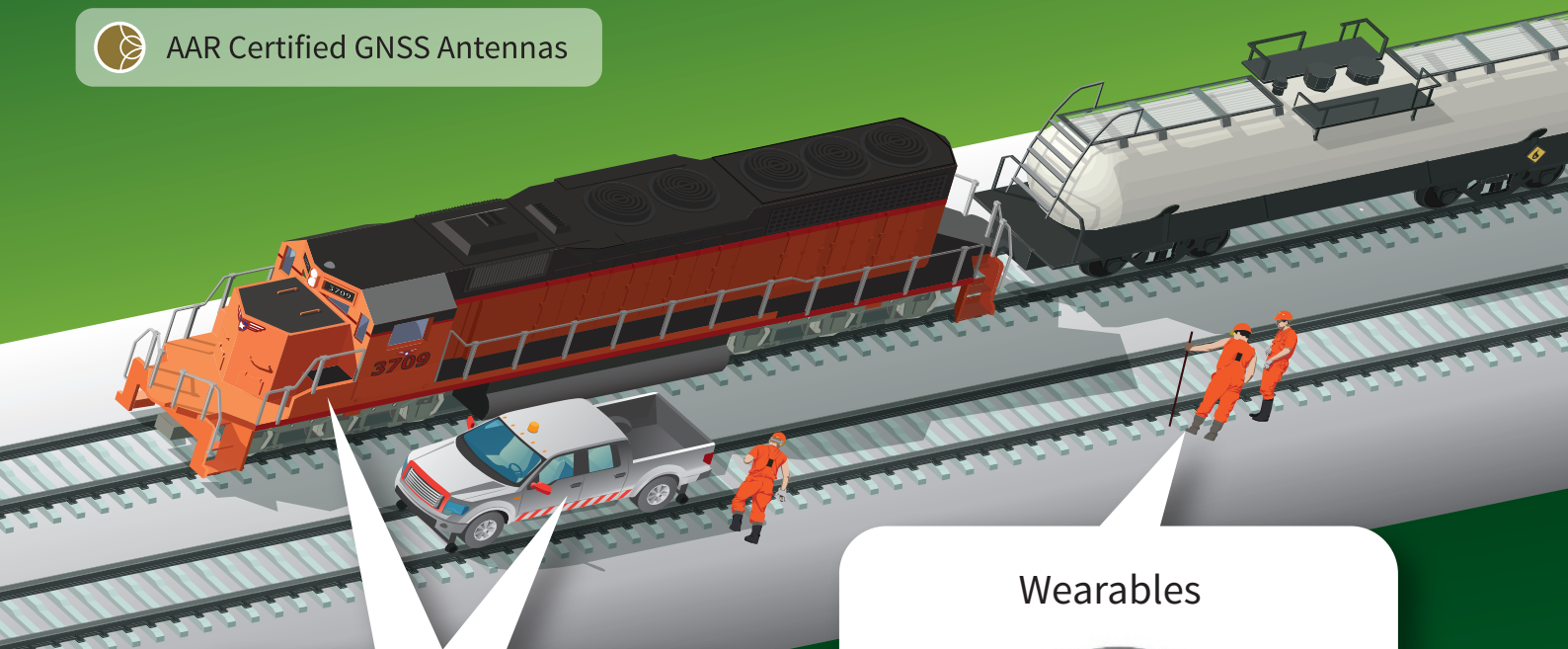


# Why is Tallysman a supplier to Class I railways?

With a wide range of high quality GNSS antennas and deep expertise, Tallysman can support the successful implementation of any GNSS system for rail.



AAR Certified GNSS Antennas



## Locomotives and Hi-Rail



### Value of a GNSS system:

- Increase positioning accuracy of trains and vehicles
- Identify train or vehicle orientation on the track, while stationary
- Improve safety and productivity

### Tallysman GNSS antennas

- AAR-compliant quality
- Signal immunity
- Tight phase centre variation

## Wearables



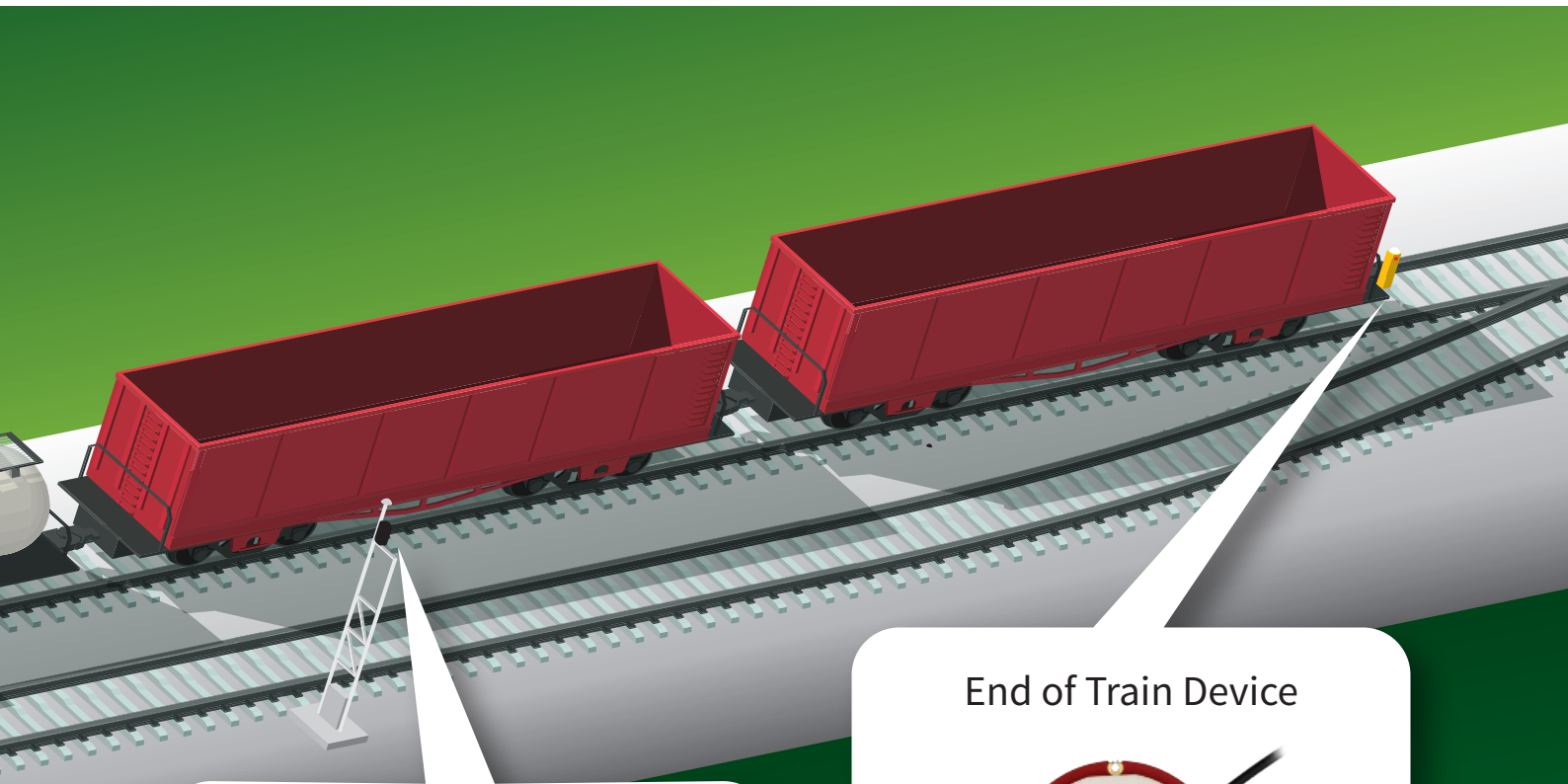
### Value of a GNSS system:

- Gain accurate awareness of worker location
- Ensure safety with the potential to alert workers of an approaching train
- Improve productivity by ensuring efficient operations

### Tallysman GNSS antennas

- A small and lightweight form factor
- Easy replacement
- Low axial ratio





## Trackside Reference Stations



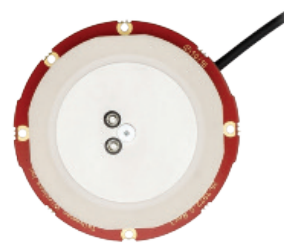
### Value of a GNSS system:

- Gain centimetre-level positioning with a network of trackside reference stations
- Ensure accuracy of the entire GNSS system
- Benefit from high performance RTK and PPP systems

### Tallysman GNSS antennas

- Very tight PCV
- Easy to install
- Wide bandwidth

## End of Train Device



### Value of a GNSS system:

- Ensure safety by remotely confirming when the end of a train has cleared the main line onto a siding
- Improve productivity by reducing the distance between trains
- Potential to platoon trains

### Tallysman GNSS antennas

- Custom-tuning for embedded antennas
- Signal immunity
- Tight phase centre variation



# INFRASTRUCTURE

## The Progress Report

An in-brief look at the status of current rail projects in North America



**What:** Ottawa  
Confederation Line

**Where:** Ottawa, Canada

**Scheduled opening:** 14  
September 2019

**Construction status:**  
Construction of the Confederation Line, a light metro line in Ottawa with 13 stations in this phase of the project, is largely complete. Trial running started on 29 July.

Success here is defined by 12 consecutive days of regularly scheduled service to confirm the system's readiness. During this trial period different systems of the line are put through their paces. An independent certifier will assess whether the necessary objectives of the trial runs have been completed.

Following this and the submission of the Revenue Service Availability notice, the city of Ottawa will

spend four weeks conducting final preparations for the opening of the line.

Construction of Phase 2, which comprises 16 further stations and will extend the line both to the east and west, is set to begin in 2019, once Phase 1 opens.

**Rolling stock:** The rolling stock will be 34 Alstom Citadis Spirit light rail vehicles.

**What:** The Silver Line  
– also known as the  
Cotton Belt Rail Line

**Where:** Dallas, TX, USA

**Scheduled opening:** 31  
December 2022

**Construction status:** The east-west line, which will connect Dallas Fort Worth Airport and Shiloh Road over 26 miles, will have a train running every 30 minutes during peak times and every hour during off-peak times.



Silver Line train © Stadler



On 18 June 2019 the DART Board approved the decision to name the future service on the Cotton Belt Regional Corridor the Silver Line.

Design finalisations are currently taking place, with construction to begin in Q1 of 2020. Testing is to commence in Q2 of 2022. Pre-construction activities, as outlined in the Quarterly Update, include on-site photography and videography as well as survey activities, geotechnical investigations and taking soil samples.

**Rolling stock:** Dallas Area Rapid Transit (DART) has ordered 8 Stadler FLIRT DMUs, which meet the Tier 4 emissions standards as defined by the EPA and the FRA.

**What:** Honolulu High-Capacity Transit Corridor Project

**Where:** Honolulu, HI, USA

**Scheduled opening:** December 2025, with Phase 1 (East Kapolei-Aloha Stadium) to open to limited passenger service in autumn 2020, with a second section to open by 2023

**Construction status:** The project will be the first fully-automated, driverless urban light rail metro system in the US. The Honolulu Authority for Rapid Transit (HART) says the project is currently 53.1 percent complete, based on the full 20 miles and 21 stations that it comprises of. Once complete, it will connect West O'ahu,



Honolulu Rail Transit First Trainset © Musashi1600 CC BY 3.0 us





San Joaquin River Viaduct and Pergola © CAHSR

downtown Honolulu and the Ala Moana Center via the Daniel K. Inouye International Airport. The system will be largely elevated. HART estimates that by 2030 the daily weekday ridership will be 121,000.

Construction officially began on 22 February 2011. The project's long-term plans include four extensions.

In April 2019 HART released a list of proposed names for the twelve stations between Pearl Harbor and Ala Moana Center.

**Rolling stock:** Electric steel-wheel trains to be manufactured by Hitachi Rail Italy. Final assembly will take place in Pittsburg, California. The electricity powering the trains will also come from renewables such as solar, wind and biofuels. Each four-car train will have a capacity of 800, with 188 seats. The total fleet will comprise 20 units. The average travel speed will be 30mph, with the maximum speed being 55mph.

**What:** California High Speed Rail

**Where:** California, USA

**Scheduled opening:** The first section of Phase 1, between San Francisco and Gilroy, and between Madera and Bakersfield, measuring 224 miles, are to open by 2027. The opening goal for the full Phase 1 is 2033.

**Construction status:** The high-speed rail line in California will be 800 miles (1,300km) in length once fully completed, with Phase 1 measuring 520 miles (840km). Running on standard-gauge tracks, DB International USA will operate the service with a top speed of 354km/h. The consortium won the bid in 2017. Construction began in Fresno in 2015. Phase 1 will connect San Francisco to the Los Angeles basin via the Central Valley. It will

connect 6 of the 10 largest cities in the state.

Recent construction highlights include works beginning on the San Joaquin River Viaduct. The Avenue 8 grade separation works in Madera County are largely complete, while initial paving has been completed on Avenue 12 in Madera County. Construction crew are also working on the crossing over the BNSF freight line. Bridge deck construction has begun for the grade separation works on Avenue 15 in Madera County.

The California High-Speed Rail Authority and Kings County Board of Supervisors signed three major agreements in August 2019 that will clear the way for substantial progress on the works in Kings County in the Central Valley. Phase 2 is still in the planning stages.

**Rolling stock:** The California High Speed Rail Authority issued a request for proposals in 2015. Nine companies formally expressed their interest: Alstom, AnsaldoBreda (now Hitachi Rail Italy), Bombardier, CSR, Hyundai Rotem, Kawasaki Rail Car, Siemens, Sun Group U.S.A. together with CNR Tangshan, and Talgo. CNR has since ceased to exist, reducing that number to 8. Each train must have at least 450 seats and be equipped with earthquake safety systems. All the trains will also be electric and powered 100 percent from renewable sources.





## Mobile rail welding systems Supra Multiflex and Supra Roadflex



For mobile welding of continuous welded rails, these machines are normally integrated into an autonomously operating rail welding system. These systems are equipped with diesel-generator set, hydraulic unit, cooling unit and lifting device.



Schlatter Industries AG

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# MOBILE RAIL WELDING SYSTEMS: Supra Multiflex and Supra Roadflex

For mobile welding of continuous welded rails, these machines are normally integrated into an autonomously operating rail welding system. These systems are equipped with a diesel-generator set, hydraulic unit, cooling unit and a lifting device.

## Supra Multiflex Container-Based Rail Welding System

Container systems are especially suitable for welding continuous welded rails directly in new railway track. They are also often used in a semi-stationary manner in depots or near the job site for the preparation of long welded rails for a section in a new railway line.

## Supra Roadflex Truck-Based Rail Welding System

The truck-based system is highly flexible as it is self-propelled and can move from one job site to the next within a short time.



*Supra Roadflex – truck-based rail welding system*

## Customised System Solutions

Optionally, the welding machines AMS60, AMS100 and AMS200 can also be purchased separately and

installed in customer-specific vehicles such as pure track vehicles, in their own rail-mounted trucks or in excavators. There is also a stand-alone solution for stationary operation in a factory.



## Supra Multiflex

Container systems are especially suitable for welding in new railway lines where a lot of new rails have to be placed and many welds have to be carried out. They are also often used in a semi-stationary manner, either in depots or close to the job site where they weld long welded rails for a certain section of new railway line before they are taken to another section. Schlatter offers a compact 24-foot container that houses all equipment in a space-saving manner. As an alternative a system is available where the equipment is incorporated into two 20-foot containers – the energy container and the welding container.



*Supra Multiflex – container based rail welding machine*

## Supra Roadflex

Supra Roadflex systems are self-propelled. They can work completely autonomously and they are very flexible for moving from one job site to the next. Accessing track is possible from any level crossing (at-grade crossing) and requires little space. Shortly afterwards the system is ready for welding at the job site.



*Supra Roadflex – AMS200 rail welding machine*

### Schlatter Industries AG

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**ALWAYS ON**



## Innovative RF Interconnect and Over Voltage Protection for your Demanding Rail Transit Applications

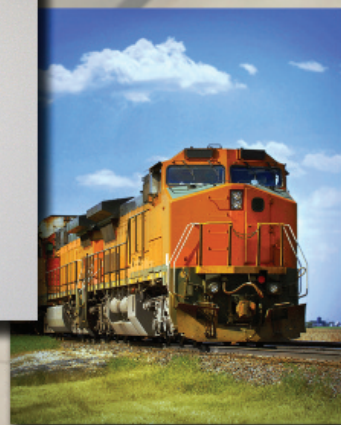
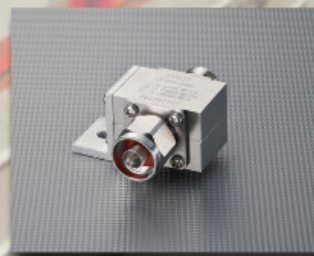
- European Train Control System (ETCS)
- Subway/Metro
- Radio Communications

### **Times Protect<sup>®</sup> RF Lightning Protection**

- *Superior Surge Protection*
- *Exceptional Longevity*
- *Weatherized Designs Available*

### **Times *LMR<sup>®</sup>* LSZH Flexible Low Loss Coaxial Cable & Connectors**

- *NFPA 130 and EN 45545 Compliant*
- *Low Smoke, Zero Halogen*
- *Easy Field Termination*





# Upcoming Railway Events & Exhibitions

## September, October & November 2019

### Rail NZ 2019 – Light vs Heavy Rail 11–13 Sep 2019

Rail NZ 2019 – Light vs Heavy Rail will bring together an international panel of governments, city and town planners, urban designers and architects, policy advisers and analysts and leading industry presenters to discuss and explore key issues impacting both the light and heavy rail industries within an urban setting, enabling people and communities to be connected. New Zealand will learn valuable lessons for its own rail expansion plans.

**Event website:** <http://bit.ly/2HvcXhY>

**Location:** International Department 215–225  
Lambton Quay, Wellington, New Zealand

### Fire Protection and Safety in Tunnels 2019 17–19 Sep 2019

The 12th annual Fire Protection and Safety in Tunnels 2019 conference: a key industry event to showcase major innovations for designing, implementing and upgrading tunnel fire and safety projects. Marking the 11th year of running the prestigious event, we will be joined by a thought-leading speaking faculty in a major tunnel region. Over 20 presenters will join us from across Europe and beyond.

**Event website:** <http://bit.ly/2Ht4trq>

**Location:** H.C. Andersen Eventyrhuset,  
Rådhuspladsen 57, 1550 København, Denmark

### ASEAN Rail Summit 2019 18–19 Sep 2019

During the ASEAN Rail Summit, more than 300 experts and decision-makers from ASEAN countries and beyond, including rail industry members,

government agencies, design units, operators and suppliers, will come together to discuss the development of the ASEAN rail transit industry, as well as opportunities and financial considerations, technological innovations, operation management and other topics.

**Event website:** <http://bit.ly/326Crdk>

**Location:** Kuala Lumpur, Malaysia

### Railway Interchange 2019 22–25 Sep 2019

Railway Interchange is the largest combined railway exhibition and technical conference in North America. Attended by nearly 9,000 rail industry professionals from around the globe, this truly massive event showcases the latest technology, services, and research by members of the Railway Supply Institute (RSI), the Railway Engineering-Maintenance Suppliers Association (REMSA) and others!

**Event website:** <https://railwayinterchange.org>

**Location:** Minneapolis Convention Center, USA

### TRAKO 2019 24–27 Sep 2019

TRAKO is the largest and most prestigious rail industry event in Poland and one of the largest in Central and Eastern Europe. It will be a presentation of state-of-the-art transport systems and railway infrastructure in Poland, Europe and around the world. The fair takes place every two years. TRAKO is the perfect opportunity to promote rail transport (trains and trams), freight forwarding and logistics and present the latest technologies.

**Event website:** [www.trakofair.com](http://www.trakofair.com)

**Location:** AMBEREXPO, Gdańsk, Poland



## 6th Railway Forum

### 01–02 Oct 2019

Under the heading 'digital and automated: the future agenda of the mobility industry', the 6th Railway Forum in Berlin is a conference organised along four strategic objectives of the railway industry, in agreement with Deutsche Bahn. They are: digital transformation, international markets, new technologies, and automation.

The event also features plant tours to Bombardier Transportation, to Deutsche Bahn, to EBK Group, to Knorr-Bremse, to Spitzke SE and to the train factory in Berlin Schönweide.

On day 1 of the event there is a Women in Mobility luncheon. Agnes Bernot, Head of Digital Operations at DB will open the event.

**Event website:**

<https://www.railwayforumberlin.com>

**Location:** Estrel Convention Center, Berlin, Germany

## EXPO Ferroviaria

### 01–03 Oct 2019

Occurring for the 9th time, EXPO Ferroviaria offers the opportunity to professionals in the railway industry, both from Italy and internationally to present the best in technology and know-how and generate valuable business opportunities for the entire supply chain with particular reference to the Italian railway network, one of the largest and most dynamic in Europe.

**Event website:** <http://bit.ly/2LdYXdp>

**Location:** Rho, Italy

## Elmia Nordic Rail

### 08–10 Oct 2019

Elmia Nordic Rail is aimed at companies, organisations and individuals with a professional interest in the railway sector. Over time the fair has become the self-evident arena for doing railway business in the Nordic region. At Elmia Nordic Rail you can network with people from the entire railway sector and explore the latest innovations. The fair is also a perfect meeting place to find new Swedish and international suppliers and partners for future projects.

**Event website:** <http://bit.ly/32evgQt>

**Location:** Jönköping, Sweden

## Rolling Stock & Track Maintenance Middle East 2019

### 09–10 Oct 2019

Rolling Stock & Track Maintenance Middle East 2019 presents the opportunities and challenges for new maintenance technologies in the Middle East rail sector. Feature topics include optimising asset management with advanced predictive maintenance solutions, data set analysis, the IoT and industry 4.0. We will address questions such as how to collect and maximise value from massive data sets from every aspect of your operations to reduce cost, minimise downtime, increase capacity and improve services.

**Event website:** <http://bit.ly/2ZxtNmu>

**Location:** The Gulf Hotel, Bahrain

## Accelerate: Rail Infrastructure 2019

### 10 Oct 2019

Accelerate: Rail Infrastructure 2019 is the UK's leading conference that brings together senior decision-makers delivering major rail projects in the UK and beyond. The event offers unique access to leading figures connected to a whole host of rail infrastructure projects. From CP6 to BIM, ERTMS signalling to large-scale construction projects, we've got everything covered.

**Event website:** <http://bit.ly/2ZwjCyr>

**Location:** Le Meridien Piccadilly, London, UK

## China International Rail Transit Expo 2019

### 18–20 Oct 2019

With over 200 exhibitors from 20 countries CIRTE is a hub for the rail industry, attracting a wide range of government officials and investors. The theme of this year's expo will be the "Belt and Road Initiative" and will explore China's influence on other economies as well as China's future opportunities and new cutting-edge technologies.

**Event website:** <http://bit.ly/2ZtbJK3>

**Location:** Changsha International Convention and Exhibition Centre, Hunan, China



# SRS Road-Rail Vehicles: Unbeatable mobility on the tracks







*Excellent performance!- SRS road-rail vehicles impress with their safety, traction, road-rail transfer speed, braking ability, speed and comfort*

## The constant increase in passenger and freight rail traffic increases wear on materials and machines. The result is a higher maintenance requirement and shorter intervals before more work is necessary.

The limited availability of track therefore means the work has to be performed more efficiently to minimise railway traffic disturbance. As the costs of using conventional rail-bound machines and working methods to carry out this work are continually increasing, the future belongs to flexible road-rail systems.

SRS road-rail vehicles move between work sites at normal road speed and can be driven on the road as close as possible to the work site. This reduces the track transport time considerably and increases the effective working time on the track. A further decisive advantage of road-rail vehicles is that they can be loaded at the depot and are therefore able to transport materials to the work site using the road and the track. The easy and uncomplicated transfer of the vehicle from the road on to the

track saves time and money as there is no need to reload the material. This means that road-rail vehicles can usually work longer at the site.

The patented road-rail system equipped with a hydrostatic drive eliminates contact between the rubber tires and the rails. When the vehicle is on the track it rests entirely on the rail wheels. This avoids wear on the rubber tires, which helps cut costs. The quick transfer of our vehicles from the road to the track requires just three to five metres of a level crossing. In comparison to conventional systems, the advantages in terms of time-saving and lower costs of the SRS rail driving system are clear to see. Designed to handle speeds of up to 100 km/h on the track the SRS road-rail system is incredibly safe within its speed range compared to systems which use tires. The rail

wheels of our system give our vehicles the same characteristics as a purely rail-bound vehicle on the track including the same braking capacity and traction.

The SRS system also allows the remote control of the vehicle from, for example, the working platform or the crane. During this time, no driver is required in the cab. This reduces costs and saves time and also eliminates the risk of a misunderstanding between the driver and the operator. The mechanised vehicles are equipped with an electronic control system, which further reduces the number of operators and therefore also the operating costs.

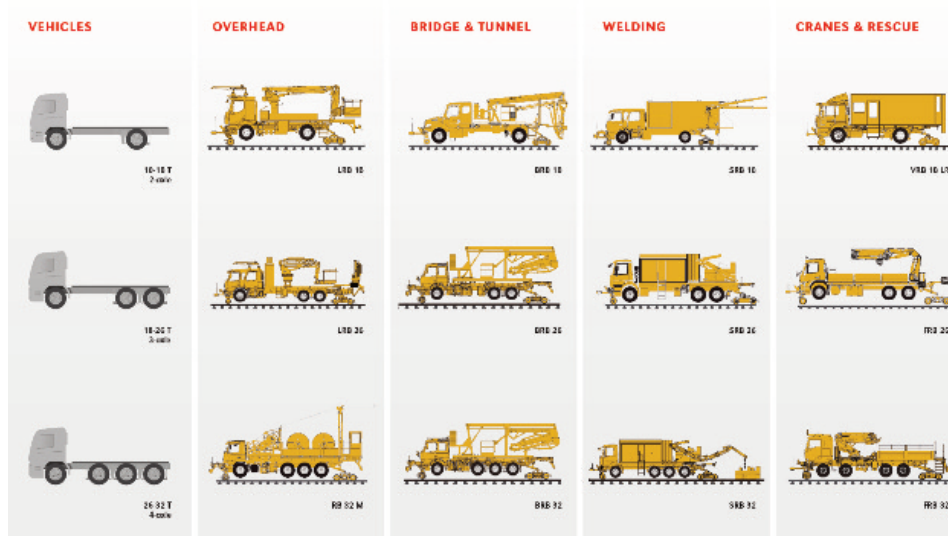
All SRS vehicles are custom-made to meet customer needs and specifications. They comply with the European standard for road-rail vehicles EN 15746/RIS1530 for both mainline and light rail.



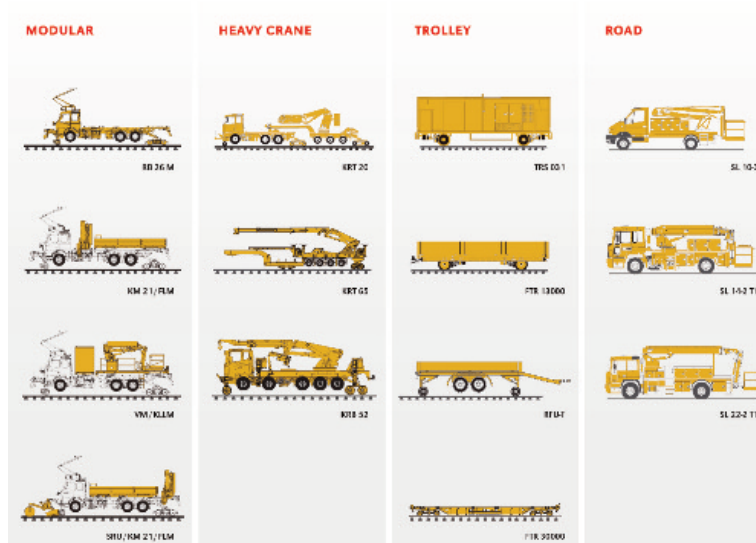
## Your Benefits

- » **Patented road-rail system equipped with a hydrostatic drive**
- » **Rapid transport to and from the work site**
- » **Speed of up to 100 km/h on track (forward & reverse) and up to 90 km/h on the road**
- » **The rail system requires only 3 to 5 m of a level crossing to transfer from the road to the track**
- » **Fast and safe driving on and off the track in less than 2 minutes**
- » **No risk of derailment at crossing points, wing rails and level crossings**
- » **No special speed restriction requirements for curves, switches and at level crossings**
- » **Remote control of the vehicle**
- » **All vehicles are custom-made to meet customer needs and specifications**
- » **All vehicles comply with EN 15746/RIS1530**
- » **The SRS service team ensures reliable operations and a long life for your vehicles**

## Standard Product Range



## Special Vehicles



### Contact:

SRS Sjölanders AB, Klövervägen 17, 283 50 Osby, Sweden

Phone +46 (0) 47917500  
info@srsroadrail.se

Fax +46 (0) 47917545  
www.srsroadrail.se



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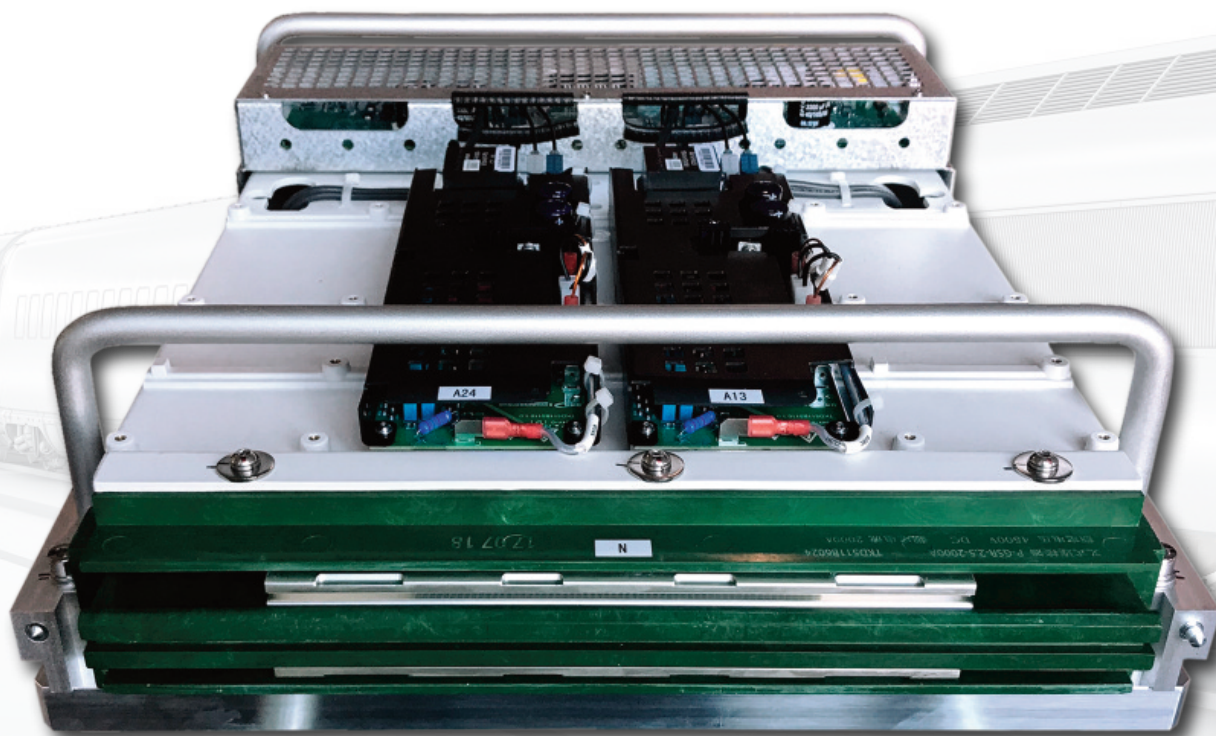
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# A Railway Success Story

## Reliable technology for Chinese high-speed trains



### Bipolar fork connector (GSR2.5)

**Application: connection between busbar and laminated busbar in IGBT**

- High power transmission
- Vibration resistance
- Stable performance
- Fast and safe mount and dismantling

#### Customer benefits:

- Safe long-term operation in challenging conditions, proven by tailor-made tests
- Innovative high-performance solution
- Improved efficiency in operation for customer clients

#### Link:

<https://www.staubli.com/en/connectors/market-solutions/railway/>

China is home to the largest and most extensively used network of high-speed trains in the world. Based in Beijing, the Chinese Academy of Railway Sciences (CARS) is the leading research and development institute, supporting this important industry with its specialised subsidiary, the Beijing Zongheng Electro-Mechanical Technology Development Co. Stäubli Electrical Connectors helped to develop a traction





converter for the latest generation of Chinese high-speed trains, while building up a partnership.

China's network of high-speed railways covers a total of over 22,000 km of tracks. Just imagine: if you could put these rails in a straight line, they would take you halfway around the globe – and even a little further. Every day, thousands of Chinese people use high-speed trains, running at 250 to 350km/h. The possibility of fast travel and commuting has profoundly transformed the country's economy and society.

## CARS: A Key Player in China's Railway Industry

When China launched its first high-speed trains, they were imported or built under technology transfer agreements with foreign train-makers. Since this initial technological support, Chinese engineers have re-designed train components and started building indigenous trains. Thanks to generous funding from the government, a dynamic local industry has developed over the past 15 years.

An important player in this market is the China Academy of Railway Sciences (CARS). Based in Beijing, CARS offers scientific and technological education as well as strategic consultation and certification services for the Chinese railway industry. A focal theme is research and the testing of new materials, products and technology.

## A Traction Converter for the New Generation

In 2010, CARS updated an existing traction converter for use in the latest generation of Chinese high-speed trains. The connector, fixed on the water-cooled board, contains two poles and connects the IGBT module (insulated gate bipolar transistor) to the bus bars in the converter cabinet. High-power transmission connectors were needed, fulfilling demanding requirements of the client for a safe and reliable solution. The higher the travelling speed of the trains, the greater the physical forces, therefore, the vibration resistance and stability are also critical. During maintenance, the module must be disconnected and replaced very rapidly to minimise costly downtime.

*"I remembered having met Stäubli Electrical Connectors at an event in Beijing the year before,"*

explains Jianhua Cheng, Senior Engineer at CARS. *"I was impressed with their MULTILAM technology, and thought they could help us find a solution."*

Thus talks started between the two companies and a joint development project was initiated.

## Building Trust

Step-by-step, trust was built up through joint workshops, technical seminars and a lot of internal testing.

In close cooperation with CARS, Stäubli developed a customised GSR2.5 bipolar fork connector, which realises the connection between busbar and laminate busbar. The use of high-performance insulation materials ensures the product can meet the tough industry requirements of mechanical stability and long-term aging. *"What finally convinced me was a third-party test, where Stäubli's solution showed a highly stable performance over 300,000 km of high speed,"* adds Jianhua Cheng. He knows the benefits for his customers: *"The solution is simple and easy to handle while ensuring safe and reliable operation of the train services. And our customers really appreciate the increase in productivity due to the fast connection and disconnection in maintenance."*

**STÄUBLI**





## YOUR RAILWAY PARTNER

# Connections: a key link in the railway transport chain

As an industry partner and key supplier in the international railway sector for more than 30 years, we have a clear insight into your challenges and expectations, such as service continuity, extreme weather conditions and mechanical stresses. We provide an effective response with optimized solutions, whether for high-speed, main-line, suburban or regional trains, or tramways and underground railways.

[www.staubli.com/electrical](http://www.staubli.com/electrical)



MPC – Modular power connector

**Multi-Contact**

**MC**

**STÄUBLI**



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# BAULTAR

*Baultar is a Canadian company that creates and manufactures innovative products for the transportation industry (railway freight, railway public transit, buses, infrastructure). Baultar's flooring division offers an advanced flooring system called Abrastop™. The Abrastop™ family of composite products, specifically designed for the transportation industry, ranges from floor coverings to complete flooring systems. It integrates many different options that can be tailor-made according to the technical and design needs of clients. These flooring solutions have two main objectives: to offer superb durability that reduces maintenance requirements and life-cycle costs, and to simplify product procurement and vehicle manufacturing by offering an all-in-one solution that integrates functions seamlessly, maximizing the value for the client.*



Photo credit: L.A. Metro



CUSTOMIZABLE COLOURS



# ADVANCED FLOORING SYSTEM

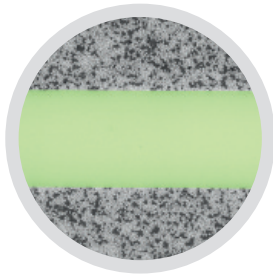
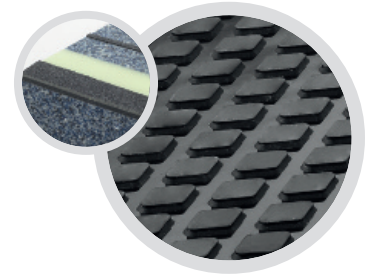


## HEATING

The advantages of an Abrastop™ Foam radiant heating floor include: uniform temperature distribution throughout the whole vehicle, superior comfort, thermic inertia that keeps passengers warm even when doors open, elimination of the discomfort caused by drafts from forced-air systems, and energy savings.

## Add GRIP SURFACES

In certain access areas, where additional anti-slip properties are needed, areas and/or bands with custom-made patterns can be integrated. Also, the surface grit can be adapted using a variety of different materials.



## PHOTOLUMINESCENT BANDS

Guide and demarcate specific areas with integrated passive high-performance photoluminescent lighting (HPPL) – staircases, walkways, doors, or specific areas with a particular function (such as an area for storing bikes) are just some examples.

## 3D BANDS AND SURFACES

Alert, guide, demarcate. Raised profiles of many different kinds help alert passengers to upcoming hazards, provide them with guidance for safe passage or exit, and/or delimit a specific area of a vehicle.

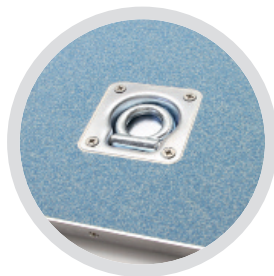


## LOGOS

Of any kind or colour, integrated logos are manufactured using the same materials as the flooring panels. Sizes and shapes can also be adjusted for any type of request.

## INSERTS

Adding even more durability and adaptability for specific uses. Trap doors, supports, reinforcements, and mechanical fastening inserts, are just a few of the possibilities for fulfilling specific needs with metal pieces.



## COVE MOULDINGS

A proper finishing touch and a streamlined look. Can be used for anything from meeting functional needs (such as covering joints, transitioning between flooring and walls, and facilitating cleaning) to serving more decorative purposes, such as fitting different styles.



# ADVANCED FLOORING SYSTEM



All-in-one  
Customizable  
High-performance

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