HIGH-SPEED IN BELGIUM : OUTLINES OF A GROWING PROJECT

PREPARE THE FUTURE

The main objective of the TGV is to forge closer links among citizens of the European Community.

The high-speed train, operative on our continent since 1981, has rapidly proved the ideal mode of transport to cover long distances. Besides substantial improvements in journey times, a considerable traffic capacity and its ability to reach the heart of urban areas, the TGV also offers the advantage to provide a high quality service while preserving the environment and consuming less energy.

Because of the needs expressed by the community, this mode of transport of a new age will certainly know a sustained development in the wider Europe of tomorrow.

That is the reason why Belgium has decided on the construction of railway lines specially designed for the running of high-speed trains.

This prodigious engineering project will not involve additional costs for taxpayers: In the long run the major part of the capitals required for the achievement of high-speed lines will be refunded by profits obtained from the TGV traffic.

High-speed trains on the Belgian tracks

On the one hand, a Eurostar link between London and Brussels through the Channel tunnel.
On the other hand, a Thalys service linking Brussels, Antwerp, Liège with the major towns of the neighbour states.
TGVs departing from Belgium can also run to the Mediterranean regions, the Alps or Provence without having to cross Paris.

For the 2005 date horizon 10 million Belgian will have the opportunity to reap the full benefit of those high tech trains thanks to direct links or through systematic connections with trains of the modernised domestic network.

THE HIGH-SPEED TRAIN AT THE CONQUEST OF EUROPE

The railway of the 21st century nears completion. Countries like France, Germany, Italy, Spain and Sweden have already paved the way for the future vast European network. These initiatives, which were firstly national, have been progressively integrated into a Community project. It must be emphasized that high-speed finds its true dimension within a European context. At the beginning of the next century all the regions of our continent will be linked with some 35,000 km of new or upgraded lines.

BELGIUM AT THE HEART OF THE PROJECT

Thanks to its excellent situation in the heart of Europe, Belgium has taken an active part in the first TGV project on an international scale. This ambitious project includes the construction of the well-known Chunnel and the commissioning of TGV lines between London, Paris, Lille, Brussels, Antwerp, Amsterdam, Liège, Cologne and Frankfurt.

THE FUTURE OF TRANSPORTATION

In the last twenty years, there has been an explosive growth in our mobility needs. Consequently, traffic jams have become a usual problem at the edge of most European major towns. Air travel has become more and more democratic but shows signs of acute congestion during peak hours.

What about tomorrow? It is expected that the removal of borders in Europe and the opening up to the East will give rise to a substantial increase in travel. According to the experts, road traffic should increase by 25% before 2005. As regards air travel, its volume will raise by 50% during the same period.

What kind of solution should be adopted? The space available around cities is not sufficient to extend or to build new motorways and airports. On the other hand, the cost for the improvement of the existing infrastructure would be enormous and such a project would have far-reaching consequences on the environment.

Given that neither air transport nor road transport will be able to answer this challenge, there is an urgent need to examine other solutions which would be more compatible with the environment and with our future needs in terms of mobility. Such an alternative already exists in France where it has rapidly led to a radical change in travel habits. This historic innovation is named TGV and has been chosen by 375 million people since 1981.

Symbol for a new age

Besides being a symbol for the revival of rail transport, the TGV is above all the fastest train in the world. It has been designed to convey hundreds of people from one town to another and possesses the ability - depending on the different systems developed - to reach speeds varying from 250 to 300 and up to 350 kph. The combination of the different technologies brings substantial improvements in journey times while providing a very high standard of comfort and a flawless safety.

The TGV, which runs on electrified lines, offers various advantages in comparison with air and road travel: No atmospheric pollution, less land-take, less waste of energy. A TGV running at a speed of 300 kph over a distance of 100 km only consumes 2.2 litres of fuel per passenger whereas a motor car running at 120 kph has an energy consumption of 8.8 litres for two passengers.

But the major asset of the high-speed train lies in its ability to serve the same stations and to use the same tracks as an ordinary train. It can be operated in a new site, that is to say on lines specially designed for high speed, as well as on conventional lines which can be used to continue its route or to convey passengers to the very heart of cities.
At the approach of the 21st century, such performance enable the TGV to be considered as the ideal mode of transport to cover distances up to 1,000 km far beyond the borders of our country.

A NEW MODE OF TRAVEL

Currently, road travel has the lion's share for distances ranging from 300 to 600 km: The car remains the preferred way of travel of 8 Europeans out of 10 for journeys over short or medium distances. The others travel by air or by rail.

But the situation should change with the advent of the TGV. It goes without saying that high-speed trains will never replace cars or planes. These two modes of transport have their specific and irreplaceable qualities. Railway has its own and a better exploitation of its advantages, namely through the TGV, would also benefit to air and road travel.

For 15 years now, the French TGV has been a remarkable alternative to air and road transport. The resounding success met by the TGV South East linking Paris to Lyon in 2□hours has exceeded the most optimistic expectations. In four years the line has attracted 6 million additional customers, much more than it had been expected. 2 million of them come from air transport, 1.1 million from road transport and 2.9 million would not have travelled hadn't the TGV existed.

The successful experience of the TGV South East resulted in the construction of other high-speed lines in France and in a vast European project in which our country is directly involved.

THE BELGIAN HIGH-SPEED PROJECT

In Belgium TGVs already run at 300 kph between the French border and Antoing.

With its 3,310 trains and its 724,000 daily passengers, the Belgian network has above all been developed to meet local and regional needs. Its configuration does not allow the operation of trains running at very high speeds. Given that high speed is an essential factor for making international services more attractive, SNCB has decided to commission a number of high-speed lines. For reasons of operation and of profitability, the number of passengers justifies the construction of lines specially designed for high-speed links at 300 kph.

MAIN FEATURES OF THE NETWORK

317 KM OF TGV LINES, MORE THAN HALF OF WHICH BEING NEW LINES DEDICATED TO HIGH SPEED

From the French border to Brussels. SNCB is building a 71 km high-speed line (LGV) between the French border and Tubize. Beyond Tubize, the existing line will be extended to four tracks. The first two will make it possible for TGVs to run at 220 kph to the Midi station, while the other two will enable to raise the running speed of IC/IR trains at 160 kph. The first 15 kilometres of the high-speed line are already operative. Near Antoing, the LGV is connected to the Tournai-Mons line, which is a key link of the line crossing the Walloon region. This link provide a direct connection between the existing network, the new line and the line operated by the French TGV. The high-speed line between Brussels and the French border will be commisioned at the beginning of 1998.

From the Brussels to the Dutch border. As regards links with the Netherlands, the TGV will head towards the Netherlads at the speed of 160 kph on the present line Brussels-Antwerp, which will be modernised. An underground north-south junction will be bored under Antwerp. Beyond, a new line will be built alongside the E 19 motorway.

From Brussels to the German border. TGVs will run towards Germany at 200 kph on the existing line, which will be extended to four tracks between Bruxelles-Nord and Louvain in order to allow a rapid flow of traffic for the national service. The TGVs will then run at 2200 kph on a new line constructed along the E40 motorway to Bierset, near Liège. This line will also be used for the national service. After it has crossed the suburbs of Liège on the existing lines, the TGV will rejoin the E40 through a tunnel and run at 300 kph along the motorway to reach the German border. Beyond, TGVs will run on upgraded tracks.

AN ENVIRONMENTALLY AND HUMANLY RESPONSIBLE TRANSPORT SYSTEM

An unprecedented environment impact study has been realised by independent experts prior to the definition of a route for the TGV and to the construction of the new transport infrastructure. An impressive number of solutions worked out in conjunction with local residents and the authorities concerned will be applied to preserve the quality of the environment in regions through which it runs and to reduce disruption to a minimum.

In 1991 SNCB has created a special budget(**the TGV Fund**) amounting to 11.7 indexed billion BEF which will be devoted to environmental projects and local planning works.

In total, the costs involved within the framework of the TGV Fund and other environmental measures represent about **20% of the costs** required for the construction of new lines.

Some significant journey times

	Without the TGV	*With the TGV Final travel time*	*Time saving*
Bruxelles-Midi - London	4.48*	1.55	2.53
Bruxelles-Midi - Paris	2.41	1.21	1.20
Bruxelles-Midi - Amsterdam	2.54	1.40	1.14
Bruxelles-Midi - Cologne	2.34	1.38	0.56
Liège - Bruxelles-Midi	1.09	0.39	0.30
Liège - Cologne	1.29	0.58	0.31
Antwerp - Bruxelles-Midi	0.39	0.29	0.10
Antwerp - Amsterdam	2.10	1.08	1.02
Brussels-Midi - Lille	2.03	0.33	1.30
Paris - Lille	2.15	1.00	1.15

* By Jetfoil

	Without the TGV	*Year 2000*	*Time saving*
Brussels - Barcelona	17.37	6.00	11.37
Brussels - Marseille	11.43	4.45	6.58
Brussels - Bordeaux	09.30	3.45	5.45
Brussels - Nantes	09.10	3.25	5.45

HIGH-SPEED TRAINS ON THE BELGIAN TRACKS

Eurostar
The Eurostar TGV is the shining result of a model co-operation between the French, British and Belgian railways.

It ensures round trips Brussels-London and Paris-London via Lille through the Channel tunnel. In Belgium it temporarily runs on the line Brussels-Tournai-Lille.
It consists in 2 power cars and 18 coaches, has a length of about 400 metres and a seating capacity of up to 794 passengers (584 places in second class and 210 in first class coaches). Four of the thirty-eight trainsets ordered will belong to SNCB.

Thalys

Since 1996 three-voltage Thalys ensure some links specific to this service, namely Paris-Brussels-Liège and Paris-Brussels-Amsterdam. In a first stage Thalys coming from Paris run on a new dedicated line until Antoing and then continue towards Brussels on the existing network. Some of them serve Mons.
They have a frequency of 13 daily departures between Brussels and Paris.
As soon as 1997 the four-voltage Thalys sets will be used for direct links, on the one hand between Paris-Brussels-Antwerp-Amsterdam, and Paris-Brussels-Liège-Cologne on the other hand.
Each trainset will consist in 8 coaches with **a power car at the front and one at the back**, and will offer 377 seats (257 in second-class and 120 in first-class compartments). It will be possible to couple two trainsets together to provide a transport capacity of 754 passengers. The French, German, Dutch and Belgian railways have ordered a total of 17 four-voltage PBKA trainsets. 7 of them will belong to SNCB.

Réseau TGVs

Thanks to a line looping round Paris to the east 'Réseau' TGVs of SNCF offer the opportunity to **travel directly** to the valley of the river Rhone, Provence, the Mediterranean regions and the Alps without having to cross Paris. In future it will also be possible to take a TGV in Brussels to go to Brittany, in the Touraine or the Bordeaux area. Those trains will have two brief stops in the Ile-de-France region: One in the Roissy Charles de Gaulle airport, which is now 2h15 from Brussels; The other at the entrance of Disneyland in Marne-la-Vallée.
Thanks to those TGVs Brussels is now 5h43 from Avignon, 6h39 from Montpellier and 7h22 from Albertville.

Intercity Express (ICE)
At a later stage the ICE of the German railways will probably run in Belgium.
The international model of this new type of high-speed train should ensure several daily round trips between Cologne, Liège and Brussels.
Unlike the other TGVs it has a varying number of coaches.
It can convey up to 760 passengers.

16 MILLION PASSENGERS TO BE EXPECTED

In France, where high-speed has become an everyday reality, the enthousiasm of customers for the TGV has exceeded the rosiest expectations: Indeed, 375 million passengers have been using it since 1981. That is the reason why Belgium hopes that the commisionning of the TGV will give rise to a tremendous increase in its international services. High-speed trains are expected to convey about 16 million passengers annually by the year 2005 instead of the 6 million currently registered on the international lines concerned (not taking account the achievement of the TGV project).

COMPLETELY RESTYLED STATIONS

To cope with the anticipated increase in traffic, SNCB has decided to modernise the stations which will be served by the TGV.

The station of Bruxelles-Midi, which incorporates the TGV station and the station dedicated to conventional trains into the existing facilities, is being completely renovated. It will soon be possible to welcome the passengers from the national and from the international service under the best conditions.
The future TGV facilities in Bruxelles-Midi will include six tracks.

The station of Antwerp, currently a dead-end track, will have a double capacity thanks to the upgrading of the tracks on three different floors. The first floor will be dedicated to high-speed trains and conventional trains heading towards the Netherlands. Those tracks will pass through a tunnel built under the city.

In Liège the Guillemins station will be completely reorganised. Projects which are being worked out provide for the extension and modernisation of the station and its surroundings in order to allow a better integration of the different transport modes.

Depending on the development of the TGV network in Europe and on the growth of the demand, another TGV terminal could be built **in the North of Brussels**.

COMPLEMENTARITY WITH THE DOMESTIC NETWORK

The TGVs will not only transform the international service from Brussels, Antwerp and Liège. These three towns will provide quality connections aimed at time-savings on the whole national network.

Bruxelles-Midi, which will be a connecting station for PBKA and Eurostar trainsets also plays a key role in the coordination of TGVs with trains of the national service and trains of the conventional international service.
Bruxelles-Nord, Antwerp, Liège-and even Lille - for inhabitants from Hainaut and Flanders - will function as connecting stations between the high-speed network and the adaptated interurban services. In this view, SNCB will modify the timetable of the IC/IR trains in 1998 to ensure good connections with the TGVs.

Another asset of the TGV is that classic trains of the national service will also be able to run on some sections of the new lines. The TGV will thus benefit to the domestic network, so increasing its capacity and performance.

A LONG TERM INVESTMENT

In the last 30 years, considerable amounts of money have been invested in the construction and development of roads and airports, while no financial effort was made to modernize the railways. The TGV project seems to be an essential 'updating.'

The investments for the construction of a new high-speed infrastructure together with the modernisation of the national network are sizeable, all the more so since the required work and the purchase of new rolling stock are the greatest undertaking ever carried out by SNCB since Second World War.

Besides the construction of the high-speed lines and the upgrading of some route sections on the Belgian territory, the actual infrastructural works include the costs resulting from the measures to be applied to preserve the environment. The financial plans

also take into account the purchase of the new rolling stock: 4 Eurostar and 7□Thalys.

In Belgium, the TGV project will be mainly financed by means of loans raised by the SNCB. The State also contributes to this financing through an annual grant equivalent to the works aiming at the improvement of the domestic network.
On the other hand, the State also participates to the project through a contribution in a joint (private-public) finance company which must provide SNCB the means required for the achievement of the TGV project 'from one border to another', that is to say with a Brussels-Liège-Antwerp link. On the other hand, the European Union supports projects presenting an interest for Europe.

The development of the TGV project, will which weigh heavily on the financial situation of the SNCB in the first years, will have a highly favourable impact on the financial situation of the SNCB in the long run.

A NEW IMPETUS FOR EMPLOYMENT

The TGV project is a vector for employment since the construction of new lines in Belgium provides 4,900 people with a job during 10 years.
The Belgian railway industry also participates to the design and construction of Thalys and Eurostar trainsets. It provides hundreds of jobs, as a large number of Belgian industries are directly or indirectly committed into the TGV project in Belgium.

STAR 21
REVITALISING THE BELGIAN RAILWAYS

SNCB attaches as much importance to the revaluation of its national network as to the achievement of the TGV project. That is the reason why it has drawn out the STAR 21 programme, which plans a modernisation of the national network over a period of thirty years
With the 1996-2005 ten-year investment plan some 291 indexed billion BEF will be invested in the domestic network within this period in order to improve the services offered on the various lines.

STAR 21: Main objectives

Enhanced comfort and speeds: SNCB invests in a more comfortable and more efficient rolling stock.
Improved services: Stations will be renovated and their surroundings will be made more attractive.
An increased capacity: The construction of additional tracks on certain lines leading towards Brussels will allow a reinforcement of the intercity service and an improvement of the links with peripheral areas.
Improvement in journey times: The maximum speed will be raised on very busy routes.

AND NOW?

The high-speed train has been running in Belgium since 1994 and the project of a high-speed network in our country will be completely achieved by the year 2005.
Investments in the TGV project and in the STAR 21 programme allow the Belgian railways to contemplate the 21st with optimism.

Fast and highly convenient journeys: That's the promise made by SNCB to customers of today and tomorrow.

If you want further information, please contact us at the following address or phone number:

Service "Relations extérieures" SNCB/NMBS
Info TGV - STAR 21
Rue de France, 85
1060 BRUXELLES
Tél.: 078 15 48 05 - Freefone call
(Except tariffs, timetables and reservations)

Reservation and telesales for Eurostar and
Thalys tickets: 0900/ 10 177

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