

# William James – The Father of the Railways

## Part 2 - Later Railway Life

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William James (1771 – 1837) Palmam qui meruit ferat - Let him bear the palm who has earned it.

“The present generation stand indebted for the origination and establishment of our Modern Railway System.”

William Henry James, 1857 (son of William James)

### **Prolific Builder Of Railways**

During his life William James surveyed many railway routes and there are thirteen major lines listed in his biography. The Manchester and Liverpool (22 miles); Birmingham and Manchester (87); Birmingham and Wolverhampton (16.5); London and Birmingham through Oxford, Moreton in the Marsh (116); Canterbury and Whitstable (6); Bishops Stortford, Cambridge and Newmarket (25); London to Brighton (47), and Portsmouth (73), and Chatham (29); Bristol to Bath (15), and Bradford (166); Bristol to Salisbury (43), and Southampton (65); Padstow to Bodmin (12), and Fowey (34); Truro and St Agnes (7); Algavoar Moor and other lines in Flintshire. The route mileage in this list is about 758 miles.

### **He Kept His Eye On All Railways Being Built**

He also continued to visit places where the engines and infrastructure for railways were being created or improved. A visit to Newcastle to interview important figures in railway history was undertaken in 1821 where he inspected an engine being used by Christopher Blackett at the Wylam Colliery on a horse wagon-way that had been laid down in 1748. The line was five miles long and connected the colliery with staithes at Lemington on the River Tyne. The original rails carry the wagons were made of wood. The first steam engine to be employed was a Trevithick type built in 1804, and of such a weight that it constantly fractured the wood rails.

The wagon-way was then re-laid with cast-iron plate rails and a new engine was commissioned by Blackett from his site manager William Hedley and his foreman smith, Timothy Hackworth. After several experiments to remove the need for Blenkinsops cog and rack system for effective traction the engine was hauling loads with metal wheels running on metal plate rails. Although this feat was only possible on level and easy gradients this was the first time that the adhesive weight of a steam locomotive had been successfully used to pull a train of wagons. The new engines were Puffing Billy and Wylam Dilly and these were hard at work on the line in 1814. Both original engines are on display in museums.

### **George Stephenson**

The next chapter of our railway story concerns a young George Stephenson at work in the nearby Killingworth Colliery. Stephenson had started working there in 1801 as a brakesman on the pit engine. A decade later he was able to fix a problem with a pumping engine in 1812 and was promoted to Enginewright. He was soon to become an expert in steam-driven machinery. Whilst Trevithick is acknowledged as the designer of the first practical steam engine Stephenson designed his own engine in 1814 for use in the Killingworth colliery site.

The engine was built by his son and was named Blücher, after the Prussian General who had supported Wellington to success at Waterloo. Stephenson had employed the best and latest ideas in its design and, weighing six tons, it could haul thirty tons in eight wagons at four mph up a hill using flanged wheels on smooth iron edge rails.

The introduction of a connecting rod with a pin on the driving wheel was one of the patents taken out and two cylinders, rather than the one used in earlier engines, helped to smooth out the power delivery. This engine was the prototype for a class of six engines for the Killingworth Colliery with the Killingworth Billy, built in 1816, now on display in the Newcastle Science Museum. Stephenson was hired to build an 8-mile railway from Hetton colliery to Sunderland in 1820. The finished scheme used a combination of gravity on downward inclines and locomotives for level and upward stretches.

### **Stephenson Was Impressed By James**

William James came into this scene in need of an engine with the power to be able to reach the high speeds required for passenger traffic on his grand railway scheme. He visited Killingworth to view the

Stephenson engine in the late summer of 1821. The visionary James and the engineer Stephenson were of a like mind on the subject of railways. Stephenson did not think that James was 'stark mad', as did some others, and he was impressed by his vision for 'Engine railroads for passenger transit', and his wealth, commercial reputation, and energy.

### **James Was Impressed By Stephenson**

In turn James was impressed by Stephenson and his work. Stephenson and the iron foundry owner William Losh entered into an agreement with James where he should give his 'best assistance for the using and employing the locomotive engines' on railways south of an imaginary line drawn from Liverpool to Hull in exchange for a quarter share of their locomotive patents.

### **Mutual Collaboration Produces A World Beating Design**

James shared the designs for a multi-tubular boiler where the water was circulated and heated inside the small tubes. This had been designed by his son. In concert Stephenson had devised the exhaust steam blast was directed up the chimney to force more air through the fire – a sort of post turbo-charging. The blast draws hot gases from the firebox through a single large diameter tube in the boiler and heats the boiler water. He changed the single large tube in his design to the multiple tube concept of the younger James and increased the water heating surface area by a factor of ten. The performance of his Blücher engine was vastly improved and later the system was used in Rocket to create the winner of the Rainhill Trials.

At long last the new design made the fledgling steam locomotive truly practical. A copy of original agreement and a letter from William Henry James was sent to the Mining Journal dated 14 November 1857, but it appears that Stephenson did not derive much, or any, benefit in return from the deal. A consequence may have been he did not support James in later years.

### **Edward Pease**

Edward Pease was another visionary of railways for the future. He promoted a line between Stockton and Darlington which was described as a horse tram-road for the conveyance of coals only. An Act of Parliament was obtained in 1821 for this purpose. Following the visit of William James to Stephenson at Killingworth, Stephenson then visited Pease at Darlington with the knowledge of the 'engine railway system of passenger transit' as envisioned by James. Pease was converted and obtained an amendment to the Act for the carriage of passengers and the use of steam engines.

### **Rapid Expansion In The Railway System**

Their relationship was the dawning of an era of rapid expansion in the railway system although the insane heights of the Railway Mania period was still a few decades ahead. The friendship of the three railwaymen had become intertwined and it was the wish of James that George Stephenson should be appointed Engineer of the Darlington railway and later, in 1824, of the Liverpool and Manchester. It could be said that William James had found George Stephenson and assisted his rise to glory of the pinnacle of honour for the railways.

### **The Pioneer Passenger Railway**

The Liverpool and Manchester Railway (LMR) was proposed by William Jessop in 1797 for a tram-road to be worked by horses. He surveyed a route, but the proposal was not taken up. Another survey was made with Benjamin Outram in the following year, although neither were accepted. In 1821 James was in Lancashire on business and he noticed that getting to various places in area was difficult. When he met Joseph Sandars, a Liverpool businessman in July they discussed the problem and agreed upon the desirability of a railway link between Liverpool and Manchester. James offered to make a rough survey to give some idea of the practicability of such a scheme. His preliminary report was entitled 'On the Survey of Investigation for a Line of Engine Rail-road from Liverpool to Manchester'.

### **Pioneer Survey**

The survey was carried out at his own expense and is considered to be the first practical scheme for the railway. Upon his return from Killingworth James found that Sandars had been gathering support for the scheme and preparing an application to Parliament and so he formed a railway company in the same year entitled the Liverpool and Manchester. Another, more detailed survey was undertaken in 1822 and Robert Stephenson, the son of George, was invited by James to assist in the work of the route which had a

distance of 40 miles. This was a demonstration of a paternal interest in the younger man's career by James who introduced him to 'better sphere'.

### **Authorities Not Gained Therefore Not Given**

Unfortunately, the initial surveys had been carried out surreptitiously and, with instances of trespass leading to hostility from the landowners, it was declared defective, and the Bill was rejected.

At this time, in late 1822, William James become embroiled in personal crisis and had to withdraw from the project. In his absence the sponsors decided to press on with a new application and George Stephenson was employed to resurvey the route with a new staff. There were accusations of underhandedness as the surveyors originally employed by James on the early surveys were recruited into the new team along with their knowledge and skills.

### **The Greatest Of Firsts**

A revised bill with a new alignment, but largely based on the original route proposed by James, was submitted and the scheme was approved in a subsequent session in 1826. The line was officially opened on September 15th, 1825, and it marked a number of 'first ever' milestones:

1. All of the engines were steam powered
2. Double track was laid for the entire length of the route.
3. Services were entirely for passengers and ran between just two cities
4. Services were fully timetabled.
5. A signaling system was employed.
6. Mail was carried.

'It must be regarded ... as opening the epoch of railways which has revolutionised the social and commercial intercourse of the civilized world'.

John B. Jervis, Delaware and Hudson Railway

### **William James Bankruptcy Late 1822 Was Not His Fault**

The proceedings which led to this sorry event deserve some discussion. His father was dying and the family had gathered at his bed to say their farewells. It transpired that a last will and testament had not been made to dispose of his estate. As the eldest son James made a promise to his dying father to look after his four sisters. Afterwards, he made a self-imposed condition that their marriages would require his consent so that his fortune could be protected. All was well with the first three siblings but when the youngest sister was married in secret James wrote her and her husband out of his will. A serious quarrel ensued and the husband, a Mr. M, took out proceedings against him for his wife's fortune. The claim was set aside as illegal in a court, but his creditors were urged to apply for an immediate settlement of their debts. Unfortunately, the fortune of James was tied up in property and collieries and so it was impossible to meet these sudden and unexpected calls.

### **Not The Only Debtor**

He was taken to and held in the King's Bench prison, Southwark as debtor. The prison had been built to hold debtors pending the outcome of a trial and some notable people have experienced its confinement. Emma (Lady Hamilton), Marc Isambard Brunel, Thomas Curson Hansard, and Edward Henry Purcell to name a few. William James was declared bankrupt in 1823 but it took nearly twenty years for the estate to be settled, giving some idea of the scale of his property portfolio. Robert Stephenson wrote to James in August to express regret at his situation of being in debtors' prison and 'that the finest project in England' was the Liverpool and Manchester line.

### **He Kept Going !**

Caging the man up did not stop him planning. During his short time in prison James wrote an essay which described his thoughts on how a railway system can be utilised in almost any situation. The first essay was entitled 'A Report to Illustrate the Advantages of Direct Inland Communication through Kent, Surrey, Sussex, and Hants, to connect the Metropolis with the Ports of Shoreham (Brighton), Rochester (Chatham), and Portsmouth, by a Line of Engine Railroad, and to render the Grand Surrey Canal, Wandsworth and Merstham Railroad, Shoreham Harbour, and Waterloo Bridge Shares productive property.'

### **Forward Declarations Of Brilliance**

The use of steam powered engines and carriages for passengers and wagons for goods would allow cheap transportation throughout the country. He declared that

“an engine railroad may be formed at one-fifth the capital requisite for canals, whilst goods can pass thereon with three times the speed, at one-third the expense, at all seasons, with the greatest security”.

And furthermore he avowed that

‘there is the possibility of a velocity of thirty miles per hour being attainable was in opposition to the opinions of Messrs. Wood and Stephenson, who thought that railway travelling could never exceed eight or ten miles an hour’.

This essay was dated 1823 and was intended to be the first of a series of twelve reports upon railway communication in various parts of England. Sadly none were published at the time. It was eventually revealed by his daughter, Ellen Paine, in 1861 in a biography.

### **Out And Immediately On The Job**

Upon his release from confinement, he was soon back at work and surveyed three possible routes for the Canterbury and Whitstable Railway in Kent between 1823 and 1824. It was intended to be a public railway for passengers as well as freight and his plans also included improvements to the harbour. The immediate problem was that the land between Whitstable and Canterbury rose to a height of two hundred feet, so the scheme had stationary engines winching trains up and down the incline with steam locomotives being used on the level sections. The line opened on the 3rd of May 1830, four months before the LMR. The harbour at Canterbury was completed by Thomas Telford in 1832 and the railway issued the first season tickets to passengers on day trips to visit the beach.

### **Thinking Along Brunel’s Lines**

In 1824 he took out a patent for an Improved Railway System. The design was for two pairs of longitudinal and hollow rails, with the inner pair on common chairs, and wagons being propelled along the rails by stationary engines through chains and rods. The design was deemed to be impractical for railway use.

### **He Should Have Retired But Worked Instead**

By 1827 James had moved to Bodmin, Cornwall to work for Anna-Maria Agar of Lanhydrock. The estate was in need of improvement and James planned to develop the ports of Devoran and Truro, and to build a railway from Fowey to Padstow. However, the efforts of constant travelling and being out in the open for long periods, was affecting his health.

### **Death Due To Exposure**

In the winter of 1836, he had been involved in resolving financial affairs in Birmingham but was called back to Bodmin. His fortunes had declined so much that he had to forsake the comfort of an interior seat for a perch on the top of a mail coach for the long journey. This caused him to contract a severe attack of influenza. he died at Bodmin on the 10th March 1837, aged 66.

### **Accolades By Peers**

James received little recognition for his work even though several eminent railway engineers, Robert Stephenson, Joseph Locke, I. K. Brunel, George Rennie, attested that his ‘self-denying efforts for the creation of a system of railroad was to the benefit of the public’.

There were written memorials sent to Parliament for financial help, both by himself in around 1826 and, after his death, on behalf of his children in 1846. There was no response.

In November 1844 Robert Stephenson wrote to William Henry, the eldest son of James and said that:

‘I believe your late father was the original projector of the Liverpool and Manchester railway’.

Further support came in 1858 when the young Stephenson described James as ‘a ready, dashing writer’, but ‘no thinker at all in the practical part of the subject he had taken up. . . . His fluency of conversation I never heard equaled’.

## Qualifications

William James was a Freemason, a member of the Royal Society of Arts, and, during the Napoleonic Wars, had been an officer in the Warwickshire Regiment of Yeomanry Cavalry. He married his first wife, Dinah Tarleton, in 1793 and they had eight children. Following her death in 1830, he married Elizabeth Butt, 36 years his junior, in 1832, and they had two more daughters. It was said of him that 'though corpulent, his manners were elegant and easy'.



Portrait & Testimonial (right)  
Courtesy of Henley-in-Arden Heritage Centre.



## Testimonial

A committee of many great and eminent Engineers, politicians and businessmen, were moved to write a Testimonial Document in support of his claims for recognition and financial recompense. The *Mechanics Magazine* of October 1848 stated..

‘He was the author of the Great Railway Movement of 1825. This document assigns, with unimpeachable speciality and distinctness, to William James, the prominent place in railway history, which George Stephenson was habitually fond of ascribing to himself. This document is subscribed by the distinguished railway engineers of this railway era including, in a foremost place, Robert Stephenson’.

## Summary

William James and his eldest son, William Henry James, designed and were patentees of several inventions related to the improvement of motor and railway transport. He was instrumental in giving a great impetus to the first hundred-mile railway and discovered George Stephenson, as well as mentoring Robert, his son.

With the backing of a great fortune from his enterprises in coal mining he used his elevated position in high society to promote the advantages of a railway based national transport system. This was forward thinking well in advance of its time even though most commentators were publicly denigrating the person and his concepts.

# Research & Original Author

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