

# **BOMBARDIER**

## BACKGROUND

### **Bombardier Gains Front Position for Next Generation High Speed Trains**

***With firm orders for 160 trains the ZEFIRO family is now one of the most successful lineups in the global high speed rail market***

**Berlin, September 22, 2010** – Bombardier is on track to achieve long-term success in the global high speed rail market, a growing sector with more than 13,000 km of new lines now under construction and a further 17,000 km planned for the future. To date, Bombardier has participated in the development of nearly 95% of all very high speed trains operating in Europe. Following this successful partnership strategy, in 2007 Bombardier Sifang Transportation in China received an order to deliver the first model of the new **BOMBARDIER ZEFIRO** high speed train family. Since then, firm orders for 160 units of the **ZEFIRO** train family have been placed. No other competitor in the high speed train sector outside China is currently this successful. As a result, Bombardier is one of the global leaders in introducing a new generation of high speed trains.

In August 2010, Bombardier, together with its Italian partner AnsaldoBreda, secured selected supplier status for the delivery of 50 V300ZEFIRO trainsets to Italian Railways (Trenitalia). The V300ZEFIRO has a capacity for 600 passengers and is capable of commercial speeds of up to 360 km/h. It is fully interoperable and will provide cross-border service taking Trenitalia's passengers to other European countries, without the need for changing trains.

The first order for the **ZEFIRO** family came from China in October 2007, with a contract to supply **ZEFIRO** 250 km/h trains. Since then, 80 trains of this type have been ordered by the Ministry of Railways in China (MOR), with a total project cost of 1.5 billion euros. The first-generation **ZEFIRO** 250 is already operating in China.

In September 2009, the MOR once again showed its confidence in Bombardier Sifang Transportation in China and awarded the company a contract to deliver 80 units of the **ZEFIRO** 380 model, with a total project cost of 2.7 billion euros. The challenge was to design and manufacture one of the world's fastest and highest capacity trains, with commercial speeds of 380 km/h and capable of seating up to 1,336 passengers.

These recent successes and Bombardier's vast experience places the company in a prime position to succeed in the high speed rail market, where more than 300 trains are expected to be acquired in the coming three-year period, with a market value close to 7 billion euro.

### **New generation high speed trains: more than just speed**

For Bombardier, innovation in the high speed rail sector is especially important. Top speed is no longer the primary concern in this market segment. Customers demand cost-efficiency, coupled with high-capacity capabilities, pleasing aesthetics, reliability, safety, durability and environmentally friendly transportation solutions. High speed trains offer an enticing alternative to short-haul flights which will further reduce strain on highways and air traffic.

Studies estimate that rail travel produces 1/3<sup>rd</sup> to 1/4<sup>th</sup> of the CO<sub>2</sub> that would be produced by a plane or car for the same amount of passenger kilometres. The advantages of high speed trains which are driving governments to review and change their transport policies include: reduced journey times and higher frequencies as well as their proven technological reliability, safety and reduced environmental impact.

Building on these advantages, Bombardier has increased the competitiveness of its high speed trains vis-à-vis other modes of transport by improving the cost-revenue ratio; trains at lower long-term costs with higher capacities while still improving aesthetic and comfort aspects for customers and passengers.

### **How is the *ZEFIRO* different?**

Beyond speed, *ZEFIRO*'s key features address the requirements of additional capacity and efficiency in next-generation rolling stock coupled with an unmatched flexibility of applications. These include:

- Commercial top speeds of 250 to 380 km/h; reaching top speeds of 420 km/h in tests, making it one of the fastest trains in commercial service.
- The highest capacity in the market for over 600 passengers per 200m train set; 12 per cent higher than similar competitors' products and thus increasing train operators' revenue generation potential.
- Lower axle load than typical track requirements, thus lowering wheel and rail wear and allowing increased capacities.
- Applied *ECO4* solutions such as the ThermoEfficient Climatization System, the AeroEfficient Optimized Train Shaping, *EBI Drive 50* Driver Assistance System, the EnerGplan Simulation Tool and the Energy Management Control System,
- Customised front-end design and interior layouts – a refreshingly different approach from common standardised solutions.

This modular customisation design allowing for high capacities and lower operational costs maximises revenues for the train operator and offers the flexibility to address different design and speed needs across the world.

Additionally, the architectural and design concepts of the trains are derived from Bombardier's other successes in high speed and very high speed trains such as the ICE3 in Germany and the *REGINA* train in Sweden.

## **Design and Layout**

The interior flexibility of the design allows for adapting the layouts to changing market requirements during the lifetime of the train. The carbody design is based on technology developed by Bombardier for the highly successful ICE3 very high speed trains in Germany, with the interior fittings (seats, tables, luggage racks, etc.) mounted on C-rails. The extra luggage racks and partition walls are movable along the C-rails. All equipment is located either in the roof or under-frame. The seating is also highly adaptable with potential for conversion to turn first into second class and vice-versa.

In terms of customer comfort, each seat area contains electrical sockets, reading lamps, reservation details and wi-fi internet connectivity. Additionally, there can be a dedicated infotainment server (for movies, music etc.), real-time journey information display, monitors in passenger saloons and vestibules and on-seat multimedia preparation for premium classes.

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