



A stunningly illustrated tribute for train lovers of all ages, celebrating the ingenuity of trains past, present and future.

- Sample contents: The First Railways; Steam Locomotions; The Ffestiniog Railway; The Orient Express; Freight Trains; The Baikonur Cosmodrome; Mail by Rail; The California Zephyr; Mountain Railways; The Darjeeling Himalayan Railway; Trams; Sky Lines; Railways At War; The Princess Christian; High-speed Rail; The Shinkansen
- Beautiful artwork by multi award-winning artist Ryo Takemasa
- Stunning journey through the history of locomotives, suitable for all ages
- Expertly written by railway historian, Alastair Steele

Locomotion

THE FIRST RAILWAYS

Today, railways are commonplace in many parts of the world. They enable around one billion people to travel every day, and transport goods and millions of passengers every single day. It is amazing to think that they have only been around for less than 200 years.

Railways were first used in the 18th century in Europe. They were used to transport heavy goods, such as coal, iron, and stone. The first railway was built in 1782 in Cornwall, England. It was used to transport tin ore from the mines to the coast.

The first steam engines were used in 1804 in England. They were used to pump water out of mines. The first steam locomotive was built in 1814 by George Stephenson. It was used to transport coal from the mines to the coast.

Over the next few decades, railways spread across the world. They were used to transport goods and passengers. They were also used to transport mail. The first transatlantic railway was built in 1852 in the United States. It was used to transport mail from New York to Philadelphia.

Today, railways are used to transport goods and passengers. They are also used to transport mail. They are one of the most important modes of transport in the world.

THE GAUGE

One of the most important things to consider when building a railway is the gauge. The gauge is the distance between the rails. It is important because it determines the size of the wheels on the locomotives and the size of the tracks. There are two main types of gauge: standard gauge and narrow gauge. Standard gauge is 4 feet 8.5 inches (1435 mm). Narrow gauge is anything less than standard gauge. The most common narrow gauge is 3 feet 6 inches (1067 mm). There are also many other types of gauge, such as 2 feet 6 inches (762 mm) and 1 meter (3281 mm). The gauge of a railway is determined by the country in which it is built. In most countries, the standard gauge is used. In some countries, narrow gauge is used. The gauge of a railway is an important factor in determining its speed and capacity.

STEAM LOCOMOTIVES

Once the possibility of mass-produced engines had been realized, a whole host of locomotives were tried and tested around the world. Some proved to be better than others, but the one that really changed the course of history was the one designed by engineer Robert Stephenson (George Stephenson's son - see page 51) to provide the principles of design for the rest of the steam locomotives that followed.

The first steam locomotive was built in 1804 by Richard Trevithick. It was used to transport iron ore from the mines to the coast. It was a portable engine, which means it could be moved from one place to another. It was 14 feet long and weighed 4 tons. It had a single cylinder and a horizontal boiler. It was used to transport iron ore from the mines to the coast. It was a portable engine, which means it could be moved from one place to another. It was 14 feet long and weighed 4 tons. It had a single cylinder and a horizontal boiler. It was used to transport iron ore from the mines to the coast.

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- RAILWAYS OF THE WORLD - THE FESTINIING RAILWAY

The Festiniog Railway is a small but significant engineering feat. It was built in 1825 in North Wales, and it was the first railway to be built in the world. It was used to transport slate from the mines to the coast. It was a narrow gauge railway, which means the rails are closer together than on a standard gauge railway. It was 2 feet 6 inches (762 mm) wide. It was used to transport slate from the mines to the coast. It was a narrow gauge railway, which means the rails are closer together than on a standard gauge railway. It was 2 feet 6 inches (762 mm) wide. It was used to transport slate from the mines to the coast.

ELECTRIC LOCOMOTIVES

The first electric train was tested as far back as 1837. Unlike steam trains, electric locomotives do not carry fuel on-board. Instead, they are powered by electricity which can be supplied from overhead lines, a third rail or in storage such as batteries. Because electric trains can be powered by renewable energy sources, they are considered less polluting than steam or diesel trains.

The first electric passenger train was presented by Werner von Siemens at an exhibition in Berlin in 1879. Consisting of a small locomotive and three cars, it reached a speed of just 13 km/h.

The ETR 200 is a record-breaking electric passenger train. It is widely considered one of the first ever high-speed trains and was put into service in 1936. In 1938, it broke the speed record for trains by reaching just over 201 km/h.

The ICE (Intercity Express) is one of Germany's most successful electric trains. The third generation ICE 3 can reach speeds of 300 km/h. Since 2018, it has run on entirely renewable energy sources.

DIESEL LOCOMOTIVES

In a diesel locomotive, the power comes from an engine that burns diesel oil. While a steam locomotive needed two people to crew it and hours to attain the right steam pressure, a diesel locomotive could simply be switched on and driven away, making them much easier and much cheaper to run. Rudolf Diesel patented his first diesel engine in 1898, but it wasn't until around 1912 that they were first used in a locomotive.

The famous DRG Class SVT 877 *Hamburg Flyer*, often referred to as the 'Flying Hamburger', was first put into service in 1933. Its smooth, rounded shape was influenced by Zeppelin airships allowing for minimal air resistance.

The De10s, built in 1956, was considered the most powerful diesel locomotive in the world at that time.

The Hxdvity 125 is one of the most successful diesel trains of all time. So named because it was designed to cruise at 125 mph (about 201 km/h) when in service, it also holds the all-time speed record for diesel trains of 238 km/h, which it reached in 1987.

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