

High-Speed Trains Worldwide

200 km/h on conventional tracks

European railways responded to the shinkansen challenge quickly. German Federal Railways (DB) started demonstration runs at 200 km/h on an existing main line near Munich in 1965. They started regular commercial services at 200 km/h in 1968, but had to reduce the speed in 1969. In 1977, DB restarted 200 km/h operation which still continues. French National Railways (SNCF) started 200 km/h regular commercial runs on the Paris-Toulouse main line in 1967. Today, TGV trains run on some sections of the conventional network at more than 200 km/h.

British Rail (BR) started its 200 km/h operation on existing main lines in 1976 using diesel-powered High Speed Train (HST) sets. Since 1989, they also operate 200 km/h trains hauled by electric locomotives. In 1990, Swedish State Railways (SJ) inaugurated 200 km/h operation on conventional main lines using electric tilting train sets.

The American railroads made valiant attempts to raise the maximum speed on existing lines, and in 1986, the Federal Railroad Administration cleared part of the Northeast Corridor for 200 km/h running.



■ A "New" Metroliner in Service Today

(Amtrak/Marty Katz)



■ Swedish State Railways X2000 Tilting Train at Stockholm Central Station

(T. Suga)



■ BR Diesel High Speed Train 1982

(T. Suga)



■ BR Class 92 Electric Locomotive at Kings Cross Station

(T. Suga)

French TGV and German ICE

SNCF has always been proud of its high-speed records, starting with the world record of 331 km/h established by two electric locomotives in 1955.

In 1981, the southern half of the Paris-Lyons High-Speed Line (TGV Paris-SudEst) was opened at a maximum speed of 260 km/h. Two years later, the northern half was opened and the maximum speed was raised to 270 km/h. In 1989, the TGV Atlantique was opened between Paris and Le Mans, followed by a branch to Tour in 1990; trains run at a maximum speed of 300 km/h. Shortly before the opening of the Tour branch, a modified TGV Atlantique train attained the world speed record of 515.3 km/h. In 1993, TGV Nord-Europe was opened

between Paris and Lille. 1994 saw the opening of the Paris bypass line connecting TGV Paris-SudEst and TGV Nord-Europe (Interconnexion Ile de France), and the Lyon bypass extending the TGV-PSE to Valence (TGV Rh?ne-Alpes).

DB started construction of high-speed lines as early as 1973, but it took many years to persuade opposed local residents. Finally, the Hannover-Wärzburg and Mannheim-Stuttgart sections were opened to traffic in 1991, and the smartly-dressed InterCity Express (ICE) trains attracted much attention. In May 1988, an ICE train reached 406.9 km/h, the world speed record until subsequently broken by the French TGV in May 1990.



■ TGV Atlantique reaching 515.3km/h on 18 May 1990 (SNCF)



■ TGV PSE Trains at Charenton Depot near Paris (T. Suga)



■ TGV Nord-Europe (M. Miura)



■ DB ICE at Schitz Viaduct (M. Miura)

Toward European High-Speed Network

Italian State Railways (FS) announced construction of the Rome-Firenze Direttissima in 1968, and the engineering work started immediately. However, it took many years to complete the work, and it was not until 1988 that FS could start 250 km/h running using ETR 450 tilting EMU sets.

Spain opened a high-speed railway called AVE (Alta Velocidad Española) in 1992 from Madrid to Sevilla, where an exhibition was held to commemorate the 500th anniversary of Columbus sailing to the New World. The rolling stock is French-made and fundamentally the same as the TGV Atlantique trains. The signalling technology is based on the German system.

In May 1994, the Channel Tunnel between France and England was opened and Eurostar trains will soon link three European capitals — Paris, London and Brussels. On the continental side, the high-speed line from Paris to Lille was named TGV Nord-Europe, suggesting that it will soon be part of a PBKA (Paris, Brussels, Köln, Amsterdam) trans-European network.



■ FS ETR450 near Florence

(T. Suga)



■ Spanish AVE Train at Santa Fusta Station

(T. Suga)



■ FS ETR500 Prototype at Brussels EURAILSPEED'92 Exhibition

(T. Suga)

■ Eurostar Royal Train at Channel Tunnel Opening

(M. Miura)



■ Channel Tunnel Opening Ceremony 6 May 1994

(SNCF)

