



Railtalk Magazine *Xtra*

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Welcome

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

Into April already and the nights are certainly getting longer and the sunshine is increasing. Some excellent news for all Czech diesel fans this month with the long awaited return to traffic of 'Grumpies' Class 749.107 and 749.121. Yes the Praha Vrsovice fleet has increased by two following the departure of 749.006 into preservation. Rumours abound that there is a requirement for two to be used on summer services which suggests that both the Zruc and the Svetla weekend turns will be regularly Class 749 hauled. With this news, plus the announcement of a daily 'Goggle' diagram be enough to tempt the UK enthusiasts back?

In Germany this month, DB has ordered even more Bombardier Twindexx and Class 146 locomotives, plus there are also orders for Talent and Coradia units. Also in Germany, well done to Siemens this month with more orders for their Vectron locos, this time from Gysev and Hector Rail.

Interesting news from Russia this month where airport shuttle service operator Aeroexpress and online payment company PayPal have launched a promotional campaign offering a 50% discount on return tickets bought through the operator's www.aeroexpress.ru website and paid for using PayPal. 'Every year we see

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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 to the right or on the next page.

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

Contact Us

Editor: David

david@railtalkmagazine.co.uk

Co Editor: Andy

editor@railtalkmagazine.co.uk

Content Submissions

entries@railtalk.net

Technical & Subscription Support

admin@railtalk.net



Front Cover

RhB Ge 6/6II No. 702, returning from Chur, crosses the Landwasser Viaduct with train No. RE1137 to St. Moritz. [Steamsounds](#)

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OBB Class 1216.231 leads a CD Railjet service through Usti nad Orlici on February 24th working from Praha hl. n. to Graz Hbf. [Class47](#)

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On February 27th, SBB Class 460.004 is seen stabled at Brig, after arriving with a service from Geneva. [Class47](#)



the increasing popularity of electronic sales channels, so we try to offer our passengers the most beneficial conditions', said Aeroexpress Chief Operating Officer Valery Fyodorov. 'Our joint campaign with PayPal offers our passengers, who are used to planning their trips in advance, the opportunity to purchase two tickets for the price of one and not worry about the security of their online payment.' I don't know of any other operators using Paypal, so is this a first??

Back in the UK and one subject that is sure to attract a lot of attention is the South West franchise is currently held by Stagecoach, has been won by First/MTR who have straight away said that they don't want the brand new Class 707s ordered by Stagecoach, many of which have still to be delivered.

This months 'From the UK' is the recent Severn Valley Railway's 'Spring Steam Gala' and featured a Southern Railway theme.

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

David
Editor

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HAD-PRINT
Unit 6, France Ind. Complex
Vivars Way, Canal Road
Selby, North Yorkshire
YO8 8BE
info@had-print.co.uk | 01757 600211

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Rail Cargo Group offers brand new direct connections

For the first time, railway transport services will run continuously between Croatia and Germany

Rail Cargo Group is embarking full steam ahead into 2017 by further expanding its customer offer. As part of its implementation of customised transport and logistics solutions, Rail Cargo Operator will offer a return service from Rijeka to Ludwigshafen via Munich for their customer DP World. This will be a completely new rail service and the first direct connection between Croatia and Germany.

Safe and rapid transportation

Transport on the new service between Rijeka Adriatic Gate and Ludwigshafen KTL commenced on 21 February 2017 with three round trips per week. This is part of the container transport between European economic centres that Rail Cargo Operator, a provider of high-frequency long-haul connections, handles for its customer DP World. The train consist comprises fourteen 90-foot container wagons and four 80-foot container wagons. With this move, Rail Cargo

Operator is cementing its position as a major player in the international logistics

industry and significantly furthering its aim of increasing the prominence of rail as a mode of transport. Along the route from Croatia to Germany, the Rail Cargo Group is responsible for the seamless provision of transport not only in Austria, but also in Croatia (Rail Cargo Carrier - Croatia) and Slovenia (Rail Cargo Carrier - Slovenia) thanks to its own carrier companies. This ensures that customers benefit from reduced transport times and increased reliability, and greatly improves safety and quality.

DP World

DP World is an integral part of the maritime supply chain and a leading figure for world trade. With a portfolio of 77 sea port terminals and inland terminals, supported by over 50 associated companies, DP World is one of the largest container terminal operators in the world. The network spans 40 different countries over six continents. One year ago, European inland and intermodal activities were bundled together under DP World Logistics Europe, which is driving this project forward in cooperation with SASS Line Intermodal.





















New cement transport for Cement Hranice, as

Cement Hranice, as, is one of the important customers of ČD Cargo. Both companies are looking for further cooperation and one of the long-term projects was successfully completed on February 28th when at Praha-Krc arrived the first block train with 16 wagons of cement from Hranice.

On a siding in Prague-Krc station the cement is pumped from rail cars into silo trucks and transported to the concrete plant at Zapa he Kačerov (in a nearby part of Prague).

The annual volume of shipments should reach 50,000 tons and just one block train will save more than 30 trucks over a distance of 300 km.

The Cement Joint Stock Company boundaries belongs to the four major cement producers in the Czech Republic. The company is part of the Italian cement group Buzzi Unicem SpA, which is active in thirteen countries of across the globe.

Photo: ©CD Cargo



EZ operated Class 797.701 is seen in Praha hl.n. on February 23rd with an engineers train.
Class47



Transshipment of calcium carbide in Prague-Liben

This year continues the reloading of calcium carbide transported from Sweden to the city of Stockvik by Prague company Linde. Carbide is transported several times a year in special conveyors that routine warehouse handling equipment can easily translate from a rail car on the road kit. This reloading is required because the Linde plant in Prague-Hostivař does not have a railway siding.

Transportation began in March 2010, when they used containers loaded on special platform wagons. In 2014, shipments for nearly two years faded and were restored in late summer 2016, when they were transported in covered wagons of the series Habins.

Calcium carbide is used for the production of acetylene, and the so-called controlled digestion of excess water. Acetylene is then fed into steel cylinders, which is sold to end customers. Today it is used mainly for metal cutting, thanks to the extremely high flame temperatures of up to 3300 °C. Its further use is in chemical manufacturing.

Photo: ©CD Cargo



▶ Tatra built Prague tram No. 8302 heads through the Zizkov area of the city with a line No. 9 service on February 23rd. *Class47*

Digital GSM-R System Will Allow to Stop Trains Remotely As Well

The companies TTC Marconi and Správa železniční dopravní cesty (SŽDC) have successfully demonstrated a new function of the traffic control terminal and the GSM-R network: Stopping Trains Remotely, the so-called General STOP. A presentation for the press and specialists from the Czech Republic and abroad took place at Sadská railway station (near the city of Nymburk) on March 27th.

The General STOP function has been in use in Czech Republic only on railway lines equipped with the analog Railway Line Radio system (TRS). In case of impending danger, it allows a train dispatcher or the head traffic controller to stop all trains in range of the respective base radio station.

Thanks to this useful tool, many human lives could be saved and extensive physical damage could be avoided. That is why SŽDC as the railway infrastructure manager was looking for possibilities to incorporate the General STOP function into the GSM-R digital radio system as well. It is similar to the cell phone system being in use in public networks, but adapted in a special way for the railway milieu and is gradually introduced on important railway lines throughout the Czech Republic.

The result is a special function called GSM-R STOP which increases the overall flexibility of employees ensuring railway traffic organisation and control in a given line section. In case of emergency on the line (e.g. an object on tracks, a fallen tree), these employees can react by pushing a button on the control terminal and thus physically stop running of all trains

connected to the GSM-R radio system in a chosen section. All trains in this area including those not being equipped with the GSM-R STOP function will receive voice information about a crisis situation in their immediate vicinity in a form of automatic notification.

An important step towards the whole intent's implementation was the construction launch of the STOP functionality within the GSM-R network last September. The construction is under way both in main halls at the Traffic Control Centres in Prague and Přerov and in railway offices and technological installations. This concerns approximately 200 locations throughout the Czech Republic. This operation worth almost CZK 25 Mio is funded from national resources. SŽDC acts as an investor; the general designer is the company TTC Marconi. The works' completion is scheduled for this September.

"In a quite short period, we were able to integrate an abundance of disparate technologies on the road from the traffic control terminal up to the train brakes. I am pleased that safety on the railway is even better now. I believe that the new function will allow to prevent tragedies in the future", says Mr. Richard Hartmann, Executive Director of TTC Marconi.

Test loading cars

Production of motor cars in the Czech Republic is still rising. In this growth also participates ČD Cargo, which is constantly looking for new ways to improve services and to increase rail's share of shipments of manufactured cars.

On February 17th, on a siding at the Skoda Auto works in Mlada Boleslav test loading took place on to TRANSFESA wagons. The participation of representatives from Skoda Auto, ČD Cargo, Cargo and DB TRANSFESA tested four types of cars, which were gradually loaded with Yeti, Fabia Combi, Octavia Combi and Kodiaq models onto both upper and lower platforms.

The test showed that all types of cars manufactured at the factory fit and can thus be loaded without difficulty and transportation of larger cars, even to Spain, whose tracks have a different gauge can occur.

Together with CD Cargo's partners, there is now a better solution to the competitive road transport for delivery of new automotive vehicles.

Photo: ©CD Cargo





Alstom will supply 15 Euroduplex Océane train sets to SNCF for the South Europe Atlantic high-speed line

Alstom will supply 15 Euroduplex Océane train sets to SNCF Mobilités, for a total of more than €400 million. This is in addition to the previous order for 40 trains, now being delivered. The 15 train sets will be commissioned in 2019 and 2020 for the Paris-Bordeaux service. They will replace older train sets, some of which are more than 35 years old.

The order for 40 Euroduplex was signed with SNCF in September 2013. 12 trains have already been delivered to SNCF; the first 4 were commissioned on 11 December 2016 for the Paris-Bordeaux line.

“This is very good news for our French sites, especially Belfort and La Rochelle, as well as for our component sites. This new train has many advantages for the railway operator, particularly its large capacity. Initial feedback, from passengers on this new train, is highly positive, in terms of both its comfort and its looks”, said Jean-Baptiste Eyméoud, CEO of Alstom France.

The Euroduplex Océane are larger-capacity trains, with 556 seats, against 509 in previous generations. Alstom has made the passenger the focus of this equipment development, offering a new seating concept, which is more comfortable, more ergonomic and features a higher equipment level (power outlets, USB sockets, reading lamps, etc.). Alstom has also developed an innovative system, allowing first-class seats to rotate through 180°, so that passengers face the direction of travel.

The distinguishing feature of the trains in this additional order is that they are pre-fitted for a new automatic speed control system generation, meeting the latest European standards (ERTMS). This train offers greater accessibility for PRMs, with increased passenger capacity, a device for help with door-locating, together with upgraded door-handles and (touch-sensitive) WC signs. The train is also pre-equipped so that the operator can offer on-board internet access.

Euroduplex is part of Alstom’s Avelia high-speed train range. Eight of Alstom’s twelve sites in France are involved in its design and manufacturing: La Rochelle for design and assembly, Belfort for the power cars, Ornans for the engines, Le Creusot for the bogies, Tarbes for the traction drives, Villeurbanne for the on-board computer systems, Petit-Quevilly for the traction transformers and Saint-Ouen for the design.



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France







Wurzburg shed roundhouse with Nos. 261 314, V60-14 (former 363.644), V270-10 (221.124, ex OSE A419) and V180-13 (203.158) all visible. *John Sloane*

Class 146.554 departs Bremen with a service to Oldenburg. *John Sloane*

Beacon Rail No. 6607 (266.026) speeds through Hannover Linden with a ballast working. *John Sloane*



Alstom receives an order for five Coradia Lint regional trains in Germany

Alstom has been awarded two contracts from Deutsche Bahn Regio AG to supply 53 Coradia Continental electric multiple units (EMUs) for a total amount of over €300 million. The trains are scheduled to enter into service between 2019 and 2020 in the German states of North Rhine-Westphalia, Rhineland-Palatinate, and Bavaria. All vehicles will be built in Salzgitter, Germany, Alstom's largest production site worldwide.

These orders are part of a frame contract concluded between the Deutsche Bahn and Alstom in 2012 for the delivery of up to 400 Coradia Continental trains. The first 28 vehicles of this contract have already been in successful service since 2014.

"We are very pleased that Deutsche Bahn has again chosen our well-proven Coradia Continental trains for its regional operations, after naming Alstom DB Supplier of the Year for trains in 2016. Orders of this size confirm Alstom's commitment for highest quality and availability. With more than 220 electric multiple units delivered in Germany since 2008, Alstom is one of the leading suppliers of regional trains on the market," says Didier Pflieger, Vice President of Alstom in Germany and Austria.

The two orders include 27 four-car trains that will operate in the suburban network of Nuremberg from December 2018 and 26 three- and five-car trains that will take up service in North Rhine-Westphalia and Rhineland-Palatinate.

Running at maximum speed of 160 km/h, the Coradia Continental trains are characterized by excellent acceleration properties, as well as a particularly smooth and quiet running. The three-car trainsets are fitted with 155 seats, the four-car ones with up to 230 seats and the five-car trains with 266 seats.

Coradia Continental meets the latest European standards in terms of fire protection, accessibility and emission values. Special attention was placed on passenger comfort: multi-purpose areas provide sufficient space for wheelchairs, bicycles and prams. The traction equipment is located on the roof to allow for more spacious interior. Access at platform height, movable steps, gap bridging and continuous low-floor areas allow barrier-free travel. The vehicles are equipped with repeaters for an improved mobile communication, as well as with sockets, video cameras and real-time passenger information system displaying current train connection data.



► Elderly DB Class 139.314 heads through Hannover Linden with a mixed freight.
John Sloane



DB Class 101.115 is seen amongst the maze of shops and platforms of Berlin Hauptbahnhof with a terminating train from Prague. *Class47*

DB Netz Class 225.010 is seen stabled at Duisburg Wedau depot. *John Sloane*

ELL Vectron Class 193.217 passes through Duisburg Entenfang on a southbound freight. *John Sloane*





Alstom's hydrogen train Coradia iLint first successful run at 80 km/h



Alstom has successfully performed the first test run at 80 km/h of the world's only fuel cell passenger train Coradia iLint on its own test track in Salzgitter, Lower Saxony (Germany). An extensive test campaign will be conducted in Germany and Czech Republic in the coming months before the Coradia iLint performs its first passenger test runs on the Buxtehude–Bremervörde–Bremerhaven–Cuxhaven (Germany) route beginning of 2018.

The four-week test runs currently undergoing in Salzgitter aim at confirming the stability of the energy supply system based on coordinated interaction between the drive, the fuel cell and the battery of the vehicle. The braking power is also being tested to check the interface between the pneumatic and the electric brake.

The Coradia iLint is the first low floor passenger train worldwide powered by a hydrogen fuel cell, which produces electrical power for the traction. This zero-emission train is silent and

only emits steam and condensed water. Coradia iLint is special for its combination of different innovative elements: a clean energy conversion, flexible energy storage in batteries, and a smart management of the traction power and available energy. Based on Alstom's flagship Coradia Lint diesel train, Coradia iLint is particularly suited for operation on non-electrified networks. It enables sustainable train operation while maintaining high train performance.

“This test run is a significant milestone in environmental protection and technical innovation. With the Coradia iLint and its fuel cell technology, Alstom is the first railway manufacturer to offer a zero-emission alternative for mass transit trains. Today our new traction system, so far successfully proved on the test ring, is used on a train for the first time – a major step towards cleaner mobility in Europe“, said Didier Pflieger, Vice President of Alstom Germany and Austria. The dynamic tests are performed at Salzgitter plant at 80 km/h and in Velim (Czech Republic) at up to 140 km/h, the maximum speed of the Coradia iLint. For the purpose of the tests, a mobile filling station has been erected in Salzgitter to pump gaseous hydrogen into the pressure tank of the Coradia iLint. The hydrogen used for the test runs is the by-product of an industrial process, which is reasonably reused as a waste product. In the long term, Alstom aims to support the hydrogen production from wind energy.

The vehicle has already successfully completed the static commissioning process. All electrical and pneumatic functions of the trains have been tested and verified at standstill. TÜV Süd has certified the safety of the battery, the pressure tank system and the fuel cell for the coming test phases.

The Coradia iLint was designed by Alstom teams in Germany at Salzgitter's site, centre of excellence for regional trains and in France notably in Tarbes, centre of excellence for traction systems and Ornans for the motors. This project benefits from the support of the German ministry of Transport and Digital infrastructure. Alstom has already signed letters of intent for 60 trains with the German states of Lower Saxony, North Rhine-Westphalia, Baden-Württemberg and the Hessian transport association 'Rhein-Main-Verkehrsverbund'.

Former DB locos, now in operation with SGL Nos. V60.14 and V300.18 are seen at Würzburg on February 23rd. *Class47*



Deutsche Bahn firmly back in the black

With a new long distance passenger record and a jump in profits, Deutsche Bahn (DB) returned to a path of success in the 2016 fiscal year.

The company boosted long distance patronage once again, transporting 7.1 million (5.4%) more passengers year on year, or a total of 139 million. In addition, substantial improvements to the punctuality of DB's long distance services (up 4.5 percentage points) were accompanied by an increase in customer satisfaction.

"Our Zukunft Bahn program is all about quality, and we are seeing the effects of our work to raise punctuality, improve cleanliness and offer our passengers better travel information," said Dr. Richard Lutz, the new DB CEO. "What is more, adjusted earnings before interest and taxes (EBIT) not only exceeded our target, but also rose more than 10% year on year, to over EUR 1.9 billion. We also continued to generate growth at our international businesses. 2016 was a good year for Deutsche Bahn."

Revenues at DB rose by EUR 108 million (0.3%) in 2016, to EUR 40.6 billion. Adjusted earnings before interest and taxes (EBIT) were up EUR 187 million (10.6%), to EUR 1.95 billion.

Gross capital expenditure rose by EUR 166 million (1.8%) to EUR 9.5 billion. Net financial debt saw only a slight increase of EUR 133 million (0.8%) in the 2016 fiscal year, to EUR 17.6 billion. The increase remained low due to the exchange rate with the pound sterling, and in particular to capital expenditures which were originally planned for 2016 but will not actually be reflected on the books until this year.

Transport

A total of 4.4 billion people used Deutsche Bahn's trains and buses in Europe in 2016, a year-on-year increase of 81 million (1.9%). Rail passenger transport in Germany saw an increase in passenger numbers of 7 million, to more than 2 billion, with long distance patronage up and regional patronage constant. DB Arriva boosted its passenger numbers by 98 million (5.9%) to 1.76 billion in 2016, due in part to its successful bids for major franchises in the UK and the Netherlands. It also raised its share in the UK rail transport market from 14% to a full 23%. Metric ton kilometers in rail freight transport fell by 3.8% year on year, to 94.7 billion. DB Cargo has put in place a comprehensive blueprint for realignment and is currently working to return to a path of lasting success.

Infrastructure

As rail traffic rose in 2016, so did volume produced on the DB rail network – by 1.3% to a new record of 1.07 billion train path kilometers. Non-DB rail companies increased their share once again, to a new high of 30%. In light of these increases, the number of stops at DB passenger stations also rose, by 1.1%, with non-DB companies accounting for 35.3% (up 12.4% year on year).

Freight forwarding and logistics

DB Schenker saw positive performance across the board, with the number of European land transport consignments up 0.3% and air freight volumes up 4.5%. Ocean freight volumes rose 3.3%, and revenues at contract logistics rose 7%.

On February 23rd, MRCE's Berlin liveried ES64U2-060 heads a container train through Regensburg. *Class47*



Stadler to supply ten EURODUAL locomotives for HVLE in Germany

The Spanish Division of Stadler and German rail freight operator Havelländische Eisenbahn (HVLE), have announced a purchase agreement for the supply of ten six-axle EURODUAL locomotives in German configuration.

HVLE and Stadler have signed a contract for the manufacturing and delivery of ten six-axle EURODUAL locomotives and a corresponding full service maintenance agreement. The powerful locomotives will be used in freight transport services in the German network combining both 15kV AC and 25 kV AC electric and diesel operating modes. On the financing side, DAL Deutsche Anlagen-Leasing accompanies the transaction with a tailor-made, asset-based leasing structure.

The Rail specialist, headquartered in Mainz, has also taken over the arranging and funding with funds from the German Sparkassen-Finanzgruppe.

HVLE becomes the launch customer of the new generation of six-axle bi-mode locomotives developed by Stadler for the European market. Iñigo Parra, CEO Stadler Rail Valencia, emphasized the importance of the project and the advantages of the new platform: “This contract is an important milestone for Stadler as the first order of the new locomotive family. With its avant-garde technology, the EURODUAL locomotive

covers every need in an efficient and reliable way offering rail operators numerous economic and ecological benefits.” For Ludolf Kerkeling (HVLE) the conditions in the rail freight market will change: “The demand for six-axle locomotives will grow because of the increasing length and weight of trains.” Martin Wischner (HVLE) added: “We need diesel power for the first/last mile but the environmental and economic advantages of electric power are very important for us.”

Stadler’s EURODUAL is a bi-mode locomotive with impressive performance, both in diesel and in electrical mode, available in different configurations, gauges and overhead voltages. The modular platform also offers a wide range of different power in diesel mode to adequately meet individual customers’ needs. The versatile locomotive platform is designed for freight and passenger mainline applications, at speeds of up to 160 km/h, on electrified and non-electrified lines.

Stadler, well-known rolling stock manufacturer including freight locomotives for the European market, is currently supplying four-axle bi-mode locomotives Class 88 to British operator Direct Rail Services and performing first tests of the six-axle EURODUAL prototype in its Spanish plant.

Photo: ©Stadler



Bombardier to Provide 25 Additional TWINDEXX Vario Double-deck Intercity Trainsets to Deutsche Bahn



Rail technology leader Bombardier Transportation has announced that it has received a call-off from Deutsche Bahn AG (DB) to provide 25 double-deck intercity trainsets. The trainsets consist of 25 BOMBARDIER TRAXX locomotives and 124 BOMBARDIER TWINDEXX Vario double-deck intercity cars. This order is based upon two framework agreements signed with DB in 2008 and 2013. Delivery of the 25 trainsets is scheduled to start in 2019.

“The signing of the contract for 25 new Intercity 2 trains is an important milestone in our long-distance transport campaign, which will expand our service by 25 percent by 2030. With the new vehicles, we offer our customers a particularly comfortable and reliable travel in long-distance traffic,” says Birgit Bohle, Chair of the Management Board of DB Long Distance.

“This order is a great achievement for our rail business and it also signifies the continuation of our successful long-term cooperation with Deutsche Bahn”, said Michael Fohrer, Managing Director of Bombardier Transportation Germany. “We are pleased that DB relies on our modern and proven double-deck trainsets to further expand its mobility services in different regions. Thanks to the single-car platform concept, these new TWINDEXX Vario cars are fully compatible with previous models, which provides maximum flexibility in operation.”

Passengers will benefit from greater comfort through ergonomic seats and adjustable headrests, larger luggage

spaces and stronger signals for mobile phones. Equipped with the European Train Control System, ETCS BL3 - Level 2, the trainsets will be homologated for cross border traffic in Germany and Switzerland. An extended maintenance data transmission system will support in optimizing service inspections. Each five-car trainset will be pulled by a third-generation TRAXX AC3 locomotive fitted with sophisticated concepts to maximize energy savings in operation.

To date, the first batch of 27 five-car, long-distance, loco-hauled trainsets is already in successful operation on several routes in Germany. Additional 17 trainsets will be delivered in summer 2018. In total, more than 2,500 TWINDEXX Vario cars and close to 900 TRAXX locomotives are operated by DB.



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Germany



Cornerstone laid for service depot for the Rhine-Ruhr-Express (RRX)

Digital service to ensure nearly 99% availability of the 82 RRX trains

Predictive service and maintenance for over 32 years

Test operations as of mid-2018 in 70,000 square meters of depot property

On March 7th, the cornerstone was laid in Dortmund-Eving, Germany, for the service and maintenance depot being built for the Rhine-Ruhr-Express (RRX) trains. Test operations at the depot are scheduled to begin in mid-2018. In the future, all 82 RRX trains will be serviced and maintained here for a period of 32 years. Siemens will create 75 jobs for the depot and is investing a mid-double-digit-million euro sum in the facility.

The depot will be fully oriented to the unique digitalized train service and maintenance provided by Siemens. Predictive analyses identify faults long before failures actually occur. To achieve this, the trains are closely monitored in real-time and the delivered data is analyzed in a central diagnostics system at

the Siemens Mobility Data Services Center (MDS) in Munich-Allach, Germany. On the basis of these analyses, specialists at the MDS calculate failure predictions and recommend acute or scheduled maintenance to the service team in the new depot.

“We have reached a further milestone. The RRX will revolutionize the state’s rail-based passenger transport, sustainably improve travel conditions for hundreds of thousands of commuters, and set new standards for comfort, throughput and travel times,” pointed out Michael Groschek, Minister for Transport in the state of North-Rhine Westphalia, at the cornerstone-laying ceremony.

Martin Husmann, CEO of Verkehrsverbunds Rhein-Ruhr (VRR) added: “I’m especially excited for the passengers. Today’s cornerstone-laying ceremony marks an important investment in the future for the 2.4 million people who use our mass-transit rail system daily. We expect the new Dortmund depot will soon make a decisive contribution toward guaranteeing the best possible availability of the new trains.”

“In Dortmund-Eving, we’ll be taking the service and maintenance of trains into the digital age. We use algorithms to analyze data delivered from the trains so we can fix

malfunctions before they actually occur. This way, we can guarantee our customer VRR and all passengers nearly 99-percent availability of our trains. We’re excited to be building this new depot in Dortmund,” said Jochen Eickholt, CEO of Siemens Mobility Division.

The site of the new depot in Dortmund-Eving covers around 70,000 square meters, roughly corresponding in area to ten soccer fields. VRR owns the property up to the year 2050 through a leasehold agreement with Siemens. The depot complex will include a six-track maintenance building, a warehouse, administration and social building, an outdoor cleaning facility for the trains, an underfloor lathe for overhauling wheelsets, and a diagnostics system for wheelsets.

The main building will be around 163 meters long, 63 meters wide and 12.4 meters high. The facility will use around 15 percent less energy than the recommended standard set by the new European Energy Saving Ordinance (EnEV). Around 5.5 kilometres of track will be laid on the property, including the maintenance building. The depot will be located on the site of the former Dortmund-Eving marshaling yard and connected at its north and south end with the main line to the Dortmund railway station, along the Lünen/Münster route.



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Germany

Bombardier and Vlexx Sign Contract to Provide 21 TALENT 3 Trains for Operation in Saarland, Germany

Rail technology leader Bombardier Transportation and emerging transport company vlexx GmbH have signed a contract to provide 21 three-car BOMBARDIER TALENT 3 electric multiple units. The new trains are scheduled to begin operation on the Saar region’s electric rail network in December 2019.

“With the expansion of our railway network and our fleet to a total of 84 vehicles, we are ensuring long-term business growth,” explains Frank Höhler, Managing Director of vlexx GmbH. “With the new trains, our passengers will experience much more comfortable rides. Passengers will benefit from many extras, like large panorama windows and a modern passenger information system,” Höhler continued.

This order is a great success for Bombardier and underlines the appeal of the latest generation of our TALENT product family. The new TALENT 3 trains combine the quality and reliability of their predecessors with new elements such as WLAN,” says Michael Fohrer, Managing Director of Bombardier Transportation Germany. “We are proud to support our new customer vlexx’s expanding mobility offering with these innovative trains. We also see this contract as a prelude to a long-term, partnership-based cooperation.”

travel experience for passengers, but residents will also benefit from its reduced noise emissions. In addition, the three-car trains feature 160 seats, of which eight are in the first class, room for two wheelchairs and nine bicycles. Furthermore for the first time, trains on this route will also be equipped with sliding steps to bridge the gap between the platform and the train while boarding and alighting for a comfortable and safe passenger exchange, especially for passengers with mobility restrictions.

The new generation of TALENT 3 electric multiple units offer modern operational flexibility, low energy consumption and significantly reduced life cycle costs. With the widest carbody in its class, the TALENT 3 train has a strong passenger-focus with a maximum comfort during travel and space that enables swift and easy passenger exchange. In total, about 1,400 TALENT family trains are in service in Europe and Canada. In

Germany, about 400 TALENT 2 trains are running with various operators and Bombardier has signed agreements to provide up to 364 of the latest-generation TALENT 3 trains to Austria and Germany. Since 2001, Bombardier has delivered more than 6,500 trains to Germany and also provides comprehensive services to customer fleets for the duration of their life cycles. With a total German supplier volume of 1.3 billion euro per year, Bombardier is strongly committed to the German supply industry.

































 Switzerland

➤ RhB Ge 4/4 III No. 707 has just crossed the Landwasser Viaduct with a freight from Samedan to Chur. *Steamsounds*

➤ RhB Ge 4/4 II No. 615 is pictured arriving at St. Moritz with a service from Landquart. *Steamsounds*

➤ Seen from a descending Pilatus Bahn train, another is approaching the Ämsigen passing loop. Note the interesting point switch. *Steamsounds*





Alstom delivers the last vehicle for SBB Pendolino fleet

Alstom has just delivered the last Pendolino ETR 610 high-speed train to SBB, in accordance with the planned schedule defined within the contract signed in 2015 for four additional trains. They will operate as EuroCity trains on the Gotthard and Simplon line to Milan. This last delivery completes SBB's tilting fleet, which now counts 19 Pendolino trains.

"We are thankful for the trust that SBB put in us and pleased to meet that trust again. Over the years we have built a strong relationship with our Swiss customer. With its unique tilting technology and its cross-border performance, Pendolino is perfectly adapted to the SBB network", said Michele Viale, Managing Director Italy and Switzerland at Alstom.

The Pendolino train for SBB is a seven-car train which can accommodate up to 430 passengers at a commercial top speed of 250 km/h. The train offers an excellent level of passenger accessibility and comfort thanks to, among other features, wide gangways and corridors, reclining seats, individual reading lights and electric sockets, as well as large panoramic windows. The train is equipped with the latest generation of flexible bogies reducing track and wheel wear. It also benefits from Alstom's unique tilting technology that allows for trains to run safely at a speed 35% faster through curves on conventional lines.

Designed to be eco-friendly, Pendolino is 95% recyclable and is equipped with an electric braking system enabling almost 10% reduction in energy consumption.

All trains were manufactured in Savigliano (Italy), Alstom's

worldwide competence centre for tilting high-speed trains and an example of Factory 4.0. Its innovative 3D virtual reality room enables Alstom engineers to design trains for easier maintainability. Over 500 Pendolino trains have been produced in Savigliano in the last 30 years.



On February 27th, VSLF liveried Class 460.105 propels a Lausanne bound IC service out of Geneva. *Class47*



Bombardier Wins Contract to Provide 70 FLEXITY Trams to Zurich

Rail technology leader Bombardier Transportation and Zurich Public Transport (VBZ) signed a contract for the delivery of 70 seven-part BOMBARDIER FLEXITY low floor trams with an option for another 70 vehicles on March 2, 2017. The base price for the vehicles ordered is valued at approximately 300 million Swiss Francs (281 million euro, \$296 million US). The first vehicles will be delivered at the end of 2019.

Zurich's new trams are based on the proven FLEXITY platform that has been customized to integrate seamlessly into the Zurich city landscape. It meets the highest standards for safety, environmental friendliness and energy consumption, while its advanced design reduces noise and vibration. It also offers barrier-free access to passengers with limited mobility. Dr. Guido Schoch, Director of Zurich Public Transport, said, "All of the FLEXITY components have been intelligently integrated and reflect the latest technological developments to reduce overall operating costs. Likewise, our passengers will also benefit greatly from the exceptional safety and ergonomics that these modern trams offer."

Stéphane Wettstein, Managing Director, Bombardier Transportation (Switzerland) AG is pleased, "VBZ has opted for an innovative and highly-developed product. This decision strengthens a decades-old partnership, which will also serve all passengers in Zurich."

modular design that reduces overall lifecycle costs by making it easy to clean and maintain. Inside, the tram's open design improves passenger flow, which in turn increases capacity by around 20 percent and lowers price-per-rider costs in comparison to vehicles currently in use.

To date, over 1,600 FLEXITY 100% low-floor trams have been sold worldwide with around 5,000 Bombardier trams and light rail vehicles operating, or on order, across Europe, Asia, Australia and North America. Bombardier is one of Switzerland's largest rail transport suppliers with a headquarters in Zurich, a plant in Villeneuve (VD) and service support centre in Oberwil (BL). Bombardier's FLEXITY trams are already in service in Basel and Bombardier Switzerland has supplied various multiple units, railway carriages, locomotives and trams to operators on the Swiss market and provides comprehensive service to these customer fleets for the duration of their life cycle.



On February 27th, SBB Re 6/6 Nos. 611.631 and 111.637 haul a consist of 3 ballast wagons into Lausanne. *Class47*



Bombardier's Joint Venture Wins Contract to Build 144 New Generation High Speed Train Cars for China

New trains to boost local economy and help expand high speed network in Western China's new 'Diamond Economic Circle'

Latest generation of eco-friendly CRH1A-A trains reduces lifecycle costs and sets new standards for sustainable transportation and passenger comfort

Bombardier Transportation has announced that its Chinese joint venture, Bombardier Sifang (Qingdao) Transportation Ltd. (BST), has been awarded a contract with China Railway Corp. (CRC) to supply 144 CRH1A-A new generation high speed train cars for China's evolving high speed rail network. The new cars will enter service with the Chengdu and Kunming Railway Bureau and support the continued development of Western China's new 'Diamond Economic Circle', which includes the cities of Chengdu, Chongqing, Xi'an, Guiyang and Kunming. The contract for 18 eight-car trainsets is valued at approximately 1.95 billion Chinese RMBs (268 million euro, \$ 284 million US). Bombardier owns 50% of the shares in BST, and the JV is controlled by BT's partner CRRC Sifang Co., Ltd.

Jianwei Zhang, President of Bombardier China, said, "China is building the world's most advanced high speed train network based upon state-of-the art technologies. In light of this market's fierce competition, we are pleased that CRC has selected our high speed technology to enhance the western China's high speed rail network,

connect cities and people there and help the new economic circle to reach a targeted GDP growth of 10% in 2017. We look forward to leveraging our expertise and resources to maintain our long term relationships and success in this dynamic market."

With an operational speed of 250km/h, the CRH1A-A train's aluminium carbody design reduces weight and track wear as well as aerodynamic drag, delivering improved performance and operating costs. The train's graphics, unique windows, lighting and shape give it a distinctive appearance, while its exceptional energy efficiency sets new industry standards for sustainable transportation and passenger comfort. The trainsets also feature the highly efficient BOMBARDIER MITRAC propulsion and control system, supplied by a separate Bombardier Chinese joint venture, Bombardier CPC Propulsion System Co., Ltd. (BCP).

Bombardier Transportation in China is the full solution provider across the entire value chain. From vehicles and propulsion to services and design, Bombardier Transportation in China has six joint ventures, seven wholly foreign-owned enterprises, and more than 6,000 employees. Together, the joint ventures have delivered more than 3,500 high speed railway passenger cars, 560 electric locomotives and over 2,000 metro cars to China's growing urban mass transit markets. Bombardier also provides propulsion equipment to third party metro car builders for use in 21 Chinese cities. As a proven global full services provider, Bombardier's joint ventures have also won orders in China to provide maintenance for 1,160 metro cars.



Further expansion in Slovenia

Rail Cargo Logistics increases stake in Intereuropa-FLG

Name change to Rail Cargo Logistics d.o.o now complete

The Rail Cargo Group is stepping up its railway logistics presence on the Slovenian market. Having upped its holdings in Intereuropa-FLG from 50% to 74 % to become the company's majority shareholder, Rail Cargo Logistics - Austria is now taking the next step: in the interests of a uniform market presence and brand name, Intereuropa-FLG has been renamed Rail Cargo Logistics.

Major market presence

Intereuropa-FLG can look back on a long and illustrious corporate history, and has been part of Rail Cargo Group since 2005. The Ljubljana-based firm's portfolio of services ranges from conventional rail freight to containerised transport, with a particular focus on intermodal shipping via the Adriatic seaports. Transit traffic via the port of Koper, including all port-related services, is a particular speciality. Customers also benefit from logistics services such as warehousing, reloading, delivery by HGV, shipment tracking, customs formalities and consultancy.

Rail Cargo Logistics will offer both a comprehensive range of services and high-quality logistics support, thus consolidating its position as one Slovenia's leading rail logistics firms. In addition, Slovenia's geographical location at the intersection of two important pan-European rail corridors will enable efficient cross-border rail transport.



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Alstom has completed its first signalling project in Serbia

Alstom has delivered its latest signalling interlocking technology to the Serbian Railway Company, working in close cooperation with the Serbian Mihajlo Pupin Institute. The project was ordered by Russian RZD International. With 8 out of 17 lines being dedicated exclusively to freight transport, Pancevo is one of the largest and most important Serbian railway stations. Its rehabilitation is the first step in an ambitious project for the reconstruction of a total of 20 km of the Serbian railway line linking Pancevo to Belgrade, to secure the high level of commuter traffic between both cities and further optimise the international transit traffic to Romania. Today, 60 passenger and freight trains daily circulate on the line and this number is expected to reach 136 trains by 2020. “We are extremely proud to have succeeded in delivering this pioneering project in just 20 months together with our local partner, the Mihajlo Pupin Institute, in a challenging environment. This is one of the first implementations of a modern interlocking system in Serbia, where the signalling and operating rules are very different from other European countries”, said Gabriel Stanciu, Alstom Managing Director for Romania, Bulgaria and Republic of Moldova.

For this project, Alstom deployed its Smartlock 400 interlocking solution. Installed in more than 25 countries with different signalling principles, among which Italy, Denmark, Turkey and Romania, the components of Smartlock are able to manage up to 1,400 routes. Smartlock 400, the latest version of the Smartlock family, interfaces directly with trackside equipment, with no need for intermediate relays. This means that reaction time can be further reduced as well minimising trackside footprint and maintenance costs. This project integrates Alstom’s Smartlock 400 solution with new equipment designed and produced by the Mihajlo Pupin Institute, never used before at an industrial scale. The new solution has become operational following extensive tests. Overall 25 specialists from Alstom were involved in designing and implementing this contract. Alstom team in Romania was in charge of the engineering and project management while the team in Bologna (Italy) delivered the products and contributed to the project coordination. The Romanian team also provided training to over 25 Serbian employees from the Serbian railway operator to use these modern solutions.



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Alstom delivers on time the first metro trainset to Riyadh

Alstom, as a part of FAST consortium, hands over to Arriyadh Development Authority (ADA) the first of the 69 metro trainsets for Riyadh that will circulate on the lines 4, 5 and 6. The production of the metro trainsets is well on track and Alstom has set to meet its deadline and deliver all the metro trainsets by end 2018.

The metro trainsets are produced in Alstom’s factory in Katowice, Poland. Metropolis is part of Alstom’s metro range. More than 5,000 Metropolis cars have been sold worldwide to cities like Panama, Singapore, Sydney, Sao Paulo, Shanghai, or Amsterdam.

ADA launched in 2013 a project to build a metro network that would be 176 km-long and include six lines and 85 stations. Alstom, as part of the Fast consortium, is in charge of supplying a full integrated metro system for lines 4, 5 and 6 (or Yellow, Green, and Purple lines). The metro system includes 69 Metropolis trainsets, as well as Urbalis, Alstom CBTC signalling solution, the power supply and its energy recovery system Hesop.

Composed of two cars each, the Riyadh metro trainset is 36 meter-long and is able to accommodate up to 231 passengers. Each train features three classes: first, family and single class separated by a glass partition. The trains will offer passengers a high level of comfort, ergonomic seating, LED lightning and advanced passenger information systems. The interior and exterior aesthetical design has been developed as per ADA’s specific requirements. The exterior car body features painted stripes that indicate the color of the line the metro trainset will circulate on.

The metro trains are 100% motorized, allowing them to run on gradients of up to a 6% slope. The trains are designed to run on standard-gauge track at a top speed of 90 km/h. The trains have been designed with the region’s climate in mind. One such feature is a more powerful air conditioning system, capable of delivering sufficient cooling capacity even in extreme heat. In addition, the bogies, traction drive, brakes and doors have been fitted with special elements in order to prevent the ingress of sand.

“We are pleased to hand over on time the first Metropolis trainset to ADA. This landmark project will allow Riyadh residents and visitors to commute aboard a reliable, comfortable and environmentally-friendly means of transport. Furthermore, Alstom is committed to be a close and long-time partner of the Kingdom to efficiently address its mobility needs and support in carrying out its upcoming transport projects” declared Gian Luca Erbacci, Senior Vice President for Middle East & Africa at Alstom.





European transport operator Arriva reports continued growth and investment in 2016

Arriva, a leading European transport provider, has recently released annual results showing growth of around 5% on the prior year, representing revenues in excess of €5bn. This revenue growth enabled Arriva to invest €359m in its businesses across the UK and Europe – 30% more than in 2015.

In the UK, Arriva increased its capital expenditure to €133m in 2016. The investment was focused on improving the customer experience, including new and improved buses and trains, station improvements and innovations such as mobile ticketing apps and the roll-out of contactless payments on buses.

Key highlights for the UK include the launch of the Northern rail franchise in April and since taking over the contract Arriva has begun investing in an extensive modernisation programme to deliver a step change for the 90 million passengers who use the network every year. In addition, Arriva Rail London Ltd began operating the London Overground concession in November following a competitive bidding process and after 9 years of Arriva operating it as a joint venture.

The UK remains Arriva's biggest bus market with 5,250 vehicles. Despite a challenging market with increasing congestion, Arriva has invested significantly in technology and refreshed networks to improve the bus passenger experience. This includes our

industry-leading app, Wi-Fi on new buses and improved ticketing and payments.

In mainland Europe, Arriva began to operate a number of new contracts, including a 15-year bus and rail contract in Limburg, the Netherlands – an innovative multi-modal contract designed to create a more integrated and seamless transport experience for passengers, with a commitment to introduce 226 new zero-emission buses and 36 trains by 2026. The Group also provided new train services in Prague, new bus services in Warsaw, and continued investing in key markets such as Italy and the Czech Republic, and developed long distance 'Arriva Express' bus lines across Europe.

Manfred Rudhart, chief executive of Arriva said: "2016 was a year of continued market growth as a result of significant contract wins and acquisitions. We also increased our overall capex investment by 30%, from €276m in 2015 to €359m. "The Northern franchise consolidated our position as a major operator in UK rail, while new franchises and acquisitions boosted our presence in Spain, the Netherlands, Italy and Czech Republic. Arriva continued its significant investment in customer service improvements, new technology and our people. We have rolled out contactless payment schemes across our markets, making bus and train travel more convenient; introduced more environmentally-friendly vehicles and continued to invest in our graduate and apprenticeship schemes."



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Hector Rail orders 15 locomotives from Siemens

Delivery to begin in Spring 2018

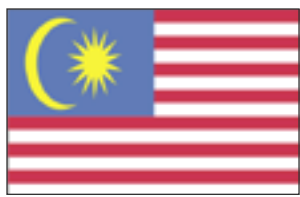
Second order from the Swedish rail transport Hector Rail AB

Hector Rail AB, a Swedish rail transport company, has ordered 15 Vectron alternating-current (AC) locomotives. Delivery is planned beginning in the spring of 2018. All of the locomotives will have a maximum output of 6,400 KW and a top speed of 200 km/h. All Vectron AC locomotives are equipped with the European Train Control System (ETCS) as well as the ATC2-STM train control system. The locomotives will be used for heavy freight and timber transport in Sweden and Norway. To bridge short stretches without overhead power lines, the locomotives have a diesel power module with radio remote control on board.

Hector Rail is an independent line haul provider for the European rail transport market headquartered in Sweden. The company provides transport solutions for heavy industrial products as well as intermodal freight and passenger transport for industrial companies. Hector Rail's fleet includes 75 locomotives, and covers a total of over seven million train kilometres a year.

Hector Rail initially ordered five Vectron locomotives from Siemens in July 2016. The order included an option for the 15 locomotives of this type that were just ordered.





Bombardier and HARTASUMA to Transform Mobility in Kuala Lumpur with 27 Additional INNOVIA Metro 300 trains

Driverless INNOVIA vehicles set to increase urban connectivity for an estimated 10 million residents across Malaysia's Klang Valley by 2020

Rail technology leader Bombardier Transportation and its local partner HARTASUMA SDN BHD have announced that they will deliver an additional 27 BOMBARDIER INNOVIA Metro 300 trains for the Kelana Jaya Light Rail

passengers per-hour, per-direction. Once final delivery is completed in 2022, these highly efficient four-car trains will help to increase reliability and provide high capacity mobility on the capital city's integrated transit network. Kuala Lumpur's new fleet comes from the same generation of BOMBARDIER INNOVIA Metro 300 trains which have been progressively entering service on the Kelana Jaya Line since December 2016.



Transit (LRT) Line in Malaysia. The order from Prasarana Malaysia Berhad is valued at approximately 1.7 billion Malaysian ringgit (359 million euro, 388 million US).

Bombardier's share is valued at approximately 1.2 billion Malaysian ringgit (246 million euro, 266 million US). Peter Cedervall, President of Rail Control Solutions and South East Asia at Bombardier Transportation said, "We are very pleased to receive, together with HARTASUMA, this further order that comes in addition to our ongoing delivery of 14 new trains previously ordered and refurbishment of the original fleet. All of these projects will significantly increase capacity on the Kelana Jaya line and improve connectivity across the fast-growing Greater Kuala Lumpur area."

Built on a proven track record of safe operation and service dependability, the lightweight aluminium INNOVIA Metro 300 trains can move up to 30,000

As a committed local partner, since 1998 Bombardier has received three orders from Prasarana for a total of 374 vehicles, making theirs one of the largest INNOVIA fleets in the world. Final assembly and interior fit-out for these trains are all being carried out in Malaysia, at the Westport facility of the Bombardier HARTASUMA Consortium as part of ongoing initiatives to increase local workforce skills. In addition, the consortium is also increasing transport capacity on the same line through the conversion of

the original Bombardier INNOVIA fleet from 34 two-car to four-car trains with inter-car walkthrough and associated wayside system upgrade, to be completed by 2020.

Bombardier has been delivering sustainable transit and rail solutions to Malaysia for more than 20 years, reflecting our customer's confidence in our technology and expertise. With public rail transportation a key part of Malaysia's economic development programme in the Kuala Lumpur and Klang Valley area, Bombardier is also currently delivering its advanced BOMBARDIER CITYFLO rail control solution for the first two lines of the new, fully-automated and driverless Klang Valley Mass Rapid Transit (MRT) system which will increase connectivity, including in and out of Kuala Lumpur, for an estimated 1.2 million residents.



Bombardier's SITEUR train arrives in Guadalajara

Rail technology leader Bombardier Transportation has announced that the arrival of the first TEG-15 model light rail vehicle (LRV) in the city of Guadalajara, Mexico. The vehicle is from an order placed on December 29, 2015 by the Sistema de Tren Eléctrico Urbano (SITEUR) for Bombardier to supply 12, two-car LRVs. The train will run on SITEUR's Line 1 as part of the Jalisco government's plan to extend and modernize the line. The last train is scheduled to be delivered by the end of November 2017.

Benoît Brossoit, President of Bombardier Transportation, Americas Region, said, "We are proud to deliver this first LRV just 14 months after contract signature, two months ahead of the foreseen schedule. These new trains will help Guadalajara, Mexico's second largest city and one of the main commercial and industrial hubs, to manage the growing urbanization it is experiencing, by renewing its transportation system and increasing Line 1 capacity by approximately 50%. We greatly appreciate the trust from our long-term strategic partner SITEUR and we look forward to seeing more Bombardier LRVs in use as Mexico's cities continue to grow."

The new vehicles will have a range of features that will improve the travel experience for Guadalajara public transit system's passengers and drivers. Among them are an On-Board Video Recording System (OVRS), a passenger communication intercom, a new fire and smoke detection system, Light Emitting Diode (LED) technology, visual alerts for closing doors, as well as wheelchair access. Additionally, the drivers' cabin, equipment, and controls have all been redesigned for greater ergonomics. The 29.56 metre-long, articulated carbon steel vehicles will also have high reliability and lower maintenance costs while increasing transport capacity with ample space for up to 48 seated passengers, and over 250 standing passengers per vehicle. The vehicles will have a maximum speed of 80 kilometres per hour and be fully compatible with the Bombardier-built TEG-90 version previously delivered to SITEUR.



The TEG-15 LRV is part of Bombardier successful Mexican Legacy Light Rail Vehicles developed since the 90s

with more than 100 trains in service in Mexico's three largest cities: Guadalajara, Monterrey and Mexico City. From design and manufacturing to commissioning and warranty, the project is being managed by teams working out of Bombardier Transportation's Ciudad Sahagún facility in the State of Hidalgo. The first vehicle will continue testing at SITEUR's facilities, with a provisional acceptance anticipated no later than the second half of May 2017.



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Intermodal transport and international transportation prove the strengths of PKP CARGO - Group results in 2016

In 2016 the PKP CARGO Group's revenues amounted to 4,411 million PLN, with EBITDA of 562 million PLN. The Group stopped the decline in the volume of freight and has increased intermodal transport in terms of weight by 25% y/y. The Group's presence in foreign markets increased by 55% y/y calculated with freight business. The Board of PKP Cargo expects that in 2017 it will be achievable to maintain the positive trend in the change in market share and take advantage of expected growth, including the situation related to large infrastructure projects.

In 2016 the PKP CARGO Group transported 111.5 million tonnes of goods and achieved freight business at the level of 28.5 billion tkm (both -4% y/y). At the same time the share of the market in the freight business amounted to 51.6%. Transportation was carried out by five entities from the capital group: PKP Cargo, PKP CARGO SERVICE and three carriers included as belonging to PKP CARGO AWT Group, operating in the Czech Republic, Slovakia and Hungary. "It certainly was not an easy year for us. However, despite the extremely difficult market environment, we were able to stop the decline in the volume of freight and reverse the unfavourable trend for us. Since May, our market share has been steadily increasing. This is the result of our hard work and the many changes that we introduced as a new Board of Directors. We have never intended to give up, because we want to win and we like to do so. I am convinced that we have not said the last word and that in 2017 our performance and the customer satisfaction with our work will continue to grow," - says Maciej Libiszewski, president of PKP CARGO. The company spares no efforts to improve customer satisfaction and customer contentment, making this one of its priorities.

"We introduced a new sales model and we are still expanding commercial structures adapted to the highest standards to provide comprehensive freight services. All this is to be closer to the Customer and to respond quickly to their expectations and needs. As a result of these activities, we rather quickly improved the work of the commercial departments and we won several important contracts," emphasizes Libiszewski. The strong points of PKP CARGO remain intermodal transport and international transportation. Intermodal transport is growing in strength recently, and the New Silk Road and rail transport of containers from China to Europe have become an additional impulse to development. PKP CARGO understands this trend and uses it well, becoming the undisputed leader in this type of transport in the country and an increasingly important player in Europe. The increase in foreign freight business in the transport of containers in 2016 was 110% y/y. Last year, PKP CARGO launched its own forwarding company in Germany, which will enable even better use of the potential of the Western European markets. "We are looking for partners abroad to use our fleet even more effectively outside Poland and on longer routes. We are active on the New Silk Road, we are also conducting talks on the development of cooperation with railways in the countries of the

Adriatic, the Baltic and the Black Sea, and through our strategic partnership with the AWT Group we have become one of the key operators in the Czech Republic," adds the president Libiszewski. Without a doubt, intermodal transport and international transportation are segments which the carrier will also strengthen this year. The Company intends to make good use of the projected economic growth and the return of prosperity for large infrastructure projects. Among plans for 2017 are also a continuation of the process of renewal of rolling stock and to increase the market share in specialist freight.

"PKP CARGO is a company that is not going to stand still, and we will be growing," sums up the president Libiszewski. Freight by the PKP CARGO Group in 2016 was affected by the general macroeconomic conditions and lower than expected economic growth, which resulted in difficult market conditions. In particular, there was a weakness in infrastructure construction and a lower demand for freight of basic construction materials (gravel, stone, sand and cement) as well as weak demand for hard coal, including in exports. The rail freight market in Poland in 2016 decreased compared to the previous year by 1.2%. The operating income of the PKP CARGO Group in the fourth quarter amounted to 1 197 million PLN (-6% y/y), with operating costs at the level of 1,133 million PLN (-14% y/y). EBITDA amounted to 216 million PLN (+ 129% y/y) and a net profit of 75 million PLN. After four quarters of 2016, results were as follows: operating income 4,411 million PLN (-0.1% y/y), operating expenses 4,437 million PLN (+ 4% y/y), EBITDA of 562 million PLN (-12% y/y), net profit -41 million PLN.

Results by segment were as follows:

Intermodal

This segment is growing the most dynamically in the whole market for rail freight in Poland. In 2016 it was responsible for 9% of the total freight business of the Group. PKP CARGO is counting on further growth in this transport group. In 2016 an increase in weight of goods transported by 25% y/y, including by 76% y/y in international transport. Dynamic development of the New Silk Road. An increase in transport by land from/to China in 2016 by 102% y/y measured by the weight of goods transported. An increase in the weight of containers transported from/to Polish ports in 2016 by 7.7% y/y. Development of transport outside Poland - an increase in freight business by 110% y/y and an increase in the weight of containers transported by 76% y/y. Developing connections with the seaport terminals in Poznań, Warsaw, Radomsko and Łódź.

Fuel

After the twelve months of 2016 results in this segment of the freight business were as follows: hard coal 11.07 billion tonnes-km (-11% y/y); these declines, however, were largely offset by increases in: coke and lignite of 1.47 billion ton-km (+ 22%

y/y), and liquid fuels of 1.09 billion tonnes-km (+ 30% y/y). The following have had an impact on the results of this segment: A reduction of hard coal production in 2016 by 2.5% y/y, i.e. 1.8 million t. An increase of ARA coal prices in 2016 by 81% to \$ 86/t. An increase in energy/electricity production in 2016 by 0.53% y/y, including a drop in production in power plants based on coal by 0.65% y/y. A reduction of coal reserves in Poland by 56.9% (2.5 million tonnes at the end of December 2016 against 5.8 million tonnes at the end of December 2015).

Aggregates market

The postponed market launch of large infrastructure investments affected the freight of aggregates and building materials, the second largest freight transport segment of the PKP CARGO Group. Freight business achieved in the last year amounted to 4.64 billion tonnes-km (-12% y/y). Slowly a revival in this segment is being seen, due to the increasing number of projects, as evidenced by an increase in freight recorded in the fourth quarter of 2016 (for the first time in 2016) by 9% y/y in terms of weight of goods transported, and freight business achieved. In November 2016 agreements were concluded with the KE for financing of 16 transport investments in the amount of over 1.9 billion, including 10 PKP PLK projects for the amount of 1.6 billion euros. This bodes well for the future. Results in this segment were affected by: Shifts in the implementation of infrastructure investments and the smaller scale of construction works in comparison with 2015. The reducing of rail investment. A smaller scale of local investments, financed by local governments, with a large share in the demand for construction aggregates. A decrease in construction output in 2016 by 14.1% y/y and in units specialising in building of civil engineering projects by 14.5% y/y, and in the fourth quarter of 2016 declines respectively of 13.2% y/y and 9.5% y/y.

Metals and ores

The freight business achieved in this group of goods exceeded 3.40 billion tkm (-8% y / y). The results in this segment were affected by: A reduction of steel production (in 2016 production was 8.9 million tonnes, i.e. less by 2.8% y/y) due to the suspension of the supply of raw materials [iron ore] for one of the key customers of the Group as a result of repairs conducted on a furnace. There has also been a significant impact on the freight volume of metals and ores (both raw materials and semi-finished and finished products) in 2016 arising from renovations of the COS line (Continuous Steel Casting) in two key customer groups conducted in the second and third quarters of 2016. Import duty on steel products from China and Russia introduced by the EU. An Increase in the prices of production raw materials: coke and iron ore.



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Bombardier Reaches New Milestone in the Delivery of Light Rail Vehicles to the People of Toronto and the Region of Waterloo

Bombardier has reached a new milestone confirming that it is on track to deliver the Light Rail Vehicles (LRV's) necessary to support the 2021 opening of the Eglinton Crosstown line, notwithstanding the pending contractual dispute with Metrolinx, and provided the following program updates:

Static testing of the first pilot vehicle has successfully demonstrated brake and high-voltage operation, as well as confirmed the functionality of major subsystems.

Now, Bombardier is ready to ship the second pilot vehicle from its Thunder Bay facility to its Kingston LRV Centre of Excellence, in Ontario, where it will begin dynamic testing later this spring. This is a significant milestone in the overall testing program. The dynamic testing will be conducted on the test track at Bombardier's Kingston facility that was recently upgraded to support the testing program as the Metrolinx rails are not ready to allow testing.

Following the arrival of the second pilot vehicle in Kingston, the first pilot vehicle will be sent to Ottawa to undergo climate testing at the National Research Council of Canada facility.

These actions clearly demonstrate that Bombardier is fully capable of delivering the LRVs necessary to support namely the Eglinton Crosstown project," said Mark McGregor, Project Manager for Bombardier Transportation, in Ontario. "We are confident that our vehicles will be



ready well before the tracks, and we look forward to delivering world class vehicles to support the transportation needs of the people of Toronto and the Region of Waterloo."



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Xtra

World News



Two years of 100 % availability on the Swedish railway

Stadler delivers to MTR Express 24 month of uninterrupted service for their fleet of FLIRT trains. 100 % availability is welcomed by MTR Express and their passengers that enjoy comfortable and trouble-free travelling between Stockholm and Gothenburg.

Stadler delivers trains and maintenance to MTR Express, operator of railway services between Stockholm and Gothenburg. In 2013, Stadler received an order for six X74-Flirt type vehicles, which immediately set the Swiss clockwork in motion. Only one year later, the first trainset was delivered to our customer, and on the 21 March 2015, the first passengers were welcomed to board the brand new red express train.

On 21 March 2017, Stadler has delivered two years of 100 % availability to MTR Express. In practice, this means that all six trainsets have run without any failures that led to an interruption. Swiss quality meets Swedish engagement and professional pride in a successful concept.

Thanks to a professional team of maintenance technicians trained in both Sweden and Switzerland, Stadler has delivered full availability, with training at the Stadler factory in Bussnang giving the co-workers a priceless understanding of the vehicles they maintain with dedication and competence.

The team at Stadler are looking forward to continuing to deliver high quality trainsets and maintenance to the Swedish railway.



Bombardier Signs Rail Control Agreement with PESA in Poland

Bombardier Transportation has announced a five-year framework agreement with Polish rail vehicle supplier PESA Bydgoszcz SA regarding onboard train control and safety technology. Scope of the partnership is to provide the advanced BOMBARDIER EBI Cab 2000 automatic train protection solution for use in new PESA vehicles built for the Polish market.

Slawomir Nalewajka, Head of Rail Control Solutions Poland, Bombardier Transportation said, "As the first approved ERTMS onboard safety system supplier in Poland, we look forward to delivering our integrated technology which will improve services for passengers."

As part of a larger rail modernization programme, Poland is implementing the globally-recognised European Rail Traffic Management System (ERTMS) standard into its mainline networks. Specifically designed to be compatible with ERTMS, the EBI Cab 2000 onboard technology enables operators to safely increase train speed and reduce headways using radio-based communications.

In 2015, Bombardier became the first supplier to have approval for both wayside and onboard ERTMS technology for the Polish market and currently has four ERTMS projects delivered or underway. Within the agreement, EBI Cab 2000 will be delivered on passenger vehicles for main and regional lines in Poland, including ERTMS and conventionally-equipped track. The technology will be delivered from the Bombardier site in Katowice.





From the UK

Severn Valley Railway

The Severn Valley Railway is a heritage railway in Shropshire and Worcestershire, England. The 16-mile heritage line runs along the Severn Valley from Bridgnorth to Kidderminster, crossing the Shropshire/Worcestershire border, following the course of the River Severn for much of its route. In mid March the line held its Spring Steam Gala.

SR Battle of Britain Class; No. 34027 'Taw Valley' is captured at Highley running light engine.
Richard Hargreaves

BR Standard Class 9F 2-10-0 No. 92214 approaches Arley on March 17th working a Kidderminster to Bridgnorth service.
Richard Hargreaves

GWR Saddle Tank No. 813 stands at Highley on March 17th during a layover.
Richard Hargreaves



From the UK



On March 18th, SR Battle of Britain Class No. 34053 'Sir Keith Park' stands at Bewdley having just arrived with a service from Kidderminster.
Richard Hargreaves

British Railways Ivatt Class 2MT Tank Engine No. 41312, visiting the line for the gala, is seen having been coaled and watered on Bridgnorth MPD.
Richard Hargreaves

Southern Bulleid Battle of Britain Light Pacific No. 34081 '92 Squadron' stands at Arley on March 17th, working a service to Kidderminster.
Richard Hargreaves





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Xtra



France

SNCF CC Nos. 65524, 65521, 65508 and 65527 are seen at La Plaine depot thermique in Paris on October 25th 1989. *John Sloane*

