TALGO INTERNATIONAL PROJECTS

ABOUT US

- Established in 1942
- Over 70 years manufacturing trains
- Over 3,500 vehicles built
- Over 60 years maintaining trains
- Over 30 years manufacturing maintenance equipments
- Over 300 maintenance equipments built
- Standard and customized applications
- Unique technology
- 100% compliance with all deliveries
- Safety record
World is changing, Needs are changing, Customer profiles are changing

Global train integrator

We are adapting to offer to our clients:
- State-of-the-art technology
- Competitiveness
- Client-oriented solutions
- Flexibility
OUR BUSINESS

I Foro Internacional Ferroviario BCNRail

Talgo

TRAINS
MAINTENANCE EQUIPMENTS
MAINTENANCE SERVICES

Revolutionary concept
Lightweight construction
Articulated unit between cars
Independent wheels
Aerodynamic design
Speed: 130 km/h maximum

Very High Speed
Lowest energy consumption in HS
Lowest noise emissions in HS
Lowest weight in HS
Great interior space
Best in the world in accessibility
Speed: 350 km/h

Guidance system
Automatic, variable gauge operations in 80
Night and day variants
Quality in manufacturing and maintenance (more than 45 years of commercial service)
Speed: 200 km/h

Natural Tilting
Reduced resistance increment
Increased speed to 33% while maintaining a high level of comfort
Mass flow level: 500 km/h
Speed: 220 km/h

Push-Pull Diesel Intercity train
Automatic, variable gauge operation in power heads
Multiple possible configurations
High fixed traction on at least 30 km/h
Speed: 250 km/h

High Speed
100% Spanish Technology
First locomotive with variable gauge
Dual voltage
Speed: 260 km/h

Interoperability
Change width
Low energy consumption
Low noise
Accessibility
T250: Dual Voltage
Hybrid: two diesel engines (1800, vel 220 km/h)
Speed: 250 km/h

Low consumption
High capacity 3+2
Reliability
Flexibility
Use of recyclable materials
TSI European Standards

1998 TALGO 331

1964 TALGO I
1959 TALGO II
1968 TALGO III
1980 PENDULAR TRAIN
2001 TALGO 150
TRAYCA

1942 TALGO I
1950 TALGO II
1968 TALGO III
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TRAYCA
OUR PRODUCTS PORTFOLIO

- **Very High Speed**
- **High Speed**
- **Intercity**
- **Locomotives**

TALGO TECHNOLOGICAL PRINCIPLES

- **Lightweight construction**
  - Lower traction cost and higher acceleration

- **Articulated union**
  - Higher acceleration and increased safety

- **Guided axles**
  - Higher acceleration, increased safety and lower maintenance cost

- **Independent wheels**
  - Increase comfort, decrease noise and track adaptability

- **Natural tilting**
  - Higher speed on curves and higher comfort
TALGO TRAINS ROUTES

SPAIN AND EUROPE
- Long-distance, intercity and international services

SPAIN High Speed
- Spain's most sold high speed train: 50% market share.
- In commercial service since 2005.
- More than 30,000,000 km.
- More than 68 different services per day in Spain.
- 46 trains currently in operation in Spain.
- Commercial speed 330 km/h.
- In 2010 - Talgo presents a new version of the Talgo 350, S-112. Significant improvements in services, capacity, accessibility and energy efficiency.
- December 2010 - Opening of the service of AVE S-112 high speed line Madrid-Valencia.

KAZAKHSTAN

UZBEKISTAN

BOSNIA & HERZEGOVINA

UNITED STATES

ARGENTINA
TALGO 250: INTEROPERABILITY AT YOUR SERVICE!

- High-speed train with dual voltage and variable gauge system
- In commercial operation since 2007.
- More than 60 different services per day.
- Currently 45 units in operation in Spain.
- Speed: 250 km/h.

TALGO 250 HYBRID: ADAPTABLE TO ANY KIND OF INFRASTRUCTURE

- Unique train in the Intercity/High Speed segment
- Travels with electric and diesel traction.
- Speed of 250 km/h
- It’s expected to enter in commercial service in Spain on December 2011.
AVRIL: The Future of High Speed by Talgo has arrived!

HS product portfolio: focus on high speed segment

- Talgo strategic approach focused on HS since 1989
- Traction scope integration since 2000
- Long experience in HS passenger coaches

- Talgo is HS constructor leader
- Biggest fleet of VHS and HS train-sets in Spain (Worldwide reference as HS model)
- Talgo global integrator

AVRIL: RESULT OF TALGO HS STRATEGY

- Talgo 350 – 330 km/h
- TRAVCA – 250 km/h
- Talgo 250 – 250 km/h
- Talgo XXI – 220
Maximum capacity on a single deck configuration.

A unique solution:

- **3,200 mm wide car:**
  Greater interior space and comfort

- **3+2 configuration (tourist class):**
  Greater flexibility in operation
  Maximum capacity on a single deck configuration

Seat configuration adapted to all uses:

- Individual passengers
- Couples
- Groups of three
- Families or Groups of four
- Larger families or group of six
- Intermediate seat occupied only if load factor is over 80%
AVRIL: ENERGY CONSUMPTION

Minimum Energy Consumption and High Capacity

- Minimum weight
- Optimal aerodynamic drag
- Best-in-class eco-friendly train

<table>
<thead>
<tr>
<th>AVRIL Talgo</th>
<th>Weight (t)</th>
<th>315</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerodynamic Coefficient (N/km)</td>
<td>0.038</td>
<td></td>
</tr>
<tr>
<td>Energy Consumption (kWh/km)</td>
<td>11.79</td>
<td></td>
</tr>
</tbody>
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AVRIL: ACCESSIBILITY

Best accessibility available in the market

- Low floor coaches
- Interoperable standard platform of 760 mm
- Maximum respect for people with reduced mobility
- Minimum passenger transfer time at station
AVRIL: NEW INTERIOR DESIGN

INTERNATIONAL PROJECTS
TALGO 250 “AFROSIYOB” : FIRST HIGH SPEED TRAIN IN CENTRAL ASIA

• November 2009 – Government of Uzbekistan buys two Talgo 250 for 38 million Euros.
• Pioneer project - First high-speed train in Central Asia.
• The trains cover the line Tashkent-Samarkand (268 km).
• Important reduction of travel time - 2 hours vs 3 hours with conventional trains.
• September 2011 - Tests in Uzbekistan- high speed record in Central Asia (255 km / h).
• October 2011 – Starts commercial service between Tashkent & Samarkand.

TALGO BOSNIA & HERZEGOVINA, CONNECTING THE BALKAN COUNTRIES

• 2006 - Railways of Bosnia & Herzegovina (ZFBiH) signed a contract with Talgo for the supply of 9 compositions Talgo S- 7 passenger coaches + maintenance equipment.
• 2010 - Delivery of the first train and beginning of the tests.
• The objective of the contract is to improve the connection of the main cities of the Balkans (Zagreb, Ljubljana, Sarajevo, Belgrade, Mostar and Ploce).
• Start of commercial service: January 2011.
RUSSIA, A BRIDGE BETWEEN RUSSIA AND EUROPE

• 2010 - Talgo and Russian Railways (RZD) sign contract for the supply of last generation passenger trains. Contract include design, manufacture and approval of:
  ▪ 3 trains - route Moscow - Berlin with variable gauge system Talgo RD.
  ▪ 4 trains to cover the route Moscow - Kiev.
• First Spanish export project of a variable gauge train
• The contract value exceeds 100 million Euros.
• Talgo intends to set up a base in Russia to carry out maintenance services in collaboration with RZD.

KAZAKHSTAN: TALGO TECHNOLOGY REDUCES JOURNEY TIME IN 9 HOURS WITHOUT ANY INVESTMENTS ON INFRASTRUCTURE.

• December 2001 A Talgo 6-car modernized train is delivered to Kazakhstan Temir Zholy (KTZ).
• July 2010 A Joint Venture named Tulpar Talgo is formed between KTZ and Talgo for the local manufacturing of passenger cars in the Republic of Kazakhstan.
• November 2010 First order of 420 Talgo passenger coaches to the Tulpar Talgo Joint Venture is placed by KTZ.
• December 2011 Tulpar Talgo new manufacturing plant opening in Astana.
October 2011 - Spanish consortium wins the largest rail contract awarded of the moment, called “TRAIN OF PILGRIMS.”

The project is based on Talgo technology and consolidates the company as a world leader in the export of the High Speed Spanish model.

Medina and Mecca.

It is estimated the trains will have an average occupancy of 166,000 passengers per day.