

# “Remove armies of lawyers from the system – more rail for the same money!”

The British railway privatisation model has failed. Now the new British Labour government is bringing the rail system back under state control at full steam. Immediately after the government program was announced, we spoke to Prof. Dr. Jon Shaw. He teaches and researches at the University of Plymouth. Since the 1990s, Shaw has become known through various publications on the privatisation of the British railway system, integrated ticket offers and other areas of transport and mobility.



Credits: Hermann Schmidendorf

**?** **CARGO FREIGHT JOURNAL:** Professor Jon Shaw, I am delighted to be speaking to you again about rail issues in the UK. It is worth summarising the current situation, particularly as a few weeks ago there was a general election in the UK and there was a political change from the Tories to the Labour Party. There is an old saying that new brooms sweep well, but old brooms know the corners. In this respect, however, the new brooms should also know the corners. Is it already apparent that rail issues will be treated differently in the new government?

**Prof. Jon Shaw:** That’s interesting because we have, as you say, a new broom, the new Labour Party, and they opened Parliament just today, just before we spoke, with the **King’s Speech**, in which the Government sets out the legislation that it will be passing over the next year. There are actually three Railways Bills that they are going to pass. The first is called the **Passenger Railway Services Bill**. This will put the privatised rail operators and companies into public ownership. Companies like **Great Western, Southern and Thameslink** will be put into public ownership, or in some cases will remain in public ownership. That will be done by waiting until their current franchise contracts end and then not renewing them. So it will cost nothing. The State will not be buying companies.

Then there is a separate Bill that will be passed by Parliament called the **Railways Bill**. This will create a new organisation called **GBR, Great British Railways**. This organisation will oversee the running of the railways. It will be responsible for all the tracks, as **Network Rail** is now, but also for running passenger services. So it will introduce the timetables and the service levels and things like that. After years of everything being separate, the idea is that this will now be brought back together.

**?** Will Network Rail be integrated too?

Yes. So it will be similar to what **British Rail** used to be before privatisation, but not quite the same. The idea is that there is one organisation responsible for running the railways, investing in the railways, planning the railways and running the railways. So that is the big change that Labour will bring about. They can do away with a lot of the contracts that currently exist in the industry. Currently, if one company has a delayed train and that causes other companies’ trains to be delayed, teams of lawyers will have to sort out who has to pay compensation to whom and things like that.

**?** So, this King’s Speech was a Black Friday for legions of lawyers? ▶

Yes. That’s right. The idea is that we remove the armies of lawyers from the system. The real benefit will be integration and hopefully reducing costs as a result. We now have a railway system that costs more to run than it should. The idea is to be able to use some of the money currently spent on the railways more sensibly and efficiently and in that way spend more money on the actual rail service.

**?** To spend money more logically?

Exactly. When Covid hit, the government basically cancelled all the concessions and just ran the railways on a management contract and gave subsidies to the rail operators so they could keep going. But since the lockdown ended, they have maintained a ridiculous funding arrangement which is really problematic. The **Department of Transport** pays subsidies to the rail operators and they pay money that comes in through fares, for example, to the Treasury. There is no single profit and loss account like in a normal company.

A really good example: after the lockdowns, the busiest days are Friday and Saturday. We know that if we were to run a Friday or Saturday service on a Sunday, we would also be very busy. If you run more trains on a Sunday, of course it costs you more. But guess what – you sell more tickets and make more revenue. But at the moment we can’t do that because the train companies say to the Department for Transport, “OK, we want to run 100 extra trains on a Sunday.” And the Department for Transport says: We can’t because it will cost us an extra £10 million. And the train companies say: Yes, but we make £20 million from ticket revenue. And they say yes, but I don’t care because we don’t see any of the money going directly to the state treasury.

**?** In recent years, we have faced the situation several times when a concessionaire could not perform its duties due to financial losses. And then a state-owned railway company has already taken over the task. If they talked about market arrangements, but offered a bad bank or a bad rail that could take over the losses, where is the market? Operator of Last Resort. This company name for the state-owned parachute company reminds me of the

operator of last hope, of the last prayer... A rather special humor? What will happen to this parachute company owned by the state? Will it also be converted into a corporation?

It will also be integrated into Great British Railways. Currently there are four companies run by the state. The parachute company is called OLR, **Operator of Last Resort**. In the future, Great British Railways will basically become the Operator of First Resort. And it will be legal for the state to run these railway companies permanently. Whereas currently, under current legislation, they are only supposed to be run by the Ministry of Transport as a last resort until they can be reprivated.

**?** Which precluded a positive development?

Well, interestingly, companies like **LNER**, with their London to Edinburgh services, are generally regarded as very well-run national companies. Some of the managers who work for LNER have said that it was easier to get things done as a nationalised company than as a private company.

**?** Interesting! What will the concessionaires do now? They were legal private companies working from one concession to the next. They have their staff as well. Will they send all their people to the newly formed company?

Yes. There is a special legal provision that allows that if one company takes over another or all the companies, the rail staff will just move to the new company. So the same thing will happen if GBR takes over. You have just asked a very interesting question about the existing concessionaires, because at the moment there are a number of groups of companies that already own concessions in the private sector – **Italia, First Group, which was Arriva**. Under the government’s plans, when the concessions expire, they will simply go into public ownership, so no private ownership group will lose money because they would use their contract until it is expected to end or until there is a termination date and then it would go into public ownership. There is a really interesting development here: Arriva, which was owned by Deutsche Bahn, has just been bought by a ▶

## THE SITUATION TODAY: PRIVATE TRAINS WITH MEAGUE PROFITS, THE STATE BEARS THE LOSS

When the British state railway British Rail BR was privatised, the network was divided into numerous franchise sectors. Rail operations on some of them were awarded to the highest bidder in tenders. The contract term was usually only five to seven years. Due to the corona pandemic, the franchise model was suspended on March 23, 2020. The financial risk and responsibility for rail operations were transferred to the Ministry of Transport, known as the Department of Transport (DfT). This solution was declared permanent with the Emergency Recovery Measures Agreements ERMA of September 21, 2020. The DfT continues to cover the railway companies' losses and pays them a fixed fee of up to 1.5% of pre-pandemic operating costs.

## FOUR RUS ARE ALREADY QUASI-NATIONALISED

In order to secure a franchise concession, RUs often made exaggeratedly high estimates of ticket revenue. The state subsidies calculated from this were later too low, partly because the companies had to pay fines and train delays due to poor infrastructure. For these cases, the Ministry of Transport set up a "stopgap company", DfT OLR Holdings Limited. The DOHL Group currently operates more than 3,600 trains a day and employs over 14,800 people.

It is currently responsible for the rolling stock leasing company Train Fleet (2019) Limited and four bankrupt RUs:

**East Coast Main Line**, through a wholly owned subsidiary, **London North Eastern Railway (LNER)**, on 24 June 2018 **Northern Rail**, through a wholly owned subsidiary, **Northern Trains Limited (NTL)**, on 1 March 2020 **London & South Eastern Railway (LSER)** services, through a wholly owned subsidiary, **Southeastern Trains Limited (SET)**, from 17 October 2021 **TransPennine Express (TPE)**, through a wholly owned subsidiary, **TransPennine Trains (TPT)**, on 28 May 2023.

The aim of the upcoming reform is to integrate all current franchise RUs into the new state-owned railway company to be founded, Great British Rail GBR. But this formation can take up to 18 months. Therefore, franchised railway companies whose concessions expire will initially be transferred to the state-owned DOHL Group following the tried and tested model. However, this only affects the franchise part of the activities. Anyone who also operates bus services will be able to continue to do so privately.



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separate private company, and this bought Arriva knowing full well that this new legislation was going to come into force. So they bought this rail operator and are likely to lose it.

There are two aspects of privatised rail that will remain, though. On the passenger side, we have these small companies called **Open Access Operators**. So there is **Hull Trains, Grand Central, Heathrow Express**, and these will be able to continue to be privately owned because they are not

using concessions. There is a debate about whether they are paying enough to get access to the line. But they have done a good job at their own risk. **Lumo** is another open access operator that runs between London and Edinburgh and they have also been very successful, partly because they have brought new business to rail, because they have taken traffic away from air, which is good. And the other big area that will remain privately owned is freight. **Freight services** will continue to be privately operated. ▶

? You said there will be a third bill. What would it cover?

The third bill follows the HS2 high-speed rail project, some parts of which were scrapped. This new third bill brings powers to build high-speed and improved infrastructure in the north of England, essentially on the line between Liverpool and York. The previous government promised it but didn't do it. The Labour party has now done it.

? In the last few months it has become clear that the full HS2 high-speed line will not be built using the Y scheme. I understand there have been rumours because it could of course happen that freight traffic will come back onto the already congested roads. And there are not enough drivers for the lorries because unfortunately all the foreigners from the EU have had to leave the country. Is

there any chance that the rail system will take more freight or at least the same amount as now?

We obviously want to get the rail to carry as much freight as possible. So we are hoping – but I am not aware of any announcement yet – that some of the abandoned HS2 scheme will be revived. Maybe it will be revived in a different way, maybe a little slower. At the moment what they are planning to build is useless and it will cost a lot of money to build a useless railway. They need to do something to take the line to central London and take it at least a little further up the West Coast Main Line to free up the capacity because that is where we will get the real freight gains and also the gains in regional rail.

*The interview was conducted by Hermann Schmidten-dorf on 17 July 2024.*



Great Western Railway train on the south English North Sea coast 2015.

Credits: Phil\_Watley CC BY-SA 2.0

In the beginning there was steam

# BRITISH RAILWAYS: INNOVATIVE, TRADITIONAL – AND WITH A BACKLOG OF MODERNISATION

At the beginning of the 19th century, the coal mines and metal works in England promoted industrial and technological progress – including steam technology. In 1802, the Briton **Richard Trevithick** built a stationary high-pressure steam engine. Two years later, he put the engine on wheels and pulled a train of five carriages with ten tons of iron and 70 people over 15.7 kilometres. The cast-iron rails laid there at the time largely broke under the high axle pressure, and the steam engine was used stationary again.

One year later, in 1805, a steam locomotive built by **John Whinfield** in Gateshead according to Trevithick's plans carried out test runs on the premises of an iron foundry. Here too, the locomotive was too heavy for the wooden rails still in use there, and it was no longer used.

The most persistent and leading to the breakthrough was the work of **George Stephenson**. From 1812 he was the enginewright at the Killingworth coal mine in County Durham. This had a mine railway on whose tracks with a gauge of 423 feet (4 feet 8 inches) = 1420 mm coal wagons were pulled by horses. In 1814 Stephenson built his first locomotive for transporting coal on the Killingworth wagon railway. It is considered to be the first successful locomotive with flanged wheels. In total, Stephenson is said to have built 16 locomotives in Killingworth. This allowed him to continually improve his designs. For example, track breaks could be reduced by evenly distributing the weight of the locomotive by using multiple wheels or bogies.

In 1821, the construction of the Stockton and Darlington Railway (S&DR) was permitted by an Act of Parliament. A 40-kilometre-long railway was to connect several coal mines with the River Tees in Stockton. Stephenson convinced investor Edward Pease that the coal wagons should be pulled by steam locomotives rather than horses. Construction work began in the same year. Stephenson used wrought iron, malleable rails that could be manufactured in greater lengths and with greater stability than cast iron rails.

## George & Robert Stephenson and the 1435 mm

**In 1823, Stephenson founded the company Robert Stephenson & Co. with Pease in Newcastle to build the locomotives. It was the first locomotive factory in the world.** Why Robert? Stephenson appointed his son Robert, who was only 20 years old at the time, as managing director. Stephenson's parents were illiterate, and George Stephenson spoke English with an accent that was considered inferior at the time. Stephenson therefore gave his son a high-quality education that prepared him not only for work as an engineer, but also for life in trade and business. Important: Robert took special courses to speak with a "Received Pronunciation" accent. This linguistic "high English" standard is mainly due to the universities of London, Oxford and Cambridge, as well as the elite schools such as Eton, Harrow and Rugby. It ensured that Robert was accepted in high society circles, which was never the case with his father. ▶

**In September 1825, the Forth Street factory in Newcastle completed the first locomotive for the railway:** it was originally called Active and then renamed Locomotion. It was followed by Hope, Diligence and Black Diamond. The first railway carriage, Experiment, was also built.

For the Stockton and Darlington Railway, which began operations in 1825, Stephenson used the 4 ft 8 in = 1420 mm gauge previously used in the coal mines, in order to be able to use the hundreds of horse-drawn wagons that were already in use on the freight wagon routes in the mines. After 15 years, the railway was converted to **the 1435 mm (4 ft, 8½ in) gauge**, which Stephenson had been using since the **opening of the Liverpool-Manchester railway in 1830**. By adding an additional ½ inch, Stephenson gave the wagons additional freedom of movement and smooth running, reducing the risk of getting stuck in curves.

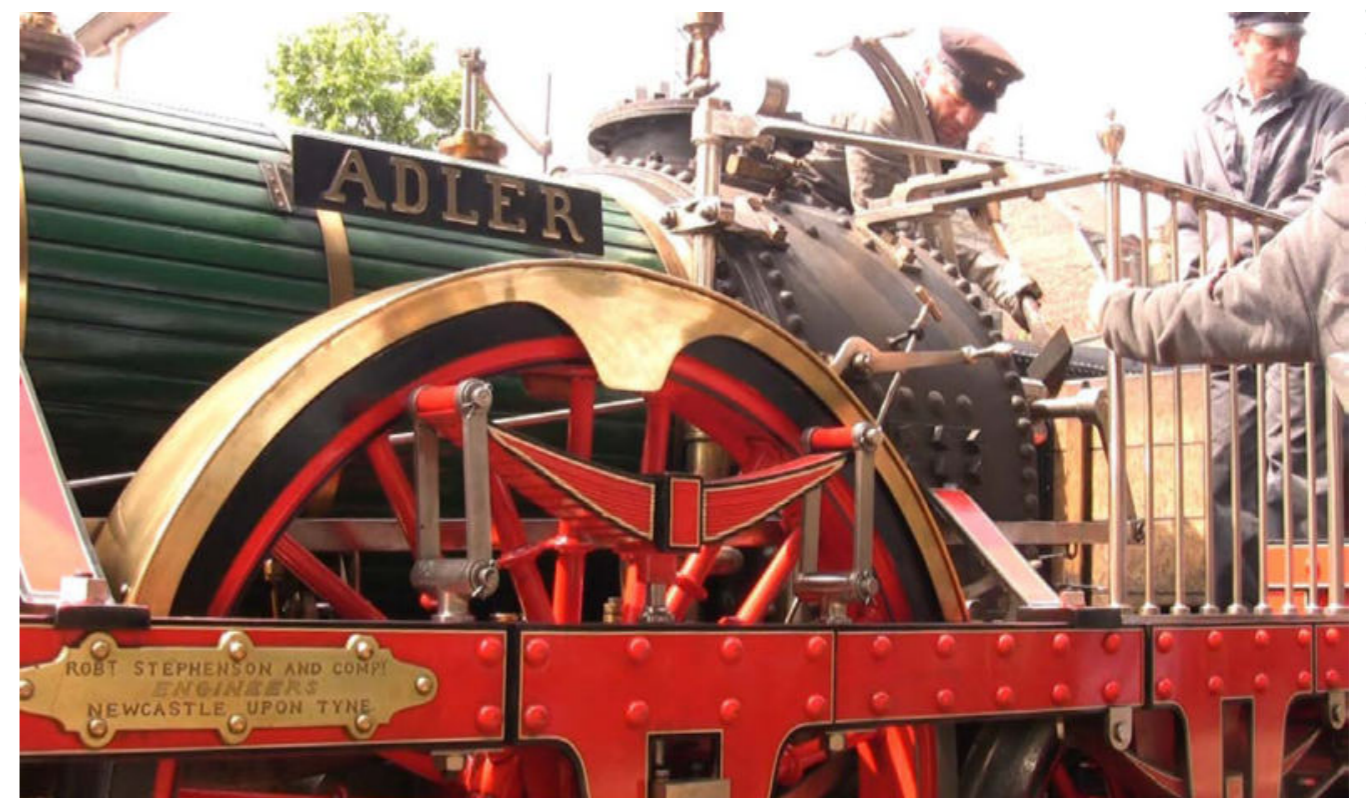
## Broad gauge loses the "gauge war"

The **Great Western Railway GWR** was founded in 1835 out of the **competition between the port city**

**of Bristol and Liverpool.** It was intended to maintain Bristol's position as the second largest port in the country and the most important for American trade and, like the railway line from Liverpool, to lead to London – but with unprecedented quality standards to outperform other lines. The **engineer Isambard Kingdom Brunel** therefore chose a broad gauge of 7 feet 1/4 inches (2,140 mm) for the line. But in 1844 the broad gauge line of the Bristol and Gloucester Railway met the already existing standard gauge lines of the Birmingham and Gloucester Railway. Passengers had to change trains at Gloucester station between the southwest and the north and goods had to be reloaded.

In a **"gauge war"**, the GWR wanted to aggressively enforce its railway profile. But it lost to Stephenson because the existing lines with "his" gauge were already eight times longer than the competing GWR broad gauge. A Royal Commission was formed. **In 1846, the Railway Regulation (Gauge) Act banned the 7-foot gauge by law**, except in the south-west of England and Wales, where railways were connected to the GWR network. New passenger railways ▶

The "Robt. Stephenson and Compy." was also the builder of the first steam locomotive on German soil, the "Adler" – here is a detail of the roadworthy DB replica.



Credits: Hermann Schmittdorff

were to be built in Great Britain with a standard gauge of 4 feet 8 ½ inches (1,435 mm) and in Ireland with a new standard gauge of 5 feet 3 inches (1,600 mm). After an interim period of mixed gauge operations (the tracks were laid with three rails), the GWR completed the conversion of its network to standard gauge in 1892. Subsequently, many countries adopted this gauge as their national standard gauge, which gave rise to **the term standard gauge**. In Germany too – **the first functioning steam locomotive on a railway on German soil, the ADLER (Eagle), came from the Stephenson factory** and was driven by an employee of this company on the inaugural run of the Nuremberg-Fürth line on 7 December 1835.

#### Clearance profile: standardised on the continent...

Unlike the track profile, the railways of continental Europe went their own way when it came to loading gauge and clearance profile. On **May 16, 1886**, Switzerland, Austria-Hungary, the German Empire, France and Italy agreed to the **State Treaty on Technical Unity in Railways (TE)** – or **Technical Unit**

for short – in **Bern**. The international, French name was: **Conférence internationale pour l'unité technique des chemins de fer (UT)**.

More and more European railways subsequently joined the agreement. In **1922**, the international railway association **Union Internationale des Chemins de Fer (UIC)** was created as a working body. The agreements on the cross-sectional design of the railway facilities, track spacing, tunnels and underpasses of bridges and the outlines of railway wagons allowed freight wagons to be used in free traffic on the various networks that were merging. A common

minimum standard was agreed at a follow-up conference in **Bern in 1912**. This meant that freight wagons built to this gauge could be used internationally.

The associated gauge was called **Gabarit passe-partout international**, abbreviated to **Gabarit PPI** – a standard size for trains. It was set at a half width of 1575 mm (total width 3150 mm), which tapers above 3175 mm, and is a maximum of 4280 mm high in the middle of the wagon. These vehicles must comply with the associated clearance gauge even with a minimum curve radius of 250 m. Long wagons therefore have to be narrower.

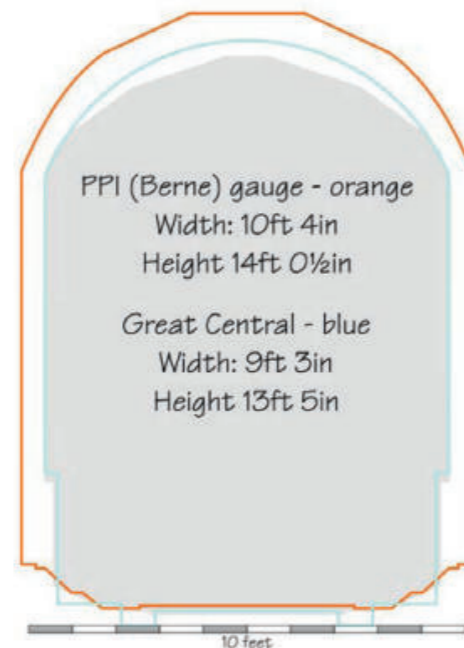
#### ... as narrow as possible in Great Britain

Such early regulations were lacking in the United Kingdom. The railways were built by a large number of different private companies, each of which had different standards for the width and height of the trains. **In 1922, after numerous mergers, the railways consolidated into four companies. It was not until 1948 that these so-called "Big Four" –**

**Great Western Railway GWR, London and North Eastern Railway LNER, London, Midland and Scottish Railway LMS and Southern Railway SR – were nationalised to form the state railway British Railways**

**BR**. The newly formed British Railways were initially divided into six regions in 1948. **In 1965 the company was renamed British Rail**.

The British gauge reflects the fundamental motivation of private railway builders to transport coal and ore in large quantities from place to place. Passenger traffic was secondary. **The gauge was therefore defined with a view to relatively small wagons.** Stephenson ►



The continental European "Berne" clearance profile PPI in orange, the profile of one of the most spacious English railways Great Central in blue: British tunnels and railway vehicles are narrower and lower, offering less space for passengers and their baggage.

Credits: Jim Champ,

<https://www.devboats.co.uk/gwdrawings/loadinggauges.php>



In 1948, the state-owned British Railways were founded.

had endeavored to create a generous route through flat terrain with wide curves, if necessary with the help of cuttings, embankments and stone viaducts. But Stephenson's construction plans were too expensive for some investors, and he lost several projects to competitors. It was not until the founding of British Railways that a national standard was defined. Due to the power of facts, **the British standard generally remained smaller than the "Bern gauge" on the European continent**. Smaller clearance gauges on older lines remained. **Even on individual lines, the static restrictions were rarely universal**. It was common for there to be certain lines with restricted clearance gauges, as well as lines with weight restrictions. These were usually listed in general or section-by-section appendices to the regulations of the respective private company. Different conditions on **platforms** posed an additional challenge.

The result was a lack of crossing options for vehicles and massive disruption to traffic. **The Southern Railway's "Hastings Line"** gained negative notoriety: it had been built with tunnels that were too small for the already small gauge of the South Eastern Railway. As a result, particularly small locomotives and wagons were required. This problem was not solved until 1986, when all tunnels were reduced to single-track traffic as part of the electrification of the line.

#### Expensive trains, missed opportunities

As a result, new wagons, multiple units and locomotives have to be developed specifically for the existing British network. Rolling stock used on the continent is too wide and too high for the British Isles. The financial implications of this were explained in the government report "HS2 Cost and Risk Model Report. A report to Government by HS2 Ltd" from March 2012. The report stated that **for the new trains on the planned HS2 high-speed line a 50 percent**



In 1964, the double arrow logo was introduced with the new name British Rail.

**surcharge on the "classically compatible" trains would be charged**, which are "compatible" with both the current (i.e. "classically") clearance gauge of the rail network and the HS2 line. The "classically compatible" trains cost 40 million pounds per train, while the pure HS2 train, which is built to European clearance gauge and is only suitable for operation on HS2 lines, should cost 27 million pounds per train. And this despite the fact that the pure HS2 train is physically larger.

In 1928 the Board of Trade specified a fairly generous gauge for new trains, which was significantly larger than most existing gauges – 15 feet on centres. Overhead electrification was apparently being considered. However, this specification had no far-reaching consequences. **Even after nationalisation, the railway network was neglected to fundamentally modernise**. In 1951, only a standard static gauge of W5 was specified, which was intended to fit almost everywhere on the network. With the W6a gauge, the lower car body was changed to allow electrification by a side conductor rail. Profiles W10 to W12 define a flat line on the top, and instead of a strict static gauge for the wagons, their sizes are derived from dynamic gauge calculations for rectangular freight containers. In 2004, a strategy to improve loading gauges was again adopted. But it was still clear that modern freight trains, especially those with standard containers, would not be able to run everywhere. **In 2007, a strategy was published to identify and use freight routes with W10 and W12 standards on which such trains should run without problems.**

A **"piggyback consortium"** tried to convince **Railtrack**, the company responsible for rail infrastructure since the privatization of British Rail in 1994, to undertake a more comprehensive modernization of the structure gauge. The aim was to also enable the transport of deep-sea containers and swap bodies by rail. But Railtrack made it clear in 1998 that it had ►

London is bursting at the seams – there is an increasing demand for rail traffic. In 2017, the modernisation of Waterloo Station was a significant challenge.



Credits: Network Rail

no interest in a comprehensive modernisation. Even a limited project for the transport of 2.78 m high containers would “satisfy the market,” the consortium reported in a memorandum dated November 30, 1998. Rail freight traffic was apparently considered less sensitive than passenger traffic. **Rail freight companies had long complained**, among other things, about **a lack of freight capacity in the north-west of London**. The limitations on network capacity resulting from the various railway line cuts since the 1960s mean that freight companies have had consistent difficulties finding routes for their trains.

**Electrified lines: 24.32% with 25 kV 50 Hz AC, 13.68% with 750 V DC**

**The fragmentation of railway lines from the early days to the present day has also had a negative impact on the electrification of British railways.** Initially, traction power systems with 600 V, 625 V and 1,500 V DC were introduced, among others. In 1956, British Railways chose traction power supply via overhead lines with 25 kV, 50 Hz AC as the national standard for future electrification projects. Several existing railways have been converted accordingly. **In October 2023, only 6,065 kilometres were electrified, which is 3,769 miles or 38 percent of the British rail network.** According to Network Rail, **by 2023, 64 percent of the electrified network will use the 25 kV AC overhead line system and 36 percent will use the 660/750 V DC system with a conductor rail** next to the track. Network Rail took over the entire rail infrastructure from Railtrack on October 3, 2002.

This coexistence of systems, which still exists to-

day, also makes British railways expensive. Locomotives that are to run everywhere must be equipped for two power systems and also with a diesel engine, a battery or a fuel cell!

**The electrification strategy is extremely inconsistent, a constant up and down.** In 2007, the British government advocated the continuation of diesel traction through the use of biodiesel. Then in 2009, plans were announced to electrify the Great Western Main Line from London to Swansea and in the north-west of England. Shorter sections of the route without traction power were also to be equipped, with the “fill ins”. In 2012, the plans were expanded. But on 25 June 2015, the government announced that some of the electrification projects would be postponed or cut back due to rising costs. Some work would also be “paused”. Then it was said that work would continue with a postponed completion date. Then again, in 2017, the Transport Minister praised hybrid technology as an alternative. On 23 March 2021, a parliamentary report called for the immediate resumption of electrification with a rolling programme.

The future of the conductor rail for electrically supplying traction vehicles also remains to be resolved. As early as June 2011, Peter Dearman of Network Rail had proposed that **the conductor rail network should be converted to overhead lines.** The conductor rail network had reached the limit of its capacity, especially as trains were becoming more and more technologically advanced. The Office of Rail and Road (ORR) also stated that 750 V DC conductor rails have a limited future for safety reasons. On the other hand, the **electrification of the railways with 25 kV AC in Scotland is progressing positively.** ►

There, the local government is responsible for transport and is implementing a plan to electrify many

important routes in central Scotland.  
*Hermann Schmidtendorf*

## BRITISCHE EISENBAHNEN – FACTS & FIGURES

**State railway:** British Railways 1948-1965. British Rail 1965-1994. Then manager of the railway infrastructure: Railtrack (private) until 2002. Network Rail (public, non-profit) until today.

**Independent public regulator:** Office of Rail and Road ORR, since 2004

**Private and publicly run heritage and tourist railways:** 600 miles (960 km) 2023, 460 railway stations

**Railway network:** 1948 19,630 miles (31,591 km). 1960 18,369 miles (29,562 km). 1975 approx. 11,000 miles (17,000 km). 2022 9,864 miles (15,874 km), 2,570 stations

**Key development steps:** Driving on the left. Electrification with 25 kV 50 Hz AC. Modernised signaling systems. 1975 Introduction of a computer system for monitoring around 200,000 freight wagons. Introduction of an InterCity passenger service at 125 mph / 200 km/h between Britain’s major cities.

**Freight transport:** 1968 Founding of the Freightliner company within British Rail. 1996 Privatisation. After DB Cargo UK (formerly English, Welsh & Scottish Railway, EWS), today the second largest provider of rail freight transport in Great Britain.

**Political mistakes:** After World War II, the government only authorized British Railways to use limited amounts of raw materials. But road traffic was allowed to exceed the limits granted to it year after year. It was not until nine years after the end of the war that BR was able to clear the backlog of track renewals that had been left over from the war. In addition, by government order, a court decided on the level of railway tolls and ticket prices and delayed increases for over 12 years. There was a government subsidy, but in the form of an interest-bearing loan, while BR’s suppliers were able to raise their prices unhindered. (Tim. Pickford-Jones and Timmonet)

**Wage increase:** Between 1948 and 1960, the rail unions fought for an average increase of over 200 percent. The government did not cover the state railway’s ever-increasing losses.

**Potential conflict of interest:** Minister of Transport (1959-1964) Ernest Marples was co-founder, director (until 1951) and shareholder (until 1960) of the road construction company Marples Ridgway, which received many government contracts. At the opening of the M1 motorway, Marples showed his preference for the road, saying: “This project is in keeping with the emerging scientific age in which we live.”

**The Beeching Axe:** Under Marples, Dr Richard Beeching was appointed to provide the government with the basis for a major reduction in the railways. In two reports in 1963 and 1965, he identified 2,363 stations and about 5,000 miles (8,000 line kilometres) across the country as redundant – a total of 55 percent of the stations and 30 percent of the railway lines. The “axe” did not eliminate all the proposed railway lines because there was considerable protest from communities and unions, but it significantly worsened rail access for rural people and industry. The hoped-for savings in the state and railway budgets were not achieved.

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*Dr. Richard Beeching*

Foto: <https://www.npg.org.uk/collections/search/portrait/mw109425>