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Content

Pg 2 - Welcome

Pg 4 - Pictures

Pg 81 - World News

Pg 91 - From the Archives

Submissions & Contributions

Railtalk Magazine Xtra, a magazine written by the Enthusiast for the Enthusiast. So why not join the team. We are always looking for talented photographers and writers to join us at Railtalk. Be it though pictorial submissions or via a written article featuring an event or railtour, we greatly appreciate any contributions to the magazine however big or small.

Photographic Contributions

All Photographic contributions should be sent to us via email, post or via the members section page on our website. Contact addresses are provided above.

All images should be provided at a resolution of at least 2400px x 1700px at 240dpi.

Welcome to Issue 191 Xtra

With the UK rail network in turmoil due to various strikes taking place, it's great to see once again so many photos from around the rest of the world.

In the news this month, new shunting locomotives have been delivered to a Russian iron-ore plant as three type TEM18DM diesel shunting locomotives manufactured by Russia's Bryansk Engineering Plant (BMZ) have been supplied to supplement the motive power fleet at the Karelsky Okatysh iron-ore mining and processing plant in the Republic of Karelia, Russia. Two of the locomotives were delivered to the plant at the end of May and are already preparing to enter service, while the third was handed over in July. Karelsky Okatysh is updating its motive power fleet with diesel locomotives from BMZ and six units from the same manufacturer are already operating. The TEM18DM combines reliability with improved emissions performance and economical fuel consumption. It also features diagnostic systems and has been designed for ease of repair, and is able to operate in severe climatic conditions, such as those experienced north of the Arctic Circle. BMZ has produced 2000 TEM18DM locomotives since 2007 for haulage, shunting and hump yard duties on Russian Railways and private industrial lines. Six variants of the design are offered to suit customer requirements.

Meanwhile on the other side of the world, in the USA, Brightline has welcomed two more trains to Orlando, Bright Green 2 and Bright Pink 2. Brightline's two trains arrived together at Brightline's Vehicle Maintenance Facility located south of Orlando International Airport, adding to the fleet of trains that will carry passengers between Orlando and South Florida. Bright Green 2 and Bright Pink 2, six-car trains consisting of two locomotives and four passenger coaches each, left the Siemens Rolling Stock facility in Sacramento and travelled 3,000 miles in total across 10 states en route to Florida.

"This is an exciting moment as we welcome not one but two brand-new trainsets, Bright Green 2 and Bright Pink 2 to our Vehicle Maintenance Facility site in Orlando," Michael Cegelis, EVP of Development and Construction for Brightline, said. "These trains, and our entire fleet,

are built with the consumer in mind. They are modern, eco-friendly, and equipped with conveniences such as hi-speed WI-FI and plug-in connections at every seat."

The trains are among five new trainsets to arrive in Florida in preparation for the opening of the Brightline station in Orlando. Brightline's Orlando extension project will reach substantial completion in early 2023. The first train, Bright Red 2, arrived in October 2021 travelling through Brevard, Indian River, St. Lucie, Martin and Palm Beach Counties to its destination in West Palm Beach. The second train, Bright Blue 2, arrived in Orlando in February 2022. The final trainset is expected to arrive in Florida later in 2022. In partnership with Siemens Mobility, the newest train sets represent Brightline's commitment to invest billions in American infrastructure, creating the country's first and only private high-speed rail network. The stainless-steel coaches are made with components from more than 160 suppliers across 27 states.

And construction has begun on the Rail Baltic bridge over the Neris river. The construction of this bridge is one of the largest technical and engineering challenges of the Rail Baltica project. It will be over 1.5 kilometres in length and built 40 metres above the river and its valley. A double-track railway line of European track gauge standard will be built over the bridge, which is almost 14 meters wide. As it will cross a Natura 2000 site – a breeding and resting site for rare and threatened species – particular effort needs to be put into protecting the surrounding environment. With this in mind, the bridge has been designed so that no supports will be built in water, ensuring that fish will be able to migrate freely and vegetation will be unaffected. This means there will be as much as 150m between supports above the river. Italian construction company Rizzani de Eccher was awarded the 64 million EUR (65.14m USD) contract for the construction of the bridge and its related infrastructure work in April. The bridge is expected to be completed within two and a half years.

Until next month...

David

This Page

RheinCargo Vectron Dual Mode Class 284.004 passes Bohmte with a deepsea container train from Bönen to Bremen-Grolland on June 14th. [Erik de Zeeuw](#)

Front Cover

SNCF 'Nez Cassé' No. 22388 brings an intermodal through Miramas on April 7th. [Anton Kendall](#)





After working the Reading & Northern RR 'Iron Horse Ramble', their newly restored 4-8-4 No. 2102 gets some attention at Jim Thorpe maintenance yard *Vernon Goodey*

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With Thanks

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New TransFER Melnik–Wilhelmshaven

ÖBB Rail Cargo Group (RCG) has expanded its TransNET with a new intermodal TransFER, which offers a direct connection from the Czech Republic to the northern port of Wilhelmshaven – the transshipment hub for intercontinental transports.

With the new TransFER Melnik–Wilhelmshaven, RCG sets new standards in the Czech freight transport market and offers customers a fixed alternative to the northern ports of Hamburg and Bremerhaven. With one round trip per week, the TransFER will run from July 2022 via the Melnik–Děčín–Maschen–Hude–Wilhelmshaven route and vice versa with antenna connections to other terminals in the Czech Republic and Slovakia. The route from the Czech Republic to Germany runs every Monday and back every Tuesday.

The TransFER is particularly suitable for ISO containers – transport of dangerous goods is also possible.

RCG expands TransNET

RCG is thereby constantly expanding the digital TransNET, in which all network TransFER connections to and from all ports, economic and industrial centres are available at a glance. Under the motto “TransNET, let’s play!” and in twelve languages, these routes as well as combinations can be explored and new routes created.

After selecting the appropriate route, icons show which services are available at the selected locations.



11,000 freight wagons equipped with SmartCargo

A big step in the direction of state-of-the-art railway logistics: In cooperation with A1 and A1 Digital, ÖBB Rail Cargo Group (RCG) has reached the 11,000 mark for equipping its freight wagons with SmartCargo.

So that customers always have an overview of where their goods are at any given time, RCG, in cooperation with A1 and A1 Digital, has been equipping its freight wagons with SmartCargo, a position, movement and impact sensor, since 2019. State-of-the-art telematics solution for GPS monitoring enables new services for customers as well as significantly improved and even more efficient maintenance coordination. The 11,000 mark has now been reached for

freight wagons equipped with “SmartCargo” and the target is around 12,000.

Big step in the direction of “intelligent” and “smart” freight trains

SmartCargo is equipped with position detection, motion sensing and shock detection. RCG, together with A1, is gradually putting intelligent freight trains on track throughout Europe thanks to the additional development of an IT platform. Live data such as location, movement data and temperature are delivered in real time to the Cumocity platform, where all information about the freight wagons or assets can be accessed digitally in a clear and compact manner.

The position data obtained from the SmartCargo devices particularly helps to optimise maintenance and a move towards mileage-dependent maintenance intervals. In addition, damage to the freight wagon can be detected quickly and improvements regarding equipment handling can be pro-actively discussed with the involved parties. If there is no network coverage, the data is temporarily stored and is then sent when signal is next available.



GrainLane – the marketplace for Ukrainian grain

Together with the partner V_labs, ÖBB Rail Cargo Group (RCG) is developing the virtual marketplace GrainLane. The goal: to boost the agricultural trade with Ukrainian grain by land.

The RCG has strengthened its agricultural transport since the outbreak of the conflict in Ukraine. In addition to this rail transport, which already incorporated a total volume of just over 330,000 tonnes by the end of June, the RCG is counting on digital solutions to boost the agricultural trade by land.

Forming new business relationships

Headed by the RCG, together with the Open Innovation Team of ÖBB holding and the external Company-Builder partner V_labs, the online marketplace “GrainLane” – an open and transparent tool for the agricultural trade – has been developed.

GrainLane connects Ukrainian farmers with retailers, consumers and logistics providers. In just a few clicks, detailed grain offers (incl. details of protein contents, conventional cultivation or organic etc.) and requests can be created. After a successful match, contact information can be exchanged and finally transport requests can be made.

GrainLane thus forms the basis for a thriving market between Ukrainian producers and European and African buyers and retailers, who often have had no business relationship before the war.

Available for free

GrainLane is free of charge for all parties and can be used at any time at www.grain-lane.com and already lists over 600 users. 61,000 tonnes of agricultural products are currently offered on GrainLane at attractive prices: from wheat (from 200 EUR per tonne) to soy (from 580 EUR per tonne) to dry corn (from 169 EUR per tonne). Interested parties can agree the details individually with sellers and you can choose for GrainLane to provide support with transport services thanks to its partner network.

This way Ukrainian producers can easily and securely reach international buyers like mills, retailers, exporters and many others.



Alpha Trains leases five Class 186 TRAXX to MEDWAY Belgium

MEDWAY Belgium, part of the MSC Group, has taken delivery of the first Bombardier TRAXX BR 186 multi-system locomotives from Alpha Trains. The Bombardier locomotives join the TRAXX 483s DC locomotives that are leased to MEDWAY Italia.

The new TRAXX are licensed for operation in Belgium, Netherlands, Germany and Austria and will primarily be used for freight transport between Belgium and Germany, via the newly founded MEDWAY Belgium, which falls under MSC's inland logistics partner, MEDLOG.

The rolling stock will help to support connections between more ports in the European region with inland services, which is important for successful intermodal offerings and is an objective for MSC's future growth.

"The TRAXX multi-system locomotives are currently the cutting edge in modern rolling stock, and thanks to their technical parameters we will make extensive use of them", says Salvatore Prudente, MEDLOG Executive Director.

"We are proud to be part of this important milestone for MEDWAY and the MSC Group which strengthens our long-term partnership", adds Fernando Pérez, Managing Director of the Locomotives Division of Alpha Trains

Image: Traxx No. E186.224 for Medway © Bart van Tricht







Railway construction companies bet on their own locomotives. They are motivated by the upcoming mandatory European ETCS safety device

The construction company Hrochostroj from the enteria group has become the second Czech company operating in railway construction to decide on its own EffiShunter 1000 locomotive. According to the signed contract with the CZ manufacturer LOKO, it will complement its fleet of construction machines for track renewal and maintenance in mid-2024.

“Among major players in domestic railway construction, we are registering an increased interest in our locomotives equipped with the European ETCS safety device. Only these vehicles and trains will be able to travel on the busiest Czech railway corridors from January 2025. The others can’t get to him. Whoever does not manage to react to it in time will be at a disadvantage,” explains Jan Kutálek, CZ LOKO’s sales director.

“It was a decisive reason for us. The ETCS issue affects us a lot, which is why we decided to solve it in time by ordering a locomotive

with the required equipment. It will make it easier for us to transport machines between individual buildings along the corridor lines. And then also shifting and track service during the transport of building materials and materials,” says Martin Varecha, chairman of the board of directors of Hrochostroje.

According to him, independent transport of special driving vehicles without the implementation of the mobile part of ETCS will be very problematic and complicated. “The new EffiShunter will partially help us solve this, although we believe in other possible solutions,” he added.

Hrochostroj, engaged in the operation of heavy rail mechanization for the maintenance and reconstruction of the railway top, has been operating on the market since 2015.

The goal is to take the position of a strong partner in the field of heavy rail mechanization. Last year, Subterra reacted

to the new situation with an order, which in April this year became the first Czech private operator of the EffiShunter 1000 with the ETCS system. CZ LOKO itself will take care of its maintenance and service.

“The exclusive operation of trains under the supervision of the ETCS system will gradually be extended to other lines as well. It is a European trend, visible in other countries as well. Here, too, we have already concluded contracts with companies participating in the construction of railway transport infrastructure,” said Jan Kutálek.

The four-axle EffiShunter 1000 has established itself in Europe with its reliable and economical operation. It is usually already equipped with the unified European security system ETCS, and for foreign markets it is also supplemented with a national security system. This allows it to be used both for shifting and in full-fledged track service.

Last year, Subterra reacted to the new situation with an order, which in April this year became the first Czech private operator of the EffiShunter 1000 with the ETCS system.

Photo: © Subterra as



Alternating current will now power trains on corridor from Břeclav to Přerov

After 12 days of work, the overhead line equipment has been switched on between Otrokovice and Říkovice and trains on this part of the second corridor can now be pulled by electric locomotives again from July 15th.

However, instead of direct current, they will be powered by the more advantageous alternating current with a voltage of 25kV. Správa železnic will thus complete the gradual replacement of the traction power supply in the Nedakonice – Říkovice section and the pilot project of converting power supply systems on domestic lines will progress to the final phase of test operation.

The network of electrified lines in the Czech country so far uses a 3kV direct current (DC) system in the northern part of the country and a 25kV, 50 Hz alternating current (AC) system in the southern part.

The aim of Správa železnic is to unify the power supply for electric trains. Switching to the AC system will result in a more efficient power supply for traction units with lower losses, energy savings and compatibility with high-speed lines. It also means cheaper electrification of other conventional lines.

The work on repositioning of the voltage system junction about 43 kilometres north to Přerov started two years ago almost to the day exactly and it was carried out practically all the time during full operation on the line.

Traction substations were built in Otrokovice and Říkovice with static frequency converters manufactured in Switzerland by Hitachi Energy being the heart of those. The technology will enable symmetrical power draw from the grid, but also, for example, an easy return of energy recuperated during locomotive operation back to the distribution system. Such a technology for this traction power system has been used in Europe for the first time.

Due to the different technical parameters, the insulator systems, the overhead contact line itself and the line signalling equipment had to be modified in the entire corridor section. Eight stations were also affected by adjustments.

The actual conversion of the power supply systems, which required temporary capacity restrictions, took place from mid-June.

The construction also included preparation of the power supply to the lines to Vizovice, Luhačovice and Bylnice. The total cost amounts to approximately CZK 2.3 billion. The documentation for building proceedings and the construction implementation is co-financed by the European Union under the Operational Programme Transport.

The gradual conversion of traction power supply will take place in the following years in the directions from Přerov and Děčín.

At the same time, Správa železnic is working on separate projects on selected line sections, for example from the state border with Slovakia to Vsetín.

The power supply conversion is also part of the planned modernisation of the line Praha-Radotín – Beroun.



Trains return to the line between Sudoměřice and Votice, modernisation is nearly finished

On July 1st, trains returned to the railway line between Sudoměřice and Votice on the border of the South Bohemia and Central Bohemia regions. Until the end of August, the new line relocation will be operated on a single track with full double-track operation commencing early September. The modernisation project of the line, which is a part of the fourth railway corridor from České Budějovice to Prague, is coming to its final stage. The aim of one of the most significant current investment in railway infrastructure was primarily to increase the speed, fluency, comfort and safety of transport.

“It is an exceptional construction not only in its scope but also in its technical complexity. Thanks to the approximately 20 kilometres

of the new line, the train journey from Prague to South Bohemia will be slightly shorter again,” said Jiří Svoboda, Director General of Správa železnic. He drew attention to the fact that almost the entire section between Sudoměřice and Votice was built on a new line, which is approximately two kilometres shorter than the existing route. The speed of trains will gradually increase up to 200 km/h, and from mid-December, when the new timetable comes into force, the travel time of express trains between Prague and Tábor will be reduced to 59 minutes. The launch of the modernised section between Soběslav and Doubí will bring further time savings. First trains on this line are expected to run in September.

“It will be a significant contribution to improving the railway connection between Prague and České Budějovice”, Minister of Transport Martin Kupka said and added:

“Now we need to prepare the last part of the corridor, Nemanice–Ševětín, for construction to achieve a smooth and fast ride along the entire route.” As Minister Kupka pointed out, this will be a very demanding construction financially and therefore, as one of the first railway projects of this type in the Czech Republic, the Ministry is considering to build it in the form of a PPP, i.e. in cooperation between the public and private sector. “We are in a situation where we are trying to catch up with the historical debt in transport infrastructure in a very short time, and if we

want to maintain the pace of construction, we cannot rely only on the state budget,” concludes Minister Kupka.

The new line starts in Sudoměřice near Tábor, where it connects to the already completed modernisation of the corridor from Tábor. It runs in parallel with the D3 motorway, through a deep cut with three overpasses and through the 840-metre long Mezno Tunnel near the new stop of the same name, then it continues through another new stop, Střeziměř, to Červený Újezd station. The station in Červený Újezd will be used for train overtaking, passenger trains will stop at the eponymous stop in the perimeter of this station. Another dominant feature of the line is the 660-metre long Deboreč tunnel,

followed by the Ješetice stop. In the deep valley between Ješetice and Heřmaničky, builders constructed a total of four elevated guideways 244, 180, 175 and 80 metres long with Heřmaničky stop in-between. The construction ends in front of the railway station Votice, where it connects to the previously completed modernisation of the line Votice – Benešov u Prahy.

The modernisation of one of the last bottlenecks of the fourth railway transit corridor started in May 2018 and will be finally completed next year. The total cost will reach CZK 6.7 billion. The contractor is the company OHLA ŽS.

France

One of Captrain's newest acquisitions, Stadler E4001 No. 92 87 0003 982-1 hauls a short freight through Feyzin (Lyon), heading for the south of France. *Anton Kendall*

SNCF Sybic No. 26077 hauls a lengthy empty fuel train through Miramas. *Anton Kendall*

Akiem's Prima No. 37516 drags a huge rake of empty tanks out of Miramas Triage. *Anton Kendall*



France

Akiem owned Prima No. 37516 brings a rake of gas tanks through Sérézin (Lyon).
Anton Kendall







France

SNCF Fret's No. 460138 hauls a rake of hoppers to Sibelin Triage through Feyzin. *Anton Kendall*



France

ECR Class 186.344-8 hauls former UK based 66 029 and the water train heading for Daventry through Villeneuve St. Georges. *Anton Kendall*



Commuter trains: the cornerstone of keeping modern metropolitans moving

Alstom's commuter transport solutions help urban ecosystems all over the world to grow sustainably, accommodate increasing numbers of commuters and alleviate traffic congestion. Building on its wealth of experience in delivering commuter solutions, Alstom offers state-of-the-art high-floor multiple units and coaches for applications between 120 and 200 km/h.

Stephane Pille, VP of the Commuter Platform at Alstom, is a Frenchman living in Berlin, he has 25 years of experience in the railway industry, working for suppliers, operators and train manufacturers in different roles: from engineering, maintenance and procurement to project management and platforming. Here's what he has to say.....

Commuter trains – what are they exactly?

Commuter train systems are the backbone of modern metropolitan areas. They connect people within cities, bring people from the outskirts and suburbs to the main city centre, as well as connect the city to its airport, ports or recreation areas. They are between the metro and regional rail systems, providing fast commuting into and around the city. What distinguishes them from the regional networks is that they stop frequently, so they need greater acceleration to move more quickly between stops to keep journey times down. They are characterised by having higher floors, which provide a flat floor within the train, giving better passenger flow and accessibility. In contrast, regional trains need to cater for varying platform heights on the network, so they have lower entrance heights but steps inside the carriages. Commuter trains can be either single-deck trains – think of Alstom's biggest contract, the mass transit trains for PRASA in South Africa, or the Crossrail trains that are coming to London – or they can be double-deck trains as commonly seen around North American cities. They can also be a combination of single- and double-deck architecture, such as the RER trains on Europe's busiest commuter line in Paris. Commuter trains can also be used in other contexts, for example, Alstom is supplying commuter trains for the Tren Maya project in Mexico. These trains will move visitors between the city and the tourist areas and will contain sleeper carriages, a restaurant and bar areas, similar to intercity trains.

What makes Alstom commuter trains so different?

Alstom is number one in this market, with more than 31,000 commuter rail cars in over 60 commuter systems in 15 countries. We have a strong and broad portfolio, and we adjust it to the needs of our customers. So, for example, if a customer wants the trains locally built, we can do this – we either have a factory in their country or we can set one up. On the design side, we can give customers exactly what they want in terms of interior design, lighting, aesthetic and so on, while at the same time delivering reliable and innovative railway technology.

We have different types of commuter trains, so we can propose single-deck or double-deck trains, or a mixture, depending on the capacity and dwell time requirements or local constraints. And our trains are tried and tested in terms of reliability and maintenance. We are also able to propose cutting-edge green technologies and build our offer according to the customer's

requirements. We standardise to cut time-to-market for our customers and “personalise” the train, giving it an identity that fits in with the local area, its identity and heritage.

Considering today's challenges, what are the solutions you are developing for customers?

We invest a lot in research and development, and co-develop with customers. So, today, we are looking at inclusivity, accessibility and connectivity issues, alongside energy consumption and green traction, where we have a range of new technologies such as hydrogen fuel-cells, batteries and hybrid solutions. We are working on capacity and modularity: we have a customer looking at adapting carriage seating according to the time of day or week, so trains can accommodate more passengers at rush hour, but allow for more comfort outside peak hours or at weekends, for example, for trips out of the city with bikes or with children in strollers. We are also researching how to minimise vandalism and provide protection against any accidents disrupting travel, such as unattended baggage on trains. Above all, any solutions we propose must be robust and thoroughly tested to offer maximum added value to our partners and passengers.

What is your vision of the commuter train of the future?

As well as the challenges described above, such as better accessibility and connectivity, increased modularity and green traction, I think we will see a lot more eco-responsibility in designing and producing trains. This goes beyond recycling materials and end-of-life planning into noise and vibration reduction. Noise is a problem in urban areas, so minimising noise, vibration and pollution increases comfort for people both inside and outside the train. Another area is driverless trains. With big data, we can design automated systems that are safer, more reliable and can run more efficiently, for example, reducing the time between trains on busy lines. This technology has been in use for many years on metro networks worldwide, so we know it is both safe and efficient. The automotive industry is doing a lot on offering solutions for less predictable environments, and we will be working on the same challenges for commuter rail networks. A fully automated system will enable further capacity and reliability improvements, even on existing



railway networks. This is especially important for cities with limited space for additional tracks or roads.

What are the next projects you will be delivering?

There are lots of exciting projects in progress! In Ireland we are working with Irish Rail to deliver single-deck electric and battery electric trains to replace and expand Dublin's DART fleet, and then in Mexico, Tren Maya, as I already mentioned, will be a state-of-the-art 'luxury' intercity and tourist service that we can learn a lot from. In Australia we have two interesting projects: Melbourne, where we are producing 25 six-car X'trapolis trains, built in Victoria with 60% local content, to increase capacity; and Perth, where we have 41 electric and two diesel trains under construction. In France, there is the RER NG contract, with 71 electric single- and double-deck trains, and in the US, we are delivering double-deck motorised cars for the New Jersey Transit. These projects illustrate the variety of needs of our customers and how Alstom is able to respond to them, around the globe.

Photo: Amsterdam Metro offering comfortable travel for passengers and easy commuting for cyclists. © Alstom

Germany

On June 13th, Association 'Dampflok-Depot Full' Re4/4 Class 421.379 run through Kattenvenne with a long rails train towards Münster. The association took over the loco from SBB Cargo on May 22nd 2021. This loco can be seen operating in Switzerland and Germany. *Erik de Zeeuw*









On June 20th, Railpool's Class 151.034 (ex DB) leased by DB approaches Neubeckum heading a mixed freight to Oberhausen-Osterfeld. *Erik de Zeeuw*





Germany

Erfurter Bahnservice GmbH Class 140.815, and 2 sister locos, powers through Hünfeld with a rake of tankers working a service from Zeitz Gbf to Karlsruhe on June 21st. *Erik de Zeeuw*



On June 22nd, LTE Class 286.940 passes Braubach and 'Marksburg Castle' with a container service from Rotterdam to Mannheim and Wörth am Rhein. *Erik de Zeeuw*



Germany

▶ A Northrail engineering train heads through Hamburg Hbf on July 4th. *Kevin McCormick*

▶ DB Class 112.141 working the RE8 23:24 Hamburg to Lubeck service is seen at Hamburg Hbf on July 4th. *Kevin McCormick*

▶ On July 4th, DB Class 112.174 stands at Hamburg Hbf working a line RE81 service to Ahrensburg. *Kevin McCormick*



Germany

On Saturday July 9th, there was, as they say in Germany a 'Sonderfahrt', which started at Lehe bhf and ran via Ocholt, Papenburg to Salzbergen where the train had to change direction to proceed to Bad Bentheim.

Class 111.111-1 ended its journey in Bad Bentheim, where a Dutch locomotive took over the ride from Bad Bentheim (border station) for the trip to Amsterdam and onwards to Zandvoort.

The Class 111.111 was not suitable to run in the Netherlands because they run on a different voltage. In Germany it is 15kV AC, and in the Netherlands it is 1,500V DC. *Andre Pronk*





DB becomes the first intermodal partner of the Star Alliance

From August 1st, Deutsche Bahn (DB) will be the world's first intermodal partner of the Star Alliance. With this, DB and the aviation industry are setting another strong example on the way to more sustainability in the mobility sector. Thanks to the new cooperation, DB customers and passengers of Star Alliance member airlines will be able to start or end their journey comfortably on the climate-friendly train. For the first time in international air travel, the Star Alliance intermodal partnership model will intelligently connect air, rail and other modes of transport. Star Alliance intends to further expand intermodal partnerships in the future. Germany is the first market and DB is the world's first partner in the new Star Alliance program.

Michael Peterson, Board Member for Long-Distance Passenger Transport: "From Freiburg to Singapore: you only need one ticket for that. With attractive inner-German connections and simultaneous links to international travel chains, Deutsche Bahn and Star Alliance make a significant contribution to reducing CO2

emissions in the transport sector. This complements our successful cooperation with Lufthansa Express Rail, where the number of bookings has more than doubled since 2010. This is how we get more people off the plane and onto the environmentally friendly rail. In close cooperation with the airlines, we are now tackling the mobility turnaround. We network our offers in such a way that we can optimally use the respective strengths of our modes of transport."

Jeffrey Goh, CEO Star Alliance: "Today joins the forces of two different transport providers, opening the doors of Star Alliance beyond the airline world. Our new model for intermodal partnership creates the conditions for coordinated cooperation between different modes of transport in all Star Alliance markets. We are delighted to welcome Deutsche Bahn as our first Star Alliance intermodal partner."

Harry Hohmeister, Member of the Executive Board of Deutsche Lufthansa AG: "This partnership is unique in

the world. Once again we are pioneers in Germany for the intelligent linking of transport worlds. We create added value for customers, for Germany as a business location, and for the environment and society. Mobility of the future means mastering challenges together. The successful Lufthansa Express Rail cooperation is an excellent example of this - based on this we are now taking the next step. Our customers have never benefited more from this partnership."

The new partnership between DB and Star Alliance builds on the Lufthansa Express Rail program. This means that Lufthansa customers have been able to buy a combined ticket for train and flight in one booking step for more than 20 years. In future, in addition to Lufthansa, all 25 other member airlines of the Star Alliance will be able to include DB's environmentally friendly ICE trains with flight numbers in their booking systems.

Customers benefit from many advantages, such as:

- With just one booking process, airline customers receive a combined ticket for the outward and return flight and the respective train journeys including seat reservation. At check-in – which is possible until shortly before the train departs – travellers receive their boarding passes for both the flight and the train journey.
- With the integrated ICE journeys, air travellers will have even more choice in terms of preferred travel time, travel duration and the prices offered.
- Customers can also enjoy accelerated baggage handling and other services in the AiRail check-in area at Frankfurt Airport.
- For all bookings of combined train-air travel via Lufthansa Express Rail or with the member airlines of the Star Alliance, customers can collect points or miles for the train journeys in the airlines' respective frequent flyer programs.
- In addition, business and first class customers of Star Alliance member airlines receive additional benefits such as access to the DB lounges with an LH Express Rail ticket.



Ulm: Maresch and DB Cargo put even more timber onto the rails

Wood is booming; demand for this natural raw material is rising at an almost unstoppable rate. COVID-19 has given it an additional boost among consumers such as homeowners. At the same time, sustainability standards in the timber industry are rising, from buyers all the way to end customers. However, wood freight transported by lorry emits more CO2 than the same wood transported by rail. Shipping this sustainable raw material by rail instead promises to cut these transport emissions from timber by 80%. This makes connecting more and more timber industry customers to rail in the region around Ulm a true step towards green logistics. Austrian timber company Maresch GmbH has been working on this shift to rail with DB Cargo for years. The partnership is setting an example across the industry.

Ulm is getting greener

The Ulm area, a timber region of European standing, is home to a large number of companies that process and refine square-sawn timber. Yet most of them have no

active siding of their own for shipping. Maresch used to use lorries to transport the timber to wood-processing companies. "Thanks to a rail link, our square-sawn timber's journey to two customers in the Ulm region has been much greener since late 2021," stresses Dieter Preiss, head of logistics at Maresch. The new concept is benefiting Holzwerke Rückerl Produktions GmbH in Pfullendorf and ASTA Holzwerk GmbH from Ziementshausen. Rückerl operates its own revitalised siding for this purpose, while ASTA has put a transshipment siding into operation in Fischach, which is only 14 kilometres away from the company's headquarters.

From there, the fresh square-sawn timber is brought to the grounds of the plant. "Sustainable management is in our corporate DNA. Opening these new freight transport points is a consistent step that feeds into that," says Erwin Bittermann, sales manager at Maresch. Clemens Pflästerer, Head of Sales & Operations Center Timber at DB Cargo Logistics GmbH, adds: "We are happy to work

with our customers on developing new transport logistics concepts that can benefit other customers, too."

Fragile supply chains require rethinking

The pandemic has thrown the potential fragility of supply chains into sharp relief. Germany lacks thousands of lorry drivers, and there is ravenous demand for an anaemic supply of cubic capacity. By contrast, rail is always running, while offering substantially greater capacity. It's environmentally friendly, too. "When our customers link to our rail network, it opens up new, sustainable options for them to transport their goods across national borders. This has a decisive impact on added value," says Pflästerer.

Looking towards a sustainable future

Maresch and DB Cargo aim to keep forging ahead along this path. The two companies have been cooperating successfully since 2016. The shift in the share of timber



transported by rail has seen very steep growth from the very beginning. Last year alone, DB Cargo transported a total of 3,200 wagons for Maresch loaded with 250,000 total cubic metres of square-sawn timber. This was the equivalent of nearly 7,000 lorries. Transporting the goods by rail rather than road saved Maresch from emitting some 5,618 tonnes of CO2 in 2021. What's more, these strategic partners will continue this clear commitment to sustainability in 2022. Their ambitious goal is to move up to 3,700 wagons of square-sawn timber.

Photo: ©DB Cargo AG

Eisenbahn BSAS Stadler EURODUAL Dual-Mode Class 159.209 is seen near Wernfeld with a rake of tankers as train No. 76956 from Ingolstadt to Wilhelmshaven. *Erik de Zeeuw*



Zeebrugge is the second-largest port in Belgium. It enjoys an ideal location on the North Sea and close to the UK, while at the same time within easy reach of western Europe's economic centres. Zeebrugge is an important container port that can also accommodate deep-draft ships. Above all, it is one of the world's most important transshipment sites for new cars: around 2.2 million vehicles pass through Zeebrugge in an average year.

Flexible handling and super-fast transshipment

It's 2:00 pm. A train from Slovakia is due to arrive at Zeebrugge. It started its journey at the Jaguar Land Rover car plant in Nitra, where around 200 new Defender and Discovery SUVs were loaded onto the train for the journey westwards. From Zeebrugge, they will be routed not just to Great Britain, the USA and Canada, but also to Australia and Oceania. With buyers already waiting for them, they need to get to their destinations as quickly as possible. As the train reaches the unloading ramp, a bus arrives with seven drivers ready to distribute the vehicles to different terminals depending on their destination.

Jurgen de Smet, Head of Commercial Activities at Port Operator CLdN Ports Zeebrugge nv "This is one of the special features that Zeebrugge offers the automotive industry," explains Jurgen de Smet, Head of Commercial Activities at Port Operator CLdN Ports Zeebrugge nv.

CLdN Ports Zeebrugge nv, part of the CLdN Group, is one of the largest stevedoring companies in the port of Zeebrugge, operating on 3 terminals and specializes in ro-ro vessel handling and automotive compound services including PDI, ancillary services and vehicle

modifications. Within the port's premises, our employees are allowed to drive the cars without number plates or completed registration papers. This permits us to take a flexible approach to handling the new cars and enables a super-fast transshipment process." Shipping new vehicles and car parts is one of several key services provided by the port. Zeebrugge can also be used by deep-sea cargo ships and has a large LNG terminal. This diversification makes it less susceptible to economic turmoil. Every year, 50 million tonnes are loaded onto ships at the port, which employs a total of 10,000 people.

Zeebrugge and Antwerp

The ports of Zeebrugge and Antwerp recently merged to form the Port of Antwerp-Bruges. The ports will be able to strengthen their position within the global supply chain and continue their course towards sustainable growth. Furthermore, the unified port will be more resilient to the challenges of the future and will take a lead in the transition towards a low-carbon economy.

Careful transport of valuable cargo

Nitra in Slovakia is the site of a state-of-the-art production facility operated by British car manufacturer Jaguar Land Rover (JLR). Covering an area of 300,000 square metres, it has an annual production capacity of 150,000 vehicles. It builds the Land Rover Defender and Discovery models. Many of its finished vehicles make their way to their new owners via Zeebrugge. "The port is ideal for us. It has enough space to park the cars, plus all of the quality certifications we need," explains Leigh Rainsley, purchasing manager at JLR. "And it has an excellent rail infrastructure." That's important because

the Defender and Discovery lines travel by train: DB Cargo Logistics takes them from Nitra to Zeebrugge. This protects the high-value cargo while at the same time being environmentally friendly, fast and efficient. "Every week, we run several trains from the JLR plant in Nitra to Zeebrugge," says Sarah Fiore, account manager at DB Cargo Logistics. "Each one transports more than 200 cars. And we could even increase the volume – if the global supply chains are functioning properly," she explains.

Car too big or wagon too small?

Using trains to transport SUVs the size of the new Land Rover Defender is not a matter of course. The company's large, heavy SUVs posed some basic challenges for train operators. The biggest Defender model weighs 3.3 tonnes. Conventional car-carrier wagons simply couldn't handle this class of SUVs. Rainsley and Fiore recall the initial stages of cooperation between JLR and DB Cargo Logistics: "A wagon just wouldn't fit two Defenders on top of each other. This was a major issue." For this reason, an additional step was necessary before the companies achieve their actual goal of moving new cars to Zeebrugge: they had to undertake a joint technical project to design a new type of car carrier. This had to fit under every bridge and get through every bottleneck, be not too heavy but at the same time roomy and robust. That wasn't all: it also had to meet all specifications and restrictions (some of which are very strict) associated with rail routes. And, finally, it had to have enough space and safety features for large Defenders double stacked. "It was a tough engineering brief," says Rainsley. "To me, it is the best example of our successful cooperation

with DB Cargo Logistics, and it marked the beginning of a fruitful long-lasting partnership." While the Nitra plant was under construction, DB Cargo Logistics was also working to enhance how the site would operate by creating a design for the plant's own siding and rail system. Rainsley says, "This was another element that helped cement our long-term relationship."

Rail is trending as a means of transport.

JLR isn't the only company going with the times: the modal shift is evident all over Zeebrugge. A growing number of logistics companies are opting for efficient and environmentally friendly transport options so they can meet climate targets and avoid blocked roads," de Smet says. Now, DB Cargo Logistics regularly runs trains on the Nitra-Zeebrugge route for JLR, something that really puts the companies' cooperation to the test. Things certainly aren't easy at the moment: challenges like the pandemic, parts shortages, extreme weather, political changes including Brexit and geopolitical issues such as the Ukraine war demand maximum flexibility from the logistics sector. Then there is the comprehensive upgrade of the rail network throughout Europe: ensuring the availability of climate-friendly rail services tomorrow entails putting up with a lot of construction work on the rail network today. This situation also represents a challenge for Fiore and her colleagues. "These factors are good reasons to concentrate on our customers even more, plan even further ahead and remove as many obstacles as possible. Getting to Zeebrugge in time remains our clear goal," she says.

Change of course: DB no longer sells station buildings

Effective immediately, Deutsche Bahn (DB) will no longer sell reception buildings at train stations. DB Infrastructure Board Member Berthold Huber said: "Train stations are the gateway for travellers to the train, their buildings and forecourts are a place's calling card. You must be friendly and welcoming. That's why we're stopping the sale of our reception building. We want to design and develop the areas together with the cities and communities."

With the change of course, all of the approximately 700 DB reception buildings will remain their property. A few properties are exempt from the sales ban, especially

where DB has already entered into contractual or pre-contractual commitments with the municipalities.

"In order to advance the mobility transition and increase the acceptance of climate-friendly rail, we need attractive train stations and a pleasant environment. Strong rails also include inviting reception buildings. This is in the interests of the common good, and the municipalities also benefit," says Berthold Huber.

So far, the DB has sold many former station buildings because they were difficult to maintain. Instead of a sale,

DB is now looking to further strengthen its station building. These should be fully developed. Good recent examples are the main train stations in Halle (Saale), Cottbus or Saarlouis.



Photo: Bahnhof Cottbus ©DB



DB returns to profitable business

Schenker and passenger transport are booming



DB Group generates EUR 876 million in operating profit in first half of 2022 • Revenues up 28.4%

“We have turned our business around and are preparing for robust growth to continue,” says DB CEO Richard Lutz

Deutsche Bahn (DB) has returned to profitable business. For the first time since the Covid-19 pandemic began, DB has generated an operating profit, returning DB to its path of profitable growth. DB closed out the first half of 2022 with adjusted earnings before interest and taxes (EBIT adjusted) of EUR 876 million. Group revenues increased by 28.4% to roughly EUR 28.0 billion. Many more passengers used DB’s regional, local and long-distance services. Demand for international freight forwarding and logistics was also higher than ever before. “Our turnaround has been successful,” said Dr. Richard Lutz, CEO of DB, in Berlin. “Demand is booming and we have returned to profitable business.”

Operating profit (EBITD adjusted) was up by around EUR 1.9 billion compared with the first half of 2021. At that time, the global Covid-19 pandemic had driven DB into the red, to the tune of nearly EUR 1 billion. Altogether, DB’s core business lost over EUR 10 billion due to the Covid-19 pandemic. DB Schenker, DB’s logistics subsidiary, made the largest contribution to DB’s current success by far. It nearly doubled its operating profit compared with the first six months of 2021 to around EUR 1.2 billion.

Earnings, revenues and volume in DB’s core business also rose considerably overall. In the first six months of the year, 59.1 million passengers used DB’s

long-distance trains. That was a year-on-year increase of 117%. Some 725 million passengers used DB’s regional and local trains, an increase of 60%. DB’s volume sold in rail passenger transport grew by 109% to 36.4 billion passenger kilometres in the first half of 2022. DB Cargo posted slight increases in revenues (up 5.6%) and volume sold (up 1.2%), but also faced a negative impact from the war in Ukraine and reduced capacity due to construction.

“The fact that our passengers have returned so quickly shows us that it was definitely the right decision to stay the course even in difficult times and prepare for robust growth with new trains, better service and more staff,” said Lutz.

He added that DB had hired roughly 90,000 new employees in Germany since 2019 and had accepted some 19,500 applicants so far in 2022. “We have done a great deal to equip DB for booming demand. More ICE trains serve Germany and Europe now than ever before,” said Lutz.

Although DB has continued to modernize and build at record levels, the rail infrastructure is not currently keeping pace with traffic growth. The result has been more congestion and delays in the rail network. In the first half of 2022, 69.6% of long-distance trains reached their destinations on time. That figure was 79.5% in the first six months of 2021. The overall on-time rate for DB rail passenger services in Germany was 92.5% in the first half of the year. Train kilometre on track infrastructure rose by 2.7% to over 563 million train-path kilometres, around 20 million more than before the Covid-19 pandemic.

Lutz stressed that DB’s current on-time rates and service quality were “not acceptable.” In response to this situation, DB and the German government had joined forces to transform the highly utilized network into a high-performance network and would begin a general overhaul of the busiest corridors starting in 2024. A package of immediate measures would provide relief even sooner. “Anything that can improve the situation for our customers will be our top priority,” Lutz said, adding that development of the high-performance network would not come at the expense of other efforts to modernize the rail infrastructure. Work to upgrade the infrastructure, build new lines and digitalize rail services would also continue unabated. The goal, Lutz said, was to make the infrastructure fit for the future in every way.

DB, together with the German government, continued to invest heavily in the first half of 2022. Net capital expenditures climbed by 3% to EUR 2.7 billion. Gross capital expenditures of EUR 5.4 billion in total were invested primarily in rail infrastructure in Germany, as in previous years. As of June 30th, 2022, net financial debt, at EUR 30.5 billion, was 4.8% higher than at the end of the previous year but remained within the expected range.

CFO Dr. Levin Holle highlighted DB Schenker’s performance in addition to the strong upswing in DB’s core business: “The first half of 2022 was Schenker’s most successful half-year in its 150-year history as a logistics company. DB Schenker played a major role in bolstering the DB’s favourable performance overall.” DB Arriva, DB’s local transport provider in Europe, also made progress in the first half of 2022. The company lifted its adjusted EBIT year on year and performed as expected overall.

Holle cited the sharp rise in inflation, and “ballooning energy prices” in particular, as a major economic challenge. For the short term, he said, energy price hedges were in place for a number of major areas. Ultimately, though, DB was not immune to the overall price trends that would be seen going forward.

There is a great deal of uncertainty associated with the forecast for 2022 as a whole since the war in Ukraine and the Covid-19 pandemic remain unpredictable. Nevertheless, DB expects to close out the year with much higher revenues and a much better operating profit than forecast in March.

DB currently expects an adjusted EBIT of more than EUR 1 billion for the year as a whole. Revenues are expected to grow to more than EUR 54 billion. Together with the German government, which is DB’s sole shareholder, the company plans to increase its capital expenditures in the current year to over EUR 16 billion gross and over EUR 6.5 billion net. Once again, capital expenditures will exceed the previous year’s already high level.

CEO Richard Lutz stressed that DB’s favourable performance would not have been possible without the dedication and passion of DB’s employees. Employees deserved to be recognized for everything they did day in and day out for DB’s customers.

Image: ©DBAG/Max Lautenschläger

HSB's 2-10-2T No. 99-7237 with the 10:30 Quedlinburg - Alexisbad makes a concerted effort to keep up with Abellio's unit working the 10:08 Halberstadt - Thale on the outskirts of Quedlinburg on July 24th. *Andy Pratt*



The 100th ICE 4 is called “Rhineland-Palatinate”

The 100th ICE 4 of the Deutsche Bahn (DB) is called “Rhineland-Pfalz”. Richard Lutz, CEO of DB, Federal Minister for Digital Affairs and Transport, Volker Wissing, Rhineland-Palatinate Prime Minister Malu Dreyer, Michael Peterson, DB Board Member for Long-Distance Passenger Transport, and Roland Busch, CEO of Siemens AG, attended the naming ceremony at Mainz Central Station. The train, a 13-car “XXL-ICE”, was christened with Rhine water from the state capital.

Richard Lutz, CEO of Deutsche Bahn AG: “The 100th ICE 4 marks an important milestone in the largest fleet expansion program in the history of DB. For new trains, more comfort and many additional seats, we will invest ten billion euros by 2029. What makes me personally particularly happy: With the ‘ICE Rhineland-Pfalz’, my home state stands for the future of the railways.”

Volker Wissing, Federal Minister for Digital Affairs and Transport: “It is the declared goal of this federal government to expand rail to become the backbone of a climate-friendly transport system. In order to convince even more people to travel by train, we need punctual, clean and comfortable trains with sufficient space. In order to be more punctual and reliable, we are currently modernizing the network to an unprecedented extent. Massive investments are also being made in rolling stock. A new ICE 4 is currently strengthening the fleet every three weeks. The fact that we can christen the 100th train here today is a really good sign for all passengers.”

Malu Dreyer, Prime Minister of Rhineland-Palatinate: “The ‘ICE Rhineland-Pfalz’ is an ideal ambassador for more climate protection and the urgently needed speed in the mobility transition. The state government of Rhineland-Palatinate sees rail as a central carrier in the mobility mix. That’s why we aim to strengthen rail as a climate-friendly mode of transport in passenger and freight transport, in local and long-distance transport.”

Roland Busch, CEO of Siemens AG : “We are delighted that the ICE 4 is the backbone of the DB Long-distance traffic is and thank our customers for their trust. Our trains help DB make rail transport more attractive and protect the climate. 100 ICE 4s delivered - this shows that we have the right portfolio for high-speed traffic. In addition, the ICE secures thousands of jobs in Germany.”

Development of the ICE fleet

In total, the DB will receive 137 ICE 4 trains in different configurations. In addition to the 50 12-car trains that have already been delivered, 19 of the 37 7-car trains that have been ordered are already in use, including on the ICE route between Cologne and Berlin. Since February 2021, the 13-car XXL ICE trains have also been added to the fleet, of which DB is getting 50. They offer almost 1,000 seats - more than ever before in an ICE and five times more than in a medium-haul aircraft. The trains run on routes that are



particularly popular, such as from Hamburg via North Rhine-Westphalia and via the Cologne-Rhine/Main high-speed line to southern Germany. ICE 4s are also used on individual connections between Mainz and Hamburg or Munich. From December 2023, the 7-part ICE 4 will also run between NRW and Austria via Cologne, Koblenz and Mainz.

To ensure that the 12 and 13-car ICE 4 trains are even more punctual, their top speed has been increased from 250 to 265 km/h. DB receives a new ICE 4 every three weeks. By the end of the year, DB will be expanding its offering by another 11,000 ICE 4 seats.

Deutsche Bahn has a strong presence in Rhineland-Palatinate. The headquarters of the freight transport division DB Cargo is located in Mainz. A total of around 7,500 DB employees work in the federal state.

DB interim balance: More than 18,000 new employees have already been hired - additional successful job advice for refugees

Deutsche Bahn (DB) is continuing its personnel offensive uninterrupted: In the first half of 2022, the group made job offers to over 18,000 new employees. Overall, DB wants to recruit around 24,000 new employees this year - around 15 percent more than planned. At the same time, DB has been supporting refugees from Ukraine in integrating into the German labor market since April - with advice, qualifications and also jobs. So far, 30 refugees have found a job at DB.

Despite the Corona crisis, DB is investing heavily in infrastructure, new vehicles and personnel as part of its "StrongRail" strategy. In the last three years, DB has hired over 80,000 employees. Most of the recruitment this year will be in the areas of rail and rolling stock maintenance (4,100), construction projects/construction supervision (3,500), train drivers (1,700), dispatchers (1,500), train service (1,400) and IT experts (1,300).

Martin Seiler, Board Member for Human Resources and Legal Affairs at DB: "In order for the mobility transition to succeed, we need committed colleagues. We have been hiring at a record level for years.



Fortunately, we stayed the course during the Corona crisis. And the rail job engine continues to run at full speed: We have now increased our original target of 21,000 new hires in 2022 by 15 percent - by the end of the year we want to have 24,000 new colleagues on board."

However, DB also relies on advice and information about the German labour market. The company cooperates successfully with the Federal Employment Agency (BA). Immediately after the outbreak of war in Ukraine, DB launched a special job program. It includes advice on residence, applications on the German labour market and jobs at DB, as well as orientation and language courses.

To date, more than 1,700 consultations have been held via a telephone hotline and three advice centres. Around 30 Ukrainians have received a job offer. They work as interpreters, engineers and recruiters, among other things. The hiring process for other refugees is currently underway.

Daniel Terzenbach, Board Member for the Regions of the BA: "With job advice directly on site at DB, we can reach the refugees in a place that they are already familiar with from their arrival in our country. It is important to us to develop a perspective with the people who seek job advice and to support them on their way into the job market. I am pleased about this pragmatic approach,

which complements our range of advice beyond the employment agencies and job centres. My big thanks go to the employees of the DB and the BA, who support the refugees."

"Every consultation, every promise of employment is a quick and unbureaucratic help with a professional restart," says Seiler. "It's about practical help for people who come from a war zone not far from us. We are deeply affected by the fate of the Ukrainian refugees. And that's why we at Deutsche Bahn, together with our partners, offer comprehensive support here."

In the job advice center at Frankfurt Central Station alone, the experts from DB and its cooperation partner, the Federal Employment Agency (BA), have so far been able to help over 300 Ukrainians. The DB Human Resources Director visited the Frankfurt site, where he got into conversation with refugees who, after taking part in a DB qualification course, are now attending a language course and are being further qualified for a job at DB.

Krombacher relies on DB Cargo

The Krombacher brewery is increasingly relying on rail. In the future, it will gradually shift up to 750 trucks to the environmentally friendly mode of transport, thereby relieving the burden on motorways and the environment. A section of the federal autobahn 45 has been closed since December 2021. This has a significant impact on the transport of goods by many companies - especially in the Hagen and Siegen area. Many of these transports have to be diverted over a wide area and are therefore on the road for significantly longer.

As early as May 2021, DB Cargo and the Krombacher brewery started the first transports to Großbeeren with a large beverage logistics company from the Berlin region. The cooperation is now being significantly expanded and further beverage logisticians (including beverages & more as part of the Krombacher Group) and, with Bremen and Hamburg, further receiving regions.

Michael Kröhl, Head of Logistics at Krombacher Brewery: "Due to the increasing transport capacity bottlenecks,

the situation in road freight traffic is already tense and this situation is further aggravated by the closure of the A45 as the main traffic artery. Together with DB Cargo and interested customers, a solution was developed via the terminal in Kreuztal with which our Krombacher products can be transported by rail. In the future, we are planning further joint projects with our customers and the railways in order to further expand the possibility of delivering Krombacher products by rail."

Sebastian Schilling, Senior Vice President European Sales and Corridor Development at DB Cargo: "With every truck that isn't on the road, we relieve the burden on motorways and the environment. Transport by rail produces 80 to 100 percent less CO2. We are particularly pleased that we were able to find a solution for the consequences of the A45 closure for our customer

Krombacher at the same time."

DB Cargo runs so-called shuttle services for Krombacher and its customers. The trains leave the brewery with full bottles and return with empties. The Großbeeren terminals for the greater Berlin area, as well as Hamburg and Bremen are approached from Kreuztal. DB Cargo organizes the entire transport chain from collection of the full goods to delivery of the empties and provides all

the equipment, including the required swap bodies.

An important local partner is the municipal district railway Siegen-Wittgenstein (KSW), with which DB Cargo works as part of the "Future Single Wagon Transport" network. It is co-operator of the "Südwestfalen Container Terminal" in Kreuztal and takes on the necessary shunting operations on site.





Official starting signal for testing new innovative technology and services at Südkreuz station

So that travellers, station guests and DB employees feel even safer, DB and the federal police are breaking new ground at the Berlin Südkreuz station: Together and with scientific support, they are developing and testing sustainable security concepts for stations there. These include, for example, a luminous platform edge for better orientation and an app to increase the sense of security. DB boss Dr. Richard Lutz, Federal Interior Minister Nancy Faeser and Federal Transport Minister Dr. Volker Wissing, in the presence of the President of the Federal Police Headquarters, Dr. Dieter Romann gave the go-ahead for testing the measures on site. In addition, the Federal Police and DB signed an agreement with the German railway station mission to further expand cooperation with regard to security at railway stations.

For more security, DB and the Federal Police are also modernizing and expanding the video technology in the stations. In a scientific study, the Federal Police and DB are examining how software could help in the future to identify possible dangerous situations, such as people on the track or abandoned luggage, to protect rail passengers.

Dr Richard Lutz, CEO of Deutsche Bahn AG: "Safety is a basic requirement for travel: Only those who feel safe on trains and at stations use the train. Berlin Südkreuz train station is our place for innovations: Here we are testing today what could become standard tomorrow in terms of security at our train stations. Despite all the technology, the focus is always on people. That is why we are significantly expanding the tried-and-tested cooperation with the railway station missions. Our clear goal: safety for rail passengers and DB employees."

Nancy Faeser, Federal Minister of the Interior: "Security is a question of social justice. Safety must be guaranteed for everyone. Where there are particularly large numbers of people, they must be able to feel safe at all times."

Whether with the new SafeNow call for help app, automated analysis of dangerous situations or signal lights on platform edges: what we are successfully developing and testing at Berlin Südkreuz station helps people to move around safely in everyday life."

Dr Volker Wissing, Federal Transport Minister: "Every train journey begins and ends at the station. If we want to convince even more people to take the train, nobody should get a queasy feeling when entering a train station and if they do, they have to be able to rely on quick help. This is not the only area where new technologies can provide security personnel with considerable support. With the illuminated platform edge, for example, we want to achieve not only increased safety but also better control of passenger flows in order to be able to make better use of the available capacities."

Dr Dieter Romann, President of the Federal Police Headquarters: "Our partners and the Federal Police are concerned with the highest possible level of security. Of course, the prerequisite for this is always technical and technological development. Thanks to this security partnership and the close cooperation in the joint security laboratory here on site, we are able to advance innovations - right through to their final use. If it is successful, we will expand what we are testing here at Berlin Südkreuz station with Deutsche Bahn AG. Luminous platform edges and the call for help app contribute to safety."

Klaus Dieter Kottnik, Chairman of the Association of German Railway Station Missions eV "We welcome the fact that Deutsche Bahn and the federal police are including the experience of the railway station mission with people from the most diverse walks of life in the further development of their security concept. We are thus continuing the good and trusting cooperation that already exists."

Innovations for even more security

In the newly opened security laboratory at Berlin Südkreuz station, the Federal Police and DB are researching and testing innovative technology and services.

On platform 1, an LED strip of light, the so-called "luminous platform edge", shows travellers the way, warns of incoming trains and ensures the necessary distance to the platform edge. In a one-year test run, this visualization is intended to show how the modern light guide system on the platform can make it easier for travellers to find their way around and increase their attention.

The technology also shows the utilization of individual wagons in perspective. In the future, this would enable passengers to board quickly at the right place.

With the new "SafeNow" app, users can call for help digitally, quickly and inconspicuously without having to make a phone call. Releasing an app button triggers the app alarm. In the Berlin Südkreuz train station, the alarm reaches the employees of the security laboratory directly. The app offers a low-threshold contact option in situations in which travellers and train station visitors feel uncomfortable.

The "Security Station" project is helping to develop software that will support the security staff of DB and the Federal Police in averting danger to rail passengers. It should help to recognize critical situations.

Focus on the human factor

Railway stations are anchors for mobility and for life in the surrounding district. Many different people come together here every day. In order to ensure mutual understanding, help and support, DB, the federal police and the German railway station mission are intensifying their tried-and-tested cooperation. To this end, the partners sign a new cooperation agreement. Here, too, the aim is to increase the sense of security on the part of passengers, DB employees and other users of the train stations. A first step, for example, is the training of DB trainees in social skills by the Berlin City Mission in order to identify and solve possible conflict situations at an early stage.

Passing Sankt Goarshausen, BLS Cargo Class 485.017 follows the river Rhine upstream working a cargobeamer intermodal from Kaldenkirchen to Domodossola (Italy). *Erik de Zeeuw*





FS Mercitalia Rail liveried Class E652.084-1 brings a long rake of boxes northbound through Reggio Emilia. *Anton Kendall*

InRail's Vectron Class 191.102-9 brings a rake of gas tanks through Reggio Emilia. *Anton Kendall*

Railpool's Class 186 290-3 brings a rake of clay wagons through Verona Porta Nuova, having started in Reggio Emilia. *Anton Kendall*





Italy

FS Freccia Argento Pendolino No. ETR485.034 working train No. 8616 to Genova Piazza Principe is seen at La Spezia Centrale on June 25th. *Gerard van Vliet*



Italy

InRail's Vectron Class 191.004-7 brings a smart rake of Veronesi grain hoppers through Reggio Emilia. *Anton Kendall*



Italy

▶ Lokomotion No. EU43-002 leads a sister loco through Verona Porta Nuova, heading a rake of DB Schenker wagons towards Brennero.

Anton Kendall

▶ Lokomotion/RTC owned No. EU43-008 (91 83 2043 008-8) hauls a short mixed rake through Verona Porta Nuova, with Class 186.288-7 tucked in behind for good measure.

Anton Kendall

▶ With a nice selection of wooden bodied vans in tow, No. 92 83 2200 023-5 (FER G 2000 23) waits patiently at Reggio Emilia awaiting a path down the branch towards Dinazzano. *Anton Kendall*





On June 14th, No. DM611 stands at Casa Voyagers on shunt duties. These 1990 built locos are meant to be a copy of the successful EMD SW1001 switcher widely used in the USA, but were built at Brush (Loughborough UK) and fitted with Cummins engines. *Mark Torkington*









Netherlands

On June 17th, RTB Cargo Class 193.793 passes Vuren with the PCC shuttle from Kutno, Brzeg Dolny, Gliwice, Kolbuszowa & Poznań (PL) to the CTT Terminal in Pernis. *Erik de Zeeuw*





Alstom and NS present the Coradia Stream Intercity Next Generation train at Rotterdam Central Station

Alstom and NS have recently presented the Intercity Next Generation (ICNG) trains to the Dutch public at Rotterdam Central Station. Alstom is supplying NS, national railway operator in the Netherlands, with 79 Coradia Stream trains that can reach a maximum speed of 200km/h. The first trains are expected to run on the Dutch national network before the end of this year. 20 additional Coradia Stream ICNG trains, which will also be able to run in Belgium, have been ordered by NS.

The new trains for NS start a new era for the Netherlands' travelling public. They benefit from the latest innovations and high comfort of Alstom's Coradia Stream family, which is a huge success throughout Europe with almost 900 trains already ordered in Denmark, Germany, Italy, Luxembourg, Romania, Spain and the Netherlands.

"The Coradia Stream are successful because they offer highly reliable, energy efficient, safe and comfortable transport for passengers. They also have an impressive availability rate of over 97% and are easy to maintain. We are proud that NS chose Alstom to help it transform rail transport across the Netherlands, and have no doubt that our trains will make a significant difference for Dutch travellers," said Bernard Belvaux, Managing Director of Alstom Benelux.

The ICNG trains designed by Alstom for NS are extremely comfortable. Alstom's teams have worked hard to integrate the latest technologies and offer an excellent on-board experience to passengers. The trains feature spacious and well-lit multi-purpose areas for reading, resting, wheelchairs and bicycles, as well as dedicated restrooms for people with reduced mobility. Passengers with reduced mobility can really enjoy travelling with the same comfort as other passengers

thanks to the design of these new trains.

Air conditioning, Wi-Fi, numerous charging options for mobile phones and laptops, as well as LED reading lamps also contribute to an outstanding travel experience.

The ICNG trains meet the highest standards for interoperability and are equipped with European (ERTMS) signalling systems. This allows tighter, denser and more energy-saving driving through digitally predictive signalling and driving commands, which increases the efficiency and reliability of transport, especially on highly frequented lines. With a smoother rail service overall, passengers can look forward to more frequent and safe connections.

Finally, the Coradia Stream ICNG train is a step further towards sustainable mobility, which is one of Alstom's main global objectives, as over 95% of its components



are recyclable. The train is also equipped with a modern traction system that allows regenerative braking, where the motion of the train is harnessed to power the brakes, which can save as much as 35% of a train's energy consumption, not to mention saving on wear-and-tear on train wheels.

Thanks to improved aero-acoustic design, the use of components with reduced noise

emission and bogies with pneumatic suspension, the ICNG train also reduces inside and outside noise, which contributes to both environmental protection and improved passenger comfort.

Netherlands

HTM (Haagse Tramweg Maatschappij) No. 4049 serving line 19 (Leidschendam - Delft) as part of RandstadRail system is seen at Phoenixstraat near the terminus at Delft Station. In the background Wheatwindmill 'De Roos (The Rose)' the last of a lot of mills build on the fortress walls of Delft and still in service and also 'de Begijntoren', a part of the former fortress walls of Delft. *Gerard van Vliet*



Netherlands

On July 3rd, the Plan-U diesel unit went for a tour on the occasion of 40 years of the Frisian Modelbahn Club. The tour started in Leeuwarden and went via Zwolle, Amersfoort, to Apeldoorn. From there the tour made a trip over a private historical line of the VSM from Beekbergen to Dieren. At Dieren the tour came back on the main line, and ran towards Ols, Zwolle and ended in Leeuwarden again. All was made possible by the (Foundation) Stichting 2454 CREW. *Andre Pronk*



Netherlands

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Norway



On July 8th, Oslo metro unit No. 3377 is seen at Høyenhall working a line 4 service to Stortinget.
Kevin McCormick

Oslo tram No. 102 heads through Oslo city centre on July 8th with a line 11 service.
Kevin McCormick

On the Bergen metro, Car No. 204 is seen operating a service from the City Centre to the Airport on July 13th.
Kevin McCormick



Norway



On July 10th, Oslo tram No. 130 is seen in Olaf-Ryes Plass working a line 11 service.
Kevin McCormick

VY No. 2247 waits with the 17:45 Bergen to Oslo service at Bergen on July 12th.
Kevin McCormick

On July 12th, VY Flirt EMU No. 75552 working the 09:42 to Jaren is seen at Oslo Sentralstasjon.
Kevin McCormick



Norway

On July 12th, NSB Di 8 No. 8.705 is seen with the shunt release of the Oslo service at Bergen. Delivered between 1996-97, ten of these were sold to GB Railfreight in 2011 and used at Redcar and Scunthorpe steel works.

Kevin McCormick

Oslo tram No. 166 is seen in Solli Plass working a line 11 service on July 11th.

Kevin McCormick

VY NSB El 18 Class No. 2248 with the 10:09 Oslo S to Bergen 'Bergensbanen' service is seen at Oslo on July 12th.

Kevin McCormick



The Bergen Funicular 'Floibanen' has been closed from September 20th 2021 until April 1st 2022 for upgrading of the vehicles, replacing 20 year old carriages, machinery and stations. Now open again, red car No. 1 'Rødhette' and blue car No. 2 'Blåmann' are seen in operation on July 13th. *Kevin McCormick*





On June 1st, CP Class 1400 No. 1438 departs Pinhao whilst working train No. IR866 11:08 Pocinho - Porto Campanha. *Laurence Sly*

CP Class 1400 No. 1438 departs Pinhao whilst working train No. IR866 11:08 Pocinho - Porto Campanha on June 1st. *Laurence Sly*

No. 1438 approaches Regua whilst working train No. IR876 17:14 Pocinho - Porto Sao Bento. *Laurence Sly*







On June 1st, CP Class 1400 No. 1429 departs Marco de Canovese whilst hauling a late running train No. IR876 17:14 Pocinho - Porto Sao Bento. *Laurence Sly*

On June 1st, CP Class 1400 No. 1436 approaches Pinhao whilst working train No. IR876 17:14 Pocinho - Porto Sao Bento. *Laurence Sly*

No. 1413 approaches Pala whilst working train No. IR868 13:08 Pocinho - Porto Campanha. *Laurence Sly*













RENFE Mercancías owned and operated Class 333.328-3 brings a long rake of tanks from the yard at Villafria to Villalonguéjar down the hill towards Burgos Rosa Manzano. *Anton Kendall*



Spain



Renfe TRAXX No. 253.097-0 is at the start of its journey working the Burgos Villafria to Huelva gas tanks as it glides down the hill towards Burgos Rosa Manzano, on June 3rd.

Anton Kendall

MEDWAY pair Nos. 269.971-8 'Sara' and 269.961-9 'Alexandra' work a westbound container train past L'Arboç on June 1st.

Anton Kendall

CAPTRAIN BITRAC No. 95 71 0601.007-8 races through Madrid Vallecas on the evening of June 2nd on a paper train.

Anton Kendall





▶ In Malmo, only some of the carriages from the Berlin sleeper go all the way through to Stockholm, so the train is split, and additional stock is added. Vectron Class 193.287 is seen on the front of the sleepers service stock which does go forward to Stockholm. To the left, Vectron Class 193 255 is seen attached to another rake of Snälltåget stock. *Kevin McCormick*

▶ Stockholm metro car No. 2319 is seen at Ropsten with a line 13 service on July 6th. *Kevin McCormick*

▶ Hector Rail Class 241.008 'Galore' is seen at Malmo having arrived with the sleeper service from Hamburg. This loco took over from DB Class 112.170 enroute. *Kevin McCormick*



Sweden

SJ RC6 loco No. 1419 with the 06:30 Stockholm to Oslo service is seen at Stockholm on July 8th. On this day the service was only going as far as Kristenham. *Kevin McCormick*



Sweden

On July 7th, Stockholm heritage tram car No. 71 is seen at Liljevalchs/Gröna Lund stop on Djurgårdsvägen Line 7. *Kevin McCormick*

RC6 loco No. 1333 is seen at Stockholm on July 8th having arrived from the Arctic with a Narvik to Stockholm service. *Kevin McCormick*

Heritage tram No. 76 arrives at Liljevalchs/Gröna Lund on Djurgårdsvägen Line 7 on July 7th. *Kevin McCormick*



Switzerland

On June 4th, a Ge 4/4iii loco hauls a Chur - St. Moritz express across the Landwasser Viaduct. *Vernon Goodey*



Reichmuth orders 35 Vectron locomotives for SBB Cargo

Reichmuth & Co Investment Management AG has ordered 35 Vectron AC locomotives from Siemens Mobility through its investment vehicle LokRoll 3 AG. LokRoll 3 will lease the locomotives to SBB Cargo for eight years through its asset manager Northrail GmbH, which it commissioned for the deal. The entire transaction was arranged and structured by Paribus Rail Investment Management GmbH. The lease also includes local maintenance of the locomotives by Siemens Mobility for eight years. The Vectrons will be manufactured at the Siemens Mobility plant in Munich-Allach and delivered in 2024.

“The fact that we are again delivering locomotives for Switzerland confirms the high level of reliability and performance of our Vectron platform. Although the AC locomotives will primarily operate in Switzerland, they can also be used for cross-border service in Germany

and Austria. This enables our customer to plan for the future in a long-term and flexible manner,” said Albrecht Neumann, CEO Rolling Stock of Siemens Mobility.

“With the Vectron mainline locomotives, we can increase the reliability of our most important transportation equipment and thus further enhance the quality of service for our customers,” said a delighted Désirée Baer, CEO of SBB Cargo.

“We are especially pleased that, together with LokRoll 3, we are now undertaking our third locomotive transaction in cooperation with SBB Cargo and once again relying on the high-quality Vectron AC locomotives from Siemens Mobility,” said Dr. Stefan Hasenböhler, CEO of Reichmuth & Co Investment Management AG.

Siemens Mobility has already sold 150 locomotives to Swiss customers. The new locomotives ordered for SBB Cargo will be equipped with the European Train Control System (ETCS) BL3 as well as the required national train control systems. More than 1,400 orders for the Vectron from Siemens Mobility have been received to date, and the Vectron fleet has covered over 600 million kilometres in service so far. The locomotive is approved for operation in Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Denmark, Finland, Germany, Hungary, Italy, the Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Sweden and Switzerland.



SüdLeasing orders 20 Vectron locomotives with XLoad on behalf of SBB Cargo International

Switzerland’s SBB Cargo International AG, in cooperation with SüdLeasing GmbH, has ordered 20 Vectron multisystem locomotives equipped with the XLoad package from Siemens Mobility.

SBB Cargo International will lease the locomotives from SüdLeasing under a long-term rental plan with a flexible term. The contract also includes maintenance of the locomotives by Siemens Mobility. Vectron XLoad is an equipment package developed to improve traction performance and increase trailer loads.

With this XLoad option, for example, operators on the North-South Corridor will be able to use only one rather than two four-axle locomotives for a train. The Vectrons are designed for a maximum operating speed of 160 km/h. The locomotives will be delivered beginning in 2024.

“We are pleased about the further expansion of SBB Cargo International’s Vectron fleet and thank the company for their trust in us and in our locomotives.

With this order, the number of Vectrons sold to Swiss customers has increased to over 100. Thanks to XLoad, the locomotives achieve tractive power previously not possible with four-axle locomotives. Our customer can use the locomotives even more efficiently in the Alpine

region,” said Albrecht Neumann, CEO Rolling Stock at Siemens Mobility.

“The Vectron is the ideal locomotive for our transport operations, being interoperable between the ARA ports (Amsterdam, Rotterdam, Antwerp) and Italy. With the optional feature XLoad, we will be able to run longer and heavier trains through the Alps in single traction.

In many cases, one can even do without an otherwise obligatory lead locomotive. Since the weight of trains for combined freight traffic is limited by maximum permissible train lengths, there is no need to use a more cost-intensive six-axle locomotive,” commented Sven Flore, CEO SBB Cargo International AG.

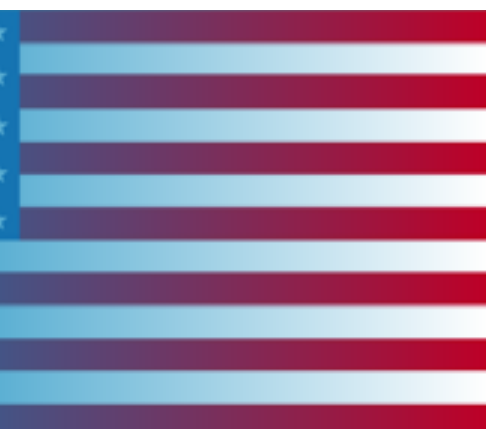
The 20 new locomotives will be used by SBB Cargo International for transalpine service. The locomotives have been approved for operation in Austria, Belgium, Germany, Italy, Switzerland, and the Netherlands. They are equipped with the European Train Control System ETCS BL3 as well as with the mandatory national train control systems.



U.S.A.

Florida East Coast Nos. 805 and 812 pass Melbourne whilst hauling train No. 202 from Miami to Jacksonville on June 14th. *Laurence Sly*







U.S.A.

Florida East Coast GP40-2 No. 413 passes St. Lucie whilst hauling local train No. 820 from Fort Pierce to Pineda on June 15th. *Laurence Sly*





U.S.A.

FEC GE ES44C4 Nos. 817 and 804 pass Stuart whilst hauling train No. 206 from Miami to Jacksonville on June 16th. *Laurence Sly*



U.S.A.

Florida East Coast GP40-2 No. 413 passes Melbourne whilst hauling the Fort Pierce local to Pineda on June 14th.
Laurence Sly



U.S.A.

Norfolk Southern SD70ACU loco No. 7235 leads a tank train past Cresson, nine miles east of Altoona in Pennsylvania on June 27th. *Vernon Goodey*



U.S.A.

Norfolk Southern ES44AC locos Nos. 8033 and 9896 lead a mixed consist past Cresson, nine miles east of Altoona in Pennsylvania on June 27th. *Vernon Goodey*



Poland

Alstom to hire 150 software engineers in Katowice

Alstom in Poland is expanding its Digital Products Engineering Centre of Competence in Katowice. As a result, the company is currently actively seeking 150 new software developers, testers and other IT experts who will work in particular on the development of advanced systems for railway traffic management in Katowice. Experts employed in Katowice will create solutions to be used worldwide in cooperation with other Alstom Engineering Centres of Competence in Italy, Sweden and Belgium.

“We have been developing local competences in Poland in nearly all the areas of railway business operations -

from railway infrastructure to advanced trains for almost 100 years in Katowice. The new investment in the Digital Products Engineering Centre of Competence proves that the company has been deeply rooted in the Polish market. Our IT solutions are designed on stable and proven modern product platforms,” says Adam Juretko, Vice President of Alstom Poland and Managing Director of Alstom ZWUS.

Alstom deployed Poland’s first European Rail Traffic Management System (ERTMS) Level 2 on the majority of the country’s main railway lines, as well as the control centre for Warsaw Metro. In addition, we installed over

30 Centralised Traffic Control (CTC) systems, equipped over 200 stations with computerised interlocking systems and modernised over 1,700 level crossing systems.

“We would like to introduce rail signalling products more widely in other countries and the expansion of the Digital Products Engineering Centre of Competence is a way to achieve this goal,” says Sławomir Cyza, President and Managing Director of Alstom Poland, Ukraine and the Baltic States. “Rail traffic control systems are equally important to the production of rolling stock products, which may not be as visible as Pendolino, but they ensure smooth traffic, automation and digitalisation of the railways in Poland. Thanks to them, the railway

transport is faster and less vulnerable to failures. Alstom is the only manufacturer in Poland who has the full portfolio of products for railway applications.”

Alstom employs more than 4,000 people in Poland and operates in 11 sites in the country, including three rolling stock and components production sites - in Chorzów, Wrocław and Świętochłowice, a signalling systems production site in Katowice, a Pendolino service centre, as well as Traxx and Twindexx service centres in Warsaw, a Traxx service centre in Toruń, a locomotive components production site in Łódź and a Coradia bogie production site in Piaseczno.

Spain

Alstom to install APS, its catenary-free solution on Barcelona’s light rail connection - Diagonal tramway line

Alstom, global leader in smart and sustainable mobility, has been awarded, by the Barcelona Metropolitan Transport Authority (ATM - Autoritat del Transport Metropolità), a contract for the electrification of the first phase of the Barcelona tram network connection, connecting the two existing tramway lines, with Alstom’s APS ground-based dynamic feeding system.

APS preserves the beauty of urban environments by removing wayside infrastructure and obtrusive catenary contact lines and masts. The contract includes both work on the infrastructure and the retrofit of 18 trams from the current fleet.

The system consists of power supplied to the light rail vehicles through a segmented street-level power rail. The conductive segments are automatically switched on and off as the tram progresses, ensuring total safety for pedestrians and all road users.

Alstom’s APS technology is currently in operation in 11 cities on four continents (including Bordeaux, Tours, Rio de Janeiro, Istanbul, Dubai, Lusail and Sydney). Every day, 362 trams use this solution on over 145 km of track in commercial service, representing 58 million km travelled with APS (as for July 2022).

This contract is part of the project to connect Barcelona’s two tram networks, Trambaix and Trambesos. This connection, 3.9 kilometres long and with 6 new stops added to the tram network, will improve mobility in the city and will enhance intramodality by connecting the Tram with the suburban and metro networks. Furthermore, once the connection is completed, it will contribute to reducing the carbon footprint by transferring users from private vehicles to the tram. Barcelona’s tramway is in the backbone of Barcelona’s promotion of sustainable mobility, with a commitment to eco-friendly, accessible, equitable and healthy urban development.

Barcelona tramway, inaugurated in 2004, has a total of 6 lines and 56 stops in a 29.22 kilometres long systems that moves more than 26 million passengers annually. It is made up of two independent systems: Trambaix (a 15.1 km network that connects Diagonal with Baix Llobregat area) and Trambesos (which connects Barcelona with Sant Adria de Besos and Badalona, on a 14.1 km route). The network is operated by 41 Citadis trams, manufactured and maintained by Alstom in Spain.

Image: ©Ayuntamiento de Barcelona



Poland

Alstom is granted homologation for the use of the ELS-96 wheel detector system on railway lines in Poland

Alstom, global leader in smart and sustainable mobility, has been granted, by PKP PLK S.A., the approval for using the ELS-96 wheel detector system on main railway routes in Poland. The certification procedure lasted over two years and required a specific process involving 9-month long field tests. The system is compliant with the technical specifications for interoperability (TSI), which means that it is compliant with EU standards and fully compatible with the rolling stock and rail types used in Poland.

ELS-96 is intended for detecting rail vehicle wheel passage on tracks and it is the main part of the axle counter system for train detection. It transmits information about the number of wheels that have passed over the area where the wheel detector head is installed. Based on that, the interfaced systems are able to determine whether track sections are occupied, thereby enabling identification of where a train is located on the railway infrastructure.

“Alstom’s wheel detectors have performed successfully in service both on the tracks in the deserts of Algeria, as

well as in frosty regions with temperatures below -50°C” said Adam Juretko, Vice-President Alstom Poland.

“Thanks to the use of this state-of-the-art solution, the volume of equipment that needs to be installed on the tracks reduces significantly. The weight and power consumption of the system is lower compared to the former version and it contributes to reduced deployment, operation and maintenance costs involved.” he added.

An integrated wheel detector, ELS-96 communicates with other systems via a safe data transmission interface. It is compliant with all the environmental requirements applicable to this type of system. This wheel detector is used on high-speed lines and mass transportation systems (metro, tramways). The ELS-96 system is mounted directly on the rail and can be used in any environmental conditions as it can withstand high and low temperatures, humidity and vibrations. It works fully under water. The fully automatic adjustment process as well as remote diagnostics and software upgrade capability facilitate maintenance work. The



integrated design of the system ensures much higher electromagnetic compatibility (EMC), thereby increasing the safety and availability of the entire system. Over 50,000 Alstom wheel detector systems are in service all over the world, with 15 000 being used in Poland

(previous generation ELS-95). The new release of the ELS-96 wheel detector system was designed in Poland and is manufactured by the Alstom site in Katowice. Such systems have already been used in other countries, such as the Netherlands, the United Kingdom and India.

China

Alstom’s Chinese joint venture to supply advanced traction system to Nanjing Metro Line 6

Alstom’s Chinese joint venture, Shanghai Alstom Transport Electrical Equipment Co. Ltd. (SATEE) [1], has been awarded a new contract by Nanjing metro and CRRC Puzhen to provide the state-of-the-art train traction and auxiliary system for 258 metro cars that will run on Nanjing Metro Line 6 in Jiangsu province, China.

Under the terms of the contract, Alstom will provide the Opt-ONIX traction system, which was specifically designed and developed for the Chinese market. It includes traction inverters, motors, and auxiliary converters. The Opt-ONIX system is designed to improve operational performance and reduce life cycle costs by featuring a lightweight and compact design by using regenerative electrical braking. All traction systems are manufactured by Alstom’s joint venture,

SATEE in China with support from Alstom sites in Belgium, France and India. Alstom’s joint venture in Xi’an, Xi’an Alstom Yongji Electric Equipment Co., Ltd. (XAYEECO)[2] will supply the traction motors. With full speed, Alstom will deliver the first train traction equipment within 2022.

The Nanjing Line 6 is a key metro line in Nanjing’s metro network. It is 32 kilometres long with 19 stations connecting the airport link (S1) in which Alstom also supplied the traction system for its metro cars. According to the long-term metro network development plan of Nanjing, Line 6 will have interchange stations with 11 metro lines in the future.

“We are proud to further extend the presence of Alstom China in Nanjing and contribute to its city rail transport network. This is another

clear demonstration of the customer’s trust and high recognition in Alstom’s expertise and competency. As a global leader in sustainable mobility, Alstom is committed to deliver high quality transport solutions with proven world advanced and innovative technologies to Nanjing.” said Henry Wang, Managing Director of Alstom China.

Alstom’s footprint in Nanjing as a major supplier of metro cars, traction systems, signalling systems and services has been for more than 20 years. So far, Alstom has supplied 456 metro cars for Nanjing Line 1, Line 2 and their respective extensions, traction systems for the 852 metro cars of Nanjing Line 4, 7, 10, S1 and S3, signalling systems for Ningtian Intercity Line, and traction overhaul services for Nanjing Lines 1 and 2.

Present in China for over 60 years, Alstom participates in the full spectrum of China’s railway projects. Alstom in China now has a complete range of rolling stock (high-speed trains, railway passenger cars, locomotives, metro, automated people movers, monorail and trams), state-of-the-art components (traction systems, bogies, traction motors, dampers), customised services as well as infrastructure and signalling solutions.

Alstom in China has eleven joint ventures, seven wholly foreign-owned enterprises, and over 10,000 employees. Together, the joint ventures have delivered more than 6,000 railway passenger cars and 1,530 electric locomotives, 7,194 metro cars, 808 monorail cars, 136 automated people mover cars, and 191 tram cars to China’s growing rail transit market as well as to

overseas markets. In China, Alstom also provides customers with a wide range of services solutions, from heavy maintenance to modernisations, and currently has 3,258 metro cars under maintenance contracts. It is a major signalling supplier to the Chinese high-speed network, and through its joint ventures, its signalling systems and propulsion equipment are utilised in more than 100 urban mass transit lines.

[1] Established in 1999, Alstom holds 60% of the shares.

[2] Established in 2006, Alstom holds 51% of the shares.

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Italy

FS-ADR, from Naples and Florence to Fiumicino airport with Trenitalia

Three new Frecciarossa trains travel to and from Fiumicino Airport, with an absolute revolution: a direct connection between the Roman airport and the stations of Napoli Centrale and Napoli Afragola.

Commencing on Monday July 11th, Trenitalia's new services are aimed at enhancing the integration of train plus aeroplane with direct High Speed connections between Fiumicino Airport and Southern Italy as well as strengthening existing connections with the centre of the country.

In line with the governmental and European strategy on the development and promotion of intermodality, the

launch of the new connections comes as a concrete result of the agreement on sustainable mobility signed on March 17th by Luigi Ferraris, CEO of FS Italiane, and Marco Troncone, CEO of Aeroporti di Roma. In collaboration with ENAC, this agreement also aims to make passenger and baggage check-in available in the near future directly at the railway station of departure.

In detail, Trenitalia's offer to and from Fiumicino Airport has been enriched with three new Frecciarossa connections, with two travelling to and from Naples and one departing from Florence's Santa Maria Novella, in addition to the Freccie to and from Venice, Padua, Bologna, Florence and Rome, the direct Leonardo

Express between Fiumicino and Roma Termini and the numerous regional connections on the FL1 Fiumicino Airport-Roma-Orte line.

The connections and timetables were developed by Trenitalia and Aeroporti di Roma to identify the best integration between high-speed trains and intercontinental flights arriving to and departing from Italy's main airport hub in favour of greater integration between train and plane and with the aim of consolidating Leonardo da Vinci airport's role as a smart hub. With these connections, passengers will be able to reach New York in the early afternoon from Naples or from Florence, guaranteeing a better connection between

collective and shared means of transport, an objective at the heart of the FS Group's Passenger Hub uniting all Group transport companies.

The round table held with FS Italiane and Aeroporti di Roma shall continue and be enriched by commercial agreements with airlines operating at Fiumicino in order to integrate their mutual sales and distribution systems with the possibility of passenger and baggage check-in directly at the main railway stations connected to Leonardo da Vinci airport.

U.S.A.

Union Pacific Signs Largest Locomotive Modernization Deal in Rail Industry History with Wabtec

Union Pacific (NYSE: UNP) has signed a historic deal with Wabtec Corporation (NYSE: WAB) for 600 locomotive modernizations featuring a suite of digital solutions and innovations. The agreement, worth more than \$1 billion, is the largest investment in modernized locomotives in rail industry history, and part of Union Pacific's fleet strategy to move more freight efficiently and sustainably across its service territory.

"Union Pacific is taking thoughtful, deliberate steps to reduce our environmental impact and to help our partners improve theirs," said Lance Fritz, Chairman, President and CEO of Union Pacific. "Wabtec's modernization program helps make our existing fleet more fuel efficient, capable and reliable. The resulting increased tractive power enables us to move more freight with fewer locomotives, which improves efficiency and reduces emissions."

Union Pacific's modernization initiative comes as the industry looks to sustainably meet the growing demands on the rail network by maximizing and extending the capabilities of locomotive fleets. It also helps place Union Pacific on a path to achieve its aggressive emission target to reduce absolute Scope 1 and 2 greenhouse gas (GHG) emissions by 26% by 2030 from a 2018 baseline, and on a path to net zero emissions by 2050. The modernizations also support UP customers' efforts to meet their own carbon reduction targets.

"Modernizations are a game changer for our customers offering the ability to realize significantly more value out of existing locomotive assets," said Rafael Santana, President and CEO of Wabtec. "By customizing these solutions for our customers and installing state-of-the-art technology, we are helping our customers realize outcomes including increased tractive effort, fuel efficiency, reliability, and adhesion, which reduce maintenance, repair and overhaul expenses. These fleet benefits will support Union Pacific's sustainable service improvements and long-term growth strategy."

The modernizations will provide approximately 350 tons of carbon reduction per locomotive per year. The total order will enable Union Pacific to realize approximately 210,000 tons in annual emission reductions. The reductions are the equivalent of removing emissions from nearly 45,000 passenger cars per year. The modernizations also support the circular economy with more than half the locomotive's weight being reused. Throughout the order, approximately 70,000 tons of steel will be reused and recycled – the equivalent of more than 51,000 passenger cars.

Wabtec will modernize 525 of Union Pacific's AC4400 and AC6000 locomotives, as well as 75 Dash-9 locomotives. The modernized locomotives will feature a suite of digital solutions and innovations such as the FDL Advantage

engine upgrade and Modular Control Architecture, a next-generation controls technology that is applicable throughout Wabtec's locomotive installed base. The modernizations will extend the locomotive's life and provide benefits, including a fuel efficiency improvement of up to 18%; more than 80% increase in reliability; and haulage ability increase of more than 55%.

This deal is the third major modernization order from Union Pacific since 2018, with more than 1,030 locomotives upon completion in 2025. Wabtec will modernize the locomotives at its plants in the United States. The deliveries are expected to begin in 2023.



**INVESTING IN A SMARTER, GREENER,
MORE EFFICIENT LOCOMOTIVE FLEET**

Wabtec Corporation signs a historic deal with Union Pacific to provide 600 locomotive modernizations.

India



Alstom wins order to supply metro trains and CBTC signalling for Bhopal & Indore metro rail projects

Alstom, global leader in smart and sustainable mobility, has been awarded the contract by Madhya Pradesh Metro Rail Corporation Limited (MPMRCL) to deliver 156 Movia metro cars with 15 years of comprehensive maintenance for the Bhopal and Indore metro projects. This project will benefit over 5.7 million people of both these cities. Valued at €387 million (over INR 3200 crores), the order includes installation of latest generation of Communications Based Train Control (CBTC) signalling system as well as train control and telecommunication systems; each with seven years of comprehensive maintenance.

Alstom is responsible for the design, manufacture, supply, installation, test, and commissioning of 52 standard gauge Movia metro passenger trainsets of 3-car configuration each. 27 trainsets will be for Bhopal and 25 trainsets for Indore. To be built at Alstom's state-of-the-art rolling stock manufacturing facility in Savli (Gujarat), these ultramodern, light-weight trains will operate at a top speed of 80 km/h, across the 31 km line in Bhopal with 30 stations and the 31.5 km line in Indore with 29

stations. This is the second such combined order in India for Alstom, after the Agra-Kanpur metro projects.

"We are delighted to be awarded this significant contract from MPMRCL and this collaboration will lay a strong foundation for an efficient and sustainable mass transport system for the cities of Bhopal & Indore. As India moves towards its vision of using green and clean energy for public mobility, Alstom takes pride in being its long-standing partner in this journey and help write the country's growth story. Following the Agra-Kanpur metro project, winning this contract is a strong validation of our commitment to deliver mobility solutions that meet the specific requirements of our customers." said Olivier Loison, Managing Director, Alstom India cluster.

Alstom India has a history of successfully delivering world-class metro trains for major cities, including Delhi, Chennai, Mumbai, Lucknow, Kochi in India and internationally for Sydney, Queensland, and Montreal. The company is currently manufacturing metro trains for Agra-Kanpur, Mumbai Metro Line 3, and modern

trainsets for India's first semi high-speed Delhi-Meerut RRTS project.

The Movia metro family offers latest technology combined with proven and reliable components. Built with light but strong stainless steel car bodies, the air-conditioned cars are developed with a strong emphasis on eco-friendly design to eliminate hazardous substances providing a safer environment for passengers. The trains are powered with modern energy efficient propulsion systems with regenerative braking, making them a sustainable alternative to other modes of transport, thus reducing energy consumption. Movia metros have been delivered to many cities around the world, such as London, Delhi, Stockholm, and Singapore.



With six industrial sites and four engineering centres, Alstom has a strong footprint in India to cater to domestic as well as several international projects. Alstom in India is a team of over 10,000 employees and the company aims to expand its talent pool by 15% this year. Alstom™ and Movia™ are protected trademarks of the Alstom Group.

Spain



Alstom's Trápaga site in Spain to supply propulsion for 25 high-speed trains for Sweden

Alstom's industrial centre in Trápaga, Spain, will be in charge of supplying the propulsion system for the new Zefiro Express high-speed trains, which Alstom will supply to Sweden's national operator SJ. This project is part of the contract awarded to Alstom to supply 25 Zefiro Express electric high-speed trains, with an option of 15 additional trains. The value for the first firm order is around €650 million and the first train is scheduled for delivery in 2026.

The new trains will effectively be Sweden's fastest ever, capable of operating at maximum speeds of 250 km/h. The Zefiro Express trains are designed to operate in harsh weather conditions – even when temperatures drop as low as -40C – and their cutting-edge technology will ensure that passengers will have a safe and comfortable

journey. The floors in the train carriages are flat and ramp-free, which allow easy passage on, off and along the train. Part of Alstom's Avelia family, the state-of-the-art Zefiro Express trains will have a total capacity of 363 seats. The carriage width, electrical systems, and signalling systems have been developed with an understanding that the trains will run in both Sweden and Denmark, but they will also be certified for traffic in Norway.

Diego García, Trápaga Industrial Centre Managing Director, has highlighted the versatility in tackling new projects: "Being part of this contract is an enormous source of pride for us. The Zefiro Express has already demonstrated its capacity in countries such as Norway, setting new standards of sustainability, efficiency and flexibility in

high-speed rail in the Nordic countries. This is one of the most ambitious projects we will tackle in the coming years, and we hope to continue to provide the excellence that has always characterised us."

With close to 200 employees, Alstom's Spanish factory designs, manages and supplies propulsion and electric traction systems for any type of railway application in all power ranges: traction systems for mainline rolling stock (locomotives, high-speed trains, long-distance, regional and commuter trains) and urban transport (metros, monorails and trams).

The Zefiro Express is part of Alstom's high and very high-speed train Avelia platform – the largest offering on the market, covering maximum operating speeds between



200 km/h and 350 km/h. A wide range of configurations and architectures are available to provide best fit to customer needs; single-deck or double-deck, concentrated or distributed traction, articulated or non-articulated architecture, as well as options such as tilting capability. Almost 3,000 high-

speed or very-high-speed trains with Alstom technology have been sold worldwide over the last 40 years.

Image: Propulsion manufacturing workshop in Trápaga site. ©Alstom

Italy

More Vectrons A35 for Oceanogate Italia

Alpha Trains are pleased to see that two brand new and powerful Siemens Mobility Vectron A35 locomotives have been successfully handed over to their long-term customer Oceanogate Italia.

Photo: Vectrons for Oceanogate Italia.© Alpha Trains



Latvia

Ambitious study closes with presentation of book on narrow-gauge railways in Selonia

On June 30th, the presentation of the book “600 mm dzelzceļš Sēlijā I pasaules kara laikā - būvniecība, mērķi, ietekme” (600 mm Railways in Selonia during World War I: Construction, Objectives, Impact) took place at the Latvian Railway History Museum.

The book is based on an unprecedented comprehensive study of narrow-gauge railways in Selonia that explored cartography, railway construction, military and socio-economic history of railways; the book has been authored by a team of researchers, including historians specializing in military history and railways, a geographer who is a professional cartographer, and an expert on the industrial heritage of railways.

Up until now, studies on Latvian narrow-gauge railways considered rural railways quite generally, focusing on the initial stages of their construction and operation during and right after World War I.

The 600 mm railways in Selonia have also been the focus of small-scale research, but their use in general passenger and freight transport, especially after 1945, has so far remained outside the scope of Western European railway history researchers.

Initially, during World War I the 600mm railway in Selonia was built as part of German military infrastructure for bringing supplies to the front, to export timber and other valuable commodities from the occupied areas, but in later years and in different political regimes it became part of the economic infrastructure.

The aim of the research group was not only to study the process of construction of the railway, the purposes it was built for and its impact on the development of the region, but also to obtain as accurate information as possible about the actual location of railway tracks, using the LiDAR (light detection and ranging) data set.

For the needs of the monograph, World War I photographs were sought out at museums, libraries, archives and private collectors, and photographs of railway infrastructure segments were taken.

The project's scientific editor is Dr. hist. Ēriks Jēkabsons, editor and proofreader - Dr. philol. Austra Celmiņa-Ķeirāne, translation into English - Māra Kokina, design and layout of the publication - Kirils Kirasirovs, project manager - Agnese Neija.

Photo: © Latvijas dzelzceļa vēstures muzeja krājums



Brazil



Alstom starts production of trains for lines 8 and 9 in São Paulo

Alstom, a global leader in smart and sustainable mobility, has started the production of trains that will provide service on ViaMobilidade's Lines 8-Diamond and 9-Emerald, in São Paulo (SP). The first carshells, from which the first cars will be built, have already been completed. In total, 36 trains of eight cars each will be produced at Alstom's industrial unit in the city of Taubaté, state of São Paulo. They are part of the package of improvements and obligations assumed by the ViaMobilidade concessionaire, responsible for the operation and maintenance of both metropolitan train lines for 30 years.

With a modern design, the new compositions in production at Alstom are lighter, with lower electricity consumption, large windows and aisles that offer freedom of movement between cars, which provides more comfort to passengers. Each train will have the capacity to transport up to 2,500 passengers.

"It is extremely important and satisfying for Alstom to be able to continue impacting people's lives positively. Projects such as the renovation of Lines 8 and 9 make us proud and reaffirms Alstom's mission to invest in the country and to know that the company contributes to the provision of safe, reliable and efficient public transport for passengers in São Paulo and its surroundings", says Pierre Bercaire, Director General of Alstom Brazil.

"The renewal of the fleet will be a legacy of the ViaMobilidade Lines 8 and 9 concessionaire for thousands of São Paulo residents, actually contributing to human mobility, improving the quality of life and expanding paths and choices", adds Adriana Martins, Engineering Director at CCR Mobilidade.

Lines 8 and 9 of metropolitan trains carry more than a million passengers a day, according to data from before the coronavirus pandemic.

Line 8, which connects Júlio Prestes to Amador Bueno, is 41.6 kilometres long and has 22 stations, serving the municipalities of São Paulo, Osasco, Carapicuíba, Barueri, Jandira and Itapevi. Line 9, on the other hand, connects Osasco to Grajaú, is 32 kilometres long and has 18 stations, serving the cities of São Paulo and Osasco.

Employment generation

In October 2021, Alstom signed a partnership with the National Service for Industrial Learning - SENAI Taubaté - to train future professionals who will work in the production of more than 170 trains, with more than 930 cars, at the Taubaté (SP) plant. About 700 jobs at the site will be filled gradually until the first quarter of 2023. In all, 600 professionals are being trained by SENAI Taubaté - 500 of them will be gradually hired by Alstom Taubaté or by partner companies to work on projects that will be produced at the industrial unit. The other professionals

(the other 100) may be hired later by the company itself or by any other company in the region. So far, 230 people have taken the course. To deliver the projects, Alstom is investing around R\$ 76 million in modernization and adaptations of its plant. Production of the new projects started in the first half of 2022.

Metropolis Trains for Diamond and Emerald Lines

ViaMobilidade Lines 8 and 9 will have 36 Alstom Metropolis trains. Made of stainless steel, one of the main gains is durability: the carshells last more than 40 years, in addition to being lighter compared to models made of carbon steel. In addition, they consume less energy and are therefore more energy efficient. The trains will have doors and corridors that will offer excellent passenger exchange and freedom of movement, as well as reserved spaces for people with

reduced mobility. The large windows and doors will provide a clear view of the outside, guaranteeing a smooth, safe and comfortable journey for passengers. The trains will also feature modern technologies: passenger counting, dynamic line maps, monitors and video surveillance, as well as fire detectors and fire extinguishers.

The new fleet will operate with Alstom's Automatic Train Control (ATC) solution, which is responsible for ensuring that the train runs within the safe speed limits established by the signalling equipment installed along the track. In addition, the system automatically controls the movement of trains, covering the automatic departure from stations, automatic maintenance of speed during the journey, automatic stopping at passenger platforms, automatic opening and closing of doors and automatic modification of trip performance according to parameters received from the control center.

Spain



THE CAF GROUP IS AWARDED TWO NEW CONTRACTS FOR THE CITIES OF ATHENS AND SEVILLE

CAF has once again been selected by two European cities to execute two contracts to improve their urban public transport services. In one case, it will refurbish the light metro units running on line 1 in Athens, and in the other, it will supply new trams for Seville. These two contracts amount to a value of over 100 million euros.

THE REFURBISHMENT OF 14 UNITS ON ATHENS METRO LINE 1

The operator STASY S.A., in charge of managing transport in the city of Athens has selected CAF to refurbish 14 metro units that currently run on line 1 of the Greek capital's metro system. This project, with a tender budget totalling €70 million, marks the first major contract for the company in Greece.

Athens metro Line 1 is the city's oldest metro line, known as the Green Line, which connects Piraeus with the neighbouring town of Kifisiá, to the north of the capital city. The contract establishes a 34-month completion period for the unit refurbishment project. These units were commissioned for operation between 1983 and 1985, and the intention is to update them so that they can continue to run efficiently for a further 25 years.

The scope of the work to be carried out on the units will include CAF Power & Automation replacing the traction equipment, fitting new state-of-the-art motors providing improved consumption efficiency, as well as updating various systems such as those related to braking equipment, vehicle access door

control and passenger information systems, to name a few. The project also includes improving train access and refurbishing the interior of the units, as well as adding areas for persons with reduced mobility, all of which is geared towards improving passenger comfort and safety.

This project falls under the umbrella of the company's refurbishment business, an area of activity that has experienced growth over recent years with projects undertaken for the Medellín metro, Lyon metro, Paris RER A trains, as well as the contract awarded last November for the refurbishment of 23 Cairo metro units, in partnership with Mitsubishi Corporation, which also included the refurbishment of the line's new maintenance depot.

THE SUPPLY OF TRAMS FOR THE CITY OF SEVILLE

Yesterday, the city council of Seville awarded CAF the contract to supply two new units for the city, and their maintenance for 30 years. The contract also included the possibility of increasing the number of units to be supplied.

The trams that CAF will supply to the operator company TUSSAM will be 100% low floor and consist of 5 modules. The vehicles will be equipped with an on-board energy storage system whereby they will be able to run along sections with no power lines between stops, thereby improving integration of the tram in the city of Seville, reducing the visual impact in the historic centre as a result of catenary-free operation between stations

and the increase in energy efficiency.

Metrocentro de Sevilla is a public transport system which was inaugurated in 2007 and runs through the centre of Seville, connecting the San Bernardo interchange station with Plaza Nueva in the city's historic centre. These new units are scheduled to be delivered by the end of 2023 and will be added to the network's current fleet of 4 units, which were also supplied by CAF.

Greece

Czech
Republic

Vectron 193.591 for LokoTrain

Alpha Trains are happy to see their Vectron MS Class 193.591 in operation in Slovakia. The locomotive was handed over recently to our new Czech customer LokoTrain s.r.o and has a really unusual and cool livery.

Photo: Vectron for new customer LokoTrain s.r.o.
© Matej Plesko



Sweden

CAF WINS CONTRACT TO SUPPLY REGIONAL UNITS TO THE SWEDISH OPERATOR SJ AB

The Swedish state-owned operator SJ AB has selected CAF to supply the 25 regional units, which could be extended to a total of 60 units should the contract extension options be triggered. The volume of the basic contract secured for these 25 units amounts to approximately €300 million, with the first trains scheduled to be commissioned for revenue service in 2026.

These are CAF Civity Nordic platform units, designed for regional and inter-regional service and equipped to withstand the extreme weather conditions in Sweden, in a snowy environment with temperatures falling as low as -40°C. The trains will be made 5-car consists and will run at speeds of 200 km/h. They will also have ample capacity (3 coupled trains will provide approximately 1,000 available seats) securing easy access and flexibility for all types of passengers.

SJ Group is a public company with a workforce of 5,400 which operates the majority of Sweden's rail network, connecting Stockholm with the other Scandinavian capitals, Copenhagen and Oslo. Providing transport to

in excess of 150,000 passengers daily, the company is renowned for its highly efficient and environmentally friendly services. This is evidenced by SJ being named Sweden's most sustainable brand and the country's best transport company, as well as Europe's leading digital transport company.

SJ is currently implementing a plan to upgrade its fleet - with some of the units nearing the end of their service life - and to expand the capacity of its trains to accommodate the expected demand growth over the course of the next few years. This is in line with achieving a cutting-edge and comfortable service for its customers and a more sustainable and efficient operation by reducing energy consumption and maintenance support costs.

CAF'S COMMITMENT TO THE NORDIC MARKET

This new contract confirms CAF's commitment to the Nordic market. In 2019, the CAF Group purchased the Swedish company EuroMaint, the leading company in its country in the train maintenance sector and a

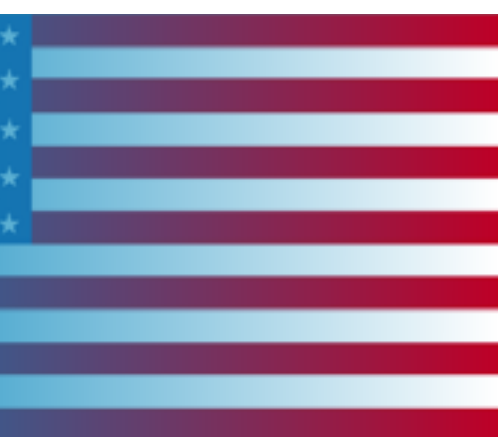
benchmark company in the Nordic railway market, with a significant market share in the train fleet maintenance sector, an activity the company combines with the supply of railway components for operators in the region. This purchase consolidated CAF's foothold in the area as regards new project opportunities in the Scandinavian region, a market where a significant number of tenders are expected to be announced over the next few years.

It must also be noted that CAF has already executed a significant amount of projects in the region, most notably the supply of high speed units for Norway, the production of metro units for Helsinki, as well as the supply of tram fleets both in Sweden (Stockholm and Lund) and Norway (Oslo).

In fact, last year CAF was awarded several contracts in Sweden. On the one hand, it secured the contract to manufacture 20 EMUs (Electric Multiple Units) and 8 BMUs (Biodiesel-Electric Bimodal Units) for AB Transito, and in addition, through its subsidiary EuroMaint, it secured two service contracts with the operator SJ AB, which

include 12-year maintenance of the train fleet operating on the Krösatågen and Kustpilen lines, and the upgrade of 57 cars in the Swedish operator's overnight passenger car fleet.

U.S.A.



Wabtec to Improve Metropolitan Atlanta Rapid Transit Authority Passenger Comfort with new HVAC Systems

Wabtec Corporation (NYSE: WAB) has announced a contract to supply heating, ventilation, and air conditioning (HVAC) units for 56 new Stadler trains that will be operated by the Metropolitan Atlanta Rapid Transit Authority (MARTA). The state-of-the-art systems will provide passengers with a comfortable commute, especially during the hot and humid Atlanta summers. “We are proud to be supporting the fleet renewal for Atlanta’s public transit system and expand our transit operations in the United States,” said Pino Cordini, Managing Director for Wabtec’s Transit segment. “Our service-proven HVAC system will improve the passenger experience by providing a comfortable cabin environment on MARTA trains regardless of extreme seasonal temperature.”

Under this contract, Wabtec will provide 336 HVAC units. 224 will be installed in passenger cars and 112 units in driver cabins. The flat, double-sided roof units are designed to be mounted in the middle of cars and have air handling on each side. This special design provides additional cooling and heating capacity. The HVAC order represents the latest chapter in Wabtec’s successful collaboration with Stadler and marks the first subway order with the car builder in the United States. In the updated agreement, initially signed in 2019, Stadler will supply 56 CQ400 trainsets with four cars each. The trains will be assembled at the Stadler plant in Salt Lake City.

“Public transport projects in U.S. cities are increasing,” added Cordini. “Wabtec is proud to leverage its global

expertise help deliver safe, comfortable transit systems to the metro Atlanta region.”

Atlanta is the ninth-largest city in the United States. The MARTA rail network consists of four heavy rail lines. The

Blue and Green lines travel east-west, while the Red and Gold lines form a north-south axis. With 38 stations spread across 48 miles (77 km) of lines, the rail line carries 217,000 passengers a day.



Brazil



Alstom announces new contract for expansion of Rio de Janeiro’s tramway

Alstom signed a contract for the 700-metre double-track expansion of the VLT (tramway) system in Rio de Janeiro, which will offer an integrated terminal connection to a new Bus Rapid Transit (BRT) system and interconnection with the bus station in the city. The scope of the project includes the extension of the VLT system by about 700 metres in double track, supply of a terminal station (Terminal Gentileza) with four platforms, in addition to the supply of the APS system for the entire stretch (1.4 kilometres), a rectifier substation and adaptation of an existing one and supply for all the signalling along the stretch. The expansion should allow an increase of approximately 40% in the number of passengers, in addition to opening the way for future expansions of the system in the São Cristóvão region, a traditional neighbourhood in the north of Rio de Janeiro.

With an intelligent mobility concept, the tram in Rio de Janeiro is powered by APS, a system owned by Alstom that supplies electricity from the ground. It is a system composed of two shoes located at the bottom of the train, and when the vehicle passes through the place where Power Box equipment is installed (about 1,100) the corresponding APS rail segments are energised and the consequent power supply is released to the vehicle. There is also a set of supercapacitors that store and supply energy to the vehicle in places without

energising rails or in case of a localised failure, up to the next power point, which eliminates the need for external wires and, consequently, enhances the architecture and city landscape. “The tram allows the city to develop sustainable mobility, in addition to rethinking and modernising urban areas and preserving its architectural heritage,” explains Pierre Bercaire, General Director of Alstom Brazil.

In addition to reducing the environmental impact of the system, the VLT in Rio de Janeiro uses completely renewable energy, with zero CO2 emissions. For Bercaire, the VLT brought more mobility options to the city’s population. “Alstom celebrates the contributions of the tram to the capital of Rio, knowing that thousands of passengers have their lives improved daily, thanks to this transport system. During this period, we assumed a commitment to the city of Rio de Janeiro and worked to maintain this innovative operation, which generates benefits for people, both residents and tourists who circulate through the city,” he comments.

The announcement of the new contract takes place at the same time that the VLT in Rio de Janeiro completes six years of operation. Manufactured by Alstom in Taubaté (SP), the Alstom Citadis model for the Rio de Janeiro tramway has already transported more than 88

million people in more than 1 million trips, in a total of 5.5 million kilometres traveled downtown and the Porto Maravilha region, integrating with the city’s mobility with subway, suburban trains, buses, ships, ferries and Santos Dumont airport. Inaugurated for the Rio de Janeiro Olympics (2016), the system is divided between three lines (with 29 stops) and has a fleet of 32 trains with a capacity for 420 passengers each. Present in Brazil for 67 years, Alstom has been participating in the

development of the country’s infrastructure, contributing to social progress with respect for the environment. Dedicated to the rail transport sector, its contribution can be seen in products and services in the main transport operations in the country, such as the São Paulo, Rio de Janeiro, Porto Alegre, Fortaleza, Recife and Brasília subways, in addition to the VLT in Rio de Janeiro and the implementation of technological solutions for freight transport operators.



Who drives the driverless train?

Driverless systems like the one in Sydney, Australia represent the future of urban clean and efficient transport.

What technologies are required for a train to operate automatically?

There are several intelligent systems that enable a metro to operate without a driver. Sensors and components on the metro communicate with digital objects on the ground like balises as they pass them by. As the metro travels along its route, these systems communicate back and forth with each other continually to ensure that everything is going smoothly.

How does a metro know where to go?

The movement of driverless metros like Sydney are managed by a central command centre according to the metro's departure schedule. This control centre is digitally connected to the metro line's trackside interlocking system (one of the intelligent objects along tracks) and asks it to open a path for the metro.

The interlocking system then checks to confirm that this particular route has not already been assigned to another vehicle, and then sets all the switch points along that path to create the route. Once everything is confirmed, the system sends a signal telling the metro that it is free to safely travel along the path that has been outlined.

Once the trip has been initiated, the intelligent system onboard the metro then enables it to move around the entire network, telling it when to move forward, accelerate or brake without a driver.

How does the metro know how fast to go?

Among the intelligent objects arrayed on the ground, there are beacons positioned along the tracks that enable the driverless metro to independently identify its location within the network. Since the metro already knows where it is and where it is going, it also knows the curves and slopes and can determine for itself how fast it should travel and at what point it needs to brake to arrive at the right spot on the platform. Since there is no driver, it's the control centre that tells the metro whether or not it might need to accelerate a bit more or less to arrive at its destination at the exact time.

How does the metro know if there is another metro in front of it?

All automated and driverless metros are geolocated in real time thanks to the beacons positioned along the tracks. The position of the metro is then sent to the intelligent system on the ground, which shares this information with the other metros so that they all know where each other are. But that's not all, every metro also indicates its position to the control centre, so that operators can see where all the metros are at any given moment and can orchestrate traffic along the entire line from their comfortable chairs.

Driverless metro operations are orchestrated from a central command centre using technologies like our Fluence/Urbalis moving block system.

How does the metro know which stations to stop at?

The control centre gives the metro its destination and tells it where it must go and at which stations to stop. The driverless metro can then just follow the route it has been given by simply following the established paths that have been laid out for it.

How does the metro manage to position itself in front of the automatic doors if it doesn't have a driver?

Just like for geolocation and speed, the beacons are also responsible for indicating to the metro how to precisely position itself in the station to open the doors at the right time and in the right place. It is thanks to them that the metro itself knows how to stop right in front of the platform doors.

In places like Singapore, the metro automatically arrives at the right spot and the doors open without anyone pressing a button.

Who opens the metro doors?

The intelligent system on board the metro takes care of that. Only when the automated metro is correctly stopped at the platform, directly in front of the platform doors, can the system simultaneously open the metro and platform doors to allow the passengers to enter and exit the metro. The same system also guarantees that the metro can't leave while the doors are still open.

Who takes control if there is an incident?

With driverless or automated metros, there is always a human operator in the control centre, who is the overseer on board. The operator can always intervene and take over control if the metro malfunctions. The control room operator can also use the metro's intercom systems to speak to passengers and provide instructions or updates.

Is it really a secure system?

Yes, automatic metro systems are secure. They actually improve safety because they limit the risk of human error.

How do you ensure that automated metro systems don't make mistakes?

All on-board and trackside systems are run by special computers, which guarantee through verification procedures that there are no mistakes in the calculations and information they transmit. This ensures that there are no accidents!

What are the advantages of using automatic metros?

Automating metros improves the regularity and punctuality of metros enabling the line to handle more vehicles and passengers. Normally, each metro driver accelerates and brakes a little bit differently, so metros with drivers don't take the exact same amount of time to make the exact same journey,

this means the traffic won't ever be truly consistent. But fortunately, computers have no personality or individual behaviour, so when they are in charge, every metro drives the exact same way on every trip. This maybe sounds a bit boring, but it makes the metros more accurate, efficient, and also more sustainable in terms of energy use.

Driverless metros can also consistently run while maintaining the highest authorised speed, which improves the overall performance, the number of metros that can run per hour and thus the number of passengers that can get on board – meaning you don't have to wait.

Are there any new innovations that further improve automatic metros?

Yes, there are two new innovations that will be presented below.

- The first innovation is a super intelligent system on board the metro

- The second innovation is that the metros communicate with each other

Let's go back to the question "How does a metro know where to go?", but this time with a super-smart system on board the metro.

The control centre communicates directly with the super intelligent automated system on board the driverless metro to give it its destination, without going through the interlocking system. The metro then makes its way by itself, directly controlling the switches/points on the track.

This reduces the number of exchanges required between systems, speeding up the process and allowing the super-smart system on board the metro to make decisions more quickly than when humans do it. It can consequently turn around faster when it reaches the end of the line, making it possible to run more metros on the same line and transport even more passengers than when the metros have a driver.

Poland

PESA has signed a contract with the Municipal Roads and Public Transport Authority in Bydgoszcz for the supply of 10 trams, with an option for another 36 units. The value of the basic order is PLN 102 million.

From the beginning of the process of replacing the old rolling stock with new vehicles, Bydgoszcz relied on PESA trams. In total, there are already 35 of them in the city. Two of them are Tramicus 122N, and 33 are Swings, which run in many Polish and European cities.

- "Bydgoszcz is our city and an important client. We are proud that our Swings are a symbol of modern, ecological and comfortable public transport for the inhabitants of Bydgoszcz. We appreciate the plans of the authorities, which focus on zero-emission transport and want to replace all old vehicles with modern rolling stock. Such possibilities are created by the option to this agreement and we are prepared to implement it. " - said Krzysztof Zdziarski, President of the Management Board of PESA Bydgoszcz

The basic order provides for the delivery of 10 Swings, including 6 five-section trams and 4 three-section trams. These will be a new generation of vehicles, the design of which was based on the best experience gained in the current production and operation of trams.

All of them will be low-floor, air-conditioned, with the most modern passenger information systems, wi-fi and chargers for mobile devices.

"We will deliver all 10 trams from the basic order by the end of November next year. Due to the economic and geopolitical situation, it is a challenge, but the examples of timely deliveries to Trams Śląskie, MZK Toruń or Romanian Jassy have shown that the implemented Strategy 2026+ and the changes introduced in the company bring the expected results. " - added Marcin Grzyb, PESA's Tram Market Sales Director.

PESA has so far delivered over 800 trams to several cities in Europe. The trams manufactured in Bydgoszcz carry residents of such cities as Warsaw, Wrocław, Gdańsk, Kraków, Toruń, Sofia, Kyiv, Jassy, Cluj and Seged.

At the moment, the company is carrying out orders for the delivery of further trams for Sofia, Krajowa in Romania and Wrocław. Recently, it has signed a contract for the supply of 23 trams to the capital of Estonia, Tallinn.

PESA wins order for trams in Bydgoszcz



Spain



THE HYDROGEN-POWERED TRAIN DEMONSTRATOR DEVELOPED BY THE FCH2RAIL PROJECT STARTS DYNAMIC TESTING ON EXTERNAL TRACK

CAF has started dynamic track testing of the hydrogen-powered demonstrator train being developed for the FCH2RAIL project. FCH2RAIL is a consortium of the following companies: CAF, DLR, Toyota, Renfe, ADIF, CNH2, IP and Stemmman-Technik.

This demonstrator train is based on one of Renfe's commuter trains, in which a new power generation system has been installed. This system, which utilises a hybridization of energy from hydrogen fuel cells and batteries, has been integrated into the vehicle's existing traction system. As a

result, it will become one of the first bi-mode demonstrator trains with hydrogen fuel cells. In other words, a zero-emissions vehicle concept that will be able to run in electric mode on the electrified infrastructure, while the hybrid mode will be used for operating on catenary-free sections.

After successfully performing static testing, the train is ready to start dynamic testing on an external track. With the start of these tests, the consortium will meet the original deadlines set for this phase of testing, demonstrating the consortium's full

commitment to the project.

During the dynamic tests, the hybridization of the fuel cells and the batteries will be optimized on routes that have been specifically selected as being representative of those that would be used for commercial services, meaning that the new system will be fully tested by a wide range of different power demand conditions. As a result of these tests, the competitiveness of the new bi-mode hybrid propulsion solution can be evaluated against the diesel trains currently in use on many routes, within the

framework of current plans to decarbonize rail transport.

The project has a €14 million budget, €10 million of which is being funded by the Clean Hydrogen Partnership, formerly FCH2 JU, a European Commission agency dedicated to promoting the development of hydrogen and fuel cells.

In this context, CAF is yet again confirming its commitment to the development of zero-emission mobility solutions, in this case through the use of hydrogen.

This is a technology that the CAF Group has been marketing for some years now through its subsidiary, Solaris, the leader in the hydrogen bus market in the European Union for year 2021.

From the Archives

OBB Class 1110.29 calls at Otztal hauling the 'Aalberg Express' on March 23rd 1975. *John Sloane*

Austria



From the Archives

China

On March 16th 1987, No. BJ 3119 arrives at Tianjin with a train from the north. *John Sloane*



From the Archives

France

SNCF BB No. 25677 calls at Menton with a stopping service to Ventimiglia on October 1st 2006. *John Sloane*



From the Archives

Germany

Strabag No. 1125 (ex DSB MY class) repainted into Santa Fe livery is seen at Halbensleben on April 30th 2010.
Mark Enderby



From the
Archives

MAV Nos. V43-1098 and V43-1100
are seen at Budapest Nyugati on
September 11th 2008.
Mark Enderby

Hungary



From the
Archives

FS double deck EMU arrives at Venice
Santa Lucia on October 15th 2011.
Mark Enderby

Italy



From the Archives

Former LMS No. 7106 and later FS No. 700-003 is seen at Arezzo Pesciola yard on April 29th 2016. *John Sloane*

Italy



From the Archives

FS No. E626-425 stands at Casserta with a freight on August 5th 1986.

John Sloane

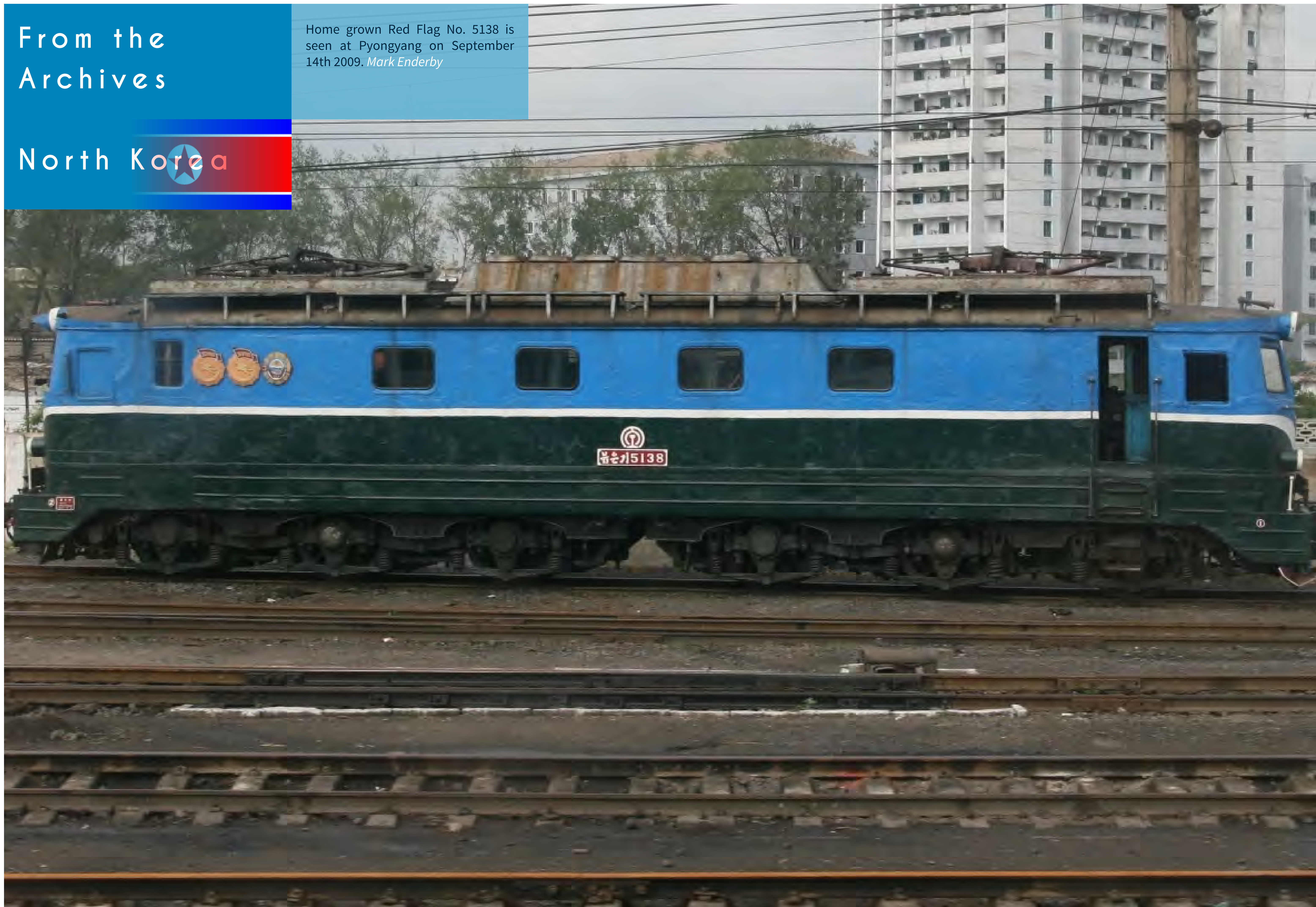
Italy



From the
Archives

North Korea

Home grown Red Flag No. 5138 is
seen at Pyongyang on September
14th 2009. *Mark Enderby*



From the Archives

SGS 0-6-0s Nos. 2511 and 2386 top and tail the weekly train up the Khyber Pass from Peshawar to Landi Kotal on February 15th 1980. *John Sloane*

Pakistan



From the Archives

Polish steam loco No. Tkt 48-154 is seen at Przeworsk shed on March 11th 1990. *John Sloane*

Poland



From the
Archives

Renfe Class 278.085 is seen at Barcelona
Condal depot on October 26th 1978.

John Sloane

Spain



From the Archives

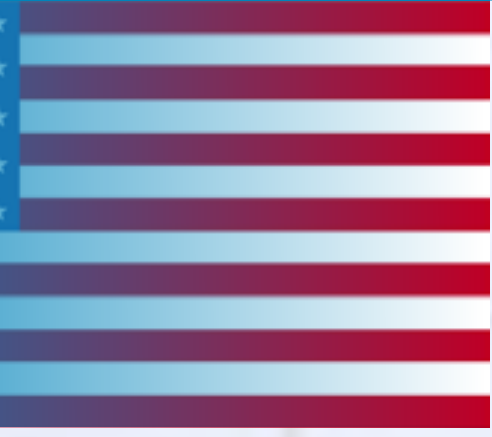
Class 485.653 and 485.651 haul a rake of tanks through Brugg, Switzerland on March 1st 2002. *Mark Enderby*

Switzerland



From the
Archives

U.S.A.



MARC GP40 No. 71 is seen at
Baltimore on April 9th 1994.
Mark Enderby

