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High-Speed Progress in Europe

Libor Lochman,
Executive Director, CER

The Latest Developments in Sweden

With articles from SJ, Trafikverket
and Transportstyrelsen



Strong commitment from the Spanish rail industry

Pedro Fortea
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As the result of a strong commitment to research and development, the Spanish rail industry has made available to the international market a modern fleet of rolling stock vehicles for all kinds of transportation for both passengers and goods, plus the offering of skilled train maintenance services as well as innovative track equipment solutions.

Railway transportation has experienced considerable development over recent years. Its great economic and environmental benefits have made it the best choice for improving connections, re-structuring territories, and contributing to sustainable mobility – for both freight and passengers.

The railway network evolution is closely linked to innovations and advances introduced by the industry in a number of fields such as infrastructure and superstructure, rolling stock and maintenance. All elements are essential in promoting the establishment of new connections and the modernisation of lines already in commercial operation.

According to a recent study by the European Rail Industry Association (UNIFE), forecasts indicate that the sector will grow an average of

2.4% until 2016, thanks to a combination of stimulus packages and a considerable investment in emerging rail markets. This increase will be associated with track superstructure work, commissioning of rolling stock and maintenance activities according to the needs of new projects.

The companies that make up the Spanish railway industry are continuing to contribute to the progress of the railway world with their products, solutions and services – adding to the evolution of a suitable means of transport to meet the demand for public transport in large cities, the centre of suburbs and medium and long distance travel.

Rolling stock: multiple technological innovations on five continents

For urban and interurban lines, the Spanish rail

industry has introduced high-impact global developments in the areas of sustainability, accessibility and energy efficiency. One example is the development of trams which are able to run without catenary thanks to an on-board energy storage system – like the ones already circulating in Zaragoza and now exported to numerous cities such as Edinburgh (Great Britain), Belgrade (Serbia), Nantes and Besançon (France) and Cuiaba (Brazil).

Concerning the tram and light-rail industries, there are also many projects which have provided new solutions, equipped with the most progress in terms of accessibility, comfort and architectural integration for the urban environment. These multiple projects include the cities of Tallinn (Estonia) Stockholm (Sweden), Rostock (Germany), Houston (USA), Birmingham (United

Kingdom), Abu Dhabi (UAE), Antalya and Izmir (Turkey) and Kaohsiung (Taiwan), to name just a few of the latest.

New forms of transport for local networks with innovative concepts such as the train-tram have also been introduced. Such vehicles represent a mobility solution which helps reduce traffic congestion problems with the capacity to deliver services on city tram lines and also connect with other urban centres using the infrastructure of suburban lines. Sheffield (United Kingdom) and Karlsruhe (Germany) have already relied on this modern combination from Vossloh Spain. This solution has also been adopted on the Spanish line Chiclana-San Fernando (Cádiz), with CAF's rolling stock.

In metro networks, together with the work of expansion and modernisation of lines in some major European cities, there has been a significant increase in the share of associated companies of MAFEX in the countries of South America, Asia and Oceania, among other areas of particular Spanish export interest. Rome (Italy), Brussels (Belgium), Hong Kong (China), Lisbon (Portugal), Bucharest (Hungary), Sao Paulo (Brazil), Medellin (Colombia), Istanbul (Turkey), Santiago (Chile), Caracas (Venezuela) Algiers (Algeria), New Delhi and Calcutta (India), are just some of the cities where Spanish technology and rolling stock is already present. This is an area which continues with new additions in perspective, given the many worldwide infrastructure investment plans in urban railways.

For some years now, the industry associated to MAFEX has as a primary objective to also assist in the implementation of local networks. The suburban railway Buenavista-Cuautitlán in Mexico – a turnkey project for which the comprehensive management from coordination of the works, to the delivery of rolling stock and operations has been realised – represents an example of how this type of network help can improve urban mobility in largely populated centres. In this field, we must highlight other projects such as the network of Auckland (New Zealand), Recife, Sao Paulo and Belo Horizonte (Brazil), Izmir (Turkey) London (United Kingdom) and Helsinki (Finland).

The rolling stock contributions have been many and varied also in other fields such as in long distance, where companies such as CAF and Talgo have manufactured new platforms which can be adapted to the needs of each client and meet the present and future demands of the market. In Turkey, Spanish companies have

taken over the first high-speed line in the country, while in Saudi Arabia, the Spanish-Saudi consortium is currently carrying out the high-speed line between the cities of Medina and Mecca. In addition, contracts have also been awarded with the operator of Kazakhstan for the manufacture of 21 trains (a total of 603 cars) that will operate services of long-distance transport, an agreement with Russian Railways (RZD) and providing high-speed trains to Uzbek Railways.

An increase in activity of rolling stock and maintenance

Along with the construction of rolling stock, activities related to the manufacture of auxiliary equipment, systems, interior design, and comprehensive maintenance form a priority expertise field for Spanish companies

“The companies that make up the Spanish railway industry are continuing to contribute to the progress of the railway world with their products, solutions and services”

like Albatros, Alte Transportation, Ametsis, Bombardier Spain, Colway Ferroviaria, Construcciones y Auxiliar de Ferrocarriles (CAF), Fainsa-Fabricación Asientos Industriales, Industrias E. Díaz, ITK Ingeniería, Kelox, Manufacturas Vental, Manusa Door Systems, Patentes Talgo, Talleres Alegría, Teknorail Systems and Vossloh Spain.

Track material: applications for improving rail traffic

The activity of the Spanish railway sector in gauge material has also been very strong, which is why its companies have extensive experience and design in engineering, manufacturing and supply of all types of components. They have an extensive experience in conducting comprehensive projects and a range of products ranging from track systems (turnouts, exhausts, scissor crossings, forks, etc.) for tram systems, high-speed, metros and conventional lines to accessories, rails, sleepers, the manufacture of elastic plates for fixation, etc. Its sub-sector includes companies like Amurrio Ferrocarril y Equipos, Arcelormittal Spain, Arteche, Felguera Melt, Ferralca, Funor, S.A., Hicasa-Hierros y Carbones, Impregna, Jez Sistemas Ferroviarios, Redalsa o Talleres Alegría, among other major firms.

All of them work continuously on the development and application of new tech-

nological solutions aimed at reducing noise and vibration in the detours, optimising operations and increasing security. In this field of expertise it is also important to note that Spanish companies have developed a proprietary technology designed to make state-of-the-art rails stronger than the conventional. The new technique adds value to the rail during manufacture, replacing expensive alloying by a controlled cooling process, and improving the properties of the steel microstructure. The company Arcelormittal in Asturias has become the only facility in the world that has produced more than 60,000 tonnes of this product in 2012, which has allowed the company to enter new markets.

Together, track material has worked in countries across five continents and in varied networks including subways, trams, commuter lines, high-speed lines and freight operations.

The continuous support of MAFEX

The international presence of Spanish railway companies continues to grow continuously and represents a significant percentage of total exports. Overall, railroad equipment sales abroad have increased by 21.2%, while sales of the 72 companies associated with MAFEX, only in this area, exceeded €2,500 million abroad. These companies, representing more than 85% of industry, had a turnover of more than €10,600 million – of which 46% corresponded to rail.

In this process of internationalisation, MAFEX plays a dynamic role in promoting and opening new markets and wants to continue doing so in the coming years. For this reason, in 2013 the Association has intensified activities worldwide. A plan that has already come to its equator and includes visiting 18 countries in the form of business delegations and attendance and participation in trade fairs. The goal is for all MAFEX companies to continue contributing with their products, services and technological innovations to build the railway of the future with state-of-the-art solutions in all areas covered by this activity.



After spending some years as the Assistant Manager at Fundigex – the Castings Exporter's Association of Spain – **Pedro Fortea** became the Director of MAFEX in 2004 and has helped to develop its professional activity. Pedro has studied at ESADE Business School, Escuela Universitaria (Cámara de Comercio de Bilbao) and Deusto University.