

WHERE RAILWAYS WERE BORN

The Story of Wylam
and its railway pioneers

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Preface

If the Northumberland village of Wylam is known outside the North East of England it is almost certainly because it was the birth-place of George Stephenson, the “Father of Railway”. Although “Wylam Geordie” – as Stephenson was affectionately known on Tyneside – is undoubtedly Wylam’s most famous “son”, several other important early railway pioneers have lived and also worked in the village, which was the scene of historic experiments with locomotives early in the 19th century.

The major contribution which Wylam and its engineers made to the history of railways and the development of steam locomotives has not always been recognised. In 1975, when the 150th Anniversary of the opening of Stockton and Darlington Railway was being celebrated (a project in which several of the Wylam-born engineers were involved in 1825), it was decided to commemorate this event by publishing an account of some of their work. This account was not restricted to a description of what occurred within the village itself, but also outlined some of the other events with which the local pioneers were associated.

This book was subsequently revised and republished in 1979, exactly 200 years since the births of Williams Hedley, designer of the historic locomotives Puffing Billy and Wylam Dilly; Benjamin Thompson, who surveyed the original route for Newcastle and Carlisle Railway and founded Wylam Ironworks; and of James Stephenson (elder brother of George) who was the first driver of his brother’s Killingworth locomotives Blucher and of the famous ‘Locomotion’, at the opening of the Stockton and Darlington Railway.

To meet the continuing steady demand, this book has been reissued in 2003 with minor revisions to the 1979 edition. Any additional information about matters mentioned in this book would be welcomed.

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Eighteenth Century Beginnings Construction of Colliery Waggonways

It was on Tyneside where the evolution of the colliery waggonways into the modern concept of the railways began. Some of the most important of Tyneside's contributions were from Wylam, then a small colliery village on the north bank of the Tyne, eight miles west of Newcastle. The village's first contribution to transport history began in the 18th Century – the period of rapid expansion in the growth of colliery waggonways. At this time, prior to the advent of the railways, river transport was the only convenient means for exporting large outputs of coal from Tyneside, but for many collieries there was the problem of linking pits to riverside staithes where the coal could be loaded into keels (barges). These problems were largely overcome by the development of a system of waggonways as a means of transporting coal, and the introduction of waggonways gradually spread throughout the coalfield area, with new collieries and those with a long haul between the pit and navigable water being among those willing to innovate.

Wylam Colliery was one of those which lay some distance from a convenient navigable point on the Tyne, and the Wylam waggonway linked the colliery to the staithes at Lemington which was the most westerly loading point on the north bank of the river, and served three waggonways; one from Holywell Main and Greenwich Moor (Black Callerton) collieries, another from Throckley and Walbottle, and the third from Wylam colliery.

The actual date of construction of the five-mile-long Wylam waggonway is unknown, but it is said to have been built in 1748 (in which case it would have been one of the earliest on Tyneside) and it was certainly in use before 1763. Similarly, it is not certain who designed and built the waggonway, but it is possible that William Brown, of Throckley, who was consulting engineer to various collieries in the north of England and responsible for the design and construction of several waggonways may have been involved. As Brown was part owner of Throckley Colliery, (whose waggonway was completed in 1751, and linked to adjacent staithes at Lemington) there is a strong chance that John Blckett; the owner of Wylam Colliery could have employed him to plan the waggonway. John Blckett inherited the Wylam estates, including the colliery in 1714, and he was the local squire until his death in 1769. To what extent he took an active interest in the running of the colliery is not known, but he was clearly sufficiently far-sighted to support and presumably finance construction of the waggonway.

Level throughout its route, the waggonway ran alongside the riverbank and close to, what at the time, was the public highway between Newburn and Wylam. The gauge was 5 feet 0.5 inches, and the timber rails were 3.5 inches wide, 4.5 inches deep and attached to stone sleepers at 18 inch intervals. The actual costs of constructing the waggonway are not recorded but contemporary documents show that in 1745 the cost of laying one yard of "standard" wooden waggonway was approximately 4/2d. (21p). The waggons were, of course, horse drawn, and one horse and a man were needed to each wagon. They usually made three trips per shift.

Although there were no significant improvements to the waggonway recorded between the time of its construction and the beginning of the 19th Century, there were other important events taking place in Wylam during this period which were to prove of greater significance to the history of railways. For example – the births of George Stephenson, Timothy Hackworth and Nicholas Wood, who were to become famous as pioneers in the history of locomotive development.

Early Years of the Wylam Engineers

Although not born in Wylam, William Hedley became so closely associated with the village from his earliest years, that he can fairly be called one of the Wylam engineers. He was born in July 1779 in nearby Newburn where his parents were in business. The fact that they were reasonably prosperous, yet chose to send their son to school in Wylam probably confirms the belief that the village school must have had a good reputation, since there were other schools closer to Newburn than the one in Wylam.

Two years later, on 9th June, 1781, George Stephenson, Wylam's most famous son, was born in the small stonebuilt labourer's cottage at High Street House (so named because of its position alongside the old road between Wylam and Newburn), half a mile east of the village. The waggonway ran past the front of the four-roomed cottage in which the Stephenson family occupied a single ground floor room. George was the second son, but three more children, two sons and a daughter, were born before the family left Wylam eight years later. Their father, Robert, a Scot, was employed as engine fireman at Wylam Colliery, with a wage of 12s. (60p). per week. His mother, Mabel, was the daughter of an Ovingham dyer, George Carr. From his earliest years, George would see the horses pulling waggons along the waggonway. One of his first duties was probably to carry his father's lunch to him at the colliery, and on his way he would pass close to the cottage where the Hackworth family lived – near the Engine Pit and the colliery workshops which stood west of the corn mill.

John Hackworth was foreman of the colliery blacksmith, and Elizabeth, his wife, a local girl from Ovingham. Timothy, their eldest son, was born on 22nd December, 1786, and was still only a toddler in 1789, when the Stephenson family, with young George as a lively eight year old, moved away from Wylam to Dewley Burn colliery at Throckley. Since William Hedley was attending Wylam School whilst the Stephenson's were still in Wylam, it is quite possible that he would have seen the Stephenson children, as his daily walk to school from Newburn would be along the old post road next to the waggonway.

Whilst Hedley, Stephenson and Hackworth might perhaps have seen each other during their childhood days in Wylam, Nicholas Wood was several years younger, (being born in 1795) and would not have known the others in his early years. Wood's home was just south of the river, at Sour Mires (now renamed Bradley Hall Farm), where his father was a farm tenant of Sir Thomas Liddell (later to become Lord Ravensworth), one of the wealthy and influential group of North-East coal owners, known as the "Grand Allies".

By the turn of the 19th Century, Hedley had finished school and trained to become viewer (manager) at Walbottle Colliery. During this time Stephenson – who had never attended school – had had various jobs at collieries in the Throckley and Walbottle area, where the family lived after leaving Wylam. In 1798, when he was 17, Stephenson was put in charge of a new pumping engine which had been erected at Water Row Colliery, Newburn, and it was here that his enthusiasm and abilities were noticed by Robert Hawthorn, then engineer at Walbottle Colliery, and a celebrated Tyneside enginewright. (Hawthorn's two sons later established a famous engineering company – R. and W. Hawthorn, which was to become a competitor of the firm Stephenson founded). In 1800 Timothy Hackworth left the village school to begin his apprenticeship as a blacksmith at Wylam Colliery, while on the south bank of the Tyne young Nicholas Wood had only just started attending school at Crawcrook.

The First Locomotives

Perhaps the most significant event in Wylam in the year 1800 was the arrival of Christopher Blackett as the new squire, for it was he who made Wylam more than just another colliery village. He inherited the Wylam Estates at the age of 49, following the death of his half-brother Thomas, but prior to this he had been Postmaster of Newcastle and agent for the Blackett-Beaumont lead mines in the Allen valley, and had wide business interests and experience, before he came to the village.

Although many of the famous engineers involved in the development of the locomotive came from the North-East, the actual inventor was Richard Trevithick, a Cornish engineer, who on 21st February, 1804, demonstrated his engine on the Pen-y-darran ironworks waggonway at Merthyr Tydfil, where it pulled five waggons containing a load of 10 tons of iron, and seventy people a distance of nine miles at a rate of nearly five miles an hour. However, this experiment did not convince the South Wales colliery and ironworks owners of the importance of his invention and having indicated the form of the locomotive engine and the principles of its construction, Trevithick did not proceed with its development on Tyneside. Christopher Blackett was aware of the Pen-y-darran trails and was so impressed with the results that he ordered one of Trevithick's engines from John Whinfield, an iron and brass founder, of Pipewellgate, Gateshead, whom Trevithick had appointed as his agent for the North of England.

It is not clear exactly why Blackett became interested in locomotives, but it seems probable that he hoped that by using locomotives instead of horses to transport the coal from Wylam to Lemington staithes, he could reduce haulage costs, and thus increase the profitability of the colliery. Certainly the costs of haulage at the colliery were high because of the distance involved and he, no doubt, thought a locomotive could do the work of most of his horses, in much less time and would not require to be fed when not in use. By using locomotives, he would also reduce the large number of waggonmen required to lead the horses. Although the initial capital costs of the locomotives were almost certain to be much greater than the price of horses, the running costs were likely to be less, since they would use coal – a readily available fuel from the colliery.

The locomotive constructed at Whinfield's foundry between October 1804, and May 1805, was made with the help of John Steel, Trevithick's millwright, and was basically similar in principle, although different in design detail, to the Pen-y-darran locomotive. Temporary track had been laid at the works to demonstrate the engine, but for some unrecorded reason, possibly because it was thought that its weight of four-and-half tons would be too heavy for the wooden waggonway, it never left the foundry and was just used as a stationary engine. It was probably the first railway locomotive built with flanged wheels.

Later in the same year, 1805, Blackett appointed William Hedley to the job of viewer of Wylam Colliery from Walbottle. Hedley, now aged 26, had married a Berwick girl, Frances Dodds, at Newburn on 2nd June 1803, and was father of two sons, Oswald and Thomas. The family moved to Wylam shortly after Hedley's appointment and lived on the Ovingham Road, either in what is now Willow House (which was at one time the residence of the colliery viewer) or more probably in White House (now demolished) which stood opposite Willow House. Two more sons, William and George, were born at Wylam in 1808 and 1809 respectively.

Newburn Parish Church had also been the scene of George Stephenson's wedding, on 28th November 1802 just six months before Hedley's. His first wife, Frances Henderson, was twelve

years his senior, the daughter of a small farmer at Black Callerton, and a servant in the house where George lodged while working as brakesman of the engine at Dolly Pit, Black Callerton. Soon after his marriage, he became brakesman of the Ballast Hill engine at Willington Quay, which had been erected by Robert Hawthorn, the Tyneside enginewright. The Stephensons only son, Robert, was born at Willington Quay in October 1803. The family did not stay long at Willington, and in the late autumn of 1804 George took the job of brakesman of the winding engine at the West Moor pit of the 'Grand Allies', and soon moved to a cottage at Killingworth. They had been there less than a year, when tragedy struck Stephenson with the death of a baby daughter, followed soon afterwards by the death of Frances, his wife. George did not remarry for nearly fifteen years, and during his childhood young Robert was looked after by an aunt, Eleanor, his father's younger sister, who lived with them. The Stephensons cottage at Killingworth stills stands, and above the doorway is a sundial bearing the date August 11th MDCCCXVI - one of the first products of George and Robert's joint enterprise.

Timothy Hackworth completed his apprenticeship as a colliery blacksmith in 1807 in difficult circumstances, since his father had died five years earlier, leaving him with the responsibility of looking after his mother, brother and five sisters. However, both Blckett and Hedley must have been well satisfied with his skills, for they appointed him foreman of the colliery blacksmiths, the post, which his father had occupied previously.

Following the failure of Whinfield's Gateshead engine in 1805, there were no further locomotive experiments in the North-East for several years, but one improvement to the Tyneside waggonways was the gradual introduction of all-iron rails to replace wood. In much of the country, L-shaped plate rails for carrying unflanged wheels were used in preference to the edge rails (which were needed when the wheels had flanges), but on Tyneside the iron edge rail was favoured, as it was stronger and more capable of carrying heavy rolling weights. In view of the local preference for iron rails and Blckett's previous experience with Whinfield's engine which proved too heavy for the wooden rails, it is surprising that in 1808, on the advice of William Thomas a consultant engineer, he had the Wylam waggonway relaid with plate rails and not edge rails. However, although the new iron plate rails enabled a single horse to pull two laden waggons instead of only one, the heavier loads necessitated the provision of spare horses.

In 1809, Jonathan Forster, a man whose practical experience and ability was to make a significant contribution to the development and construction of the early locomotives came to Wylam Colliery as the enginewright. His responsibility was looking after the stationary engines and not to work locomotives. Forster was born in the South Tyne Valley in 1775, and married at Tynemouth in 1801, but little else is known of his early life before he moved to Wylam.

Two years later in April 1811, the youngest of the Wylam engineers, Nicholas Wood, began training at Killingworth Colliery at the age of 16, apprenticed to learn the profession of a colliery viewer. Shortly after Wood started his apprenticeship, George Stephenson was promoted to the post of enginewright at Killingworth High Pit, and a strong and lasting friendship developed between the two local men, with Wood actively assisting Stephenson in his locomotive, safety lamp, and other experiments in subsequent years. That same year 1811, Timothy Hackworth began attending local meetings of the Wesleyans. He became devoted to the non-conformist cause – an event that was to have significance a few years later.

The next major step forward in solving the problem of adapting the locomotive to service was made by another Tynesider, John Blenkinsop, who was employed as viewer at the Middleton Colliery, Leeds, then owned by Charles Brandling, of Gosforth, for many years a Member of Parliament for Northumberland. For some time the colliery had been experiencing financial

difficulties, partly (as at Wylam Colliery) due to the high costs of horse-drawn transport, and Blenkinsop was keen to find a cheaper alternative means of conveying coal. In 1810 or 1811 he commissioned Matthew Murray, a partner in the Leeds engineering firm of Fenton, Murray and Wood, to build an engine capable of hauling substantial loads. It was to run on a rack railway that Blenkinsop devised and patented on 10th April 1811. In August 1812 the first rack-rail locomotive built by Murray entered full commercial service on the Middleton Colliery railway. It ran on four flanged wheels, which were free, and was solely propelled by a toothed driving wheel on the engine, which engaged in a rack on the side of one rail. It weighed about 5 tons. This locomotive cost £380 to produce and had a tractive power five times greater than Trevithick's, yet was the same weight. This was the first practically successful locomotive, and one was introduced on Tyneside, on the Kenton and Coxlodge waggonway in 1813. However, due to the expense of the rack-rails, engines of this type were not widely adopted for use on colliery waggonways. The successful trials of the Blenkinsop/Murray locomotive, combined with the fact that the cost of both horses and fodder had increased during the concluding years of the Napoleonic wars may have encouraged Christopher Blackett to re-examine the possibilities of developing the locomotive engine as an alternative, cheaper form of haulage to horses.

Another, and perhaps more probable, reason for re-examining locomotives as an alternative to horse transport, is that an increase in demand for coal, and hence of output from the colliery, necessitated an improved, more rapid, system of transporting coal between the colliery and the river staithes at Lemington. It may be that Blackett considered using Blenkinsop's engine, but since he had relaid the Wylam waggonway with plate rails only three years earlier he probably could not justify spending the £9,000 which would be required to replace these with the specially cogged rails necessary if a locomotive of Blenkinsop's type were to be used. In any event, Blackett reverted to the idea of trying another engine and is reputed to have asked Trevithick to build one for him. Apparently Trevithick declined and so in October 1812, he discussed the matter with colliery viewer William Hedley.

It was not definitely known at that time what relation the weight of an engine bore to the maximum load which it was capable of moving from a state of rest, but Hedley discovered this by a series of experiments carried out with a small test carriage (probably on a track laid between Wylam Cottage and the back of Wylam Hall) and found that an engine light enough to travel on the Wylam waggonway could haul a profitable load of waggons in all weather conditions by the mere adhesion of its smooth wheels on smooth rails and that the use of rack rails and other devices were unnecessary. Following these experiments, the first engine was produced early in 1813 by modifying the test carriage and using a single boiler supplied by Thomas Waters, a Gateshead ironfounder and successor to John Whinfield (who made the engine for Blackett in 1805). This engine proved defective because the boiler was cast iron, and had a straight instead of a return flue – a feature that differed from Trevithick's designs and resulted in the engine being "short of steam".

These faults were remedied in a further engine built at Wylam incorporating twin boilers. Both Hackworth and Forster assisted with this engine as they had done with the first. This new engine was probably put to work in 1814 and another engine to Hedley's design was also under construction in 1815. In March 1813 Hedley took out a patent on his design and it is clear from the specifications that he did not intend to rely solely on the adhesion of the wheels to the rails. By means of teeth or flanges projecting from both sides of the wheels and entering the ground between the stone sleepers or rails, the engine increased its grip on the level, while with the aid of a rope stretching from a post on the waggonway to a rope roll attached to the frame of the locomotive and worked by its own machinery, it could pull itself up an incline. There is, however,

no evidence that any of the locomotives used on the Wylam waggonway ever incorporated this device, which in fact Hedley's own experiments had proved unnecessary!

The locomotives built in 1813 – 1815 weighed over eight tons each, and the tender, with its coal and water for the engine, a further four tons. Each could haul an average total load of about 50 tons (one loaded waggon could weigh as much as four tons) at a speed of nearly five m.p.h. At this speed it took each locomotive about an hour to make the journey from the colliery to the staithes at Lemington. The engines were originally mounted on four wheels, but because their weight frequently broke the cast iron, channel-shaped plateway, they had to be remounted on eight wheels two or three years later in order to spread the load and avoid damage to the plateway.

Now a staunch Wesleyan and a local preacher, Timothy Hackworth objected to working on the Sabbath and in May 1815, at about the time that the second locomotive was under construction he resigned his job as foreman of the colliery blacksmiths following disagreement with the management (presumably Hedley) about Sunday working. After leaving Wylam, he took a similar post at nearby Walbottle Colliery.

Following the successful construction of the early locomotives at Wylam between 1813-15, the main focus of locomotive development switched to Killingworth, where the two Wylam-born engineers, George Stephenson and Nicholas Wood were employed. While Hedley, Blenkinsop and others were carrying out various experiments with locomotives, Stephenson watched the developments with interest and in 1813 his employers, the "Grand Allies" (who were probably interested in the success of the experiments sponsored by their rival coal-owners, Christopher Blackett and Charles Brandling), agreed to his building a locomotive for the Killingworth waggonway in the West Moor colliery workshops. The result was Stephenson's first locomotive Blucher, which made its first journey on 25th July 1814; several months after the engines had begun on the Wylam waggonway. The design incorporated various features of the earlier locomotives designed by his contemporaries and it is said that Stephenson regularly visited his friend Jonathan Forster at Wylam during 1813 and 1814 in order to see the Wylam engines at work.

The years between 1814 and 1825 at Killingworth are regarded as Stephenson's period of invention, during which he carried out numerous experiments in association with his friend Nicholas Wood, who by then was the colliery viewer at Killingworth. In these 11 years, Stephenson claimed that he had built 55 engines, of which 16 were locomotives and that these were the only locomotives built during this period. However, it was his construction of colliery railway systems, particularly the Hetton Colliery railway in 1819-22, which led to his involvement in the Stockton and Darlington Railway, and to his subsequent years of fame.

Although there were no further spectacular pioneering locomotives developments at Wylam, William Hedley had an opportunity to show his ingenuity in 1822 during a keelman's strike on the river Tyne. (The keelmen manned the keels or sailing barges in which coal was carried from the staithes to the colliers anchored in the mouth of the river). By removing one of the colliery locomotives from its chassis, mounting it on a keel and adapting it to drive paddles instead of wheels, he produced a steam paddle tug which proved capable of towing barges up and down the Tyne for several months until the strike ended. Subsequently this locomotive, now preserved and known as 'Wylam Dilly', reverted back into a colliery engine and continued its normal tasks on the waggonway. It is possibly the only locomotive ever to have been used on water.

While still viewer at Wylam, Hedley acquired interests both in shipping and also in other collieries, but about 1827, after leasing Callerton Colliery, north of Throckley, he and his family moved from Wylam. Shortly before Hedley left the village, Robert Hawthorn was employed to survey the line of the waggonway. Whether this was a necessary preparation for the replacement of the old plate-way, which was carried out between 1827 – 1830, using cast iron fish-bellied edge rails, 4 feet between centres, is not clear but no major changes were made in the waggonway route following Hawthorn's report.

On 25th June 1829, Christopher Blackett died, aged 78. He had been instrumental in encouraging the development of locomotives and, without his tenacity, the important experiments carried out might never have taken place. So ended an era – with none of the important locomotive pioneers still living in the village. But although little was happening in Wylam, if we turn back a few years, and switch the scene to Darlington, we find Wylam engineers closely associated with the development of the world's first public steam-hauled railway.

The Stockton and Darlington Railway

The idea of constructing a railroad or tramroad for transporting coal from the Shildon area of Durham to Stockton and Darlington, had been discussed and argued about over a period of several years, and eventually an Act for this project, known as the Stockton and Darlington Railway Act, was obtained on 19th April 1821. It was originally intended that fixed winding engines would be used to work the trains on part of the route, but that horses would haul the trains on the remaining length. By coincidence, on the same day that this Act was passed, George Stephenson and Nicholas Wood had an appointment to see the main promoter of the project, Edward Pease of Darlington.

At the time, both men were still employed by the “Grand Allies” at Killingworth and were associated with the Hetton Colliery Company, where Stephenson was engineer. (A locomotive designed by Stephenson and Wood for Hetton Colliery in 1822 is preserved in the Beamish Museum, Stanley, and Co. Durham). Wood recounted the story of their visit to Edward Pease's house in Northgate, Darlington, as follows: “We rode on horseback from Killingworth to Newcastle, a distance of five miles, travelled from thence by coach, 32 miles to Stockton, then along the proposed line of the railway 12 miles from Stockton to Darlington. We then had the interview with Mr. Pease by appointment and afterwards walked 18 long miles to Durham, within three miles of which I broke down, but was obliged to proceed, the beds being all engaged at the Travellers Rest”. The result of this interview with Mr. Pease was that Stephenson was asked to undertake a survey of the proposed route of the railway. Although other engineers had undertaken surveys previously, it was Stephenson's plans, which were adopted in January 1822 when the directors appointed him engineer at a salary of £660 a year, from which he had to pay his assistants. On his advice, a fresh Act of Parliament was obtained in 1823 giving power to carry passengers as well as goods, and to use locomotive engines. As well as surveying and supervising the building of this line, Stephenson also supplied the first locomotives which were built by Robert Stephenson and Co., a firm which he founded in premises in Forth Street, Newcastle, in June 1823, with the benefit of financial assistance from Mr. Pease and others – Robert Stephenson was made the managing partner.

When in 1824 Stephenson needed someone to supervise the newly established locomotive works, while he was involved in undertaking a survey for the Liverpool and Manchester Railway and

had to leave Newcastle, and Robert was in South America, he offered the job to Timothy Hackworth. However Hackworth was still employed at Walbottle Colliery, and did not want to take this new job on a permanent basis, but it was agreed that he should help Stephenson for a temporary period of a few months. Stephenson was so impressed with the way Hackworth had managed the works that he offered him a partnership, but being a rather independent individual and preferring to make his own way in life, Hackworth declined the offer. However, Stephenson was clearly impressed with his ability and, in May 1825, Hackworth was appointed resident engineer to the Stockton and Darlington Railway at a salary £150 per annum, with a house and fuel provided.

At the opening ceremony on 27th September 1825, the first train was hauled along part of the line by the steam locomotive 'Locomotion' (built at the Forth Street works) with George Stephenson and his brother James at the controls. Subsequently Stephenson spent much of his time surveying and supervising the construction of lines in other parts of the country, and day-to-day running of the locomotives on the Stockton and Darlington line was left to Hackworth. It was Hackworth who discovered the faults of the early locomotives and when, as a result of the numerous problems being experienced, the Railway Company were considering substituting fixed engines as an alternative, he persuaded them to let him design and build a locomotive. He designed an engine with six coupled wheels and great hauling capacity, which was well suited for use with the coal traffic of this line. The first of these locomotives, Royal George, was constructed at the Company's works at Shildon in 1827 at a cost of £425 and was the first six-coupled engine built. As a reward for his efforts Hackworth received a bonus of £20.

The Rainhill Trials of 1829

Following the opening of the Stockton and Darlington Railway, Stephenson's next major involvement was as engineer to the Liverpool and Manchester Railway – a project which required extensive engineering works, including laying the line across a peat bog on Chat Moss – a feat which many doubted was possible, but which Stephenson achieved. Although construction of this railway was well advanced in 1829, the directors had not yet decided whether to use steam locomotives or fixed engines for haulage on the line. Strong arguments were advanced both for and against the two alternatives – Stephenson favoured the locomotives, but two deputations who had visited the North East to see both systems in practice, recommended fixed engine haulage. To settle the issue the directors agreed to hold trials to try and find the best locomotive and offered a first prize of £500 to the winning competitor.

These trials were held at Rainhill near Liverpool in October 1829, and were primarily reliability tests. Each locomotive had to haul a train three times its' own weight twenty times to and fro over a one-and-a-half mile course. Two of the judges, J. U. Rastrick, son of a Morpeth inventor, and Nicholas Wood were Northumbrians as also were two of the competitors, Robert Stephenson and Timothy Hackworth. There were three main contenders for the prize. The Novelty entered by John Braithwaite and John Ericsson was the popular favourite, but an engine explosion and other mechanical faults put it out of the running. Hackworth's engine, Sans Pareil developed a boiler leak early on and was later found to be heavier than the rules allowed. The Stephenson locomotive, the Rocket, easily won the prize, running at an impressive average speed of 14 m.p.h. over the 60-mile test without mishap. The Rocket was generally accepted as being a superior locomotive, and in winning proved conclusively the superiority of locomotives over fixed haulage engines.

Newcastle to Carlisle – The First Railway to cross Britain

During the 18th Century the idea of linking the east and west coasts by a canal had been put forward, but it was not until the 1790's when William Chapman, a Newcastle engineer, published various pamphlets advocating construction of a canal that detailed schemes were considered. In 1795 Chapman carried out a survey and proposed that a canal be constructed on the north side of the Tyne. The route he put forward ran through Wylam on a line just north of Close House and south of Oakwood House, but in the face of strong opposition from various landowners along the route and the fact that other engineers favoured a canal south of the river, his proposal was eventually withdrawn.

At the turn of the 19th Century William Thomas of Denton Hall (who was later retained by Christopher Blackett as a consultant engineer to Wylam Colliery), appears to have been the first to suggest, in a paper to the Newcastle Literary and Philosophical Society, that a railroad using waggonways might be preferable and more practical than a canal. Opinion gradually swung in favour of the railway project and when the issue was raised in 1823 William Chapman strongly supported the railway. In July 1824, a public meeting to consider the idea of a rail link between Newcastle and Carlisle was held and supported by many prominent individuals. The following month a committee was formed to investigate the two alternative projects, and Chapman asked to prepare a report on the relative costs. He wasted no time and on 27th October reported that whereas a canal would cost £880,000 a railway would require only £252,488. Another famous canal engineer, Josias Jessop, who was also consulted, confirmed that a railway would be preferable to a canal in this particular instance.

In March 1825, just six months before the opening of the Stockton and Darlington Railway, a meeting of influential gentry in Newcastle resolved to build a railway link to the west coast between Newcastle and Carlisle. At about this time Benjamin Thompson, a mining and railway engineer and coal owner, became associated with this project. Later on, in 1836, he was to play a significant part in Wylam's history by establishing Wylam Ironworks. Thompson became an active director of the Railway Company, and assisted Chapman and Jessop who had been appointed to survey the route. The line proposed by Thompson and Chapman in June 1825 lay on the north side of the river between Newcastle and Bywell, then crossing to the south side. However, it was subsequently thought that most of the trade for the line would come from the industries south of the river, and this factor combined with the relatively high costs which it was anticipated would be incurred in constructing the stretch between Wylam and Bywell, led to the eventual decision to select a route along the south side of the Tyne.

Due to the discovery of errors in the levels shown on the plans, and difficulties with certain landowners, the original Bill had to be withdrawn and it was not until April 8th 1828 that a Bill was submitted to Parliament. Among the clauses included in the Bill was one preventing the use of locomotives. This had probably been included partly to gain the support of some of the landowners and also because of the advice of Benjamin Thompson who was responsible for guiding the Bill through Parliament and who, in a report of 1825, recommended the use of horse-drawn carriages together with stationary engines on selected stretches of the route – rather than locomotives.

In retrospect it is surprising that at the Parliamentary Committee, held three years after the introduction of locomotives on the Stockton and Darlington Railway, only one witness spoke

openly in favour of the use of the locomotives. He was Jonathan Forster, the Wylam enginewright who had worked with Hedley and Hackworth. He described the superiority of locomotives on the Wylam waggonway. Nevertheless, the unique clause prohibiting the use of locomotives was retained and on May 22nd 1829 the Bill was given the Royal Assent. Later that year the Company's engineer, Francis Giles, suggested that it would be preferable for the line to go on the north side of the river through Newburn instead of Blaydon. He also recommended that by raising the intended level of the track by three feet in the vicinity of Wylam the proposed tunnel through Hagg Bank could be replaced by a deep cutting, eliminating the possibilities of the track being flooded – which had been thought to be a potential hazard.

It had been the intention of the directors to commence work on construction at each end of the line at the same time. In March 1830 work started at the western end, between Blenkinsop and Carlisle. At the eastern end debate still continued about whether to follow the route via Newburn or to go via Blaydon. In June 1830 Giles presented a report on the comparative qualities of the two rival lines. One idea was to adapt the Wylam waggonway between Lemington and Wylam Colliery, and then cross the river at Hagg Bank (i.e. the line subsequently constructed in 1872-76 by the Scotswood, Newburn and Wylam Railway Company) but he regarded it as unwise to follow the route of the waggonway further west than Cat House, situated midway between Newburn and Wylam. Notwithstanding Giles' reports, the directors stuck to the route on the south side of the river, which although more expensive, was likely to produce greater revenue. The terminus at the eastern end was temporarily fixed at Blaydon, and on 28th June 1830 work commenced at Hagg Bank, Wylam, where Giles' suggestion to raise the level of the track to avoid the cost of a tunnel was adopted.

In the period between the passing of the Act in 1829 and the opening of the line in 1835 locomotive design improved considerably and their advantages became more obvious. What eventually persuaded the directors in favour of locomotives is not recorded – but they ordered two locomotives in time for the opening. One was the Rapid from Robert Stephenson and Co., and the other the Comet from R. and W. Hawthorn. Each cost £1,053. The Directors then applied to Parliament for the necessary permission to use them, but they also had to obtain the agreement of all the landowners – and one, Charles Bacon Grey, of Styford Hall near Riding Mill, refused to agree. Nevertheless the two locomotives were used at the opening of the line on 9th March 1835. Less than three weeks later all traffic on the line had to be stopped due to an injunction by Mr. Grey. By 6th May Grey had been persuaded by intense public pressure to withdraw his opposition, but Parliament did not actually sanction the use of locomotives until 17th June.

The tariff card of the “Newcastle and Carlisle Railway Coaches”, printed for Blaydon and Hexham traffic in 1835, shows that the trains left the two towns at 8 a.m., 2 p.m., and 5 p.m. every day except Sunday, and that on Sunday there were trains both ways at 8 a.m. and 5 p.m. There were two rates of charges “First Class” and “Second Class or Outside”. The fares from Wylam “Going West” were:

	1st Class	2nd Class
To:-		
Prudhoe or Ovingham	6d.	6d.
Stocksfield or Bywell	9d.	6d.
Broomhaugh, Riding Mill and Corbridge	1s 0d.	9d.
Hexham	1s 6d.	1s 0d.

Following the opening of the first section of line between Hexham and Blaydon in March 1835, the remaining lengths were opened in stages, as they were completed. In 1836 the line was opened from Hexham to Haydon Bridge and from Carlisle to Blenkinsopp, and the following year was extended eastwards from Blaydon to Redheugh. The line between Redheugh and Carlisle was completed in 1838 and the opening ceremony on 18th June was an occasion for great celebration. All but one of the company's locomotives took part and during the day thirteen separate trains carried more than 3,500 passengers in 120 carriages and waggons.

However the line was not extended into the centre of Newcastle until 1850 when Queen Victoria opened the Central Station. John Dobson, architect of many of Newcastle's fine buildings, designed the station buildings.

The Newcastle and Carlisle Railway was the first to be built across Britain. It became part of the North Eastern Railway Company network in 1862.

Wylam Station is one of the oldest passenger stations in the world still in regular use. The former Station Master's house and the small booking office comprise the original station built soon after the opening in 1835. The single storey waiting rooms were added a few years later; the architect of many of the stations on the Newcastle and Carlisle Railway is thought to have been Benjamin Green.

Wylam Ironworks Locomotives

The year 1835 proved to be an important one in the history of Wylam with the opening of the first stretch of the Newcastle – Carlisle railway from Blaydon to Hexham, the planning of a project to establish an ironworks, and the start of work on building a bridge across the river to link the village, and particularly the colliery and the proposed ironworks, to the new railway. Construction of this bridge was financed by public subscription and it was opened on 25th April 1836 by John Blackmore, engineer to the Newcastle and Carlisle Railway Company.

One man deeply involved in all these schemes was Benjamin Thompson. A Yorkshireman by birth, he came to the North-East in 1811 as a managing partner of Bewicke's Main (later Ouston) Colliery, and Fawdon Colliery, Gosforth. Before coming north, he had, with an elder brother John, established an ironworks at Aberdare, in South Wales. Using this previous experience he became closely associated with the establishment of ironworks in Northumberland and Durham, which at that time had hardly been developed, and following the discovery that the waste material extracted from Wylam Colliery contained a high proportion of iron ore, he leased an area of land to the north of Wylam bridge from Mr. Blakett with the intention of developing an ironworks which he did in 1835-36. His two sons, Benjamin and George managed the works, and lived at Wylam Hall for several years.

Unfortunately, few records remain, and very little is known about the history of the Thompson Brothers' period at Wylam. However, site plans exist showing the layout of the works when they left in 1844. The main buildings occupied the site subsequently used for the former County Primary school (now the Falcon Centre) on Falcon Terrace and the single blast furnace stood on the line of the road immediately south of the school playground. Other buildings included workshops, engine sheds, workmen's cottages, and beehive ovens where coke was produced.

It is known that Thompsons built several locomotives at Wylam and the records of the Newcastle and Carlisle Railway show that six of their locomotives were supplied by Thompson Brothers between November, 1839 and April, 1841, i.e. Matthew Plummer, Adelaide, Mars, Jupiter, Venus and Saturn. (The last five cost £1,650 each.)

Matthew Plummer was the Chairman of the Newcastle and Carlisle Railway Company from 1833 until 1848, and a wealthy coal owner, who also had interests in a flax mill and glassworks on Tyneside. The locomotive named after him was a six-wheeled engine with a distinctive tall brass chimney. Illustrations of locomotives built by Thompson Brothers at Wylam are scarce but one drawing of the 'Indefatigable', built in 1841 for the Seaton Delaval Colliery, still survives.

In 1844, after they had been operating the ironworks for nearly eight years, Thompsons found that business was becoming less profitable and closed the works. Although the premises were subsequently leased by Bell Brothers (later to become a famous firm on Teeside) they no longer continued Thompsons trade of building locomotives.

Achievements of the Local Pioneers

William Hedley

After leaving Wylam, Hedley developed his mining interests by leasing or purchasing several collieries in Northumberland and Durham, and one project with which he became involved was a proposal to construct a railway to link the South Durham Coalfield to the River Tees at Port Clarence. Hedley gave evidence in Parliament in support of this project, known as the Clarence Railway, and although opposed by the Stockton and Darlington Railway Company, it was approved by Parliament in 1828 and the line was constructed shortly afterwards. However, the Stockton and Darlington Company continued to obstruct the scheme and prevented the Clarence Railway Company from introducing their own engines for haulage. It was not until 1835 that these restrictions were withdrawn, and steam power instead of horsepower was used on the Clarence line.

In that year, Hedley began using two locomotives, Wylam and Tyneside, built for him by Hawthorns of Newcastle, for transporting coal from his colliery at Crowtrees to Port Clarence, but it is ironical that Hedley, who had done so much to prove the technical and economic success of the locomotive, should have been thwarted in this way. The following year the Clarence Railway Company's own engines began working but not long afterwards the line was absorbed by the West Hartlepool Harbour and Railway Company, which itself was subsequently merged in the North Eastern Railway.

Apart from his involvement in the Clarence project, Hedley does not seem to have continued any further interest in locomotive design, leaving this to others, but he extended his coalmining speculations in County Durham – particularly at South Moor, Craghead and Holmside, near Lanchester. He lived at Burnhopeside Hall, Lanchester, and shortly before his death on 9th January 1843, purchased an estate at Newton, near Stocksfield. He is buried at Newburn Parish Church, not far from the old Wylam waggonway, which had been the scene of his historic experiments 30 years earlier.

George Stephenson

Following the success of the Rocket in the Rainhill Trials the Stephensons soon became internationally famous and were involved in building railways both in Britain and abroad. One scheme very close to George Stephenson's heart was to link the capitals of England and Scotland by rail. Although he did not live to see this completed, the opening in June, 1844, of the Newcastle and Darlington Junction railway, which linked the Thames to the Tyne, was a splendid occasion when both father and son returned in triumph to their native Tyneside. The streets of Newcastle were bedecked with flags for the occasion and the employees of Stephenson's Forth Street works paraded through the town with banners to welcome "Wylam Geordie" and "Young Bobbie" – as they were affectionately known. A lavish banquet for 500 guests, held in the Assembly Rooms lasted for 5 p.m. until midnight!

The last few years of his life were spent in almost complete retirement at Tapton House, Chesterfield, where he died on 21st August 1848. He left £140,000, most of which went to his son Robert.

Although born and bred Northumbrians the only Northumberland railway on which the Stephensons – father and son – were engaged as engineers was the Newcastle to Bewick project. This was the last section of the London to Edinburgh rail link along the east coast, which was not completed until the Royal Border Bridge across the River Tweed at Berwick was opened by Queen Victoria in 1850, two years after George's death. Both this bridge, and the High Level Bridge over the Tyne at Newcastle, which was built at a cost of £243,000 and opened the previous year (also by Queen Victoria), stand as fine monuments to Robert Stephenson, who designed them.

George Stephenson did not invent the locomotive (that distinction belongs to Richard Trevithick) but although other engineers before and after him made essential contributions to early railway history, it was he who by his vision, self-confidence and obstinate drive, proved the locomotive to be a practical success for railway traffic and who initiated Britain's modern railway system.

Timothy Hackworth

Hackworth served the Stockton and Darlington Railway Company for the first fifteen years of its existence from 1825 – 1840, initially as engineer and then as manager. During this time he was responsible for keeping the Company's engines in working order, and in addition he designed several successful locomotives. In 1833 while still employed as the Company's manager, Hackworth was given permission to establish his own locomotive building works at Shildon, and for the next seven years, until he left the Company in 1840, he was involved in running their works as well as his own. He remained active until his death on 7th July 1850, by which time he had built up an extensive engine works.

Soho Cottage, the house where Hackworth lived in Shildon, was opened as a museum in 1975, and the National Railway Museum is developing a centre at Shildon in 2003.

Despite being instrumental in designing various improvements to the whole system of colliery haulage, including inclined planes, winding engines and general mining machinery as well as locomotives, Hackworth never received the international recognition given to several

contemporary engineers, although he seems to have been highly regarded and respected by his colleagues.

Nicholas Wood

One of Wood's main contributions to railway development was the publication in 1825 of a standard textbook, 'A Treatise on Railroads', in which he recorded the various locomotives which had been built and the extensive experiments which were carried out at Killingworth by Stephenson and himself in the period 1814-1825. He also continued testing locomotives after Stephenson had moved from Killingworth. By the 1830s, Wood had gained a considerable reputation as a colliery and railway engineer and he began to acquire interests in various collieries. In 1844, he became manager of collieries at Hetton, and owner or part owner of other collieries in Northumberland and Durham. In many of the colliery villages with which he was associated, and particularly in his early years at Killingworth and Hetton, he promoted the building of schools for the children of the mine workers and frequently stressed the importance of a good education and training.

After the death of John Buddle in 1843, the famous Wallsend colliery viewer, Wood was regarded as the chief authority on colliery engineering in the northern coalfield. Following the introduction of the Mines Inspection Act in 1852, the North of England Institute of Mining Engineers was formed and Nicholas Wood became its first President. He was a strong advocate of the value of a scientific and technical training to those having responsible positions in industry and in 1853 he began a campaign to try and persuade the University of Durham to establish a College of Science in Newcastle. Although the project did not materialise during his lifetime, his efforts paved the way for the subsequent establishment of a College of Physical Science in Newcastle in 1871, from which the present University of Newcastle traces direct descent.

Neville Hall, Newcastle, the home of the North of England Institute of Mining and Mechanical Engineers was rebuilt in 1870, five years after his death and incorporates the Wood Memorial Hall, erected to his memory.

Jonathan Forster

Jonathan Forster served as enginewright at Wylam Colliery for over 40 years, from 1809 until his retirement in 1853 at the age of 78. Clearly he cannot have been as ambitious as some of his contemporaries and was content to live and work in Wylam for most of his life. However, his practical contributions to the construction and subsequent maintenance of the Wylam locomotives deserve recognition, and as we have already seen, he was apparently the only one to publicly support the idea of using locomotives on the Newcastle-Carlisle line, when that was first being considered in 1828-29. He became a great friend of the Stephensons, and his sons were trained at Robert Stephenson's works in Newcastle. He died at Wylam in 1860, and is buried in the Churchyard at Ovingham.

Industrial Decline

There were few significant innovations on the Wylam waggonway in the period between the departure of William Hedley, and its eventual closure over 40 years later. Hedley's original locomotives were modified several times during their working lives, but continued to run until the early 1860s, by which time they had become of historic interest, and one of them, now known as Puffing Billy, was loaned by Captain E. A. Blackett to the new Patent Office Museum in June 1862. Subsequent negotiations with Blackett regarding the purchase of the locomotive took three years (during which period Blackett had tried unsuccessfully to find a buyer for both the colliery and ironworks) and involved lengthy and often bitter correspondence before agreement was reached on a price of £200. Once Puffing Billy had gone to the Museum, Wylam Dilly was the only original locomotive left at the colliery and required repair before it was able to replace Puffing Billy at work on the waggonway.

During the late 1850s, negotiations had been taking place between the North Eastern Railway Company and the smaller Newcastle and Carlisle Company, for their merger. Blackett, anticipating the successful outcome of these negotiations, which would enable him to despatch his coal more conveniently on the North Eastern Railway system, and also dispose of the liability of maintaining the waggonway, advised the wayleave proprietors that he proposed to give up the lease at the end of 1860. Unfortunately for him, the Parliamentary Bill to permit the amalgamation of the two companies was rejected in 1861, and he then had to renew the wayleave agreements again. However, in July of the following year, the Amalgamation Bill was passed and from that date until closure of the colliery in October, 1868, most of the colliery output was conveyed by public railway and little use made of the waggonway and the remaining Hedley locomotive, Wylam Dilly.

Following the closure of the colliery, three auctions were held in January, February and March of 1869, to dispose of the colliery equipment and fittings. In his sale catalogue, E. U. Blackett, son of Captain Blackett, recorded that one item, described as "a locomotive steam engine, Puffing Billy", fetched the princely sum of £16 10s 0d! This engine was almost certainly Wylam Dilly which, if the price paid was a fair one, can only have been valued as scrap. It was purchased either at the auction or shortly after by William Hedley's family who probably felt that they had some obligation to rescue this historic locomotive, which was basically the one designed by their father 50 years earlier. The Hedley family subsequently restored Wylam Dilly and, in 1882, it was transferred to the Royal Scottish Museum, Chambers Street, Edinburgh where it can be seen today.

The Scotswood, Newburn and Wylam Railway

Although the idea of building a railway along the northern bank of the river was investigated at the time that routes for the Newcastle – Carlisle railway were being examined, the eventual route chosen lay south of the Tyne. In the late 1860s, when the Tyne Ironworks, Spencers Steel works, the Lemington Glassworks and other industries in Newburn were in full production, and collieries working at Walbottle, Heddon and Throckley (where the Isabella Pit was opened in 1869), the prospects of building a railway from Scotswood to North Wylam linking with the existing Newcastle – Carlisle railway at each end, were again examined.

Among the sponsors of the project which was subsequently put forward were members of the Spencer family who owned the large steel works in Newburn; William Haswell Stephenson (subsequently Lord Mayor of Newcastle) one of the owners of Throckley fireclay, brick and tile works, and of collieries at Throckley, and Thomas Bates who owned Heddon Colliery and brickworks. Both Bates and Stephenson had made agreements with E. A. Blckett during the late 1850s and 60s for the transport of materials to and from their collieries along parts of the Wylam waggonway, but with the final closure of the Haugh Pit at Wylam Colliery late in 1868, Blckett had no interest in maintaining the waggonway and its condition deteriorated. Nevertheless, parts of it were used occasionally up to the time that work on the new railway started and, as late as November, 1870 Thomas Bates negotiated a 21 year wayleave to use the length of waggonway between Heddon Colliery and Wylam Bridge so that he could have access to the Newcastle – Carlisle line.

Clearly these industrialists with works and collieries on the north bank of the Tyne, including those who had used the waggonway, needed an improved system of transport, and they joined forces to promote the scheme for the development of a permanent standard-gauge public railway designed to serve their industrial interests, as well as possible new housing developments which, it was envisaged at that time, would take place in the Tyne valley west of Newcastle, extending out to Heddon and North Wylam.

The original scheme, authorised by the Scotswood, Newburn and Wylam Railway and Dock Act of 16th June, 1871, also included for the construction of a new dock due east of the old Suspension Bridge at Scotswood, but this part of the project was subsequently abandoned because the river had not been dredged up to this point, and the Company was allowed to drop the “and Dock” from the title. Much of the route chosen for the six-and-a-half mile line followed alongside the old high road between Wylam and Newburn, and also utilised stretches of the former waggonway.

The first sod was cut on 15th May 1872, and construction of the line between Scotswood and Newburn completed on the 12th July 1875, with the extension to Wylam being opened to traffic as a single line on 13th May 1876. A second track was laid that summer and in October 1876 the railway was linked to the Newcastle – Carlisle line by the construction of the final section at its western end, from North Wylam Station to the Hagg on the south bank. The single span, 240 foot long wrought iron arch bridge which carried this railway over the Tyne west of Wylam cost £16,000 to build, and was designed by W. G. Laws, the consultant engineer for this line, who later became City Engineer of Newcastle. This is possibly the first arch rib bridge ever built to support a suspended rail track, and very similar designs were later used for the Sydney Harbour Bridge and the Newcastle Tyne Bridge, which was built 50 years after that at Wylam. The platform of the bridge is just three feet above the height to which the river had risen in a tremendous flood in 1771, and the structure was designed as a single span to avoid the need to construct piers on the river bed where it was feared that borings and construction works might penetrate the shallow underground workings of the local collieries which extended under the river in this area.

The total cost of the railway was over £100,000, but the railway company never employed its own staff or purchased its own rolling stock, and arrangements were made for the North Eastern Railway Company to operate the line from the beginning.

A Century of Change

Despite the hopes of its promoters, the Scotswood – Newburn – Wylam railway was not a financial success. It never paid any dividend to its ordinary shareholders, and was acquired by the North Eastern Railway Company in 1883 for £155,746. It did, however, enjoy a moment of glory on 9th June, 1881 – the centenary of George Stephenson’s birth, when as part of the celebrations a train load of dignitaries travelled from Newcastle Central Station to North Wylam, stopping en-route at Stephenson’s birthplace. To commemorate the occasion the Mayor of Newcastle planted an oak tree in the field behind the cottage, and this is still growing.

The tree planting ceremony was followed by a formal inspection in the North Wylam station yard of 16 modern locomotives, which had been loaned by the major railway companies to take part in the procession. Also on display were the Ovingham Parish Church registers, which contained the entries of the marriage of George Stephenson’s parents in 1778 and his baptism in 1781.

While few fatal railway accidents have been recorded in or near the village, one tragedy achieved wide publicity and is recorded for posterity in Thomas Fordyce’s “Historical Register of Remarkable Events”.

“November 17th, 1870 – This afternoon, about half past two o’clock, a frightful and fatal accident occurred on the railway at Wylam Station. It appears that Captain Walker, adjutant of the Northumberland Administrative Battalion Rifle Volunteers, who had to inspect the Hexham Rifle Volunteers; intended proceeding from Newcastle by the ordinary train leaving the Central Station at a quarter before two o’clock; but it started before he arrived at the Station, in consequence of which he went by a special train, consisting of an engine and first class carriage. The special train left Newcastle at twenty minutes past two.

“A horse and cart were standing beside the warehouse at the Wylam Station, but off line, and the driver, on observing the train coming towards the station, took hold of the horse’s head. Mr. Gustavus Townsend, the Station Master who, it appears, was not aware that there was a special running, left the station for the purpose of crossing the line just as the train was passing, when unfortunately he was knocked down and run over. He was dreadfully injured and died about twenty minutes after the accident. The deceased, who was very much respected, was about 40 years of age and had been Stationmaster about two years. He left a widow and several children.”

Although the main Wylam Colliery, based at the Haugh Pit, had closed in 1868, two other pits which had been previously worked, one at Wylam Hills, and the other the Hope Pit (known locally as the Chuckee Pit) near Rift Farm, both north of the village, were re-opened in the 1870s. These pits were linked to the main Newcastle – Carlisle line by tramways which ran southwards from the pit heads, across the Scotswood-Newburn-Wylam line and over the river bridge, where a turntable at the southern end of the bridge enabled waggons and materials to be transferred from the colliery tramway onto the railway.

About 1882, several alterations were carried out at Wylam station, affecting the turntable and the station platforms. Originally the platforms for both east- and west-bound traffic had been built directly opposite each other, in front of the station buildings, but in 1882 a new platform for east-bound (Newcastle) traffic was constructed in its present position west of the level crossing. At that time the signal box stood on the south side of the track, next to the Boat House Inn but shortly afterwards a new signal box was erected above the track, in the position it is today; a

footbridge over the line was also provided to the west of the level crossing, but this was later moved to its present position east of the crossing in about 1915. 1894 saw the closure of the colliery based on the Chuckee Pit for the last time, and for several years there were no collieries working in the village. The need for the tramway track across the bridge and the turntable had now gone, and these were removed.

In 1897 the Wylam Toll Bridge Company was formed and in December the following year permission was given to build a new toll gatehouse at the north end of the bridge (which still stands today). The original toll keeper's cottage was at the opposite end of the bridge, at the entrance to the goods yard (now the station car park).

The period since the Second World War has seen numerous changes to the railway network and the pattern of rail travel. Nationalisation in 1948 was followed in the 1950s and 1960s by the replacement of the steam locomotive and the widespread introduction of diesel railcars, together with the closure of local goods depots and booking offices in efforts to streamline the railway network and reduce costs.

The Scotswood-Newburn-Wylam line remained open for passenger traffic until 3rd September 1966, although the stations at Heddon, Newburn and Lemington were closed eight years before, in September 1958. In early 1967 the line between Blaydon station and Scotswood was closed for several months owing to alterations to the railway bridge at Scotswood, and passenger trains were re-routed along the line north of the river and past Stephenson's birthplace.

Final closure of the former Scotswood, Newburn and Wylam line, which for more than 90 years had provided an alternative route between Wylam and Newcastle, came on 11th March, 1968, although the rails were not lifted until April, 1972. Following acquisition by the County Council the length of track between Hagg Bank and Newburn was levelled and landscaped as a public walkway. The derelict buildings, footbridge and platforms in the former North Wylam station yard were cleared in January 1975 to provide a car park and landscaped area. The former railway land is now part of the Tyne Riverside Country Park.

Improvements to the station on the Newcastle – Carlisle line have included clearance of the goods yard to provide a car park, and the cleaning and renovation of the station buildings in 1972. In 1977 the down platform, to the east of the station buildings, was raised. Care was taken to ensure that this work did not detract from the setting of the station buildings, which are listed as being of Special Architectural and Historic Interest. The stationmaster's house is now used as offices.

High Street House, George Stephenson's birthplace, was purchased from funds raised in response to an appeal issued by the North East Coast Institution of Engineers and Shipbuilders in 1948. The cottage is now owned by the National Trust and is occasionally open to visitors, by prior arrangement with the tenant (Telephone: 01661 853457).

Displays in the small village museum within the Falcon Centre, the former village school, which overlooks the old North Wylam Station Yard –now the Country Park car park – illustrate the important contribution of the Wylam engineers to the early development of railways.

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Events in Local and National Railway History

c1630	Waggonways introduced to the Tyne coalfield
1726	Causey Arch built on the Tanfield tramway Oldest railway bridge
1748	Wylam Colliery waggonway laid from Wylam to Lemington
1758	First Railway Act – Middleton Colliery railway, Leeds.
1771	Richard Trevithick born near Cambourne, Cornwall
1776-1817	Various schemes proposed for a canal between Newcastle and Carlisle
1779	William Hedley born at Newburn
1781	George Stephenson born at High Street House, Wylam
1786	Timothy Hackworth born at Wylam
1789	Stephenson family left Wylam
1795	Nicholas Wood born at Sour Mires, south of Wylam
1800	Christopher Blackett became Squire of Wylam
1801-3	Surrey Iron Railway – First public railway – horse drawn, freight only
1803	Robert Stephenson born at Willington
1804	Trevithick's Pen-y-Darren locomotive tested
1804-5	Locomotive built for Blackett at Whinfield's foundry, Gateshead. Based on Trevithick's design
1804	George Stephenson appointed brakesman at West Moor Colliery, Killingworth
1805	William Hedley appointed viewer of Wylam Colliery
1807	Timothy Hackworth succeeded his father as foreman of Wylam Colliery blacksmiths
1808	Wylam waggonway relaid with cast-iron plate-rails
1811	Nicholas Wood commenced training at Killingworth Colliery
1812	Blenkinsop/Murray rack and cog locomotive built for the Middleton Colliery railway. First commercially successful steam haulage
1812	Hedley demonstrated by practical experiment that a locomotive with smooth wheels was capable of hauling loaded waggons on smooth rails without slipping
1813	First locomotive produced at Wylam Colliery proved defective
1814-15	Several successful locomotives built at Wylam to Hedley's designs, and provided the first regular steam haulage on smooth rails
1814	George Stephenson's first locomotive built at Killingworth
1815	Hackworth left Wylam and moved to Walbottle Colliery
1817	Wylam locomotives converted from four wheels to eight, to distribute the weight and prevent damage to the waggonway
1821	George Stephenson appointed engineer to the Stockton and Darlington Railway project
1822	Wylam Dilly converted into a tug-boat to haul keels on the River Tyne, during a Keelman's Strike.
1822	Hetton Colliery locomotives designed and built by Stephenson and Wood
1825	Opening of the Stockton and Darlington Railway – the first public steam-hauled railway
1825	Hackworth appointed resident engineer to the Stockton and Darlington Railway
1825	Newcastle and Carlisle Railroad Company formed
1827	William Hedley left Wylam
1827	Wylam waggonway relaid using cast-iron edge rails, on stone sleeper blocks

- 1829 Rainhill Trials held by Liverpool and Manchester Railway Company – won by Robert Stephenson’s Rocket
- 1829 Newcastle and Carlisle Railway Act
- 1830 Opening of the Liverpool and Manchester Railway – the first public steam-hauled passenger and freight railway
- 1830 Work on constructing the eastern end of the Newcastle and Carlisle Railway began at Hagg Bank, Wylam
- 1835 First section of the Newcastle and Carlisle Railway officially opened for passenger traffic between Blaydon and Hexham
- 1835/36 Wylam Station built
- 1836 Wylam Toll-bridge erected by public subscription to link the village to the Newcastle and Carlisle Railway
- 1836-44 Locomotives built by Thompson Brothers at Wylam Ironworks
- 1843 Death of William Hedley
- 1848 Death of George Stephenson
- 1850 Death of Timothy Hackworth
- 1862 Puffing Billy lent to the Patent Office Museum, South Kensington, London
- 1862 Newcastle and Carlisle Railway merged with the North Eastern Railway
- 1865 Death of Nicholas Wood
- 1869 Wylam Dilly acquired by the Hedley family and restored following the closure of Wylam Colliery
- 1871 Scotswood, Newburn and Wylam Railway and Dock Act
- 1876 Scotswood, Newburn and Wylam Railway complete, following the route of the Wylam waggonway for much of its length
- 1881 Centenary of George Stephenson’s birth celebrated
- 1882 Wylam Dilly donated to Royal Scottish Museum, Edinburgh
- 1923 Grouping of over 120 independent railway companies into four larger units
- 1948 Nationalisation of independent companies into British Railways
- 1949 High Street House, Wylam acquired for preservation
- 1968 Closure of former Scotswood, Newburn and Wylam line (Track lifted in 1972)
- 1968 Last steam locomotives run regular services on British main lines

An Epitaph to Steam

My Engine now is cold and still
No water does my boiler fill
My coke affords its flame no more
My days of usefulness are o'er
My wheels deny their noted speed
No more my guiding hand they heed
My whistle too has lost its tone
Its shrill and thrilling sounds are gone
My valves are now thrown open wide
My flanges all refuse to guide
My clacks also tho' once so strong
Refuse their aid in the busy throng
No more I feel each urging breath
My steam is now condensed in death
Life's railways o'er, each station's past
In death I'm stopped and rest at last
Farewell dear friends and cease to weep!
In Christ I'm safe in Him I sleep

(Epitaph on Oswald Gardner a 27 years old locomotive engineman employed by the Newcastle and Carlisle Railway Company, who was killed in an accident when the connecting rod of his locomotive "Wellington" broke near Stocksfield on 15th August 1840. He is buried in the churchyard at Whickham, Tyne and Wear. This was composed by a friend – probably Thomas Codling, a railwayman who lived at Scar Houses, Wylam)

Where Railways were born

There can be little doubt about the important position that the North East of England held in the first decades of the nineteenth century in railway development.

During this period the contribution made to early railway history by the small Northumberland village of Wylam was exceptional. Wylam was the birthplace in the late eighteenth century of George Stephenson, Timothy Hackworth and Nicholas Wood, three men who all became engineers of international repute.

The first steam rail locomotive to be built for use in England was ordered in 1804 for the Wylam Colliery waggonway and eight years later the village was the setting for historic experiments into the design of locomotives, carried out by William Hedley, the Wylam Colliery viewer. These resulted in the construction of Puffing Billy and Wylam Dilly now among the earliest preserved locomotives.

Railway projects which had a significant impact on the village both by the provision of improved communications and the opportunity for new industrial development, included the planning and construction of the Newcastle and Carlisle Railway between 1825-36 and the Scotswood, Newburn and Wylam Railway from 1872-76

In view of Wylam's close association with the birth of railways the choice of title is particularly appropriate for this book in which the author Philip Brooks traces the development of the early locomotives in the work of the famous Wylam pioneers and by bringing together material from a variety of sources throws light on the interplay of events and personalities at a significant period in railway history.