European Federation of Railway Trackworks Contractors

Newsletter EFRTC

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# Editorial

As the Federation approaches the tenth anniversary of its foundation we are at an important stage in our development. Launched in May 1997 in Stuttgart by a far-sighted group of contractors we have come a long way since. From those beginnings we have become recognised as representing our sector in standards formulation and in research programmes, as partners with the infrastructure managers in the development of a potential joint approach to procurement, and as associate members of UNIFE.

All those who by their efforts and commitment have participated in and encouraged this change can be justly proud. And so can those founders who had the vision to see what had to be done and what could be achieved. I am sure we will have more to say about that at our 10th anniversary meeting in London on 8 June.

But while much has been achieved, we still have much to do. As the Federation grows and matures, it needs to strengthen its influence and to attract new member associations. That is an important task for the future, and one that we must and will pursue with all determination. I look forward to discussing that, and much else, with as many member companies as possible in London on 8 June. It will be an important meeting; make sure you are there.

*Jeremy Candfield*,
President of EFRTC

## EFRTC General Assembly
## London
## 8th June 2007

## Safety Rules

According to the safety directive 2004/49/EC, EFRTC is facing the Safety of Track and the new national rules applied. The Directive introduces a system of notification of national safety rules to the Commission. New national rules should be kept to a minimum and their introduction will be monitored by the Commission. In the transition period before safety rules are harmonized throughout Europe, The European Railway Agency will assist the Commission by examining national safety rules with respect to EU legislation and the TSIs.

This activity has three primary tasks:

- To classify the national safety rules notified to the Commission by the Member States and register them in the Agency's public database, so that they are accessible to all interested parties;
- To assist the Commission in the examination of national safety rules, and prepare technical opinions on their adherence to EU legislation;
- To prepare technical opinions on safety related aspects for the national regulatory bodies and the committees monitoring and developing the European railway market.

From April 2007 onwards the public database of national safety rules will be available on the web site of ERA. By April 2008, the Agency shall evaluate how the national safety rules are published and made available to interested parties in the Member States. Based on this evaluation, they prepare a recommendation for the Commission.

## New Track Geometry Absolute Measuring System

Guiding a tamping machine with an absolute system offers remarkable advantages especially regarding the correction of the construction rules of the track.

The UIC Infrastructure Department dedicated a daylong workshop under the title of "Benefits of track machine guidance based on absolute coordinates", on May 6th 2006 in Paris, where specialists from both, railway companies, track machines manufacturers and University experts, did attend. This seminar aimed to establish the state of art of the existing positioning methods used today by the railway companies with the goal to see what can be the future.

Today, the Railway Infrastructure Managers require that the measures of the distance and the level of the track compared to the fix points (the catenary's pylons) will be executed by the tamping machines especially equipped to do that work. Besides, some of these equipments can introduce directly in the tamping machines reference system the variances between the theoretical values and the actual ones measured, so that the machine can perform directly the correction. This work organization is only justified by the fact that the present track geometry recording cars can execute the measures named above at a speed up to 120 km/h.

The company Dreco SA in Switzerland considers that the present maintenance work methods should be reviewed by improving the technical capabilities of the tamping machines and not only by focusing on developments which increases the linear output.

As a result, they have applied for three patents, one of which is a system measuring at high speed the actual distance and level between the track and the fix points having each one its own identity, i.e. the values of the theoretical (construction) track distance and level. This system is a dependable and reasonably priced solution aimed to increase the efficiency of the maintenance yards and to simplify the work methods by obtaining a better track geo¬metry.

This new measuring system will be of great interest for both, the Railway Infrastructure Managers and the Trackwork Contractors.

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## High-Output Installation of Y-steel-sleepers

The Y-steel-sleeper has brought a renaissance for steel sleepers in Germany at the moment. Its application for tracks in ballast bed proves that the steel sleeper is a very reliable element for high positional stability and long service life, especially under extreme conditions and strains. In addition to the traditional partially mechanized installation method of sleepers, a new installation technology has been developed, which makes it possible to lay Y-steel-sleepers in chain production manner with high output and good quality.

## Development of the Y-steel-sleeper

In developing a modern steel sleeper the aim was to replace the traditional steel sleepers with all their disadvantages. In 1984 this led to an innovation: the Y-steel-sleeper.
The Y-steel-sleeper does not lie orthogonal to the rails like a rod, but its horizontal layout is formed like a "Y".

Compared to the orthogonal sleeper, the Y-steel-sleeper has got a much higher resistance against cross movements, which is not due to the ballast in front of it but rather to the amount of ballast contained between the two parts of the Y-fork. Depending on the height of the lower crossbeams the required resistance against cross movements can be reached. Therefore the Y-steel-sleeper is especially suitable for sections with a small radius. Due to the reduction of contact surface the Y-steel-sleeper is used for narrow crests. For existing tracks, where the cess has been lost due to an increase of the track distance, Y-steel-sleepers offer the possibility of a reinstallation of the cess.

The low construction height of the Y-steel-sleeper facilitates modernisation and subsequent electrification of tracks, especially in the area of tunnels.
The Y-steel-sleeper has therefore been used more and more for railroad tracks of Deutsche Bahn AG as well as for railroads not owned by the state during the past years.

## Traditional methods of construction

In developing the Y-steel-sleeper, the aim was to achieve a low weight and thus an easy handling of the sleepers on site. Most of the time the tracks are reconstructed using the traditional method of track laying in panels, which makes it necessary to change rails afterwards, or using the method of laying the sleepers individually. Before starting the actual construction works, the new rails and the packets of sleepers are brought on site and positioned next to the tracks. After the old rails and sleepers have been removed, the bottom ballast is put into place. The next step is to exactly position the new rail as a guide bar. The sleepers are put into place by means of an excavator and exactly positioned by hand. Afterwards the new rails are put onto the sleepers by means of a rail lifting device and the tracks are fixed.

There are often difficulties due to short track possesions over the week-end or due to a lack of space next to the rails, which only partly allows a use of these two methods.
These circumstances have incited the company LEONHARD WEISS to develop a suitable mechanized method of laying sleepers.

# Installation of Y-sleepers in chain production manner

High output track renewal trains have got a long tradition with LEONHARD WEISS. Already in 1978 the track reconstruction company was the first private company to use a track construction train on the tracks of the Deutsche Bundesbahn at that time.

Currently the company is in possession of three high output track renewal trains, which are able to reconstruct tracks in a chain production manner. Today the name LEONHARD WEISS stands for high reconstruction output, quality and reliability, even under difficult conditions. Based on the know-how of over 5.000 km track renewal the team accepted the challenge to develop a suitable installation system for Y-steel-sleepers.

The performance specification required the development of a method for high quality and performance.

Due to the form and construction of the Y-steel-sleeper an exact laying of the Y-steel-sleepers is indispensable, in order to meet the requirements of the valid guidelines. Practical experiences have proved that it is not possible to adjust or pull the sleepers in the ballast subsequently by means of a laying device, like it would be possible for concrete sleepers, for example.

With the patented LEONHARD WEISS method for laying Y-steel-sleepers the Y-steel-sleepers are taken up one after another with the laying device in a position that is turned by 180° and they are put onto the bottom ballast.

Up to the present the track renewal train UM1 Hohenstaufen has reconstructed approximately 200 km Y-steel-sleeper-track. Today the average installation output is around 200 - 250 m/ hour.

# Economic efficiency of installing Y-steel-sleepers in a chain production manner

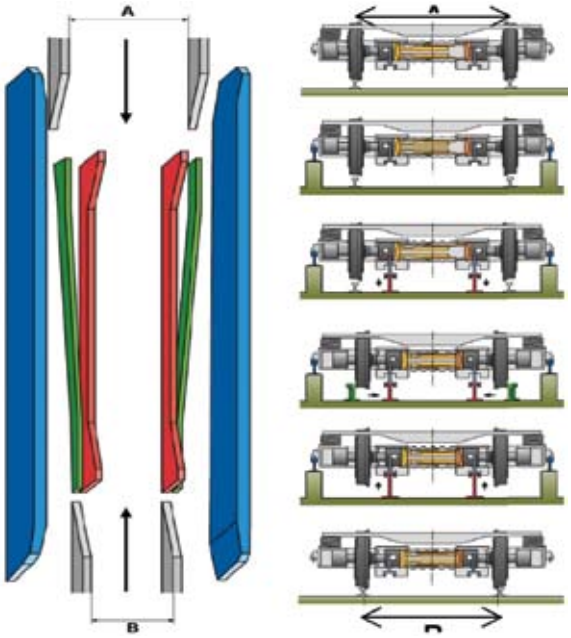
Installing Y-steel-sleepers in a chain production manner excels through high installation outputs and exact quality in laying tracks. With the high output per shift the chain production method is a very economic method of reconstruction of tracks. Follow-up works like for ex. installation of track fastening, tamping, ballast regulating and welding can be carried out directly behind the track renewal train, as the entire logistics of construction materials are aimed forward. The building works can thus be completed rapidly. Time consuming work in shifts following the installation of the tracks are not necessary, the tracks are directly available for railroad traffic.

Preparing new materials next to the tracks is not necessary thanks to the organized supply and removal of sleepers on sleeper transport wagons. Especially in narrow spaces, like for ex. in tunnels, on bridges or in case of slopes this is an excellent advantage.
By copying the former track position by means of the reconstruction train, the Y-steel-sleepers are put in exactly the same height, direction and distance.
The extensive mechanization of the works has minimized the need for personnel and considerably reduced the risk of accidents.

A high availability of the tracks makes it possible to carry out necessary track reconstructions with a minimum of restrictions in every day operation. With the mechanized installation of Y-steel-sleepers LEONHARD WEISS has proved once again that this is possible with innovative solutions, high performance machines and extensive know-how.

# Gauge Change Systems in Spain

Since the railways were first built, most lines in the Iberian Peninsula have tended to have a gauge of 1,668 mm, different from the gauge that is now considered standard: 1,435 mm. In the 60s, the Talgo company started work on an experimental train with moveable bogies. In 1967, the first interchange was built in Irún and that same year the first nocturnal journey from Madrid to Paris took place using the Talgo RD (moveable bogie).

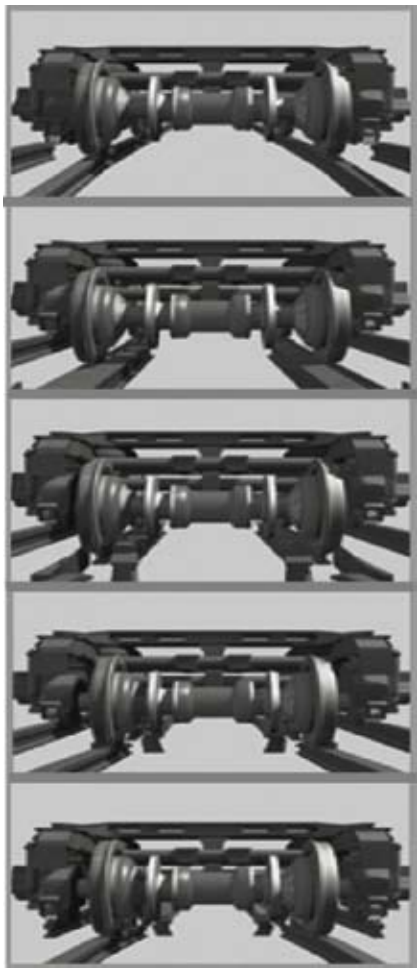



The Talgo gauge change system is based on a mechanism by which, when a vehicle runs through the interchange, the wheels are released from their load and the carriages are supported by raised side rails. The locks that stop the lateral movement of the wheels are unlocked while the wheels move onto rails that widen or narrow (depending on the direction of change), moving them to their new position. Finally, they are once again locked in place.

In 1992, with the arrival of high-speed trains and the construction of the Madrid-Sevilla line, a second generation of interchanges was developed, which were installed at the connections between the new standard gauge lines and the Iberian gauge lines.

Today, with the construction of the new high-speed line between Madrid and Barcelona, a third generation of interchanges has appeared. Their design coincides with the appearance of a new train technology that permits engine gauges to be changed, thereby avoiding the need to change locomotives. The current CAF-Alstom ATPRD s-120 engines can change gauges at a speed of 30 km/h using the Brava system developed by CAF.

The Brava system can be applied to any type of train that incorporates Brava bogies. This system consists of two sets of wheels that can be moved sideways in a pre-established way, on a fixed rotation axle. The separation between the wheels is obtained using a locking-unlocking mechanism that operates



automatically.

## Commercial and Service Interchanges

The interchanges installed before the arrival of the high-speed lines, and which are still in use, are those in Portbou, Irún and the Las Matas and Sant Andreu Comtal workshops. All of these are valid for changing the gauge of Talgo carriages.

On the Madrid-Sevilla high-speed line, opened in 1992, the Madrid-Puerta de Atocha, Córdoba and Sevilla-Majarabique interchanges were built.

The interchanges built since 2001 are those at Plasencia de Jalón, Zaragoza-Delicias, Puigverd de Lleida (the three built or fitted by COMSA), Huesca, Madrid-Santa Catalina, Roda de Barà and Antequera-Santa Ana. Most of these interchanges are already compatible with the two types of gauge-change technology.

As well as these commercial interchanges, there are others that are used in the maintenance bases, for switching rolling stock from the high speed network to the Iberian gauge network. COMSA, as part of its high-speed line maintenance contract, manages two of these bases: Calatrava (Madrid-Sevilla line) and Calatayud (Madrid-Barcelona).

During the construction phase of the high-speed line, interchanges were also installed in the work bases. COMSA has built and used some of them for constructing the line, as in the case of the Salillas de Jalón interchange, which was used to build a number of sections of the Madrid-Barcelona line.

For the future Madrid-Valladolid line, interchanges are planned for Valdestillas, Medina del Campo, Madrid-Chamartín and the one COMSA is currently building in Valladolid.

Finally, it is worth pointing out that all this technology for interchanges and vehicles with adjustable axles, developed in Spain, could be a good alternative for international administrations for the integration of networks of differing gauges.

## Trans-European Transport Network Executive Agency

The Trans-European Transport Network Executive Agency (TEN-TEA) has been created by the Commission's Decision C(2006)5034 of 26 October 2006, in accordance with Council Regulation (EC) No. 58/2003. Once operational, the Agency will manage the Community funds available for the promotion of the trans-European Transport network (established with the Decision on Community guidelines for the development of the trans-European transport network) in close collaboration with Directorate-General Energy and Transport of the European Commission. Starting from 2007 the Agency will be managing an annual budget of approximately 1 billion Euros.

## The main tasks of the Agency will be:

- to ensure the technical and financial management of projects co-financed under the trans-European transport networks' budget;
- to collect, analyse and transmit to the Commission of all information required for the implementation of the trans-European transport network as well as assisting the Commission with programming for the TEN-T network;
- to check the conformity of projects co-financed by the Community with the transport policy rules and principles applicable to the trans-European network infrastructures;
- to provide technical support to project promoters and to the financial institutions which will be responsible for managing the loan guarantee instrument for the trans-European transport network projects.
- to provide any technical and administrative support requested by the Commission.

The TEN-TEA will be located in Brussels and its multinational team will be composed of up to 99 specialists experienced in finance, project management, engineering and legal affairs.

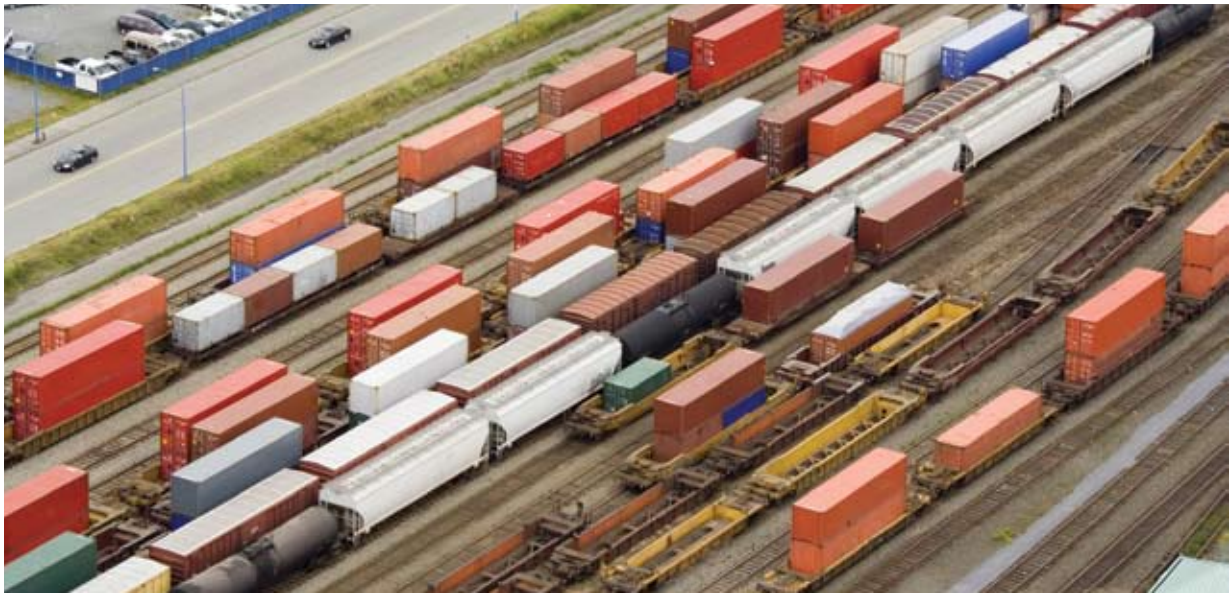
# Total opening-up of rail freight to competition

As of 1 January 2007 all rail freight services will be opened up to competition. This new stage in the process of revitalising the rail industry in which the Community has been engaged for several years should mark a turning point for rail freight, the market share of which has been declining since 1970 in most Member States and needs to be increased. Jacques Barrot, the European Commission Vice-President with special responsibility for transport said that "competition among freight operators will make it possible to stimulate the sector and contribute to the achievement of an integrated European rail area.

I would like the railways, a safe and environmentally friendly mode of transport, to play a major role in the European logistical chain." As of 1 January, all freight lines will be opened up to competition. At present, in the Member States which have followed the Community timetable, only international freight services, which represent approximately half of the total market for the transport of goods by rail in Europe, are liberalised Thanks to this new stage in the process, the Community hopes that rail freight will attract new investors and new customers by offering a quality service adapted to the needs of the market and that, overall, the railways will steadily increase their market shares in a lasting way.

The share of the carriage of goods by road grew steadily from 1970 to 2003, to the detriment of the railways. As a result, from 20% in 1970, the market share of the railways in the 15 Member States fell to less than 8% in 2003, and the sector shed one million jobs over the same period. However, rail freight, which has the advantages of being safe and environmentally friendly, remains essential to the proper functioning of the European economy. It should occupy an important place within the logistical system of the Union. To reverse the decline in rail freight, the European Union has initiated a policy based in particular on support for investment in rail infrastructure accompanied by a policy aimed at the gradual opening-up of the rail freight market and the development of interoperability. The objective is twofold: to promote rail freight and create an integrated European rail area.

The trend was reversed in 2003, when the volume of goods transported by rail in the Europe of 25 began to increase. But this recovery remains very fragile, too limited and unbalanced between Member States, and the modal share of rail freight is still falling. The total opening-up of the rail freight market in all the States of the Union should give a new impetus to the railways and provide a stimulus for the players in the sector.



# EFRTC General Assembly 2006

## EFRTC General Assembly Rome

The EFRTC General Assembly held in Rome on the 1st December 2006 was hosted by the Italian National Association ANIAF and took place in the offices of ANCE (Italian Construction Contractors' Association).

The meeting was opened by Mr. Angelo Maria Cicolani, President of ANIAF followed by the report of the EFRTC President, Jeremy Candfield and Secretary General, Rolando Naggar. The incorporation of the RIMARE project into INNOTRACK was welcomed and UNIFE was thanked for its assistance in facilitating this arrangement; associated funding arrangements were approved.

The working relationship with EIM, concerning harmonisation of procurement procedures, were welcomed and the hope was expressed for similar cooperation in the future with CER. The Chairman of the working group EIM/ EFRTC, Mr.Eric Maatjes – Manager of ProRail, presented the state of progress.

Concerning the EFRTC's own activity, Mr. Rolando Naggar described the Federation's participation in the drafting of European standards applicable to the activity of trackwork Contractors together with the progress of the standards that have been promoted by the Federation, as well as the progress of work on Safety of rail track .

With the support of the EFRTC Italian Member ANIAF, the General Assembly had the participation of important guest speakers:

- Mr. Michele Elia – CEO Rete Ferroviaria Italina, relating on relationship with EFRTC;
- Mr. Matteo Triglia – Maintenance Manager, relating on track maintenance applied by RFI
- Mr. Drewin Nieuwenhuis – General Director of UNIFE – "Overview latest EU Railway (Infrastructure) Policies Development"
- Ms Luisa Prista – Head of Unit Surface Transport Research relating on "EC Research & Innovation in Railway Infrastructure"

The next EFRTC General Assembly will be held in London, UK on 8th June 2007.

## Conferences & Seminars

**May 21 – 24, 2007** Helsinky, Finland
**UITP World Congress**

**June 8, 2007** London, U.K.
**EFRTC General Assembly**

**June 12 - 14, 2007** Lille, France
**5th International Railway Industry Exhibition**

**June 14, 2007** Madrid, Spain
**UNIFE General Assembly 2007**

**June 18 – 20, 2007** Moscow, Russia
**International Railway Conference & Exhibition**

**September 23 – 27, 2007** Switzerland
**UIC ERTMS World Congress**