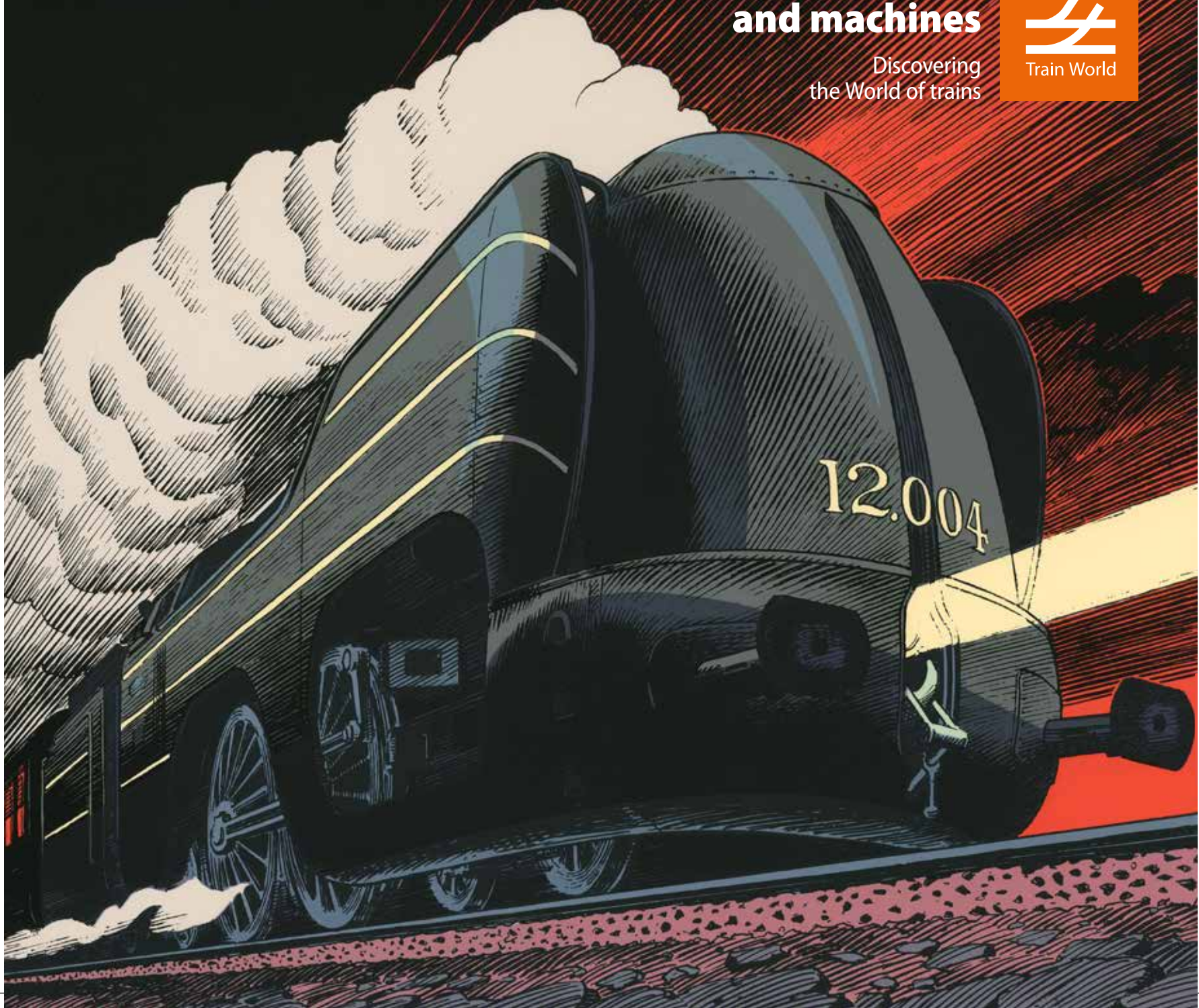


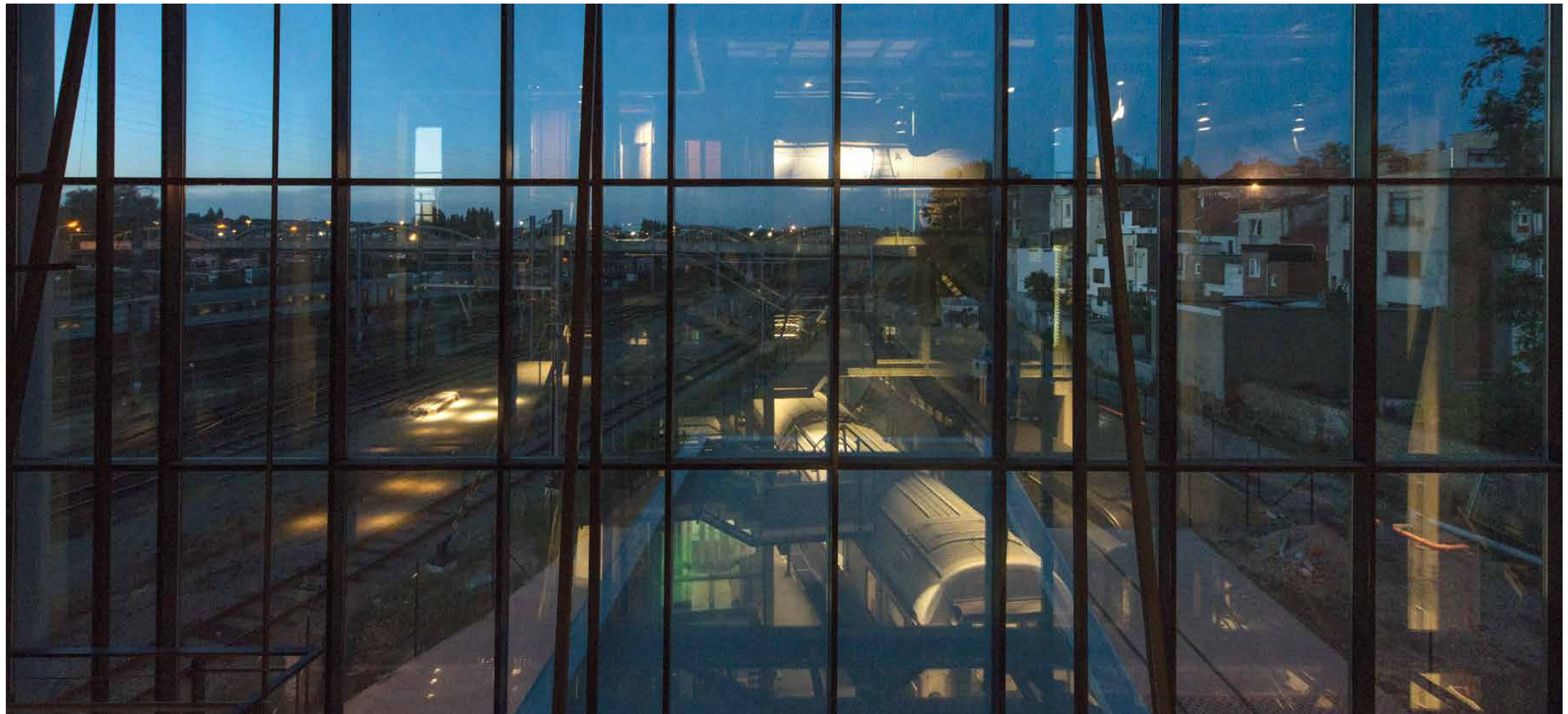
Of men and machines

Discovering
the World of trains



Train World





Of men and machines

Discovering the World of trains

Catalogue



éditionsmoulinsart

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Legal deposit September 2015

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ISBN 978 2 87424 345 5

Printed in Belgium by Graphius

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FOREWORD

On May 5, 1835, a train ran for the first time in Belgium and on the European continent. Brussels, now linked with Mechelen by railway line, became the first capital in the world accessible by train.

Five years after its independence, Belgium became a pioneer of the railways: a new promising form of transport that was going to turn the life of the Belgians upside down and become the motor of the industrial revolution.

In only forty years, 3,390 km of rail tracks were constructed. In 1846, Brussels and Paris became the first two capitals in the world linked by railway. During the nineteenth century, Belgium and Great Britain were the principal exporting countries of railway technology. Between 1835 and 1939, some 16,000 steam locomotives were built in Belgium, of which some 10,000 were exported to every corner of the world.

On May 5, 1935, exactly one hundred years after the pioneering rail trip of a steam engine, the first electrified line of the NMBS/SNCB was inaugurated between Brussels and Antwerp. With this revolutionary passage from steam to electric traction, the Belgian Railways entered into a new era.

A third major technological leap was realised in 1997, when the NMBS/SNCB was propelled into the twenty-first century with the inauguration of the first high speed line between Brussels and France. For the first time, a border was crossed by a train at 300 km/h.

Today the NMBS/SNCB is a major transportation player in Belgium, carrying 845,000 passengers daily, with 3,700 trains a day, and 550 stations and stops. The services provided to customers aim to offer safe, comfortable and punctual rail travel.

The history of the Belgian Railways is a succession of challenges that were taken up from one generation to another. The extensive heritage collection of the NMBS/SNCB testifies eloquently to this fact. But due to insufficient display space, this 'Sleeping Beauty' slumbered in faraway depots, inaccessible and without any scenographic validation.

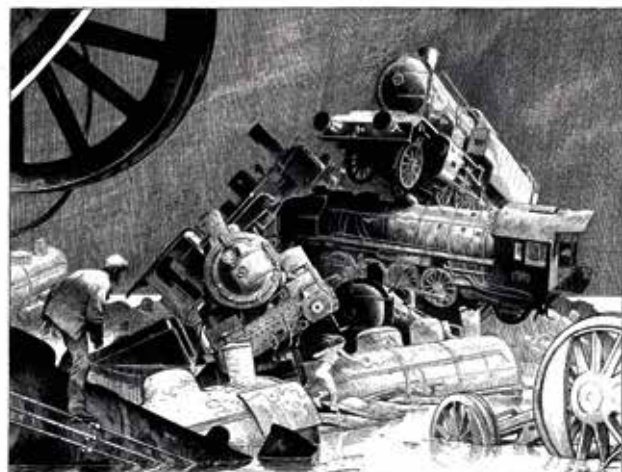
Thanks to *Train World*, the public can now discover in Brussels the best of the Belgian Railways collection, at the magnificently restored Schaerbeek station.

Train World, is a showcase of the Railways of the past, the present and the future. The NMBS/SNCB proudly presents this gift to the public.

And thus, we wholeheartedly invite you to explore this surprising universe and to (re)discover the most outstanding pages of the history of the Belgian Railways.



Jo Cornu
Chief Executive Officer SNCB



TEN YEARS ...

Almost ten years were necessary to bring the *Train World* project to fruition – ten passionate years that flew by. It is so difficult nowadays to complete an ambitious project successfully without a total investment and at the risk of losing part of one's dream along the way.

The scenario was self-evident. Schaerbeek station, a real jewel, listed as a historic monument, is a gift for such a project. The only station in Brussels to have been completely preserved, retaining even the original ticket offices. It is a strong sign, an ideal starting point for a museum to reincarnate fully the role of these cathedrals dedicated to the railways. Roads radiating in a star pattern from the station demonstrate the important role played by the railways in the conception of urban design. The establishment of a new building alongside the tracks also followed quite naturally. The railway workers' house on the site, that at first had seemed a constraint, gave us the opportunity to build around it, so as to underline the human dimension of the railways. The building had been destined to disappear, but now it embodies the very heart of *Train World*. The integration of a superb part of the *Pont du Luxembourg* (Namur) provided the opportunity to create a spectacular link between the vast grid of tracks of the site and the city itself.

The scenography was thus put together as we went along, taking in all these visions, all the risks and every passion... For the whole team, there was above all the desire to show the public the richness of this world, a wish to share the love of railway men and women for their engines and their profession.

But how do you pay homage to all these participants? How does one avoid short-changing the complexity of such a history? Luckily, the historic heritage department of the NMBS/SNCB helped us never to lose the thread of the story. It was the guardian of the temple, casting light on the past, present and future.

To be able to work on such an extensive subject, so dear to our hearts, was the chance of a lifetime. It was a privilege to share this adventure with lighting designers, painters, decorators, musicians, producers, scientists and historians, just as it was to collaborate with model-makers, craftsmen, railway workers, engineers and architects. Everybody was exhilarated by the sheer pleasure of this adventure. All these professionals, each in turn, were seduced by the presence of the engines, and by the passion surrounding all the objects. It was as if this railway universe had the power to fascinate all generations, all classes and every sensibility.

Even though railways across Europe are going through a difficult period, subject to restructuring, economic plans and doubts, *Train World* is now here to embody the beauty of its history, the pride of its professions and the stakes the railways will encounter in the future.

Perhaps a way of making us remember that "he, who knows where he comes from, knows where he is going"...

François Schuiten

Artist and scenographer of *Train World*





TRAIN WORLD, A RAILWAY OPERA

There was once an important railway collection which craved for a public to appreciate it and investigators to discover hidden treasures. Then one day the Belgian artist, François Schuiten, was commissioned by the Belgian National Railways (NMBS/SNCB) to devise a concept for this to happen. *Train World* was born.

But *Train World* is not a museum like any other. It's a universe that calls on all the senses to understand the railway in its multiple dimensions. Like a musical score, it also plays on the emotions. Let us enter into this special world to be found at Schaerbeek station ...



THE STORY OF THE BELGIAN RAILWAYS



It all began on May 5, 1835, five years after the creation of the new state of Belgium. The first railway line for the benefit of travellers was established between Brussels and Mechelen. Brussels became the first world capital to be served by a railway. The country was gradually divided into a grid that ensured links with neighbouring countries.

The core network was constructed by the State while the regional branches were left to private enterprises until 1870. At that time, the state took over most of these lines until the creation of the NMBS/SNCB in 1926.

The new company did its best to make the exploitation of the railway profitable, until the world economic crisis in the early 1930's forced it to review its policies.

New competitors complicated the picture further: first of all the car and then, later, the aeroplane. The NMBS/SNCB countered this by modernising its rolling stock, and offering innovation and diversity to its services.

The end of the twentieth century brought new surprises with the liberalisation of the railways as imposed by Europe in 1991.

Today, the NMBS/SNCB is no longer the company created in 1926. It has become a public autonomous company, charged with the organisation and commercialisation of train services at a national and international level.

Since January 1, 2014, the Belgian Railways are constituted of NMBS/SNCB and Infrabel, the administrator of the railway infrastructure.



INFRABEL
Right On Track



CHEMIN DE FER DE BRUXELLES A MALINES.

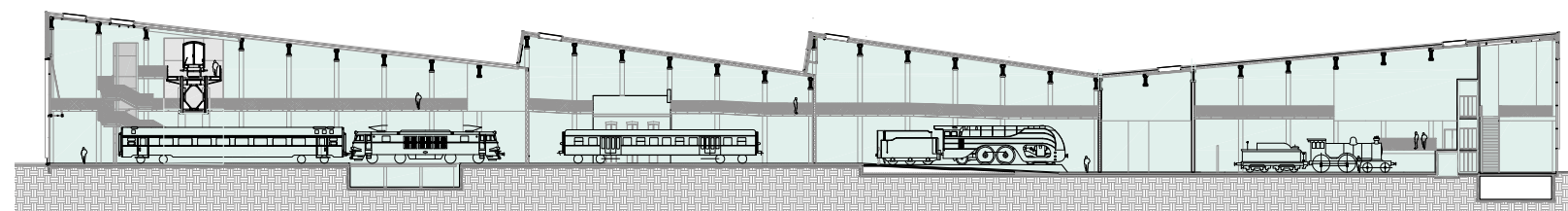


ARIADNE'S THREAD



Train World is housed in two buildings: the historic rail station at Schaerbeek and a new construction composed of four halls. Each hall is dedicated to a particular theme.

The two buildings are separated by a 'railway promenade' where items of historical interest are displayed.





THE RAILWAY STATION, MIRROR OF THE CITY

For each universe there is a particular entrance. For *Train World*, it is the station at Schaerbeek – a district of Brussels – which lies in the heart of Europe, on Belgium’s first railway line.

During the nineteenth century, the station was a new point of entry to the city. It formed part of the urban design, just as the cathedrals of the Middle Ages redefined landscapes. It was not surprising that some stations, such as Antwerp-Central, were compared with them.

Schaerbeek station is a typical example of a nineteenth-century railway station. Brussels-Central represents the twentieth-century station, while the renovated Antwerp-Central and the newly-built Liège-Guillemins initiate the return of the railways to the centre of the country’s social and economic life.

These stations are open to the city, places of exchange and commerce, and hubs for different types of transport.



SCHAERBEEK, A RAILWAY BEAUTY

The historic station of Schaerbeek has not changed much since its construction in 1887, but to welcome visitors it has undergone a conscientious restoration, respecting its original materials.

It gives access to a second building, an extension designed by the architect Franz J. Seulen and built during the 1920’s.

The main hall is exceptionally large and leads to a row of wooden ticket offices that are quite remarkable. They evoke the atmosphere of railway stations in former times.

ANTWERP-CENTRAL

A railway cathedral

While the Neo-Gothic style dominated architecture at the end of the nineteenth century, the Bruges architect Louis Delacenserie conceived his plan for Antwerp-Central railway station in a style that drew on Renaissance and Baroque sources. Of a monumental size, the platforms are surmounted by a vast glass and steel roof, the work of the engineer Clément Van Bogaert. It was inaugurated in 1905.

Damaged during the Second World War, it was threatened with demolition. It was saved, however, by being listed in 1975, needing to be restored from top to bottom.

A North-South tunnel was dug under the city to transform the terminus into a through station, allowing high-speed trains to continue their route towards the Netherlands. It expanded with new spaces and new platforms at basement levels. This huge building project lasted from 1986 till 2009.

It took more than twenty years of work, but what a result! A through station, opening on a new district, clearly visible to its core, some twenty metres below ground, thanks to the daylight coming through a huge triangular atrium.

Antwerp-Central is rated among the most beautiful stations in the world.



BRUSSELS-CENTRAL

A railway palace

Brussels-Central railway station is one of the last major works of Victor Horta, the celebrated Belgian art nouveau architect. It forms part of the ambitious project for a North-South connection, an idea going back to the nineteenth century.

Victor Horta drew up his first plans for the station in 1913, but the execution of the final project did not begin until 1937. The slope of the land and its instability made it a complex and challenging task. On top of the technical difficulties, there were the economic restraints that delayed building works so much that Horta himself never saw them completed. He died in 1947 and it was his former pupil Maxime Brunfaut who was responsible for the final stages, scrupulously respecting the wishes of Victor Horta. The station was inaugurated in 1952.

The station was partly listed in 1995 and consequently renovated. The mezzanine floor and the access to platforms were enlarged and rearranged, a new access way was opened up towards the Mont des Arts and the lighting of the underground passage was improved by a source of natural light.



LIÈGE-GUILLEMINS

All clothed in white

The idea of integrating Liège into the European high speed train network was first expressed in 1987. However, the station had to be reinvented and above all relocated to meet the new demands for safety, speed, comfort and compatibility.

The Spanish architect and engineer Santiago Calatrava was chosen in 1996, following an international competition. He daringly proposed a structure of white concrete, surmounted by a vault of steel and glass, which broke with the tradition of having a facade.

The railway station thus became a central point around which connections were organised between the high speed trains,

the domestic train service, buses, taxis and even motorway traffic. A new type of railway station was born, it revived the former role of urban monument, like the cathedrals or town halls of past times.

The planning permission was granted in 2000 and the station's inauguration took place in 2009. The long duration of the building works can be explained by its complexity, the preliminary studies, the perfecting of techniques and the need to maintain the train traffic while building.

Liège-Guillemins is regularly referred to as one of the world's most beautiful modern railway stations.





THE COWL MAKES THE MONK
 The railway employee is recognised as such by his uniform. Until 1914, engineers and station masters wore dress uniforms for official ceremonies. This gala uniform dated from the second half of the nineteenth century. The buttons and the ceremonial sword are decorated with a winged wheel, the emblem of the railways. This uniform belonged to one Monsieur Donnay, station master at Brussels-North.



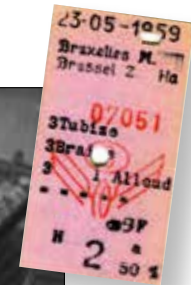
MEN AND MODELS

These models of trains on a scale of 1/10 are made by apprentices to complete their training.

Professional apprenticeships at the railways date back to the years immediately after the First World War. Initially it was limited to the central workshops of the department 'Matériel & Achats' of the NMBS/SNCB.

The apprentice, recruited without examination, could choose the branch in which he wanted to specialise. After a month of general instruction, identical for all candidates, he was given an apprenticeship under the tutelage of a skilled or qualified worker. Altogether, the apprenticeship lasted three years.

In 1936, the specialisation of the instruction was abandoned, though not the professional test of aptitude which closed the cycle of apprenticeship.



SCHUSTER CHOOSES CARDBOARD!
—Tickets, please!
 Today tickets are real or virtual and of a differing format according to the source of purchase. In 1947 the NMBS/SNCB introduced a machine invented by the Belgian Schuster. Small pink cardboard coupons were printed in the ticket office at the client's request. In smaller stations they were still used until 1993.

TRAINS IN THE SPOTLIGHTS

Is it surprising that trains entered the collective imagination as soon as the illustrious inventor of the steam locomotive, George Stephenson, sang the praises of coal and didn't hesitate to proclaim that the sun itself allowed trains to traverse the globe?

From its very first appearance, the locomotive was an object of fascination. Its power and its speed astonished people, who previously were only familiar with the speed of walking, or the horse's gallop. At the same time it inspired artists to create works, some forgotten, some with us still.

Poets have extolled the railways and the trains, who open up new horizons, promising escape. Victor Hugo, for example, praised its movement:

"It's a magnificent movement that one has to have experienced to realise. The speed is incredible.

The flowers of the wayside are no longer flowers, they are blobs of colour or streaks of red or white; no more dots, only stripes; fields of wheat are like large heads of yellow hair, fields of clover are great green tresses; towns, bell towers and trees dance and merge madly on the horizon. In the carriage one says: it's eight miles away, we'll be there in ten minutes."

Painters captured the intrinsic beauty of locomotives. J.M.W. Turner, for example, with his magnificent canvas: *Rain, Steam and Speed, the great Western Railway*.

Film-makers such as Jean Renoir or Buster Keaton drew on the dramatic potential of a locomotive.

Musicians incorporated its distinctive hissing and clatter into symphonies. In 1923, Arthur Honegger composed the music for Abel Gance's film *La Roue* (The Wheel), with instruments of the symphony orchestra emulating the sounds emitted by a locomotive type Pacific.

Trains have also inspired literary works, for instance by Agatha Christie. But the railways also inspired a collection of light novels, bought at stations before boarding a train in order to pass the time of the trip.

Trains transcend genres, as shown in *Train World*, especially in the new exhibition halls where all the senses are courted, including the hearing with an original score by the French composer Bruno Letort.



THE MAIDEN AND THE QUILL PEN

On the eve of his demise, the celebrated novelist Sir Walter Scott, author of *Ivanhoe* among other works, confided to his friend Henry Williamson that his goose feather quill pen should be left to the person first found reading one of his novels on a train on the European continent.

Learning that Belgium had just inaugurated a train connection between Mechelen and Antwerp (1836), Williamson wasted no time making the trip to Antwerp to fulfil the wishes of the author. He had the honour of awarding the quill to a young girl of just 18 years old. Travelling in a carriage together with her father, she was reading the second volume of *'The Antiquary'*...



PRELUDE TO A PATH OF DISCOVERIES

A corner of the veil on *Train World* has just been lifted.

The visit continues with a short walk to enter the new halls where the railways will show its many facets in a succession of different sequences.

JULIETTE (1912)

The steam crane called Juliette, of British origin, is as robust as it appears. It is capable of lifting goods up to 35 tonnes to five metres high.



✂ The engineer's notebook



Alfred Belpaire (1820-1893)

The engineer-mechanic Alfred Belpaire graduated from the *École centrale des arts et manufactures* in Paris in 1840. In September of the same year he joined the Administration of the State Railways. Initially he directed the workshop in Mechelen, but in 1850 he became director of the rolling stock in Brussels.

He is celebrated for his invention of the 'flat firebox' which allowed the burning of low price fuel.

He also experimented with the first steam 'automotor' on the Belgian rail network. This was a precursor of the diesel railcars that were employed on the network in the twentieth century.



A flat firebox to increase efficiency

Initially, the fuel most commonly used by Belgian steam locomotives was coke. As it produced comparatively little smoke, it was not too much of an inconvenience for travellers in the uncovered carriages. But the cost became unaffordable. In order to be able to use cheaper low quality coals, Alfred Belpaire devised a new type of firebox to increase the surface to allow a greater exchange of heat with the boiler.

Until then the roof of the firebox had been cylindrical in the extension of the boiler. By bringing the firebox closer to a parallelepiped box with a flat roof, a marked increase in surface was attained.

His project was completed in 1864 and from then on the Belpaire firebox was installed in all Belgian locomotives.

Later it was adopted by Great Britain's *Great Western Railway* and the American *Pennsylvania Railroad*, as well as by the *Société alsacienne de construction mécanique*.

COAL BURNERS

The boiler displayed at *Train World* used to be installed in a Type 25 Belpaire locomotive of 1894. These locomotives were built from 1884 to 1898 to pull freight trains. As mainly coal trains were concerned, they were called *Charbonnières* (from the French 'charbon'). The last example of this type was taken out of service by the NMBS/SNCB in 1941.

| | |
|--------------------------------|--------|
| ● Overall length of the boiler | 7,75 m |
| ● Width at firebox level | 2,11 m |
| ● Width at smoke stack | 1,69 m |



IN THE BEGINNING THERE WAS STEAM

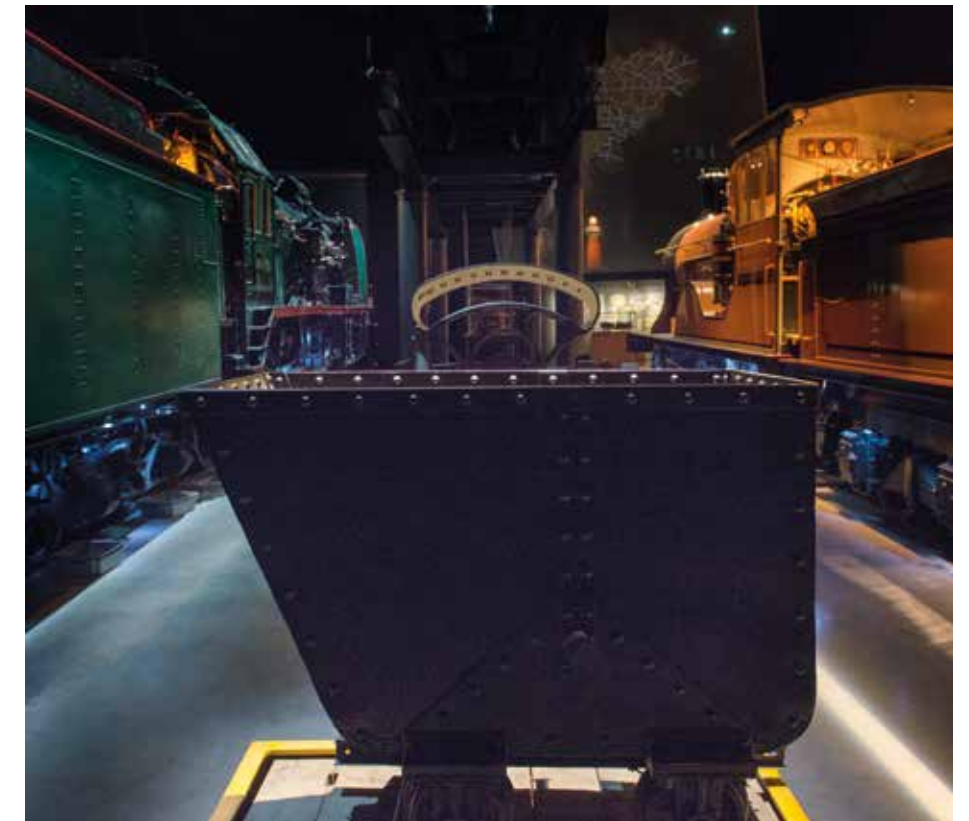
Steam, seemingly so insignificant and intangible.
And yet, what a source of energy!

During the eighteenth century, steam was used to aid
the industrial production of textiles and metals.

In the nineteenth century, it was the origin of the rise
of coal production. But above all, it served as the base
of a revolution in the transportation sector, with
the appearance of the first steam locomotive, invented
by George Stephenson in 1815. It was the starting point
for the development of the railways.

From 1835 onwards, Belgium created the first railway
network on the continent. It ordered its first five steam
locomotives from Great Britain. The sixth however was
produced at the *Usines Cockerill* at Seraing, near Liège,
on December 31, 1835.

It was called *Le Belge*.



A DAY OF POPULAR JUBILATION

On May 5, 1835, the first railway line between Brussels and Mechelen was officially inaugurated. A huge and enthusiastic crowd gathered to see the new locomotives, although there was some slight concern about the speed of the still unknown steam engines.

The *Journal Officiel* reassured the population in an article published on the eve of the event: the locomotives would take about an hour for the trip though the distance could be completed in only twenty minutes... This compared with the two hours needed by standard horse-drawn coaches to cover the distance. Imagine the excitement!

Three locomotives left the *Allée Verte* in Brussels in the following order: *La Flèche*, then *Stephenson*, each drawing seven carriages; finally *L'Eléphant* pulling sixteen carriages, nine of which were decorated with the coats of arms of the provinces.

The inventor of the first 'real' steam locomotive, George Stephenson, was on the maiden trip. It was less of a novelty for him, as he had already inaugurated the first passengers' railway line between Stockton and Darlington in the United Kingdom. The engineer De Ridder took a seat in one of the carriages drawn by *La Flèche*, while Simons travelled with *Stephenson*.

At Mechelen, a ceremony commemorated the event by erecting a column. On the return to Brussels all the carriages were pulled in one convoy by the powerful locomotive *L'Eléphant*.

The day ended with fireworks.



**JAN ANTOON NEUHUYS
RECALLS MAY 5**

On the occasion of the 50th anniversary of Belgian Railways, the Dutch painter Jan Antoon Neuhuys completed a canvas representing the inaugural trip of May 5, 1835. The event so touched the participants that the artist naturally gave prominence to the crowd that came to see the locomotives off. However, *La Flèche* is clearly recognisable by the arrangement of figures who seem to make way to allow the train to take its place in the limelight.



**KING LEOPOLD I
(1790-1865)**

No sooner crowned (July 21, 1831) King of the Belgians, Leopold I, showed a particular interest in the building of a railway. He referred to it in an address to Parliament on June 7, 1833, where he called for the project to be tackled in the shortest possible time. It was a project, he said, that "met the needs and wishes of almost the whole country." Scarcely a year later, on May 1, 1834, he signed the law creating the railway. But after endless discussions! Many deputies were opposed to this "dangerous invention." Some maintained that "it would deprive thousands of workers of their livelihood;" or that "milk transported by train would arrive at its destination curdled and eggs would be scrambled..."



**JEAN-BAPTISTE MASUI
(1798-1860)**

Jean-Baptiste Masui was the first Director-General of the Belgian Railways, Post and Telegraph Services. He was appointed to this post on January 27, 1850. Before this he was the director of the railway operations.

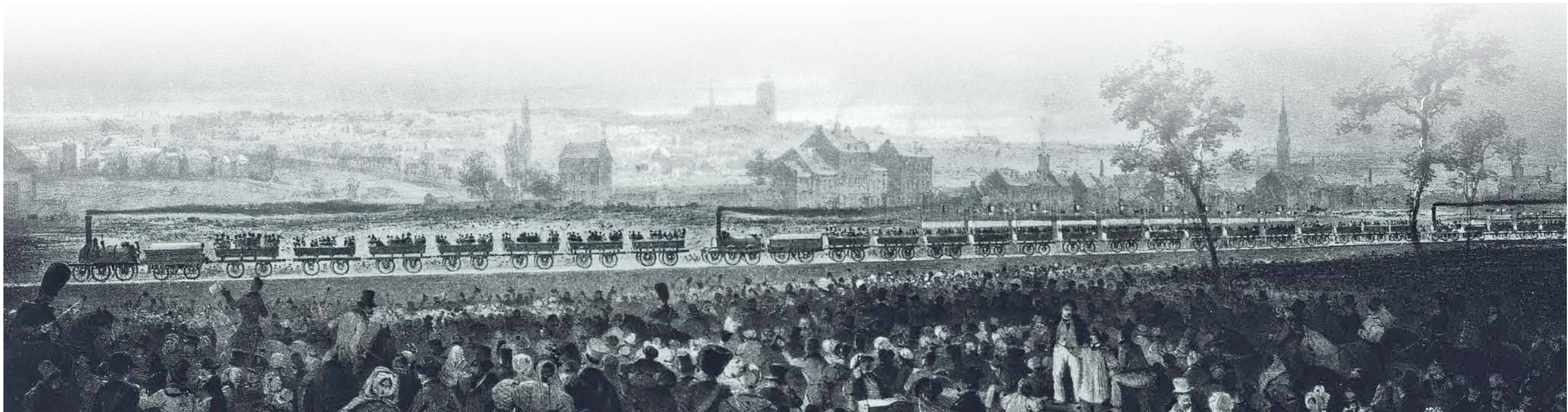


**PIERRE SIMONS
(1797-1843)**

On account of his experience with public building works and particularly with communications, Pierre Simons became overall responsible for the construction of a railway in Belgium. He and his brother-in-law, Gustave De Ridder received the official commission on July 31, 1834. The two men previously had the opportunity to study in England the perfecting of railway routes following the use of steam trains for transporting passengers. His bust was originally installed in the waiting room of Brussels-North station where the government had it placed in 1860.

**GUSTAVE DE RIDDER
(1795-1862)**

On August 24, 1831, the engineer Gustave De Ridder, and his brother-in-law Pierre Simons, were ordered by the Inspector-General of Roads and Bridges to study the feasibility of establishing a railway line, linking Antwerp with the rivers Meuse and Rhine. Together, they completed their field study and published several papers before being entrusted with the building of the railway. They were promoted to Engineer-Directors for this purpose.



THE BELGIAN RAIL NETWORK

The network was developed in successive stages. The law of May 1, 1834, creating the railways, defined it as two major lines running north-south and east-west, reaching as far as the country's borders and intersecting at Mechelen, the central point of the network. This was esteemed sufficient to meet the principal commercial and industrial objectives of the day.

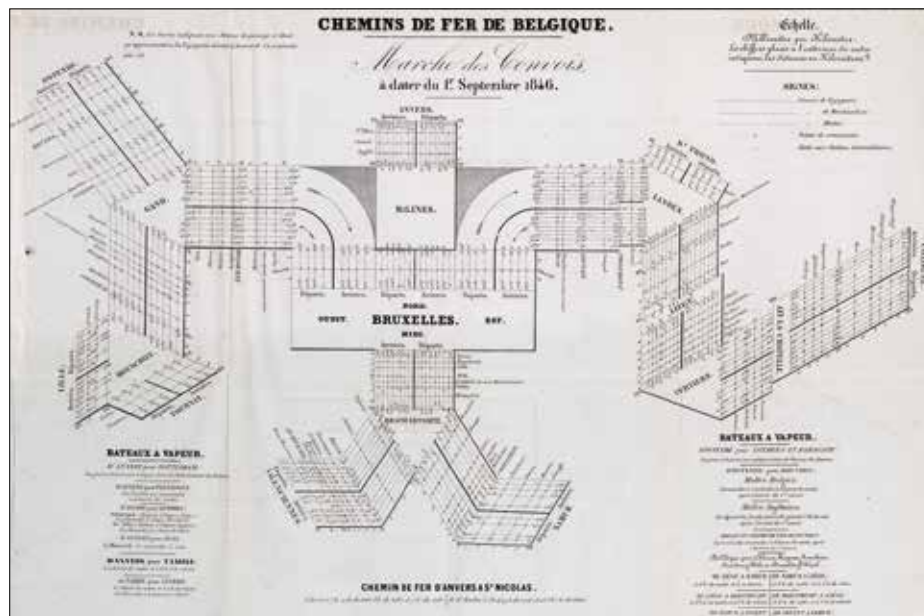
Four branch lines serving the provinces of Limburg and Luxembourg, as well as the industrial region of Charleroi and ensuring a link between Ghent and the French border were rapidly added to this initial network. The whole represented a total of 556 kilometres and its construction was finished by 1843. The State was both the builder and the operator.

The branching out of the network was subsequently left to private enterprise under a system of concessions. Each construction of a line, or a group of lines, was nevertheless subject to separate legislation. In all, some fifty railway companies were interested in the project. Some shareholders were Belgian, some were British. From 1843 to 1874, the network thus grew by 2,771 km to a total 3,387 km, of which the concessions accounted for 80%.

From 1873, the State took over the operations, while still delegating construction to the private sector. In 1890, with the network almost complete, the Belgian railways became exclusively state-owned again. The last major building project before the First World War was the new line Antwerp-Mechelen-Brussels, doubling the original line of 1835. This was put into service in 1907-1908.

In 1913, the Belgian rail network consisted of 4,601 km of lines, of which 38% was constructed at the State's expense and 62% by concessionary companies. The network reached its peak in 1949 at 5,034 km of lines.

In its present form, the Belgian rail network answers the need for local transport and contributes to the development of foreign trade.



EUROPE

The map of Europe recalls the privileged position of Belgium at the heart of the continent. It shows also the imperative need for the country to go beyond its borders. The conception of the network responded to this requirement as each major line reached the Belgian boundaries.

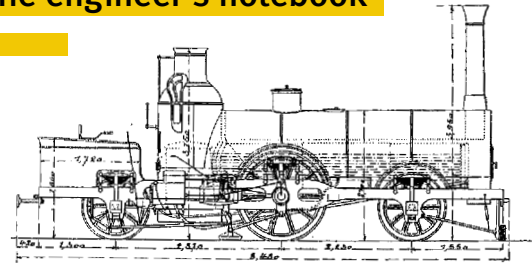
The French border was crossed in 1842 and the German in 1843. The first rail link between Brussels and Paris was opened in June 1846. It was the first time that two capitals were linked by a railway line. The journey took eight hours without heating, electricity ... or lavatories.

Thirty years later, the Belgian Georges Nagelmackers opened the doors of Europe a bit further by creating the *Compagnie internationale des wagons-lits et des grands express européens*.

Progress continued in the twentieth century with the advent of the motorail trains (sleeper trains on which passengers could take their cars) in 1956, the *Trans Europ Express* (TEE) in 1957 and the first high speed line between Brussels and France in 1997.



✂ The engineer's notebook



The locomotive *Pays de Waes*

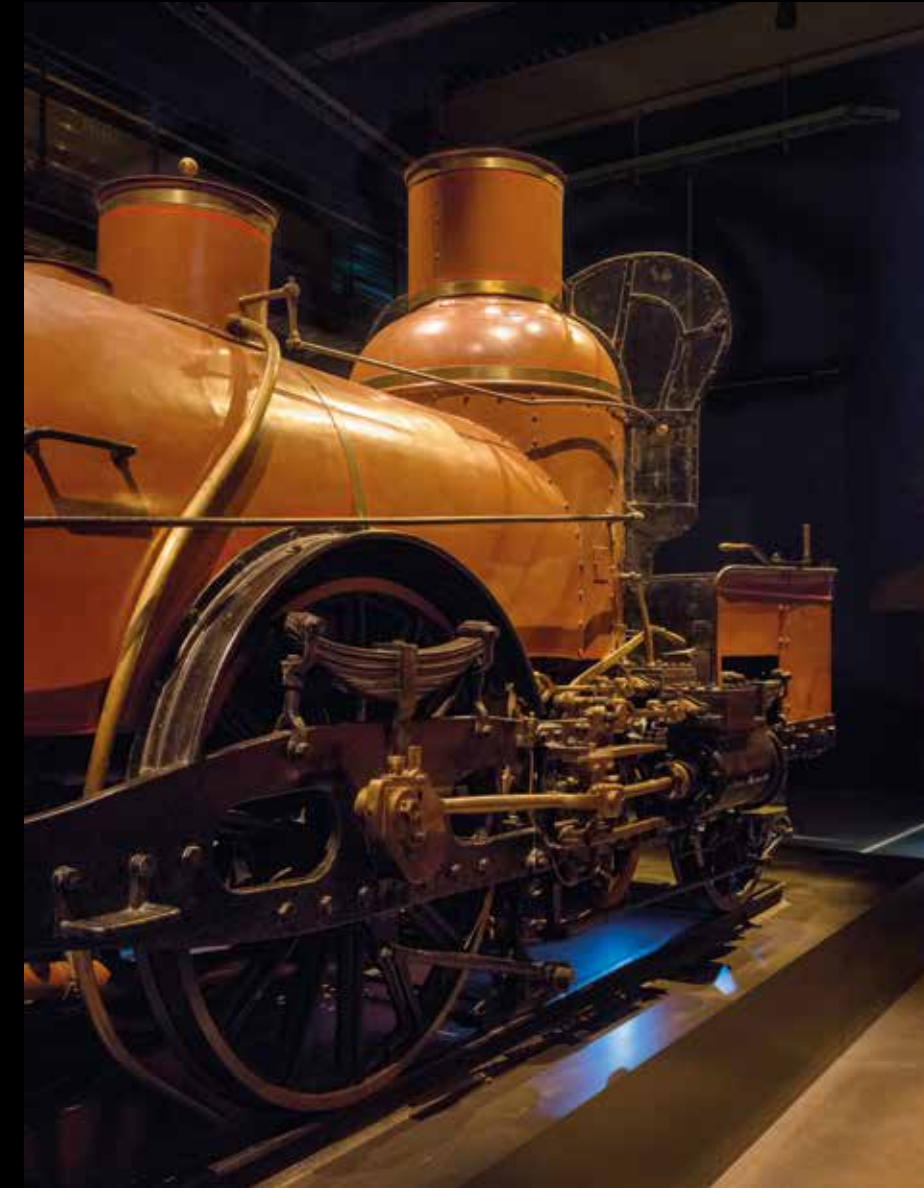
The locomotive *Pays de Waes* was one of nine engines built in the Brussels workshops of the Belgian engineer Gustave De Ridder between 1844 and 1846. These locomotives were designed to run on the narrow gauge (1,145 mm) line Antwerp-Ghent, traversing the Waasland region, a concession gained by the engineer in 1843.

On January 1, 1896, the State reclaimed the line and converted it to the standard 1,435 mm gauge in one weekend.

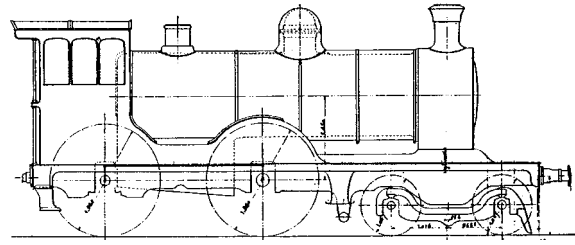
De Ridder's nine locomotives were adapted from 1880 to 1890. The last locomotive to be taken out of service, *Pays de Waes*, was saved from the scrapyard and had the honour of featuring in the Ghent Universal Exhibition of 1913.

It is the oldest locomotive preserved in Belgium, and one of the oldest surviving railway engines in the world.

| | |
|------------------------|---------|
| ● Year of construction | 1844 |
| ● Power | 50 h.p. |
| ● Maximum speed | 60 km/h |
| ● Ø back wheels | 1,55 m |
| ● Payload | 17,55 t |
| ● Fuel used | coke |



✂ The engineer's notebook



ÉGIDE WALSCHAERTS (1820-1901)

Égide Walschaerts was taken on by the Belgian Railways as a mechanic at the workshops in Mechelen at the age of 22. Two years later he became head of the workshop at Brussels-South, a position he held until his retirement at an advanced age. He did not have a formal qualification, but the railways benefited from many of his ideas.

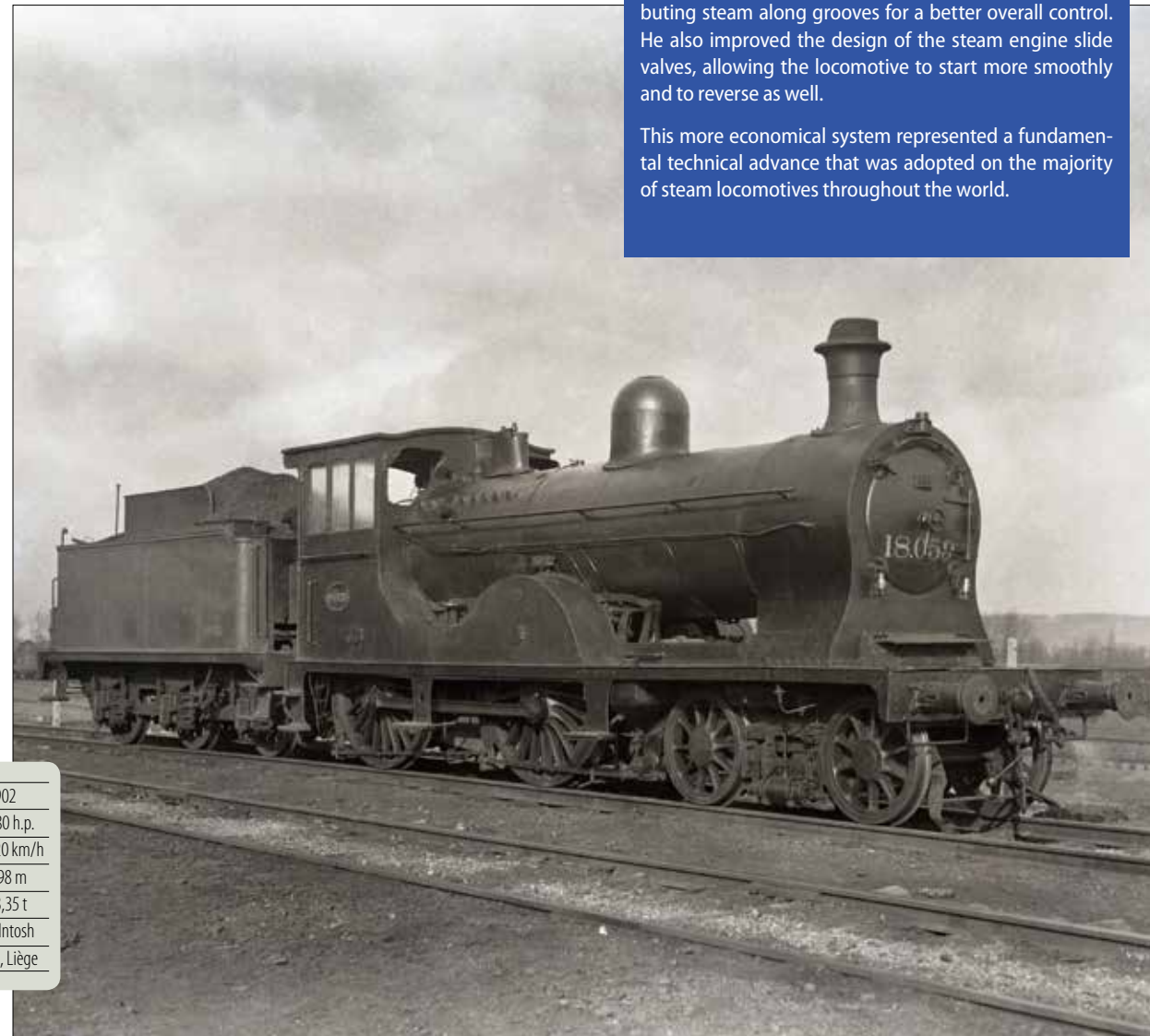
In 1844, he invented a revolutionary system of distributing steam along grooves for a better overall control. He also improved the design of the steam engine slide valves, allowing the locomotive to start more smoothly and to reverse as well.

This more economical system represented a fundamental technical advance that was adopted on the majority of steam locomotives throughout the world.

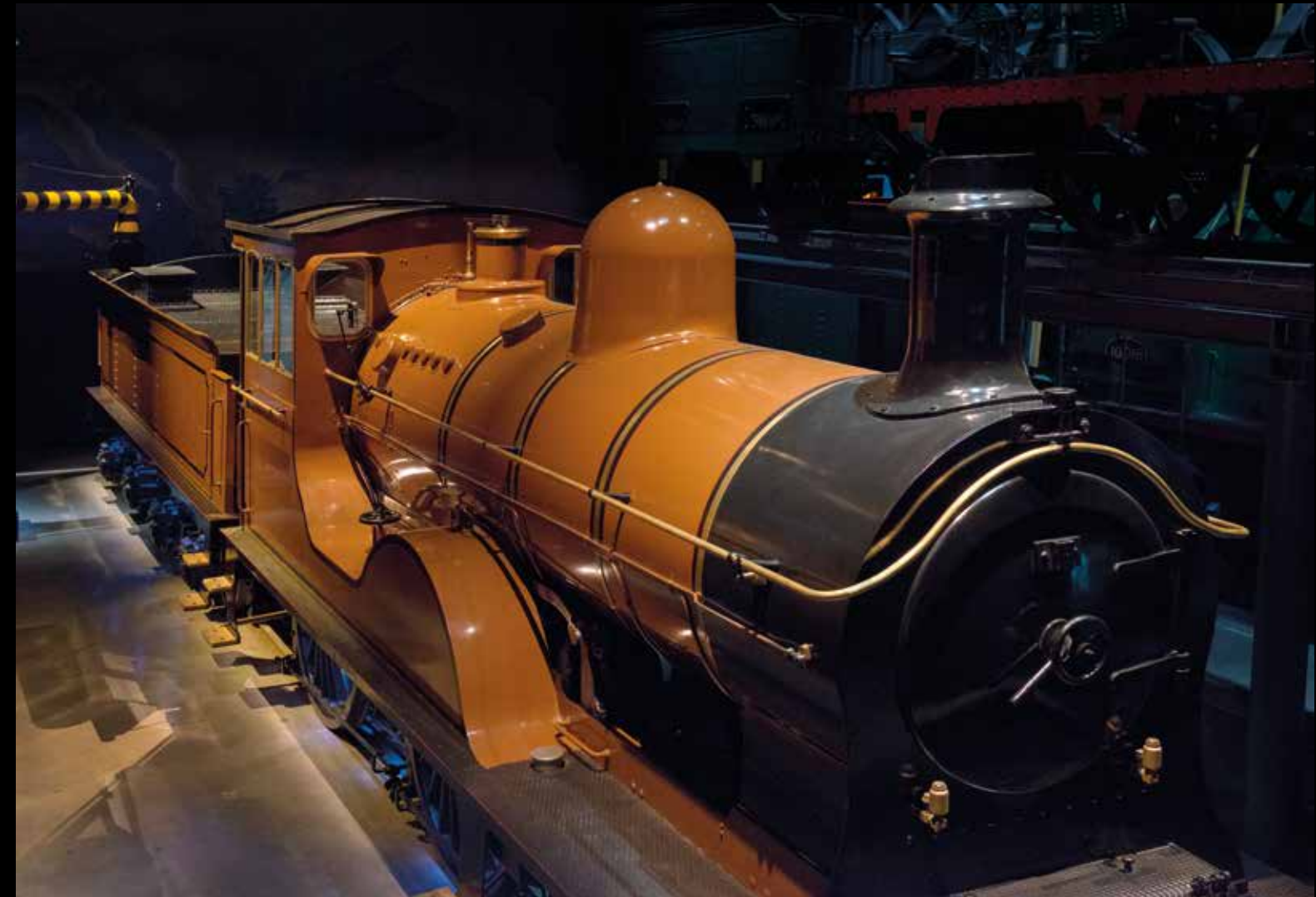
The Type 18 locomotive

The Type 18 locomotive represented a fundamental technological advance. It was capable of such power that it could pull loads of 375 tonnes at an average speed of 95 km/h.

Its qualities caused it to be used from 1908 on to haul the so-called block-trains. These convoys were made up of indivisible sets of carriages and circulated between Brussels and Antwerp.



| | |
|------------------------|---------------------------|
| ● Year of construction | 1902 |
| ● Power | 880 h.p. |
| ● Maximum speed | 120 km/h |
| ● Ø back wheels | 1,98 m |
| ● Weight in motion | 53,35 t |
| ● Designer | Mac Intosh |
| ● Constructor | S.A. Saint-Léonard, Liège |





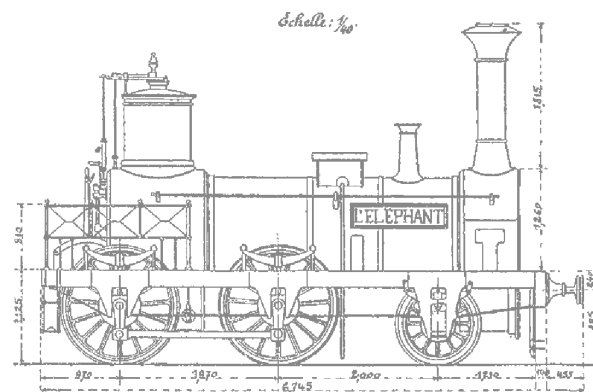
AS SEEN FROM AFAR

Reproduced here on a scale of 1/10 is one of the first trains to have run between Brussels and Mechelen. It is easily recognisable as *L'Éléphant* pulling different types of carriages. This model was made by apprentices of the central workshop at Mechelen.

The first class carriages, called 'Berlines', consisted of a number of compartments of a coach placed on a chassis resting on four wheels. Each compartment had its own doors. A luggage rack was fitted to the roof. The second class carriages were covered charabancs without any windows. Only canvas curtains protected the passengers

from inclement weather conditions... As for the charabancs of the third class carriages, they were open and lacked a gangway. Passengers had to step over the benches to get to their places. At first, these carriages were roofless. From 1838 on, however, they were converted to closed compartments.

L'ÉLÉPHANT



The first order of railway locomotives by the Belgian state from the English constructor Stephenson consisted of *L'Éléphant*, *La Flèche* and *Stephenson*. *L'Éléphant* was the most powerful engine of the three, to the point that it was able to bring back under its own steam all thirty carriages of the inaugural trip.

At first, no distinction was really made between the locomotives drawing passenger carriages and those pulling freight trains. It was just accepted that small-wheeled machines were more suitable for heavy and low-speed trains.

For that reason, from 1839 on, *L'Éléphant* was used for the most part for freight trains. The famous locomotive continued its service until 1865, before being sent to the scrap yard.

This model is a replica in wood on a scale of 1/1. Though its date of construction is not known, we do know it featured in the Ghent Universal Exhibition of 1913.



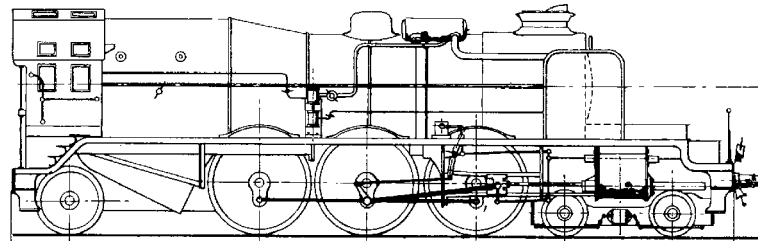
NAMES GIVEN

L'Éléphant, *L'Anversoise*, *Pays de Waes*, *Bayard*, *Rubens*, *L'Hercule*... such were the names given to the first locomotives. From 1876 on, locomotives were given a number instead of a name.

On the initiative of Alfred Belpaire, the Belgian State locomotives as well as the majority of those from the companies, were classified by type: 1 to 18 for expresses and passenger trains; 20 to 39 for hauling goods and mixed purpose trains; 40 to 49 for various types with separate rail tenders, and 50 to 59 for shunting locomotives.

Shunting locomotives may well have had a number, but the railway personnel preferred to give them a name of their choice. This habit took hold in the marshalling yards for communication purposes and because the drivers liked names such as *Juliette*, *Hortense* or *Henriette* better than numbers. This lasted till the arrival of female employees at the railways. Such names were subsequently replaced by more neutral ones like *Mexico*, *Saturn* or *Pluto*.

✂ The engineer's notebook



Locomotive 10.018 'Pacific' or the Queen of Luxembourg!

The Type 10 locomotive 'Pacific' was one of the most remarkable creations of the engineer Jean-Baptiste Flamme. This engine was designed to respond to the growing demand for speed and power in rail transport.

In service from 1910, it was at the time the most powerful locomotive in Europe! During the 1920's, it reached a top speed of 120 km/h. Its exceptional qualities made it suitable for the pulling of heavy express trains.

In 1928, the Type 10 locomotive gained 'royal' honours for pulling the *Edelweiss*, a deluxe train operated by the *Compagnie des wagons-lits* on the Brussels-Luxembourg line.



JEAN-BAPTISTE FLAMME (1847-1920)

Some remarkable innovations can be credited to this engineer, among them the technique of superheating which he devised in 1905. This technique consists in greatly increasing the temperature of the steam produced in the boiler (up to 425 °C) so as to avoid condensation. The performance of the locomotive was thus improved.

The Type 10, designed by Flamme, was of course equipped with this apparatus for superheating, which was subsequently used in most locomotives throughout the world, until the end of the steam traction.



| | |
|------------------------|---------------------------|
| ● Locomotive type | Pacific 4-6-2 |
| ● Year of construction | 1913 |
| ● Power | 2,250 h.p. |
| ● Maximum speed | 120 km/h |
| ● Ø back wheels | 1,98 m |
| ● Weight in motion | 104 t |
| ● Designer | Jean-Baptiste Flamme |
| ● Constructor | Usines Cockerill, Seraing |



THE RAILWAY LINE



The locomotives are so imposing that it is easy to forget another essential element of the railways: the track, without which the train could quite simply not run.

The track is a necessary requirement, but not sufficient in itself. It needs to be supported by an effective signalling system, otherwise the train, fixed to the rails, would run completely blind.

Follow the track for the proof!



UNDERNEATH THE PAVING... THE TRACK

The design of a track has not changed since the advent of the railway, though the materials used and the forms of the rail have evolved.

The general evolution of a line can be seen by wandering over the glass pavement. It showcases a track some thirty metres long, displaying different types of rail, the oldest of which date back to 1838 and 1856. They are placed on different sleepers made of wood, metal or concrete.

As the means of traction evolved; the line in due course would become electrified. A section of overhead wires is included in the scenography, while part of a set of points explains the way trains can switch direction on their route.

This short railway line is fictitiously prolonged by a film of a moving track, taking us into reality.



WORKERS, THE DRIVING FORCE

Without the rail track workers, the train would hardly be able to run. Theirs is an ungrateful profession. As they have to break off their work when a train passes by, almost no-one actually sees them at

work. In contrast, the men who put the overhead wires in place make a much greater impression. But nevertheless, without the former, the latter can do all they like, still the train would not run.



SIGNALS FOR COMMUNICATION

Where there is speed, there is a potential danger. The same rule applies to the railways. Since the start of railway operation a comprehensive security system has been developed to prevent accidents.

The basis of this security system lies in the signals. Their function is to give instructions to the train driver all along for the whole length of the journey. But please keep in mind that in addition to all these flags, lanterns and other light signals a great many other innovations have been introduced since the nineteenth century, and especially in recent years, for the further reduction of risks.

We have come a long way since the time of the track guards, who were marking out the track every two kilometres to give signals to the trains.



AND THEN THERE WAS LIGHT

The signals with blades are doomed to disappear in favour of light signals, an innovation that was introduced simultaneously with the electrification of the lines. The era of the 'chandeliers', an example of which can still be seen on this image, will soon come to an end.



THE ELECTRIC POWER IS SWITCHED ON

In the nineteenth century, steam had a major impact on the industrial revolution. In the twentieth century, a similar upheaval came with the economic use of two new sources of power: the combustion engine and electricity.

The electrification of the railway network was viable and made economic sense. The decision was therefore taken in 1933 to electrify the Brussels-Antwerp line.

The inauguration took place on May 5, 1935, a century to the

day after the railway's first trip on that same stretch of line. It was a late development compared to some neighbouring countries where electric lines were constructed from the beginning of the twentieth century. But as a result Belgium profited from the most recent progress and could take advantage of the latest developments in this field.

A continuous 3,000 V current was chosen and lines were gradually converted.

By 2014, 89% of the Belgian railway network was electrified.



THE RAILWAYS MAKE ALL CLOCKS TICK AT THE SAME TIME

This accumulation of clocks illustrates well the difficulty that the railways faced in the nineteenth century. How could a timetable be established when there were almost as many different times as there were timepieces? The railways came to a general agreement with everyone concerned in 1881 that all clocks should be set at the Brussels time. This was maintained until, eleven years later, Belgium adopted Greenwich Mean Time (GMT). The master-clock took on the role of 'the guardian of time'. The one in *Train World* comes from Liège.



SHOW ME YOUR ATTIC AND I'LL TELL YOU WHO YOU ARE

All the stuff one stores in one's attic... Things that are no longer used, documents that one means to reread one day, old family pictures, souvenirs of one's childhood and of all those travel trips... Everything in fact that makes up our life. All these objects separately have hardly any meaning, but together they tell a story of who we are. This attic here recreates the collective memory of the railways. It is in these details that the richness of the story is most easily read.



THE CITY OF TECHNOLOGY



[...]
Fear that one day a train will no longer move you...
[...]

Said Guillaume Apollinaire in his poem *La victoire*.

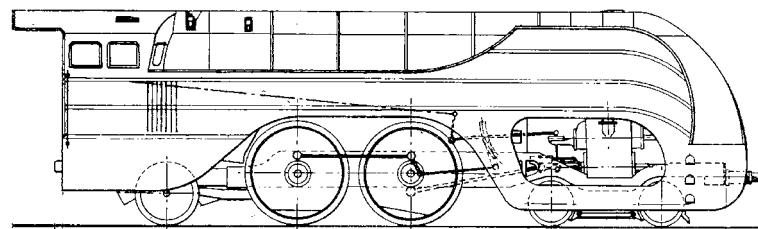
But he had not seen the Type 12, capturing our gaze, enthraling us and leaving us spellbound. Framed here by a diesel railcar and an electric one, the Type 12 recalls a century of steam traction before giving way to its successors.

Here we are in the twentieth century, the century of the magic of electricity and of the combustion engine.

For thirty-six years, from 1930 to 1966, the electric and diesel traction coexisted with steam traction.



✂ The engineer's notebook



Locomotive 12.004 'Atlantic'

The Type 12 locomotive 'Atlantic' is the most fascinating engine ever constructed in Belgium.

It is an absolute classic in the quest for modernity so characteristic for the 1930's. Its aerodynamics, its power and its enormous wheels make it a real monster of speed.

The Type 12, designed by the NMBS/SNCB engineer Raoul Nottesse, and with the streamlining drawn by the Frenchman André Huet, is a glorious illustration of the know-how of specialists and is considered to be the absolute masterpiece of steam traction in Belgium.

Delivered to the NMBS/SNCB in 1939 by the Cockerill factories, it distinguished itself the very same year with a speed record on the Brussels-Ostend line completed in 57 minutes. Travelling at an average speed of above 120 km/h, it gained the *Blue Ribbon* for the world speed record of a steam train on a regular railway line in commercial service.

During speed trials, the locomotive even reached a peak of 165 km/h!



SUCH IS THE PHOENIX THAT RISES FROM THE ASHES

The Second World War left the Belgian network in a sad state: half of its stations and locomotives had been destroyed. Everything had to be reconstructed and, as far as possible, modernised. NMBS/SNCB resumed the electrification of the lines and the steam traction was gradually abandoned.

The locomotive 12.004 ended its career on the Brussels-Mons line and on the Brussels-Lille line with a final trip on July 29, 1962.

Sent to the scrapyards, it was saved at the last moment by the chief of the Brussels-South depot who ordered its detachment from the condemned convoy. Tucked away at the bottom of a shed, then transferred to the museum depot at Leuven, it was restored to working order for the 150th anniversary of Belgian Railways. It was deployed for tourist rides on various lines until 1989 when the failure of a mechanical part sent it back to obscurity ...

| | |
|-------------------------------|---------------------------|
| ● Type of locomotive | Atlantic 4-4-2 |
| ● Year of construction | 1939 |
| ● Power | 2,200 h.p. |
| ● Maximum speed: | 140 km/h |
| ● Ø back wheels | 2,10 m |
| ● Weight in motion | 81 t |
| ● Constructor | Usines Cockerill, Seraing |





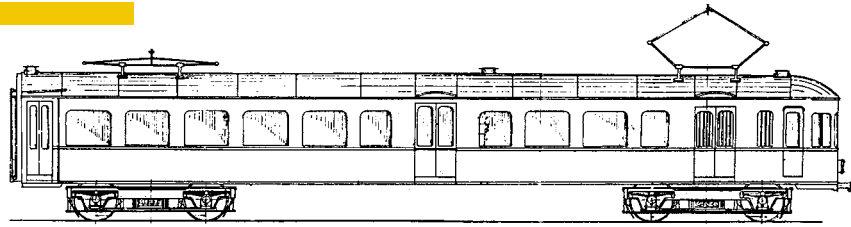
A RAILWAYMAN AND HIS ENGINES

Jean Dubuffet was 15 years old when he entered the central workshop at Cuesmes, near Mons, as an apprentice. Each workshop took ten apprentices a year. He enrolled for general classes (24 hours a week), technical classes (21 hours a week) and some evening classes as well. In other words, quite a hellish week for an adolescent. What is more, no breaks were allowed, meaning he had to go off and hide to eat, while the locomotive stokers, as he observed them from the workshop, could take a meal break at 10 a.m. Jean did not hesitate: he would become a stoker. Such is destiny!

If one was willing to study hard, one could improve one's position at the railways by taking exams, which Jean did several times. It allowed him to become progressively a driver on steam locomotives, an instructor on electric engines and subsequently chief instructor. He thus mastered all three types of traction. He was happiest on board his locomotives as they represented liberty for him. And when he had to drive the royal train, well, that crowned it all!



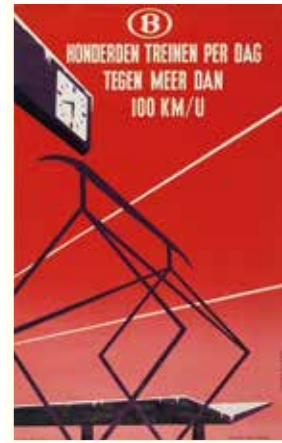
✂ The engineer's notebook



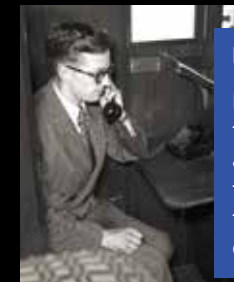
The Electric Multiple Unit

When the Brussels-Antwerp line was electrified in 1935, the Belgian railway company put into service 12 Electric Multiple Units that would run direct services between the two metropolises.

Each EMU was made up of four carriages, with the ones at the front and at the back containing a cab for the driver. One of these front carriages is on display at *Train World*. Their interior design is by the celebrated Belgian architect and designer Henry Van de Velde



| | |
|------------------------|---|
| ● Year of construction | 1935 |
| ● Power | 2,120 h.p. |
| ● Maximum speed | 120 km/h |
| ● Weight in motion | 277,5 t |
| ● Constructors | Ateliers métallurgiques de Nivelles Ateliers de la Dyle, Louvain |
| Electrical parts | ACEC |
| ● Passengers | 356 seats, of which 114 in first class |



HELLO TRAIN?

In 1949 the Belgian railways offered passengers on the Brussels-Charleroi line a service that was unique at the time: a telephone in the train! Six seats of the 1935 Electric Multiple Unit were replaced by a telephone booth with a table, two chairs and ... an operator!



PERFECT AGREEMENT

According to Henry Van de Velde, the more an object correlates with its reason of being, the more accomplished its design.

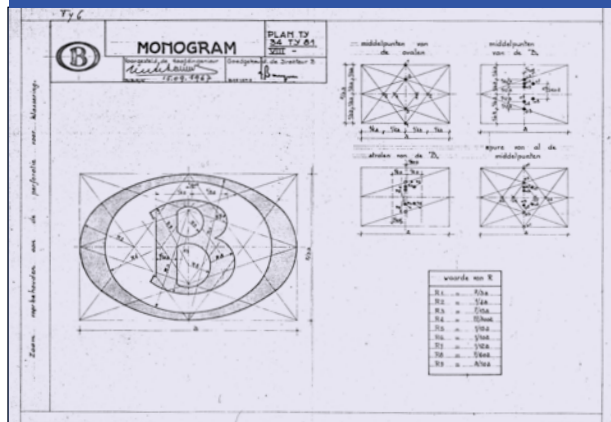
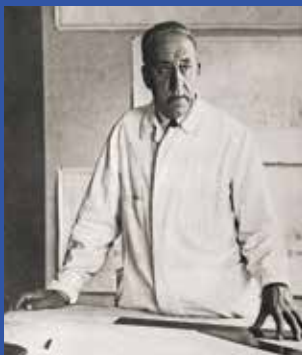
This first class compartment of a K1 carriage, designed by him, demonstrates his theory perfectly.



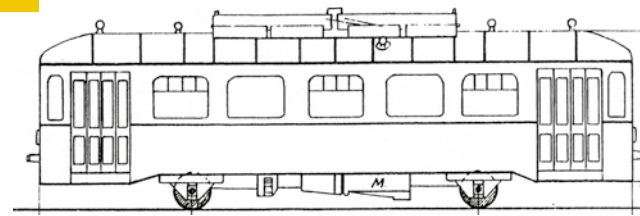
UNDER THE OVAL SIGN

The well-known logo of the NMBS/SNCB was chosen in 1934 as a result of a competition, judged by a jury and presided over by the architect Henry Van de Velde. At the time he worked as the artistic adviser of the NMBS/SNCB.

The creator of the logo was an employee of the railway design department. His design was a 'B' surrounded by two concentric circles. The final version, however, is slightly different: Henry Van de Velde replaced the circles with an oval. This is still the emblem of the Belgian National Railways.



✂ The engineer's notebook

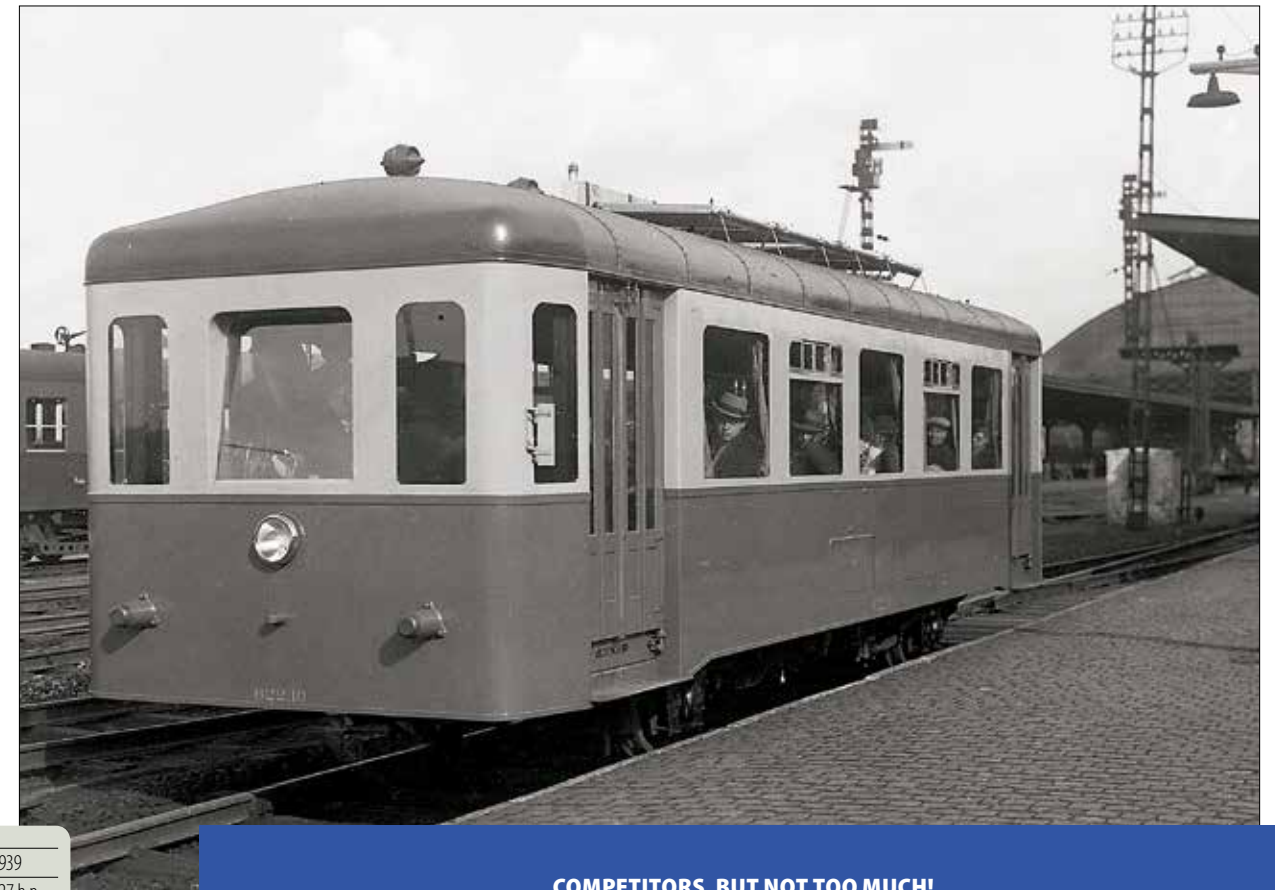


Single Railcar, Type 551

This railcar was designed to improve the poor profitability of the steam-driven omnibus trains. It was a solution to compete on secondary lines with road traffic. It was very much like a bus on rails.

By having a driver's cab at each end, it avoided the manoeuvres required by locomotive-drawn trains at terminus stations. This railcar comprises a single second class compartment. The platforms are for standing passengers, and if necessary to store luggage.

When not occupied, the driver's seat can be slid under the instrument panel. In this way it becomes a protective cupboard that can be locked by key.



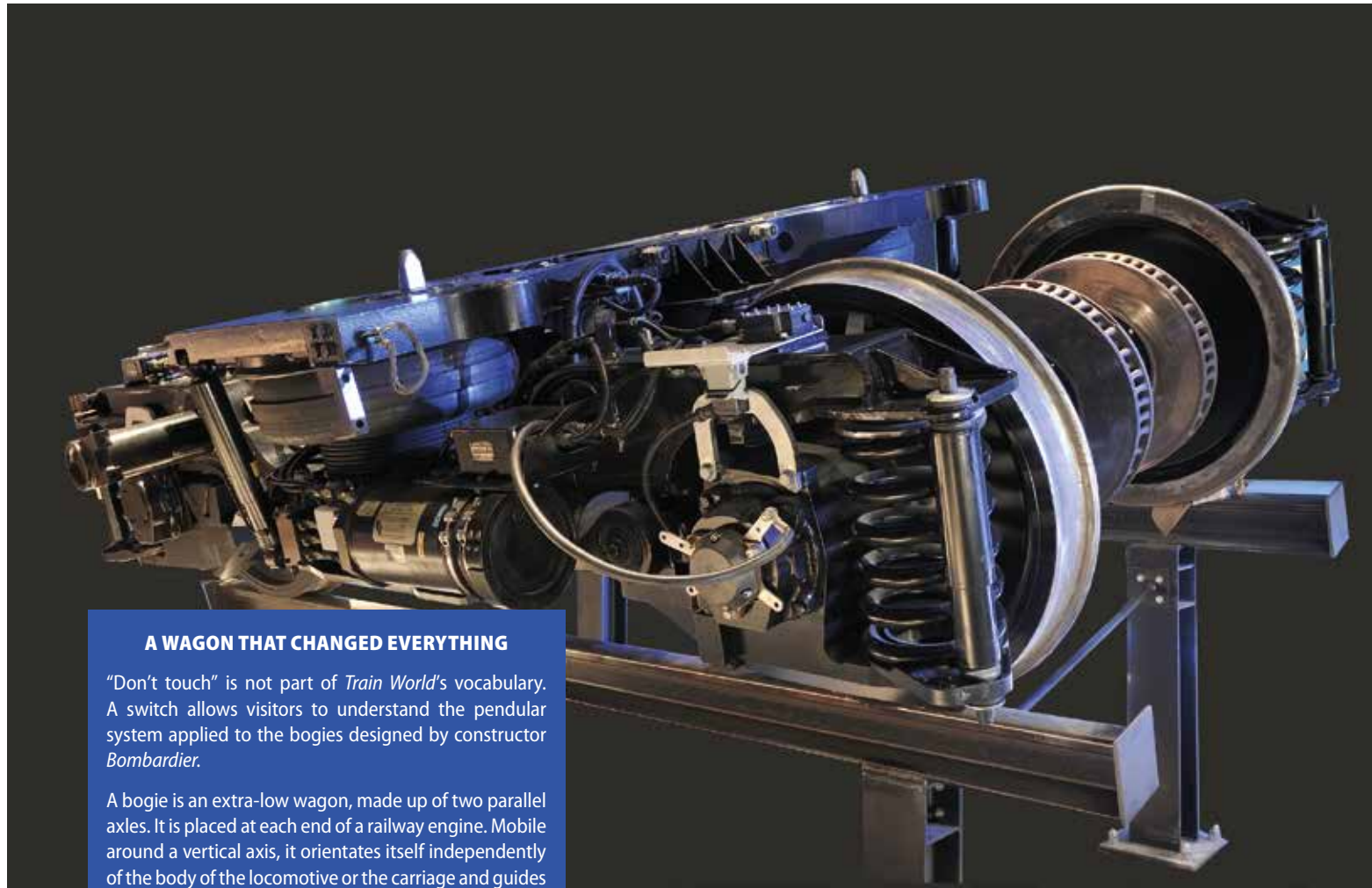
| | |
|------------------------|--------------------------------|
| ● Year of construction | 1939 |
| ● Power | 127 h.p. |
| ● Speed | 58 km/h |
| ● Ø wheels | 0,720 m |
| ● Weight in motion | 22,4 t |
| ● Diesel motor | Brossel |
| ● Passengers | 47 seated and 33 standing |
| ● Constructor | NMBS/SNCB workshop at Mechelen |

COMPETITORS, BUT NOT TOO MUCH!

A lorry engine fitted on a train... Spot the error!

The company *Brossel* was originally, in 1912, a repair workshop. It did not design its own vehicles until 1924, following the purchase of the equipment manufacturer *Arbenz*, whose lorries it sold for a time.

During the 1930's it diversified its operations, producing on the one hand, under the name *Bovy-Pipe*, cars and utility vehicles and making, on the other hand, under the *Brossel* name, heavy industrial vehicles, city buses and railcars for the NMBS/SNCB.



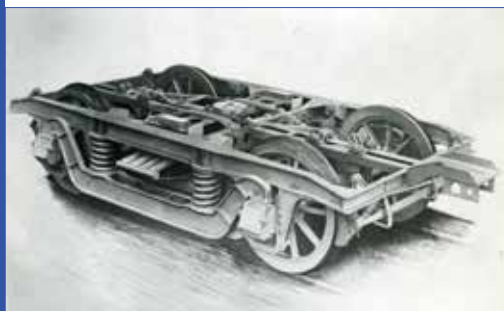
A WAGON THAT CHANGED EVERYTHING

“Don’t touch” is not part of *Train World’s* vocabulary. A switch allows visitors to understand the pendular system applied to the bogies designed by constructor *Bombardier*.

A bogie is an extra-low wagon, made up of two parallel axles. It is placed at each end of a railway engine. Mobile around a vertical axis, it orientates itself independently of the body of the locomotive or the carriage and guides it along the curves, while at the same time reducing the jolting.

The *Bombardier* technology improves this mechanism while allowing a higher speed.

Think of a motor-cycle which leans into a bend. The pendular system does exactly the same thing for trains thanks to jacks applied to detect curves. Trains are thus able to meet higher speeds with a good level of comfort for passengers.



TRACEABILITY

Belgian rail constructors are proud of their know-how and... like to make it known! From the second half of the nineteenth century on, they have therefore fixed their plaques to their engines.

Their pride is justified. In one century the country's principal workshops built some 16,000 steam locomotives! In the nineteenth century there were about thirty – for the most part in Wallonia – sharing the national market and a not insignificant part of the international market.

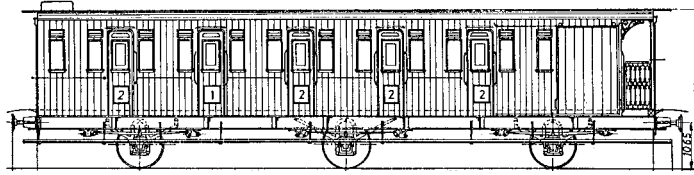
THE TRAIN TAKES US ON AN EMOTIONAL RIDE

Carriages are often witness to the emotions of separation, the joy of reunions, the commuter routine, the pleasure of holidays, and unfortunately pain and suffering too ...

Telling us softly so many stories.



✂ The engineer's notebook



Wooden car Type GCI

The first wooden carriages, with three axles, of *Great Capacity* (GC) were able to offer up to 80 seats. Put into service by the Belgian state from 1888, their dimension and weight required more powerful locomotives and longer station platforms. The carriages were isolated one from the other without the possibility of passing through.

From 1901, they were gradually transformed. They were provided with an interior corridor and a gangway with a handrail to enable the passage from one carriage to another. To the acronym GC was added the letter I for 'intercirculation' (GCI).

For reasons of safety, they were progressively replaced by metal carriages in the early 1930's.

| | |
|---------------------------|---------|
| ● Put into service | 1921 |
| ● Withdrawal from service | 1960 |
| ● Maximum speed | 90 km/h |
| ● Weight | 29 t |
| ● Length | 15,25 m |



A RISKY JOB

The first *Great Capacity* (GC) carriages consisted of a number of compartments isolated from one another by transverse partitions. Access was only possible from the platform by the doors situated on both sides of each compartment. The train

guard could therefore only go from one compartment to another by ways of the running board on the outside. . . due care had to be taken not to slip in wet weather or on ice!



METAL CARRIAGES FOR SLOW TRAINS

The NMBS/SNCB introduced its first large series of sturdy metal carriages in 1932. In 1936 the railway company procured a number of metal M1 carriages, designed after the trains operating in the Paris suburbs. They had a central corridor and spacious platforms with pneumatic doors. These were controlled from a distance, which saved the train guard from having to close them one by one.

But these carriages had a disadvantage: their weight required them to be drawn by more powerful locomotives and to run on reinforced tracks. Moreover, their comfort level was quite rudimentary. Because they could transport a large number of passengers, these carriages were mainly destined for slow services but sometimes for direct and semi-direct trains as well.



A HOSPITAL TRAIN

It is astonishing how stretchers were accommodated in a M1 carriage!

During the Second World War such stretcher shafts were fitted in 73 third class carriages, who brought back wounded soldiers. Some 11,000 Belgian soldiers benefited from this service, as well as survivors of the concentration camps.

All the carriages were returned to their original state after the war, with the exception of this one, which was made available to the Red Cross. It was used to transport the sick and wounded to Banneux, a pilgrimage site in Belgium.



PERMISSION TO MOVE...

The economic boom of the nineteenth century led to the shifting of labour from rural areas to the industrial regions and the mining districts.

This massive exodus was a serious cause of concern to the public authorities who sensed a potential danger: workers could be influenced by militant social movements and demand better salaries. Furthermore, from a general health point of view, the dreadful living conditions in crowded tenements were a possible source of epidemics. It was therefore better for workers to remain in their original environment, at home where they could additionally cultivate a plot of land.

In 1869, the government therefore decided to create a discount season ticket for workers. It was restricted to manual workers who were paid a piece rate or weekly wages. Belgium so became the first country in Europe to introduce discount season tickets for workers.

The workers travelled every morning in carriages coupled to regular trains taking them to the industrial centres and mining districts. In 1890 they were allowed to board any train, but on condition not to disturb the other passengers!



PEOPLE ON A DAILY MOVE

Belgians prefer to travel daily by train to their place of work rather than live closer to it. These particular passengers are called commuters.

ENJOY YOUR HOLIDAYS!

The law on paid holidays of June 27, 1936, granted six days of vacation for workers. For its part, the NMBS/SNCB introduced some attractive travel offers to make access to trains available for everybody. It launched a 'worker's holiday card' that allowed people to travel at reduced train and bus fares. It also offered cheap travel packages to visit Belgium's cultural destinations.

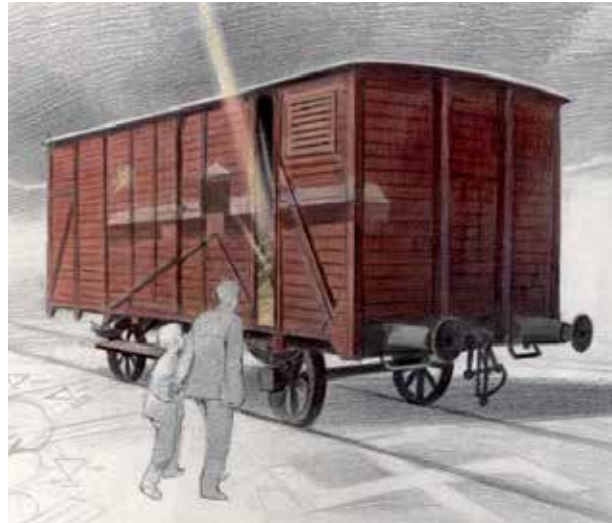


CAMPING IN A RAILWAY CARRIAGE

Camping in a railway carriage rather than in a tent, and located in some very attractive parts of Belgium, such as the Hautes Fagnes, the Ardennes or the Kempen ...

The NMBS/SNCB launched this holiday formula in the 1930's. An original initiative promoted by some heavy advertising!





"LEST WE FORGET ..."

The history of the Belgian railways is not only about social progress. There are also the dark times as symbolised by a wagon.

From July 1942 to September 1944 a considerable number of Jews and Gypsies were deported to the extermination camps. Initially these victims travelled in third class carriages but, in order to prevent their escape, they were later transported in closed goods wagons.

These convoys were driven, against their will, by Belgian train drivers who also had to drive the German military trains. This situation stemmed from the decision taken in 1940 to take up work again in the interests of the country and the population, despite the German occupation. As a result the activity resumed on the railways and with it the obligation to drive German trains, regardless of their destination.

Thousands of Belgian railwaymen lost their lives during both world wars because they chose to resist by every means possible: sabotaging equipment, hiding escapees from the concentration camps or passing on information about train movements to the different resistance organisations.



THE GHOST TRAIN

On the eve of the liberation, as the Allied Armies crossed the Belgian border, the Germans organised the transportation of 1,500 prisoners to Germany.

On the early morning of September 2, 1944, these political prisoners, incarcerated in the prison of St-Gilles, were taken to Brussels-South station to board the train to Germany.

The departure was delayed till late in the afternoon when the locomotive 'Atlantic' 1202 and driver Verheggen were requisitioned under threat to make the journey.

The railwaymen used every means to obstruct its progress, to the point that the train took 10 hours to cover 40 kilometres, the distance between Brussels-South station and Mechelen.

The train would not go any further. Under coercion, SS General Jungclaus gave the order during the night to free all political prisoners.

Those on the train did not know it yet, but they were out of danger.

On the morning of September 3, the train returned to Brussels.

It reached its destination in only 30 minutes!





GIRL POWER AT THE RAILWAYS

The occupation of crossing keeper appeared in the middle of the nineteenth century to ensure the safety at level crossings. This was often taken up by the wives of track workers. Apart from manoeuvring the gates, they carried out some maintenance tasks and a general surveillance around the crossings.

They were the first women to enter the railway services, followed in 1958 by the hostesses employed to guide visitors to the Brussels Universal Exhibition.



RAILWAY PEOPLE

One often joins the railways from father to son for a simple reason: the love for the profession is passed on from one generation to the next. Furthermore, the railways offer a great variety of jobs and the opportunities for career advancement. The portraits of men and woman from yesterday and today, projected on the façade of the house, recall how essential their work is for keeping the trains running.

THE RAILWAY HOUSE

The railway house in *Train World* is there for a reason. It stood on the portion of land intended for the museum. It was once the residence of the railway personnel whose presence at the workplace was required 24 hours a day. It was therefore quite obvious that it should be integrated in the museum.

It has been furnished for *Train World* in the style of the 1950's, a flourishing period for the Belgian railways, characterised by the democratisation of train travel in Belgium as well as to Europe.

It housed quite a number of tenants, including the Telemans family.

Guido, one of the sons, had the chance to see his former home again during the building of *Train World* and he could not hide his emotions. He recalled:

My father joined the railways as a simple track digger. But he was determined to aim for a better job, so soon he became a track foreman. A good promotion but it meant that the family had to move to Schaerbeek as my father was made responsible for the important sector of Schaerbeek, including the marshalling yard, the largest in the country, the depots of the rolling stock, and dozens of kilometres of track.

We moved in at the height of the war, in 1942, and this area was particularly vulnerable to bombing. At every alert, we had to dash to the shelter that my father and his workers had dug out to protect their families.

I remember also a Red Cross train on a side track. I was with my brother and out of curiosity we peeked behind the curtains... and saw the wounded. But more memorably: we were given a good scolding by a fierce nurse!

This house was, for me and my siblings, our childhood universe, where we grew up, rocked to sleep by the incessant noise of the trains ...



SIGNALS AND LEVERS

The world of signals is little known. It is, however, a key instrument of railway safety.

The signals along the track are only the visible part of the much more complex mechanisms that are housed in the signal boxes.



MEN AND TRAINS AND SIGNAL BOXES

As rail traffic grew and speed increased, the signalling systems became more complex. Signals, rudimentary and mobile at the beginning, became fixed and were no longer separately directed, but in a centralised way from the signal boxes. These boxes were at first installed at the fork branches and later close to a railway station. The block system improved the device. It made sure that only one train at a time could run on a given section of rail track.

The twentieth century saw electric signal boxes alongside mechanical boxes for some time.

Today the new signal boxes are all electronic. They allow computerised management of traffic, ensured by Infrabel, the infrastructure manager of the Belgian Railways.

When trains run at a high speed, the signals along the track are no longer clearly visible. Therefore the signalling data are sent directly to the on-board computer in the driver cab by way of beacons and aerals alongside the track.

The world of railway signalling is changing and the signals along the tracks will disappear sooner or later. Small wonder that nowadays we no longer call those working in the signal boxes 'signallers' but 'operators' instead. From being a hard and physically demanding job, the profession has become cerebral and more sedentary.

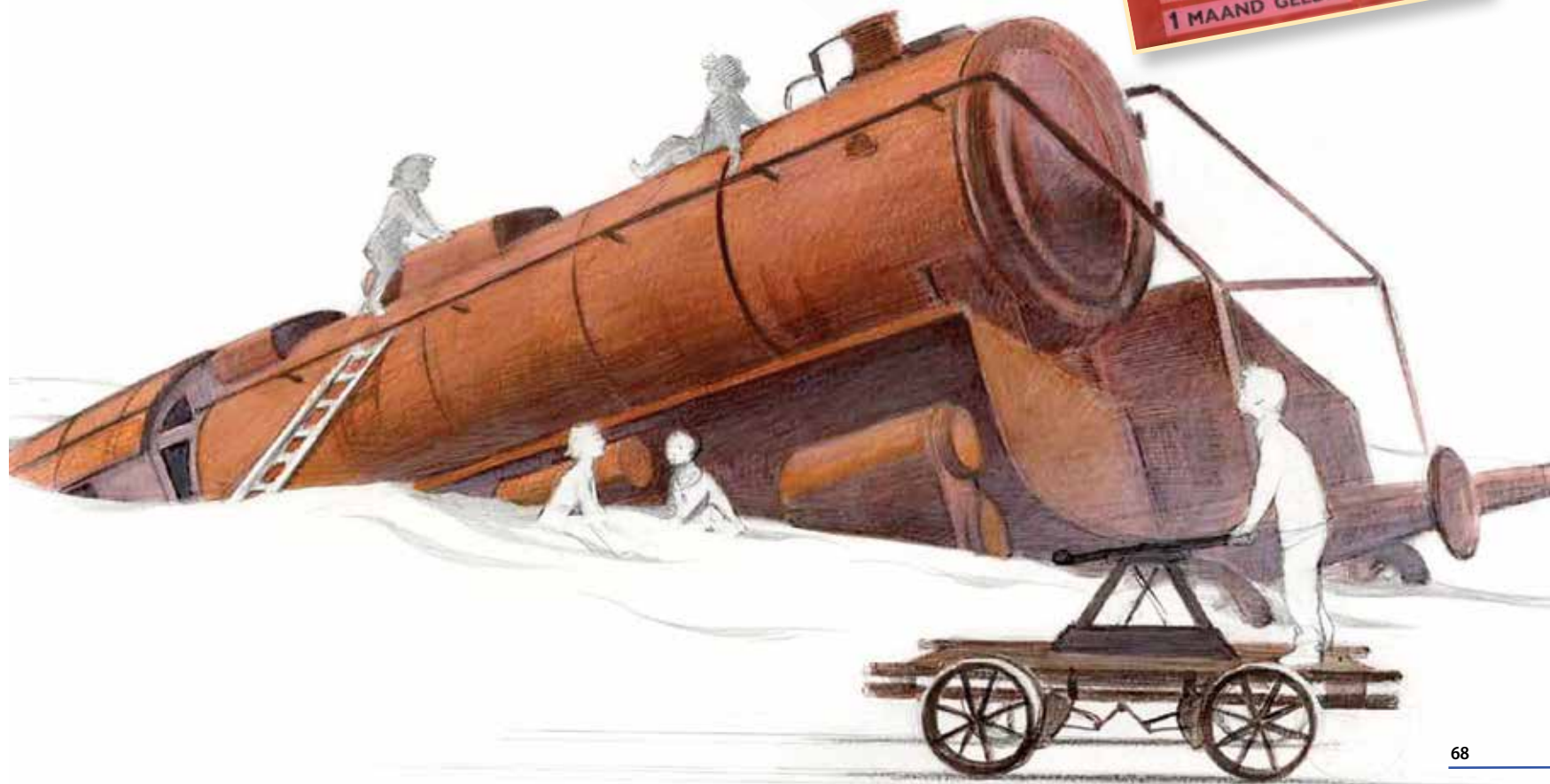


THE KID'S LOCOMOTIVE

At *Train World*, nothing is impossible: look, there is a real locomotive in the sand!

This engine with two axles (MF33), built in 1912, was used for shunting on the private junction of the coal company *Charbonnages Monceau-Fontaine*.

It was a gift to *Train World* from the tourist association *Chemin de Fer à Vapeur des 3 Vallées*, which runs the museum line Mariembourg-Treignes.





TRAINS, TRAINS, TRAINS...

To each type of passenger his/her carriage.

To each type of goods, its specific wagon.

Everyday regular trains run next to exceptional or special trains.

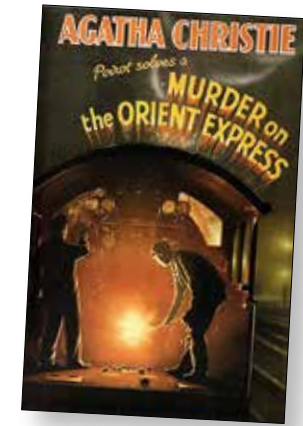


HERCULE POIROT'S TRAIN

Well before the appearance of the TEE, there were trains travelling across Europe without a changing of rolling stock at the borders, and managing to avoid too many customs formalities. They consisted of luxurious carriages including a restaurant, a smoking room, a salon with piano, and a number of private compartments with bunks, and a small bathroom.

These trains belonged to the *Compagnie internationale des wagons-lits et des grands express européens*, created by Georges Nagelmackers in 1876.

These mythical trains captivated the spirit of the Belle Époque and of the Roaring Twenties. They inspired one of Agatha Christie's best-known books: *Murder on the Orient Express*. The author based the bizarre setting of the story on a real event: the isolation of the *Simplon-Orient-Express*, blocked by a blizzard for six days in February 1929, near Cherkeskoy in Turkey ...





ROYAL SUITE I

Leopold I, the first king of Belgium, supported the project for the creation of a railway. His son, Leopold II, showed just as much enthusiasm for this new means of transport. Was it surprising then that the Court should have its own rolling stock at its disposal, made up of about forty wooden carriages?

The royal carriages were used for conveying the sovereigns in Belgium and Europe, as well as being made available for foreign heads of state during their official visits to Belgium.

This saloon carriage was put into service in 1901 and is in the brown livery of the State Railways. As its comfort and facilities needed to be at least equivalent to those in the major European expresses, its construction was supervised by the *Compagnie internationale des wagons-lits*, experts in luxury carriages and travel. This sensible move must have pleased Leopold II as he had always encouraged the projects of the company's founder, Georges Nagelmackers.



ROYAL SUITE II

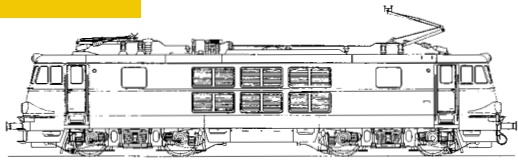
The second royal train was built in 1938/1939 at the NMBS/SNCB's central workshop at Mechelen. It was inaugurated by Leopold III in May 1939 on the occasion of a royal visit to Belgium by Queen Wilhelmina of The Netherlands.

During the reign of Baudouin, until 1976, the train was used by members of foreign royal families during their official visits, and by the king for his private travels. Subsequently, the sovereigns preferred the classic, more comfortable trains of the NMBS/SNCB.

The royal train consists of three metal carriages, in the green livery of the NMBS/SNCB. Baudouin was on board this train when he inaugurated the North-South connection on October 4, 1952.



✂ The engineer's notebook

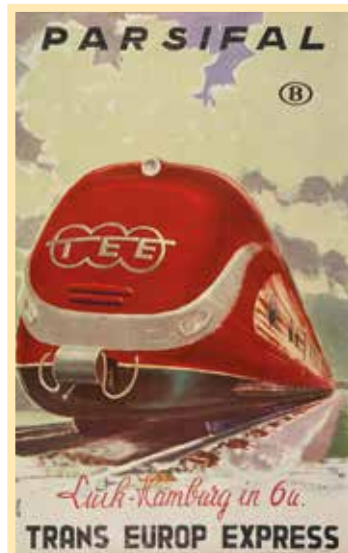


The Tri-voltage locomotive series 15

These locomotives were ordered by the NMBS/SNCB to pull the TEE trains on the 'Paris-Brussels-Amsterdam' line, which was fully electrified in 1963. They allowed an increase of the transport capacity of the TEE, which originally used diesel railcars.

Put into service in 1964, they were the first multicurrent engines of the NMBS/SNCB. They could run equally under the differing voltages of 3,000 V in Belgium, 25,000 V in France and, in the Netherlands 1,500 V.

| | |
|------------------------|-----------------------|
| ● Year of construction | 1962 |
| ● Number of engines | 5 |
| ● Power | 3,562 h.p. |
| ● Maximum speed | 160 km/h |
| ● Length | 17,750 m |
| ● Constructors | |
| Mechanical part | Brugeoise et Nivelles |
| Electrical part | ACEC |



BUSINESS TRAVEL TAKES ON IMPORTANCE

The *Trans Europ Express* (TEE) was introduced in 1957. These highly prestigious trains provided a daily connection between the major European cities.

From the start the targeted clientele was that of business men and women who required a fast comfortable means of transport. The timetables were specially adapted to business hours and meals were offered on board. The customs formalities were conducted on board and a special seat reservation system was introduced.

These trains were given evocative names, such as *Étoile du Nord*, *Memling*, *Oiseau bleu*, *Rubens*, *Diamant*, ...

Their high running costs and the fierce competition of air travel proved to be fatal. The trains disappeared in 1987... to return again under the guise of high-speed trains.



A STAINLESS STEEL TRAIN!

From their introduction into service in 1957, the TEE trains were an undeniable success. To increase the number of passenger carriages on the first PBA (Paris-Brussels-Amsterdam) trains, additional equipment known as 'Mistral 69' was introduced.

These carriages were in stainless steel and their level of comfort was much higher than the earlier carriages. This model dates from 1974. It does not yet have a second class, which was progressively installed in TEE carriages from 1978 on.



AN OFFICE THAT SORTS MORE QUICKLY THAN ITS SHADOW

The first travelling post office on the continent ran on September 15, 1840, between Brussels and Antwerp. This office assured both the sorting and the transport of mail. By doing so, it eased the workload of stationary sorting offices. It allowed the mail, deposited before the last posting time at any location, to be delivered the next morning to its addressee, even if he or she lived at the other end of the country.

This postal carriage is a German war trophy of 1944. One sees on its sides the post horn, emblem of the mail service, and a letter box.

KNIGHTS OF THE POST

The postmen who worked on the trains were called 'ambulants' (wanderers). Due to their isolation they formed a separate community that was known for its spirit of independence and of initiative. They were nicknamed 'the knights of the post'!



THE TRAIN WILL LOOK AFTER YOUR TRUNK!

Since its beginning, the railways have transported all sorts of things. For instance, small parcels and luggage. Before leaving on holiday, people could send their trunks ahead, with the special pick-up, delivery and return service of the railways. This was organised with the use of horses and carts.

The Brussels Tour and Taxis station was the hub of this service during the twentieth century.

At its creation in 1926, the NMBS/SNCB continued this activity but replaced the horse power with lorries.

Another type of transport carried out by rail was that of the homing pigeons ... Previously these were brought to the place of release on foot, but the journey took several days. By train the pigeons arrived quickly and in good shape.



OBSTACLE RACE

From small parcels to heavy loads, there is only one bridge to cross in *Train World*: a span of the *Pont du Luxembourg*.

As trains have to run from one station to another on the shortest route, they sometimes have to cross a bridge or viaduct or go through a tunnel.

The Belgian rail network has a multitude of technical structures. From the simplest to the most sophisticated, they illustrate the progress accomplished in engineering since the beginning of the railways.



A BRIDGE ON THE MOVE

No, this bridge is not just a showcase but an authentic span of the old *Pont du Luxembourg* which spanned the river Meuse at Namur until 2011.

It is a real survivor if one considers that it was dynamited by Belgian sappers and then by the Germans, in 1914 and in 1940, and subsequently by the allied forces and Germans in 1944.

Built in the years 1853 to 1856, it was rebuilt in 1920, then again in 1948/1949. This bridge was transported to *Train World* by route in a special convoy.



VIERENDEEL BRIDGE

There are as many bridges and viaducts as there are obstacles to surmount and loads to support. But the bridge built by Arthur Vierendeel (1852-1940) is particularly revolutionary. He had the audacity to challenge the dogma of the triangular girder. He proved that the girder in arcades was more resistant than the girder in diagonals by constructing his first road bridge on this hypothesis, the bridge at Waterhoek (Avelgem) on the river Scheldt.

His girder was subsequently used for many bridges, notably rail bridges, but also for the construction of railcars and for the framework of ships and buildings.

Arthur Vierendeel liked his creations to be attractive. "The engineer should first of all feel, and then calculate," he would tell his students.



THE ANGLES OF THE CANAL DU CENTRE

The Nimy viaduct on the Brussels-Mons line crosses the Canal du Centre that links Blaton with Péronnes. Its trellis structure enables it to support significant loads.

THE ARCHES SPANNING THE PEDE VALLEY

Model of the concrete viaduct constructed in 1929 on the new Brussels-Ghent line. Composed of 17 arches, it dominates the Pede valley at a height of 20 metres.



WHEN THE TRAIN GOES TO SEA

In 1924, a daily ferry service between Harwich and Zeebrugge, linked Great Britain with the continent. The ferry transported freight wagons designed to travel both on the continental and on the British railways. A win-win situation as there was no more need to unload wagons or to transfer goods in the ports, and there were fewer losses of fragile or perishable goods.



TANKER-WAGON

This tanker-wagon, dating from 1901, represents one of the specialist wagons used for the transport of petroleum. After 1918, the number of specialist wagons grew with the diversification of transported products: chemicals, fuel oil, gas and food products...

Think of whisky, if one is like Snowy!



A REVOLVING BRIDGE TO YIELD A BETTER RETURN

The revolving bridge in railway depots aided to shift or to turn steam locomotives with their tenders.

THE NORTH-SOUTH CONNECTION

A much contemplated project

At the beginning of the railways, Mechelen was to be the hub of the Belgian rail network. However, as passenger transport became more successful than the transportation of goods, the centre shifted to Brussels.

Two railway stations were built in the capital to service the growing traffic: Brussels-North, in 1841, serving the lines to the north, east and west, and Brussels-South, in 1840, for the southern lines.

Because of the continuing increase in railway traffic, the maximum capacity of the two stations was reached within a period of ten years. It was then that the idea arose for a connection between the North and South stations, with a central stop in the heart of the city.

Whenever railway traffic was on the brink of saturation this idea popped up again. Numerous commissions were charged with a feasibility study of the project, initially of its original plan, or later, in conjunction with the electrification of the network. After a great deal of discussion, a decision was reached in 1903, to build the connection based on a layout which corresponds largely with that of the actual connection.

However, the construction dragged on to such an extent that in 1935 the *Office national pour l'achèvement de la jonction Nord-Midi* was created to bring the project to a conclusion.

The North-South connection was inaugurated by King Baudouin on October 4, 1952; more than a century after the idea was first suggested.



QUAINT SCENES

The building site of the North-South connection gave rise to a number of rather unusual scenes: children are playing in the sand in the *Putterie* district during the construction work; 24 metres long girders as high as a man are being conveyed with the assistance of the *Brabançons* or Belgian heavy horses and special carts; the hazardous tight-rope walking executed by the workers charged with the placing of the overhead wires... and even an international exhibition mounted by the Belgian Association of Poultry Farmers in 1948 on the platforms of Brussels-Central!



AN ALTERNATIVE TUNNEL VISION

The regular methods of digging tunnels could not be applied to this particular tunnel on account of the characteristics of the area. The work was therefore undertaken in open trenches, according to a method devised by engineer Franchimont.

Nowadays tunnels are dug using tunnel boring machines, designed to deal with the nature of the soil and the geometry of the tunnel.



SWEET MEMORIES ...

Are you looking for a long lost train in the attic ... or perhaps in your imagination?

Let yourself be submerged in the delicious pleasure of your childhood memories.

A train sweeps through the countryside, over mountains and viaducts, past cliffs and rocks and meadows. ... time stops for a while. The smells and the flavours of the past come alive again, what a joy!



THE FUTURE IS AT THE END OF THE TRACK

How does it feel to drive a train? What will the railway lines of tomorrow look like? Enter one of these train simulators and find out!

Take the driver's seat and follow the instructions. A three dimensional railway line will take you to a city of the future.

WHEN TOMORROW HAPPENS TODAY

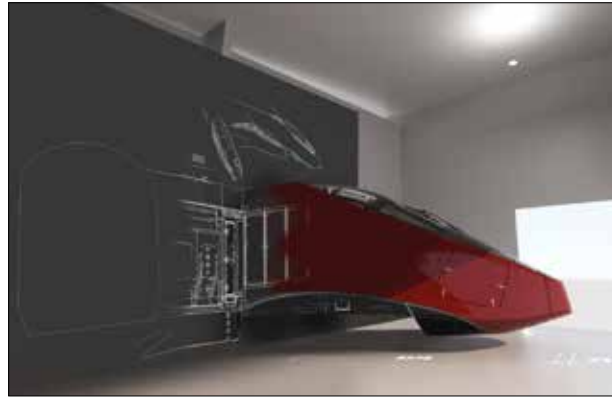
The history of the railways is a succession of small and big inventions. Sometimes their creation and application, conjugated with another technology – a driver assistance system, for example – could result in a remarkable leap forward for the railways.

This was the case for the steam locomotives, and the high speed trains are another excellent example. And the adventure is far from over.

Let us end our journey into the railway universe with a quick peep into the future.

This film about the future of the train was made in partnership with the *International Union of Railways* (UIC).





A PAIR OF SEVEN LEAGUE BOOTS

The high speed railcar *AGV* is built by *Alstom*. Successor to the *TGV*, it has a motorisation that is spread the length of the train. Due to the use of composites and an improved traction system, *Alstom* has managed to reduce the mass and the energy consumption of this train by 15%. The *AGV* has been running in Italy under the name *Italo* since 2012, principally between Milan, Rome and Naples.



EUROSTAR CONQUERS THE CHANNEL!

Built by *Siemens*, this second generation high speed train has a more rounded and aerodynamic design. Its motorisation is spread the entire length of the train, unlike the first *Eurostar* where motorisation was concentrated in the two engines. The maximum speed is 320 km/h, and the Wi-Fi in these most recent *Eurostars* works even in the Channel Tunnel.



TRAIN NOSES AHEAD

The twenty-first century will be the century of speed. And this goes for the trains as well!

Compared to one of its most ardent competitors, the airplane, the train offers some solid arguments to be taken into consideration: no need for cumbersome luggage handling, railway stations in the city centres, freedom to move about and refreshment carriages.

The train will run faster and faster. A prototype of the next Japanese high speed train with magnetic suspension reached a record speed of 603 km/h on April 21, 2015.

Closer to home, in Italy, high speed railcars (*AGV*) travel at 300 km/h commercial speed. And that is only one example. Tapered and streamlined like birds, high speed trains cleave the air and the walls of *Train World*.

A TRAIN CALLED DESIRO

Desiro is the name of a new generation of electric railcars, introduced in 2008 and designed by the German manufacturer *Siemens*. All the *Desiro* trains are equipped with the latest inbuilt signal technology.





LE BELGE SALUTES YOU

The steam locomotive *Le Belge* is the first engine to have been built in Belgium. It left the *Cockerill* factories at Seraing on December 31, 1835, only eight months after the inauguration of the first railway line in Belgium. Quite a symbol!

The life-sized wooden replica on display in the shop emphasises its modest dimensions. Compared with a Type 10 locomotive, it's a flyweight: 8 tonnes compared with 104 tonnes, and power estimated at 41 h.p. against 2,250 h.p.!

But *Le Belge* possesses already all the characteristics of a steam locomotive for years to come. It also gives us an idea of the progress achieved in the construction of these engines.



**DID YOUR VISIT TO TRAIN WORLD
MAKE YOU WANT TO FIND OUT MORE
ABOUT THE BELGIAN RAILWAYS?**

Consult the website www.trainworld.be

Here you will find all the information on the NMBS/SNCB heritage collection, its numerous historic vehicles, railway-related objects, photographs and film and video. As well as posters, books, documents and historic archives.

REALISATION

Catalogue

Editorial management

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The editorial staff
and NMBS/SNCB extend
their thanks to:

François Schuiten
Véronique Carlier
and Pascale Jeandrain (*Expoduo*),
Scenographers of *Train World*

for their collaboration
in the preparation
and the conception
of this catalogue.

The teams of *Eurostation*
and the NPO *Train World*



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SNCB would like to thank
the companies and institutions
participating in and supporting
Train World

INFRABEL
Right On Track

ALSTOM

BOMBARDIER
the evolution of mobility

SIEMENS



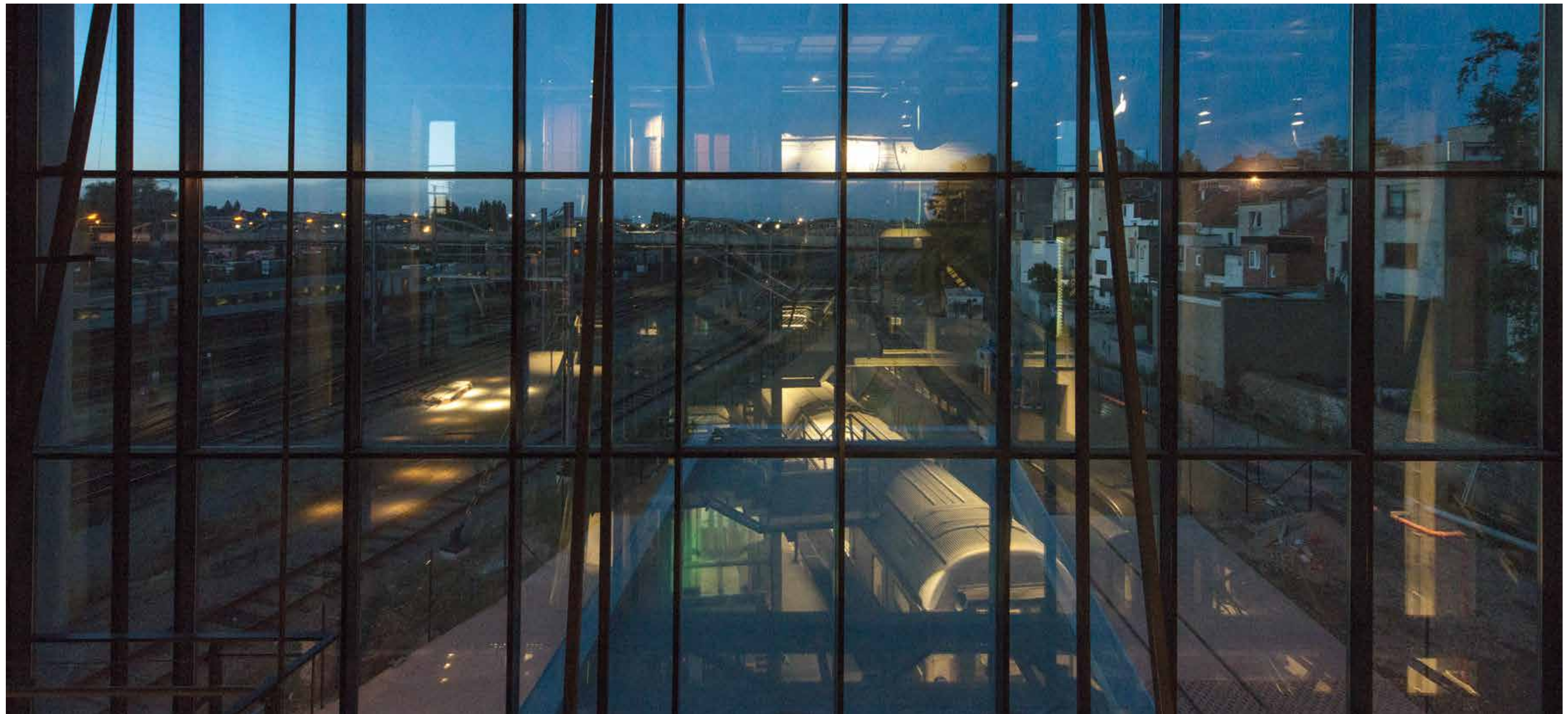
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THALYS



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The first train journey in Belgium and on the European continent took place on May 5th, 1835.

This catalogue, designed for *Train World*, relates the story of the pioneer adventures of the Belgian railways, as imaginatively recreated by François Schuiten on the magnificently restored Schaerbeek station site.

This book illustrates the passion of men for the trains and legendary objects assembled in *Train World*.



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ISBN 978 2 87424 345 5



9 782874 243455

