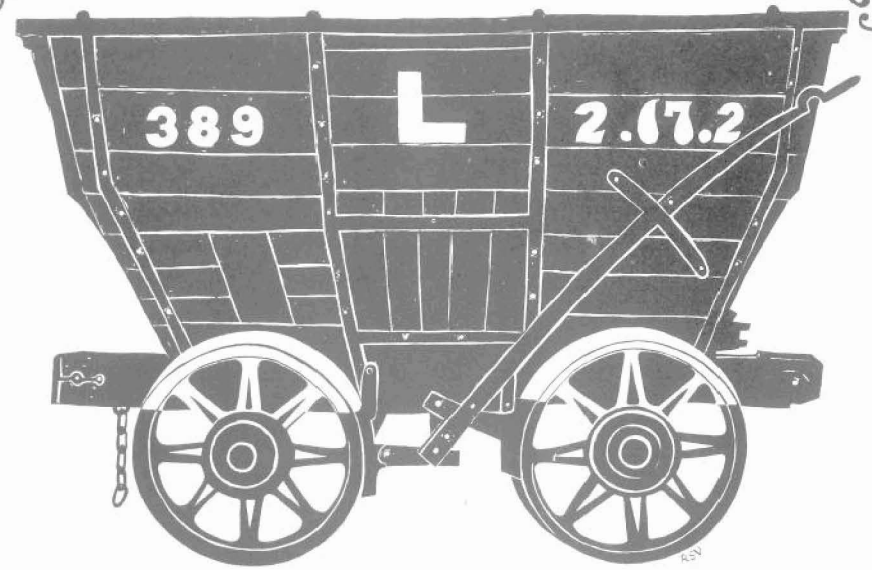


The North East Industrial Archaeology Society



April 1971

BULLETIN 13

EDITORIAL

In this edition we have Mr. Colin Mountford's very interesting paper on the "Colliery Railways of County Durham", which was generally acclaimed at the Conference on "The Export of Coal", held in Sunderland last September.

We hope members who were unable to be present will enjoy the fascinating details given here of a very important part of the North East's industrial history, and including a useful series of maps.

We must apologise for a number of errors which came to light in our last Bulletin and we include a list of the principal 'offenders' for your guidance.

Articles and comments, by 31st May, 1971 to:-

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The Development of Colliery Railways in County Durham.

Colin E. Mountford.

It is a rather unaccountable fact that colliery railways and industrial railway systems generally are usually forgotten by railway historians. People are still often left with the impression that railways began with the Stockton & Darlington Railway and George Stephenson whose earlier career at Killingworth may or may not be mentioned. Lately however, the position has begun to change, and rightly so for colliery railways not only played a significant part in general railway development, but were also an integral part of the local transport network.

Before beginning to consider the development of colliery railways in County Durham it is necessary to take a brief look at the structure of the Durham Coal Industry itself. In many other coalfields, such as South Wales, the initiative in development was taken by local businessmen in other trades who leased land from a local landowner for a colliery. In Durham on the other hand, it was much more common for the landowner to work the coal under his land himself. This was notably so in the traditional areas of mining. The Tyne valley in the first quarter of the nineteenth century was controlled by the Grand Allies - the partnership of Lords Ravensworth, Strathmore & Wharnccliffe, while the Wear valley was dominated by the Lambton family (later Earls of Durham) and the Marquis of Londonderry. Only in the south of the county do we find typical entrepreneurs such as the Pease family.

This pattern had a marked effect on railway development. In South Wales coal owners invested money in public railways and then ran their own wagons over the lines to the ports for shipment; in South Durham the Pease's were behind the Stockton & Darlington Railway, but in the rest of the county the proprietary interest led to the building of many private lines. This lead was followed by the sprinkling of entrepreneurs, such as the Hetton Coal Company and the Birtley Iron Company, who also built their own private lines. The same was true of Northumberland.

One must however, take the analysis a little further. Most of the great colliery railways were built during the period between 1810-1830, that is, before the great upsurge in the public sector after 1835. They were built because they were needed and there was nothing else available. Even so some of the systems do date from mid-century or later and the building of smaller systems, of perhaps two or three miles in extent, occurs fairly frequently throughout the century.

Thus many of the large systems were developed to fill a gap. The proprietary interest of the coal owners can also be seen in the wagonways of the eighteenth century, but only rarely was a colliery railway system reconstructed from these predecessors. There are many reasons for this. In some cases the wagonways served quite shallow collieries, a number of which seem to have been abandoned after 1815, when the end of the Napoleonic War caused a fall in the demand for coal, but the crucial factor was that many of them ran to staithes which were well upstream e.g. at Swalwell and Dunston on the River Tyne or Fatfield and Washington on the River Wear. The rivers were not deep enough for sea-going colliers to reach the staithes, and so the famous keels were used to convey the coal from staith to collier at Newcastle, South Shields or Sunderland. This system was basically inefficient and the situation became worse after 1820, with the keels unable to handle the rising output and dozens of colliers cramming the harbours waiting for cargoes. The Marquis of Londonderry left the Wear entirely and in 1828 began the construction of a completely new port at Seaham with a railway system to serve it. Other colliery railways were built to serve staithes much further downstream in deeper water, at Hebburn, Jarrow, South Shields and Sunderland, so that the colliers could be loaded directly at the staithes with as little time wasted as possible. Of the wagonways only one of any size was rebuilt as a railway, and that by a public company, the famous Tanfield Branch.

As the building of public railways in the county increased coal owners who had their own rail transport found themselves with an invaluable asset. They could work all their own trains at their own convenience, and team coal at the staithes whenever it was required, day or night. The system could be expanded to handle output from new collieries and it was usually cheaper to operate than the cost of sending coal over the public lines. The difficulties of owners without their own facilities are well shown in the case of Messrs. John Bowes & Partners, whose managing partner was Sir Charles Mark Palmer. In 1847 the partners were considering a scheme to link their Marley Hill Colliery (hitherto served by the Tanfield Branch) to an already existing line which ran from Kibblesworth via Springwell to Jarrow. Sir Charles summarised their position in a letter of August 1847:-

"Marley Hill is now enabled to work 40 keels of coal (850 tons) daily out of which we have 18-20 keels for shipment, also 200-300 tons of coke daily to be sent down the line (the Tanfield Branch). We are continuously stopped for want of wagons; this arises from the want of shipping places at Shields, the difficulties of increasing facilities on the railway to meet the traffic and partly through want of wagons. We have been suffering daily up to this time, and we have never exceeded 35 keels but, on an average 30 keels and not more than 150 tons of coke daily so that I see little chance of getting our full workings away. Besides, all the other collieries are likely to increase. It is therefore quite evident the present railway is not capable of carrying the quantity we require and we must either get them to increase their powers greatly or find an outlet of our own."

Sending coal over public railways, whether in the railway's wagons or in their own left the coal owners entirely in the hands of the railway companies, who could, and did, charge what they liked; whose carrying capacity was restricted, especially in West Durham where rope-worked inclines were used and who could be capricious in the regular flow of wagons, a capriciousness increased by a lack of railway owned staithes on the Tyne. In addition Sir Charles calculated that the cost of coal from Marley Hill to South Shields was $4/11\frac{1}{2}$ d. per chaldron, whereas the cost over his proposed system would be only $3/8\frac{1}{2}$ d., a saving of $1/3$ d. per chaldron. When the line was finally opened in 1855 it saved the Partners approximately £6,000 per year in transport costs. On the other hand only the large owners would gain any sizeable benefit from co-ordination of their activities and complete independence of what became the monopoly of the North Eastern Railway indeed, only the large owners had both the influence and the money to be able to act independently.

We have seen a brief glimpse of some of the men behind the growth of colliery railways and various reasons why they built the railway which served their collieries. Let us now look at some general features which the railways had in common before going on to look at some of them in more detail.

Bearing in mind that the loaded wagons were travelling, with very rare exceptions, in the same direction, it was George Stephenson's practice to use horses or locomotives on the level or where the gradient ascending with the load was over 1 in 300; self-acting rope-worked inclines where gradients descending with the load were more severe than 1 in 30; and stationary engines with ropes for intermediate gradients. Having provided much of the initiative for the development of the locomotive, the colliery railways veered away significantly from general railway development. After the early locomotive trials of 1814-1815 only the Hetton Railway and the Springwell line, both designed by Stephenson, used locomotives. Even the former is said to have abandoned them for a time. In many places not even horses were used, instead the use of rope-worked inclines up to $1\frac{1}{2}$ miles long was developed to an extent and a refined standard unknown elsewhere. The basis of this was the stationary engine. Not only were these used to haul against the load, they were used as brakes on inclines in favour of the load and not infrequently they hauled loads on the level using either the endless rope or "main-and-tail" systems commonly used underground. Even public lines, e.g. the Durham & Sunderland Railway opened in 1838, followed suit. It is difficult to understand the coal owners' general aversion to locomotives, especially after the progress of the 1830's, yet virtually all of the extensive Lambton and Londonderry systems were worked by inclines, the conversion of the flatter sections to use locomotives not occurring until the 1860's. As a result the rope-worked incline remained a common sight in Durham long after it had been forgotten elsewhere and a few are still with us.

In general the railways carried only coal and colliery requirements such as pit props, but there were exceptions. Sometimes bricks or stone from a local quarry would be carried, and very occasionally coal from other companies. At least three are known to have carried passengers though only on certain sections; from Wardley to Jarrow on the Springwell line, a service which lasted from about 1843 to 1872; on the Seaham-Sunderland section of the Londonderry Railway from 1855 to 1900; and on the Whitburn-South Shields section of the Harton Coal Company's system from 1888 onwards, latterly under a Light Railway Order under the title of the South Shields, Marsden & Whitburn Colliery Railway.

Few of the lines had any signalling of note. On the locomotive worked sections drivers were expected to recognise loco whistles and main line trains for the staithes were normally given absolute priority. Only on the complicated Lambton system and on the passenger sections above was there any normal signalling with signal boxes. On the incline signalling was normally done by means of a bell system operated from the bank foot whilst a set-rider rode on every set to ensure its safety. The system was known to be fallible, especially on self-acting inclines, where it was not uncommon for the descending set to leave the bank head before the rope had been attached to the set at the bottom.

In the early days the chaldron wagon, or its successor, the 4 ton "black wagon" was in universal use, but from about 1880 it began to be replaced by the 10 ton truck though black wagons were in use on some lines until quite recently. Most companies had shops to repair and even build their own wagons of which they might have thousands. Locomotive repairs were usually carried out in the loco sheds and when the boiler needed heavy repairs it had to be sent away. Both the Earl of Durham and the Marquis of Londonderry built their own Engine Works and on occasions even built new locomotives.

Many colliery lines had official names which were usually carried on the locomotives. These were maintained in a condition equalling anything on a public line with numerous coats of paint and polished brass, for the large companies, at least, were proud of their lines as were the men they employed, and no opportunity of showing it was missed.

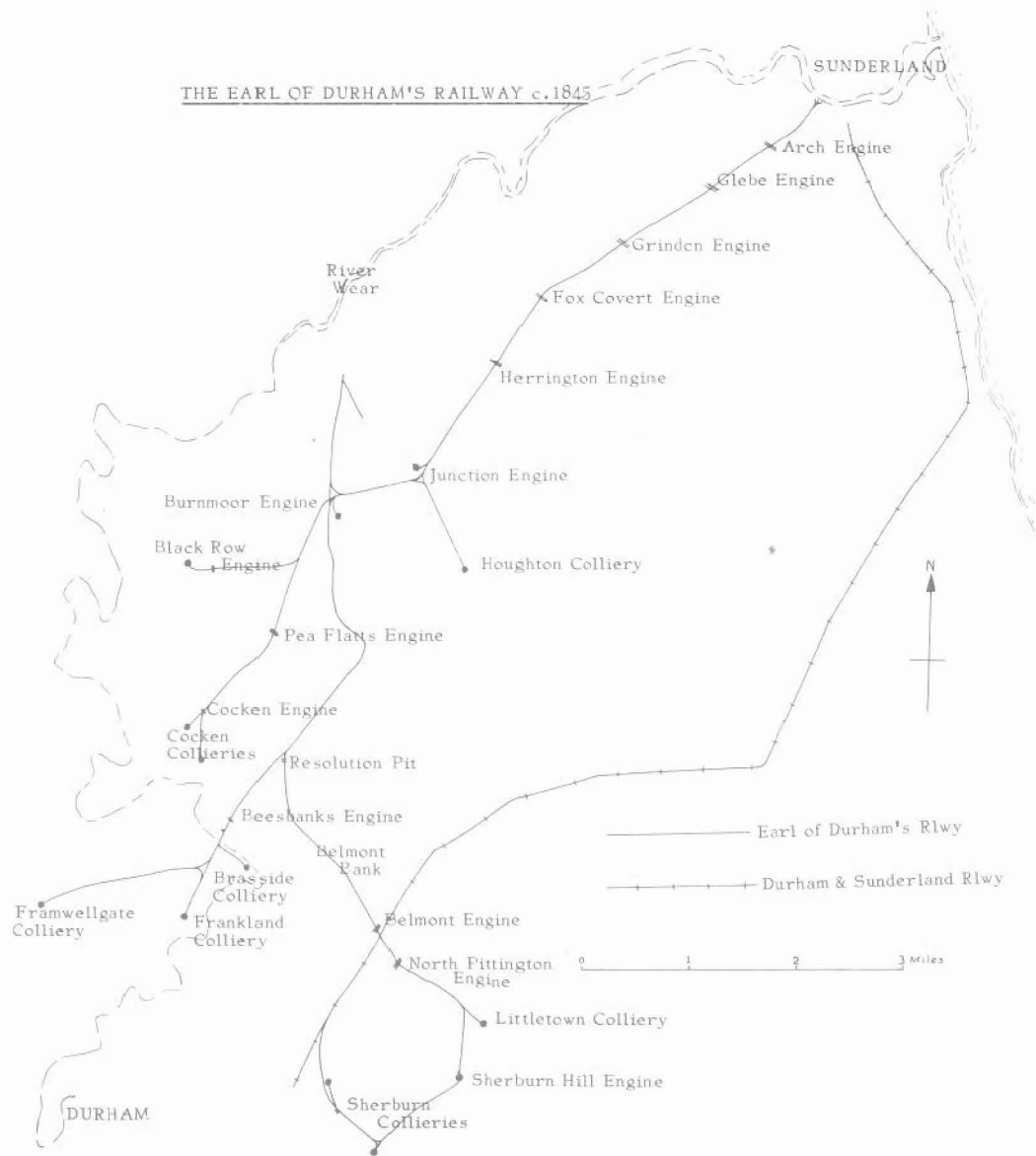
In turning now to a closer look at some of the larger systems a word of caution: in very few of the railways do any extensive written records survive. In some cases no written records may have been kept, and even some of those that were, have been, and still are being lost or destroyed. The historian is, therefore, obliged to rely on the memory of old employees for whatever has been passed down by word of mouth and the work of his predecessors, which may or may not be reliable.

The Earl of Durham's Railway

This which later became "Lambton Railway," and was the largest of all the systems, was one of the few lines to grow out of two of the earlier wagonways. It developed from the Lambton wagonway from a colliery at Fencehouses to Fatfield on the River Wear with a branch to collieries at Lumley, and the Nesham wagonway from collieries at Newbottle over Grindon Hill to Sunderland. The new system was begun by John George Lambton (1792-1840), later 1st Earl of Durham, who in 1819 took over the Nesham wagonway and linked it to the Lambton wagonway by means of a line from Burnmoor to Philadelphia. Houghton Colliery was linked in 1821 and in the next ten years other small extensions were made in the Fencehouses area. In 1831 sinking was begun at Littleton Colliery and to serve this the line was extended for about five miles from Rainton Meadows via a disused colliery known as the Resolution Pit. At the same time, presumably to cater for the increased traffic considerable improvements were made to the older parts of the system. Part of the Nesham line between West Herrington and the Grindon Engine was replaced by a new line and the Lumley wagonway with its branch to Cocken was also reconstructed, stationary engines being installed to replace horses.

Meanwhile there were further developments beyond Littleton. Sherburn Hill Colliery was sunk in 1835 to be followed not long after by Sherburn House Colliery and Sherburn Colliery (Lady Durham Pit), these being served by a long branch from the Littleton line at Pitlington. About 1840 a branch was built from the Resolution Pit to serve Frankland Colliery, and about the same time another branch was built from this just south of the bridge over the River Wear to serve Framwellgate Moor Colliery (though this was not owned by the Earl). Later another short branch was built along the south bank of the river to serve Brasside Colliery.

This represented the maximum extent of the Earl's railway as is shown on Map No. 1, and at this period most of the system was operated by rope-worked inclines. The section from Sherburn Colliery to Sherburn House Colliery was virtually level and was probably worked by horses. From Sherburn House the wagons were drawn up to Sherburn Hill by a stationary engine there, whence there was an incline down to Low Pitlington, the line being joined here by an incline from Littleton Colliery. From Low Pitlington the wagons were hauled by an engine up to New Pitlington and then lowered by a self-acting (?) incline to Pitlington village, both of these banks being very short. Near the tunnel under the Durham-Sunderland turnpike road the Belmont Engine worked the bank up from Pitlington and this was followed by a long self-acting incline (the Belmont Bank) down to Belmont Bottom near the Resolution Pit. From here to the bottom of Junction Bank at Burnmoor the line was relatively level and the horses here may have been superseded by locomotives in the 1850's. The Junction Bank was worked by an engine situated near the Houghton Colliery branch junction. The same engine may also have worked the branch, but as this was level it may have



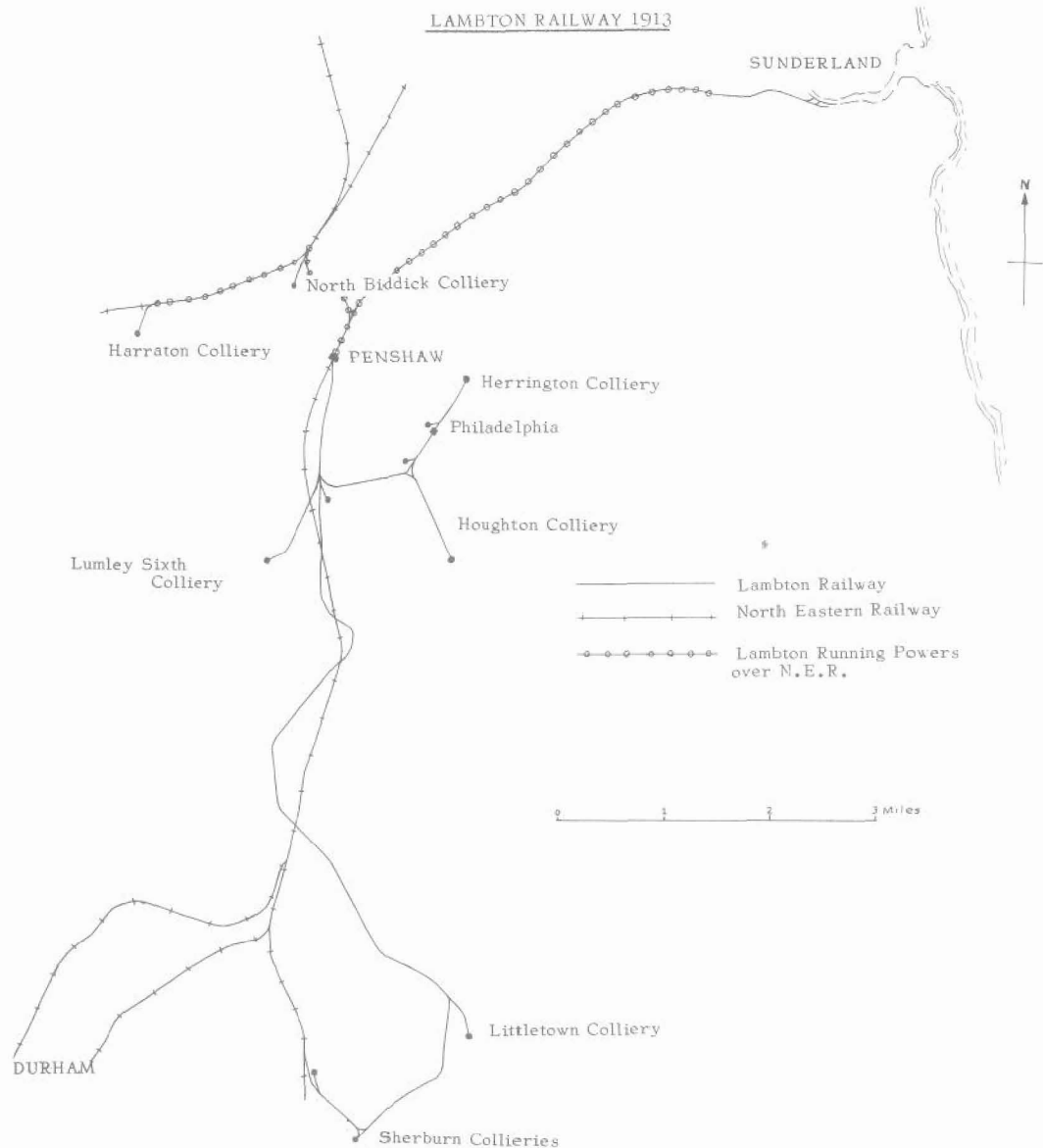
been done by horses. Beyond the Junction Engine the main line was level as far as Philadelphia where the Herrington Engine hauled the wagons up the Herrington West Bank and lowered them down the Herrington East Bank. From this point the Fox Covert Engine took them to the summit of the line and lowered them down to the Grindon Engine. There then followed three further inclines in favour of the load worked respectively by the Grindon Engine, the Glebe Engine and the Arch Engine. At Lambton Staithes near Monkwearmouth Bridge there was another small engine which worked traffic to a landsale yard.

From Framwellgate Moor Colliery the first half mile may have been worked by horses, then followed by a self-acting incline down to the River Wear. The branches to Frankland and Brasside Collieries were probably worked by horses. From the east side of the river the wagons were drawn up a short steep incline by the Beesbanks Engine. From here to the Resolution Pit Junction may also have been worked by horses or the early locomotives.

The Lumley and Cocken branches were also worked by stationary engines. The Black Row Engine near Lumley Thicks worked the line up from Lumley Third Pit and dropped the wagons down to Lumley Sixth & Seventh Pits. From here they were taken up to the junction with the main line by the Burnmoor Engine. This section was virtually level and may have been worked by main-and-tail rope between the two engines. On the Cocken line the Cocken Engine drew wagons up from the various pits. The Pea Flatts Engine then hauled them up the Pea Flatts Bank before dropping them down to the Sixth & Seventh Pits.

The system operated as thus described until 1865, when the N.E.R. opened a branch from their Durham-Sunderland line to Pallion (See Map No. 2). As a result a tunnel was built to connect this with Lambton Staithes and tender locomotives introduced to haul most of the Earl's traffic over the N.E.R. (via running powers) from Penshaw to the staithes and later the South Dock. The old route over Grindon Hill seems to have been finally abandoned about 1870. Loco working over the N.E.R. (with the reverse both at Penshaw & Washington) to Harraton Colliery also seems to date from this period and North Biddick Colliery was similarly served after the Earl acquired it.

On the branches Frankland Colliery seems to have closed by the 1860's together with the line to Framwellgate Moor Colliery and by the turn of the century only one or two of the Lumley Pits were still working. By this time most of the stationary engines had been replaced by locomotive working. Locos were kept at Sherburn Colliery by 1871, though re-alignment and levelling of the line between Sherburn House and Pittington was necessary before locomotives could work through to Belmont Bank Head. The Belmont Bank remained a self-acting incline. The section from Rainton to Sherburn Hill was closed in 1914 when the Sherburn collieries were sold, though three years later a long new spur was opened from Rainton Meadows to Rainton Bridge to link the railway with the Hetton Railway.



Today all working over British Railways has ended and Lambton Staithe are closed. Much of the evidence of 20th century closed lines survives, though Belmont Tunnel suffered when the road was widened two years ago. To find the nineteenth century lines can be quite a tough job. The line from Framwellgate Moor can be made out through the undergrowth, but the branch to Brasside seems to have left no traces. Cross the river and the incline up to the Beesbanks Engine and even the foundations of the engine may be clearly seen. Such is the lot of the industrial archaeologist.

Pelaw Main Railway, (see Map No. 3).

The origins of this line go back to 1809, when a line was opened from collieries in the Ouston area to the River Tyne at Bill Quay near Hebburn. It was designed by Benjamin Thompson the leading advocate of rope-worked railways who was later to clash with Nicholas Wood over whether locomotives would be used on the Liverpool & Manchester Railway. Thompson went much further than Stephenson in the use of ropes, such as on level sections where he installed main-and-tail rope systems.

Like the Pontop & Jarrow Railway later the Pelaw Main system was built up from lines owned by a number of firms. The largest of these was the Birtley Iron Company whose furnaces at Birtley were started in 1828. The colliery side of their business they termed "Pelaw Main Collieries" though occasionally "Charles Perkins & Partners" is found. Eventually this firm came to control the whole system. In the late 1920's the Birtley Iron Co., closed down and the collieries passed to a French syndicate, a very rare case of an English coal company being run from abroad.

In its final form the Pelaw Main system may be said to resemble the letter 'Y'. The southernmost of the smaller arms began with the collieries in the Ouston area, originally five in number. Wagons on the various branches were worked either by stationary engine, gravity or locomotives to a collecting yard known as "Birtley Tail," which was situated on the site of the Caterpillar factory at Birtley. From the "Tail" the wagons were hauled up to Black Fell on the eastern side of the Team Valley by two stationary engines, the first at Birtley Church and the second at Blackhouse Fell, but in 1904 the Birtley Church Engine was dispensed with though the building remained until a few years ago. The section from Blackhouse Fell to Eighton Banks Foot along the ridge of the valley, level and about a mile long, was originally worked by a main-and-tail rope, but latterly by a locomotive. Next came a short incline up to the Eighton Banks Engine, which also stood until 1966 when it had to be demolished after vandals had set fire to it. Wagons were then hauled by a locomotive to the Whitehill Yard which formed the junction with the northern arm of the 'Y'.



The northern arm latterly had two outlets. The northern end ran to a junction with the Tanfield Branch at Dunston whence the wagons were run to Dunston Staithes. From there the line ran southwards through the Team Valley, originally in pleasant open country, but from 1937 through the middle of the Team Valley Trading Estate to Shop Pit Sidings. Then followed two inclines. The first, the Allerdene Incline, was worked by a stationary engine situated alongside the Great North Road which also had to work Ravensworth Shop Colliery and the second was worked by the Starrs Engine at Wrekenton, which also worked Ravensworth Betty (or Teams) Colliery. Both inclines were single line. From Starrs to Whitehill, a distance of just over half a mile, the wagons were worked by locomotive.

From the Whitehill Yard traffic descended the Whitehill self-acting incline at the foot of which it was joined by another incline from Heworth Colliery which was owned by an independant firm. From Whitehill Bank Foot to the Pelaw Main Staithes at Bill Quay Locomotives took over again.

The Pelaw Main system was different from other large systems in a number of ways. It was one of the last to dispense with the "black wagons," but one of the first to instal electric hauling engines and a bell system on all its inclines, thus enabling the set riders to be taken off. The working of its inclines is also more complicated than elsewhere the more so because loaded wagons often travelled in both directions. It tended to purchase second-hand locomotives throughout its existence and it was served loyally by successive generations of the same family.

It remained basically intact until 1959, when the whole of the southern arm as far as the Eighton Banks Engine was closed together with the section from Whitehill Bank Top to the level crossing over the Hebburn road (A. 185). The section from here to the Staithes continued, all traffic being brought by road until May 1964. Meanwhile, traffic from the northern arm was brought to Whitehill and then pushed to Eighton Banks and round a recently constructed spur on to the Blackham's Hill East Incline of the Bowes Railway. This section continues, but its long struggle for existence is very nearly over.

The Hetton Railway, (see Map No. 4).

This line is perhaps the most well-known of Durham's Colliery lines outside the county for it appears in most books on early railway history.

Hetton Colliery was the first to be sunk through the magnesium limestone covering the eastern half of the coalfield, and the railway was built to carry its coal to Sunderland, eight miles to the north-east. The Hetton Coal Company's

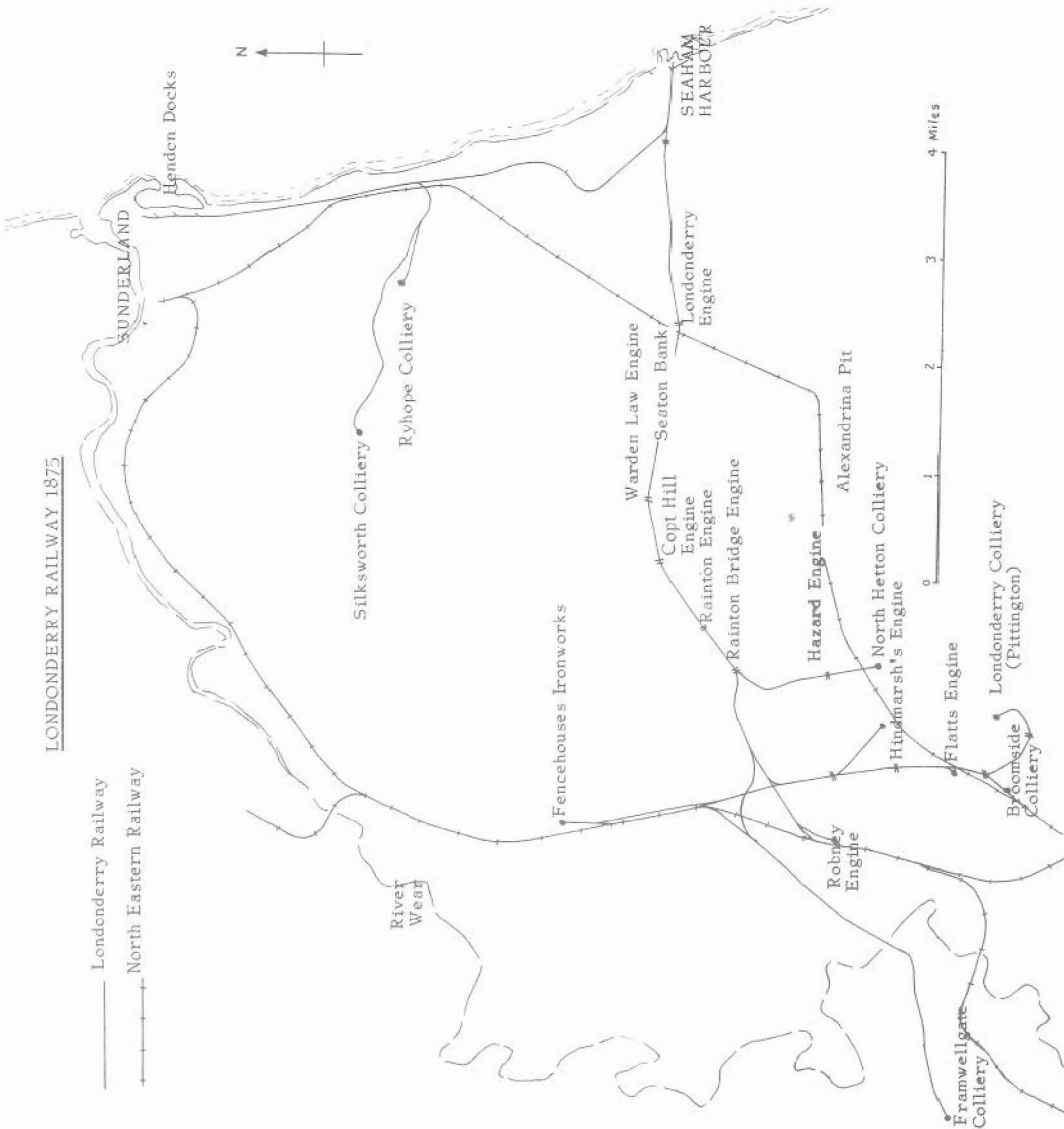


managing partner was Nicholas Wood (1795-1865) collaborator with George Stephenson at Killingworth and it was probably through Wood that Stephenson was appointed Engineer in 1819. The line, which was the first in the world to be designed to use locomotives was opened on 18th November, 1822. The first $1\frac{1}{2}$ miles from the colliery was worked by locomotives and the next $1\frac{1}{2}$ miles by two stationary engines. The first at Copt Hill (originally known as the Byer Engine) hauled the wagons up to the engine house where the ropes were changed for the engine to work them for a further half mile to an interchange point known as "The Flatt." From here they were hauled up to the top of Warden Law at 636 feet. The wagons then descended four self-acting inclines to a marshalling yard at North Moor, Sunderland. The next two miles were originally worked by locomotives, but these were soon replaced by a third stationary engine at North Moor. The fifth incline mentioned in the famous account of the opening is believed to have been at the staithes.

In 1825 two branches were built, both worked by self-acting inclines. The first ran from Hetton Dene for three-quarters of a mile to Eppleton Colliery and the second ran from a junction near Hetton Colliery for a mile southwards to Elemore Colliery at Easington Lane. Between 1890 and 1902 the ropes were removed from both of these lines and also at North Moor.

At the north end of Hetton Dene the line passed over the Rainton & Seaham section of the Londonderry Railway, which, in addition to coal from Londonderry pits, also handled coal from the North Hetton Coal Company's Hazard and Moorsley Collieries via a one mile branch from Rainton Bridge. When this section of the Londonderry Railway closed in 1896 the North Hetton company took over the line between Rainton Bridge and Hetton, and altered the north end to join the Hetton Railway.

In this form, except for the North Hetton branch which closed about 1917, the railway survived until nationalisation in 1947. Hetton Colliery closed in 1950 and when Eppleton and Elemore were co-ordinated into the Hawthorn complex the railway was closed on 9th September, 1959, except for a short section from Silksworth Colliery to the staithes though the latter too have now been closed. The aged beam engine at Warden Law built in 1836 was preserved for inclusion in the Regional Museum and one of George Stephenson's original locomotives, considerably rebuilt, is preserved at York Railway Museum. The route of the line through the streets of Hetton is difficult to trace now, but from Hetton Dene the trackbed survives as does part of the engine house at Copt Hill. From Warden Law northwards some of the line has been reclaimed by agriculture.



LONDONDERRY RAILWAY 1875

— Londonderry Railway
 — North Eastern Railway

Londonderry Railway, (see Map No. 5).

The Londonderry Railway, is interesting for a number of reasons. It was the only line built to connect with the sea; it ran a full scale passenger service on one of its sections, and apart from this section almost none of it survived the nineteenth century. The railway owed its inception to the 3rd Marquis of Londonderry (1788-1854). The Londonderry family owned collieries in the Rainton area and coal from here was taken by short wagonways to Fatfield on the River Wear. In 1826 the system was extended further southwards to serve Londonderry Colliery at Pittington. This caused such an increase of traffic to a river which was already overloaded that the Marquis decided to leave the river and build himself new docks on the coast at Seaham, where the foundation stone was laid on 27th November, 1828. In conjunction with this a new railway was built to connect with the old line at Rainton Meadows, most of the earlier line to Fatfield then being abandoned. This line worked entirely by inclines was opened on 25th July, 1831.

The southern extremity of the line was Londonderry Colliery where, certainly in later days, the winding engine at the pit also worked the first half mile of the railway. Next came a steep self-acting incline down to Pittington village. Here a branch opened about 1840 and three-quarters of a mile long ran southwards to Broomside Colliery. The Flatts Engine situated near the junction of the branch worked the branch and also the main line as far as Pittington Bank Foot, in both cases by a form of main-and-tail haulage. At Pittington Bank Foot the line turned under the Durham & Sunderland Railway and ascended an incline to Hindmarsh's Engine or Pittington Bank Engine as it was known later. This engine also worked the Lady Seaham Pit near the foot of the incline and it probably worked the line northwards as far as the crossing on Hetton Lane. Here a branch came up from the Alexandrina Pit, worked by the Robney Engine situated near the junction of the main line. This engine may also have worked the short section northwards to the Durham & Sunderland turnpike road where a long self-acting incline known as Benridge Bank took the line down to Rainton Meadows.

In the Rainton Meadows area several branches joined the line. From there to Nicholson's Pit a long spur went off westwards to join the Lambton Railway to allow coal from Franwellgate Moor Colliery to be shipped at Seaham.

From Rainton Meadows the wagons were hauled eastwards by the Rainton Bridge Engine, which was situated near the branch to the North Hetton Coal Company's collieries. From Rainton Bridge the wagons were hauled up first to the Rainton Engine and then to the Copt Hill Engine passing under the Hetton Railway in a short tunnel. From Copt Hill to Seaton Bank top the line was fairly level and was divided into two main-and-tail sections (Warden Law Flat & the Long Run) worked by the Warden Law Engine near Warden

Law Farm. The wagons then descended the self-acting incline known as Seaton Bank before being hauled up the very short Londonderry Bank to the Sunderland & Stockton turnpike road. The engine situated near the level crossing also worked the Carr House Bank descending towards Seaham from the bottom of which another self-acting incline, the Seaham Bank, took the wagons down to Seaham Harbour.

Despite extensions to Seaham Harbour in 1838 traffic increased to such an extent that a new line was proposed to give access to the docks at Sunderland. This section, six miles long, was opened on 3rd August, 1854, and passenger services were begun on 2nd July, 1855. It began at Seaham Station on a link between Seaham Bank and the Swine Lodge Incline of the South Hetton Coal Company's line to Seaham. It then ran northwestwards through Seaham Colliery Station before turning north-eastwards to follow the coastline to Ryhope where there was another station, and the terminus and docks at Hendon. It cost approximately £40,000 and was designed from the beginning to be worked by locomotives. In 1855 a branch was opened to serve Ryhope Colliery and this was extended to Silksworth Colliery in 1871.

It has been suggested that loco working on the more level parts of the Rainton & Seaham section began as early as 1845, though evidence is lacking. A locomotive is recorded at Framwellgate Colliery in November 1876, but the Rainton area was still being worked by the stationary engines then, though the position had changed by 1890 when two locos were kept at Rainton and another at Warden Law for the section between the Copt Hill Engine and Seaton Bank Top. All repairs were done at the Marquis' Engine Works at Seaham.

Except for the section between Seaham Colliery and Seaham Docks the whole of the Rainton & Seaham section was closed in November 1896 on the grounds that the collieries it served were exhausted. In 1898 the docks were taken over by the Seaham Harbour Dock Co. Ltd., and on 6th October, 1900, the Sunderland section passed to the control of the North Eastern Railway who used it as part of their new line from Sunderland to West Hartlepool. The Marquis' personal station survived for many years and his "coronet" can still be seen on some of the under-bridges. Of the Rainton & Seaham section, apart from the Seaham Colliery section now no longer an incline, little remains though the loco shed at Warden Law survives. The original Seaham Station may still be seen, though it is largely derelict.

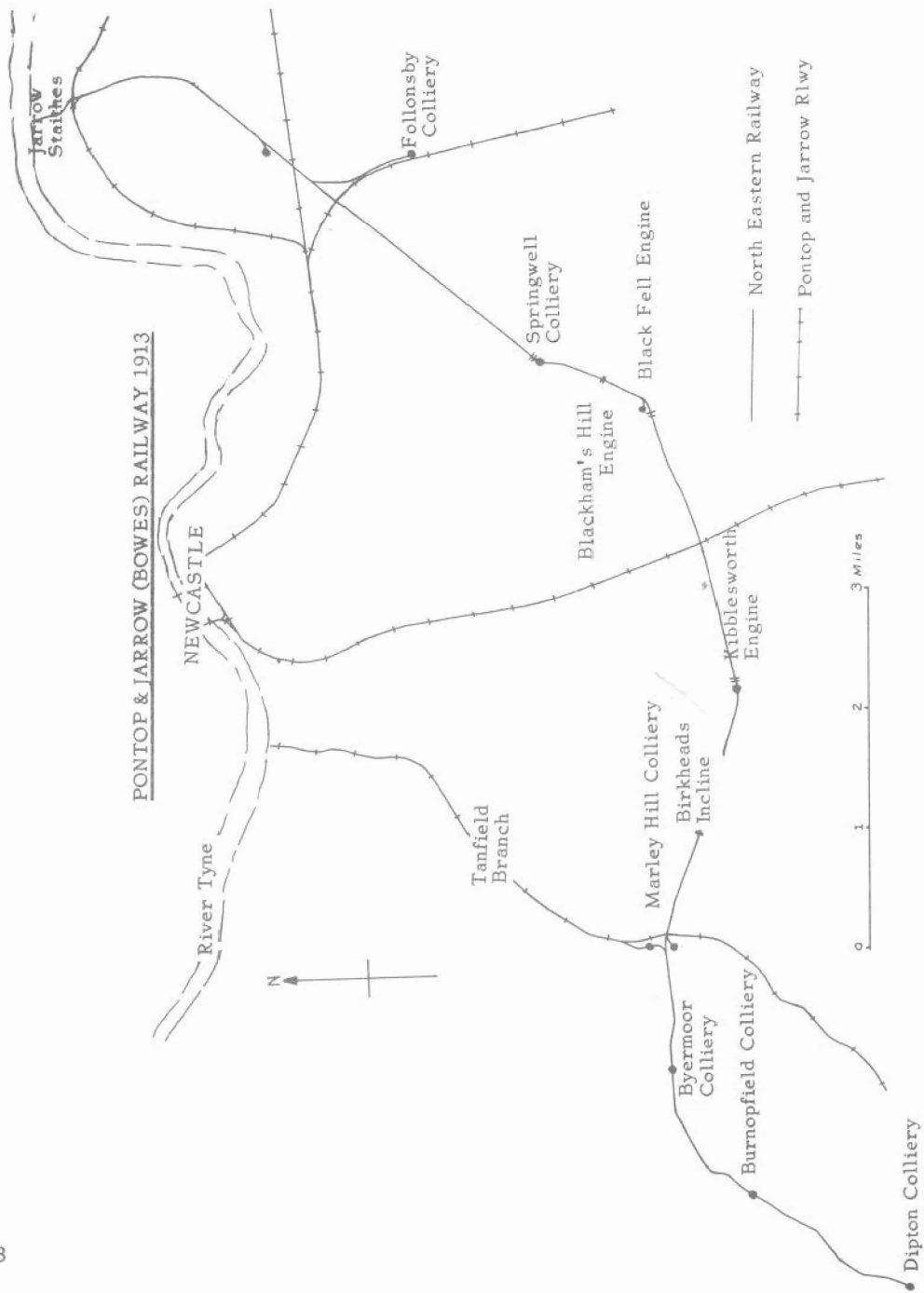
You will perhaps forgive me if I say I have a rather special interest in the last of the large systems. It has always interested me, not least because until 1968 its working had not changed a great deal since its opening. This was:-

The Pontop & Jarrow Railway, later known as the Bowes Railway, (see Map No. 6).

Like the Pelaw Main Railway this was built up from a number of lines originally owned by different companies, but this time the interest of the great County Durham landowners can again be traced. The oldest section, from Mount Moor Colliery via Springwell Colliery to Jarrow, was opened on 17th January, 1826. It was another of George Stephenson's designs this time for the Grand Allies, now known as Lord Ravensworth & Partners, the partnership of Lords Ravensworth, Wharnccliffe & Strathmore. It too was operated partly by inclines, and partly by locomotives the first two being probably the first built by the famous firm of Messrs. Robert Stephenson & Company at Newcastle. In 1842 this line was extended to Kibblesworth for that colliery's owners by means of two more inclines.

Meanwhile some two miles west of Kibblesworth, Marley Hill Colliery had been sunk by the firm later known as Messrs. John Bowes & Partners, John Bowes being the son of the Earl of Strathmore. This colliery was linked to the Tanfield branch and as we have seen the firm's managing partner Sir Charles Mark Palmer found this outlet inadequate. After taking over Lord Ravensworth & Partners and Kibblesworth Colliery a link was eventually built between Kibblesworth and Marley Hill. At the same time a line which had already been built by another man from Marley Hill to collieries at Byermoor and Burnopfield and which had also fallen into the Partners' hands was extended southwards to a new colliery at Dipton, and the whole system was opened on 15th April, 1855. It is noteworthy for the large number of collieries which it served, a number of them being worked entirely by inclines.

Locomotives from Marley Hill worked traffic from the far western colliery at Dipton as far as Burnopfield where an incline descending with the load, but worked by a stationary engine took the wagons down to Crookgate for locomotives to take over again. The inconvenience this bottleneck must have caused can be imagined and in 1900 it was converted to locomotive working. Locomotives took traffic from the western group of collieries to Birkheads Bank Top on the western ridge of the Team Valley. From here they travelled over six inclines the first and last being worked on the self-acting principle and the other four by stationary engines. The Engine at Kibblesworth also worked traffic with the load as well as the colliery, whilst the Blackham's Hill Engine not only worked an incline to the west and the east of it, but a colliery as well! This six mile section is interesting because of the excellent co-ordination of single and double track sections. At Springwell Bank Foot the bottom of the last incline locomotives again took over for the five mile journey to Jarrow Staithes though there was also an incline at the staithes until 1882.



Apart from the closure of a number of short branches, and of the Dipton-Burnopfield section in 1940 the railway remained intact until 1968. Since then closures have decimated the line west of Kibblesworth, the Pelaw Main branch is due to close soon and the future of some of the rest is uncertain. The railway today is one of the very rare places in the country where rope-worked inclines can be seen operating daily, a piece of working railway history.

These, then, were five of the large colliery systems in Durham. There were of course, other smaller lines; the Sacriston Railway opened in 1831; the South Hetton line opened in 1835; the Beamish Railway rebuilt about 1853; the Harton Railway operated by electric locomotives from 1907 onwards, and its passenger-carrying sister the South Shields, Marsden & Whitburn Colliery Railway; and the Chopwell & Garesfield Railway, the last noteworthy system to be built, 7½ miles of locomotives and inclines opened by the Consett Iron Co. Ltd., in 1897, and its "feeder" a two mile long narrow gauge line worked originally by electric locomotives and from about 1930 by a main-and-tail rope system. Apart from South Hetton and Harton given new life by the development of coastal or near coastal collieries, little remains, except old trackbeds, embankments and tree-lined cuttings. Even the surviving large systems are shadows of what they once were. For the need which they fulfilled and the industry which they served has nearly gone, and road transport has cut heavily into what survived to be nationalised. Gone too is the "atmosphere" which each railway had and the loyalty given to them by successive generations of the same families. But in their time they played an essential part in the development of the transport system needed to serve the coalfield as it expanded during the last century and each carried millions of tons of coal destined for many places in Great Britain and Europe. They, as much as the public system which grew up with them were the arteries of the coalfield and for this, to say nothing of the interest of their operation they deserve to be remembered by the social, economic and railway historians of the area, and industrial archaeologists.

FOOTNOTE: Regarding the "black wagons" referred to on these colliery railways, the following comments may be of interest:- The early wagons used were "chaldron wagons" and usually carried 53 cwts, These were commonly referred to as "Newcastle Chaldrons" and the normal design consisted of a wooden body with all the sides sloping inwards onto a wooden base frame. They had only a crude wooden brake and were completely unsprung which boded ill for the cast iron wheels.

During the 1860's two planks were added to the top of the sloping body to increase the capacity to 70 cwts and all new wagons also carried this amount. These were known locally as "black wagons" and a few of this type can still be seen at Seaham Harbour, where they await transport to Beamish Museum.

BULLETIN NO: 12 - LUMPSEY IRONSTONE MINE

Page No.	3	Line	30	For "double tubbing" read "double cribbing".
"	"	9	" 21	For "surface haulage system was demolished" read "Surface Haulage House was demolished".
"	"	9	" 31	For "Differtial Compound Engine" read "Differential Compound Engine".
"	"	10	" 37	For "early stages" read "early days".
"	"	14	" 20	For "through pulleys in a rectangular board" read "passed through holes in a rectangular board".
"	"	22	" 25	For "The stone used to be taken away in standard gauge wagons from ten to twenty tons capacity, but later larger steel wagons were used. read "The stone used to be taken away in standard gauge wagons from ten to twenty tons capacity. Later steel hopper wagons of a larger capacity were used".
"	"	24	" 19	For "It was half-buried in the ground" read "It was half buried in the ground, having been used to collect rainwater".