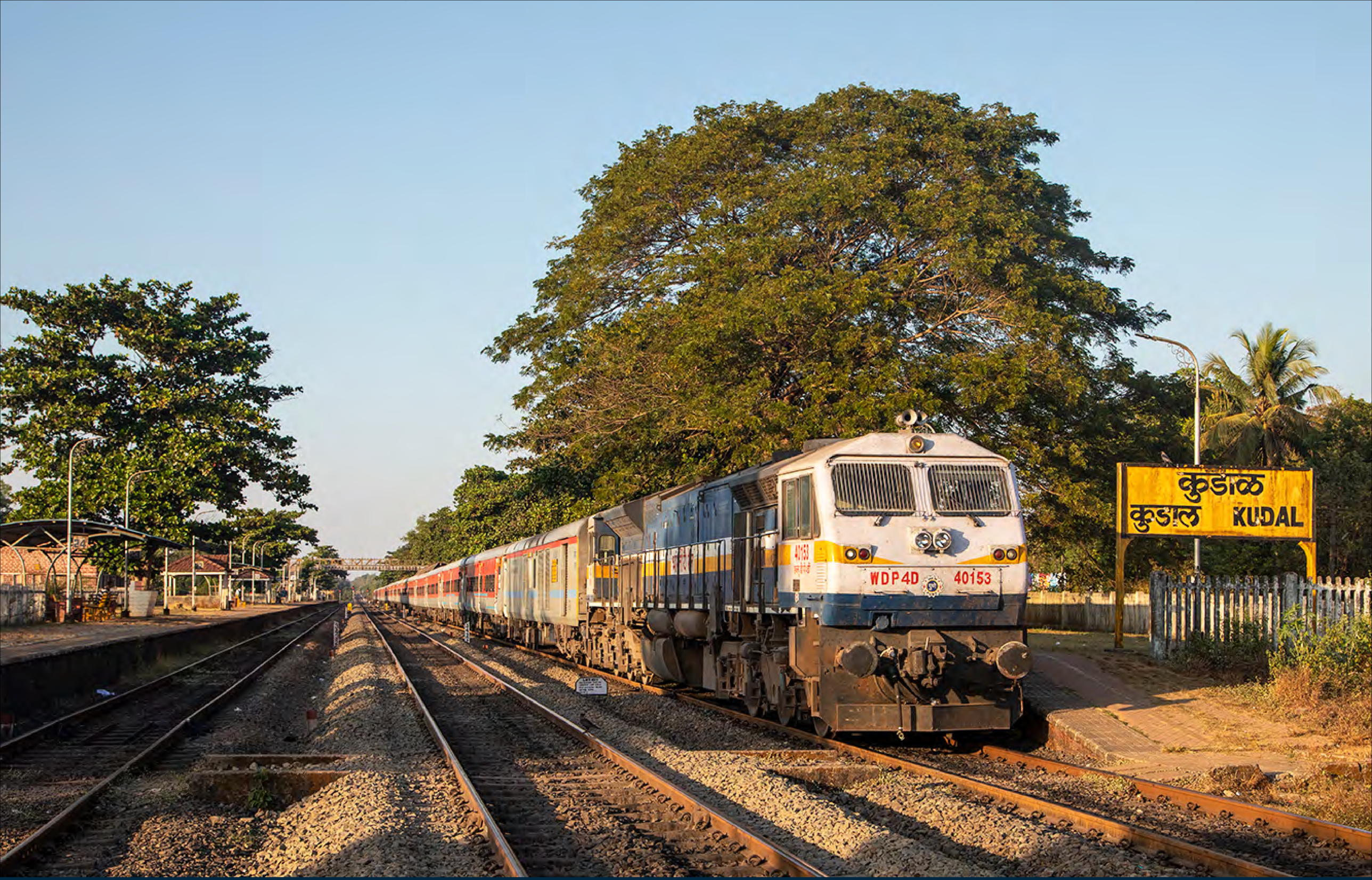

Railtalk Magazine Xtra

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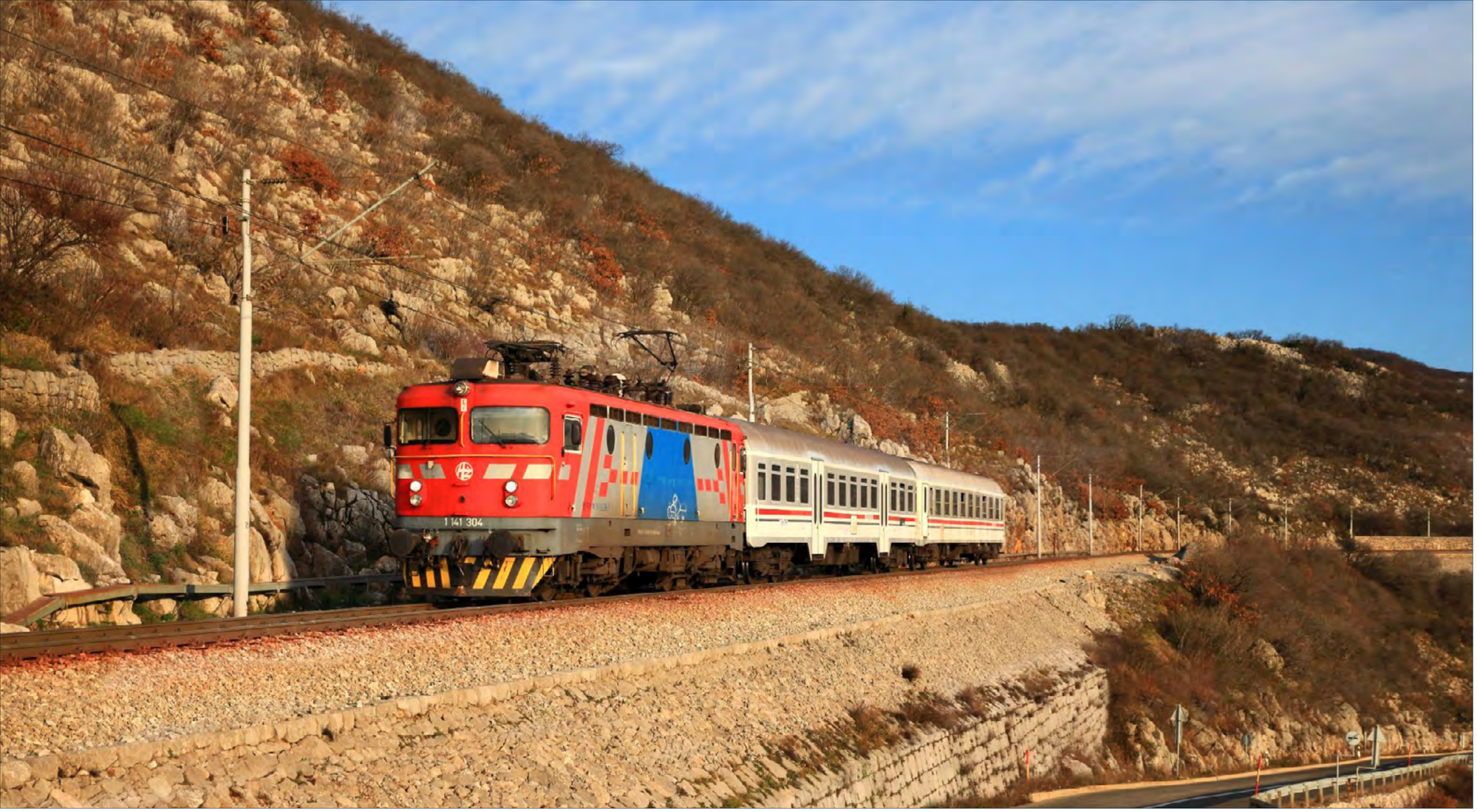

Welcome

Welcome to another edition of Railtalk Xtra, the monthly magazine that predominantly features railways outside the UK.

Following on from the news last month that Vossloh was selling its locomotive business to the Chinese comes the news this month that Bombardier are selling their rail division to Alstom, will all these mergers mean less choice on vehicle fleets? We shall have to wait and see.

Some good news from Croatia where HŽ Infrastruktura and Swietelsky have signed a contract for modernisation of the 17·8 km Zagreb Zapadni – Savski Marof section of the Zagreb – Dobova line. This is used by 160 trains per day including Zagreb suburban services. The 27-month project will raise the maximum speed from 60 to 120 km/h and includes the renewal of several bridges, level crossings and passenger facilities at the stations.

Meanwhile the continued attempts to switch from road to rail has seen Polish freight operator Lotos Kolej place orders for an electric locomotive and flat wagons with co-financing from an EU programme. The EU's aim is to reduce the negative effects of road transport, including emissions, congestion and accidents, while the operator is seeking to benefit from the development of Polish ports and the increase in intermodal transport from Asia to Europe. The support from the EU's Operational Programme Infrastructure & Environment 2014-20 'means

Content

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 to be sent to us via email, post or via the members section page on our website. Contact addresses are provided to the right or on the next page.

All images ideally should be provided at a resolution of at least 2048px x 1536px at 150dpi.

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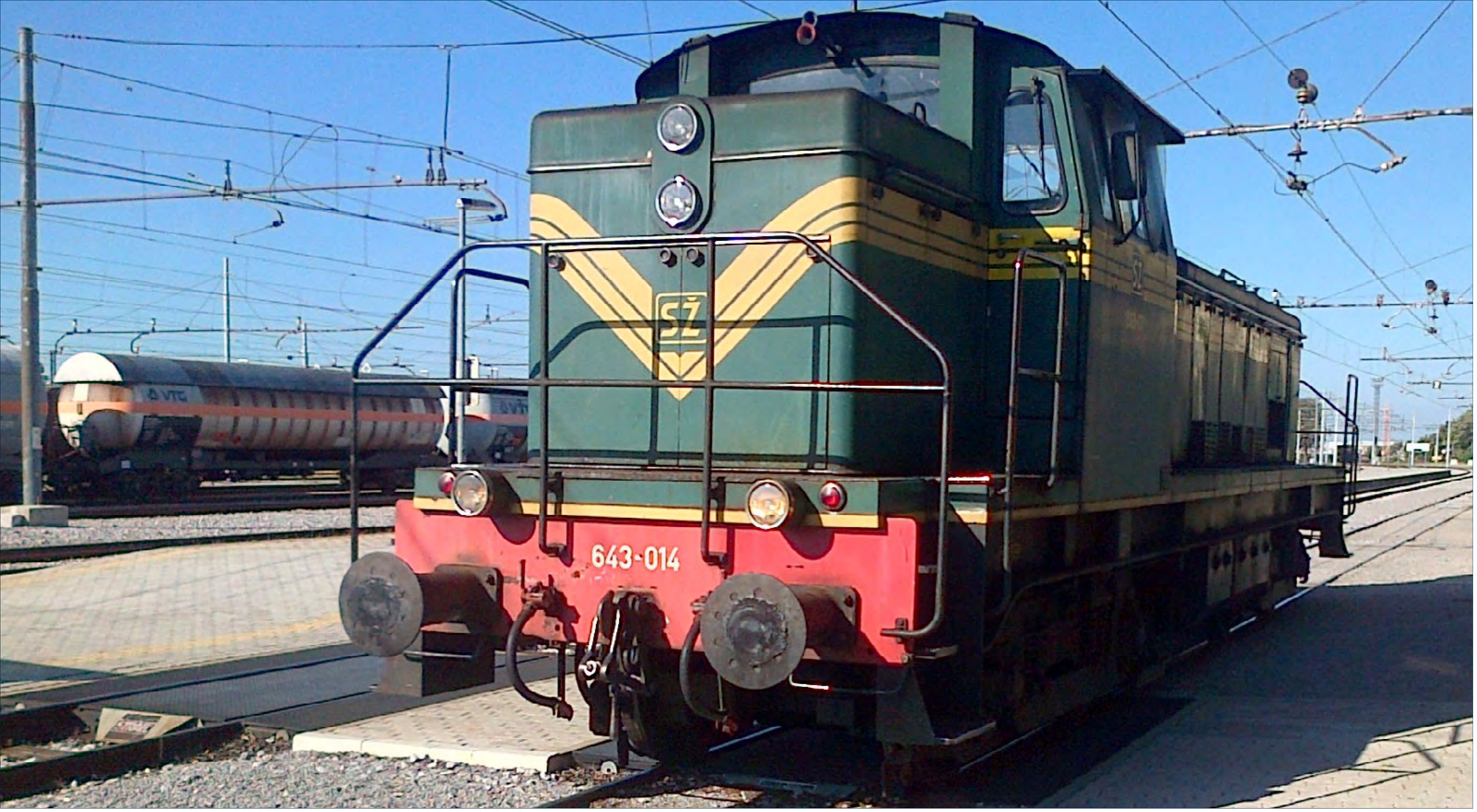
Front Cover
Indian Railway's WDP4D No. 40153 pauses at Kudal with the Mandovi Express from Mumbai to Goa on January 17th. *Mark Torkington*

This Page
HZPP No. 1141.304 with train No. P4606 is seen near Meja on its way to Rijeka. *Thomas Niederl*

Next Page
Slovenska Zeleznice Class 643-014 stands at Sezana, Slovenia, the border station on the Italian frontier. *Christopher Baldwin*



that we will be competitive with other entities providing this type of transport', said Lotos Kolej President Anatol Kupryciuk. The four-axle Newag Griffin electric locomotive is the third to be ordered by Lotos Kolej. It will be equipped with ETCS Level 2 and will be able to haul up to 3200 tonnes at speeds up to 160 km/h. 'Its high availability and reliability will contribute to strengthening the leading position of Lotos Kolej in the freight market', said Newag management board Vice-President Józef Michalik.

The move from road to rail is not keeping pace in Slovakia however where Russian intermodal operator TransContainer has decided to close its Slovakian subsidiary and end its lease on the Dobrá intermodal terminal five years early. Located in the southeast of the country 10 km from the border with Ukraine, the Dobrá terminal was designed for rapid transhipment of containers between the 1 520 mm and 1 435 mm gauge networks; it has a nominal capacity to handle 250 000 TEU a year. In December 2008 TransContainer agreed a 15-year lease on the 18 ha facility from ZSSK Cargo, with a view to opening up a Eurasian landbridge corridor serving central and southern Europe, with through services linking Moscow and the Adriatic ports. The conflict between Russia and Ukraine resulted in more Eurasian rail freight being routed via Belarus or Kaliningrad, further reducing the volume of containers handled at Dobrá.

As always a massive thanks for all the excellent photos, please keep sending them in, and remember if you are going on holiday, don't forget to take your camera.

David
Editor

Terms & Conditions

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With Thanks

Once again many thanks to the many people who have contributed, it really makes our task of putting this magazine together a joy when we see so many great photos.

These issues wouldn't be possible without: Ray Anslow, Brian Battersby, Mark Bearton, Mark Bennett, Tim Blazey, Rob Boyce, Keith Chapman, Julian Churchill, Nick Clemson, Derek Elston, Mark Enderby, Tim Farmer, Dave Felton, FrontCompVids, Paul Godding, Richard Hargreaves, Jim Haywood, Keith Hookham, Colin Irwin, John Johnson, Anton Kendall, Jyrki Lastunen, Ken Livermore, Michael Lynam, Peter Marsden, Phil Martin, Denzil Morgan, Thomas Niederl, Peter Norrell, Chris Perkins, Mark Pichowicz, David Pollock, Andy Pratt, Paul Quinlan, Railwaymedia, Alan Rigby, Bryan Roberts, Neil Scarlett, John Sloane, Stephen Simpson, Laurence Sly, Stewart Smith, Steamsounds, Steve Stepney, Mark Torkington, Gerard van Vliet and Erik de Zeeuw.

Austria

OBB Class 1116.180 arrives at Linz Hbf with a loaded timber train. *Class47*

First results ROLA: Significantly more trucks on the rails

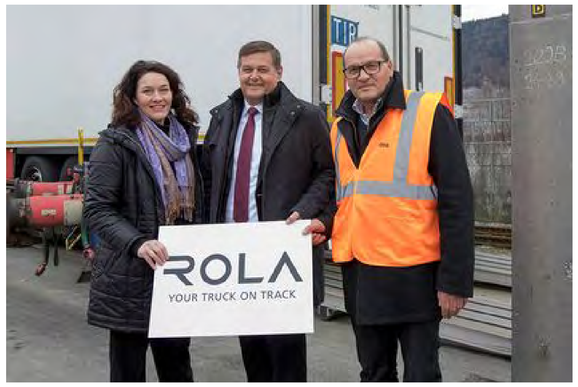
The extended sectoral driving ban in Tyrol has been in force since the turn of the year. And it has shifted many more trucks to the rails. Since then 32 % more trucks have been transported than this time last year.

The extended sectoral driving ban has been in force in Tyrol since January 2020. In close cooperation with the State of Tyrol, the Rail Cargo Group had made provisions early on so that it could handle an increased demand for ROLA services. Capacities have been successively increased since the turn of the year. The impact of these measures can already be felt. While 16,165 trucks were transported on the Brenner axis from 1st January to 15th February 2019, this year the figure has already risen to 21,394 trucks in the same period.

Over 1,000 fewer trucks on Tyrol's roads every day

Growth is concentrated mainly on the Wörgl-Brenner and return routes. At ROLA's full capacity, 1,000 fewer trucks cross through Tyrol every day. In this way, the Rail Cargo Group, together with the State of Tyrol, is making a significant contribution to relieving the Tyrolean population of the burdens of transit traffic and is also making an important contribution to protecting the environment and the climate.

"The ROLA system manages to relocate very large quantities in a short period of time. Short loading and unloading times of the ROLA trains mean that rapid train turnarounds and high-frequency transport can be implemented. This is also an advantage for transport companies who can quickly get their trucks onto the rails without having to purchase additional equipment," says Bernhard Ebner, Business Unit Manager Intermodal of the Rail Cargo Group.



Capacities to be doubled in the course of the year

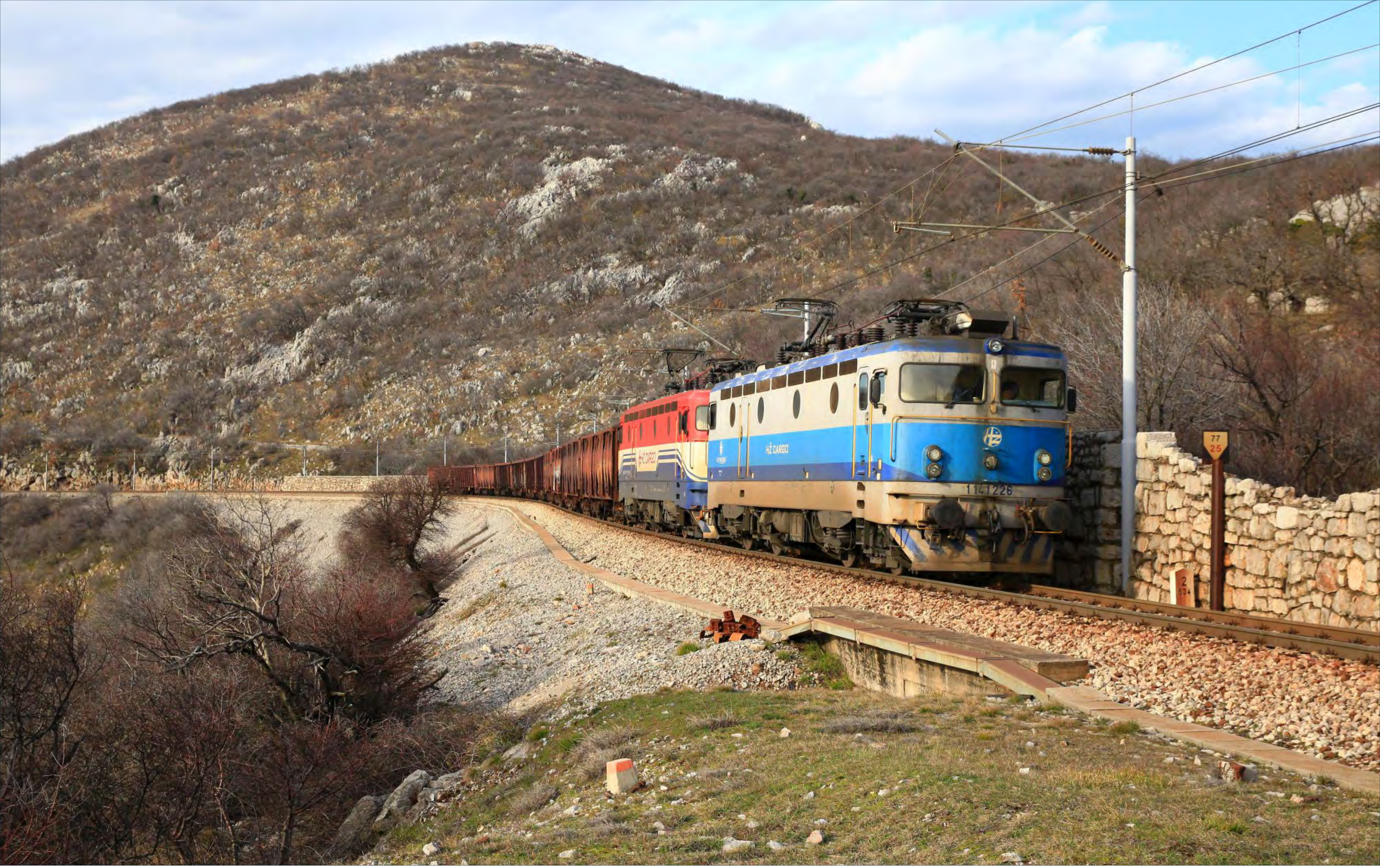
ROLA capacities will be gradually increased over the course of 2020. Specifically, the Rail Cargo Group has been offering 46 trains on the Brenner axis since the beginning of the year. In terms of trucks, a capacity of 250,000 trucks per year on the ROLA on the Brenner axis has been made available since the beginning of the year. This will be increased to 400,000 trucks per year. Both the Wörgl-Brenner route and the Wörgl-Trento route are available on the Brenner axis.

Photo: ROLA mehr lkw ©oebb/muehlanger

Croatia

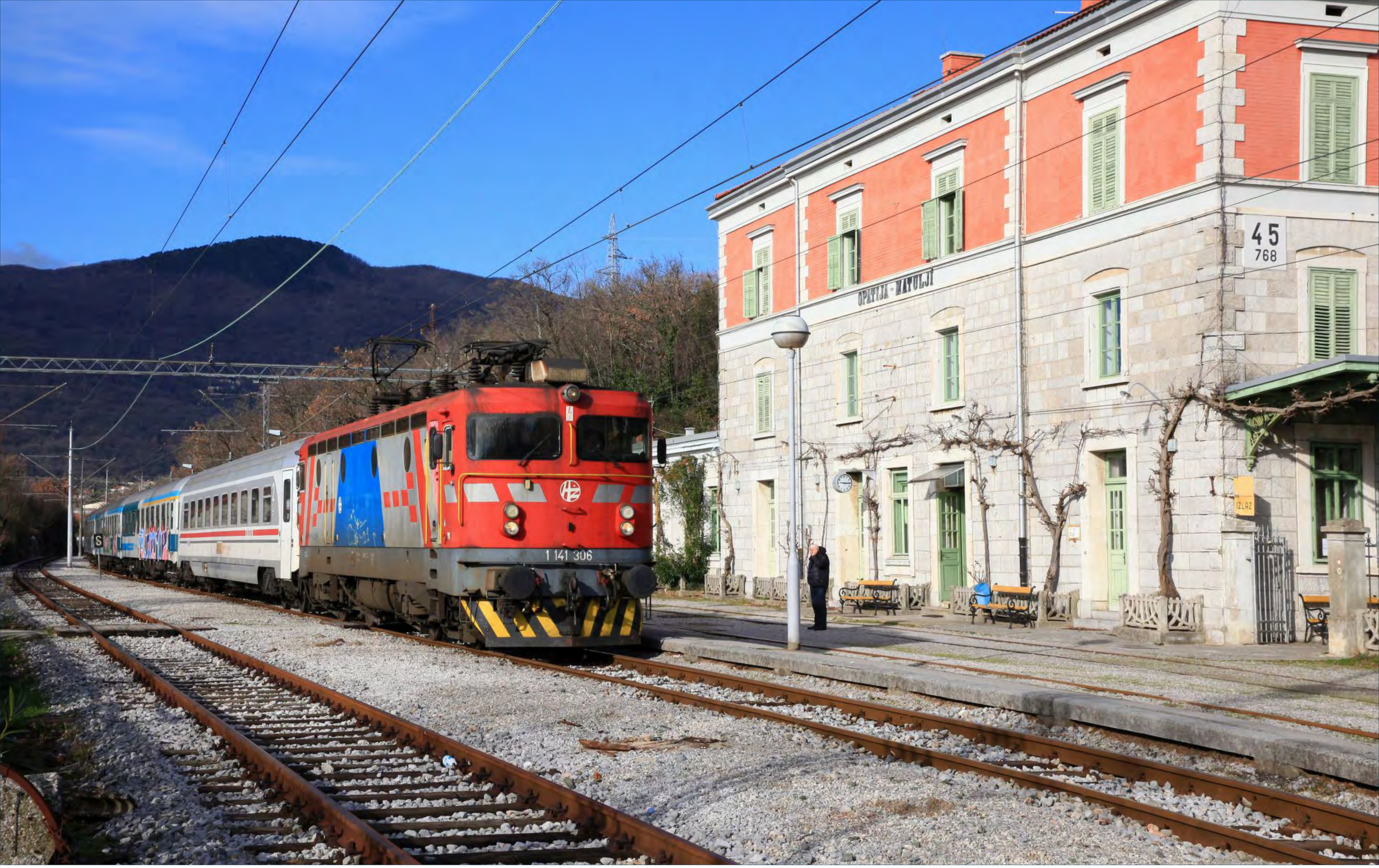
HZPP No. 1141-303 has just arrived the final destination of Rijeka with train No. B481 ‘Opatija’ from Ljubljana. The HZPP engine took over the service at the border station of Sapjane and the first carriage is a through coach from Munich. *Thomas Niederl*

HZPP No. 1141-301 on the way from Zagreb gl.k. to Rijeka is seen approaching Skrljevo station on February 21st with train No. P4000, a stopping service which calls all 46 intermediate stations.
Thomas Niederl



HZ Cargo Nos. 1141-226 and 1141-029 are seen on February 21st near to Meja station. *Thomas Niederl*

On February 21st, Train Croatia No. 400.007 waits at Skrljevo Station for the oncoming passenger train to pass. *Thomas Niederl*



On February 22nd, train No. B481 hauled by No. 1141-306 pauses at the station of Opatija-Matulji. *Thomas Niederl*

Czechia

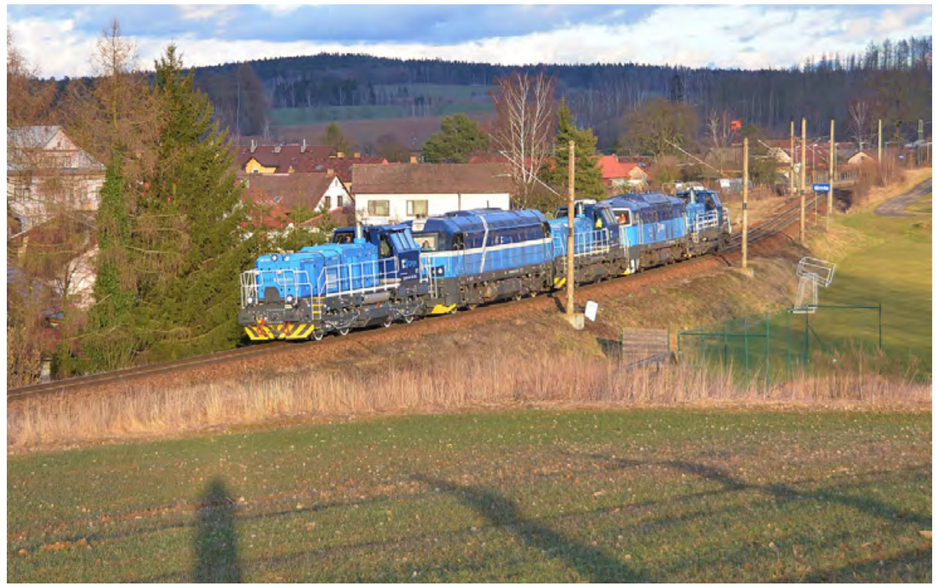
On February 9th, KZC No. T478.1006 (Class 749.006) stands at the end of the line at Slavonice near the Austrian border with a railtour .
Mark Pichowicz

Tests of Multiple Control

On February 18th, an interesting event took place in Jihlava. As part of the testing of new vehicles, and the test of multiple control of the newly delivered locomotive series (Classes 742.71x, 753.6xx and 744.xxx) was completed, which was supplemented by an older Class 753.7xx.

All five locomotives Nos. 742.712, 753.615, 742.711, 753.756 and 744.110 were coupled into one train and controlled from one driver's cab.

Photo: © CD Cargo



The smallest EffiShunters will travel to Serbia

The Serbian state carrier Srbija voz, which provides passenger transport in the country, will complete its fleet with two locomotives of the EffiShunter 300 type. Like Czech Railways, which owns twelve of them, they will deploy them at stations and depots to move vehicles and shift trains. Delivered under contract is in the first quarter of 2021.

“We are always looking for new market opportunities. Two paths lead to them through the development of new locomotives and territorial development. And it is not only to open a new market, but also to strengthen its position there. And that is what we are all about in the Balkans, ” says Ľubomír Dlábik, sales team manager.

Already in March, two EffiShunters 300 will go to the Republic of Serbia, which was commissioned last year by the state rail infrastructure manager of the Srbija Railway Infrastructure. Even then it was after an international tender. It will be used for lighter work trains used for railway infrastructure maintenance. Both orders include the installation of the Indusi national security system.

“ It is this positive reference that significantly helped our victory in the tender,” Dlábik added CZ LOKO type EffiShunter 300 has developed as the smallest representative of its product portfolio. It is a two-axle locomotive powered by a 328 kW CAT C13 internal combustion engine with an AC/DC electric transmission and a maximum speed of 60 km / h.

The Czech company ČEPRO and VÚŽ and the Polish Metro Warszawskie also own the “Trinity”, where it has been tested for a trial period and is now waiting only for final approval for regular operation during the technological service between the maintenance halls at the Kabaty station.

Photo: © CZ Loko

On February 7th, CD Class 210.058 stands at České Budějovice with train No. Os3887 21:10 to Horní Dvořiště. *Mark Pichowicz*

Czechia

Increasing Speed on the Czech Railway Shows in Shorter Journey Times of Trains

Trains on the Czech railway will start accelerating thanks to a finalization of investments of Správa železnic with one of their results being a line speed increase. Journey times decrease not only on modernized main routes but also on reconstructed regional lines.

”Although the journey times are usually decreased by several minutes, we must be aware that this occurs on rather short line sections. Even then, in many cases we can already compete with road transport including motor cars. Moreover, we gradually modernize more integrated sections on transit corridors with time savings as a result. This can be seen most clearly while travelling by train between Prague and Ostrava but on other routes as well“, says Mr. Jiří Svoboda, Director General of Správa železnic.

Especially investments into transit corridor lines are paying off. The biggest recent completed investment was a relocation of the Ejpovice – Plzeň line with a new, more than four kilometres long tunnel. Increasing maximum speed up to 160 kph allowing a decrease of fast trains’ journey times from Rokycany to Plzeň from the original 19 minutes in 2018 down only to 11 minutes.

In the section Bohumín – Karviná, journey times of fast trains decreased from 15 minutes last year to the current 10 minutes and they are by 2 additional minutes shorter in the connecting section to Český Těšín. On Rail Transit Corridor IV from Prague to České Budějovice, the completion of a part of the works allowed decreasing journey times: e.g. the fast train from Veselí nad Lužnicí will arrive into České Budějovice in just 27 minutes, instead of the original 31 minutes.

A speed increase occurs also on important non-corridor lines. A fast train runs the section from Světlá nad Sázavou to Havlíčkův Brod in 14 minutes this year, whereas the year before last it took 6 minutes more. Among other fast train lines we can name the one between Pardubice and Liberec where line speed gradually increases in many sections. This will reflect in a transport model change with an important journey times’ decrease when all constructions are complete.

However, Správa železnic does not forget about regional lines either. Modernization of the line Louny – Lovosice decreased journey times considerably, namely from 69 to 52 minutes. Passengers will appreciate shorter journey times also in the sections Kladno-Dubí – Brandýsek, Žďár nad Sázavou – Tišnov or Studénka – Bílovec.

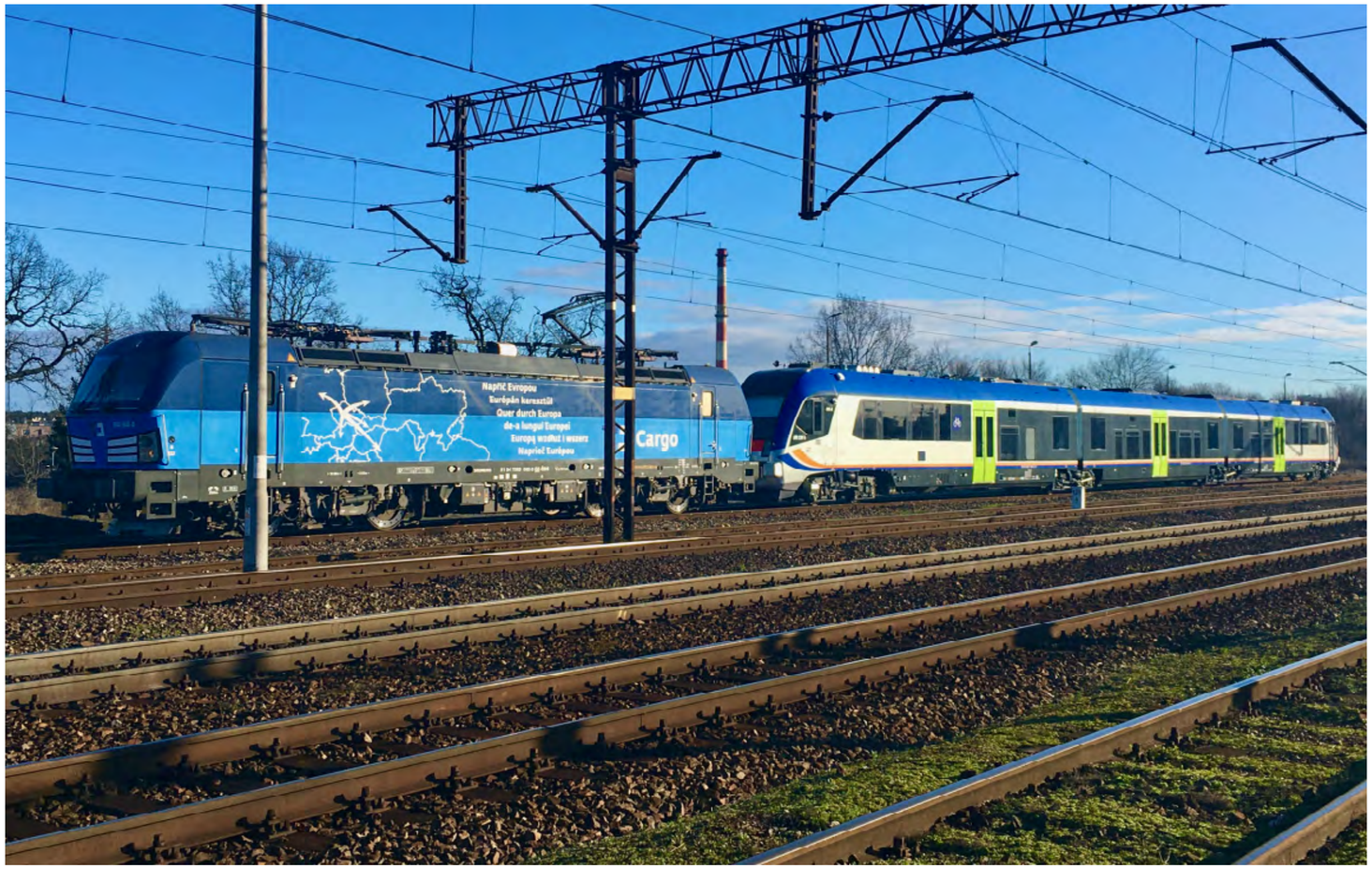
This year, journey times will decrease thanks to a line speed increase e.g. up to 160 kph in the section from Valašské Meziříčí to Hustopeče nad Bečvou (9.6 km), a reconstruction of Řetenice station (8 km) or modernization and electrification of the line Šakvice – Hustopeče u Brna (6.7 km).

Transport of a new diesel multiple unit

The joint-stock company ČD Cargo, together with its subsidiary CD Cargo Poland and the ČD Cargo Niederlassung Wien branch, is providing transport of ATR 220 diesel multiple units from the manufacturer PESA Bydgoszcz to the Austrian-Italian border crossing Tarvisio.

On February 5th, CD Cargo Vectron Class 383.002 hauled the first unit. A total of 14 of these units should be transported to Italy.

Photo: ©CD Cargo



Alstom delivers the 130th Citadis tram to Bordeaux Métropole

Alstom has delivered the 130th Citadis tram to its long-time customer Bordeaux Métropole, its historic customer. The city now has one of the largest tram fleets in France, having been ordered in four tranches beginning in 2000 and beginning passenger service in 2003.

This fleet consists of 118 trams of 44 metres in length and 12 trams of 33 metres. Each tram can accommodate between 218 and 300 passengers, the equivalent of more than three buses. Alstom's Citadis trams offer optimal on-board travel quality with a full low floor, air conditioning and a video-protection system, as well as audio and visual information. Up to 98% recyclable, Citadis trams help to preserve the environment.

The Bordeaux tram network consists of four lines, with a total length of 77 kilometres. 35 kilometres are equipped with the APS ground-level power supply technology. The Citadis trams are well loved by the city's inhabitants, who appreciate their accessibility and acknowledge that they have transformed the urban landscape. The Bordeaux tram network is one of the busiest in France, carrying more than 100 million passengers per year.

"The celebration of this delivery is a proud moment for the Alstom teams and for me, as it brings the fleet of Citadis trams in Bordeaux Métropole up to 130 and bears witness to the trust our customer has placed in us over the past 20 years," said François Papin, Director of Alstom's site at La Rochelle, Alstom's centre of excellence for trams.

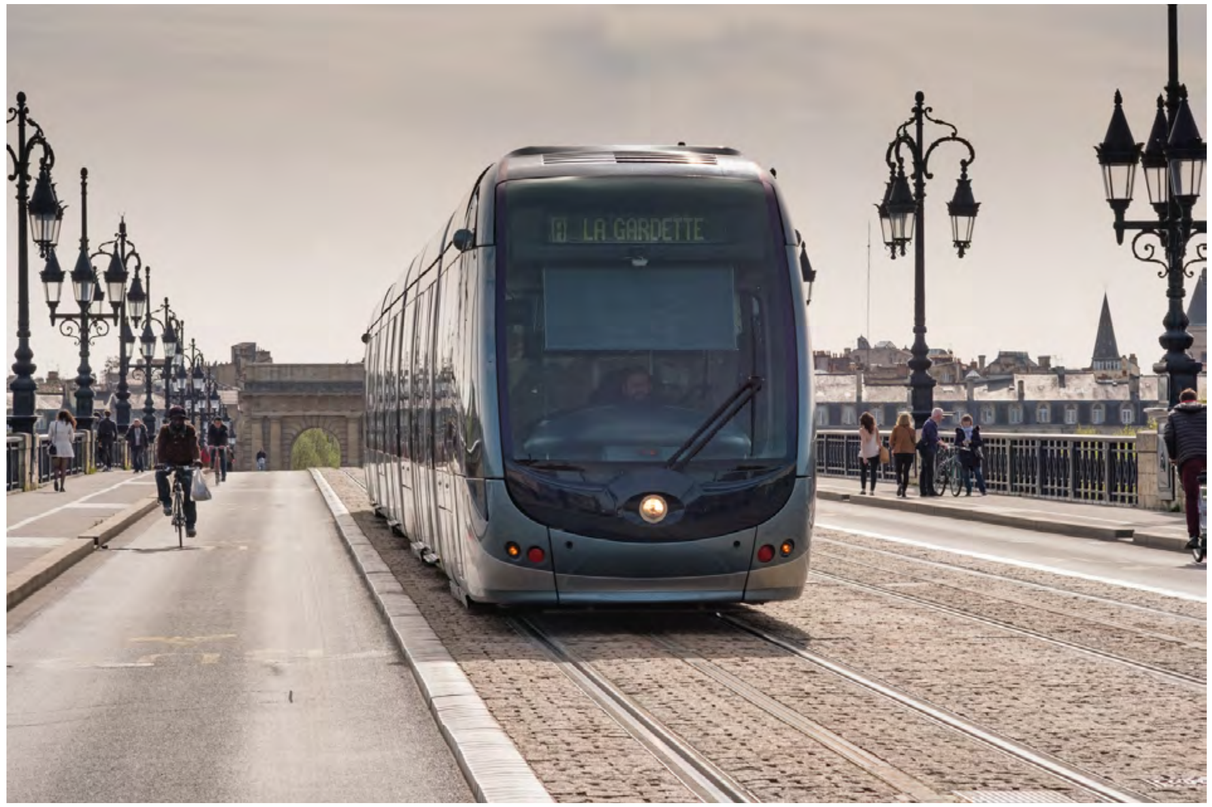
All the Citadis trams (33 and 44 metres) of Bordeaux Métropole are equipped to be compatible with the APS system, which has since been implemented on numerous tram systems, including those of Reims, Tours, Dubai, Sydney and Rio de Janeiro.

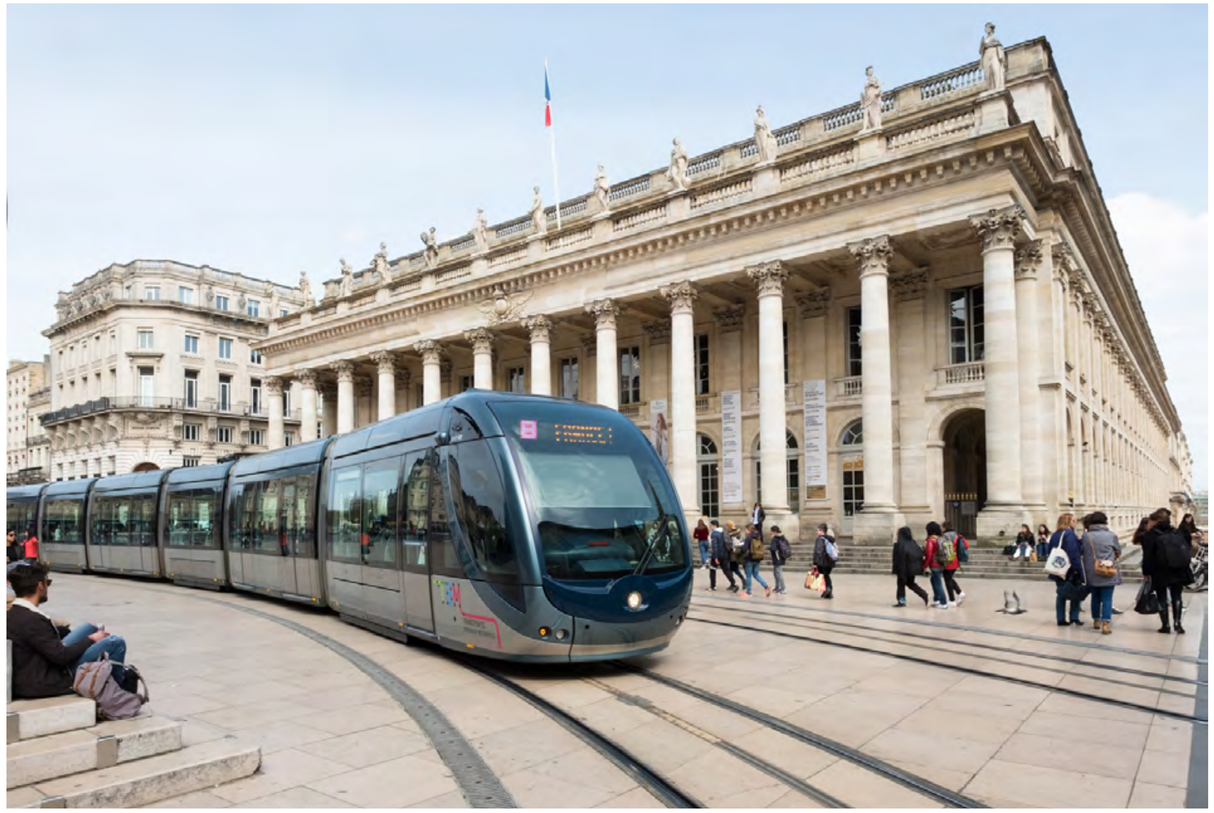
Bordeaux Métropole was the first customer to place its trust in Alstom's new power supply solutions, which represent an alternative to conventional catenary power supply. As well as APS, new technological innovations are available to reduce energy consumption and preserve city centres: SRS, an innovative ground-based static recharging system, Citadis Ecopack, and battery solutions.

The Bordeaux trams were manufactured at seven Alstom sites in France: La Rochelle for the design and assembly, Ornans for the engines, Le Creusot for the bogies, Tarbes for the traction system equipment, Villeurbanne for the on-board electronics, Vitrolles for the APS and Saint-Ouen for the design.

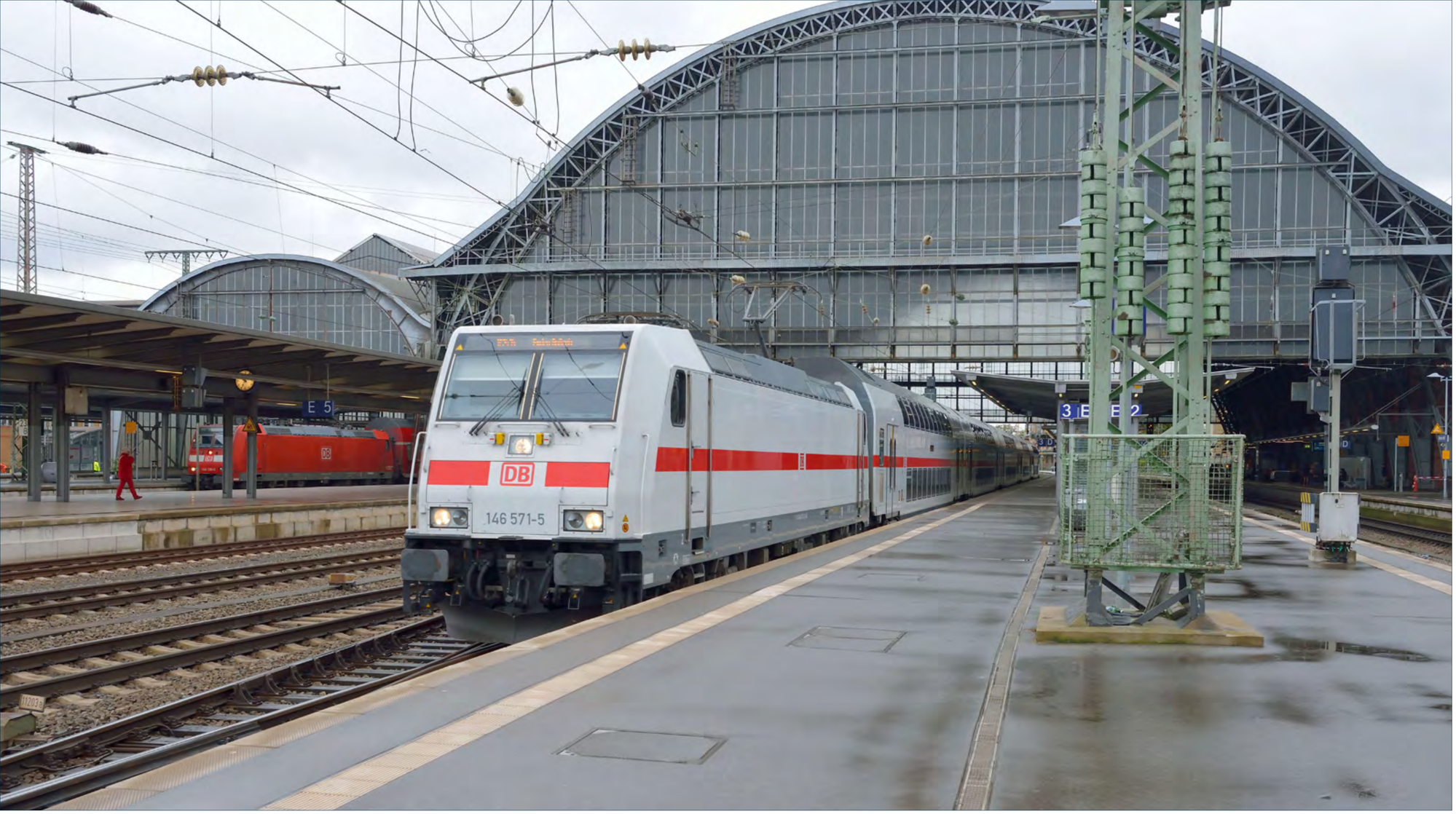
In total, more than 2,500 Citadis trams have been sold to more than 50 cities throughout 20 countries.

Photos: Citadis Bordeaux ©TOMA - Richard Nourry





Germany



DB IC2 Class 146.571 departs Bremen Hbf with a service to Emden Außenhafen. *Class47*

Alstom signs first contract for battery-electric regional trains in Germany

Alstom will manufacture, deliver and maintain until 2032 eleven Coradia Continental battery-electric trains for regional traffic on the Leipzig-Chemnitz route on behalf of VMS (Verkehrsverbund Mittelsachsen) and with the support of ZVNL (Zweckverband für den Nahverkehrsraum Leipzig), the two authorities responsible for this line. The contract is worth approximately €100 million. Following this order, Alstom offers all types of traction systems on the market as well as the full range of emission-free drives, from efficient electric motors to hydrogen fuel cells and advanced battery traction.

In 2014, Alstom had previously signed a contract with VMS for the delivery of 29 Coradia Continental electric regional trains (EMU). In order to bridge the 80 kilometres of non-electrified line between the cities of Chemnitz and Leipzig, the authority requested a battery-electric version (BEMU). The new trains will enter service in 2023. They will be built at Alstom's German site of Salzgitter, in Lower Saxony. The battery traction sub-system is designed and supplied by Alstom's traction centre of excellence in Tarbes.

"We are immensely proud to be providing the responsible authorities with a sustainable and perfectly-suited solution. Today, Alstom stands apart in being able to offer any form of emission-free traction currently on the market built into a proven solution. As a responsible company, Alstom has an intense focus on sustainable mobility, offering the best-fitting solutions that make it not only possible, but also cost-effective and attractive," says Gian Luca Erbacci, Senior Vice President of Alstom Europe.

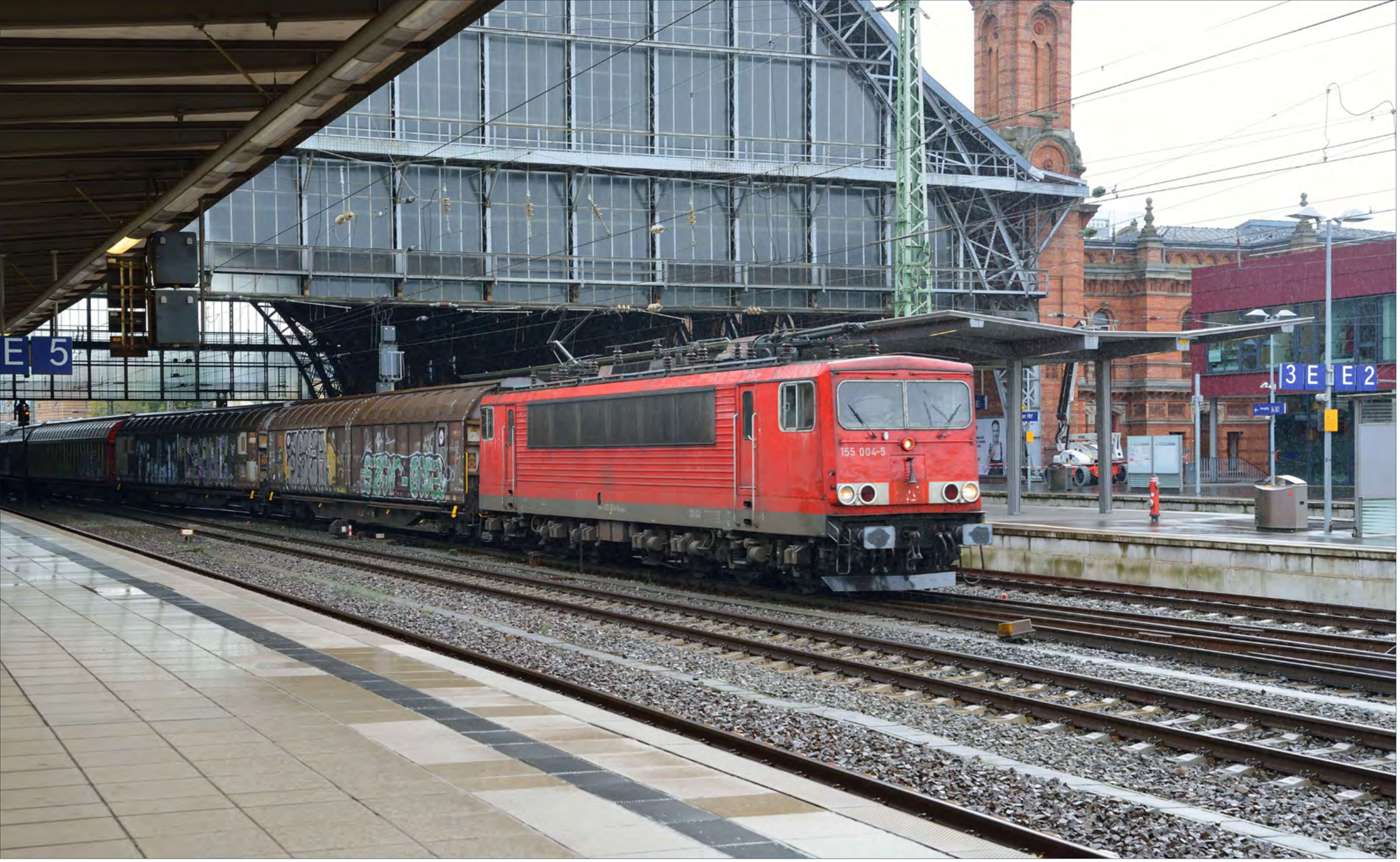
The Coradia Continental BEMU trains will be similar to those already in service on the Dresden, Riesa and Zwickau routes. The main difference: they will also have high-performance batteries on the roof. The train, based on the proven Coradia Continental, builds on Alstom's long experience in battery traction, gained with the Coradia iLint, Citadis trams and the Prima H3 locomotive.

The Coradia Continental BEMU has a range of up to 120 kilometres and can be operated under catenary as well as on non-electrified sections. The three-car-trains will be 56 metres long and equipped with 150 seats. They will have a top speed of 160 km/h in battery mode. The capacity of the batteries (high-power lithium-ion) is calculated to ensure catenary-free operation of the line Chemnitz-Leipzig without any sacrifice in performance or comfort.

Alstom's Coradia range allows operators and transport authorities to offer their passengers regional trains that meet their needs and expectations, while demonstrating exemplary reliability and cost-effectiveness. Alstom has tailored the Coradia range to operate with all available emission-free power systems, from electric to battery-electric and hydrogen fuel cells. The latter, the Coradia iLint, powered by fuel cells and offering performance comparable to a diesel train while emitting nothing but water, has been in passenger service in Germany for over a year.

DB Bahnbau Gruppe Class 293.008 plus classmate leads an engineers train through Hamburg Harburg. *Class47*

Germany



Railpool's Class 155.004 heads through a damp Bremen Hbf with a rake of Ferrywagons. *Class47*

Alstom to equip another 19 ICE high-speed trains with ETCS

Alstom has obtained an order by Deutsche Bahn AG (DB) to retrofit 19 additional ICE1 high-speed trains with the newest ETCS[1] signalling standard. The retrofitting work, worth more than €10 million, is scheduled to be completed by September 2021.

The project is a follow-up contract for the ICE 1, of which Alstom had already retrofitted 39 trains for the commissioning of the VDE 8 high-speed line connecting Berlin and Munich. Since the opening of the high-speed line passenger numbers have more than doubled.

'We are delighted that Deutsche Bahn has again passed a vote of confidence in Alstom for this complex retrofit. This is a further step towards making Germany fit for digital rail guarantees Deutsche Bahn a uniform and flexibly deployable ICE fleet', says Dr. Joerg Nikutta, Alstom Managing Director Germany & Austria.

The contract includes development, design and manufacture of the digital signalling system ETCS Level 2 Baseline 3 as well as its installation, connection to existing train control systems and commissioning. The new system will ensure a continuous communication between the vehicle and the track.

The retrofitting work will be implemented in cooperation with several Alstom sites: Berlin, Braunschweig (installation design and project management), Charleroi, Belgium (product development, validation and assembly for ETCS) and Lyon/Villeurbanne, France (manufacture of components). The conversion and recommissioning of the vehicles will be carried out at the ICE-plant in Hamburg-Eidelstedt.

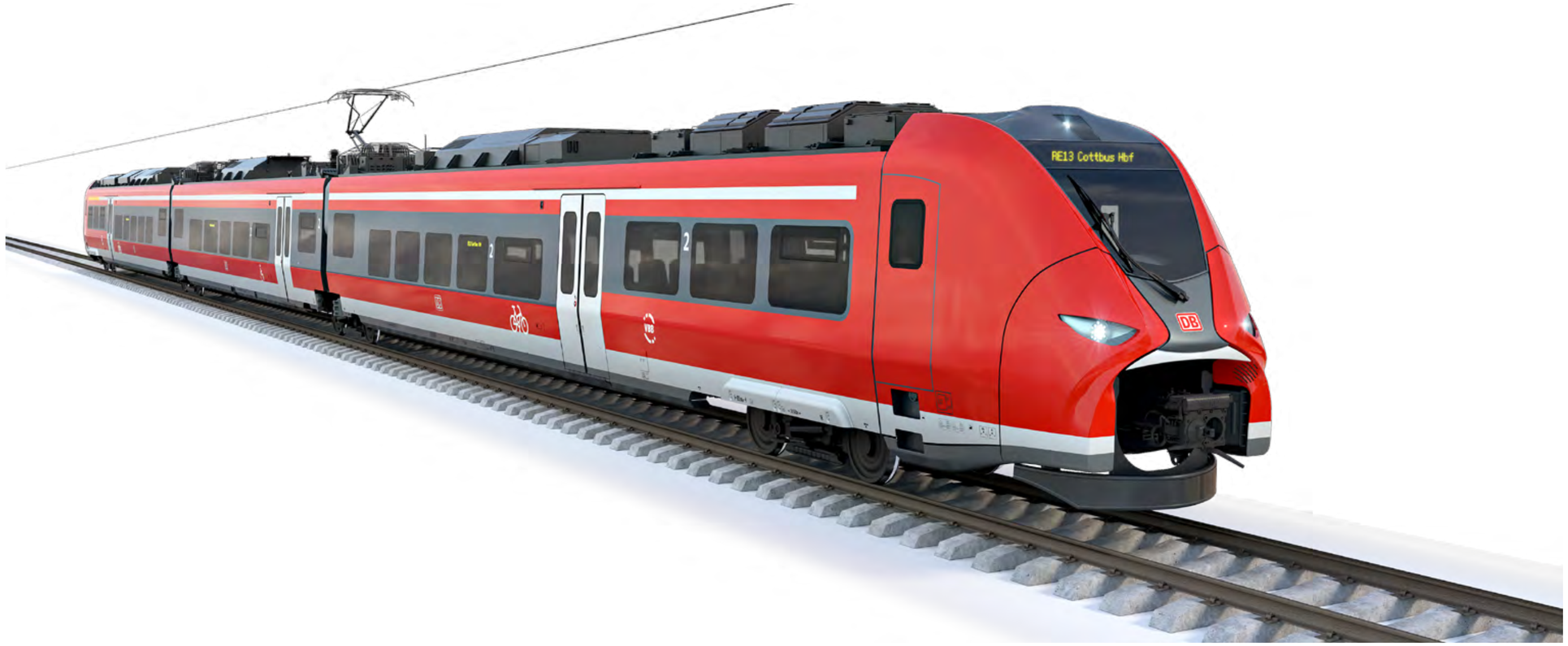
With 15 years of experience putting into service ERTMS Level 2 digital signalling solutions, Alstom is a global pioneer in its development and implementation. With projects in 30 countries, Alstom has installed nearly 40% of the Trackside ERTMS Level 2 equipment in service in Europe and equipped over 8,000 trains of 200 different types with its Atlas On-board ERTMS solution. Atlas is a scalable solution that can be adapted to all types of traffic and operational needs: passengers and freight, high-speed or suburban.

[1] European Train Control system

Siemens Mobility builds regional trains for the Lausitz

DB Regio orders 18 three-part Mireo trainsets from Siemens Mobility
Service in the Lausitz regional network
Enhanced passenger comfort, barrier-free convenience and higher capacity

Susanne Henckel, Managing Director of the Verkehrsverbundes Berlin-Brandenburg: “We’re really excited about the latest generation of trains planned for the Lausitz region. We’ll be further improving the already high-quality standards in regional transport, and our passengers can look forward to modern, attractive and reliable trains.”



DB Regio has ordered 18 three-part Mireo trainsets from Siemens for service in the Lausitz regional network in the states of Brandenburg and Saxony. On December 17, 2019, DB Regio was awarded the contract for the Lausitz network by the Verkehrsverbund Berlin-Brandenburg (VBB) on behalf of the State of Brandenburg and the Zweckverband für den Nahverkehrsraum Leipzig (ZVNL). The 18 new three-part Mireo trainsets from Siemens Mobility have 180 seats, enhanced passenger comfort and full barrier-free access. The order includes a high level of features, including WLAN, charging stations for e-bikes, energy-saving lighting, power sockets with integrated USB charging ports, inductive charging at the tables with vis-à-vis seating, and premium-quality first class sections.

State Secretary Rainer Genilke of the Brandenburg Ministry for Infrastructure and Planning commented: “This is good news for the Lausitz region. With the new Mireos, we’re getting more modern and higher-quality trains, which is exactly what we had envisioned for the Lausitz network in the tendering process in 2019. Moreover, we’ll be adding more train-kilometers on the network and reorganizing the service in the region from southern Brandenburg to Saxony. By undertaking these developments in our transport sector, we’ll be supporting structural change in the Lausitz region.”

Dr.-Ing. Joachim Trettin, CEO of DB Regio AG, Regio Nordost, said: “The contract for the Lausitz network with these new trains marks a great success. It’s especially important for us that we were able to secure employment for our colleagues in southeast Brandenburg for a further 13 years. The modern trains will offer our passengers a substantially improved level of comfort and convenience: Features like WLAN, USB charging ports and even charging stations for e-bikes will clearly increase the attractiveness of public transport in Brandenburg and Saxony.”

“We are delighted that we have been commissioned to build the new trains for the Lausitz network. With this order, the number of Mireos will increase to almost 180 train sets! The Mireo is our intelligent and proven regional and commuter platform, which combines economy with sustainability over the entire life cycle of the train and enables increased passenger comfort through many extras such as inductive charging options, WLAN and comfortable seats,” said Sabrina Soussan, CEO of Siemens Mobility.

The new Mireo trains will cover 4.3 million train-kilometers a year and operate on the following routes:

- RB11 Frankfurt (Oder) – Cottbus – Finsterwalde – Falkenberg (Elster)
- RB49 Cottbus – Ruhland – Elsterwerda-Biehla – Falkenberg (Elster)
- RE10 Frankfurt (Oder) – Cottbus – Falkenberg (Elster) – Eilenburg – Leipzig Hbf
- RE10V Cottbus – Leipzig Hbf
- RE13 Cottbus – Senftenberg – Elsterwerda

Siemens Mobility is building the 18 Mireos at its plant in Krefeld, Germany, and is planning to deliver the trains beginning in autumn 2022. Commissioning of the trains will take place between October 2021 and November 2022, and passenger service is scheduled to begin in late 2022.

India

Nos. 11389 and 11365 cross the impressive Panvel Viaduct with the Tejas Express from Goa to Mumbai on January 19th.
Mark Torkington

India

On January 20th, No. 21893 (a dual voltage WCAM3) awaits departure from Mumbai CST with an express towards the Pune direction. *Mark Torkington*

India

A commuter EMU arrives into Mumbai's famous CST terminal on January 20th. *Mark Torkington*

India

On January 20th, WDM3D No. 11416 takes a breather at Ratnagiri with an express from Kochuveli in Kerala to Porbander in Gujarat - a mere 45 hour journey that it should work throughout, sadly an air leak meant two hours later it was shut down and a loco from a passing freight train was used to top it forward.

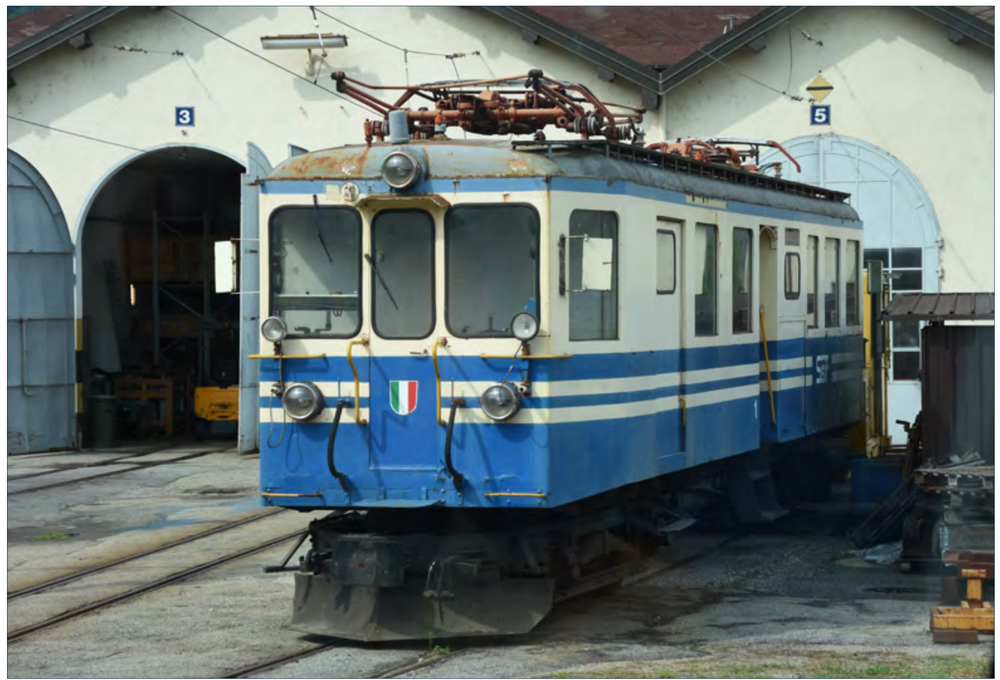
Mark Torkington

Italy

The heaviest freight train in history will be up and running from March

The heaviest freight train in the history of Rail Cargo Carrier - Italy S.r.l., has completed its first successful journey on the steep Tarvisio-Udine line. 24 fully loaded tank wagons started off from the large marshalling yard at Villach South on 14th January and reached Trento Roncafort with a total load of 2,200 tonnes.

Brake tests were carried out on the Ugovizza-Carnia line, as well as incline tests on gradients of more than seven percent. In both cases, the maximum weight was several hundred tonnes heavier than any loads that the Italian subsidiary has ever transported. Cameras monitored the acceleration rate and the behavior of the wheels. Various weather conditions were simulated by watering the tracks. A data logger manometer recorded pressure levels in the main brake pipe during the Ugovizza-Carnia and Tarvisio-Udine descents in order to verify that standards governing the sawtooth method were adhered to. It was also interesting to observe the amount of thermal stress and the extent to which pressure losses could be avoided when the vehicle's electric brakes ran out of power. The first test run was a success, so nothing stands in the way of RCG transporting heavy goods at great heights in Italy for our customers from 1st March.

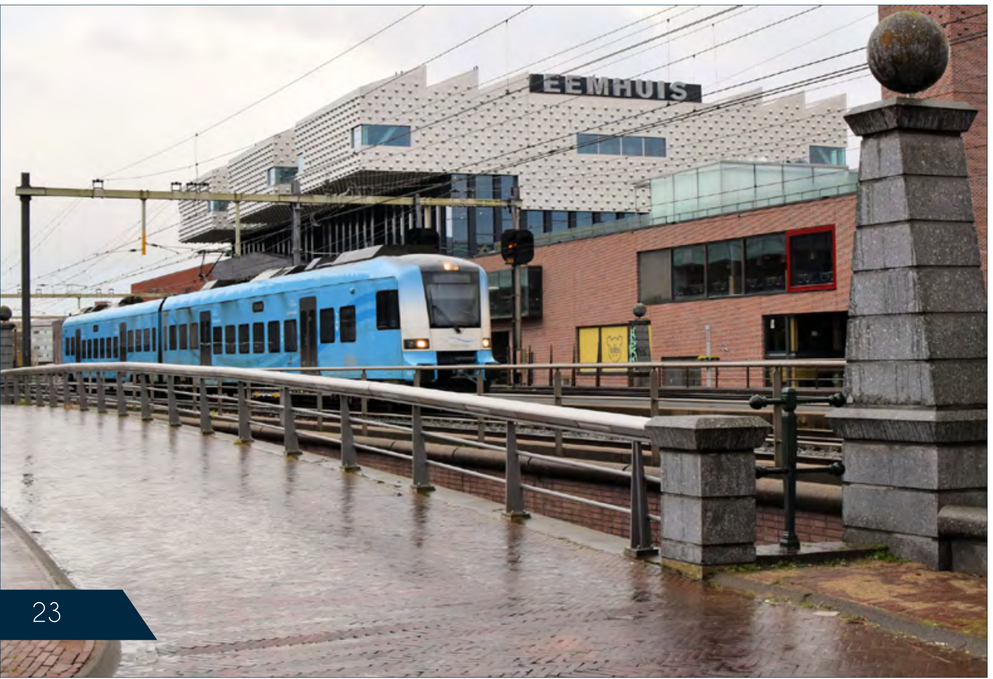


The station on the Italian side of the Slovenian border, Villa Opicina, is close to the terminus of the Tram di Opicina linking it with Trieste, which climbs 300m in 5km. *Christopher Baldwin*

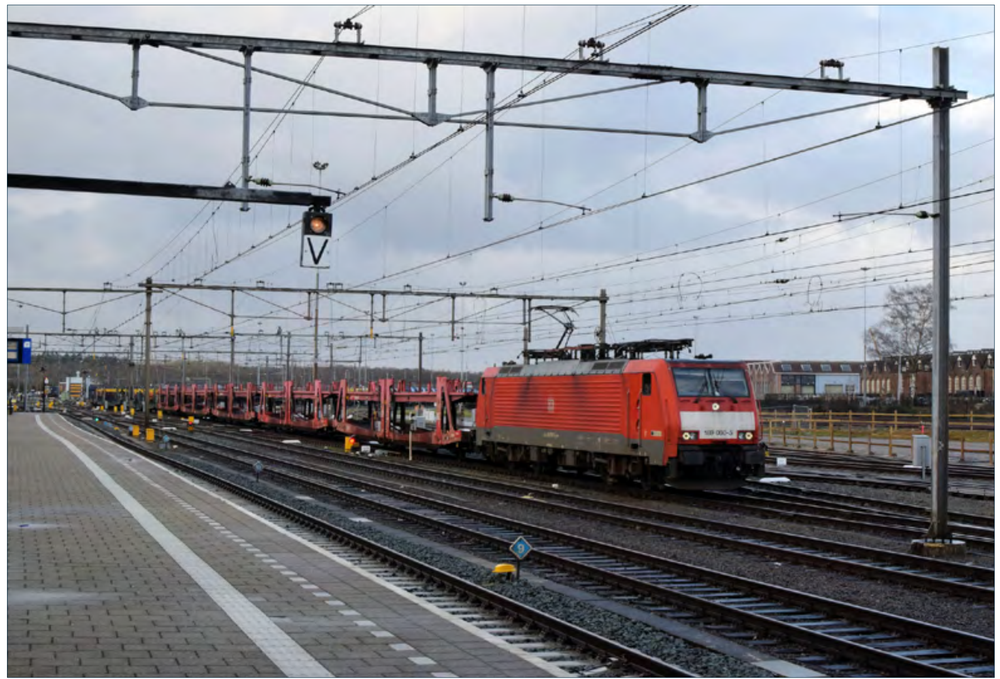
An unidentified 1923 built SSFI railcar sits outside Domodossola depot. *John Sloane*

Netherlands

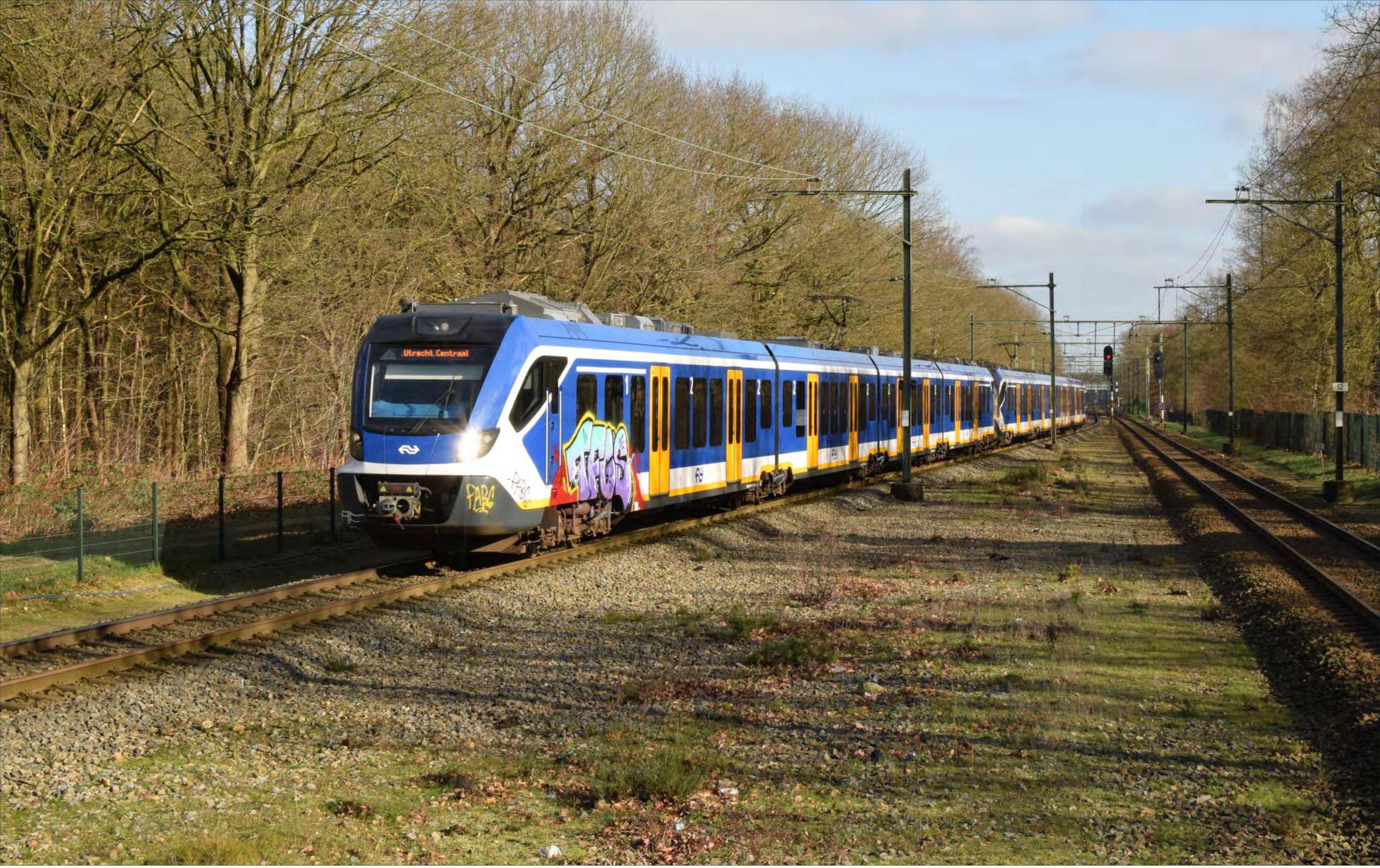
In Amersfoort on January 29th, NS ICM trainset No. 4026 is ready for departure with a service to Amsterdam Centraal station. *Erik de Zeeuw*



On January 29th, DB Class 189.080-5 departs from Amersfoort with an empty ‘Pon’ (VW importer) train to Wolfsburg in Germany. *Erik de Zeeuw*

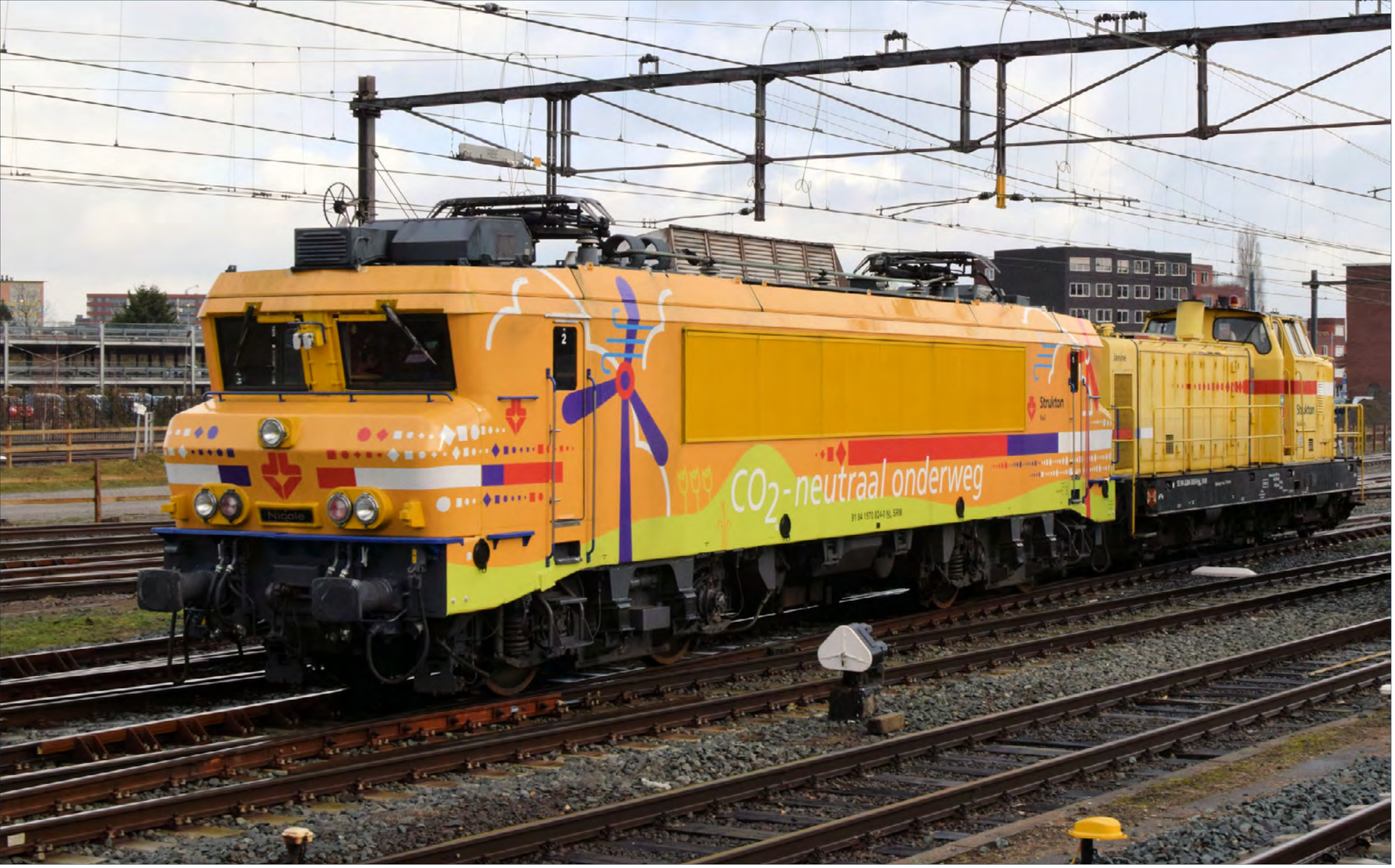


On January 29th, Valleilijn-Connexxion train No. 5032 passes the bridge over the river Eem working a service from Amersfoort to Barneveld-South. *Erik de Zeeuw*

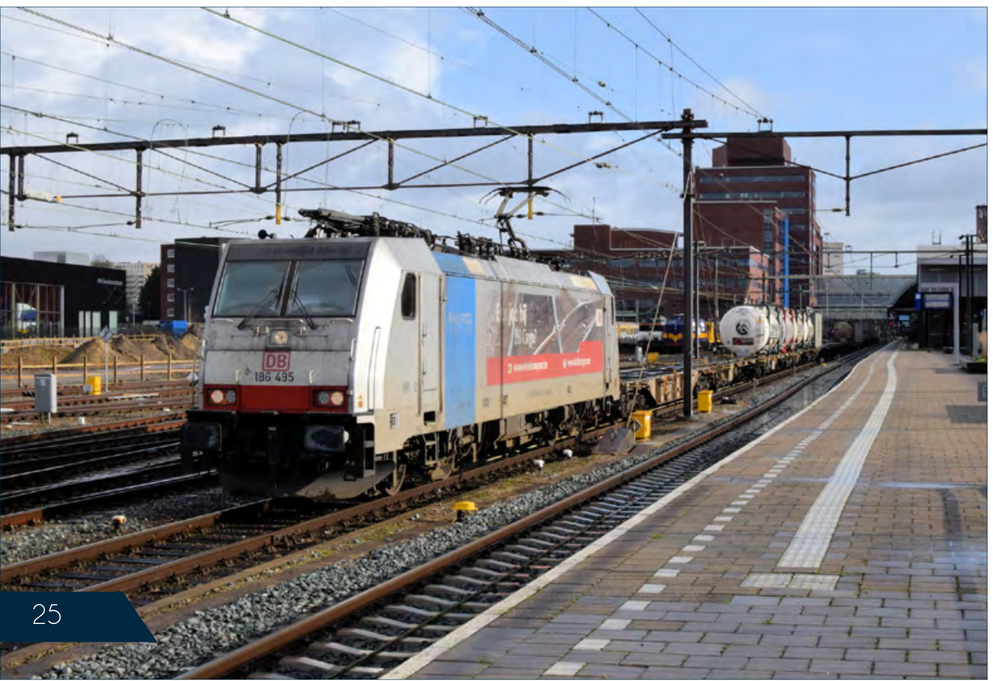


On February 5th, NS SNG CAF Civity Nos. 2732 and 2727 arrive in Den Dolder working train No. 5640 from Zwolle to Utrecht Central station. *Erik de Zeeuw*

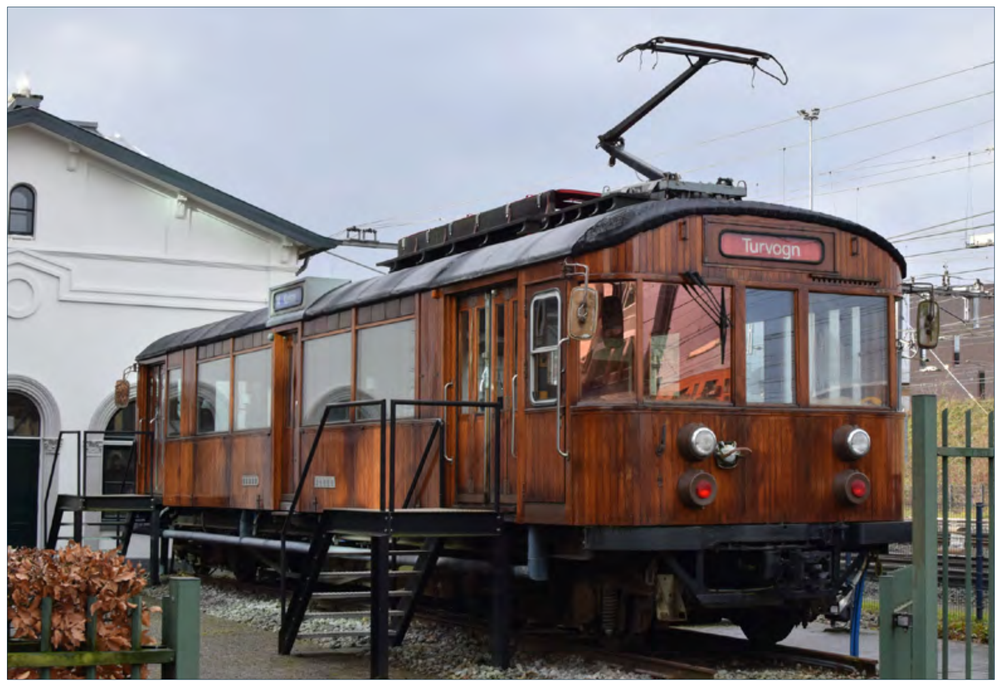
Netherlands



On January 29th, Strukton No. 303.003 'Janine' shunts Strukton No. 1824 'Nicole', which is a hybrid locomotive and can work trains with and without overhead power. *Erik de Zeeuw*



In 2002 TUI opened a special travel agency in Amersfoort and placed an eyecatcher next to the former station. It's teak motorcar No. 605 built in 1951 by Skabo Jernbanevognfabrikk in Drammen and operated at the Holmenkollen Line in Oslo Norway. *Erik De Zeeuw*

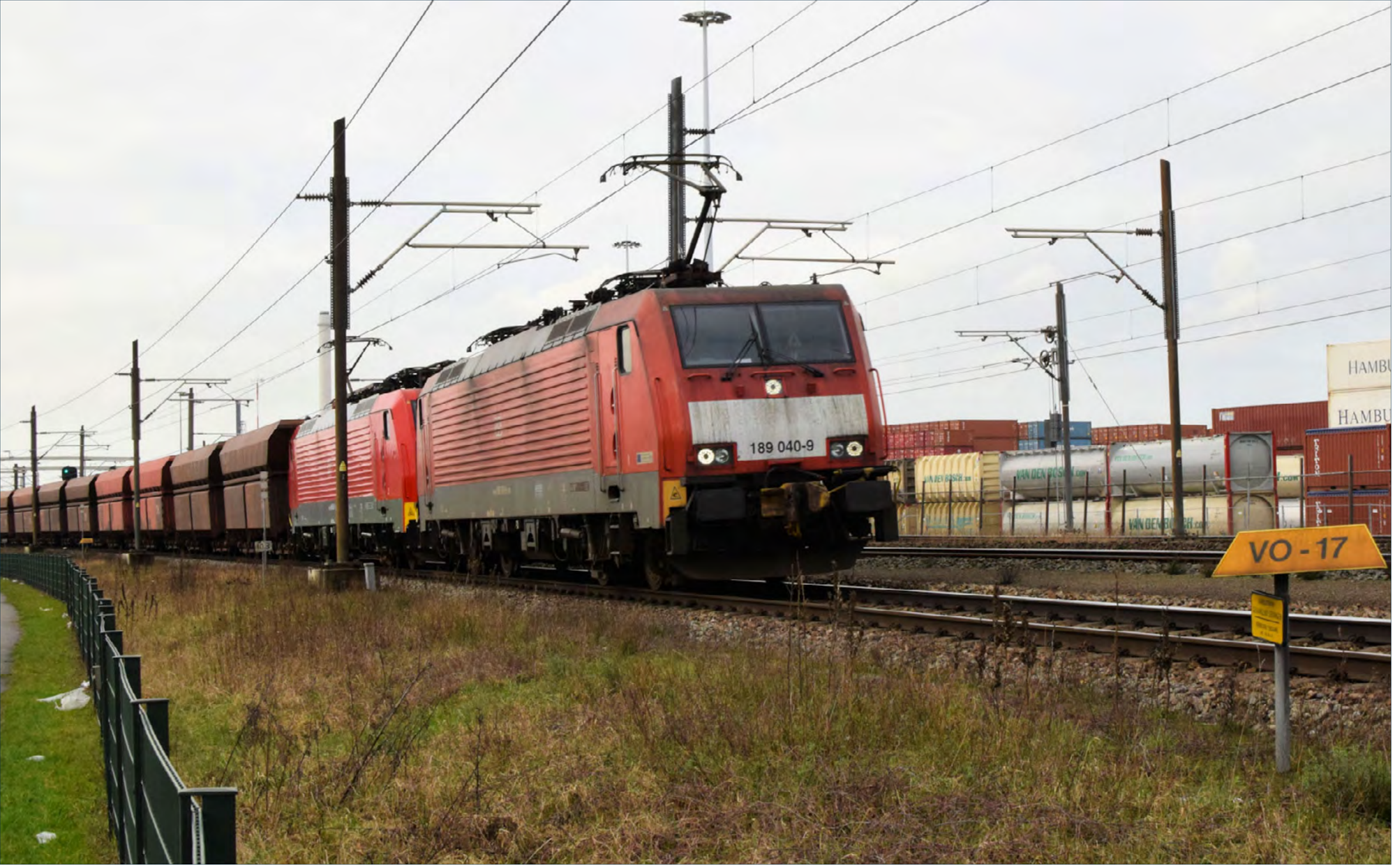


DB Class 186.495 with a 2 hour delayed Prusków Shuttle from Grodzisk Mazowiecki (PL) to Combinant (Combined Terminal Antwerp) in Antwerp (B) heads through Amersfoort on January 29th. *Erik de Zeeuw*

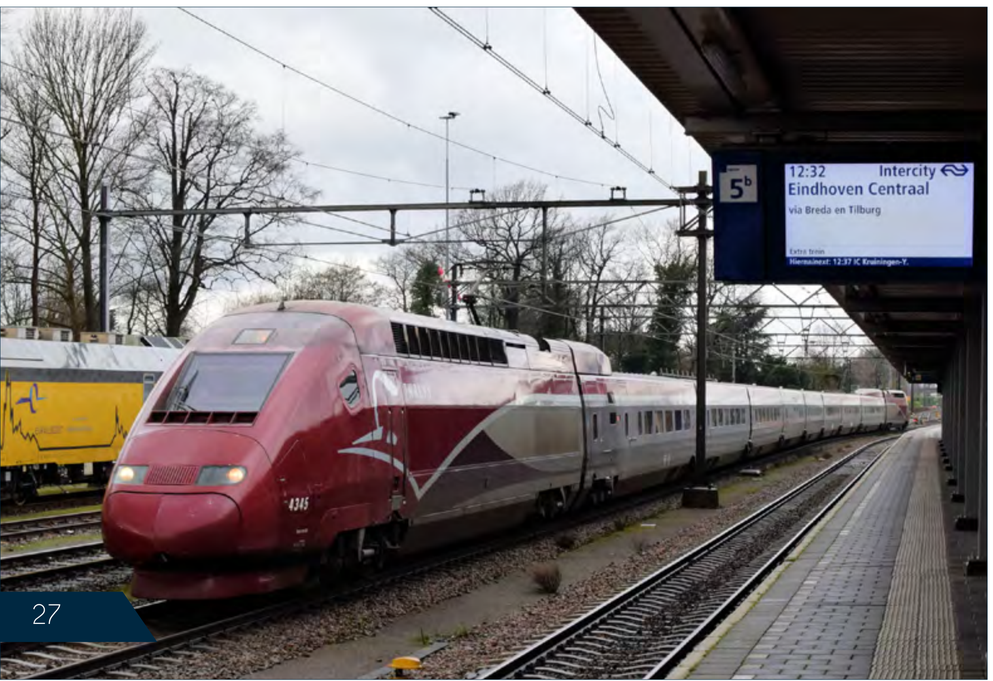
Netherlands

Near Bilthoven, Lineas No. 2835 (Class 186.227) hauls an empty dolomite train to Hermalle (B), February 5th. *Erik de Zeeuw*

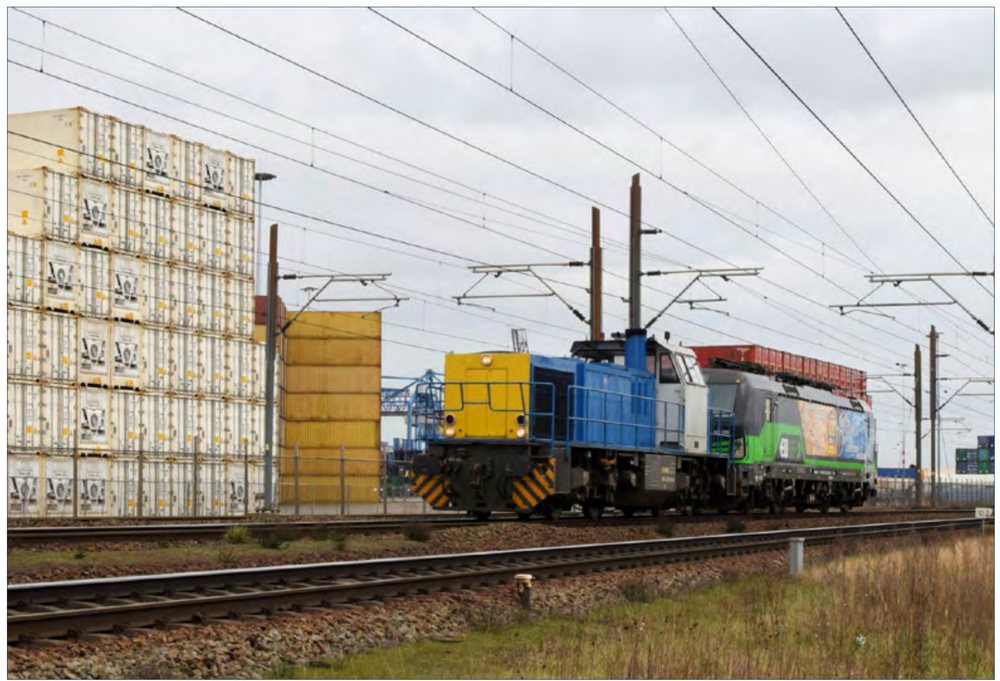
Netherlands



On February 13th, DB Class 189.040-9 and 189.039-1 double head an ore train from Rotterdam to Dillingen/Saar (Germany). *Erik de Zeeuw*



LTE No. 1506 hauls LTE Vecton Class 193.232 to Maasvlakte Yard, Rotterdam on February 13th. *Erik De Zeeuw*



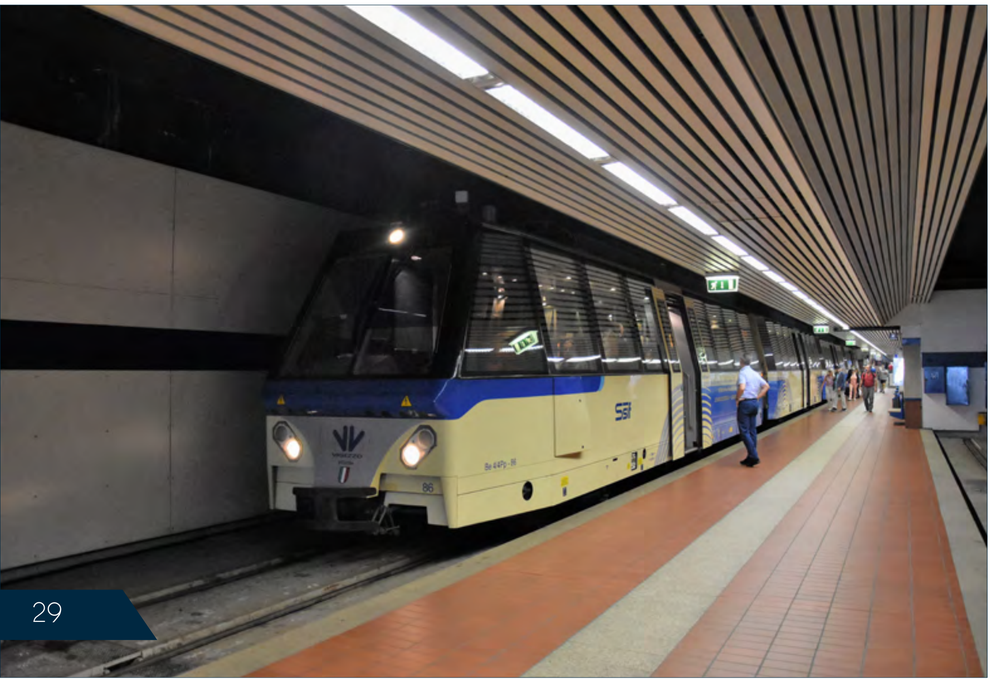
On February 13th, due to a switch failure, Thalys No. 4345 could not use the hi-speed line and had to run through Dordrecht whilst working a service from Amsterdam Centraal station to Paris Gare du Nord. *Erik de Zeeuw*

Netherlands

TX Logistik Class 189.992-1 runs through Dordrecht on February 13th with a rake of tank cars, heading towards Germany.
Erik de Zeeuw

Switzerland

The ‘Centovalli’ line from Domodossola (where it’s the SSIF) to Locarno (where it’s the FART). FART unit No. 47 heads away from a crossing point en route westwards. *John Sloane*



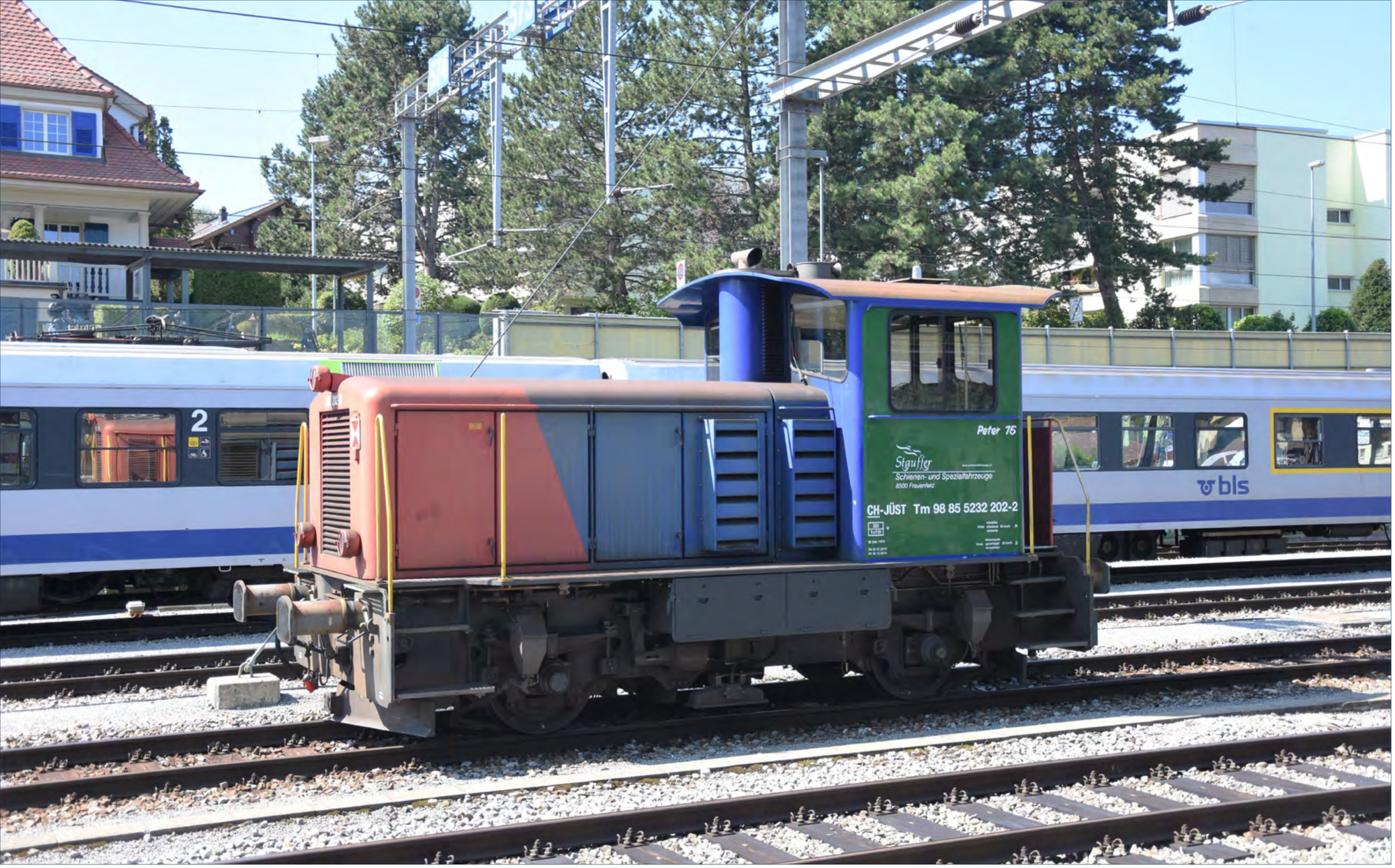
An SSIF Panoramic unit calls at a wayside station on the Swiss section of the route. *John Sloane*

SSIF Panoramic unit No. 86 ‘Villette sits at Domodossola on a through service to Locarno in Switzerland. *John Sloane*

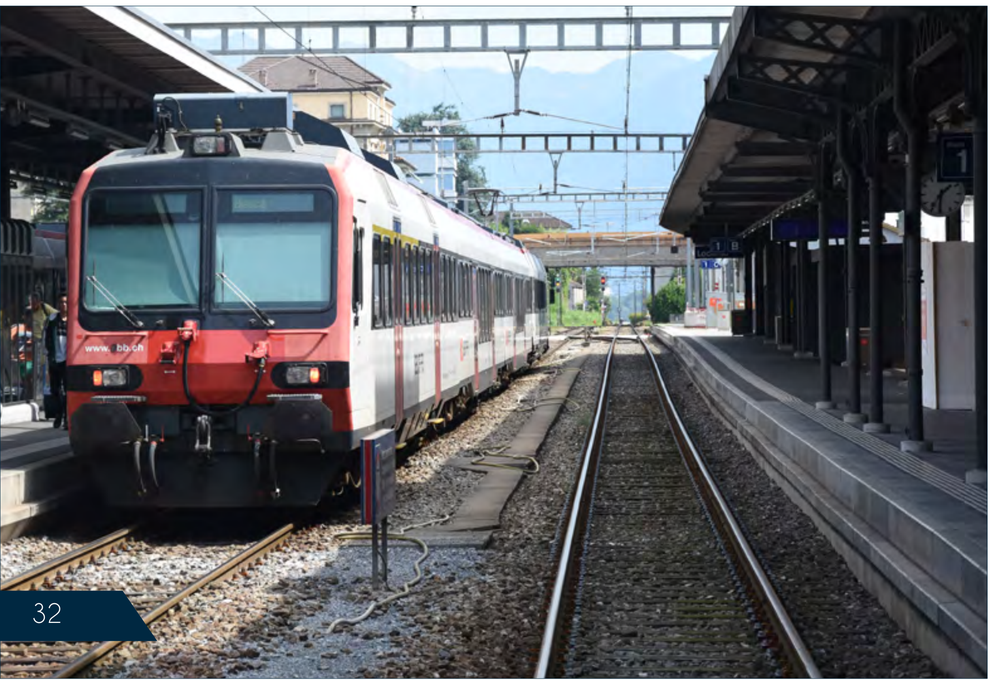
SBB Class 420.267 approaches Spiez with a local freight working.
John Sloane

Jungfraubahn units Nos. 221 and 214 climb away from Kleine Scheidegg heading for Jungfraujoch. *Mark Pichowicz*

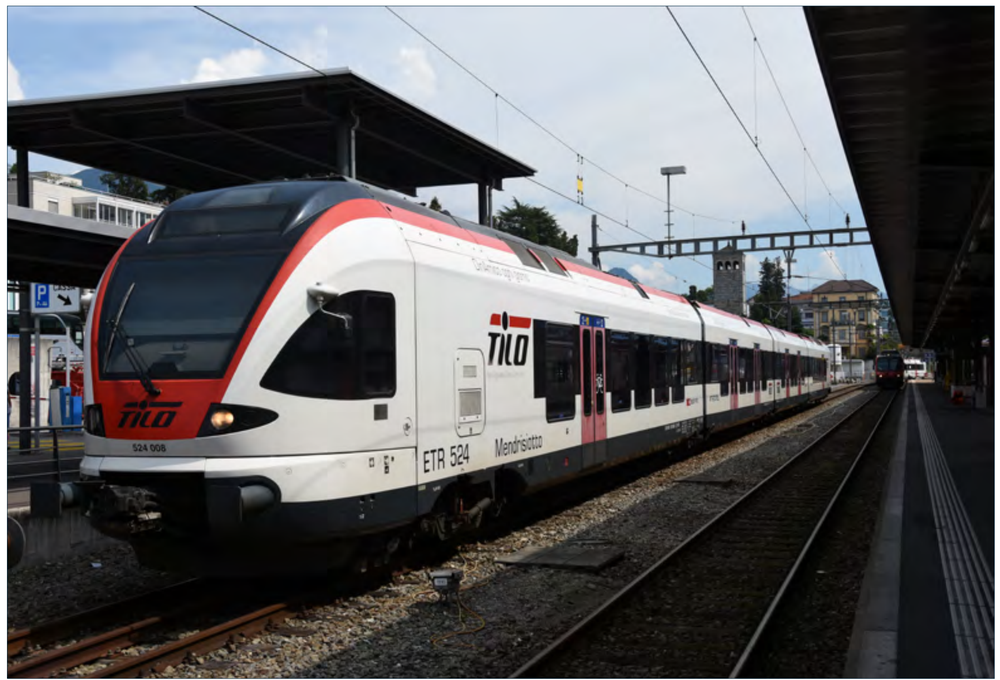
Switzerland



Stauffer shunter (ex SBB) No. Tm232.202 is seen at Spiez station. *John Sloane*



A SBB/TILO Flirt unit No. 524.008 stands at Locarno. *John Sloane*

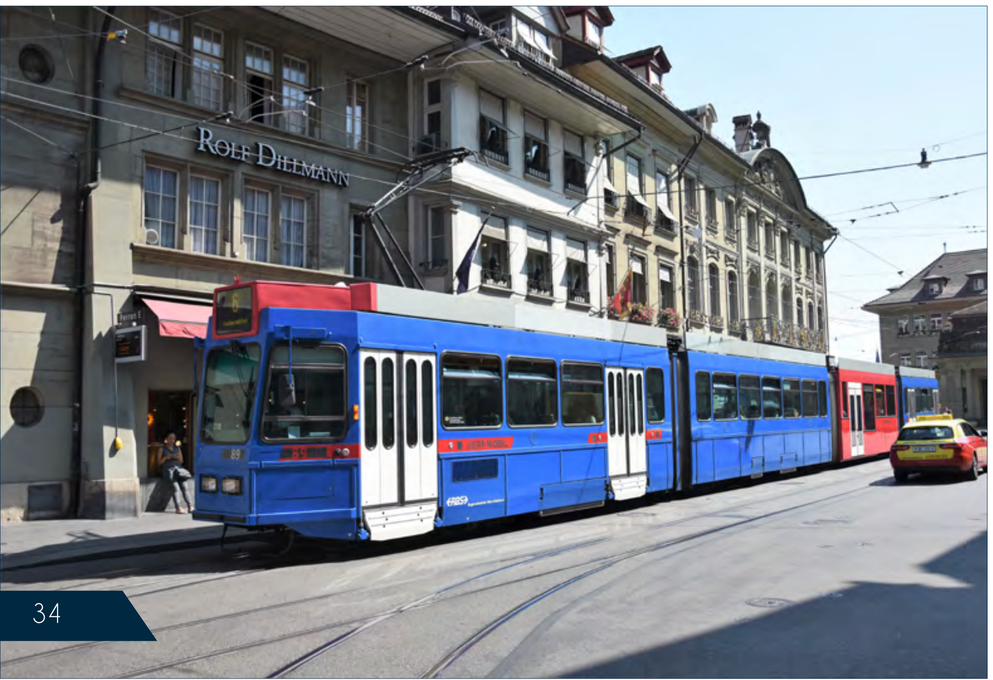


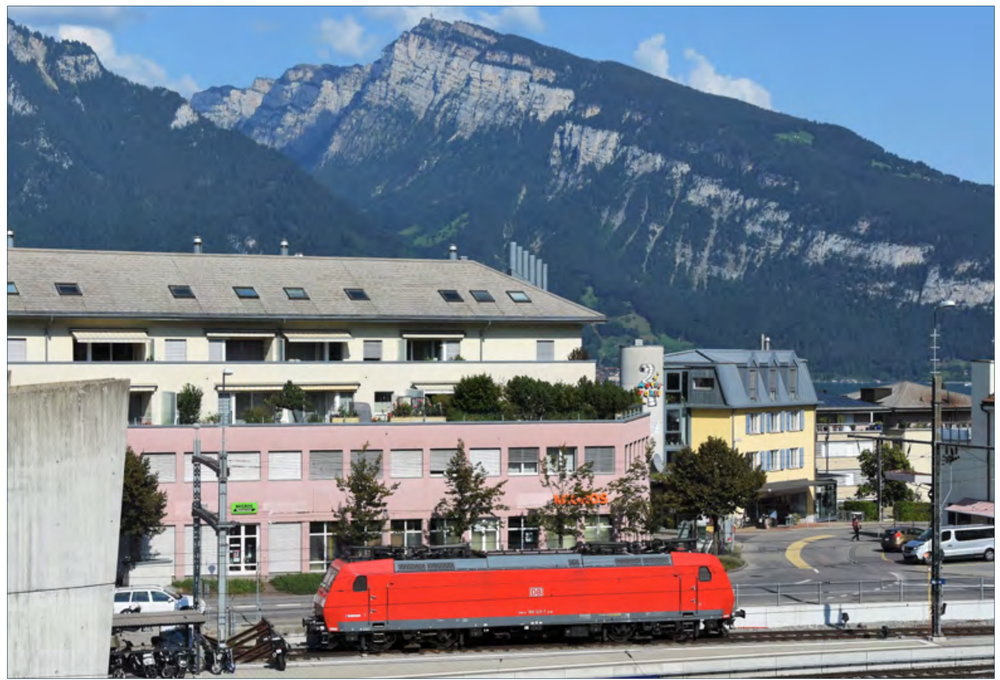
A SBB EMU is seen departing Locarno with a service to Biasca. *John Sloane*

DB Class 193.340 is seen stabled at Spiez. *John Sloane*

Switzerland

SVB tram No. 755 heads through the centre of Bern working a line 8 service to Brunnnen Westside Bhf. *John Sloane*





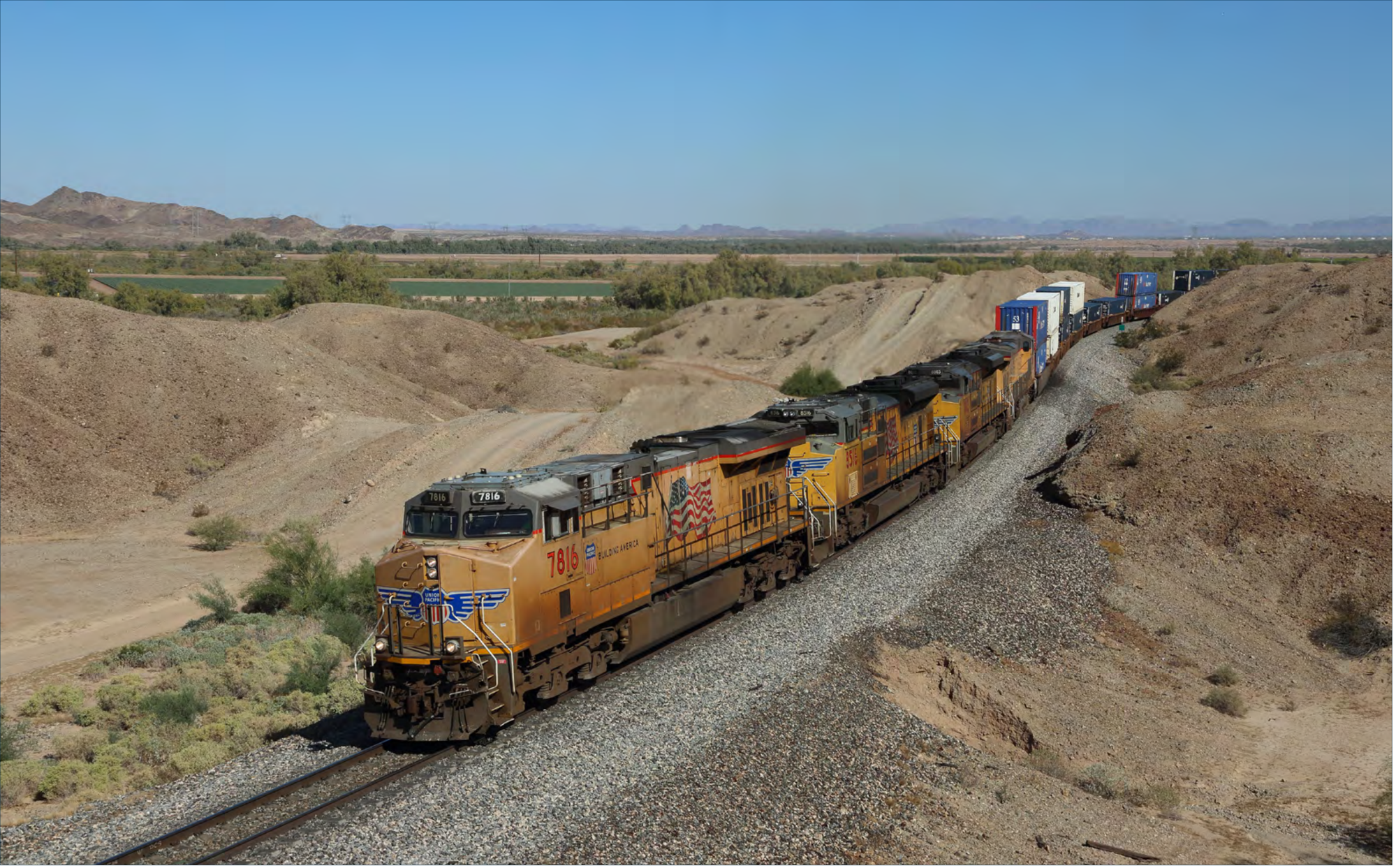
DB Class 185.123 is seen stabled at Spiez. *John Sloane*

SVB/Bernmobil tram No. 89 working a line No. 6 service to Fischermätteli heads through Bern. *John Sloane*

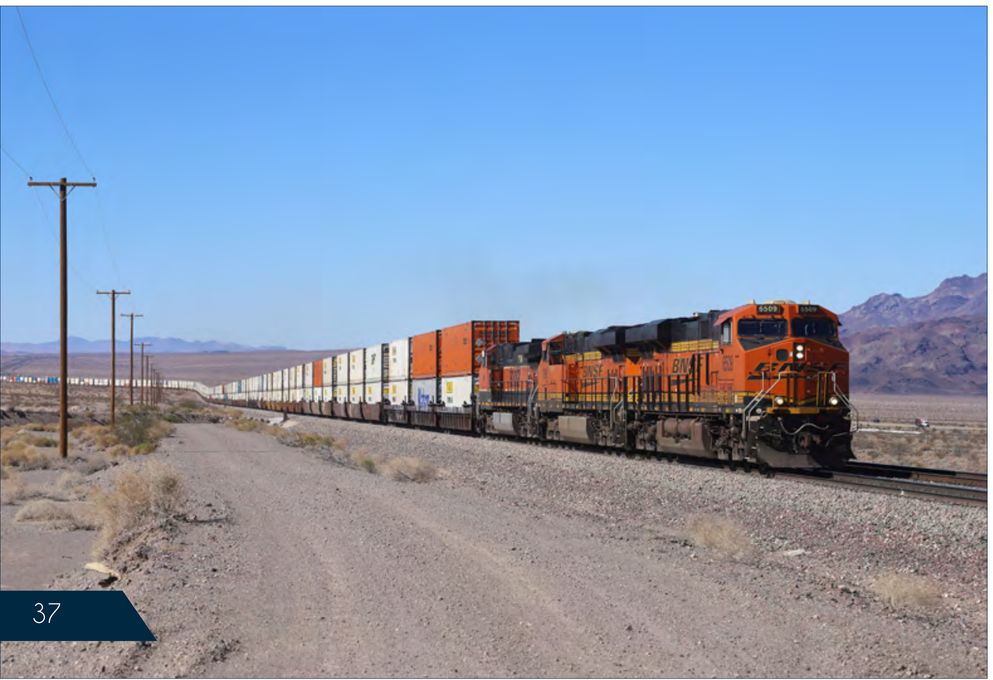
Freeport McMoRan Railroads Nos. 56, 51, 57 and 58 are seen stabled at Clifton interchange sidings. *Laurence Sly*

BNSF GE C44-9W No. 5139 leads ES44DC No. 7546 and another C44-9W No. 5410 past Ludlow whilst hauling a grain train.
Laurence Sly

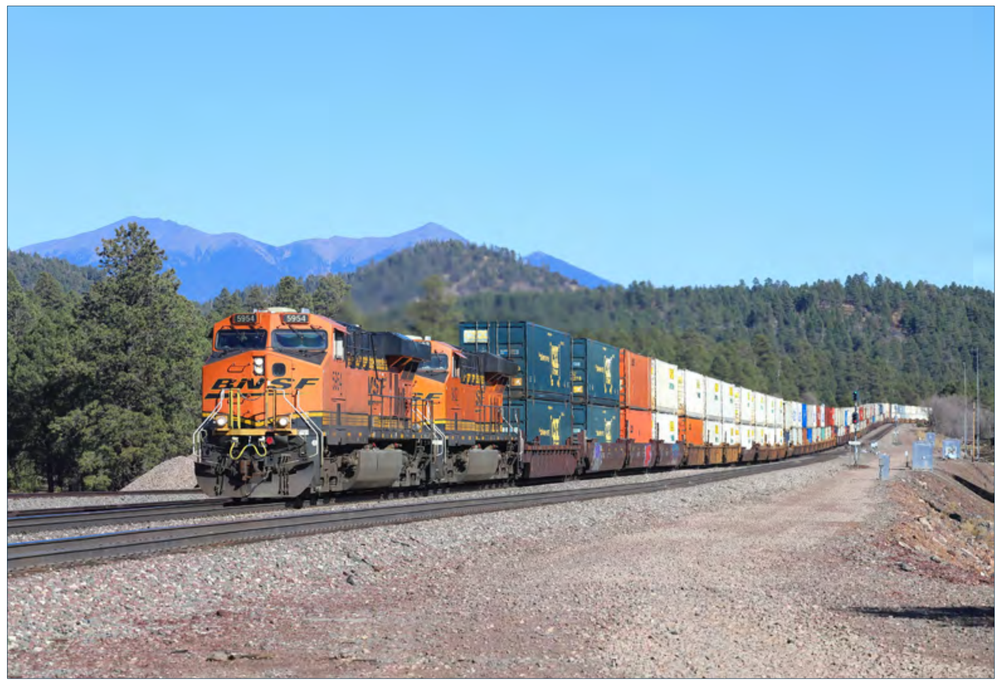
U.S.A.



Union Pacific AC45CCTE No. 7816, EMD SD70ACe Nos. 8516 and 8603 and AC45CCTE No. 8266 pass Dome whilst hauling a westbound double stack container train. *Laurence Sly*



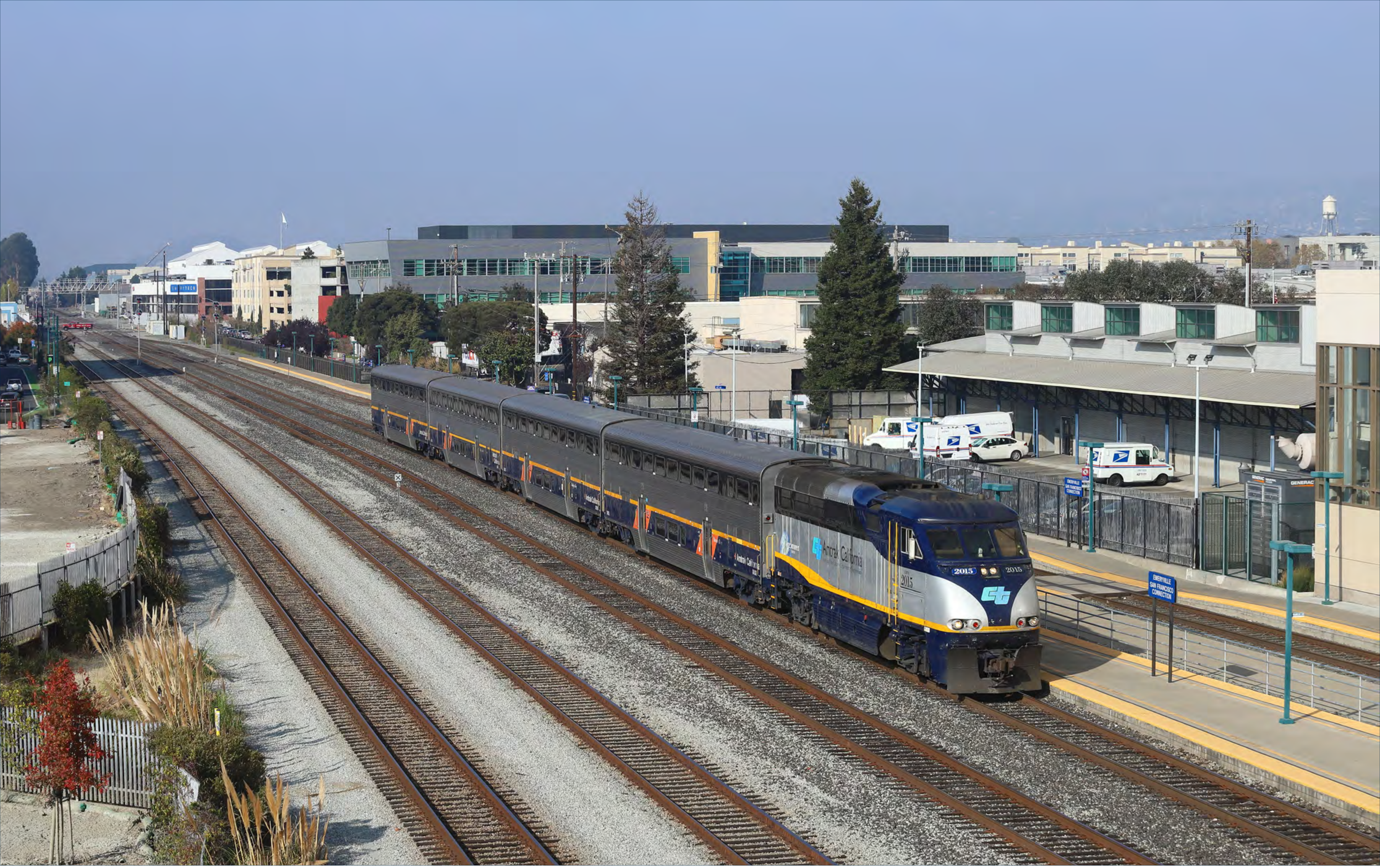
BNSF ES44C4 Nos. 6954 and 6432 approach Williams whilst hauling an eastbound double stack container train. *Laurence Sly*



BNSF Nos. GE ES44C4 No. 6509, ES44DC No. 7390 and C44-9W No. 969 pass Ludlow whilst hauling a double stack train. *Laurence Sly*

BNSF GE ES44C4 No. 7144 and ES44DC No. 7297 approach Hill 582. *Laurence Sly*

BNSF ES44C4 No. 6699 and C44-9w No. 4635 pass Phelen whilst hauling a double stack container train. *Laurence Sly*



Railtalk Magazine Xtra

U.S.A.

Amtrak California EMD F59PHI No. 2015 calls at Emeryville.
Laurence Sly

Arizona and California Railroads EMD SD40-2 Nos. 4001 and 4002 are seen stabled at Parker. *Laurence Sly*

BNSF C44-9W No. 4390 and ES44DC No. 7396 cross the Colorado River near Needles. *Laurence Sly*

BNSF ES44AC No. 6163, SD40-2 No. 6952 and C44-9W No. 5006 pass through Kingman Canyon whilst hauling an eastbound double stack container train. *Laurence Sly*

U.S.A.

Union Pacific GE ES44AC No. 5407 and AC44CW No. 6700 pass Dome whilst hauling a westbound double stack container train.
Laurence Sly

Freeport McMoRan Railroads EMD GP38-2 Nos. 58, 57, 51 and 56 depart the mine at Morenci for the interchange sidings at Clifton.
Laurence Sly

Trains go green: focus on battery and hydrogen

In February 2020, Alstom received an order for eleven battery powered regional trains for the Zweckverband Verkehrsverbund Mittelsachsen(VMS) in Germany. These are the first battery trains to be ordered from Alstom. Offering both hydrogen and battery is an important milestone for the Alstom, as it further proves their central role on the emission-free mobility market.

Here are some questions and answers from Brahim Soua, VP Regional Rolling Stock platform, but first a bit of background to Brahim.

Brahim Soua holds a PhD from the Ecole Nationale des Ponts et Chaussés and a degree from Ecole Nationale Superieure des Arts et Metiers. Passionate about excellence in each and every strategic project he is involved in, Brahim has held various positions within his 23 years career within Alstom. When he is not involved in beating records and developing new solutions, he enjoys long walks in Montmartre and a good night out at the theater.

What are the steps for Alstom towards emission-free solutions?

Our focus on sustainable energy has brought green solutions to the forefront of attention. The order from Zweckverband Verkehrsverbund Mittelsachsen (VMS) in Germany is a first for Alstom. Offering both hydrogen and battery solutions represents an important milestone for the company, as it further proves our central role on the emission-free mobility market. At the same time, we are already working on bringing our Coradia iLint to different countries: it will for instance be tested in the Netherlands. This demonstrates that Alstom's hydrogen technology is fully adaptable to different countries, ready to answer the growing demand for green transportation.

What is Alstom's experience in using hydrogen and battery?

We can be very proud to be pioneers in this field. Alstom has two pre-serial trains that are running in commercial service in Germany for more than a year now. The experience we gained allowed us to offer an optimised full hydrogen system that includes rolling stock, maintenance and hydrogen supply with a partner. Alstom has signed two contracts for hydrogen fuel cell powered trains. The first one is for 14 trains in the German region of Lower Saxony. The second one, also in Germany, for 27 trains to the Frankfurt metropolitan area. Speaking about battery solutions, we already have a great deal of experience with our Coradia iLint. We've tailored the Coradia range to operate with all available emission-free power systems, from electric to battery-electric and hydrogen fuel cells. The Coradia iLint is powered by fuel cells and offers a performance comparable to a diesel train while emitting nothing but water. Even though the iLint train is hydrogen-powered, it uses batteries as part of the traction system. Other examples include the Citadis tramway in Nice for example, the locomotive Prima H3 and our electric buses.

Alstom Coradia Polyvalent: new green solutions
What factors are considered when choosing between hydrogen and battery?

We analyse many parameters, such as operational requirements, existing infrastructure and topography, level of electrification, density of the traffic on the line, level of needed investments and, finally, fleet size. Generally speaking, battery solutions are more suitable in case of short and medium length of non-electrified sections, while hydrogen solutions are best to use when range is key. But it is important to keep in mind that these two solutions are complementary, with each of them answering different needs. Alstom is professional in both, and we are very well prepared to support our customers in choosing which one is the most suitable green solution for them.

What are the challenges that green solutions face today?

Whenever a green solution is introduced, the full system, including rolling stock, must be optimised. In terms of hydrogen infrastructure, we are talking about fuelling stations and distribution. Battery solutions, on the other hand, may require charging stations, as well as additional electrification that has an essential impact on cost and on its economic efficiency. In case of hydrogen technology, in order to make the investment more efficient on the fuelling infrastructure, it can be shared with other forms of transport using hydrogen - buses, trucks and cars, which is called "sector coupling". To invest in it, it is also important to gain political support as well as partners to form an ecosystem together.
For the battery technology, we have to tackle the distance limitations. While a hydrogen train can cover 1000 km without refuelling, battery train range is more limited. With the new battery technology that we are working on now, it can be increased to over 120 km. However, these numbers are far from being final, as we are constantly learning more and making improvements in this aspect.

What are Alstom's current objectives regarding the green range of solutions?

We would like to accompany our clients in phasing out diesel by 2035. Many major companies pledged to become fully emission-free in this timeframe. Alstom is already ideally positioned, being able to offer the whole range of green-traction solutions to our customers. Now we continue developing them further, proposing optimal solutions for each customer and each specific case. In parallel, we are working on improving the environmental impact of Alstom trains that are still using diesel and minimising CO2 emissions. This can be achieved by using hybrid powerpacks that combine battery and diesel. Other alternative fuels are now also under evaluation.

All systems go in Burgbernheim for wood consignments to Scandinavia

Late February saw DB Cargo Logistics and its customer binderholz dispatch their first load of cross-laminated timber on its journey from Burgbernheim in northwest Bavaria to Sweden. Previously, binderholz sent its products by road, but it has now switched to green rail services: with the support of DB Cargo Logistics, the company spent a number of months working to reopen a disused private siding located on its production premises.

binderholz and DB Cargo Logistics have enjoyed a close business partnership for many years. Cross-laminated timber products are made at a number of sites, including Burgbernheim, and, from now on, they will be transported to construction sites in Scandinavia and France by rail on open or covered wagons.

Martin Sigl, head of binderholz's logistics activities, says, "Working together, we are increasing the volume of freight leaving our Austrian and German plants on eco-friendly rail services. Measuring up to 20 metres in length, our cross-laminated timber units are in high demand internationally in the residential construction sector. We are delighted that our partnership with DB Cargo has resulted in a model that enables us to cater to this demand. Using the single wagonload network, we can transport consignments to Sweden, where they arrive on schedule after a journey of over 2,000 kilometres."

Dr Sigrid Nikutta, Member of the DB Management Board for Freight Transport, agrees: "That is an excellent description of our partnership. Tailor-made solutions for our customers are what we need if we want to increase the volume of goods being transported by rail. Whether these solutions take the form of a new or reopened private siding, or innovative ideas for simple transshipment processes at our marshalling yards and container terminals, we are ready to work with our customers on increasing rail freight's importance."

With locations in Austria, Germany and Finland, the binderholz Group is Europe's market leader in solid timber products and innovative solutions for the construction industry. Deutsche Bahn is dedicated to growth in the rail freight sector, and it is stepping up its single wagonload services for customers as a green alternative to road-based transport. The binderholz private siding is just the first of many success stories that we can expect to hear about in 2020.

Passengers ride on ATO (Automatic Train Operation) train in Groningen, Netherlands for the first time

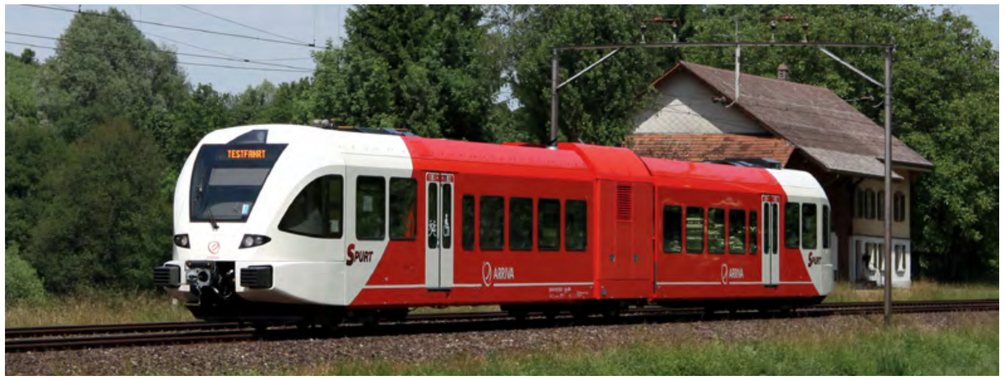
Stadler, together with ProRail, the Provincie Groningen and Arriva Netherlands, has opened the doors of an ATO test train to a group of VIPs, taking them on a trip in the Groningen area. This is the first time that passengers in the Netherlands have been on board an ATO train which can accelerate and brake automatically.

The four partners invited 50 local and national dignitaries to ride on an ATO train, taking them on a short journey around Groningen. The train ran in Grade of Automation (GoA) 2, which means that it moves automatically and stops precisely at a platform, based on the journey profile provided by ATO trackside. The train is a diesel-electric powered GTW, manufactured by Stadler and provided by Arriva Netherlands. To guarantee the train's safety, it operates under a train protection system and the supervision of a driver.

Testing in the Groningen area started in October 2019 and comprises three parts. The current phase, part 2, involves passengers travelling on an ATO train. The aim of the project is to evaluate the human factors of ATO usage. The project also determines the potential increase in track capacity as well as saving energy, and assesses stop precision, punctuality, speed, safety and comfort.

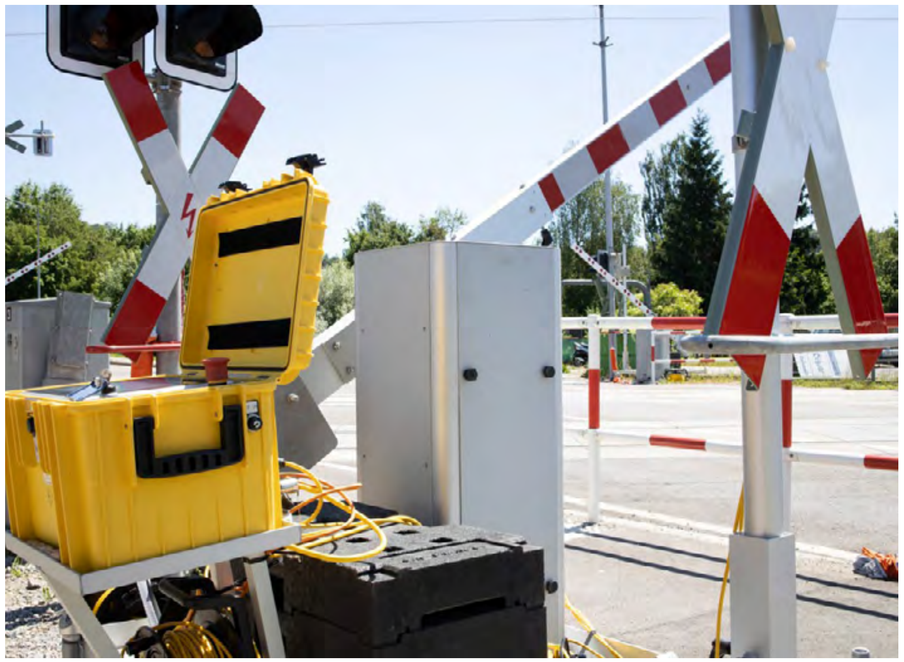
ATO can alleviate congestion, make journeys smoother and ensure a more reliable service for customers. It allows trains to travel more closely to each other than otherwise. It also saves energy, as trains can travel at the optimal speed, with braking being adjusted accordingly.

Now, Stadler, the Provincie Groningen, ProRail and Arriva Netherlands are running a few test trains specifically for the general public, allowing them to experience first-hand what it is like to travel on an ATO train.
Siddhant Tomar, Chief Technology Officer at Stadler Signalling, said: "This is a very exciting project, and we are pleased that the tests have gone well. Similarly, the collaboration between ProRail, the Province of Groningen, Arriva Netherlands and Stadler on ATO is proving successful. Innovation requires the collaboration and sharing of ideas. It means sitting down and talk with passengers to understand their needs. The Stadler ATO system is one of the most innovative technological steps in the industry. It meets our customers' expectations and paves the way to a digitalised railway."



Mobile protection for level crossings Fail-safe control from Siemens and UPZ

UPZ Sitech GmbH is part of the UPZ Group and is a specialist in rail safety technology and rail-related services. To ensure the reliable and smooth running of trains in the event of faults in the stationary safety technology for level crossings, UPZ has developed a mobile level crossing protection system. The solution is based on a Simatic S7-1500F fail-safe control in the robust Siplus extreme version from Siemens. This ensures that the system meets strict rail requirements, including its ability to operate in a temperature range from -25 to +55 degrees Celsius. In addition, the system is TÜV-certified, open, freely programmable and extremely flexible. The modular solution can be used to monitor up to twelve cabinet modules and offers an installation time of just two to three hours.



Level crossings for vehicles and pedestrians are protected with level crossing gates and light signals to ensure effective accident prevention. In the event of faults in the stationary safety technology, a level crossing safety barrier and one or more auxiliary barriers must take over this task – for a maximum of seven days. Then a mobile level crossing protection system must be used to replace the safety function, also known as technical equipment for level crossing safety barriers. The solution from UPZ is based on a fail-safe Siemens Simatic S7-1500F control, which is currently the only fail-safe control that meets strict rail requirements. In the Siplus extreme version, all components and solder points on the printed circuit board feature a specially sealed surface and increased thermal stability for use in temperature ranges from -25 to +55 degrees Celsius.

TÜV-tested, easy to install system

The control is installed as a Siplus ET200SP I/O system. The Profinet Industrial Ethernet standard can be used to connect up to twelve drives, 36 light signals and twelve audible level crossing alarms quickly and reliably to the control. This means that complex level crossings can be protected without problems. UPZ has achieved TÜV certification for its mobile solution including night warning system (NWS), which is a track contact-controlled system that is integrated in the UPZ solution and which provides an audible and visual warning when a train approaches an unprotected level crossing and automatically protects the crossing. In addition, the Siplus extreme rail components meet the requirements of railway standards DIN EN 50126 and DIN EN 50128 (safety standards for rail applications) as standard. This means that rail safety certifications to safety level (SIL) 2 can be achieved without additional testing.

Cost-effective and robust solution is well received

By using the UPZ railroad crossing protection system, which is installed within two to three hours, rail operators can avoid expensive auxiliary barriers and instead opt for a solution that is reliable and robust, but above all also very cost-effective. Around 20 of these systems are now in use across Germany.

IN EXCESS OF 100 MILLION EURO WORTH CONTRACTS AWARDED TO CAF IN THE NORDIC COUNTRIES

The Norwegian operator VY has signed an agreement with Euromaint to maintain the fleet to be operated by the Norwegian company for the Bergen Railway in this Scandinavian country for 9 years.

The Swedish subsidiary of the CAF Group is the market leader in railway maintenance services and components in Sweden, and will contribute with a long-standing experience in the field to conduct most of its operations in Bergen, where a new maintenance workshop is currently being built for the line.

This contract is a first for Euromaint in Norway where it will conduct its activities hand in hand with VY thanks to both companies' extensive knowledge of local train operating conditions, in addition to cutting-edge efficient and quality train maintenance techniques.

The Bergen railway line (Bergensbanen) connects Oslo with Bergen. It is the highest railway in Northern Europe and is reputed for having been named one of the most spectacular railway routes in Europe.

Last December VY was awarded the contract to manage the operation of the Bergen Railway lines, with a view towards increasing long-distance, regional and local train traffic, improving regional transport connections whilst also upgrading on-board services. The VY Group is one of the largest transport groups in the Nordic region. Owned by the Norwegian Government, through the Department of Transport and Communications, it operates most of the passenger train services and a significant number of bus services in Norway.

The acquisition of Euromaint in 2019 reinforced CAF Group's growing service provision business, and this new contract will also consolidate the Company's strong foothold in the Nordic market, where the Group has implemented a considerable range of projects over recent years.

CAF to supply five additional metro units for Helsinki

HKL (Helsingin kaupungin liikennelaitos), the company responsible for operating the Helsinki public transport systems has chosen CAF for the procurement of five new M300 series metro units. These will be added to the 20 trains that CAF previously supplied to the Finnish capital Metro system which are currently in service.

These new 4-car units will be similar to the already existing M300 units, increasing the current Helsinki Metro fleet from 45 to 50 trains as, aside from the 20 M300 CAF-produced trains, 6 M200 series trains and 19 M100 series trains are also currently in operation. The new trains will span a total length of 90 metres with an approximate passenger capacity of 575. They will be fully accessible from end to end facilitating passenger circulation between cars on route. This operation includes the supply of spare parts in addition to the train units. The trains are scheduled to be delivered over the course of 2022 with a view towards catering for the traffic increase forecast for the first half of the 2020s on the Metro West line towards Kivenlahti.

Stadler and Nexus sign contract for delivery and maintenance of 42 METRO trains in Newcastle upon Tyne

Stadler will supply 42 METRO trains, build a new maintenance plant and carry out 35 years of maintenance for the Tyne & Wear Metro. Stadler and Nexus have signed the contract after the expiry of the objection period. The order, comprising trains, depot and maintenance, is worth around 700 million pounds sterling. This success in the north-east of England sees Stadler win its third major METRO contract in Great Britain. Passengers on all underground trains in the UK outside London – in Liverpool, Glasgow and now Newcastle upon Tyne – will soon be travelling on Stadler trains.

The transport authority, Nexus, based in Newcastle upon Tyne, UK, has signed the legally binding contract with Stadler for the delivery of 42 METRO trains, including an option for more trains. A objection period, which started the day that the contract was awarded, has now run its course. No competitor has appealed against Nexus' decision to award the contract. The Tyne and Wear Metro serves Newcastle upon Tyne, Gateshead, South Tyneside, North Tyneside and Sunderland in Tyne and Wear in the north-east of England. Commercial operations are scheduled to begin in 2023. In 2024 the new METRO trains will completely replace the existing fleet. The contract for the supply of the vehicles, the construction of a new depot and the maintenance of the trains for 35 years is worth around 700 million pounds sterling. Stadler will also work with local suppliers from the North East of England to produce the new trains.
Ansgar Brockmeyer, sales director at Stadler, said: "The contract with Nexus represents an important milestone for Stadler in Great Britain. After Glasgow and Liverpool, this is the third metro operator to opt for a Stadler vehicle. We look forward to working with Nexus and our suppliers in the North East of England."

Director General of Nexus, Tobyn Hughes, said: "We have secured one of the best train builders in the world to make the new Metro fleet. It's an historic moment in the proud 40 year history of the Tyne and Wear Metro service. I am delighted that has now been made official with the signing of the contract with Stadler. The hard work now starts in making our new train fleet become a reality. It heralds a very exciting future for Metro, its passengers, and its workforce. We asked for the best trains to transform the passenger experience and delivering huge energy savings. Stadler has delivered on all fronts, and we look forward to working with them and the extensive UK supply chain which will support them over the coming years."

Comprehensive maintenance services

Stadler has also been awarded the contract for the comprehensive maintenance of the Tyne and Wear Metro fleet for 35 years. This will be for the new trains, and from towards the end of this year, Stadler Service will also be responsible for the maintenance of the existing fleet, comprising 89 vehicles. This work will initially be carried out at Nexus' existing depot in Gosforth. The old depot, which dates back to the era of steam locomotives, will be replaced by a brand new facility. The new depot will be designed by Stadler and built with locally recruited partners. To ensure maximum availability, the contract includes among other things preventive and corrective maintenance as well as daily cleaning. These activities will be carried out by Nexus' experienced service personnel, who will transfer to Stadler as part of the contract.
Jürg Gygax, head of Stadler's Service division, added: "This order for Stadler Service clearly shows how Stadler implements a complete service package – this marks a massive step into the future. We are very much looking forward to embarking on a long, productive partnership with Nexus, which will span 35 years."

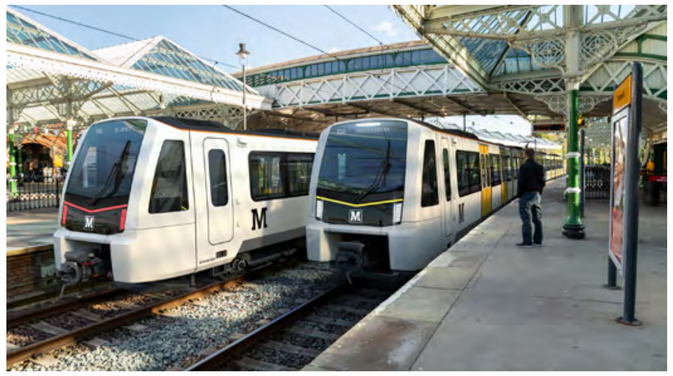
More about the trains

The 60-metre long trains that Stadler is providing for the standard gauge network in Tyne and Wear each consist of five carriages. Power is supplied via an overhead line with 1500 V DC. The maximum speed is 80 kilometres per hour. Eight large double doors allow passengers to get on and off quickly. The trains can accommodate up to 600 passengers. The lightweight vehicle design, the recovery of braking energy and the use of highly efficient traction converter technology will all lower energy consumption. The trains will be built to accommodate an energy storage system, so that in the future they will be able to operate on an extended network. The interior of the vehicles will be bright and open. There will be special multi-functional areas for wheelchairs, prams, luggage and bicycles. Trains will feel more secure, featuring video surveillance, protection systems for door operation and clear warning displays. Good thermal and acoustic insulation will regulate on-board temperatures for the comfort of passengers, and newly developed air-sprung bogies will reduce noise levels.
Local engagement

Stadler has undertaken extensive research into possible local companies to supply parts for these vehicles. Although the trains will not be manufactured in UK, it is committed to involving as many companies from the Tyne and Wear region in the project as possible. The Service contract, which is for 35 years, represents a long term investment in the area, and it is essential that local companies play a key role within it. Stadler has also established links with a number of educational establishments in the region. It has asked them to help with training and supplying apprentices and graduates, with a view to developing training programmes with them. Such initiatives could encourage students to stay in the region, boosting the local economy.

Other METRO orders in the UK

In March 2016, Stadler, in a consortium with AnsaldoSTS (now Hitachi), won the first METRO order in the UK: 17 underground trains for Glasgow Subway, operated by Strathclyde Partnership for Transport. In February 2017, Stadler was awarded a major contract from Merseytravel to build 52 METRO trains for the Liverpool City Region. Stadler will be responsible for their maintenance for 35 years. These three METRO contracts see Stadler supplying all underground systems outside London with modern, energy-efficient and highly available vehicles.



Acquisition of Bombardier Transportation: accelerating Alstom's strategic roadmap

On February 17th, Alstom announced that it has signed a Memorandum of Understanding with Bombardier Inc. and Caisse de dépôt et placement du Québec ("CDPQ") in view of the acquisition of Bombardier Transportation. Post-transaction, Alstom will have a backlog of around €75bn and revenues around €15.5bn. The price for the acquisition of 100% of Bombardier Transportation shares will be €5.8bn to €6.2bn which will be paid via a mix of cash and new Alstom shares. CDPQ will reinvest c.€2bn corresponding to 100% of cash proceeds to be received from the sale of its stake in Bombardier Transportation and further invest €0.7bn in Alstom, outlining its strong belief in the strategic rationale and value creation potential of the combination.

"I'm very proud to announce the acquisition of Bombardier Transportation, which is a unique opportunity to strengthen our global position on the booming mobility market. This acquisition will improve our global reach and our ability to respond to the ever-increasing need for sustainable mobility. Bombardier Transportation will bring to Alstom complementary geographical presence and industrial footprint in growing markets, as well as additional technological platforms. It will significantly increase our innovation capabilities to lead smart and green innovation. We will be thrilled to welcome all the talent and energy of Bombardier Transportation employees. We are deeply committed to step up the turnaround of Bombardier Transportation activities and deliver significant value to all stakeholders, particularly our customers. We will also further develop Bombardier Transportation's historical presence in Québec, drawing on Québec's well-established strengths in innovation and sustainable mobility. We are pleased to welcome CDPQ as a new long-term shareholder. CDPQ is fully supportive of the transaction and Alstom's strategy." said Henri Poupart-Lafarge, Chairman and CEO of Alstom.

A step-change acquisition

Alstom and Bombardier operate in a very positive market environment with passenger traffic expected to grow between 3% to 5% annually over the 2015-2025 period and global rail OEM market expected to achieve a +3.0% CAGR between 2021-2023. The dynamic is driven by urbanisation trend and a strong push for decarbonation of mobility. In Europe, the European Commission has set very ambitious targets in terms of CO2 reduction and several countries have announced large investments in rail. Alstom is a preeminent rail equipment player with an industry-record backlog of €40bn and €8.1bn of annual sales as of 31-Mar-2019. Over the period 2016-2019, Alstom delivered strong sales development with an average annual growth of 5.5% outperforming the market, and significantly improved profitability (up to 7.5% adjusted EBIT margin). Bombardier Transportation is a reference player in global rail transportation with a €32bn backlog and €7.4bn sales as of December 2019. With a track record of market leadership and a strong expertise, Bombardier Transportation offers a broad product portfolio across all market segments and has a well-balanced industrial footprint between best-cost and high-tech countries. Post-transaction, Alstom will benefit from significant additional technologies and added R&D resources to consolidate its innovation leadership in sustainable mobility. The group will also further develop its presence in Québec, Canada. After the transaction, Montréal will welcome the Headquarters of Alstom of the Americas, leading all Alstom operations and expansion in these geographies. In addition, drawing on Québec's well-established strengths in innovation and sustainable mobility, Alstom will establish a centre of excellence for design and engineering, as well as high-tech R&D activities, which will notably be focused on developing sustainable mobility solutions.

A unique opportunity to accelerate Alstom's strategic roadmap, Alstom in Motion

The acquisition of Bombardier Transportation is a one-time opportunity coming at the right moment for Alstom, having significantly strengthened its operational and financial profile over the past 4 years to accelerate its strategic roadmap, and adding to Alstom complementary commercial and industrial platforms. Bombardier Transportation will notably bring to Alstom:

- complementary geographical presence to broaden Alstom's commercial reach in key growing markets leveraging on Bombardier's successful historical track record in Germany, UK, North America and its unique presence in China
- attractive rolling stock additions to Alstom's portfolio establishing a comprehensive offering across all rail segments to better address customers' needs for fit-for-purpose mobility solutions, notably with selective niches such as Monorail, People Mover and bringing strong expertise recognition through the development of local specific solutions to blue-chip clients
- significant assets for Alstom services business with access to the largest installed train fleet worldwide and a wide maintenance facilities network in a high value segment and opening new opportunities with a strengthened market coverage and service offering
- complementary and strategic new geographies in signalling enabling Alstom to accelerate the roll-out of its solutions leveraging on new market access and highly qualified employees consolidating Alstom capabilities in a strategic segment
- complete innovation portfolio and significant engineering and R&D resources to lead smart and green mobility innovations
- best cost industrial footprint including in Eastern Europe, Mexico and China and complementary footprint in mature markets e.g. Germany & UK

A value-creating transaction for all stakeholders

Alstom is committed to recover Bombardier Transportation's full operational and profitability potential with the objective of restoring project execution and margin towards standard level. This will be achieved thanks to clearly identified levers including:

- focus on operation turnaround and backlog execution based on Alstom best practices systematic roll-out
- structured action plan to ensure successful integration and deployment of Alstom best practices and technologies globally
- Alstom's financial discipline and successful track record in profitability step-up
- the strong cultural fit and understanding of Bombardier Transportation developed during numerous co-led projects

In addition, tangible and executable synergies have been identified and Alstom plans to deliver €400m run rate cost synergies in year 4 to 5. As a result of greater efficiency and of a more robust operational profile, the transaction is expected to be double-digit EPS accretive from year 2 post closing for Alstom shareholders. Customers will also benefit from the extensive expertise and the broad portfolio of this larger entity.

CDPQ becoming a new long-term shareholder of Alstom

Pursuant to the terms of the acquisition, CDPQ (currently holding 32.5% of Bombardier Transportation), will become the largest shareholder of Alstom with approximately 18% of capital. CDPQ is a highly regarded strategic investor with a long-term investment approach and has a significant and successful track record in the rail industry. It is fully supportive of the transaction and Alstom's strategy. CDPQ will reinvest its proceeds for c.€2.0bn and realize an additional investment of €0.7bn in Alstom. Bouygues will remain an important shareholder of Alstom with around 10% of capital. It is fully supportive of the transaction and undertook to vote in favor of the transaction-related resolutions at the EGM. For existing Alstom shareholders, the transaction is expected to deliver significant value and they will be offered the possibility to accompany Alstom in the financing of this strategic acquisition through a rights issue, subject to EGM approval.

Indicative timetable and next steps

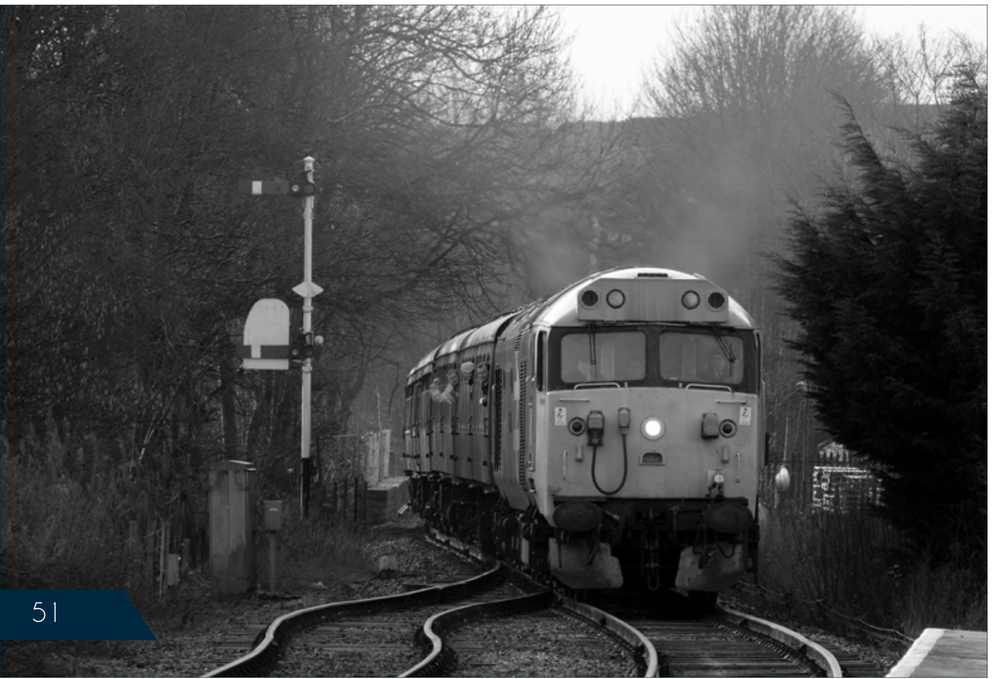
The signing of the Memorandum of Understanding has been unanimously approved by each of Alstom's and Bombardier Inc.'s board of directors and the envisaged transaction is fully supported by CDPQ. The Memorandum of Understanding organises the information and consultation process by Alstom and Bombardier of their respective Works Councils and contains exclusive commitments by both parties.An extraordinary general meeting (EGM) voting on the reserved capital increases and the rights issue should take place no later than October 31, 2020. Bouygues undertook to vote in favour of the transaction-related resolutions at this EGM. Subject to the EGM, rights issue will take place between H2 2020 and H1 2021 and the reserved capital increases will take place at closing. The transaction will also be subject to clearance from relevant regulatory authorities and anti-trust authorities.

From the UK

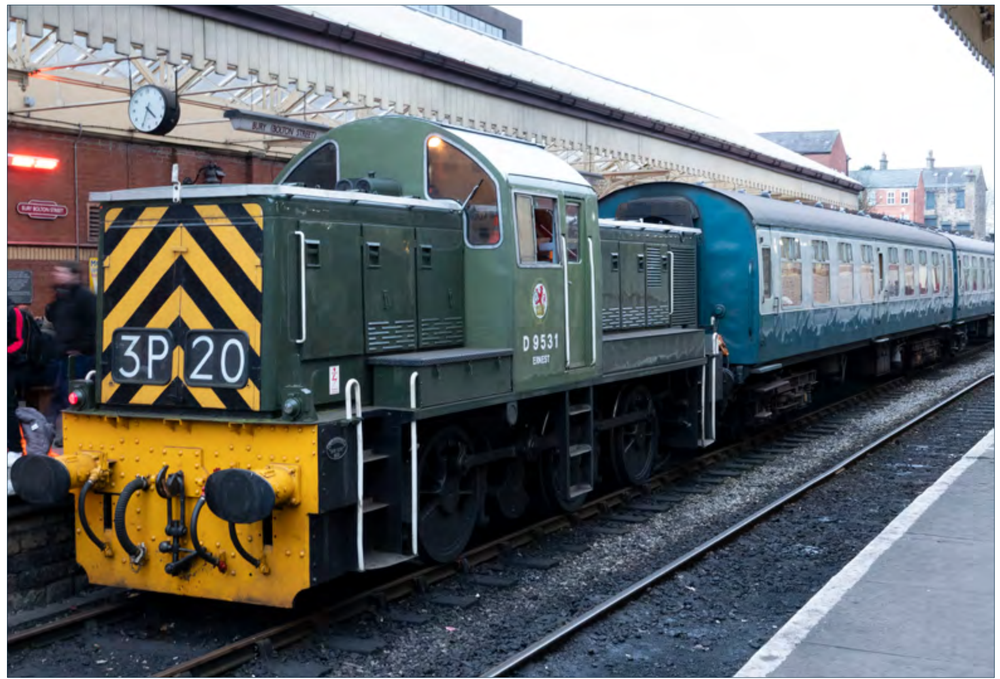
East Lancs Railway

Our first visit of the year to the popular Lancashire line for its spring diesel gala. A few late running services and a couple of failures, but that's what makes it all the more interesting, isn't it??

Warship Class 42 No. D832 'Onslaught' runs light engine through Bury Bolton Street. *Richard Hargreaves*



Class 14 No. D9531 'Earnest' waits departure time at Bury on the rear of a late afternoon service to Heywood. *Class47*



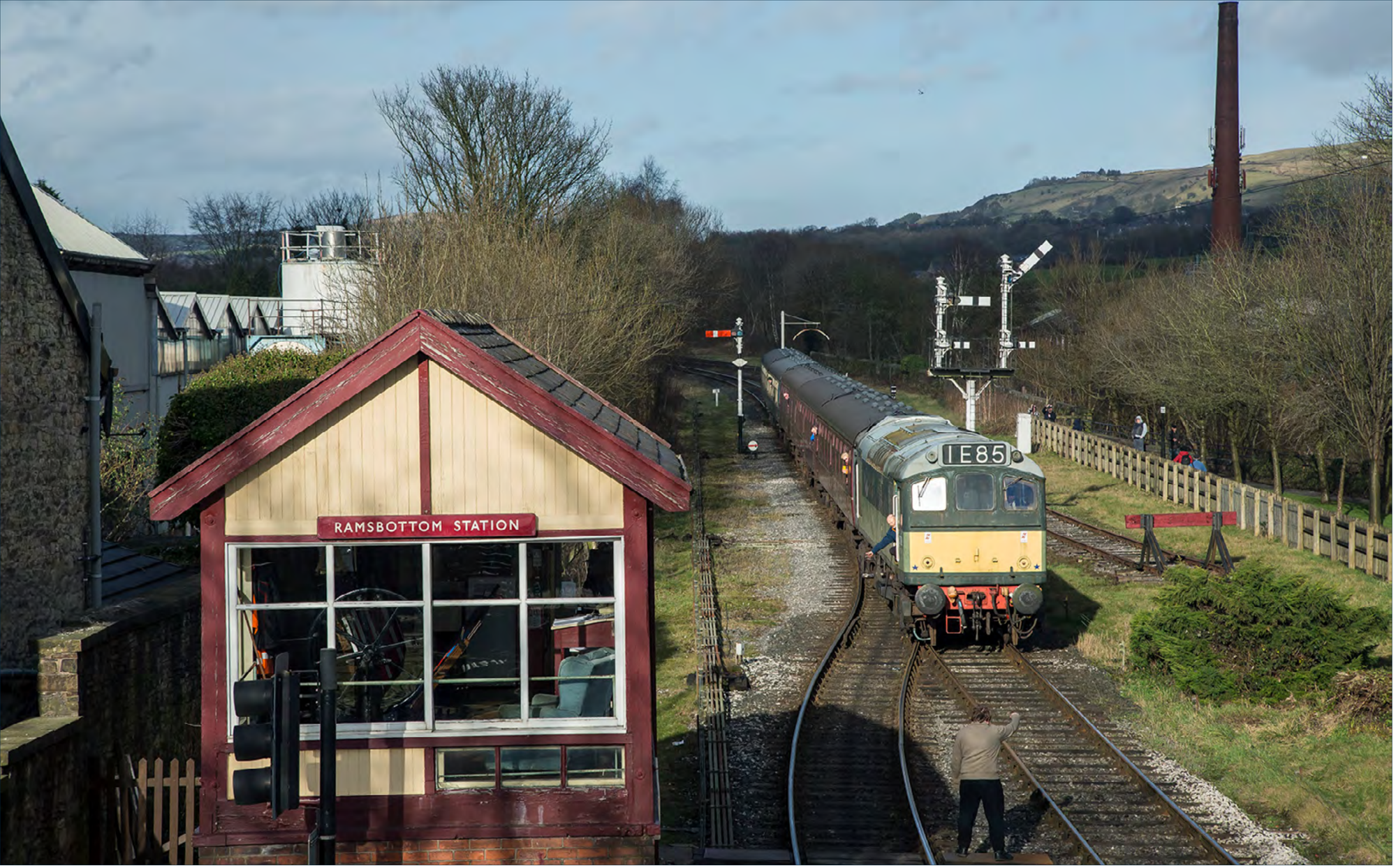
On February 8th, Class 50 015 arrives at Ramsbottom with a service to Rawtenstall. *Class47*

From the UK

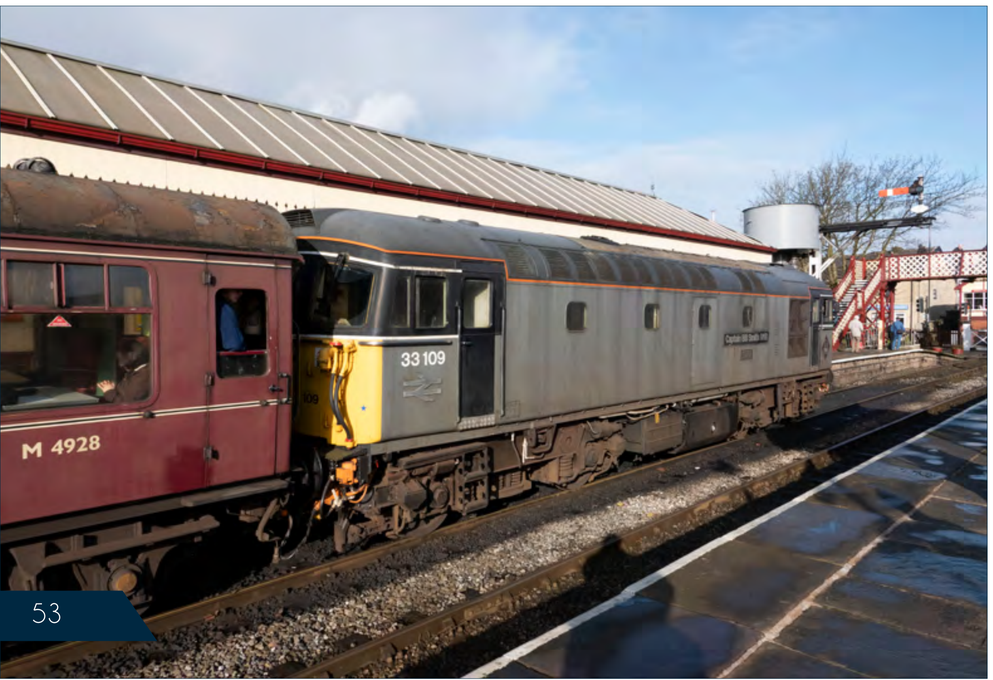
Class 45 108 is seen at Bury Bolton St. on February 8th, waiting departure time with a service to Heywood. *Richard Hargreaves*

From the UK

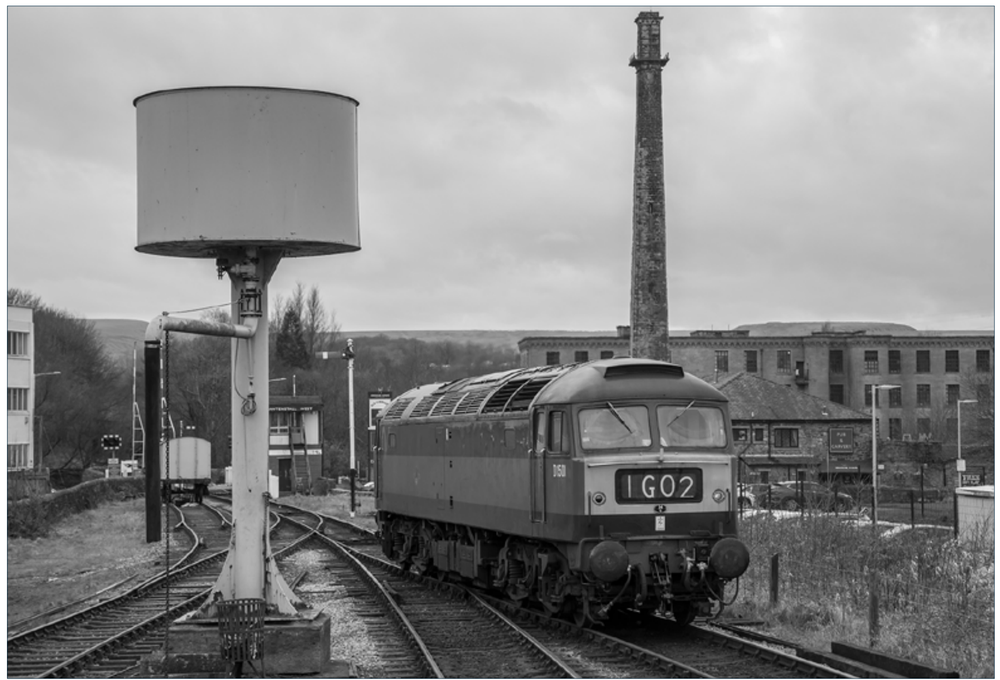
East Lancs Railway



Class 25 No. D7629 catches a brief patch of sunshine as it approaches Ramsbottom with a service to Bury on February 8th.
Richard Hargreaves



Class 47 No. D1501 runs round its train at Rawtenstall on February 8th. *Richard Hargreaves*



Class 33109 waits departure time at Ramsbottom on February 8th with a service to Rawtenstall.
Class47

From a colour negative, this photo shows an X4200 Panoramic railcar, plus trailers at Brioude on May 27th 1967. This service named the 'Cevenol' ran from Clermont-Ferrand to Marseilles taking the mountainous route across the Cevennes to Nimes.

Christopher Baldwin

A rather old photo of SNCF No. CC6529 taken in 1968 at Toulouse Matabiau. The locomotive is carrying the headboard for Le Capitole, a first-class only express from Paris Austerltz to Toulouse that ran non-stop as far as Limoges. The train covered the 443 miles in 6 hours. *Christopher Baldwin*