

Railtalk Magazine *Xtra*

Issue 167x
August 2020
ISSN 1756 - 5030

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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 above.

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



Welcome to Issue 167Xtra

Another month of lockdown and just when you start to make plans for a visit abroad after many countries eased travel restrictions, we seem to be heading towards the tightening of them back up again. Oh well it's back to staying in the UK for me.

Anyway the main news this month has to be that after a long discussion, the European Commission has cleared Alstom's acquisition of Bombardier Transportation.
The Commission's approval for the transaction is conditional on the proposed engagements that consist of:

- A transfer of Bombardier Transportation's contribution to the V300 ZEFIRO very high-speed train and an offer of IP licence to Hitachi for the train co-developed by Hitachi and Bombardier Transportation for use in future very high-speed tenders in the UK
- The divestment of the Alstom Coradia Polyvalent and the Reichshoffen production site in France
- The divestment of the Bombardier TALENT 3 platform and dedicated production facilities located within the Hennigsdorf site in Germany
- Providing access to certain interfaces and products for some of Bombardier Transportation's Signalling On-Board Units and Train Control Management Systems (TCMS)

The divestitures will comply with all applicable social processes and consultations with employee representatives' bodies. The transaction remains subject to further regulatory approvals in several other jurisdictions and customary closing conditions.

In other news and from India where the Rail Coach Factory in Kapurthala has rolled out its first 'post-Covid coach', incorporating what Minister of Railways Piyush Goyal said were 'significant design improvements for post-Covid travel'. The vehicle incorporates a range of 'hands-free' features including forearm-operated compartment door handles, and foot-operated toilet door latches, taps, soap dispensers and flushing systems. Handrails and latches are coated with copper, which has antimicrobial properties, while titanium dioxide coatings on surfaces such as washbasins, toilets, seats and berths, tables, windows and the floor are intended to inhibit viruses, bacteria, mould and fungal growth. The air-conditioning system incorporates plasma equipment to sterilise the air and internal surfaces.

More Coronavirus woes from Belgium though where delivery of SNCB's double-deck Type M7 push-pull trainsets has been further delayed and will not now be completed until March 2023.

Meanwhile in Lithuania, the state railway group's freight business LTG Cargo has established a Polish subsidiary to support its international expansion plans and is negotiating a joint venture with PKP Cargo to operate cross-border intermodal services. LTG Cargo Polska was granted a safety certificate by Polish authority UTK at the end of June and plans to begin operations in the near future, initially between the border at Mockava and the city of Białystok. 'While rail freight businesses across Europe are experiencing shocks, we see the current period as a window of opportunity for active development', said LTG Cargo CEO Egidijus Lazauskas. 'This will allow us to further diversify our flows, reducing our dependence on traditional types of cargo, the demand for which will gradually shrink over the next decade.' And also from Lithuania, national railway group Lietuvos Geležinkeliai has launched a new brand identity on its 101st birthday, reflecting its recent restructuring with the formation of passenger, freight and infrastructure businesses. The full name remains Lietuvos Geležinkeliai, but with the 'new, more patriotic' abbreviation LTG rather than LG. The passenger transport business is now called LTG Link, with the dual meaning of 'direction' in Lithuanian and 'connection' in English. The freight operator is LTG Cargo and the infrastructure manager LTG Infra. The new logo has an arrow which 'embodies movement and progress' and the 'mission to connect people and businesses'.

Until next month

David

This Page

Aurizon's very scruffy No. S3306 is seen approaching the Kwinana unloading facility with loaded bauxite hoppers from the Alcoa mine site at Pinjarra. *Colin Gildersleve*

Front Cover

NS Sprinters Nos. 2991 and 2973 working train No. 5047 pass Delft. *Gerard van Vliet*



On July 4th, the 'Erlebniszug Rheinschlucht' formed of Ge 4/4i No. 610 built in 1953, two carriages built in 1939 and two famous 4 wheel open observation carriages work train No. RE1751 from Trin to Ilanz. *Thomas Niederl*

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Railtalk Magazine is published by HAD-PRINT a trading name of HAD-IT LIMITED.

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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, Mathijs Kok, 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.

Lovely afternoon winter light bathes the 2NY3 Newcastle to Whyalla steel train as it begins the climb of the Cullerin Ranges between Goulburn and Yass on the NSW Southern Mainline, hauled by Pacific National Nos. NR32, 8225 and 8224. *Mark Bennett*

Two of Transperth's 'A' series electric narrow gauge suburban units pass on the outskirts to Fremantle station. The dual gauge line to the left is for access to the Fremantle Container Port. *Colin Gildersleve*

Nos. NR2, NR18 and LDP007 take the loop at Telegraph Point with the 4WB3 steel train to cross XPT No. NT32 heading to Brisbane on July 2nd. *Mark Bennett*

The 2WB3 Port Kembla to Brisbane steel products service is seen at Telegraph Point on July 21st hauled by No. NR74, wearing the livery of The Ghan passenger train, leading Nos. AN8, 8169 and 8229. With the Covid-19 pandemic, 'The Ghan', along with the Indian-Pacific have been cancelled and the special-liveried NR's that normally work them are being seen wide and far on Pacific National freight services. *Mark Bennett*

Australia

The new terminus of the Newcastle railway, Newcastle Interchange Station, after the railway was cut short by several kilometres to open up the city/foreshore area for development. Intercity V-set V5 departs for Sydney as a local Hunter Railcar looks on. *Mark Bennett*

On June 26th, the 5BW4 empty steel products train climbs out of Stroud Road, at the locality of Nooroo on the NSW Lower North Coast, hauled by Nos. NR70 and LDP003. *Mark Bennett*



Grafton cement train No. 4621, passes through Telegraph Point behind Nos. 8256 and 8239 on June 27th.
Mark Bennett



Australia

The 6AB6 Adelaide to Brisbane intermodal service, approaches Kundabung on the NSW North Coast line, hauled by Nos. NR72 and AN7 on June 26th.
Mark Bennett

Loaded coal train No. SF614 from Stratford Colliery hauled by Nos. 9318, 9308 and 9312 is seen at Dingadee on the NSW Lower North Coast, June 26th. *Mark Bennett*

Watco Australia's Nos.G511 and FL220 with train No. 3142 Forrestfield to Fremantle Container Port intermodal is seen at Jandakot. *Colin Gildersleve*



Australia

CBH Group's Nos. CBH025 and CBH002 with train No. 5K25 empty grain hoppers from Kwinana passes the site of the soon to be relocated Midland station.
Colin Gildersleve

Czech Republic



Preserved Class 706.533 attracts a couple of photographers at Pecky.
Class47

The first agreement on increasing energy efficiency has been concluded

Increase energy efficiency and consume less energy for transport. This is a new socially responsible commitment of ČD Cargo. The company confirmed it by signing an agreement on increasing energy efficiency with the Ministry of Industry and Trade. The Czech Republic is thus fulfilling its obligation required on Member States by the European Directive 2012/27 / EU, which states that in the years 2021 to 2030 at least 0.8% of final energy consumption must be saved every year. The aim is to improve the climate and the environment in which we live.

In order to ensure more energy-efficient transport, ČD Cargo is gradually changing its vehicle fleet. Instead of vehicles with electric resistance control, it acquires new locomotives with semiconductor lossless power control, enabling the use of regenerative braking and taking only effective current components. The company modernizes diesel locomotives, thus improving their technical and environmental parameters. It is also preparing to use two-source hybrid locomotives, which will bring fully emission-free operation in the future. By measuring and evaluating the traction consumption of each individual train, ČD Cargo guides and will further motivate its drivers to energy-efficient driving. The gradual change of the vehicle fleet also applies to wagons, where rolling stock with lower driving resistance and lower noise are purchased.

The agreement on energy efficiency was signed by Deputy Prime Minister and Minister of Industry and Trade Karel Havlíček and Chairman of the Board of Directors of ČD Cargo Ivan Bednárik. It is thus clear that reducing energy consumption and increasing energy efficiency is in the common interest of the state, companies and entities that provide services in the field of energy. All of this, of course, without negative effects on final consumers.

“In order to meet our commitments to the European Union, which responds to climate change, among other things by reducing carbon emissions, we are choosing the path of voluntary Strategic Declarations (Agreements) on energy efficiency. They can be joined by all companies that are not indifferent to the quality of the environment and sustainable development, “says Deputy Prime Minister and Minister of Industry and Trade Karel Havlíček, adding: “ČD Cargo is the first “swallow”, an example to which I believe other companies will join soon.”

“We appreciate that the Ministry of Industry and Trade is preparing and supporting legislative changes related to increasing energy efficiency in transport. We also welcome the Ministry’s commitment to promote incentive programs to reduce the energy intensity of transport and increase the share of emission-free electric traction, “says Ivan Bednárik, Chairman of the Board of ČD Cargo , and goes on:” At the same time, we see increasing the energy efficiency of our freight transport, reducing our carbon footprint and reducing our emission intensity not only as socially responsible , but as absolutely necessary with regards to future generations. “

Czech Republic

Regiojet Class 386.201 approaches Breclav with a Praha - Wien service.
Class47





TRAXX locomotives on ČD Cargo

On July 2nd, the historic first working of locomotive No. 388.002 on a regular ČD Cargo freight train took place. It was a turnaround of train No. Pn62012/62013 Ostrava - Česká Třebová - Ostrava and it happened within the trial operation on the lines of Správa železnic.

In the near future, engine No. 388.001 should appear regularly on trains with wood chips from Planá u Mariánských Lázní and from Havlíčkův Brod to Hněvice.

In the second half of August, some of the locomotives will be utilized on the so-called Western Expresses of Czech Railways. The new TRAXX engines have to travel 10,000 km with passenger trains as part of the test run, too.

Photos: © Martin Padalík and Petr Kadeřávek



Czech Republic

Class 720.099, 721.549 and 721.113 lead a historic lineup at Kolin.
Class47

Czech Republic

Správa železnic prepares the construction of a Tunnel between Prague and Beroun

Správa železnic announces a tender for the preparation of an update of the documentation for zoning proceedings for the construction of the new railway line Praha-Smíchov – Beroun. Its subject is the construction of a new double-track line on the 3rd transit corridor directly connecting the stations Praha-Smíchov and Beroun. The winner of the tender should be known this autumn.

The assumed price of the procurement for processing of the update of the documentation for zoning proceedings is CZK 160.5 million. The new double-track corridor line will start with the modification of the exit from the Praha-Smíchov station, where two more tracks will be added to the two existing ones. The route of the new line will lead mainly in a tunnel with a length of 24.7 kilometres, which will start under Barrandov and end near Beroun. Furthermore, the new corridor will continue with an overpass over the Berounka River valley. On the Prague side of the tunnel, a branch to the Branický bridge in the direction of Praha-Krč will be built, and on the Beroun side of the tunnel, a branch will be prepared for the adjoining new high-speed line in the direction of Hořovice/Plzeň. The new tunnel will be designed for a maximum speed of 200 km/h. The main benefits of the new line include reducing the travel time in the section Praha-Smíchov – Beroun to about 12 minutes, speeding up and improving regional traffic in the section Prague – Beroun and also the entire south-western part of the Central Bohemian Region in relation to Prague, speeding up and improving domestic and international traffic in the section Prague – Pilsen – Nuremberg/Munich. Relieving the current congested railway line along the Berounka River from long-distance passenger and freight transport will then make it possible to increase the frequency of commuter trains on this line.

Most of the tunnels excavations will be performed by full-profile TBM tunnelling machines at a depth of approximately 150 meters below the surface. At present, there are only 13 longer railway tunnels in the world and a similar number is under construction or in a similar phase of preparation. Construction work is expected to begin in 2028 and complete in 2042.

Správa železnic Continuously Spends Increasing Amounts on Better Safety at Level Crossings

Accidents at level crossings are among the most serious railway incidents. There are about 160 collisions a year, in which dozens of people die. One way to prevent collisions between road and rail vehicles, often with tragic consequences, is to increase level crossing protection.

“The approval of additional funds for our organisation will, among other things, allow us to accelerate the preparation of investment actions that aim to increase the protection of many dozens of level crossings. We will invest in total 1.36 billion crowns in mentioned area this year. We intend to continue the trend of increasing money for safety at level crossings, we are already counting on the amount of 1.5 billion crowns for next year,” said Jiří Svoboda, Director General of Správa železnic.

There are 7,789 crossings of railway lines and road communications with various levels of protection on the network of Správa železnic. The infrastructure manager is gradually modernising them and thus increasing the safety of road and railway traffic. Priority is given to increasing the degree of protection at level crossings that are assessed as potentially risky. This includes the addition of warning lights, the installation of barrier crossbars and the new technology of composite barrier crossbars with LED diodes as well.

Správa železnic is accelerating the speed of level crossing protection increase, which is proven by the following data: The volume of investments in level crossings (repairs and maintenance excluding) reached 1.1 billion crowns last year, thanks to which 130 crossings were reconstructed. Already 142 level crossings will be modernised for 1.36 billion crowns this year. More than 170 actions at crossings are being prepared for next year, with an estimated cost of over 1.5 billion crowns. Replacement of the barriers crossbars at level crossings on second-class roads significantly accelerates at the same time. Out of the total number of 565 crossings, 267 crossings are already equipped with the light warning equipment with barrier crossbars.

How will increasing safety at level crossings look like in exact numbers this year?

- In 52 cases, the barrier crossbars will be replenished where the light warning equipment was without barrier crossbars.
- In 70 cases, the light warning equipment will be set up instead of warning crosses.
- In 49 cases, the barrier crossbars with LED diodes will be installed.
- In 14 cases, the intelligent level crossing cameras will be added to record offenses.

The installation of modern level crossing camera systems is one of the preventive measures. After a pilot project in Úvaly u Prahy, Správa železnic launched the operation of intelligent level crossing cameras in Uhersko in mid-May this year. Records from this equipment will assist the Police of the Czech Republic in administrative proceedings. In the extreme case, an undisciplined driver may lose his driving license.

Improvement in places of tragic collisions

When planning investments in railway level crossings, Správa železnic based inter alia on statistics of collisions between road and rail vehicles. For next year, it is preparing to start the modernisation of the level crossing of the third-class road with the Městec Králové – Chlumec nad Cidlinou railway line in Běrunice near Městec Králové. There were a total of 6 accidents with a consequence of 2 deaths and 3 injuries in the past. Today the crossing is equipped with warning crosses, which have been equipped with reflective highlighting, in addition, horizontal traffic sign has been added. Thanks to the investment of Správa železnic, the warning lights protection equipment with barriers crossbars will be built there.

A significant change is awaited at the level crossing on the third-class road at the Studénka station, where a truck accident with a Pendolino claimed 3 deaths, 5 serious injuries and 11 minor injuries. Barriers crossbars with modified tilting and LED highlighting of logs are installed here at present. Construction of a road underpass should begin here in 2022, which will replace this level crossing.

Replacements of level crossings with grade separation structure

For the period from 2021 to 2027, it is also planned to replace level crossings on transit railway corridors; 13 actions at level crossings are being prepared, with an estimated cost of more than CZK 3.6 billion.

As an example, we present replacement of the existing level crossing in Holická Street in Olomouc on the Olomouc – Přerov railway line with a new overpass, which will be located north of the current level crossing. The costs are estimated at CZK 236 million, the expected realisation date is from December next year to December 2023.

Prevention is an important tool

Prevention plays an important role in safety on places with crossings of the road with the railway. The topic of correct behaviour at level crossings appeared in both parts of the preventive-safety film of Správa železnic You can’t do that! “During last year’s holidays, we also looked at crossings in some safety videos that were inspired by real events. We always incorporated shots of them into featured scenes, which showed risky behaviour in the railway environment. We published educational videos on our social networks with instructions on how to proceed correctly when driving across the crossing this spring. We will deal with this steadily present topic in other safety videos, which we prepare for this year’s holidays as well,” reminded Jiří Svoboda, Director General of Správa železnic.

On July 6th, HSL Class 186.181-4 heads through Salzbergen with a set of empty tank wagons on its way to the BP Refinery in Lingen. *Erik de Zeeuw*



A DB Bombardier Twindexx IC2 composition with traction from Class 146.557-4 heads through Neue-Mitte as train No. IC2205 on its way from Norddeich-Mole via Münster and Cologne to Koblenz on June 16th.
Erik de Zeeuw

World's first hydrogen filling station for passenger trains to be built in Bremervoerde

In Lower Saxony's Bremervoerde, the world's first hydrogen filling station for passenger trains will be built starting in September. Representatives of the state and the companies involved met on site for a symbolic ground-breaking ceremony. An eighteen-month test phase for the first two trains was successfully completed at the end of February. The mobility project, which has attracted worldwide attention, is now entering its next phase.
The gases and engineering company Linde will build and operate the hydrogen filling station near Bremervoerde station on behalf of the Lower Saxony Regional Transport Company (LNVG). Other project partners are the rail vehicle manufacturer Alstom, the state of Lower Saxony and the Elbe-Weser Railways and Transport Company (EVB).

After completion expected in mid-2021, the hydrogen filling station will replace the existing mobile filling solution. With a capacity of around 1,600 kg of hydrogen per day, it is nominally one of the largest hydrogen filling stations in the world. From the beginning of 2022, 14 hydrogen-powered regional trains supplied by Alstom will be refuelled there daily and around the clock if necessary. Thanks to a range of 1,000 kilometres, the multiple-unit trains will be able to run emission-free all day long on the EVB network with just one tank filling. Expansion areas at the filling station will allow hydrogen to be produced on site later using electrolysis and regenerative electricity.

"The ground-breaking ceremony for this world's first hydrogen filling station for passenger trains is an important step for a showcase project from Lower Saxony", said Carmen Schwabl, Managing Director of LNVG. The initiative to test the gas as a fuel in local rail passenger transport came from LNVG.
"We are delighted to play a key role in this world-leading, innovative project," said Mathias Kranz, responsible at Linde for the onsite and bulk business in Germany. "Linde has long been committed to hydrogen, which can make a significant contribution to decarbonisation. The introduction of hydrogen as a fuel for trains will significantly reduce the burden on the environment, as one kilogram of hydrogen replaces approximately 4.5 litres of diesel fuel".
"The construction of the hydrogen filling station in Bremervörde will create the basis for the series operation of our emission-free hydrogen trains in the Weser-Elbe network. We really appreciate that Linde, as an experienced hydrogen supplier, is now also taking over the refuelling of the series trains following the successful trial operation," comments Jörg Nikutta, Managing Director Germany and Austria of Alstom.

"We are proud that we were the first railway company in the world with permission to operate fuel cell trains on the Weser-Elbe network. Our passengers were very curious about the trains and their technology from the very beginning. In addition to the very low noise level, the hydrogen train impresses with its zero emissions, especially in times of climate change. For our train drivers, the operation of iLint was a very special motivation", said Andreas Wagner, head of the SPNV division and authorized signatory of the Eisenbahnen und Verkehrsbetriebe Elbe-Weser GmbH (evb).

The project is subsidized by the national innovation programme for hydrogen and fuel cell technology of the Federal Ministry of Transport, and Digital Infrastructure NOW GmbH will coordinate the funding guideline and Project Management Jülich (PtJ) is responsible for the implementation.

About the Coradia iLint
Coradia iLint is the first passenger train in the world to be powered by a hydrogen fuel cell, which generates electrical energy for propulsion. This completely emission-free train is quiet and emits only water vapor and condensation water. The train features several different innovations: clean energy conversion, flexible energy storage in batteries and intelligent management of motive power and available energy. Designed specifically for use on non-electrified lines, it enables clean, sustainable train operations.

About Linde
Linde is a leading global industrial gases and engineering company with 2019 sales of $28 billion (€25 billion). We live our mission of making our world more productive every day by providing high-quality solutions, technologies and services which are making our customers more successful and helping to sustain and protect our planet. The company serves a variety of end markets including chemicals & refining, food & beverage, electronics, healthcare, manufacturing and primary metals. Linde's industrial gases are used in countless applications, from life-saving oxygen for hospitals to high-purity & specialty gases for electronics manufacturing, hydrogen for clean fuels and much more. Linde also delivers state-of-the-art gas processing solutions to support customer expansion, efficiency improvements and emissions reductions.

About the Elbe-Weser GmbH (evb)
The evb-group is one of the leading groups of companies in passenger and freight traffic in Northern Germany. With over 550 committed employees evb transports annually 2 million passengers on the rail and 4 million passengers in the buses in the Elbe-Weser-Triangle safely to their destination. evb has its own route network, bus and train repair workshops and travel agencies. The evb group operates the freight traffic throughout Germany and is represented with locations in Hamburg, Bremen, Bremerhaven and Regensburg, among others. As a shareholder evb is involved in metronom as well as in various logistics companies and transport associations in the region.

About the Landesnahverkehrsgesellschaft Niedersachsen mbH
The Landesnahverkehrsgesellschaft Niedersachsen mbH organises the local rail passenger transport (SPNV) between the North Sea and the Harz Mountains and makes annual compensation payments of around 300 million euros to the railway companies. With its entry into fuel cell technology, LNVG is playing a pioneering role in Germany.

On line RB32, Abellio ET25 No. 2208 (a Flirt 3XL) is on its way from Dortmund to Duisburg (Rhein-Emscher-Express) and passes here at Neue-Mitte on June 16th. In addition to the Abellio logo, the NS logo is also visible on the front. *Erik de Zeeuw*



Rail freight transport: pilot project launched to test automatic rail coupling



A consortium headed by Deutsche Bahn is now trialling the use of digital automatic coupling (DAC) on freight cars. The German Federal Ministry of Transport and Digital Infrastructure (BMVI) awarded the contract for this pilot project to the consortium of six companies from Germany, Austria, Switzerland and France. The project, aimed at demonstrating, testing and obtaining regulatory approval for digital automatic coupling (DAC) in rail freight transport, will run from July 2020 to December 2022.

Digital automatic coupling automatically connects freight cars, as well as their lines for power, data and compressed air, without any need for strenuous physical work. Most freight trains are still currently coupled by hand using buffer-and-chain couplers; DAC makes this process much more efficient and relieves strain on rail workers.

The consortium is made up of DB, its subsidiary DB Cargo, and five other companies: the Swiss and Austrian rail freight companies SBB Cargo and Rail Cargo Austria, along with wagon keepers Ermewa, GATX Rail Europe and VTG.

“It wouldn’t make sense to manage the EU-wide introduction of DAC from the Member State level alone,” said Enak Ferlemann, Parliamentary State Secretary at the German Ministry of Transport and Digital Infrastructure. “We need to find solutions at the European level. The financial challenges involved are considerable, and they are not the kind of thing that companies alone can solve; we will need a comprehensive European program with sufficient funding. The German Ministry of Transport and Digital Infrastructure will continue to support the introduction of DAC, and we have commissioned the DAC demonstrator project to this end. We will be providing some EUR 13 million in funding for this research project over the coming two-and-a-half years.”

Sabina Jeschke, Member of the Management Board for Digitalization and Technology: “We are delighted that we can implement this project together with our strong partners in the consortium. When the digital automatic coupling is introduced throughout Europe, it will be a revolution for freight transport by rail — and an enormous relief for employees.”

In the first phase, 12 freight and tank cars from DB Cargo, VTG and GATX will be equipped with prototype couplers from four different manufacturers. Then the initial technical tests will begin. The results of these tests will determine which type of coupler is ultimately selected. In the second phase, a demonstrator train consisting of 24 freight cars equipped with the selected coupler type will run in Germany, Switzerland, Austria and other European countries. This will allow DAC to be tested in daily operations in a variety of areas, including at marshaling yards.

The goal is to prepare the process of selecting one type of coupler to introduce throughout Europe. DAC will open the door to a system of rail freight transport that is fully automated and digitalized. A coordinated approach within Europe will be key to achieving full-scale implementation of the technology.

Germany

DB invests one billion euros in new ICE: 30 additional ICE high-speed trains beginning in 2022

From 2022, 30 new high-speed trains will strengthen the DB long-distance fleet. Deutsche Bahn is awarding the order worth one billion euros to Siemens Mobility. DB launched the tender at the end of 2019 after the federal government announced that it would lower the VAT on long-distance tickets from early 2020.

The vehicles will first be used on lines between North Rhine-Westphalia and Munich, which run over the Cologne / Rhein-Main high-speed line. The space available for long-distance DB passengers grows with the new trains by 13,000 seats.

Dr. Richard Lutz, CEO of Deutsche Bahn AG “Today is a big step for the strong and environmentally friendly rail: The railroad is investing in new trains at record levels. Our fleet gets modern additions with the new ICE. By the end of 2022, our passengers will benefit from more seats, more comfort and more speed. Over the next few years, the entire DB long-distance fleet will grow by 20 percent. Even though demand has declined sharply due to the corona pandemic, in the longer term everything speaks for climate-friendly rail. That is why we are on a growth and investment course!”

Andreas Scheuer, Federal Minister of Transport and Digital Infrastructure: “The new, state-of-the-art ICE makes rail travel even more attractive - also because high-performance high-speed trains are an important prerequisite for the implementation of the Germany cycle alongside the infrastructure. This means that rail is increasingly becoming a climate-friendly alternative to long-distance transport. The order is also a strong economic stimulus and therefore a good signal for many employees in the rail industry and their families. With an order of this size, we are securing thousands of jobs and strengthening innovations made in Germany.”

“We are helping Deutsche Bahn to implement the master plan for the transformation of the transport sector. The goal is to massively reduce CO2 emissions and at the same time to get more people into public transport, ”says Roland Busch, Vice Chairman and Member of the Board of Siemens AG. “Siemens and DB have enjoyed a long and very successful partnership. The most important requirement with the ICE order was that the trains get on the rails very quickly. We can do exactly that by using our proven Velaro platform. ”

Frequency-transmissive panes for stable cell phone reception

By 2026, 421 ICE trains with around 220,000 seats will be on the German network. And for the new ICE, in addition to the 30 trains ordered, there is the option of an additional 60 vehicles.

The new ICE will be manufactured at Siemens locations in North Rhine-Westphalia, Bavaria and Austria. Technically, the train is based on the tried and tested platform of the ICE 3. It has 440 seats and a top speed of 320 km / h. Frequency-transparent panes for stable mobile radio reception and bicycle parking spaces on every train offer more convenience.



Germany

Top marks for environmental protection



The coronavirus pandemic may have nudged environmental protection and the surrounding debate into the background for now, but DB Cargo has defied these times of crisis to transport goods reliably while using its Eco Solutions to outgreen other modes of transport. The CDP (Carbon Disclosure Project), an international rating agency, has once again confirmed this fact for Deutsche Bahn AG as a whole, awarding the company a top grade of "A". The A rating singles the DB Group out as one of the greenest companies in the transport and logistics sector worldwide. CDP is the world's most prestigious climate protection rating agency. In 2019, it reviewed the climate protection activities, climate change strategies and reporting transparency of 8,400 companies around the world. Participating companies currently account for over 50% of global market capitalisation. The international non-profit organisation also has the most extensive collection of company climate data.

Eco Solutions

Environmental and climate protection take pride of place at DB's freight operating company, too. For instance, DB Cargo offers the DBeco plus and DBeco neutral products to its customers. DBeco plus lets customers carry out their transports CO2-free to actively contribute to climate protection. It works by fully covering the electricity needs of transport with renewable energy. Customers who use DBeco plus protect the climate in two ways at once: They get CO2-free transport, and 10% of the proceeds are used to promote the expansion of renewable energy sources, such as a hydrogen hybrid power plant. The technical inspection association TÜV-Süd checks the process all the way through, and DB Cargo awards a TÜV certificate to its customers to certify the emissions they have avoided. DBeco plus is available on all electrified routes in Germany and Austria.

However, it is not always possible to avoid CO2 emissions altogether. That's where DB Cargo's DBeco neutral comes in. It compensates for unavoidable emissions, such as those generated by pre-carriage and onward carriage by truck. Climate protection certificates offset the carbon emissions generated by transport. The certificates meet today's strictest standards for climate protection projects, CDM Gold. The compensation projects not only help cut CO2 emissions; they also promote sustainable development in the project regions. They have been used to encourage the use of efficient wood-burning cookers in Rwanda, for example.

Greener living facts

Yet even the most efficient transport is pointless if goods are moved unnecessarily. After all, the only way to effect real change is to act together, and that starts with each individual. This crisis in particular has shown DB Cargo to be a reliable partner for the supply of basic goods, especially food. However, considering that the average German throws away 80 kilograms of food worth roughly EUR 230 every year, huge potential CO2 savings remain untapped. This food, which is essentially produced for the waste bin, is the world's third largest source of greenhouse gases. It is responsible for 3.3 billion tonnes of unnecessary CO2 each year. Consumers can apply some very simple fixes to turn this trend around. First and foremost, of course, they can try to shop more selectively and waste less.

Photo: ©DB AG

Deutsche Bahn is dressing up: New corporate clothing is coming August 1st

DB's more modern appearance • New cuts, new colors - outfits in blue and burgundy • Focus on sustainable production

The new one is finally here - and it is really an eye-catcher! From August 1, 2020, tens of thousands of DB employees in trains, buses, at train stations and in travel centers will wear the new, modern corporate clothing in the colors burgundy and blue.

DB boss Richard Lutz: "With our strategy" Strong Rail "we want to become more modern and offer our customers an attractive travel experience. Our employees play a crucial role as hosts for our customers on the trains and in the train stations. That is why, for me, the new corporate clothing is a key to a pleasant journey. I am very happy about the successful new, fashionable and modern start for our employees, who keep the shop going every day in customer contact. "

DB Human Resources Director Martin Seiler: "I think it's no exaggeration to say that a new era is beginning here at Deutsche Bahn. Because our appearance in Germany changes almost completely from one day to the next. The DB once again presents itself as a modern and attractive employer. Now we can add - a really smart employer. It was therefore important to us that our colleagues were involved in the planning from the start. "

Star designer Guido Maria Kretschmer designed the collection from 80 individual parts in close coordination with dozens of DB employees. After longer wear tests and further adjustments, production started and orders were placed in January this year. Despite the Corona crisis, the garments could be sewn and delivered in the planned time frame.

Around 43,000 employees with customer contact wear corporate clothing at DB. In some regions, the rollout will take place over the next few months. Employees receive "style guides" with all possible combinations at a glance. Jeans and polo shirts are new for some professions. There are also clothes now.

During production, DB ensures compliance with particularly high sustainability standards, which the renowned Hohenstein Institute certifies. A large part of the clothing will therefore carry the MADE IN GREEN by OEKO-TEX® label, which stands for materials tested for harmful substances and environmentally friendly and socially responsible production.



The previous corporate clothing was introduced 17 years ago. DB now collects the items of clothing and has them recycled in parts. This results in, among other things, painter's carpets, insulation layers, cleaning rags and wipes.



BBL Logistik Class 1214.029 arrives into Rosenheim with an engineers train. *Class47*

Covid-19 pandemic hits Deutsche Bahn hard • DB invests at record levels, laying groundwork for post-pandemic growth

Deutsche Bahn (DB) is investing record sums to tackle the Covid-19 pandemic and return to a path of growth. DB, like so many companies around the globe, has seen its financials hit hard by the pandemic, which caused revenues and profits to fall sharply in the first six months of 2020. DB closed out the first half of the year with adjusted earnings before interest and taxes (EBIT adjusted) of minus EUR 1.8 billion. Extraordinary effects driven mainly by an impairment at the subsidiary DB Arriva of EUR 1.4 billion have been recorded additionally, leading in total to an after taxes loss of EUR 3.7 billion in the first half of 2020. DB and the German government remain committed to their long-term modernization and expansion program for rail in Germany; accordingly, capital expenditures continued to rise in the first half of 2020. Gross capital expenditures were at EUR 5.6 billion; net capital expenditures at EUR 2.8 billion. Those were record levels, and the highest half-year capital expenditure figures in DB's history.

"Covid-19 put an abrupt stop to the successful growth we were seeing, and plunged DB into the worst financial crisis in its history," said Dr. Richard Lutz, CEO and Chairman of the Management Board of DB, in Berlin. "But the virus has also shown how critically important rail is for Germany and Europe. We are essential to the functioning of society. Even in very difficult times, we keep people and goods moving." The Covid-19 pandemic had been a stress test for DB, said Lutz, and the company had passed this test, thanks to the Strong Rail strategy it put in place a year ago. "Rail is an eco-friendly form of transport, and we are working each and every day to shift more traffic to rail again," Lutz said. "We are continuing to invest, as clearly evidenced by the 30 new ICE trains we have purchased."

DB Group revenues fell 11.8%, to EUR 19.4 billion, in the first half of 2020. Just under 663 million passengers used DB's local, regional and long distance trains in Germany. That was a drop of 37% compared to the first half of 2019, and it came despite the fact that DB had actually raised patronage considerably in January and February, due in part to a reduction in value added tax. Volume sold in DB's long distance rail passenger business fell 44% in the first half of 2020, to just under 12 billion passenger kilometers. Volume sold was also down 41% in rail transport at DB Regional, and down close to 13% at DB Cargo. DB Cargo did transport more food and pandemic-related products but also faced serious challenges such as the temporary shutdown of a number of key industries. Germany loosened its Covid restrictions in late spring, and DB's core business has been seeing improvements since May. Punctuality improved considerably compared to the first half of 2019. DB Long Distance delivered service punctuality of 83.5%, its highest half-year rate in 12 years. And the number of customers who said they were satisfied with service on their current journey was higher in June than in any month of the ten years before.

Outside Germany, the picture was mixed. DB Arriva, DB Group's subsidiary for local passenger transport in Europe, had long been grappling with Brexit and with challenging developments on the British rail market. The Covid-19 pandemic, which came on top of these challenges, had a particularly serious impact on DB Arriva because the company does business in the UK, Italy, Spain and other countries that were hit especially hard. This situation ultimately made it necessary to make an impairment of EUR 1.4 billion at DB Arriva.

DB Schenker, DB Group's international logistics subsidiary, has done well in the crisis, despite falling revenues. DB Schenker was able to demonstrate its importance to global supply chains, and the company lifted adjusted earnings before interest and taxes to EUR 278 million, an increase of 16.8% year on year.

CFO Holle: "We want to shape the future, not cut costs at its expense"

DB continued to hire new people at record levels in the first half of the year, accepting roughly 19,000 applicants. Investment in infrastructure and rolling stock was also at record levels. "This testifies to a commitment we share with the German government," said Dr. Levin Holle, DB's CFO. "It is a commitment to climate protection and growth. We want to shape the future, not cut costs at its expense."

It will take some time for DB's investment in growth to become visible in the company's bottom line. DB expects adjusted losses before interest and taxes of up to EUR 3.5 billion for 2020 as a whole. That would be the highest operating loss in the Group's history. Revenues could sink as low as EUR 38.5 billion in 2020. The uncertainty associated with such forecasts remains high.

Germany

Siemens delivers an additional 22 metro trains for Munich

After the first C2 metro train from the first option in 2016 entered service in May, Stadtwerke München (SWM) has also called up the second and final options for 22 six-car metro trains from Siemens. When all trains are delivered, Münchner Verkehrsgesellschaft (MVG) will operate a total of 67 C2 trains on its system.

Ingo Wortmann, SWM Managing Director for Mobility and CEO of the Münchner Verkehrsgesellschaft (MVG): “With the new C2 trains, we are steadily continuing to rejuvenate our metro fleet. For our passengers, this will above all mean more space and greater comfort. Over the next ten years, we want to retire all old A and B trains and operate our metro system exclusively with modern high-performance trains. This means that we can add around 5,000 more seats to the trains without introducing a higher frequency.”

“We’re proud that Stadtwerke München and the Münchner Verkehrsgesellschaft have decided to call up the second and final option of this major order. Including this order, we’ll have delivered a total of 67 trains with 402 cars to Stadtwerke München. The new C2 trains are contributing to a sustainable increase in value over their entire lifecycle and to enhanced passenger experience. We’re pleased to be significantly involved in developing local public transport in our hometown,” said Sabrina Soussan, CEO of Siemens Mobility.

The latest order is based on the proven design of the last generation of C trains, which was developed and further evolved by the internationally renowned Munich vehicle designer Alexander Neumeister.
The new C2 trains, for example, are distinguished by their front end with new LED lighting technology and the easier visual recognition of opening and closing doors through coloured LED lighting strips on the door frames. Video cameras, passenger TV and newly designed interior lighting with LEDs provide more comfort and convenience for passengers.

Other advantages include the train’s higher capacity and availability: The passenger compartment’s redesign and new seating concept with wider doors compared to older trains allow more passengers to be transported. Overall, the C2 now offers space for 940 passengers. Since there are no longer any separate cars, the train is completely open from front to back.

Siemens Mobility delivers particularly environmentally friendly and energy-saving trains for Munich. Energy consumption is reduced by combining various innovative design concepts. No harmful materials are employed, energy-saving LED lights are used throughout, and the materials are 97% recyclable. The new trains will thus further improve Munich’s CO2 balance and help reduce energy consumption in transport.

The trains are manufactured by Siemens Mobility in Vienna and their bogies are supplied by Siemens Mobility in Graz. The new trains will enter service in 2022 and operate on the city’s U3 and U6 metro lines like the other C2 trains already in use. Operation on other city lines is also planned.



On June 16th, Captain No. 403 emerges from the bushes with a set of empty 6-axle self-unloaders. The wagons are used for transport of sand to ThyssenKrupp in Duisburg. *Erik de Zeeuw*



Germany

On July 7th, DB Class 185.348-8 races through Lingen with an empty car train from Emden to Seelze marshalling yard, passing one and two-arm classic exit signals. *Erik de Zeeuw*



Deutsche Bahn and Lufthansa significantly expand cooperation: “Train to flight” service is to be expanded

New Lufthansa Express Rail connections to the Frankfurt LH hub from Hanover, Leipzig and Basel.
Train journey with LH boarding card from 17 stations.
Doubling of the joint offer planned.

Deutsche Bahn and Lufthansa will work even closer together in the future and expand their strategic partnership. This was explained by the two corporate boards Harry Hohmeister (Lufthansa) and Berthold Huber (DB) on the sidelines of a meeting in Frankfurt am Main: “We will significantly expand the long-standing and successful cooperation between Deutsche Lufthansa AG and Deutsche Bahn. By intelligently linking rail and air transport, we jointly support the sustainable turnaround in Germany. We want to offer more and more customers a consistent and comfortable travel chain. “

To this end, Lufthansa and Deutsche Bahn are expanding their joint Lufthansa Express Rail offer. From now on, Lufthansa passengers can use four rail connections to Frankfurt Airport each day from Hanover Hbf and Leipzig Hbf. The “Train to Flight” service is also available from Basel with three connections a day. The aim of the two companies is to double the joint offering in the coming years. New services are also planned.

Harry Hohmeister, Member of the Board of Management of Deutsche Lufthansa AG: “With the additional routes, we are offering even more travelers a comfortable journey to Frankfurt Airport and an optimal change to their flight. Train and flight complement each other. An attractive combination of modes of transport offers our customers good connections to the world and at the same time serves the environment. That is why we rely on intermodal solutions wherever it makes sense and is feasible. Our goal is to strengthen the successful cooperation between Lufthansa and Deutsche Bahn in the future. “

DB Passenger Board member Berthold Huber: “We are continuously expanding our long-distance services for Germany’s major cities - with new trains, more seats and additional connections. The connection to the largest German airport from all metropolitan regions is getting better and better. With the expansion of our joint cooperation, air travellers can benefit as much as possible and at the same time do something for reducing CO2 emissions and protecting the climate. ”

Customers use their Lufthansa boarding pass to take the DB to Frankfurt Airport. The new routes can be booked in all Lufthansa sales channels. The network of Lufthansa Express Rail connections from / to Frankfurt Airport grows to 17 cities with Hanover, Leipzig and Basel.

In total, Deutsche Bahn and Lufthansa offer feeders on the rail from / to the largest German airport and LH hub Frankfurt from the 17 stations with up to 123 train / flight numbers. DB runs 100 percent of all long-distance journeys with green electricity. With the expansion of the joint offering, both companies are making a further contribution to climate protection in Germany.

Germany

DB Class 185.245-8 is seen in Salzbergen running a VW car train from Hannover to Emden on July 7th. *Erik de Zeeuw*

DB Class 294.605-1 is on the way back from a shunting job at the Salzbergen Refinery on July 6th. *Erik de Zeeuw*

Near Gildehaus and the Dutch border, DB Class 189.027-6 leads the Nosta/Hoyer Shuttle from Osnabrück (Germany) via Roosendaal to Sloe (Netherlands) and Antwerp (Belgium) on July 6th. *Erik de Zeeuw*







Irish Rail GM-built 3,200hp 201 Class No. 224 came to grief on July 7, when it was discovered to have a badly fractured chassis. Thankfully, there was no accident/ derailment. The RAIU (Railway Accident Investigation Unit) are investigating the cause. The loco has been withdrawn, pending ongoing analysis. *Paul Quinlan*



Bord na Móna narrow gauge industrial railway No. LM430 hauls a rake of wagons loaded with milled peat, towards Shannonbridge power station. *Paul Quinlan*



Irish Rail 201 Class No. 218 passes Burnfort en-route to Cork, with a Mk4 set. *Paul Quinlan*

At Reggio Calabria Centrale, Trenitalia No. D445.1056 is seen working the 07:35 service to Taranto. *FrontCompVids*

Trenitalia No. D445.1141 working the 13:07 Taranto - Reggio Calabria Centrale service calls at Cariati.
FrontCompVids

Trenitalia No. E401.022 hauling the 07:28 Roma Termini - Bari Centrale is seen at Bisceglie. *FrontCompVids*



At Oristano, Trenitalia No. D445.1076 arrives with the 17:20 service from Cagliari. *FrontCompVids*

EIB provides FS Italiane Group with support for new hybrid trains with lower environmental impact

EU bank has approved €450 million in financing for Trenitalia. New resources will go towards the purchase of 135 less polluting and more efficient trainsets, almost half of which will be for southern Italy. An initial tranche of €150 million has already been finalised via the subscription of an FS corporate bond.

The EU bank is supporting FS Italiane Group's investment plan covering new trainsets for Trenitalia's regional transport division. The trains will be less polluting and more efficient, and almost half will be for southern Italy. This is the goal of €450 million in European Investment Bank (EIB) financing for FS Italiane (parent company of the Trenitalia transport company) announced today by EIB Vice-President Dario Scannapieco and FS Italiane Chief Executive Officer and General Manager Gianfranco Battisti.

€150 million of the total has already been finalised via the subscription of a corporate bond under FS' EMTN programme, concluded by way of private placement, confirming the group's commitment to sustainable finance.

The recently subscribed operation will finance the purchase of the first 43 trainsets ordered of a total of 135 covered by Trenitalia's investment plan.
The new trains will operate on internal routes in several Italian regions (including Calabria, Lazio, Molise, Sardinia, Sicily, Tuscany and Valle d'Aosta). The 135 hybrid trainsets will have three or four passenger carriages.
Trenitalia's overall investment for this kind of train totals almost €960 million, covering the renewal of regional fleets on lines where electrification is not yet complete. The trains will be equipped with cutting-edge motors for non-electrified lines, with a pantograph for electrified lines and batteries for the last mile of non-electrified lines, thereby avoiding the use of fuel and the related emissions close to urban centres.
For the EIB, this operation is completely in line with its new status as a climate bank, the aim of which is to mobilise €1 trillion in new investment to tackle climate change in all sectors of the economy between 2020 and 2030.
For FS Italiane, this deal broadens the range of financing instruments used by the group since 2017 and that, from this year, includes not only public green bonds but also loans and private placement operations based on ESG principles and designed to finance projects with reduced environmental impact that encourage rail transport.

"We have been working with Ferrovie dello Stato Group for a long time – for example, in recent decades the EIB has been the main financier of high-speed rail between Naples and Milan. This partnership has continued over the last few decades and is being renewed now with an operation enabling millions of passengers to travel on new trains that are considerably less polluting than in the past, in line with the EIB's goals as a climate bank," said EIB Vice-President Dario Scannapieco.

"This major financing continues our investment plan to renew the regional train fleet, which as it stands remains one of our top priorities", highlighted FS Italiane Group Chief Executive Officer and General Manager Gianfranco Battisti. "The new trains will be environmentally sustainable and of a very high standard, enabling another step forward in changing commuters' travelling habits in Italy. We also expect the renewal of Trenitalia's regional fleet to make it possible to reduce CO2 emissions by 600 million tonnes a year and take 400 000 cars off Italian roads."

Netherlands

On June 7th, ‘Foundation Mat’54’ trainset No.766 has just started its journey to Nijmegen after a visit to the workshop in Leidschendam.
Erik de Zeeuw

Netherlands

On July 31st, Arriva Wink No. 603 arrived in the Netherlands, behind Strukton No. 303008. Photographed with a drone at Holkerveen near Amersfoort, about 10 minutes from its destination of Amersfoort. *Mathijs Kok*

On June 28th, Lineas Class 186.385-1 passes Willemsdorp with the GXN Sweden-Xpress from Malmö to Antwerp. The train carries 2 carriages and a freight car from Weed Free On Track. These spraying trains offer sustainable and tailor-made weed control solutions for European rail networks. *Erik de Zeeuw*

Netherlands

Rail Feeding locomotive No. 24 passes Schipluiden, which is between Delft and Schiedam, Holland on July 16th. *Gerard van Vliet*

Netherlands

On July 1st, a special transport took place in the Netherlands. Fairtrains No. 1304 in the design of HSL logistik, brought the ex NS No. 1501 of the KLOK foundation to the Dutch railway museum. In 1953 Metropolitan-Vickers built seven of this locos which were bought from the UK in 1969 by the NS Railways as they were compatible with the country's 1.5Kv system. *Mathijs Kok*





Netherlands

On June 7th, BLS Cargo Class 475.414 leads a set of tankcars loaded with diesel fuel through Dordrecht on the way to Rümlang (Switzerland). *Erik de Zeeuw*



SBB/RRF Class 193.530 'Po' and classmate No. 193.531 'Reuss' pass by Giessenburg on June 7th with the 'Gallerate/Busto' shuttle, train No. 40202 heading towards Rotterdam. *Erik de Zeeuw*



BoxXpress Class 193.701 passes Oisterwijk with the Kornwestheim-shuttle to Germany on June 21st. *Erik de Zeeuw*



Netherlands

On June 21st, DB Class 189.066 and 189.070 pass Bruchem with the Sunday blast furnace steel train from Beverwijk to Sittard. *Erik de Zeeuw*

On June 21st, NS 'ICNG' (Intercity New Generation) No. 3103 is seen near Zaltbommel while making a test run from Flushing to Utrecht as train No. 91381. *Erik de Zeeuw*

Two farmers hold a work meeting whilst in the background VIRM No. 8653 passes by with train No. 2935 from Enkhuizen to Maastricht on June 21st. *Erik de Zeeuw*







Netherlands

Digital Twins and driverless shunting: the future is now

Autonomous driving, known by experts as ATO ("automatic train operation"), enables the rail sector to save energy by regulating traction and braking efforts, and therefore increasing network capacity by reducing the timetable margin. This leads to more reliable operation and increased traffic. While ATO is already in use in the metro sector, as well as in urban mainlines such as in Paris, this technology has been little used for freight transport and passenger transport on non-urban mainlines.

The environment of railway lines requires a different approach and different standards than metro lines. The operational monitoring and control of all traffic is more complex. Main lines have complicated train schedules with different railway operators. If one train is delayed, this affects all other connections. Most main lines have combined passenger and freight traffic as well as a large variety of rolling stock, which makes monitoring challenging. Railway operators, infrastructure owners and the industry are currently in the exploration phase to test different use-cases. Together with operators, Alstom is exploring which innovations are suitable for which modes of operation in order to develop a roadmap for railway automation.

GoA (Grade of Automation)

As the name suggests, autonomous driving, or ATO, is a digital system which enables the automatic operation of a train and supports the train driver by taking over some of his tasks. The higher the grade of automation ("GoA"), the more tasks are taken over – GoA4 being the ultimate level of automation where a computer fully drives the train according to predetermined algorithms and pre-recorded mission profiles.

ETCS on the Betuweroute, Netherlands

At the end of 2018, Alstom carried out the test of ATO functions with a class 203 locomotive of Rotterdam Rail Feeding (RRF) on the Betuweroute. The aim was to gain insights from the test for ATO operation under automation level GoA2 on a freight line: The vehicle takes over certain tasks from the driver with him still present continuing to supervise the line.

Over several days, the BR203 covered around 2000km, running in normal operation on the Betuweroute and in the port area of Rotterdam with ATO GoA2. Equipped onboard already was the European Train Control System (ETCS) which is the standardised train control system and designed to replace the many incompatible safety systems currently used by European railways. Both ETCS Level 1 and Level 2 operations were covered by the tests with a nominal run being around 100km in GoA2 operation. The line was in revenue service during these tests which were conducted during normal daily operation. To ensure that the locomotive remained operational in regular operation between these test runs, the ATO equipment was isolated from the traction/brake control and activated for the next test. This was done for the locomotive to be allowed to run in commercial operations in cross border traffic outside of the testing times so that RRF had its roster only impacted to a minimum. ETCS Level 1 relies on signal recognition. ETCS Level 2 has no signals on the line, it only relies on balises in the track and radio communication.

Components and installation

The onboard equipment for ATO consists of three main components:

- the On-Board Unit (OBU),
- the Gateway (GTW)
- the Relay Interface Unit (RIU).

ATO test bench architecture

The OBU handles the Journey Profiles and Segment Profiles received from the trackside server. Journey Profiles and Segment Profiles contain all information on the journey necessary for automatic operation: distances, speeds, station locations, gradients and timetable information. Based on this information the OBU calculates the ideal driving profile for the operator's needs. The Gateway has been integrated on this same computer and serves as an interface between the OBU and with the ETCS On-Board Unit, thus obtaining information about the ETCS braking curves to ensure that the ATO is controlling the train to remain below the authorised maximum speed. The RIU is the interface unit to the control the traction and braking equipment in the vehicle (drive/brake switch, direction switch, etc.) and enables switching on and off from ATO or conventional operation mode. The driver can still override the ATO at any time.

In addition to the ATO components, cameras have also been installed on board the locomotive. This served as a test for obstacle detection and to detect objects such as tracks, signals and the ETCS marker boards.

The equipment was installed on several positions in the locomotive: the RIU was installed in the driver's cab, the OBU and GTW were installed under the hood. For the ATO On Board Unit, industrial computer units were used which were conventionally available on the market.

In order to carry out the installation, two surveys on the BR203 were performed in advance at the operator's depot in Dordrecht. In order to modify the existing equipment of the locomotive as little as possible, the RIU was interfaced to existing connectors, and could thus be switched on or off without further consequences for the on-board equipment. Certain actions of the driver are bypassed and taken over by the ATO module, especially the braking and acceleration functions.

Digital Twins

For the development of the ATO product, Alstom set up a so-called Digital Twin. A digital twin is a digital replica of a physical entity. It enables carrying out and replaying test runs prior to and during the actual field tests. In this way the Alstom engineers were able to reduce precious testing time by replaying issues encountered in the field and pretesting new software versions before installing them on the train.

The final test runs took place in December 2018, during which the locomotive reached a speed of 100 km/h. It went through various scenarios: driving a train with margin in the timetable (optimizing energy), driving a train without margin in the table time (running at max speed to comply to timetable), train following a delayed train, changing routes. This was repeated during several days in order to compare the test results and thus, ensure regularity of train driving. During the test runs the ATO algorithms were further optimized with each software release and was adapted to the circumstances. The aim was to ensure that the locomotive reaches a predefined timed stopping point (in this case an ETCS stop sign) or a timed passing point as accurately as possible. The defined stopping- and passing points were finally reached on time as intended. For the further pursuit of ATO in freight traffic, the objective of the freight operators must be kept in mind. ATO can very efficiently (and therefore "steeply") negotiate a braking curve, entailing wear and tear. It can maximize the energy sent back to the grid. Doing this a very gentle braking curve will result, which significantly reduces the overall energy consumption. But does this maximize infrastructure utilization? For freight traffic, the profiles that fit the local context must be defined depending on the operating conditions. A line operated purely with freight traffic may be suitable for saving energy, because all the trains run with similar characteristics. In comparison, on networks with mixed traffic ATO needs to be configured to run the trains perfectly on schedule, especially in an area of heavily loaded nodes, in order to avoid route conflicts.

The future is here today

After the successful test on main line dedicated to freight transport, it became clear that ATO in its tested form and modalities is mature and can be rolled out. It can be installed on new and refurbished vehicles with targets and priorities for the optimization chosen and composed individually by the operator. Freight transport is particularly affected by driver shortage. We have learned that both passenger and freight operators will benefit from ATO as it brings energy savings and timetable stability.

In Germany, too, a further step towards digital railway operations is now being implemented. The German Federal Ministry of Economics has awarded Alstom the "Innovationspreis Reallabore" (Innovation Prize for Reallaboratories) in connection with a planned test project for the implementation of the system developed by ATO in the daily passenger operation of regional trains. The research project will be launched in 2021 in collaboration with the Greater Braunschweig Regional Association, the German Aerospace Center (DLR) and the Technical University of Berlin (TU Berlin).

After evaluation of the selected line sections and the equipment required for automated operation, tests will be carried out with Metronom Eisenbahngesellschaft on two electric Coradia Continental regional trains type "ENNO" of Regionalbahnfahrzeuge Großraum Braunschweig GmbH. The aim is to optimize regional railway operations, reduce energy consumption and increase ride comfort. Highly automated driving will thus make a decisive contribution to climate protection. The aim is to drive automatically and to test different degrees of automation: GoA3 in regular passenger operation and GoA4 when shunting.

Netherlands

A lovely summer picture with NS No. 1739 hauling train No. IC141 to Germany on June 23rd. In Bad Bentheim the NS locomotive leaves the train and the journey to Berlin continues with a DB Class 101 as traction. *Erik de Zeeuw*

All the way from China. On June 25th, PKP Cargo Vectron Class 193.514 with a container train is seen near Holten on the way to Tilburg. *Erik de Zeeuw*

Near Holten, Lineas Class 186.229-1 hauls the GXN Sweden-Xpress from Antwerp (Belgium) to Malmö (Sweden) on June 25th. *Erik de Zeeuw*





Netherlands

LTE Vectron Class 193.738 'Loreley' passes Zenderen on June 25th with a container shuttle from GVT in Tilburg to Chengdu and the surrounding area. The train still has more than 10,000km ahead and will arrive in China within 15 days. *Erik de Zeeuw*

Metrans Class 386.032-7 runs through Bathmen with a shuttle from METRANS Ceska Trebova to Rotterdam RSC on June 25th. *Erik de Zeeuw*

DB No. 6465 crosses the 'Magazijnweg' in Alphen a/d Rijn with freight wagons unloaded at Electrolux on July 6th. *Erik de Zeeuw*







The ‘Rhätische Bahn’ offers from May until late October two daily historical trains between Davos Platz - Filisur and return. This trains are hauled by the famous ‘Krokodil’ engine Class Ge 6/6. This train is a great offer, especially because it replaces a scheduled service train and can therefore be used with all regular tickets. Here Ge6/6 No. 415 working train No. R1822 passes Davos Frauenkirch on July 2nd. *Thomas Niederl*



Rhätische Bahn Ge 4/4ii No. 621 is seen here with train No. RE1732 from Disentis to Scuol-Tarasp between Ilanz and Castrisch on July 4th. *Thomas Niederl*

The ‘Erlebniszug Rheinschlucht’ runs From June until the end of October between Landquart and Ilanz. There are additional trains between Ilanz and Chur and Trin during the afternoon. The train is formed of the Ge 4/4i No. 610 built in 1953, two carriages built in 1939 and two famous 4 wheel open observation carriages, seen here just leaving the station of Versam-Safien on July 4th. *Thomas Niederl*

Switzerland

Ge 4/4ii No. 631 follows the River Rhine with train No. RE 1761 Scuol-Tarasp - Disentis-Muster, seen near to Versam-Safien on the evening of July 4th. *Thomas Niederl*



Ge 4/4ii No. 616 departs the village of Ardez in Engadin with train No. RE1248 to Disentis-Muster. In Engadine, Romansh is still the main language spoken, which is the fourth and least spoken official language in Switzerland. The advert on the loco is an appeal for the restoration of a heritage steam engine of the RhB. *Thomas Niederl*

Ge 4/4ii No. 619 passes the village of Ardez with train No. RE1252 to Disentis-Muster on July 4th.
Thomas Niederl

The first kilometres of the Chur-Arosa railway line run like a tramway through the City of Chur. EMU ABe 8/12 No. 3501 stops at the halt Chur Altstadt with train No. R1433 to Arosa. These EMU units are named ‘Allegra’ which is a greeting in the Romansh language. *Thomas Niederl*

United Kingdom

Eversholt Rail and Alstom invest a further £1 million in Breeze hydrogen train



On July 22nd, Eversholt Rail and Alstom announced a bold plan to fast-track the hydrogen train industry in the UK with a further £1 million (over €1 million) investment in British hydrogen trains, creating an entirely new class of train, the first-ever 600 series. Taking the Breeze hydrogen train plan to the next level, this major investment means that the Breeze will be ready for early deployment in the UK to meet the Government's need to decarbonise the rail industry. This investment from Alstom and Eversholt Rail in the UK hydrogen train will underpin other initiatives in the hydrogen sector and will support any subsequent national hydrogen strategy.

Breeze trains will be built at Alstom's Widnes Transport Technology Centre, which is fast becoming the UK's premier centre for train modernisation. Widnes will also become Alstom's worldwide centre of excellence for hydrogen conversion when this project is in series production, creating over 200 high quality engineering jobs in the North West, crucial for the Prime Minister's levelling-up agenda.

When powered by green hydrogen, these trains offer true zero-emission mobility, not just zero emission at point of use. The only emission from a hydrogen train is water; it produces no harmful particulate or gaseous emissions. Hydrogen trains are ideally suited to regional rail services on routes that are not currently electrified. Alstom has already proven that hydrogen trains are a cost-effective and environmentally friendly solution with the success of the Coradia iLint in Germany. This new investment will ensure that Breeze trains are ready for swift deployment in the UK wherever electrification with overhead wires might be impractical or visually intrusive. The pioneering of a hydrogen train fleet is a notable step in the path towards decarbonising the UK railway. As Breeze will be the first UK train fleet to use the Class 6xx category, it will bear the classification '600'. Both Eversholt Rail and Alstom are delighted with this recognition.

"It's time to jump-start the UK hydrogen revolution. With the Government looking to invest in green technologies, Alstom and Eversholt Rail have deepened our already extensive commitment to this job-creating technology with a further million-pound investment. This bold move to back the Government's ambitions on hydrogen means we are the only game in town if you want a shovel ready British hydrogen train. The Breeze is good to go, wherever the Government commits to upgrading Britain's railway with hydrogen trains," said Nick Crossfield, Managing Director, UK & Ireland

Mary Kenny, CEO of Eversholt Rail, said "Eversholt Rail has a proud record of innovation in key rolling stock technologies and this further investment in the Breeze programme demonstrates our commitment to providing timely, cost-effective solutions to the identified need for hydrogen trains to support the decarbonisation of the UK railway".

About Eversholt Rail

Eversholt Rail owns UK passenger and freight rolling stock and has more than 25 years' experience in the rail industry. Eversholt Rail has invested more than £3bn in new trains since privatisation and continually invests in existing fleets to maintain quality and reliability to deliver a better passenger experience. Eversholt Rail has a proud history of innovation and plays an integral role in the growth and modernisation of the UK rail sector by introducing new products and technologies into the market.

About the Breeze train

Breeze is a train powered by hydrogen. It brings hydrogen train technology, proven in passenger service on Alstom's Coradia iLint trains in Germany, to the UK. To make it, Alstom will rebuild Eversholt Rail's Class 321 electric trains to use hydrogen power. Alstom will do the work at our Widnes facility in the Liverpool City Region. First fleet production would create more than 200 jobs. When more trains are ordered, this number would grow. The Breeze hydrogen trains will be replacements for the UK's regional diesels that operate across the country and the first trains could be in service in 2024.

About the Class 600

All UK trains have a class number, made of three digits, with the first of the three digits explaining the type of train it is. The Breeze is the first ever hydrogen train for the UK, which requires a new 'class', beginning with a 6. The 600 series will be reserved for alternative traction like hydrogen, and as the Breeze is the first of this type, it will have the first number, 600.

France

Alstom expands its expertise in braking systems with the acquisition of Ibre

Alstom is taking a new step forward in the implementation of its AiM (Alstom in Motion) strategic plan in France with the acquisition of Ibre, a company specialised in the development, manufacture and supply of cast iron or steel brake discs for high-speed, intercity, regional and suburban trains, trams and metros. Alstom and Ibre already had a long working relationship on projects for SNCF. With the acquisition, Alstom will reinforce its internal capabilities regarding railway braking systems, which are essential to the overall dynamic performance of trains.

Ibre employs around 30 people at its Sens site in the region of Bourgogne Franche Comté and had a turnover of approximately €10 million in 2019. It is a company with an international scope, with more than half of its sales in France, of both original equipment and replacements. The rest primarily serves customers in Austria, Australia, Belgium, Scandinavia, England, India and Germany.

"This acquisition represents very promising development potential for Ibre and its employees and is in line with Alstom's strategy to extend its know-

how," says Jean-Baptiste Eyméoud, Senior Vice President Alstom France.

Railway brake discs are one of the critical components of the braking system. Alstom's acquisition of Ibre represents a unique opportunity to extend its offer. Ibre products will be offered as original equipment and as part of maintenance contracts.

Following completion of the transaction, which took place on 30 June, the company, renamed "Alstom Ibre", becomes a wholly owned subsidiary of Alstom.





Inauguration of Dubai Route 2020 Metro



Alstom congratulates Dubai's Roads and Transport Authority (RTA), on the inauguration of the Dubai Route 2020 Metro. This iconic project was ceremonially inaugurated by H. H. Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates, and Ruler of the Emirate of Dubai on 7 July 2020, and was also attended by Henri Poupart-Lafarge, Alstom's CEO and Chairman of the Board as well as the top management of the ExpoLink Consortium via video conference technology.

The new line project, commenced in July 2016 and carried out by the Alstom-led ExpoLink consortium, also composed of ACCIONA and Gülermak, consists of a 15km-long line, of which 11.8km is above ground and 3.2km underground, and an interchange on the Red Line. The extension of the metro has seven stations including Jabel Ali Station and the flagship metro station at the Expo exhibition site. The project is worth a total of €2.6 billion.

As part of the Consortium, Alstom was responsible for the integration of the entire metro system including 50 Metropolis trainsets produced in Alstom's site in Katowice, Poland, power supply, communication, signalling, automatic ticket control, track works, platform screen doors and a three-year warranty on the whole system, as well as the enhancement of the existing metro line by upgrading power supply, signalling systems, miscellaneous communication and track works. The trainsets are 85.5 meters long and composed of five cars per trainset, and they will be able to carry up to 696 passengers each[1].

"We are extremely proud to have delivered the world's fastest built turnkey metro project. The Route 2020 project shows Dubai's commitment to offer its residents and visitors a state-of-the-art rail network system, and we remain committed to providing the RTA with the utmost support in their journey towards greener and smarter mobility", says Müslüm Yakisan, Senior Vice President for Africa, Middle East and Central Asia at Alstom.

The train offers an excellent level of passenger experience, thanks to wide gangways, large doors and windows, three specific areas for Silver, Family and Gold Classes. Eco-friendly, the train is equipped with a full electrical braking system, LED lighting and other innovations to reduce energy consumption.

Alstom is a dedicated and long-standing partner of Dubai's transportation and mobility development. Alstom delivered the Dubai tramway, the first fully integrated tramway system in the Middle East and the world's first 100% catenary-free line, which was opened in November 2014. Alstom is also in charge of the maintenance of the Dubai Tram for a period of 13 years.

[1] 4 passengers per sqm^2



CAF SECURES MAINTENANCE CONTRACTS TOTALLING €40M

In Italy, the operator AMAT S.p.A, the public agency of the city of Palermo managing transport in the capital of Sicily, has awarded CAF Italia the contract for 4 years' maintenance of the 17 trams which provide service on the 4 lines of the city's tramway network. This tramway fleet has been in operation since 2015, and is one of Italy's most modern tramway systems. Maintenance work will be carried out in the customer's own workshops in Roccella and Leonardo.

The tender was awarded to the joint venture made by CAF Italia and EDS Infrastrutture S.p.A, with CAF Italia leading the joint venture and being responsible for rolling stock maintenance, while EDS Infrastrutture will take on the line infrastructure maintainer role.

On the other hand, Companhia Paulista de Trens Metropolitanos (CPTM) of the State of São Paulo, Brazil, has awarded CAF a contract for maintenance of 8 suburban trains for a 4-year term. These units were manufactured and supplied by CAF between 2011 and 2012, and operate on line 10 on the São Paulo metropolitan network, operated by CPTM.

CPTM is a company associated with the Secretary of Metropolitan Transport of the State of São Paulo, which manages seven lines with over 270 kilometres of railway network, transporting approximately 2.9 million passengers on a daily basis.

The maintenance work will be carried out by the CAF Brazil subsidiary at the Brazilian operator's facilities in the district of Lapa, located to the west of the municipality of São Paulo. This contract reinforces CAF Brazil's activities with CPTM, where it now operates several maintenance contracts. Also in the American continent, the Medellín Metro has awarded CAF the long cycle maintenance reviews of 35 units supplied by CAF over the last few years. This contract will span over more than 2 years in continuation to the activity that was already being carried out since the commissioning of these units until this date.

Lastly, CAF has concluded an agreement with Metro de Málaga in Spain to extend the current maintenance contract for 5 years, including long cycle inspections, of its URBOS 3 fleet of 14 trams. It should be mentioned that CAF's relationship with Metro Málaga dates back to 2010 with the delivery of the first units manufactured by the company to this operator, having since then performed maintenance operations on this fleet of trams.

Europe

Eurostar launches flexible fares and restarts routes

No exchange fee up to 14 days before travel
Travel to the Netherlands and Disneyland resumes
Tickets now on sale for Christmas breaks

Eurostar, the high-speed passenger rail service linking the UK and mainland Europe, is offering travellers more flexibility on their bookings, with all fares now available to exchange with no fee, up to 14 days before departure.

The new flexible fares will start at just £39 each way and apply to all bookings made from 1st July until 31st December. They are valid for any dates of travel available at the time of purchase.

The increased flexibility comes in addition to options for those with existing bookings who may want to change their travel plans.

Returning to the Netherlands and Disneyland
Eurostar will reinstate its popular service direct from London to Rotterdam and Amsterdam from Thursday 9th July.

The route will restart with one train a day departing London St Pancras at 11:04 and arriving in Amsterdam Central at 16:11. Fares are available from just £40 one way.

As well as providing a fast and seamless direct connection to two of Europe's most exciting cities, there are a range of alternative destinations within easy reach with a simple onward journey:

- Amsterdam to Utrecht in just over 20 minutes: an interesting alternative to Amsterdam, with historic canals and an imposing gothic tower looking over the city
- Rotterdam to The Hague in under 30 minutes: experience the beaches on the outskirts of the city, with its pier jutting out to the North Sea and 50 meter-high Ferris wheel. Or take in some of the Vermeer works on display at the Mauritshuis art gallery.
- Amsterdam to Haarlem in just 10 minutes: and enjoy lunch on the terraces of its central historic square, climb a traditional Dutch windmill or experience the art collection at the Frans Hals Museum.
- Rotterdam to Delft in under 15 minutes: to wander alongside canals, churches, historic mansions and courtyards

The return journey continues to be a connecting service through Brussels, where passport controls and security screening are carried out.

Families planning trips to Disneyland Paris over the summer will soon be able to take advantage of Eurostar's direct service from London to Marne-la-Vallée, on the doorstep of the Disneyland Park, in just over two and half hours. The most effortless way to travel to Disneyland will restart from 2nd August with fares from just £39.

Plan a European festive getaway
For travellers planning further ahead, tickets will go on sale from 2nd July for travel over the Christmas period. From just £39 each way, bookings are now available up to 31st January, providing the perfect excuse to plan a winter break. Whether it's to take advantage of a direct, city-centre to city-centre journey to Paris, Lille, Brussels, Rotterdam or Amsterdam, or to visit alternative destinations with a simple connecting journey:

- Strasbourg with its picturesque streets and historic architecture under 2 hours from Paris.
- Bruges to wander beside canals and through market squares in around 1 hour from Brussels.
- Cologne with renowned art galleries and unique shops in just 2 hours from Brussels.

Additional hygiene measures
Eurostar has introduced new hygiene measures on board and in stations, to provide customers with a comfortable and safe experience. A new seat map ensures travellers are seated at a safe distance apart respecting social distancing guidelines. Trains are deep cleaned before every journey, and cleaning teams are on board to regularly disinfect high contact areas. All travellers must wear a mask on board and in stations, in line with government regulations.

Hungary

Hungarian CER Cargo Holding becomes first foreign operator of the EffiShunter 1000M

The Hungarian freight carrier CER Cargo Holding, a member of the LAC holding, has expanded its fleet of locomotives with the Czech EffiShunter 1000M. The first of the two ordered vehicles was taken over by its representatives on Wednesday, June 30, at the CZ LOKO plant in Jihlava. The second will follow in September.

"Ensuring a reliable and well-functioning independent traction on the Hungarian and Slovak markets is of strategic importance to us. It is the independent traction on the local railway networks that gives us a clear competitive advantage. That is why we are strengthening our diesel fleet with reliable CZ LOKO locomotives, " said László Horváth, Chairman of the Board of Directors of CER Cargo Holding. After the Czech company ČD Cargo, he became the second owner of this locomotive and the first foreign one.

According to Josef Gulyás, CEO of CZ LOKO, this is the fourth type of locomotive that the CER Cargo holding company has delivered over the last three years. "Therefore, we see huge potential in the Hungarian market," he added. The company has already delivered EffiLiner 1600, EffiLiner 3000 and EffiShunter 1600 locomotives to the carriers.

The EffiShunter 1000M locomotive (742.71x series) is a comprehensively modernized ČKD vehicle of the 742 series, which is technically and structurally based on the top parameters of CZ LOKO locomotives. Simply put, it is an EffiShunter 1000 built on the platform of the original 742 locomotives. This ensures efficient operation and maintenance.



Through its subsidiary CER Slovakia, CER Cargo Holding wants to deploy the first EffiShunter 1000M in Slovakia and the Czech Republic. The second will be operated primarily by CER Hungary. Due to the expansion of business activities, deployment is planned in Hungary and Croatia. Therefore, the locomotives are equipped with INDUSI and MIREL safety systems as standard. If necessary, the European ETCS system can also be installed.

EffiShunter 1000M locomotives have newly designed, for example, hoods with a tower driver's cab or a combustion engine CAT 3508 C with an output of 1000kW. The production of a 50-piece series for ČD Cargo is currently in full swing in CZ LOKO.

Germany

Additional funds for routes and train stations in Bavaria



The rail offer must improve if the climate targets are to be achieved. In order to advance important rail projects in Bavaria, the Bavarian Minister of State Kerstin Schreyer and DB Infrastructure Director Ronald Pofalla have agreed a project list for Bavaria with an investment volume of more than 400 million euros. Overall, more than 86 billion euros will be invested in the federal rail network in the next few years. In particular, the rail infrastructure in the Free State benefits from this. The package now presented mainly complements projects on smaller regional routes.

Bavaria's Minister of Transport Kerstin Schreyer: "My goal is that we have an attractive offer of public transport all over Bavaria so that more people can use it. For this we need a strong infrastructure, especially on the rails. That is why I am pleased that Deutsche Bahn, in coordination with us, will be investing a lot of money over the next few years so that train stations, tracks and signals throughout the Free State will become even more efficient. And that also supports our construction industry, especially in Corona times! "

Ronald Pofalla: "We are continuing to expand local transport in Bavaria! For all rail customers this means better connections between city and country as well as in the metropolitan areas. We are making rail travel more attractive and creating the conditions for the urgently needed turnaround in traffic.
The federal government provides the funds for local transport projects within the framework of the service and financing agreement III agreed with Deutsche Bahn. That means an increase of 50 percent. A total of 2.8 billion euros are available from these funds for all federal states. The two most populous federal states, North Rhine-Westphalia and Bavaria, benefit particularly, Bavaria receives 436 million euros.

In the past few weeks, the Bavarian State Ministry for Housing, Construction and Transport has agreed with the Bavarian Railway Company - the public transport authority - and the railways which projects should be financed from the 436 million euros by 2029. These include these projects:

- New construction of train stations, for example in Lindau (mainland station), Würzburg (Heidingsfeld-Ost), Regensburg (Walhallastraße) and Brunnen (station of the Paartalbahn).
- Accessibility measures, including in Senden, Marktoberdorf and Seefeld-Hechendorf.
- Integration of reactivated routes into the DB network through construction work at interfaces, such as the construction of a new crossing station in Langlau.
- Smaller electrification measures on the routes Wasserburg - Ebersberg, Pfronten-Steinach - state border to Tyrol and the second track on the dam to the island of Lindau.
- Route improvements and accelerations such as the Rottalbahn (Mühldorf - Passau), the Gäubodenbahn (Neufahrn - Bogen), the Gräfenbergbahn (Nuremberg - Gräfenberg), the Aischgrundbahn (Neustadt ad Aisch - Steinach), the Paartalbahn (Augsburg - Ingolstadt) and the Oberlandnetz (Routes to Bayrischzell and Lenggries).

Hungary

Stadler to deliver four additional hybrid tram-train vehicles to Hungarian Railways

Hungarian passenger service operator MÁV-START Zrt. has exercised its right and called an option from Stadler for four additional bi-mode tram-trains of the CITYLINK family. Base contract for the supply of eight vehicles was signed between the companies in 2017 to serve the first tram-train system in Hungary between the cities of Szeged and Hódmezővásárhely. First eight units are expected to enter commercial service by the Autumn of 2021, while the optional 4 units by the summer of 2022.

Hungarian passenger service operator MÁV-START Zrt. signed a contract with Stadler for the supply of eight bi-mode tram-train vehicles of the CITYLINK type with an option for additional four units in 2017. This option has been exercised now. The new bidirectional vehicles will connect without transshipments the tram networks of Szeged and Hódmezővásárhely. The objective of the first tram-train project in Hungary is to provide a high quality public transportation system for passengers commuting every day between the two cities. The base lot of 8 vehicles would be able to serve a timetable with a 20 minute vehicle frequency, while with the additional 4 units this amount can be reduced to only 15 minutes.

The new tram-trains are able to operate in electric mode under 600V DC overhead on the tram networks in Szeged and Hódmezővásárhely, and in diesel mode on the mainline connecting both cities. They feature two low-emissions diesel power packs rated at 390 kW. They are also able to negotiate narrow curves of 22m radius providing the benefit of being used in existing curved streets of city centers. Easy access for different platforms types, without modifying the current height of the platforms, is also ensured



by doors located at different heights and the use of different type of sliding ramps. The fully accessible vehicles, designed and manufactured by Stadler Valencia, are 37.2 m long and 2.65 m wide. They have been designed according to the latest safety standards and have a capacity of 220 persons, 92 seated. The vehicles are low-floor throughout and barrier-free. Spacious interior with a high number of seats and four multi-purpose places for persons of limited mobility such as wheelchair users and parents with prams, full HVAC, CCTV and PIS systems are all features that will optimize the passenger travel experience.

Egypt

Alstom delivers power supply system and computer based smart interlocking system in “Mallawi” section for the Beni Suef-Asyut line

Alstom has successfully supplied, tested and put into commercial operation on July 23rd its power supply system and computer-based interlocking signalling system Smartlock 400 GP for the Mallawi section in the line linking Beni Suef to Asyut. The inauguration ceremony was attended by Eng. Shaban Mahmoud, Upper Egypt Zone Manager at ENR (Egyptian National Railways), Eng. Mohamed Fawzy, Operations Manager at ENR Eng. Mostafa Shahin; General Director of Projects and Strategic Department at ENR; Eng. Hussain Rashidy Head of Signalling System at ENR; Eng. Mohamed Magdy BSA Executive Project Manager at ENR, Mr. Luca Pastorino Alstom Egypt BSA Project Director.

Despite an unprecedented worldwide sanitary crisis that led to an important disruption of business activities, Alstom Team remain committed to serve the customer in the best health and safety conditions and succeeded to deliver a new milestone for the Beni Suef – Asyut line renovation. The Mallawi section is the fifth section of the Beni Suef-Asyut line to enter into commercial service with Alstom’s interlocking signalling system following the commissioning of Beni Mazar station on November 2019. With the achievement of this milestone, 40 km are now fully automated operating with contraflow function. To date over 70 km of mainline railway in Egypt are using Alstom’s signalling solution.

“Our Egyptian team of experts namely in the fields of installation, construction and commissioning, succeeded to deliver this new section despite a challenging operational context. We are proud with this new demonstration of the sense of responsibility of our teams. Our mission is to always meet our customers’ and stakeholders’ expectations” said Mohamed Khalil, Managing Director Alstom Egypt.

In 2015, Alstom was awarded a contract by Egyptian National Railways (ENR) to supply signalling equipment for the Beni Suef-Asyut line in Egypt. The regional railway line running between Beni Suef and Asyut is 240 kilometres long.

Alstom has been present in Egypt for over 40 years and has contributed to support the strong trend of railway infrastructure development in the country. Over decades, Alstom Egypt has employed around 420 employees and developed a local talent pool that is today in charge of a center of excellence related to Signalling, Power Supply and Depot Equipment which is supporting our projects within all MEA region. It is this heritage that has allowed Alstom Egypt to make a significant contribution to Egypt’s rail industry development.



Netherlands

Semi-stationary welding for Utrecht’s new Sneltram

By setting up mobile welding machines in semi-stationary operation, Vossloh has found an economical and logistically outstanding solution for its Dutch customer and its construction site partners.

A new rapid tramway for low-floor trams is currently under construction on the SUNIJ line between Utrecht and the outlying districts of Nieuwegein and IJsselstein. The rails sections were laid in June of 2020 and welded together to form continuous rails.

Tight curve radii are typical for tram lines and the new Sneltram line in Utrecht is no exception. In some places rails are being laid in curves of 120 meters. Technical specifications for using mobile welding machines, however, require the curves to be at least 300 meters. Vossloh therefore quickly decided to convert the customer’s mobile welding concept into an economical and logistically superior solution: operating mobile welding machines as semi-stationary welding plants.

Excavators were used to convey Vignoles rails into the temporary welding stations that had been set up in the three depots. Here, the 30-meter lengths were welded into 120-meter lengths and then transported straight to the construction site on flatcars.

Timothy Ruiter, market segment manager for Track Supply, comments on the tight schedule: “We’ve scheduled our personnel to suit the customer’s small time window. Despite Corona, by the end of the project we will have carried out nearly 1000 welds on this construction site.” At one stage during the project, 60 welds were completed in less than nine hours.

The “new Sneltram” is scheduled to be operational again from the end of September 2020. In future it will be extending its service beyond the existing terminus at Utrecht Central to Uithof University campus and the Science Park.



Spain

Alstom, Indra and Constructora San Jose to supply tunnel safety and security systems for Spain's new Madrid-Asturias high-speed line

Alstom, in consortium with Indra and Constructora San Jose[1], has signed a €53 million contract[2]with Spanish railway infrastructure authority Adif to supply and install the safety and security systems for twelve tunnels in the Pajares Bypass high speed connection. The 49-kilometre Pajares Bypass, which joins the municipalities of La Robla (León) and Pola de Lena (Asturias), is part of the future León - Asturias High Speed Line (LAV), which will substantially improve the railway connection between Madrid and the North of Spain. The project includes, includes a 25-kilometre bi-directional tunnel, the second longest tunnel in Spain, and will allow trains to cross the Cantabrian Mountains at high speed.

The consortium will supply the safety and security systems for the tunnels, including ventilation and firefighting systems, fire doors, emergency radio and gas detection. Alstom will also provide the power supply for the entire system and will integrate it into the customer's remote-control Supervisory Control and Data Acquisition system (SCADA). Assistance and emergency responses are also part of the package. Alstom and Indra teams have long experience in similar projects on the Spanish rail network. Specifically, the companies have already equipped and maintained electromechanical installations in 32 tunnels associated with the Ourense-Santiago line, and 4 tunnels on the Madrid-Valladolid high-speed line, including the Guadarrama tunnel – the longest in Spain. Alstom and Indra have also jointly installed security systems in the tunnels of the high-speed line between Antequera and Granada.

Constructora San Jose has executed various sections of the main high-speed lines in Spain (Madrid - Zaragoza - Barcelona - French Border, Madrid - Valencia, Madrid -Galicia, Madrid - Asturias, etc.), highlighting the Contreras - Villargordo del Cabriel one of the most challenged in Spain (85% of the route is made up of 3 tunnels and 3 viaducts, among them the Contreras one with the largest concrete railway arch in Europe).

Pajares Bypass will allow passenger and freight trains to cross the Cantabrian Mountains at high speed. The installation of the security systems will contribute to easier, faster and more reliable connections between Madrid and the north of Spain. It will reduce the travel time on the Madrid-Valladolid-León-Oviedo / Gijón route and will ease the railway connection with the Asturian ports. With a double track section, it will also increase network capacity and ride comfort.

[1] The consortium is composed of Indra (35%), Alstom (35%) and Constructora San Jose (30%).

[2] Vat excluded (64,3 million Euro, including taxes)

Taiwan

Alstom to supply integrated metro system for Taipei Metro Line 7 extension



The Alstom-led consortium with Taiwanese engineering and contracting services company CTCI reached contractual close on 23 June 2020 for the Phase Two extension of Taipei Metro Line 7. The contract [1] is valued at close to €424 million, with an Alstom share of approximately €248 million.
Phase One, which was awarded by Systemwide E&M Project Office Department of Rapid Transit Systems of Taipei City Government (SEMPO) in 2018, has been extended to deliver a seamless customer experience on the new metro line, spanning an additional 13.3km with 13 stations as part of Phase Two. When fully completed around late 2028, the 22.8-kilometre medium-capacity metro line, also known as Wanda Zhonghe Shulin Line, will connect Taipei City to New Taipei City more seamlessly. In addition, passengers can look forward to more convenience travelling between the various districts within New Taipei City such as Chong-he, Shu-lin, Tu-chen, Xin-zhuang.

Under the contract, Alstom will be responsible for the design, supply, manufacturing, testing and commissioning of 16 additional fully automated, four-car Metropolis trains, Urbalis 400 Communication Based Train Control (CBTC) signalling system, Supervisory Control and Data Acquisition (SCADA) system, as well as platform screen doors. The trains will be manufactured in Alstom's Taubaté factory in Brazil, while the signalling system will be delivered by its Saint-Ouen site in France and Bangalore site in India. Alstom and CTCI will also jointly carry out project management and system integration. CTCI will provide the track work, power supply, depot equipment, Telecommunication and Ticketing systems.

"Taipei Metro Line 7, which interchanges with five other lines[2], will be a game changer for the travelling public of Taipei, and Alstom is delighted to continue to be a part of this iconic project. The success of this project extension with SEMPO positions us as a reliable and trusted partner, established for the long term in Taiwan and well beyond our 40 years of active presence," said Ling Fang, Senior Vice President of Alstom Asia-Pacific.

Alstom's metros are world-leading, proven, safe and reliable trains that serve many of the world's great cities, including Amsterdam, Barcelona, London, Paris and Singapore. Alstom has more than 65 years' experience in the production of metros, having sold over 17,000 metro cars that operate in 55 cities around the world and carry 30 million passengers every day. In Taiwan, Alstom provides signalling systems to all but one of Taipei's metro lines and is currently supplying a driverless signalling system for Taichung Green metro line. In 2017, Alstom won its first tramway project in Taiwan, supplying its latest Citadis tram to Kaohsiung tramway line phase two.

[1] Booked in Q1 of 2020/2021 fiscal year.

[2] The line will have transfers with Zhonghe-Xinlu Line, Bannan Line, Songshan-Xindian Line, Tamsui-Xinyi Line and Circular Line Phase One.

Ireland

Alstom delivers new tramways for Dublin

More space and environmentally friendly journeys for Dublin's commuters
55 meters: the longest Citadis tram in the world
Up to 98% recyclable
Alstom will extend 26 existing vehicles

Alstom has delivered the first of eight new Citadis tramways to Dublin, as part of a partnership with Transport Infrastructure Ireland (TII) and the National Transport Authority (NTA) that will also see it extend 26 existing vehicles.

The first of the new trams, manufactured in La Rochelle, have been shipped to Ireland and assembled in Transdev's Sandyford depot. The first two new Citadis tramways have entered service in July.

The eight newly-ordered tramways will be 55 meters long, the longest single unit Citadis trams in the world, offering more capacity to support demand in Dublin's rush hour. Each of the 26 extended trams will also be 55 metres (from 43 metres currently). Alstom has also agreed with TII and the NTA to fit its new eMapping technology to some of Dublin's tramways fleet. By the end of the year, four tramways in the city will be fitted with remote sensors that compile data on energy usage.

Alstom and TII are aiming to reduce energy consumption on Dublin's tramways through a series of energy efficiency measures.

"Alstom's tramways have served Dublin for over a decade, providing a reliable, efficient and comfortable service for the city's commuters and visitors from all over the world. This brand new 55m tramway will create more space for passengers on Luas, and we are proud to be working with Transport Infrastructure Ireland and Transdev to improve the service for everyone that uses it. Dublin was one of the first cities in the world to adopt Citadis tramways and now passengers rely on them in over 50 cities worldwide. With this brand new 55m tramway, the longest we have ever built, Dublin is leading the world again," said Nick Crossfield, Managing Director, UK & Ireland.

More than 2,600 Citadis tramsets have been sold to over 50 cities in five continents. They have been in operation since 2000. This experience enables Alstom to innovate, offering greater comfort for passengers and simplified commercial management for operators. Citadis is environmentally friendly being up to 98% recyclable.



Argentina

Siemens Mobility to provide CBTC Signalling for Buenos Aires 'D' Metro Line

Communications-Based Train Control signalling system to be installed on 11km of 'D' Metro Line in Buenos Aires, Argentina

The automated signalling system will provide greater availability, enhanced operations and passenger experience

Siemens Mobility has been awarded a contract by Subterráneos de Buenos Aires, Sociedad del Estado (SBASE) to install a Communications-Based Train Control system (CBTC) on the 'D' Metro Line in Buenos Aires, Argentina. The CBTC signalling system will be fully implemented across the entire 11 kilometre line that incorporates 16 stations between "Catedral", located in the historic Plaza de Mayo, and "Congreso de Tucumán", located in the northern part, close to the borders of the city of Buenos Aires.

The system will include the installation of onboard units on 24 existing cars, as well as a radio system, electronic interlockings, and wayside equipment. All elements of the system will be coordinated by a newly established operations control center. As part of the overall SBASE project to renovate the 'D' Metro Line, Siemens Mobility will also provide a passenger information system.

"Siemens Mobility is delighted to have been selected to install Communications-Based Train Control signalling system for the 'D' Metro Line in Buenos Aires. This important project further underscores our leading position in the field for delivering automated signalling systems, and expands our growing footprint in South America," said Michael Peter, CEO of Siemens Mobility. "The state-of-the-art signalling technology will augment operations on this line and allow for an enhanced passenger experience featuring superior service reliability and availability."

The radio based CBTC technology provides real-time data on vehicle position and speed conditions, allowing system operators to safely increase the number of vehicles on a rail line.

This results in greater frequency of train arrivals and will allow SBASE to accommodate more passengers on its system. Additionally, the technology precisely locates each train on the tracks and controls speed, improving safety for riders and employees, while also providing the ability for continuous updates on system status that results in fewer delays and up-to-date travel information.

Siemens Mobility has a long-standing relationship with SBASE that goes back to the early years of the Buenos Aires metro network. This is the third contract awarded to Siemens Mobility to equip Buenos Aires metro lines with CBTC signalling technology.

The Siemens Mobility CBTC solution Trainguard MT is the most extensively deployed automatic train control system in the world and is also used by many operators in Latin-America, like Sao Paulo and Salvador de Bahia, and around the world, including Paris, Beijing and New York.

From the Archives

Armenia

VL8 No. 1523 heads for Yeravan on the west shore of Lake Sevan, June 16th 2008. *Mark Enderby*

From the Archives

Austria

On June 3rd 1989, OBB Class 1044.032 with a Merano - Innsbruck service stands at Zell am See.
Mark Enderby

From the Archives

Austria

OBB Class 1041.005 is seen at Bischofshofen on June 3rd 1989.
Mark Enderby

From the Archives

Brazil

Hitachi 1979 built B-B rod drive electrics Nos. 2010 and 2008 depart Piranapiacaba to descend the Abt rack incline towards Santos with a freight train on November 26th 1981.
John Sloane

From the Archives

Chile

Breda 1961 built E32 Class No. 3202 awaits departure from Santiago Alameda station with an overnight train for the south on December 7th 1981. *John Sloane*

From the Archives

China

DF4B No. 0177 is seen at Lishuguan near Hami, Xinjiang on January 24th 2005. *Mark Enderby*

DF4B No. 0537 approaches Linxi, Inner Mongolia on January 30th 2005. *Mark Enderby*

From the Archives

Czech Republic

Class 363.061 runs round its Praha bound service at Usti nad Labem on March 29th 2012. *Brian Battersby*



From the Archives

Czech Republic

On March 31st 2012, CD Class150.213 stands at Praha hl.n. with a service to Praha Smichov. *Brian Battersby*

From the Archives

Czech Republic

Class 753.212 with a short engineers train is seen at Karlstejn on May 29th 2002. *Mark Enderby*

From the Archives

Czech Republic

Class 749.006 departs Brno hl.n. on July 6th 2008. *John Sloane*



From the Archives

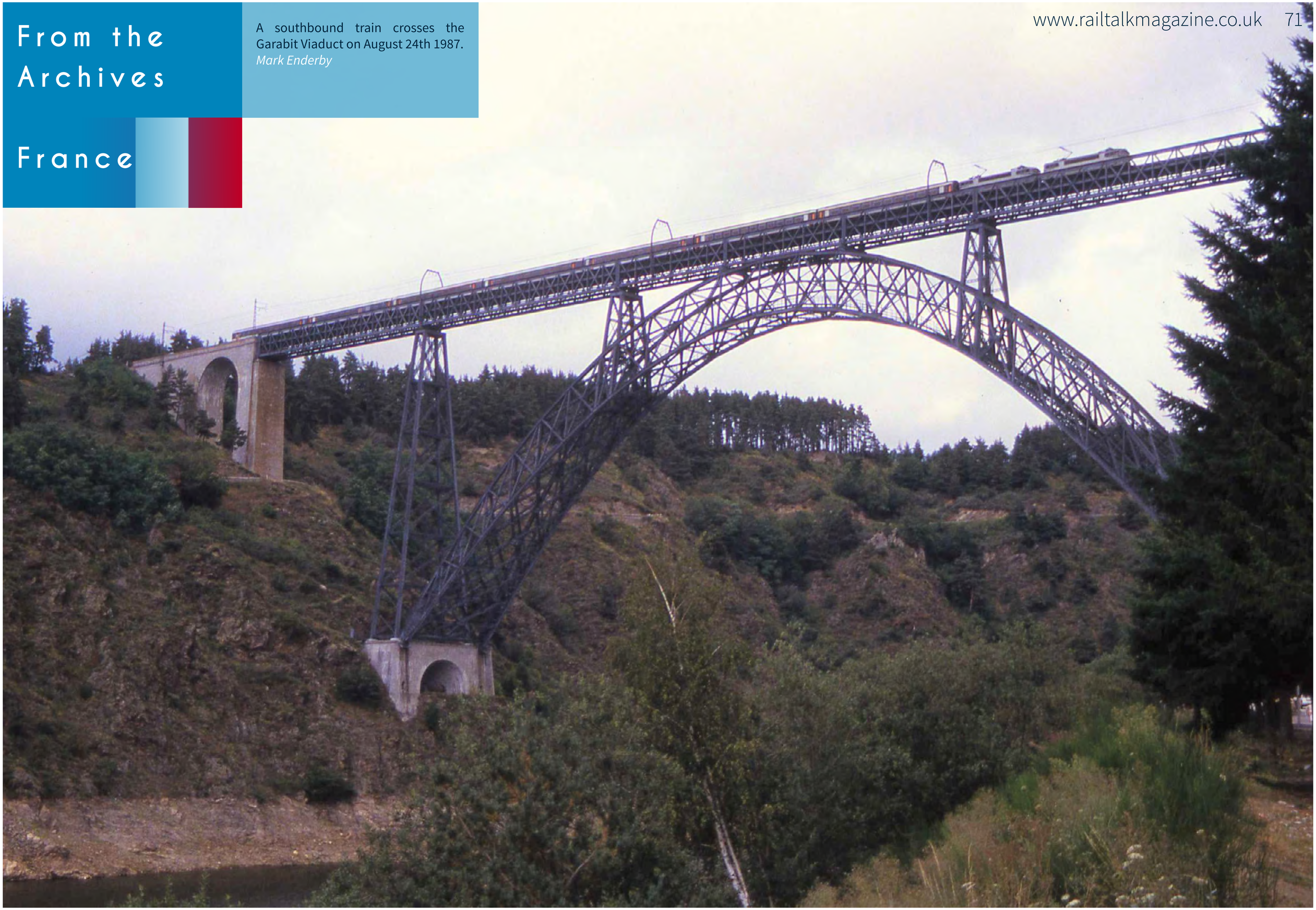
France

SNCF CC No. 6503 approaches Bordeaux with a Hendaye to Paris express on April 21st 1979.
John Sloane

From the Archives

France

A southbound train crosses the Garabit Viaduct on August 24th 1987.
Mark Enderby



From the Archives

France

SNCF shunter No. Y 7658 on a P.W. train passes Nomain on June 7th 1999.
Mark Enderby

From the Archives

France

SNCF BB No. 16057 hauling a Berlin to Paris service passes Tergier on June 9th 1999. *Mark Enderby*



From the Archives

Hong Kong

Bo-Bo No. 51(Clyde/GM of 1955) 'Sir Alexander' is seen engaged in making up a train at Kowloon terminal on April 2nd 1987. This was the first diesel acquired for Hong Kong and is now in the railway museum there. *John Sloane*

From the Archives

Ireland

CIE No. 154 is seen stabled at Limerick Jct. with an engineers train on March 22nd 1998. *Mark Enderby*

CIE No. 211 hauling an Ammonia train is seen at Ballybrophy on March 27th 1998. *Mark Enderby*

CIE No. 220 with a Dublin - Galway service passes Curragh on March 28th 1998. *Mark Enderby*







From the Archives

Italy

Trenitalia Class E424.280 is seen stabled at Verona on August 28th 2006. *Brian Battersby*

From the Archives

Italy

Trenitalia Class E402.132 arrives at Peschiera Del Garda on August 21st 2006. *Brian Battersby*

From the Archives

Kenya

No. 9214 was built by MLW in Canada in the late 70s as an MX624 (similar to the Greek A451 class) and is seen at Nairobi waiting to depart on August 27th 2012 with an evening commuter train that was load 14 and standing room only for most of its journey. *Mark Torkington*

From the Archives

Malaysia

A Malaysian diesel unit, passed its sell-by date, stands at Tapah Road on November 21st 1999.
Mark Enderby

From the Archives

Mozambique

GM built No. D310 pauses at Sena with the twice weekly train on the CFM network from Beira to Tete, September 12th 2012. *Mark Torkington*

From the Archives

Myanmar

In the days when the country used to be called Burma, No. DD.934, an Alsthom 900hp Bo-Bo of 1975, is seen ready to depart Yangon Station with a train for the Yangon circle route on January 25th 2006. *John Sloane*

From the Archives

Netherlands



NS No. 1203 stands at Amersfoort on March 30th 1989. *Mark Enderby*



No. 1159 on a Koln - Den Haag service arrives at Dordrecht on March 30th 1998. *Mark Enderby*



No. 1135 arrives at Amersfoort on March 30th 1989 with a mixed freight. *Mark Enderby*







From the Archives

New Zealand

DXC No. 5517 stands at Middleton depot, Christchurch on November 30th 2010. This loco was one of a batch of DX's which were given exhaust modifications for working heavy coal trains through the Otira tunnel between Greymouth and Christchurch. *John Sloane*

From the Archives

Peru

A Perurail train is seen stabled at Aguas Galientes (for Machu Pichu) on November 28th 2000. *Mark Enderby*

From the Archives

South Africa

On April 15th 2014, a DC powered EMUs stands at Cape Town, bearing an uncanny similarity to early British design EMUs! *Mark Torkington*

From the Archives

Zambia

No. 02-306 (a GE U15) stands on a cross border freight to Zimbabwe at Livingstone on April 4th 2014.
Mark Torkington