# Railtalk Magazine Xtra

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Prosit Neujahr! / Šťastný nový rok! / Bonne Année

#### Welcome

Welcome to the Railtalk Magazine Xtra, which compliments the main Railtalk Magazine and means that we can put even more pages together every month.

As always in Xtra, we concentrate on Mainland Europe, and once again we have some excellent shots from some of Europes finest photographers. Our "From the UK" section has a look back at 2009, we see the highlights from the year, and what an excellent year its been. Not only have we seen new freight terminals opening, but we have also seen a new fleet of EMUs and freight locos that has made us all run for our cameras. There is one thing for sure, there will be probably the same to come next year.

I hope everyone has a good start to the year, and don't forget to visit the new website: www.railtalk.org

Once again many thanks to the many people who have contributed this month, it really makes our task of putting this magazine together a joy when we see so many great photos. This issue wouldn't be possible without: Jaroslav Charvát, Steve Madden, Brian Battersby, Richard Hargreaves, Tomáš Kubovec, Ron Halestrap, Petr Holub, Jonathan McGurk, Warren Armstrong, Colin Irwin, and Carl Grocott.

#### **Contents**

Pg 2 - Welcome

Pg 3 - Pictures

**Pg 17 - News** 

Pg 22 - From the UK

Pg 34 - From the Archives

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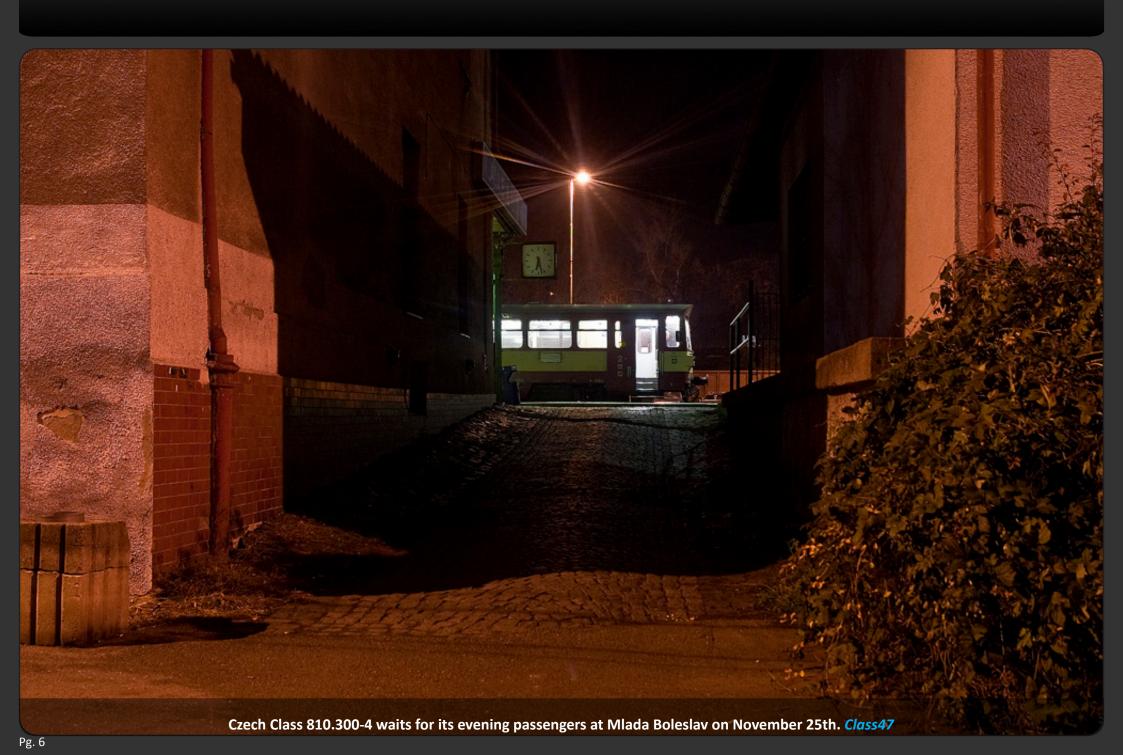


### **Pictures**

















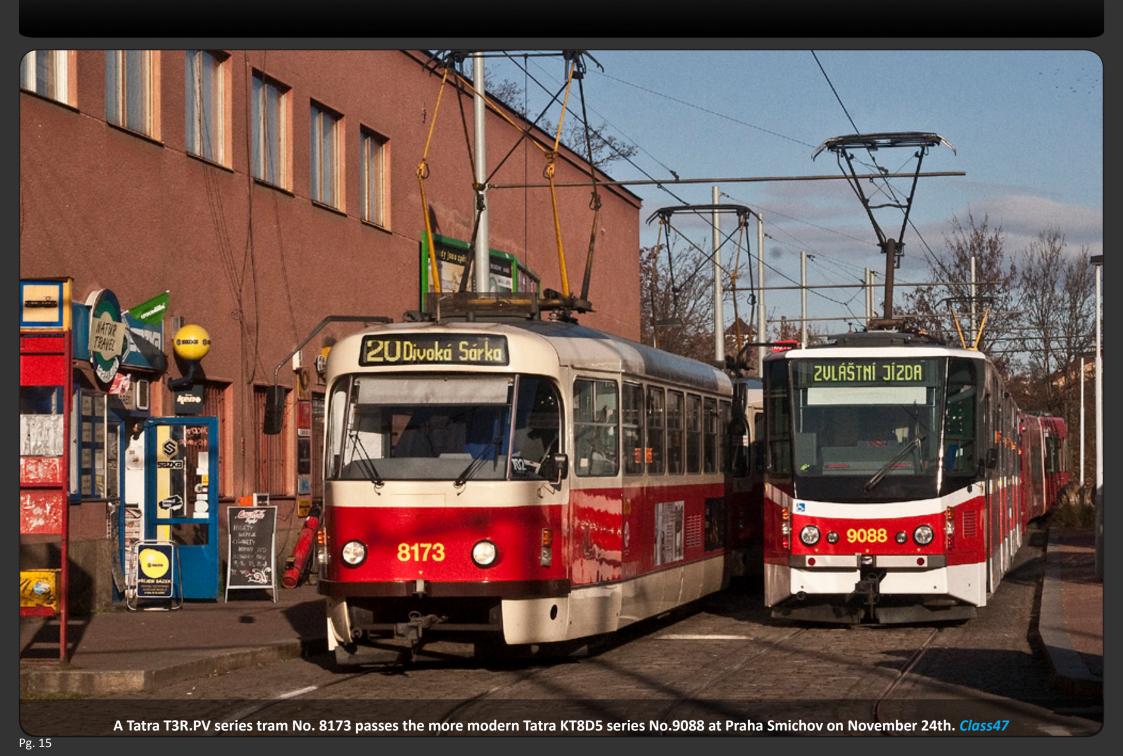




Austrian OBB Class 1116.031-4 leads German DB Class 182.016-6 with a container service between Steinach in Tirol and St. Jodok in September. Tomáš Kubovec Pg. 12









#### **Demolition begins of Wien Sudbahnhof station**

Since the late fifties, tens of thousands of passengers pass through Wien Sudbahnhof every day. Although officially called "Sudbahnhof" it is actually two stations in one, serving both the south and the south east. From the timetable change on December 13th, the main hall of the station has been closed. The station at Wien Meidling has partially taken over the position of South Station, and in January the demolition work begins - the station needs to makes way for the new Wien main railway station.

From the beginning of January, the old station building will be cleared of furniture and garbage. The principal is to remove the center of the building whilst keeping the original facade intact. In order to do this, all supply and waste pipes, windows, doors, partition walls and facade components will be strengthened before excavation. It is predicted that approximately 225,000 m³ is material in total is to be removed. The work expected to last until the middle of 2010.

Separation of recyclable material and the processing of the waste will be made directly inside the area. The removal of soil excavated for reuse will be done by train.

Concrete and aggregate material will be crushed on site, with the rest of the bulk of the material that is recyclable such as metals, wood and glass will be held in special facilities. Approximately 10% of all total material removed will go to landfill.

One of the main challenges is the removal of an oval underground bunker which lies under the station with walls up to three meters thick. It is planned to cut through the concrete reinforceme and then demolish it with five tons of heavy demolition hammers. This will commence in April.

To avoid any possible dust and noise pollution for local residents and users, a number of protective measures have been put in place.

For example, misting systems which prevent excessive dust, the crushing plant is enclosed and will be used exclusively with low-noise, construction equipment and transport vehicles. At the site entrance is situated a mobile tyre wash. The work will be carried out under the utmost consideration for the residents and passengers.

A temporary South station is now in operation, located to the east of the old building where some trains will still leave from. There has also been a temporary halt created, Ostbahnhof at Arsenal Street, where trains for the S60, S80, and for the local and regional transport operate from. The suburban railway trunk route between Wien and Wien Meidling Floridsdorf is open during the entire construction operation.



#### The fastest trains in the Czech Republic

Czech Railways trains are getting faster, and there has been an appreciable opening up of upgraded lines at a speed of 160 km/h. The fastest train in the Czech Republic is still the SC Pendolino which has increased its average speed between Prague and Ostrava's Svinov from 117 km/h to 120 km/h. More rapid acceleration of trains can be expected with the completion of the modernization of other corridors between Prague and Pilsen, Czech Budějic, and with the construction of the first track suitable for speeds of 200 km/h and new faster locomotives.

The SC Pendolino can reach line speeds of more than 160 km/h between Prague and Ostrava's Svinov with regular services covering the Svinov line to Olomouc in just 46 minutes at an average speed of 132 km/h and the line to Chocně Pardubice in 15 minutes at an average speed even 145 km/h.

Other very fast trains are on EuroCity upgraded corridor routes from Prague to Decin, Ostrava and Břeclav and between Ostrava and Breclav. On all these lines trains can reach a maximum speed of 160 km/h. For example EuroCity trains average speed between Ostrava's Svinov and Breclav is over 100 km/h, from Svinov a threshold level of 96 km/h, from Prague to Breclav 95 km/h and from Prague to Decin approximately 91 km/h. To achieve such high average speeds the where the service often involves several stops, the train has to run some short sections even faster. These average speeds also include start, braking and certain restrictions such as maximum speed in curves.

The fastest train in Cologne to Pardubice has an average speed of 126 km/h, in the section Hodonín - Wed City of Uherského. Hradiště - Otrokovice rapidly achieve speeds of 120 km/h, and the Ostrava's Svinov and Prerov EuroCity trains have an average of 118 km/h.

In the category of very fast connections are included some "ordinary" express trains that can, for example, traverse the line between Pardubice and Chocně in just 17 minutes at an average speed 123 km/h, with a maximum speed of 140 km/h.

These are some of the very fast sections and very high-speed rail network of the Czech Republic:

- 1. Choceň (transit without stopping) Pardubice main station, SC Pendolino, the average speed of 145 km/h;
- 2. Svinov Ostrava Olomouc main station, SC Pendolino, the average speed of 132 km/h;
- 3. Cologne Pardubice main station, EuroCity, average speed 126 km/h;
- 4. Olomouc hl.n. Pardubice main station, SC Pendolino, the average speed of 125 km/h;
- 5. Pardubice hl.n. Choceň, express, average speed 123 km/h;
- 6. Hodonín Old Town next Uh. Fort, EuroCity, average speed 120 km/h;
- 7. Old Town of Uh. Fort Otrokovice, EuroCity, average speed 120 km/h;
- 8. Ostrava Svinov Přerov, EuroCity, average speed 118 km/h;
- 9. Olomouc hl.n. Czech Třebová, EuroCity, average speed 117 km/h;
- 10. Ostrava Svinov Borders in Moravia, EuroCity, average speed 115 km/h;
- 11. Olomouc hl.n. Zábřeh Moravia, EuroCity, 115 km/h;
- 12. Břeclav Brno main station, EuroCity, Olomouc hl.n. Czech Třebová, EuroCity, average speed 114 km/h;

The maximum speed allowed on Czech lines is 160 km/h.

### Alstom delivers 200th double-decker TER trainset

On December 1st, at the Lyon Perrache train station, Alstom Transport delivered the 200th Coradia Duplex TER 2NNG trainset to the SNCF, the 60th for the Rhône-Alpes region. On hand were Jean-Jack Queyranne, President of the Rhône-Alpes Regional Council; Bernard Soulage, First Vice-President of the Rhône-Alpes Regional Council and Delegate for Transport, Travel and Infrastructure; Josiane Beaud, Regional Director of the SNCF Rhône-Alpes; and Michel Serra, President of Alstom Transport France. The delivery is a part of an investment programme signed between Alstom and the SNCF in September 2000 and financed by the French regions. The programme's aim is to renew the TER fleet. 233 Coradia Duplex TER 2NNG trainsets have been ordered at a cost of over €1.8 billion for certain regions of France (Centre, Haute-Normandie, Lorraine, Nord-Pas de Calais, Pays de la Loire, Picardie, Provence-Alpes-Côte-d'Azur and Rhône-Alpes) and for Luxembourg operator CFL.

The trainset presented at the Lyon Perrache train station is a part of Alstom's Coradia Duplex range, which is notable for its reliability and performance (160 km/h), on-board comfort, "service spaces" (bicycle holders), modularity and accessibility. The Coradia Duplex also meets environmental protection requirements, in particular with its 95% recyclable body. Nearly 280 Coradia Duplex trainsets have been ordered to date worldwide: in addition to 233 trainsets for France and Luxembourg, Alstom has delivered 43 "X40" trainsets to Swedish operator SJ.

Alstom Transport designs and assembles the Coradia Duplex at its Valenciennes manufacturing site, which is specialized in bi-level trains and

metros. Alstom's sites in Tarbes, Villeurbanne, Le Creusot, Ornans (France), Charleroi (Belgium) and Katowice (Poland) are also involved in the execution of this contract. In cooperation with Alstom, Bombardier participates in the manufacture of certain cars for these trains.



#### First automatic marshalling yard in Eastern Europe enters operation in Lithuania with Siemens technology

A consortium under the leadership of Siemens Mobility has modernized the marshalling yard in Vaidotai near the capital Vilnius on behalf of Lithuanian Railways, Lietuvos Geležinkeliai (LG). This is the first automatic marshalling yard to enter operation in Eastern Europe. Its performance has been boosted by 1,200 cars per day to a current total of 3,000 units. In addition to savings in maintenance costs, dangerous manual gravity shunting work is also avoided.



The marshalling yard in Vaidotai near Vilnius is the hub for cargo trains in the Baltic region. The yard had reached its capacity limits due to rising transport volumes in east-Pg. 19

west trade. Lithuanian Railways (LG) placed an order with a consortium led by Siemens Mobility to extensively modernize and expand the yard. The yard's previous humping capacity was 1,800 cars per day. It has now been raised to 3,000 cars per day. The automated process not only accelerates the cutting procedure and boosts shunting quality, it also offers the advantage of eliminating highly dangerous work that was previously necessary on the tracks, such as the placing of scotch blocks by brakesmen. Conversion of the marshalling yard took place during ongoing operations.

The existing track installation and 21 switches were completely renewed in the yard's humping area while the number of classification tracks was increased from 16 to 20. To this end, the layout of the arrival tracks was also modified to create additional routes and greater useful distances. Four existing stabling tracks were also extended to 1,000 meters each and four new stabling tracks with lengths of 1,000 meters each were built. Moreover, 25 hydraulic clasp retarders were installed in three staggered groups. To control humping operations with automatic cut routing and retarder control as well as target distance measurement on the classification tracks, the humping system was equipped with an MSR32 type microcomputer system from Siemens. This required extensive conversions and additions by Siemens to the indoor and outdoor equipment of the MRC13 relay interlocking. The operating and maintenance personnel's workplaces were adjusted to the Lithuanian customer's requirements. Commands and messages are issued in Lithuanian. For reliable operation of the entire marshalling yard, interfaces to the existing dispatching and relay systems had to be redesigned and commissioned. The previous system was based on Russian relay technology. The six transformer stations (10 kV to 0.4 kV) for the site's power supply were also modernized. The SCADA control station for remote control of the electrical systems was expanded for this purpose.

As a considerable number of the shunted units consists of tank cars, a closed drainage system including oil separator was also installed.

Besides Siemens, the consortium included SONA Präzisionsschmiede GmbH of Duisburg, Germany and several local construction companies contracted by Siemens.

### Over 90% of Czech trains travelled on time in November

Timekeeping of Czech trains was 91.1% in November, this is an improvement of 0.3% from October. Improving the accuracy of connections at the end of the year is generally linked with the termination of major rail construction projects. This value is comparable with other countries railways, which also show the reliability of their services usually around 90%, although the Czech Railways has less stringent limits.

High reliability of the trains of Czech Railways illustrate a more precise analysis to monitor the accuracy of trains in different time limits.

On the dot, ie. without any tolerance, monitoring 89.17% connections. That's more than 192 thousand trains dispatched in November. On the contrary, the delay of 15 minutes was only 2% of connections, which is only about 4,300 of the nearly 216,000 moving trains in November.

The most common causes of delay are mainly lying entirely outside the influence of Czech Railways, and most are caused by force majeure or failure of infrastructure. The so-called "higher power" is responsible for 36% of all delayed trains, this is when delay is due to a serious incident, such as cases of suicides, accidents at level crossings as a result of violation of traffic rules, or medical emergencies for people with sudden medical complications and effects of wind and tempest, flood.

Other common causes are defects in the track, signalling equipment failures or overhead lines, during November, this was attributable to 29%. of all delays.

Defects on locomotives and carriages belonging to Czech Railways, were only about 5%.

A large part of delays seems to be waiting for connections. Typically, connections are waiting 5 - 10 minutes for transferring of passengers. In November these delays were accountable for nearly 20% of all minutes lost.

## Bombardier receives order from Transitio in Sweden for the delivery of 11 x three - car "CONTESSA" trains

The new trains are based on proven Bombardier design for high-level reliability and comfort Bombardier Transportation and AB Transitio have agreed on the delivery of 11 three-car BOMBARDIER CONTESSA trains, valued at approximately 96 million euros (\$137 million US). The agreement includes an option for five additional trains. The new trains will be leased by Swedish operators Länstrafiken Kronoberg, Kalmar Läns Trafik and Hallandstrafiken.

The new trains will run in the Oresund region and will be managed by local traffic authorities co-operating in Oresund and Trafikstyrelsen in Denmark. The total number of trains ordered by various customers in Sweden and Denmark is 111 (including this new order) of which 90 have been delivered and are in service.

The CONTESSA trains are a vital part of everyday life for thousands of commuters and are one of the key factors behind the successful integration of the prosperous Oresund region.

The trains, which can reach a maximum speed of 180 km/h, are capable of crossing the bridge between Denmark and Sweden despite the different rail infrastructures used in both countries. The trains automatically shift signalling and power systems when crossing the border thanks to a sophisticated dual system integrated into the vehicles. It thus links the entire southern part of Sweden to Denmark and the rest of Europe. Other features of the inter-regional train include a middle-car design with a low floor and entrances giving easy access, for example, to disabled passengers and passengers carrying heavy

Bo Fredriksson, Managing Director of AB Transitio said: "CONTESSA trains are already part of our fleet and we are pleased to increase the number of CONTESSA vehicles in order to respond to passenger growth in the Oresund traffic."

Commenting on the order, Stéphane Rambaud-Measson, President Passengers Division, Bombardier Transportation, said: "CONTESSA trains contribute to the environmentally friendly passenger growth in the Oresund region and we are proud that Transitio has again entrusted us to continue providing further capacity to the region."

The vehicles and propulsion equipment will be designed by Bombardier in Sweden, with the propulsion equipment being manufactured at Bombardier's production site in Västerås. The cars will be produced in Germany at Bombardier's Hennigsdorf and Görlitz production sites, while the bogies will be produced in Siegen.



### Alstom Transport awarded two contracts in Spain

Alstom has just been awarded two contracts in Spain worth a total of €94 million. The first relates to signalling equipment for a section of the Atlantic mainline (€16.5 million). The second is for the supply of 24 suburban trains to Catalan railways (€77.5 million).

The first contract, signed on 20 November with Spain's Ministry of Transport, relates to a €16.5 million contract to equip a section of the Atlantic mainline with Alstom's signalling technology. This 25 kilometre section between Vigo and Portela (Pontevedra province) in Spain is part of the new high speed Atlantic mainline rail corridor running from North East Spain to the Portuguese border. Alstom will equip the line with conventional signalling and telecommunications systems. The company will provide electronic Smartlock points, signal lights, track circuits, telephone communications, power supply and technical premises. The new signalling equipment will enable trains using the line to reach speeds of up to 200kph, and will reduce journey times and increase the capacity of the line in complete safety, thereby meeting the objectives of the Ministry of Transport. Besides, on 30th November, Alstom and Spanish rail manufacturer CAF signed an agreement worth a total of 155 million euros with Catalan railways (FGC) for the supply of 24 suburban trains. Alstom, whose share amounts to 77.5 million euros, will supply 12 trains that will be manufactured at the Santa Perpetua Alstom plant in Barcelona. The agreement includes an option for 20 additional trains. The trains are intended for the line linking Barcelona to Vallés in Catalonia. This 45-kilometre line transports 60 million passengers annually via the existing fleet of 42 trains. User numbers are expected to increase by 30% over the next 10 years. The EMU-type trains (Electrical Multiple Units) will comprise four cars accommodating a total of 800 passengers. They will be equipped with air conditioning and will be accessible to the disabled. The trains will also be equipped with innovative signalling and communication systems, such as Wi-Fi video-surveillance which was installed on this line by Alstom last July. Alstom and CAF had previously supplied FGC with the trains currently in use on the line, as well as those serving the Barcelona-Baix Llobregat line.

luggage.

# Citadis Dualis, the Alstom tram train for the French regions

In May 2007, the SNCF awarded Alstom Transport an order worth about 650 million euros to design and manufacture 200 Citadis Dualis tram train train sets, with a firm section for 31 train sets: 7 train sets for the Pays de la Loire region and 24 train sets for the Rhône-Alpes region, worth 100 million euros. In March 2009, the SNCF ordered a conditional further 8 train sets for the Pays de la Loire region. Today there is still a conditional option for 161 train sets. Early in 2010, Alstom will deliver the first train set which will be operated on the Nantes-Clisson line.

Citadis Dualis answers the growing need of cities to develop public transport between the centre and suburbs, without changing the load, to connect the city centre tramway network to the suburban rail network. The tram-train Dualis penetrates to the heart of cities like a tramway and runs on a regional rail network by adapting power, safety and comfort. This configuration makes it a polyvalent mode of transport: its tram gauge enables it to circulate in the city, while its train performances enable it to transport passengers at the speed of 100 km/h in the suburbs, without them having to change their mode of transport.

With the same basic design as the Citadis tramway, Dualis benefits from Alstom Transport's return on experience:

- 550 Citadis in service throughout the world, whose fundamental and successful characteristics it repeats: modularity, accessibility, reliability,
- the Regio Citadis tram train, the first bi-modal tram train in the world, which has already proved itself in Germany,
- Coradia regional trains, from which it derives its safety systems indispensable for circulating on the regional rail network.

The product is entirely modular (2 widths of train set, several possible sources of electric and diesel energy, the possibility to chose the number and position of doors and windows...) and offers a large choice of interior layouts (number of places seated/standing, baggage/bicycle areas...), interior decoration (different colours, lighting and atmospheres depending on the spaces inside the train set...) and exterior design (personalised livery with the markings of each Region).

Citadis Dualis is accessible to all, and in particular to people



with reduced mobility, thanks to its low floor throughout and to a design that fills the gap between train and platform.

For passive safety, Citadis Dualis is equipped with collapsible coupling which absorbs a reinforced structure in the event of a crash and thereby meets all the latest safety standards. In the field of passenger safety, Alstom has developed a unique onboard surveillance and passenger information system: Agate e-Media. Besides video-surveillance, this system presents strong added value for passenger communication: passengers receive in real time information on the duration of the journey, waiting times in stations, works and journey incidents...elements that all contribute to increasing the comfort and attractiveness of public transport.

Citadis Dualis is a new generation of rail equipment which exists as a result of the latest Alstom Transport innovations:

new compact bogies adapted to circulation at 100 km/h to improve comfort and circulation; permanent magnet engines, of the same type as those tested on the rail speed record V150 train in April 2007, and which are particularly compact and light, thereby reducing energy consumption.

Lastly, thanks to ONIX IGBT technology developed at the Alstom site in Tarbes (France), the weight and volume of the Alstom traction chains has been reduced by 30% while at the same time power has been increased. Result: passengers have more space and operating performance is improved.

The Citadis Dualis tram train is also a new vehicle for sustainable mobility: 90% recyclable, energy consumption is also reduced thanks to its permanent magnet engines. Going even further, Alstom has committed to integrating environmental parameters in the conception of its tram trains to master and reduce their impact on the environment throughout their life cycle, from manufacturing to recycling.

This approach has made it possible to:

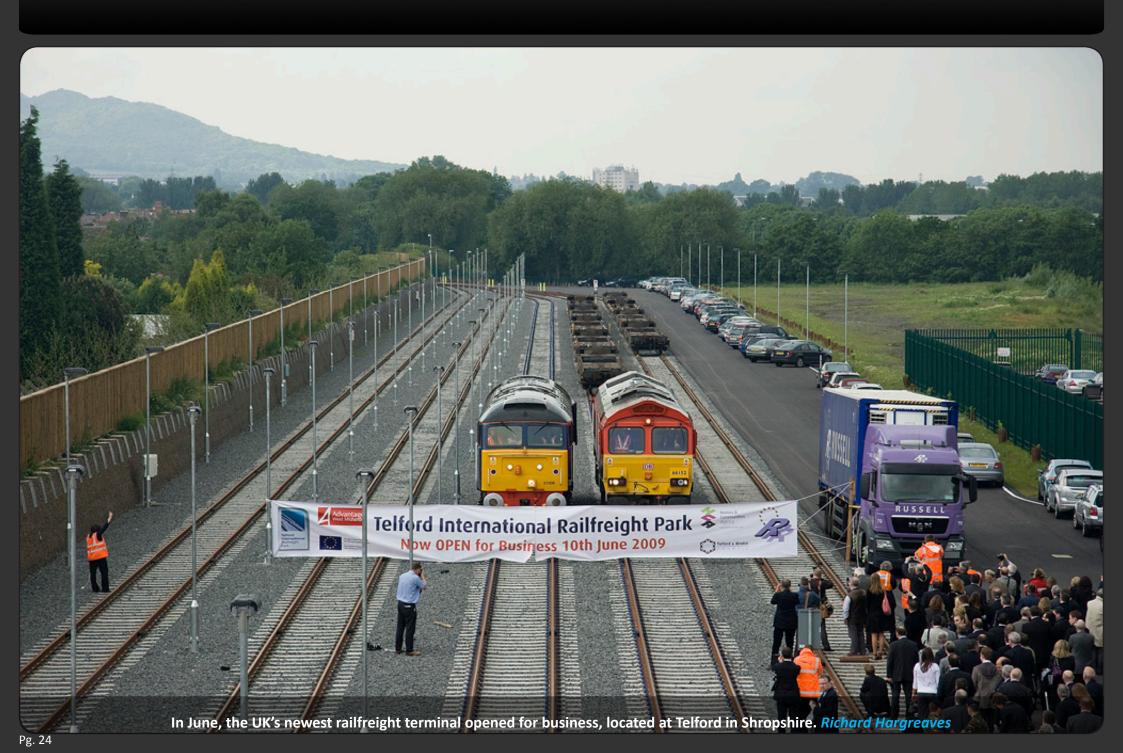
- Improve the recyclability of tramways by employing materials with well-developed recycling channels. Alstom is also conducting research into the field of biomaterials from renewable resources such as wood or hemp. This recyclability today reaches a minimum of 85% and can go as far as 90%.
- Reduce noise both inside and outside the tramway through the use of insulating materials and improving wheel-rail contact with acoustic shock absorbers. Extremely silent, the Citadis Dualis tram train in this way emits in cities a noise level 5 dBA below the level generated by automobile traffic, or nearly 4 times less noise.
- Reduce energy consumption within a context of considerable price tension. The use of composite materials and the improved efficiency of traction systems have made it possible to reduce weight and energy consumption by 10%. A Citadis Dualis therefore consumes in seated passenger/Kwh, 4 times less than a bus and 10 times less than a car

Photo: @ Alstom

### From the UK









Over ambitious in 2009 or just a bad business plan, who knows but was this to be the shortest lived livery on a Class 66 as by the end of the year Advenza had ceased trading. On 20th May, Advenza Freight Class 66 841 (ex - DRS liveried Class 66407) is seen at Springburn. Jonathan McGurk









numbered 86 701 and 86 702, had been given major exams by ETL and Europhoenix at Long Marston and recertified for 110 mph running. Richard Hargreaves









### **From the Archives**



SNCF Class BB 27000 "Prima" electric locomotives were built by Alstom between 2001–2005. These are dual-voltage freight-only locomotives; they are not fitte with a 1500 V DC electrical line for train heating and accessories. This example is seen at Culmont-Chalindrey on September 18th 2003. Class 47











SNCF's CC 7100 Class are part of a series of electric locomotives built by Alsthom. The prototype "CC 7000" (7001 & 7002) were built in 1949 and the production series locomotives CC 7101-CC 7158 followed during 1952–1955. CC 7121 set a world rail speed record reaching 243 kilometres per hour (151 mph) on February 21st 1954. This is CC 7121 at Miramas, France on September 23rd 1999, and today the loco is still at the depot and in preservation. Ron Halestrap



Following on from the previous photo, SNCF Class CC 7107 and Bo-Bo locomotive BB 9004 both attained 331 kilometres per hour (206 mph) on separate high speed runs between Bordeaux and Dax, Landes. BB 9004 and CC 7107 retained the locomotive speed record for over 50 years until it was broken on September 2nd 2006 by a Siemens Taurus locomotive, ÖBB No 1216 050, which attained 357 kilometres per hour (222 mph).

Record breaker CC7107 is seen at Avignon depot on September 23rd 1999. The loco is today preserved at Mulhouse. Ron Halestrap