



# THE ROCKET

The Newsletter of the Robert Stephenson Trust - Spring 2024

## John Jeffrey MBE



It is with sadness that we record the death of former Secretary to the Trustees, John Jeffrey. John joined as a Trustee in 2010 and took over as Secretary in 2014, a role he undertook until his retirement in 2021. He was well known

and respected in engineering circles having been awarded an MBE in 1997 for services to the engineering profession. He served as chairman of ICE (NE Region), CIHT (Northern Region) and was a member of many other associated bodies including the Panel for Historical Engineering Works.

## Chairman's Report

The Trust Board still desperately needs an Editor to replace Michael Taylor. If any of you have any interest in journalism and/or communication as such then do please get in touch with me using my personal email address jedecoin@aol.com. Michael has very kindly offered to produce this edition and the Trust is grateful to him for carrying on after he had given notice. As Editor, Michael has also been responsible for distributing Rocket. His successor does not have to have this responsibility if he or she doesn't want it and the Board will make other arrangements.

The Board is still looking for new Trustees and if any of you reading this edition of Rocket have the any interest in promoting the record of Robert Stephenson and his associates then we will be very pleased to hear from you. Please do contact me directly. Trustees and previous Trustees continue to give lectures to interested societies, clubs etc. The next big bicentenary will be in 2025 and the Board are now giving consideration as to how they can use this to highlight the works and achievements of Robert Stephenson.

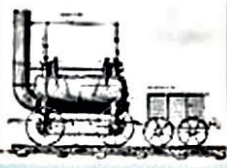
D L Heath, Chairman

## REGULATIONS FOR THE DRAWING OFFICE OF ROBERT STEPHENSON & CO.

- Hours of Attendance.*—From Seven o'clock in the Morning until Six in the Evening, except on Saturdays, when the Office Hours terminate at Four; subject however, at all times, to extra Attendance whenever Business requires it.
- Meal Times.*—BREAKFAST, from Half-past Eight till Nine o'clock;—DINNER, from One till Two; Head Draughtsman, from One till Half-past Two.
- Management.*—The Head Draughtsman to have the sole Management and Control, and to be considered Master in the Absence of Mr. Hutchinson.
- Order.*—Each Draughtsman to assort and carefully put away every Evening, all such Drawings, Papers, and other Documents and Instruments, he may have been engaged with, or using during the Day.
- Removing of Documents.*—No Drawings, Papers, or any other Documents whatever, belonging to the Establishment (or Copies thereof), to be removed or taken from the Office, or out of the Works, without the Sanction of Mr. Hutchinson.
- Instruments.*—Every Draughtsman, before entering the Office, or as soon after as convenient, must provide himself with all necessary Drawing Instruments.
- Leave of Absence.*—No Absence is allowed without Leave from Mr. Hutchinson; or, in case of his Absence, from the Head Draughtsman.
- Time.*—Each Person to enter an Account of his Time in a Book, and deliver the same once a Fortnight (on the Thursday Morning) into the Counting House.
- Note.*—We hereby appoint MR. WILLIAM WEALLENS to the Situation of Head Draughtsman, who has our Authority to enforce the strict Observance of these Regulations.



# THE ROCKET



## Stephenson Times

### What was happening to the Stephensons 200 years ago?



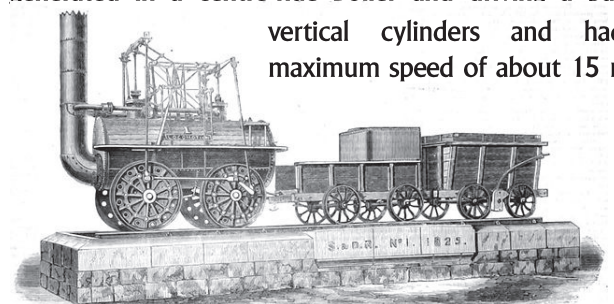
On 18 June 1824, Robert Stephenson sailed on the *Sir William Congreve* from Liverpool for South America on a three year contract with the Columbian Mining Association. At that time Colombia and Venezuela had not been independent of Spain for long, and they were both part of the same republic, Gran Colombia. The area's natural resources were attracting some British investors, including the Colombian Mining Association which had been formed to reopen gold and silver mines worked by the Spanish in colonial times. A Robert Stephenson & Co. partner, Thomas Richardson, was a promoter and as the company had received orders for steam engines, Richardson suggested to Stephenson that he go to South America.

To prepare for the trip, Stephenson took Spanish lessons, visited mines in Cornwall, and consulted a doctor, who advised that such a change of climate would be beneficial to his health. After a five-week journey Robert arrived at the port of La Guayra in Venezuela on 23 July 1824. He investigated building a breakwater and pier at the harbour, and a railway to Caracas. A railway linking Caracas to its port was an ambitious project as Caracas is nearly 1,000 metres above sea level and the railway was not completed until the 1880s. Stephenson had potential backers for his railway in London, but he concluded that while the cost of a pier, estimated at £6,000, would be sustainable, that of a breakwater or railway would not.

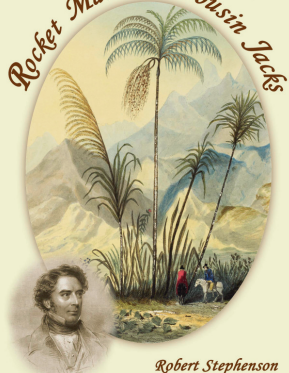
The initial survey for the Liverpool & Manchester line was carried out by William James and, being done surreptitiously and sometimes by trespass, was defective. William James became bankrupt and consequently in 1824 George Stephenson was appointed engineer in his place. By this time George was very busy due because of the absence of Robert left checking the survey to subordinates. Upon presentation to Parliament in 1825 it was shown to be inaccurate (particularly in relation to the Irwell bridge), and the first Bill was thrown out. A key opposition figure in this had been Robert Haldane Bradshaw, one of the trustees of the Marquess of Stafford's Worsley estate, which included the Bridgewater Canal.



On 16 September 1824, the S&DR ordered a pair of steam locomotives from RS&Co, at a price of £550 (about £46,810 today) each. This order was historically important as the first of these locomotives, *Active* (later renamed *Locomotion No. 1*), built on the improvements that George Stephenson had incorporated in his Killingworth locomotives. The locomotive weighed 6.6 tonnes, with many elements, including the boiler, cylinders and wheels, composed of cast iron, although the frame was timber. There were four 4 feet (1.2 m) diameter driving wheels. It used high-pressure steam generated in a centre-flue boiler and driving a pair of vertical cylinders and had a maximum speed of about 15 mph.



### Rocket Man with Cousin Jacks



Robert Stephenson  
in Colombia 1824 - 1827

This book sets out the reasons behind his decision to abandon his father George, his friends and the management of the locomotive factory. for a speculative

venture in South America in which he would be responsible for finding and extracting silver from mines first started during the Spanish occupation. Copies are available from Robert Stephenson Trust.



## Stephensons' Associates - William Weallens, 1823 - 1862

William Weallens was the descendant of a German family who emigrated in the 1700s to work in iron works in North of England. His father, John Weallens, a farmer at East Houses, North Dissington married Mary, the daughter of the Rev. John Furness, of Ponteland, in 1822. William Weallens was born, on the 8th of March, 1823 and subsequently received his education under Dr. Cowan, of the Grange, Bishopwearmouth.

His mother, who was widowed in 1828, subsequently married William Hutchinson who had joined Robert Stephenson and Co. in 1823. Hutchinson who became works manager of the South Street factory, Newcastle identified William's potential as a mechanical engineer and enabled him to become a pupil of his stepfather on 3rd September 1838 apprenticed to Robert Stephenson and Co.

Weallens was appointed Head Draughtsman on 1st February 1846 and on Hutchinson's death in 1853 William became responsible for the mechanical department and eventually, in January 1855, he became a partner in the firm. The Institution of Civil Engineers Proceedings of 1863 records that both Pease and Stephenson admired Weallens clear judgement and that his amiable manner endeared himself to the workmen and also to his fellow-townsmen, who elected him a member of the Town Council.

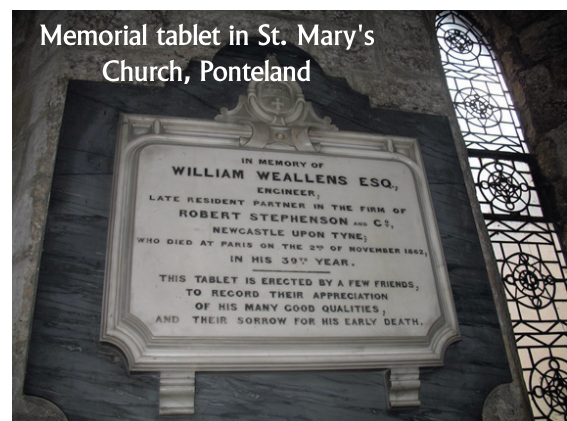
On 20th November 1855 Weallens wrote with some concern to Edward Pease to say that whilst the factory was full of work, orders were not coming in as fast as he would like to see. He did confirm however that the factory was doing well with marine engines. During Weallens' tenure with the company, the production of marine engines was set to continue to expand and during the first forty years of existence 115 marine engines, 206 marine boilers and 263 stationary engines and boilers were built.

During the 1850s the company began to improve marine engines and in 1855 Weallens raised the possibility of patenting some of these improvements with Robert Stephenson who responded from his office at 24 Great George Street, London, in encouraging terms. The encouragements had immediate effect and William Weallens and George Crow, who was also involved in the project, made patent applications for "improvements in marine steam engines" on 25th July 1855 and "improvements in parabolic governors in the mode of applying the same to steam engines" on 28th September 1858.

In 1855 William travelled to Paris for The Exposition Universelle, an international exhibition held on the Champs de Mars in Paris from 15th May to 15th November. He was accompanied by his sister and two misses Hardcastles to Bolougne before meeting Robert Stephenson at the exhibition.

At the time of the 1861 census, he was living at Ashfield House, Elswick Lane, just a short distance from the South Street works. He had in fact married Elizabeth Hutchinson, his step sister in 1849 and had 8 children, the youngest of which was 10-month-old Robert Stephenson Weallens who was eventually to become a clergyman in Wiltshire. William the son born in 1859 was a lieutenant at Rorkes Drift in the Zulu War and was later part of the colour party presented to Queen Victoria, eventually retiring from the army as a Brevet Colonel.

Williams's life was to be cut short. He usually made an annual visit to the Continent with his friend and London Manager for the company, Mr. Charles Manby. Both men had been indisposed and consequently travelled more leisurely than usual as far as Turin, where Manby found it necessary to call for medical advice about William's decline in condition, which suggested that a



journey further south might even be beneficial to his condition. However, on arriving at Genoa, Manby consulted an eminent physician who advised a return home. He was taken to Marseilles by sea, and transferred to a bed-carriage on the railway to be taken to Paris, which was reached on the evening of Saturday 1st November, 1862 and dying the following day.

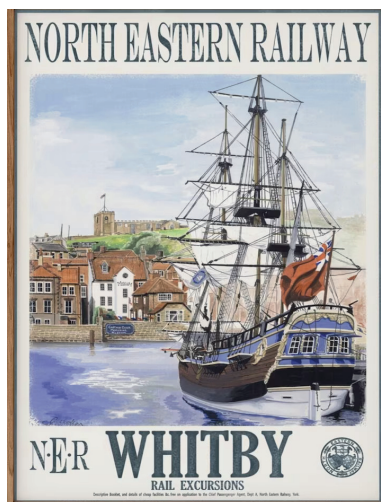
His remains were brought to England, and were interred in the family vault at Ponteland, on Saturday 8th November, 1862. The funeral was attended by his partners, a large number of local people, workmen from the factory, and a large body of Volunteers under arms.





## THE ROCKET

### Early Whitby MPs



The Whitby constituency was created by the Great Reform Act for the 1832 general election as a parliamentary borough, Whitby being at that point one of the most prosperous towns in England which had not previously been represented.



In the election of 1832 Tory Aaron Chapman was elected MP polling 217 votes against his Whig opponent Richard Moorsom who polled 139 votes. Chapman came from a prominent local family and his success was mainly due to the support of the local ship owners who did not support Moorsom's support for free trade.



Drawn by G. Dodgson.

Engraved by J. Stephenson.

HAILING THE COACH, WHITBY AND PICKERING RAILWAY.

Moorsom was from an equally prominent local family with distinguished naval connections. His uncle was probably Admiral Sir Robert Moorsom who captained HMS *Revenge* at the Battle of Trafalgar. Admiral Moorsom was the father of Constantine Richard Moorsom, Secretary of London & Birmingham Railway and Captain William Scarth Moorsom who after apprenticeship with Robert Stephenson became engineer for railway lines in England, Belgium, Germany and Ceylon.

**WHITBY AND PICKERING RAILWAY.**  
TO EARTHWORKERS, QUARRYMEN, MASONS, AND CARPENTERS.  
**THE DIRECTORS of the WHITBY and PICKERING RAILWAY COMPANY** will receive Tenders for the Excavations, Embankments, Masonry, and Bridges, required along the first 3 Miles at the Whitby End of this Railway. The necessary Plans, Sections, and Specifications, may be seen at the Railway Office, in Whitby, between the 17th and 24th instant. No Tenders will be received after the 26th inst.  
Tenders to be addressed (Post-paid) to **ROBERT CAMPION, Esq., Whitby, the Chairman of the Directors.**  
By Order,  
**HENRY BELCHER, } Solicitors to the**  
**JAMES WALKER, } Company.**  
Whitby, 7th August, 1833.

Chapman was re-elected unopposed, in 1835, 1837 and 1841 but in 1845 he announced he would not stand in the 1847 election. George Hudson, "The Railway King", had inherited property on Whitby's West Cliff in the 1820s, and in 1843 he founded the Whitby Cliff Building Company to develop the area as a seaside resort. In 1845 the York & North Midland company purchased the Whitby & Pickering railway, which it planned to connect to the Stockton & Darlington railway.

**TO CONTRACTORS.**  
**THE Directors of the WHITBY and PICKERING RAILWAY**, are ready to Contract for the Execution of the whole of the Works on the remaining 8½ Miles of the Whitby and Pickering Railway. Plans, Sections, Drawings, and Specifications, may be seen at the RAILWAY-OFFICE, WHITBY, between the 7th and 29th Inst., after which date, no Tenders will be received.  
By Order of the Directors,  
**GEO. STEPHENSON, Engineer.**

In August of 1845 Hudson had been elected in a by-election for the Sunderland constituency hence it was his associate Robert Stephenson, who was elected unopposed as Whitby's Conservative MP. Stephenson had become involved with Hudson in 1840 when Hudson invested in the financially failing Stanhope & Tyne Railroad in which Robert was a shareholder.

Robert was elected as a Conservative holding strong protectionist Tory views and opposed to free trade. His maiden speech was in favour of the Great Exhibition and, with Brunel, he became one of the Commissioners. Robert spoke against educational reform, saying workmen needed only to learn how to do their jobs, although he made donations to educational organisations. In 1850, the Pope appointed Bishop Wiseman as the first English Roman Catholic Cardinal since the Reformation; Robert wrote in a private letter that this was aggressive, saying that in the "battle as to the mere form in which the creator is to be worshiped – the true spirit of Christianity is never allowed to appear. He later expressed opposition





## and Early Railways

to the decision to become involved in Crimea but supported the government when a vote of no confidence in the management of the war was tabled in January 1855.



Crimea War: *The Attack on the Malakoff*

on 7th September 1855 (painting by William Simpson)

The coalition government of George Hamilton-Gordon, 4th Earl of Aberdeen, fell on 30 January 1855 on a no-confidence vote, as Parliament voted to appoint a committee to investigate the mismanagement of the war. Lawyer and author, Edmund Phipps, a Whig stood against Robert in the 1852 election but Robert was returned with a majority of 109 when he polled 218 votes. He was returned to parliament in 1857 and 1859 unopposed.

Robert had become a member of the Société d'Études du Canal de Suez in 1846, and he advised against a canal, saying it would quickly fill up with sand, and became engineer for the building of a railway between Alexandria and Cairo, with two tubular bridges that he had designed. This opened in 1854, and was extended to Suez in 1858. He spoke in Parliament against possible involvement in a Suez Canal scheme in 1857 and 1858.



Hudson 'off the rail'

Stephenson was elected MP for Whitby for the forth time in 1859. But his death shortly after his election did not end Hudson's involvement or railway interest in



George Hudson



Harry Thompson

the Whitby constituency. In the ensuing by-election, Harry Stephen Thompson, chairman of the North Eastern railway was elected with a majority of 39. Two candidates appeared on the Conservative side. Thomas Chapman, chairman of Lloyd's shipping register in London, was backed by his family influence and Whitby's shipping interest, but faced a rival in the form of Hudson, who had recently lost his Sunderland seat. Hudson had fallen from grace after the exposure of his fraudulent railway dealings in 1849.

Thompson had been instrumental in bringing Hudson's mismanagement of his railway companies to light and had replaced him as chairman of the York & North Midland railway. As chairman of the successor NER, Thompson was involved in lengthy legal proceedings to recoup some of the money Hudson had embezzled, and Hudson's West Cliff property had come under the NER's control. This, together with the NER's plans for improved railway links to Whitby, gave Thompson considerable local influence. Hudson was forced to flee abroad to avoid his creditors, and withdraw his candidature a few days before the nomination, leaving Chapman and Thompson in a straight fight.

Hudson intended to stand for election again in in 1865 because Thompson had become unpopular as many constituents felt that the railway developments he had overseen as NER chairman had benefitted Scarborough more than Whitby. However, Hudson's was dramatically arrested two days before the nomination at the request of his creditors, and he was imprisonment in York Castle. The Conservatives' last-minute substitute, Charles Bagnall, a Staffordshire iron-master defeated Thompson with a majority of 23 votes.

So it may have been the shipping interest that prompted Whitby's enfranchisement in 1832, but the railway interest came to play a very influential role within the electoral politics of this Yorkshire port.



# THE ROCKET



## Sankey Viaduct

Stephenson's viaduct crossing the Sankey Brook, and the remains of the Sankey Canal has undergone repairs costing £3.8m ahead of its 200th anniversary. Also known as 'Nine Arches' viaduct, it was designed by George Stephenson to bridge the 160-metre gap over the Sankey valley and built between 1828 and 1830.



The work consisted of erecting scaffolding towers along each span to enable the carrying out of extensive brickwork repairs, painting historic metalwork in heritage colours and installing strengthening anchors to secure any cracks. Overgrown weeds and plants were removed, graffiti cleaned from the top of the stonework and three new pairs of pattress plates – metalwork which secures the structure.



It was given Grade I listed status in 1966, and because of that free-standing scaffolding was used so as not to interfere with the historic structure.

Laser scanners and drones were used to map every inch of the Victorian viaduct as part of the major restoration project. Drone flights also took place as part of the survey taking high-definition photographs of the Grade I listed structure.

The viaduct has nine semi-circular arches each spanning 15 metres, which stand on eight supports (piers) up to 21 metres high spanning 160 metres over the Sankey Valley. It carries twin tracks on which major freight and passengers services run every day. The viaduct was a key component of the Liverpool & Manchester Railway (L&MR) which opened in 1830 between Liverpool Road, Manchester Victoria and Crown Street, Liverpool.

## The Norwegian Trunk Line

The Trunk Line (Norwegian: Hovedbanen) was engineered by Robert Stephenson and was the first railway line in Norway opening on 1st September 1854.

In 1851, the British engineering company Ricardo, Peto & Brassey started work on the 68 kilometre railway line between Oslo and Eidsvold. Initially the line was owned by a Norwegian-British consortium, where the Norwegian state owned 50%. The trip between Oslo and Eidsvold took 2.5 hours and in its first year, the line carried 128,000 passengers, and 83,000 tons of timber.



The opening celebration held at Eidsvold was attended by over 300 guests including Robert Stephenson, George Parker Bidder and Contractor, Samuel Morton Peto

Currently owned by Bane NOR the line runs from Oslo to Eidsvold and was further connected by steamboats on Lake Mjøsa, allowing steam powered transport to Lillehammer, 180 kilometers (110 mi) from Oslo. The section between Kristiania East and Lillestrøm was rebuilt to double track in 1902, and the line was electrified in two portions, in 1927 and 1953. The Trunk Line was the main line between Oslo and Eidsvold until 8 October 1998, when the more direct, double-tracked high-speed Gardermoen Line opened, taking most of the passenger traffic.







## The Stephensons and the artist John Lucas

The artist John Lucas was born in London in 1807 and between 1828 and his death in 1874 he exhibited 117 portraits at the Royal Academy and other galleries. Undoubtedly, he was one of Robert Stephenson's favourite artists which is borne out by the number of canvases related to Stephenson subjects.

In 1845 London & Birmingham Railway commissioned Lucas to paint a portrait of Robert to be presented to him as a "fitting mark of their appreciation of his services". Robert was depicted sitting at his desk, displaying a drawing of a 2-2-2 long boiler locomotive. Robert agreed that his portrait, which was exhibited in the Royal Academy in 1846, would be kept by himself during his lifetime but on his death would be gifted to the Literary and Philosophical Society of Newcastle upon Tyne.



Robert was so pleased with this portrait that he commissioned Lucas to paint a portrait of his father standing on Chat Moss. In the background is a locomotive developed in 1847 for the York and Newcastle Railway, a 3 cylinder engine, which was the last patent that George Stephenson took out.

Lucas also completed after nine sittings a portrait of Robert standing in front of some rocks with the Britannia Bridge across the Menai Straits in the distance.

In 1848 Engineering Contractor Samuel Morton Peto commissioned a painting of the two Stephensons together. As George died in 1848 it must be assumed that it was



mostly a posthumous portrait and not completed until 1851. This painting conveys an affection between the two men with George's hand on Robert's shoulder. The model depicted is a long boiler locomotive which had been an important milestone in the development of the steam locomotive. The painting is now in the ownership of the Institution of Civil Engineers (ICE) and enjoys a prominent position in the organisation's offices at One Great George Street, London.

In 1851 Peto commissioned another painting, 'Conference of Engineers', to commemorate the construction of the Britannia Bridge on the Chester and Holyhead railway line. This painting is also housed in the ICE offices.



The members of the group are Robert Stephenson, Joseph Locke, Isambard Brunel, Edwin Clark, Admiral Moorsom, Latimer Clark, Frank Forster, G. P. Bidder, Mr. Hemmingway, Capt. Claxton, Charles H. Wild, Alexander Ross. The painting hangs in the ICE, having been presented by George Robert Stephenson, who inherited Stephenson's paintings.

Robert Stephenson commissioned Lucas in May 1855 for a painting he called *The Stepping Stones*. Stephenson's biographer Jeaffreson said, 'painted at Robert Stephenson's request and it represents a girl carrying a child over a stream in Wales with The Britannia Bridge is seen in the distance. It was required to fill a panel in the drawing-room of Stephenson's house, 34 Gloucester Square, Hyde Park.

The location of a painting commissioned for the drawing-room at 34 Gloucester Square may recently have been identified. It is entitled *Love*, Portrait of a Lady painted in 1858 and is a portrait of Cornelia Fallon, daughter of Marcela Fallon whom Robert had met in Columbia in 1825. Cornelia was a guest of Robert staying at his home in 1858. The painting is now in the ownership of Touchstones, Rochdale Art Gallery.



Robert Stephenson commissioned a further painting from Lucas in 1857 but it was never exhibited publicly. Entitled *Birthplace of the Locomotive*, and is a strange mix of images. Strangest of all, perhaps is the two ladies said to represent George's first



two wives and the small girl who some say represents Robert's sister who died in infancy. The Painting is currently displayed at Chesterfield Museum.



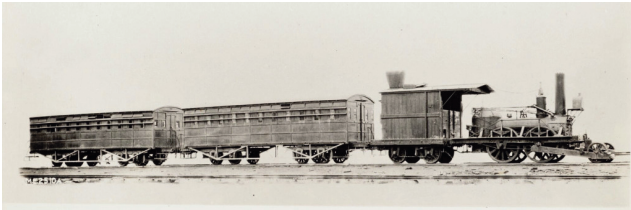


# THE ROCKET

## PRODUCTS OF THE WORKS

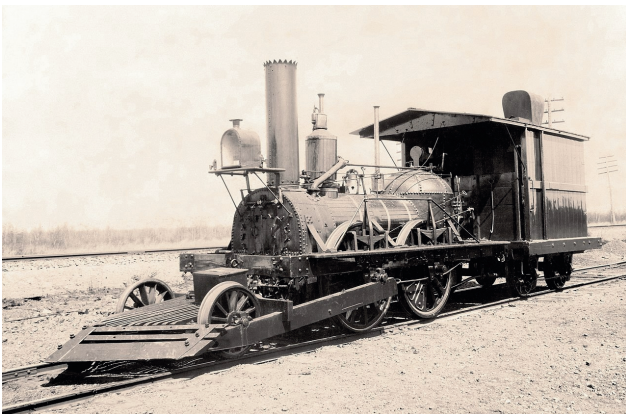
### John Bull

Built for the Camden and Amboy Railroad (USA) by Robert Stephenson & Co. the 2-4-0 steam locomotive Nr. 1 *John Bull* operated for the first time on 15th September 1831. It ran for 35 years, pulling trains of passengers and cargo between the two largest cities of the time, Philadelphia and New York. Robert Stevens was president of the Camden & Amboy Railroad and initially the locomotive was named Stevens in his honour after he had travelled to Britain to order the locomotive.



The locomotive was based on the Stephenson *Samson* model with four equal-sized driving wheels powered by two steam cylinders. However, it lacked the later front cow-catcher, pilot wheels, and covered rear tender carriage.

On arrival in the United States the task of reassembling the locomotive was undertaken by the railroad's chief mechanic, Isaac Dripps, who did so without the aid of any drawings or instructions. Fortunately his work on steamboats gave him an idea of how steam boilers functioned and were assembled.



On 12th November 1831 the locomotive completed a test with New Jersey politicians and dignitaries riding along but it was a further two years before the railway was completed and *John Bull* was able to enter service in the spring of 1833.

### Norwegian Locomotive

The locomotive was built by R. Stephenson & Co in 1861 for the Oslo and Eidsvold line.



### Melbourne & Hobson's Bay Railway Company 0-4-0 well tank



Pier Donkey locomotive (later numbered No. 5), the 0-4-0 well tank of the Melbourne & Hobson's Bay Railway Company purchased from Robert Stephenson & Co. in 1857. Transferred as part of an amalgamation to the Melbourne & Hobson's Bay United Railway Company in 1865. It was sold with the company to the Victorian



Railways in 1878 and resold in 1904 to Rowden & Baxter to be used as a contractor's locomotive in South Australia.

Edited By: J. Michael Taylor MBE, CEng, MICE, FCIHT

Rocket is published by The Robert Stephenson Trust

C/O The Common Room, Neville Hall,

Westgate Road, Newcastle upon Tyne, NE1 1SE

Email: [rstrust@robertstephensontrust.com](mailto:rstrust@robertstephensontrust.com) Website: [robertstephensontrust.com](http://robertstephensontrust.com)