

6 A PARTICULAR CASE: RELATIONS BETWEEN SPAIN AND GERMANY

The transport relations between Germany and Spain are greatly limited by the topographic constraints and the role played by France. Traditionally, only two passages have linked Spain and France, one on the east and one on the west of the Pyrenees, where the geography is more benevolent. From these points on, diverse natural routes lead to Germany. The eastern routes are restricted by the central massif of France and the Alps, the main options being to run along the valley of the Rhone, surrounding the Alps via Lyon to the Alsace or crossing the east side of the Alps to Geneva and Zurich, and then run along the valley of the Rhine. On the west, the routes would run across the plains of France until the Alsace (see figure 6-1).



Figure 6-1: European topography. Source: Library of the University of Texas at Austin.

Nevertheless, a factor of major importance at present is the existence or availability of tracks offering those links, for the French network is not meant to satisfy the needs of the neighbour countries. Moreover, other technical and operational aspects prevent the seamless services between the mentioned countries.

6.1 TODAY

Nowadays three passages connect Spain with France, namely Hendaye, La Tour-de-Carol/Puigcerdà and Portbou/Cerbere. The second one is almost irrelevant in terms of traffic using it [31], especially if compared with the other two passages. A fourth one not yet mentioned is the Somport tunnel at Canfranc, that is out of duty since the nineteen seventies. According to this, almost all the traffic is diverted to Portbou and Hendaye, at the opposite ends of the Pyrenees, increasing the travel distance and concentrating the traffic.

At present, owing to the gauge change, passengers have to transfer at all the border points except when using the Talgo trains (under the commercial name of Talgo or Euronight, figure 6-2), provided with automatic variable gauge axles. This system has not yet been implemented in freight trains; the best solution so far is the change of axles of special wagons carried out by *Transfesa* in Hendaye and in Cerbere. In these double-track facilities the wagons are lifted and the axles are interchanged between trains travelling in



Figure 6-2: International Talgo links.
Source: Talgo.

opposite directions. Despite the fact that they manage to change 300,000 axles per year, requiring 60 minutes to carry out the overhaul of a train of 25 double-axle wagons [Transfesa], the system is still incapable of satisfying the needs of modern transport for effectiveness and cost reduction. Furthermore, the modernisation of the facilities is not welcomed given the lack of local alternatives for the workers.

Germany, in a different topographic and political situation, has a total of 21 frontier points on its western and south-western borders, without gauge compatibility problems, but as described in section 1, the rest of technical systems and operational procedures are far from being equal in each country. From the point of view of the German enterprises, freight connections with Spain face additional difficulties. The gauge change, the high degree of competition of roads and short-shipping and the old and insufficient infrastructure in Spain – short passing-tracks limit the maximum train length to 400m while abroad it is limited to 700m and thus oblige to split the trains in two, etc – limit the capacity and make the services unreliable (less than 50% arrive in time) and therefore uninteresting to use the rail [3].

An example can be found in the Opel trains on their way from Zaragoza to Eisenach that have to face two gauges, 5 electrical systems, 6 ATC systems, 3 drivers and diverse papers and controls of production after the diverse allowance procedures for the locomotives and their adaptation [9].

6.1.1 Services and figures

Spain is widely known for being a tourist country, but its peripheral position in Europe and the barrier that constitute the Pyrenees so as the previously mentioned deficiencies do not grant railways a big share in the passenger transport market (see figure 6-3). From June 2002 to May 2003 only 0.9% of the tourists arrived by train, while 23.6% did it by road, 70.5% by airplane and 5% by ship [secondary data from INE].

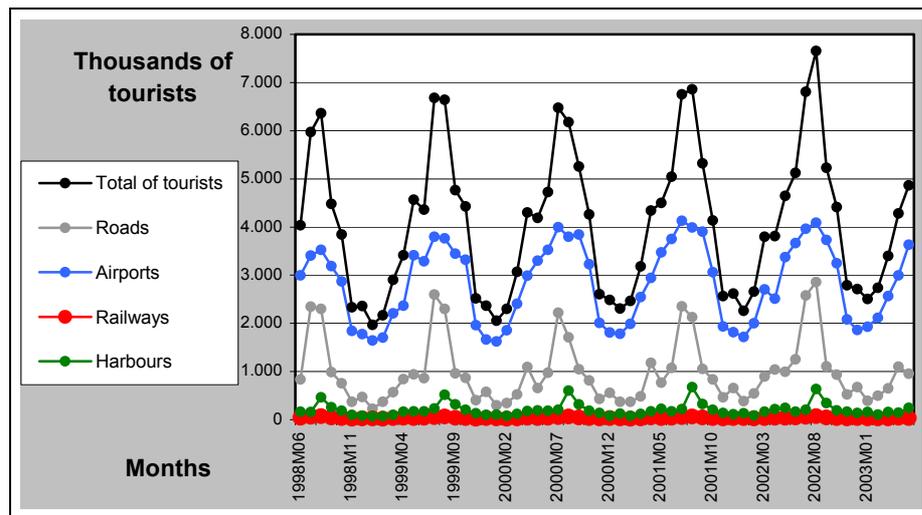


Figure 6-3: Modal distribution of tourists travelling to Spain.

Source: INE.

Many different routes link Spain to Germany, even with the same departure and arrival cities. But the shortest way is not necessarily the quickest, due to the configuration of the French network, especially of the high-speed one. For example, the travel from Frankfurt to Barcelona requires at least 15 hours and the quickest of services follows a quite surprising route [DB]: IC to Frankfurt airport, ICE to Köln, Thalys to Brussels, TGV to Perpignan and Talgo to Barcelona.

The same connection along shorter routes takes 16:17 hours via Bern with the Euronight and 17:41 hours via Strasbourg and Lyon, for there are no high-speed trains in these services. Surprisingly, the way back can not be

done in less than 16:43 hours, which is the time required by the connection via Bern.

Whereas the possible itineraries can be easily found out thanks to the extensive information provided at the web site of the German railways (the information at Renfe's site is limited to Freiburg, Bern, Zurich or Paris), prices for international links depending on foreign operators are only communicated at the ticket windows or travel centres. In spite of it, the discounts on foreign tickets can neither be known nor taken advantage of.

The high prices along with the long journey time make trains a secondary option, especially considering the cheap airlines operating from Germany to Spain and vice versa (Ryanair, Air Berlin, German Wings...). A round trip ticket from these airlines costs from 40 € to 250 €, but some of them operate on secondary airports, thus increasing the total time and cost of the journey and reducing the comfort. However, the advantages they still offer are decisive.

Concerning trans-Pyrenean freight traffic, in 1998 flows amounted for 144 million tonnes freight, distributed as follows: 53% by road, 44% by sea and 3% by rail [17]. This grants the rail traffic 4.320 million tonnes transported through the Pyrenees in 1998 whereas the INE accounts for 4.995 million tonnes in 2000 but 4.750 in 2001. However, for 2010-2015 another 100 million tonnes are expected to cross the Pyrenees [17].

At present more than 15,000 heavy vehicles drive daily through both ends of the mountain range and the number is growing 10% each year [17]. This growth is untenable, for social, ecological and road capacity reasons, and requires the implementation of measures.

6.2 COMING IMPROVEMENTS

The first projects conceived by the European Commission already included improvements on the infrastructures linking the Iberian peninsula to the central regions of Europe. The flows seen in figure 1-4 justify the inclusion of the connection Madrid-Zaragoza-Barcelona-Perpignan in the list. The section Madrid-Barcelona will be dedicated exclusively to passenger traffic whereas the Barcelona-Perpignan is designed for mixed traffic, and both have been designed with international gauge. This last section towards France will greatly influence all the traffic between Spain and the rest of Europe, and the passenger flows will multiply within few years after completion. Extra flows of some 260% are expected in the line Barcelona-Montpellier, and of some 15% between Barcelona and Madrid [32]. Further to the north, the new high-speed line Perpignan-Montpellier-Nîmes will link Barcelona to the Marseille-Paris line (figure 6-4).

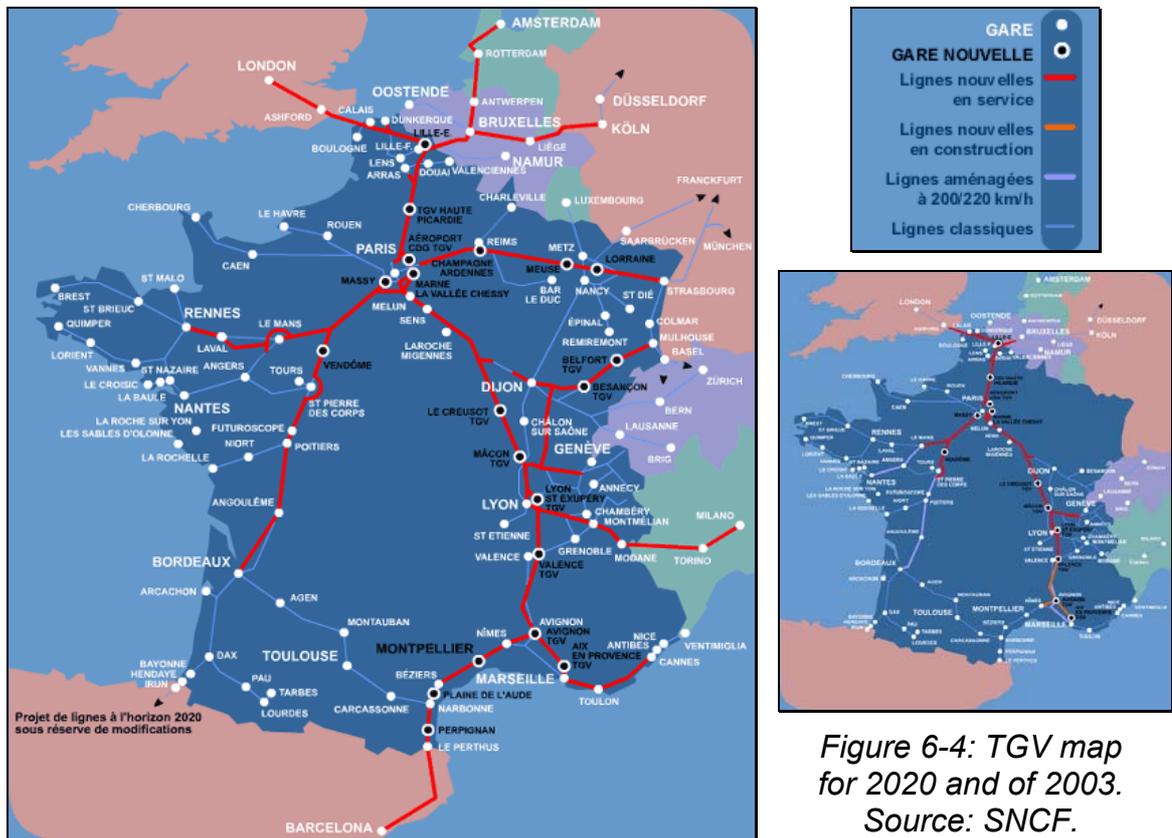


Figure 6-4: TGV map for 2020 and of 2003. Source: SNCF.

Some time later, links along the Atlantic seaboard will be also improved. A new section Madrid-Valladolid will be built and existing ones will be upgraded on the Valladolid-Vitoria-Dax route. From there on, the works on the southwest of France will improve the link from Dax to Bordeaux and so connect with the extended Paris-Tours line (figures 4-1 and 6-4). The sections on the Spanish side will be built to Iberian gauge but laid with multi-

purpose sleepers. The traffic on the route Madrid-Dax is expected to grow a 100% [32].

Despite the measures to improve the rail traffic on both sides of the Pyrenees, the EU and the Spanish government consider necessary to open a way through the centre of the range of mountains [17]. A new road tunnel has recently been inaugurated at Somport whereas the European Commission has blessed the new rail project by considering it of European interest. First, the Canfranc tunnel will be reopened and upgraded but this will just be a short-term measure for its technical features – minimum curve radii of 200 m and maximum slopes of 45 ‰ – limit its capacity [33]. A long-term solution will arrive with the construction of a new high capacity tunnel, which will finally be drilled under the Vignemale. The European Commission though, wants both tunnels to be permanently operative, which means that the renovation of the rail tracks between Zaragoza, Canfranc and Pau must consider the future circulation of trains using any of the tunnels [34]. Therefore, the tracks towards Zaragoza will also be upgraded with international gauge and 750 m long passing-tracks among others. The Vignemale tunnel, of international gauge and about 42 km long [35], will not be finished before the 2020 and will require the financing of private investors, but it shall then be able to transport 30% of the freight on that route [36].

However, all the projects intending to improve the connections from Germany to Spain, and vice versa, require the active participation of the French administrations and the later collaboration of the infrastructure operator. In this sense, another project of interest is the new line from the Southern Alsace to the Rhone-Alps region, linking Mulhouse to Mâçon on the southwest branch and over Dijon to the TGV line Lyon-Paris on the northwest (figure 6-4). These new tracks will become part of the French high-speed network and aim to improve the passenger flows from Scandinavia and Germany to French and Spanish Mediterranean regions. The German-French traffic is expected to grow a 20% thanks to this project [32].

All these projects will allow international travel times to sink. Frankfurt will then be only 6:30 hours away from Barcelona and 9 or 10:15 hours from Madrid along the Mediterranean or Atlantic routes respectively [32]. At the same time conventional tracks will see the number of main-line passenger trains reduced and thus have more available capacity for freight trains and, as mentioned in section 4.2, they will also benefit from the TERFF's.

Apart from the infrastructure improvements, other measures are being carried out. Renfe is getting ready to split into "Renfe Operadora" (railway) and ADIF (rail infrastructure administrator) in application of the rail law derived from the European directives. Besides of this, the Spanish rail market will be opened to freight carriers in 2004 [26].

6.3 EVALUATION

Gradually, the obstacles that the rail traffic between Spain and Germany faces are being overcome, but controversies on the political level have slowed down the advance of the common projects such as the reopening of the Canfranc tunnel or the construction of the high-speed line Barcelona-Perpignan.

On the other hand, the opening of new routes can always be put under the question. For instance the Vignemale tunnel. It is little accepted by the population living on the close areas since it will bring traffic where now there is none and will run across areas of very high natural value, but at the same time it is very appreciated by politicians for the economical growth that the construction of the infrastructures and its future use will bring to the region. From an objective point of view though, and even more considering the new road-tunnel at Somport, such works will not reduce the road transport on those areas but will only help to increase the total freight traffic unless measures are taken to eliminate heavy vehicles of the parallel roads, such as the piggyback system on the rolling motorways (see 4.7) or truck restrictions.

Concerning the item of the gauge difference the Spanish government seems to have taken a decision and is actually introducing a whole net of high-speed lines on international gauge. This will certainly allow foreign trains to roll non-stop to many locations all over the country but will doubtlessly multiply the number of required gauge change stations and so the expenses, while these new infrastructures will be inaccessible to most of the national rolling stock.

However, as regards international rail connections for freight and passengers, the overall result of the projects will be very positive.