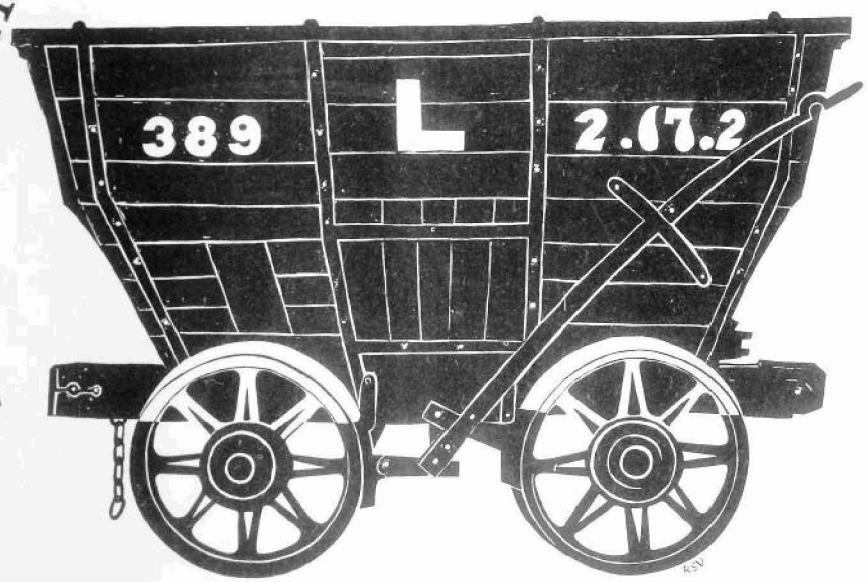
February 1970

The Industrial Archaeology Society For The North East



BULLETIN 10

Editorial

At the Society's A. G. M., held in Durham last July a little time was given to a review of some of the local Group's activities, and we thought it may be of general interest to publish details of these in this edition. The North Riding's contribution has taken the form of a History of The Whitby and Pickering Railway which, while of interest in itself, has been brought up to date with some details of the contribution which the North Yorks Moors Railway Preservation Society is making at the present time, towards its future.

Members may be interested to hear that the Society now has a Banker's Order Form which is available from the Treasurer (Mr. W.A. Carr, 6, Raby Avenue, Barnard Castle) and can be used for the renewal of annual subscriptions.

We regret the delay in the issue of this Bulletin, but feel sure that its varied content will in some part compensate for this.

S.K.C.

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Scott's Pottery, Southwick, Sunderland

Stuart B. Smith

During the summer months, the Sunderland Group has divided its time between completing the Town Survey and excavating on the site of Scott's Pottery, Southwick, Sunderland. The Town Survey is now virtually complete and is to be published at a later date. This article will, therefore, concern itself with the pottery activities.

Introduction

Sunderland is now world famous for its pottery, mainly as a result of the popularity of the familiar lustre ware. At one time or another there were over 15 potteries in the Sunderland area. The range of products was very wide, from the common brown ware used for bread bins; tea services of many patterns; copper and silver lustre ware and of course the traditional "Sunderland" jugs and bowls. In the majority of collections (including the one in Sunderland Museum), the common wares are poorly represented. This is because they are not readily identified as Sunderland Ware and of course they are less attractive. To the historian or industrial archaeologist, appearance must of course come second to true representation, and the only way in which the full range of products can be ascertained is by actual excavation. Even though much common ware must still be in existence, they are seldom marked and without direct evidence of their origin they are relatively useless to the ceramic historian.

It was not difficult to choose the site for the first "dig", as Scott's lies on the banks of the Wear and the ground is now used for tipping. The sites of many of the other potteries are either unknown or built over. Sunderland Museum is fortunate in having many of the account books, letter books, pottery designs and other archives of Scott's pottery, as well as plans of the pottery and machinery. The curator, Mr. James Wilson has done an enormous amount of research into Sunderland pottery, and thus the group was lucky enough to know what it was looking for, and where to look for it.

History of the Pottery

In 1788, Anthony Scott, who managed Byers & Co's. Pottery at Newbottle, established a new pottery, in partnership with his father, at Southwick, at that time a small township on the banks of the river Wear, on the outskirts of

Sunderland. The senior partner was Edward Atkinson, and the firm traded under the name of Atkinson & Co., until 1799 when the title was changed to Anthony Scott and Company. When Scott senior died in 1829, the name changed to Scott & Sons, and on the retirement of Anthony in 1841, the firm became known as Scott Bros. The firm flourished during the nineteenth century and in 1888 the whole works were reconstructed along the most modern lines. Trade however, began to decline and in 1896 the firm closed down. The auction notices for this date give an invaluable list of copper plates used to print transfers, many of which were bought by Ball Bros., of Deptford.

Products

The produce of Scott's was of high quality and there was a considerable home trade supplemented by exports to the continent. The firm produced the usual range of transfers, mottoes and verses applied to jugs, ewers and mugs. In additional the firm produced a considerable quantity of dinner services and tea sets in various designs; cream coloured wares; brown ware; blue and white striped ware; willow pattern; pink lustre ware; Wedgewood style ware; frog mugs; streaked pottery rather like Linthorpe ware; "Sunderland" lions; religious plaques etc. During the excavations examples of most of these types have been found, but it is interesting to note that whilst many sackfuls of sherds of the dinner service and common kitchen ware have been found, there have only been a handful of sherds of the typical "Sunderland" lustre pottery. This probably reflects the comparative quantities produced, although the selectivity of the excavations must be taken into account.

The site

When Scott's closed down in 1896, the buildings were quickly demolished and eventually the Southwick Iron Works was built on the site. These too are now abandoned and the site is being used as a tip. The archaeologist is, therefore, only left with a ten yard strip of uncovered land between the tip and the water's edge. This in fact turned out to be rich in wasters due to deliberate tipping and breakages when loading boats. Since the site was so small and the actual layout of the site was well known, it was decided to concentrate on collecting sherds. The greatest quantity of these were found to be overlying a well worn cobbled floor which was immediately behind the old quay wall. The sherds found in this position were generally in the biscuit state with transfer designs already applied. Sherds found between the old and new quay walls were generally glazed fragments and of later date. Pottery found has covered all periods from about 1840-1850 (printed "S.B. & Co.", "SCOTT" impressed) to the closure of the factory ("SCOTT"impressed), but it is hoped that further digging will find both earlier pieces and also more lustre ware. Since the majority of sherds were in the biscuit state and had already had designs applied, the problem of cleaning them was a major obstacle as the designs easily washed off. As a result of the excavations however, it has

been possible to identify at least a further 16 pottery designs and to extend the range of products considerably. Unfortunately it was the practice to only mark a small fraction of the products and thus to determine the names of other designs it will take a great deal of digging and a great deal of luck. During the "Dig", the base of one of the kilns was discovered and it is hoped to completely uncover this at a later date. This project turned out to be a very good one for the summer months as it was a family activity and even the youngest there found something to do!

In actual fact a large number of local small boys were found to be enthusiastic pick wielders. Possibly the first time an Industrial Archaeology Group has been engaged in social work!

I am greatly indebted to Mr. James Wilson and his booklet, "The Potteries of Sunderland and District," in the writing of this article.

GLOSSARY

Biscuit	pottery which has been fired once and in a brittle porous state ready for decoration.
Impressed	a part of the mark to be found on the base of some pottery, the part which pressed into the clay when the pot is unfired.
Mark	found on the base of some pots, consisting of a design name or number, and the name of the Pottery which made it.
Sherd	any fragment of pottery.
Transfer	a method of applying decoration to pottery by which the design is printed from a copper plate onto tissue paper which is then stuck on the pot in the biscuit state. The ink on the transfer is fired into the pot.
Waster	pottery waste, discarded pots due to a fault in the manufacturing process.

A History of The Whitby and Pickering Railway

G. D. Calvert, B.Sc

For centuries Whitby had to rely on the sea as a means of communication and travel with other parts of the country. A journey by pack-horse over the surrounding moors was hazardous at the best of times. It was not until 1759 that a turnpike road was opened to Pickering with the result that in 1788 a twice weekly service by stage coach was operated between Whitby and York. Further improvements were made in 1796 with coaches to Sunderland and Scarborough; in 1814 to Stockton via the coast; and in 1823, the York service was increased to thrice weekly.

For all the improvements that were made, the services were far from satisfactory, and following their success in other parts of the country the idea of a canal to link Whitby and Pickering was mooted in 1793. A survey was carried out and it was found that 100 locks would be required in the first 8 miles out of Whitby - even so the idea was not dropped and discussions continued for nearly thirty years. Meanwhile, an event of great significance had occurred further north. In 1818 the proposition was made for "A public railway to be built from the colliery near Auckland to Darlington, Yarm and Stockton..."

The Stockton and Darlington Railway as opened on September 27th, 1825, and 19 of the original subscribers were from Whitby. The following year the Whitby and Pickering Turnpike Act was due for renewal, and these two events turned the thoughts of some Whitby inhabitants towards the building of a railway.

Robert Campion proposed a line to connect with the S. & D.R., and at his own expense, asked Thomas Storey to undertake a survey. On 2nd March, 1831, Campion presented Storey's report at a meeting of the recently formed Whitby Literary and Philosophical Society. At a further meeting in May, this route and the route to Pickering were considered, and Storey was asked to survey the latter. His report was not considered entirely satisfactory, and a second opinion was asked for from George Stephenson. He favoured the Pickering route estimating the cost of the 24 miles at £48,000. His report was accepted, and with an estimated overall total cost of £80,000 a bill was presented to Parliament; the Act for the construction of the Whitby and Pickering Railway receiving the Royal Assent on May 6th, 1833.

Work started in the September and on June 8th, 1835, a service between Whitby and the Tunnel Inn, Grosmont, was inaugurated, followed later in the year by a service between Pickering and Raindale. The whole line was formally opened with great rejoicing on May 26th, 1836, an account of this event appearing as Appendix 4, in Henry Belcher's "Scenery of the Whitby and Pickering Railway" (1836). All the trains were horse drawn and consisted of a stage coach on flanged wheels.

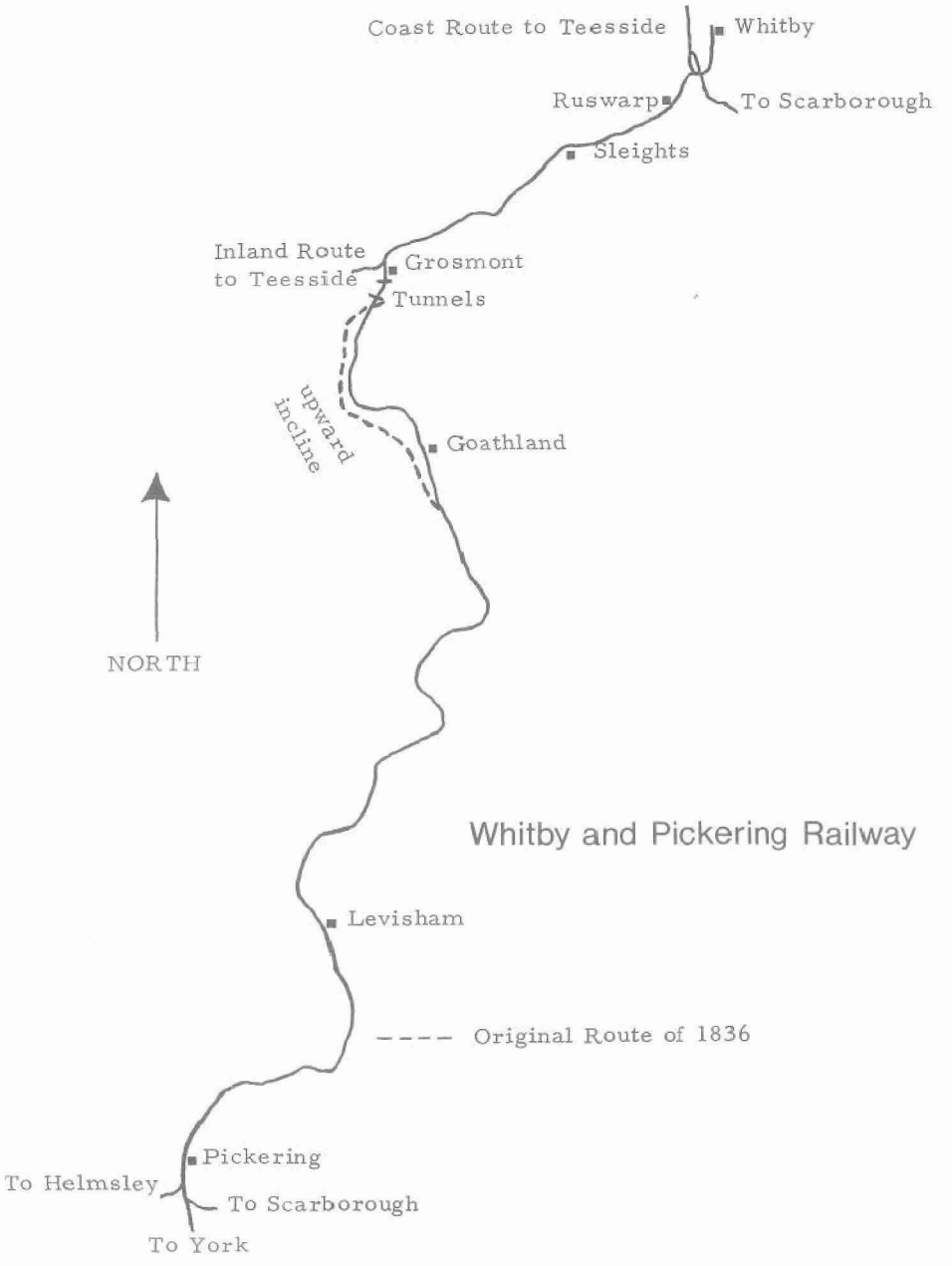
Between Beckhole and Goathland there was a rope-worked incline. The total cost of the line was £105,600 and so a second Act of Parliament was necessary (Royal Assent May 5th, 1837). The original act is probably unique in that one clause permits the use of steam engines, and a later clause forbids them.

On August 8th and 9th, 1839, in connection with a three-day bazaar at Grosmont to raise funds for the building of an Anglican Church, trains were run every hour from Whitby, starting at 9.50 a.m., the fare being reduced from 9d to 6d, and as often as required from Pickering, the first train leaving at 5.50 a.m. with a reduction in fare from 2s. 3d. to 1s. 6d. Hence Grosmont can claim the distinction of being the destination of the first railway excursion.

It was soon obvious that the line was not a financial success, but with whom should it amalgamate - the Stockton and Darlington Railway's branch to Middlesbrough or the York and North Midland Railway who in 1844 planned a branch to Scarborough. The Directors chose the latter, and on June 30th, 1845, the Whitby and Pickering Railway was sold for £80,000. By June 1847, the branch from Pickering to Rillington was complete and the whole of the line was doubled and made ready for steam engines.

In their turn, the York and North Midland Railway Co., amalgamated with two others in 1854 to form the North Eastern Railway. Following a fatal accident on the incline in February 1864, plans were speeded up for a deviation line from Grosmont to Goathland; this being opened on July 1st, 1865, followed in October by a line from Grosmont to Castleton to complete the North Yorkshire and Cleveland Line from Picton Junction.

In 1872, a special track was laid on the disused Beckhole-Goathland incline in order to test a "Fell-System" locomotive built by Manning, Wardle & Co., of Leeds for a coffee plantation in Brazil. As a tourist attraction the N.E.R. re-opened the Grosmont-Beckhole line in 1908 and operated Autocars on the line until shortly after the outbreak of World War I. As part of their contribution to the war effort, the N.E.R. singled the track between Levisham and Pickering, but the ship carrying the lifted track to France was sunk in the Channel.



By the turn of the century, Whitby has four rail outlets, all of which continued in use after the grouping of 1923, when the L. N. E. R. was formed, and after nationalization in 1948. However, ten years later the coast line from Whitby to Middlesbrough was closed, and then when the Beeching Report was published, there came the news that Whitby was to close all its railways. At the four sessions in Whitby of the Transport Users Consultative Committee what was probably the strongest case in the country was put for the retention of all the lines, with the result that the T. U. C. C. reported that grave hardship would result from any closure. The Minister of Transport, in London, thought otherwise and the final trains on the Scarborough and York lines ran on 6th March, 1965.

Discussions followed with the local authorities on ways of re-opening the lines, but with no results; and then on June 3rd, 1967, the North Yorkshire Moors Railway Preservation Society was formed. The railway preservation movement began in 1951, when a group of amateurs took over the Talyllyn Railway in Merionethshire after its virtual owner had died. Their success led to the formation of societies elsewhere to preserve other lines.

Since its formation, the membership of the N. Y. M. R. P. S. has passed 2, 200 (a record for standard-gauge societies). A contract has now been signed with British Railways for the single track with passing loops from Grosmont to Ellerbeck, together with the track from there to High Mill, Pickering, at a cost of £42,500, of which a 10% deposit has been paid. The next step is for British Railways to apply for a Light Railway Order, after which the society must apply for a second such order; this process may take up to two years. The initial aim of the society will be to operate steam trains on Summer Weekends, and by means of their Diesel Railbus to operate a local service for Goathland throughout the year as necessary.

The society possesses a sleeping coach for volunteers on works trains, a buffet car, and the last non-gangwayed, centre-lavatory 1st/3rd class coach remaining in Britain. Three small steam locomotives are at present on permanent loan to the society and three others suitable for passenger train working are expected fairly soon. Amongst its membership, the society is very fortunate to possess practical railwaymen from all departments and their help is greatly valued.

Full details of the society may be obtained from the Secretary, Mr. T. Salmon, "Rosebank", The Avenue, Ruswarp, Whitby, North Yorkshire.

Lead Shot Tower at Elswick, Newcastle Upon Tyne

R. M. Higgins

General History of Lead Shot Making

The method of making lead shot by dropping molten lead from a height of about 15'0" was patented by William Watts. How Watts came to hit upon his undoubtedly superior process for making lead shot is hard to say with any degree of certainty. It is likely that Watts, by hard and able thinking had improved on a method already in existence but carried out in an imperfect and desultory manner. There are, however, grounds for believing that Watts may have 'borrowed' the process in use in some continental country. Nevertheless perusal of Watts' Patent Specification proves it to be a clear and workmanlike description of how to make lead shot of high quality with a large percentage of them perfect in regularity. In fact the process has undergone little change and lead shot was being made until recently in practically the same way as Watts laid it down in his specification in 1782.

The method of making shot by pouring molten lead through a 'colander' or 'frame' full of holes into a vat full of water was a well known method long before 1782, but only a short drop was used - a few feet at most - and the consequence was that malformed globules of lead resulted. It was reasonable to assume that if shot - of a kind - could be made by the short drop method that the long drop method had been tried and found wanting, in that the shot, although in some cases better, was still malformed and irregular.

Molten lead poured through a frame full of holes just runs through like water in a continuous stream and does not produce spherical shot. The art of shot running was to make the molten metal form drops on the underside of the frame, each hole was required to drip regularly but quickly. This was achieved by retarding the flow of the metal through the frame by the addition of 'scum'; the ideal condition of the molten metal in the frame for successful shot running was to be as much like porridge as possible.

The retarding of the flow of the molten lead through the frame by the addition of 'scum' was also, one suspects, common knowledge before 1782. The truth was that 'soft' lead dropped from any height does not form perfect spherical globules and shot produced in this way was made nearly perfect by being 'rumbled' in a rotating drum. Before this method was in use 'milled shot' was used. Originally, milled shot was made by 'dicing' sheet lead and

rumbling the small cubes until round; therefore, both diced sheet lead and malformed dropped shot were rumbled and termed 'milled shot', even after Watts' perfect Patent dropped shot had been on the market for some while.

The secret for success in William Watts' Patent for making small shot, as he put it 'solid throughout, perfectly globular in form, without the dimples, scratches and imperfections which other shot heretofore manufactured usually have on their surface' was firstly the arsenic added to the lead and secondly the considerable height for dropping that Watts stipulated should be used. Arsenic does not harden lead to the extent of making 'iron into steel' as it were, but it increases the surface tension of the molten lead and sort of pulls the lead inwards from the centre to form perfect globules which harden during their passage through the air before breaking their fall on any water placed to receive them.

Watts incidentally went bankrupt in 1794, largely owing to an injudicious building speculation in Bristol, or so the story goes.

History of the Lead Works at Elswick

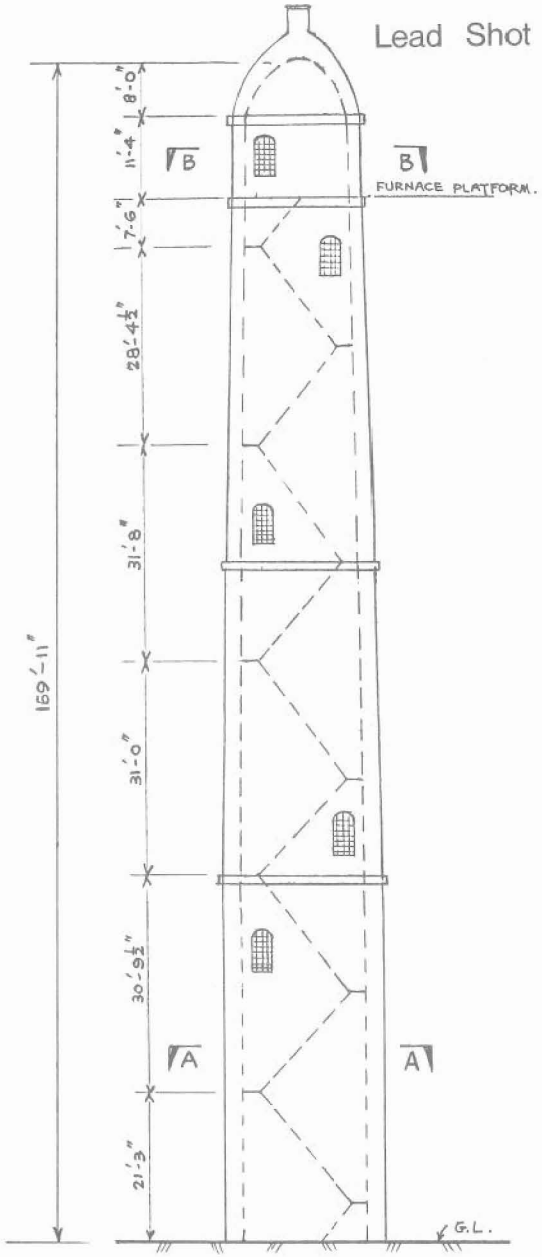
The Lead Works were originally founded in 1778 under the name of Walkers, Ward and Fishwick, and has since then been variously known as Walkers, Fishwick and Company; Walkers, Parker and Company, Walkers, Ward Maltby and Company; Walkers, Parker, Walker and Company. The changing ownership is difficult to trace, but certainly the Walkers and the Parkers continued their family interest in it for many years. The works are now owned by the Associated Lead Manufacturers, the largest firm engaged in the business.

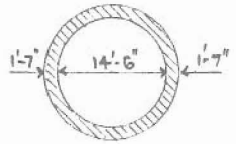
During the nineteenth century, Newcastle was one of the most important centres of the lead trade in England, the lead being obtained generally in the upper Weardale Valley and brought down to Newcastle for processing. The production of lead shot would have been an important part of the processing, particularly during the Napoleonic Wars. It is probable that Walkers, Fishwick and Company paid a sum of money to Watts for the right and licence to manufacture shot until the patent expired in 1797.

History of the Lead Shot Tower

The Newcastle upon Tyne Lead Shot Tower was built by Walkers, Fishwick and Company, at their Elswick Works in 1797, it is rather interesting to note that they built it with their own workmen and that it was started towards the end of 1795 and was completed about January 1797. It was found to be two feet out of the perpendicular when completed and this was rectified by the hazardous expedient of digging down to the foundations and removing a certain amount of soil on one side when it gradually righted itself, how this did not end in disaster is hard to say. The company paid their workmen £10 per week until the Tower was finished.

Lead Shot Tower, Newcastle Upon Tyne





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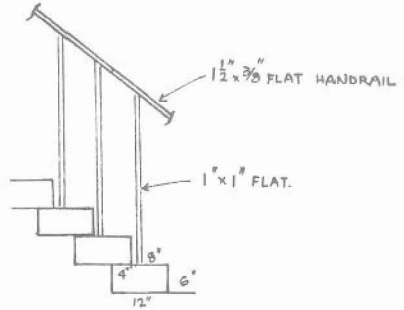

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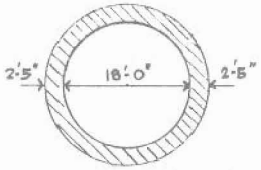

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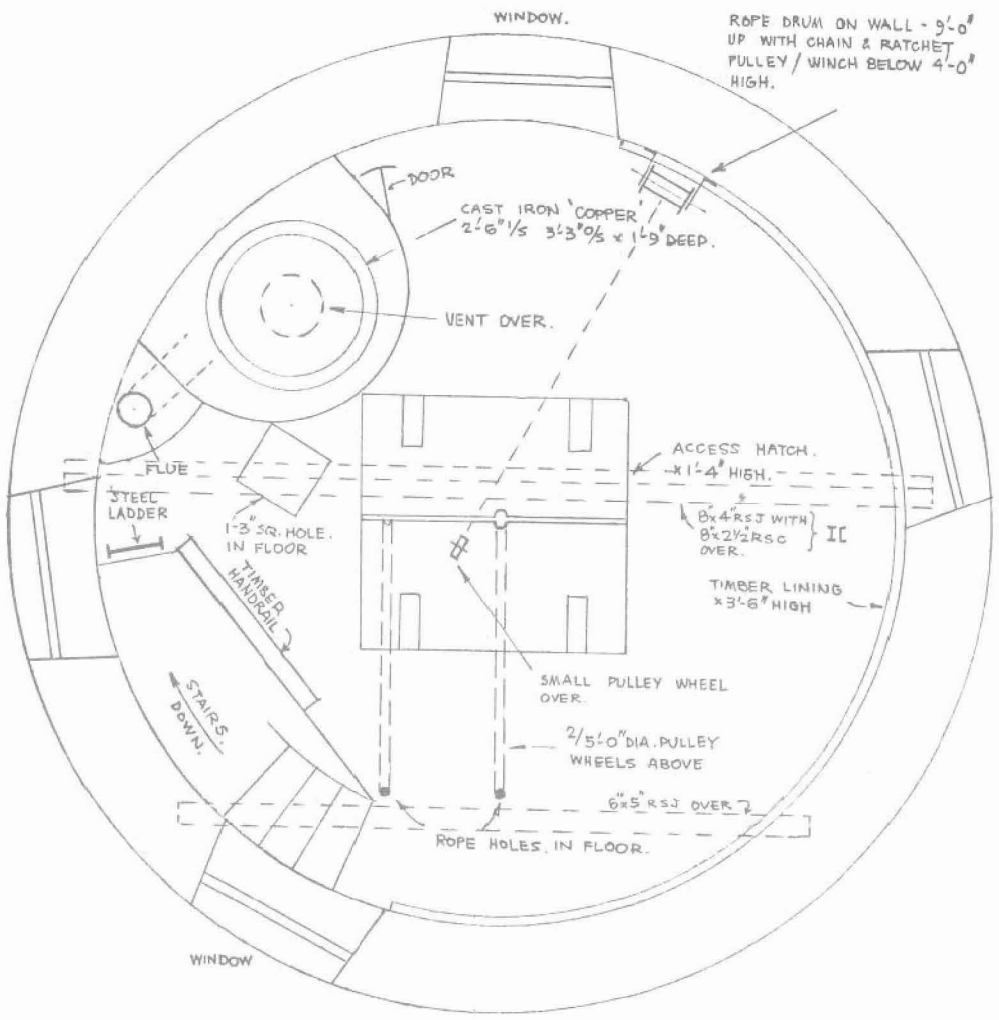
ELEVATION.



PLAN AT FURNACE PLATFORM LEVEL

In later years the tower again started tilting, whether in the same direction or the opposite direction it is hard to say, until only last year it was found to be some 3'0" out of plumb and still moving and had to be demolished in January of this year. Originally the Tower had three wooden galleries as can be seen in a print of 1840, but these were removed later in the nineteenth century. The Tower was damaged by lightning in 1802 and again in 1814 when part of the cupola came away and broke one of the wooden galleries, the falling pieces incidentally injuring one of Walker's workmen named Edward Lonsdale. In the same year 1814 before the tower was struck, Samuel Walker Palker one of the Partners of Walkers, Ward, Maltby and Company - as it was then - entertained a large party at Low Elswick House on 9th May on the occasion of the Peace Celebrations after Napoleon had been banished to Elba; the highlight of the celebrations was that the Shot Tower was illuminated at night both inside and out and made a fine spectacle.

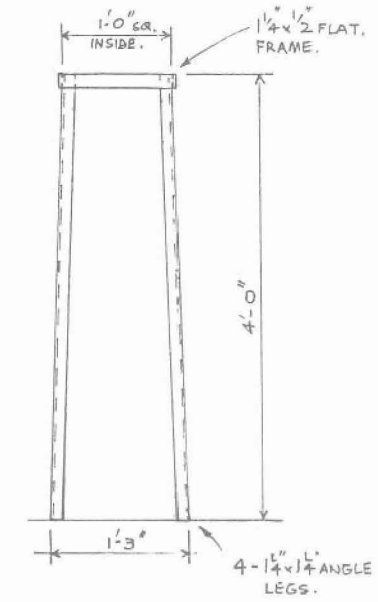
Descriptions of the Lead Shot Making Process

The process hs differed little from Watts' Specification No. 1347 of 1783.

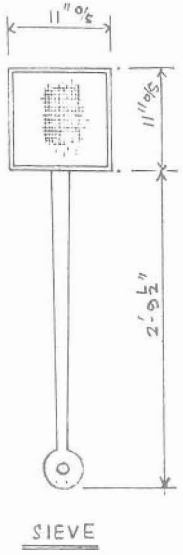
The shot running floor at the top of the Shot Tower was provided with a furnace and a melting pot. Supplies of fuel and lead were sent up to the top of the tower by a bucket hoist and materials sent up by this method entered by the trapdoor in the centre of the floor, the hoist may have been worked by hand originally, but later was driven mechanically. The shot runner had to climb the spiral stone staircase round the inside wall of the Tower to do his work and not unnaturally stayed at the top as long as possible. He communicated with his 'mate' on the ground - who was the senior man - by messages, sent up and down in a small bucket on a rope; some shot runners sampled their shot three times an hour in order to control the size while pouring by manipulating the scum or dross in the bottom of the frame. These samples were collected by the senior man and the shot was gauged by being weighed in scales and inspected visually for malformed shot and the result would be sent up by message in the bucket to the shot runner himself at the top of the tower.

In 1830 it is probable that the shot runner and his mate were working twelve hour shifts, as it was undesirable for the runner to stop pouring once he started. The drill was to move the vat of water out of the way last thing at night and hoist about $2\frac{1}{2}$ tons of lead and a quantity of fuel. While stoking up and melting the lead next morning the vat would be emptied, running would be resumed and go on till supplies were exhausted, then the vat would be emptied and more lead and fuel sent up when running would continue until the evening.

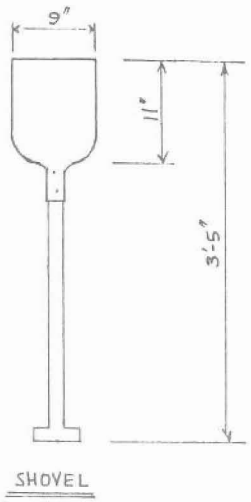
At the base of the tower, in the centre, stood a wooden vat holding about 600 gallons of water, the vat was mounted on an iron frame with flanged wheels at each corner which in turn ran on a short length of iron rails; the purpose



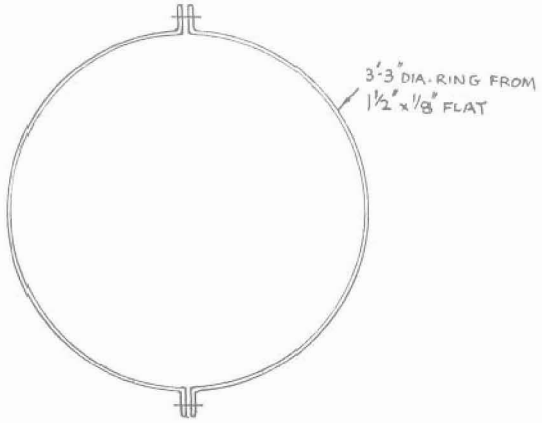
GRADING FRAME

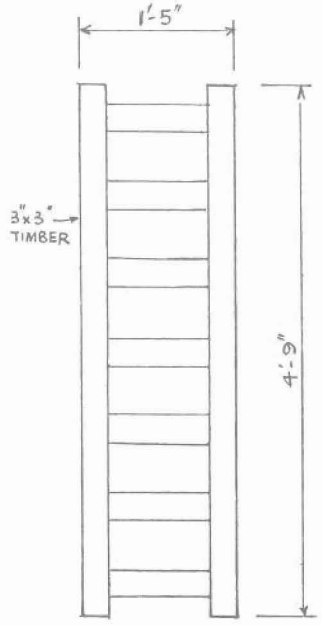


SIEVE



SHOVEL





of dropping shot into water was to break the fall of the shot, and to avoid distortion and damage, cooling hardly entered into the matter at all. The reason that the vat of water could be moved from the centre of the tower was to leave the centre of the base of the tower clear for working the hoist, and more important, to enable the vat to be moved from the centre after running shot, so that it could be placed as close as possible to the wall of the tower, in order that the shot at the bottom of the vat could be 'shot out' - together with the water - through the large bore tap on the bottom side of the vat. The large bore tap had a longish spout projecting downwards and this spout went through a hole in the wall of the tower and ejected shot and water into another smaller vat in the shot processing room situated outside and at a lower level than the floor of the shot tower vat itself; the vat on rails had a sloping floor inside converging on the taphole in order to facilitate the ejection of the shot by the water.

In the processing room the shot was drained, dried by handling on a hot iron plate, sifted for size in sieves slung from the roof and then polished with black lead in a rotating drum. Finally the shot was packed into bags or casks.

Later, rotating screens were introduced to screen and size the shot more accurately, and also the inclined plane. The inclined plane was a highly polished iron table with a dead true surface, this iron table had sides to it and was tilted at an angle. At one end it had a hand fed hopper down which the shot ran on to the table, the perfect shot ran down the inclined plane and the malformed shot either moved to the sides of the table or dropped short at the other end into a trough provided for them, the absolutely accurate shot ran down the full length of the table and jumped off with considerable force into another trough placed beyond the trough for the malformed shot. It must have been at a somewhat later date that the 'cascade' was introduced, this was a very similar arrangement to the inclined plane except that it was in three stages with jumps for the malformed shot in between each plate, it was also mechanically fed. The difference between the cascade and the inclined plane was that few malformed shot ran down the final plate, they were nearly all good pellets that finished up in the trough.

Description of the Tower as Surveyed in December, 1968

The Tower, of course had not been used for shot making since 1951, nevertheless the shot running platform, the furnace, pulley wheels and various bits of equipment were still intact although very rusty and covered in dust. The accompanying sketch shows the layout of the platform with the trapdoor in the centre through which the materials would have been hauled, the iron framed stand on which the 'colander' would have stood with a hole in the floor beneath and the heavy cast iron 'pot' and brick lined furnace in which the lead was melted with a flue passing up the walls and out through the

central 'chimney' at the top of the cupola.

The whole of the tower including the cupola was brick built, the walls being 2'5" thick at the base. It was lit by a number of windows on the line of a fine stone spiral staircase with an iron balustrade which cantilevered out from the side. Many of the articles on the shot tower mention the height to the platform of 175'0", it was found on the survey, however, both from an internal measurement and an external theodolite measurement that the height to the platform was 150'0" whilst it was some 174'0" high overall.

Acknowledgement

"Shot Making and the Shot Tower at Elswick" Ian Glendenning - Proceedings of the Society of Antiquaries of Newcastle upon Tyne, Autumn 1955.

Review

"From Telegraph to Nuclear Power" edited by D.W. Pattenden

This is a history of Electrical Engineering in Cleveland and South Durham from the first appearance of the telegraph and electric light to the building of the Hartlepool Nuclear Power Station. There are sections devoted to the development and use of electricity in the steel and chemical industries, transport, mining, domestic uses and communications. Local manufacturers of electrical goods are noted and described, and to bring this right up to date, details are given of Military Defence systems in the area, and the coming of Nuclear Power. At the back of the book are notes on technical education and institutions.

Being a book written for and by Electrical Engineers it contains a lot of technical jargon, but is nevertheless a good history and reference book with an interesting collection of illustrations. To emphasise the reference book aspect there is a list of societies and places where information may be obtained by those interested in further research.

Copies of this publication can be obtained from Mr. D. W. Pattenden, 45 Stanhope Road, Acklam, Middlesbrough, Teesside. Price 5/- post free.

S. A. C.

A Visit to Pontop Pike and East Castle

Durham Industrial Archaeology Group

On Saturday, 7th December, 1968, Mr. J. G. B. Piggins acted as Leader on the first outing of the Durham Industrial Archaeology Group to Pontop Pike and East Castle, and has reported as follows:-

"The object of visiting Pontop Pike was to investigate the waggonways and pit sites on "The Pike" and the object of visiting East Castle was to investigate some old lime kilns. (The visit followed a talk given the previous evening by the leader).

The group met at the entrance to the B. B. C. Transmission Station on the road between East Castle and Dipton. The waggonway visited is on the west side of this road and can be seen from the road as an embankment.

A few yards from the meeting place a stile led into the field in which were the remains of the waggonway, and a short distance away was the remains of the Success Pit.

About one third of a mile further along the waggonway the party came to the site of the North Pit. This site seemed to be larger than that of the Success Pit and contained the remains of the pit pond. Nearby were the remains of a row of cottages on the high side of the pit site. These cottages had been stone built, but there was evidence by way of many yellow bricks to suggest that the outhouses (possibly coalhouses) had been of brick. Some of the bricks had the word "Ritson" on them. Ritson's bricks were once in common use in North-West Durham.

It is believed that the North Pit was working during the 1914-18 War and that the cottages had been inhabited for some time after the pit closed. Some discussion took place among the party to estimate how long the cottages had been derelict, as there were some young trees growing in what had been a house. It was thought that they would be about 25 or 30 years old.

Proceeding further along the waggonway we came to the site of the Hive Pit, this is almost entirely covered by gorse bushes and is only about 75 yards from the Consett to Dipton Road and not far from 'The Brooms Road-Ends'. The Hive shaft can still be seen even though it had been filled in, but the filling has sunk about two feet, revealing a stone-lined shaft with a diameter of 7'11". As a child living in the Consett area I remember a white tower-

like structure, somewhat like a lighthouse, which must have been the Hive Pit, but which in those early childhood days was always, as it were, "in the distance."

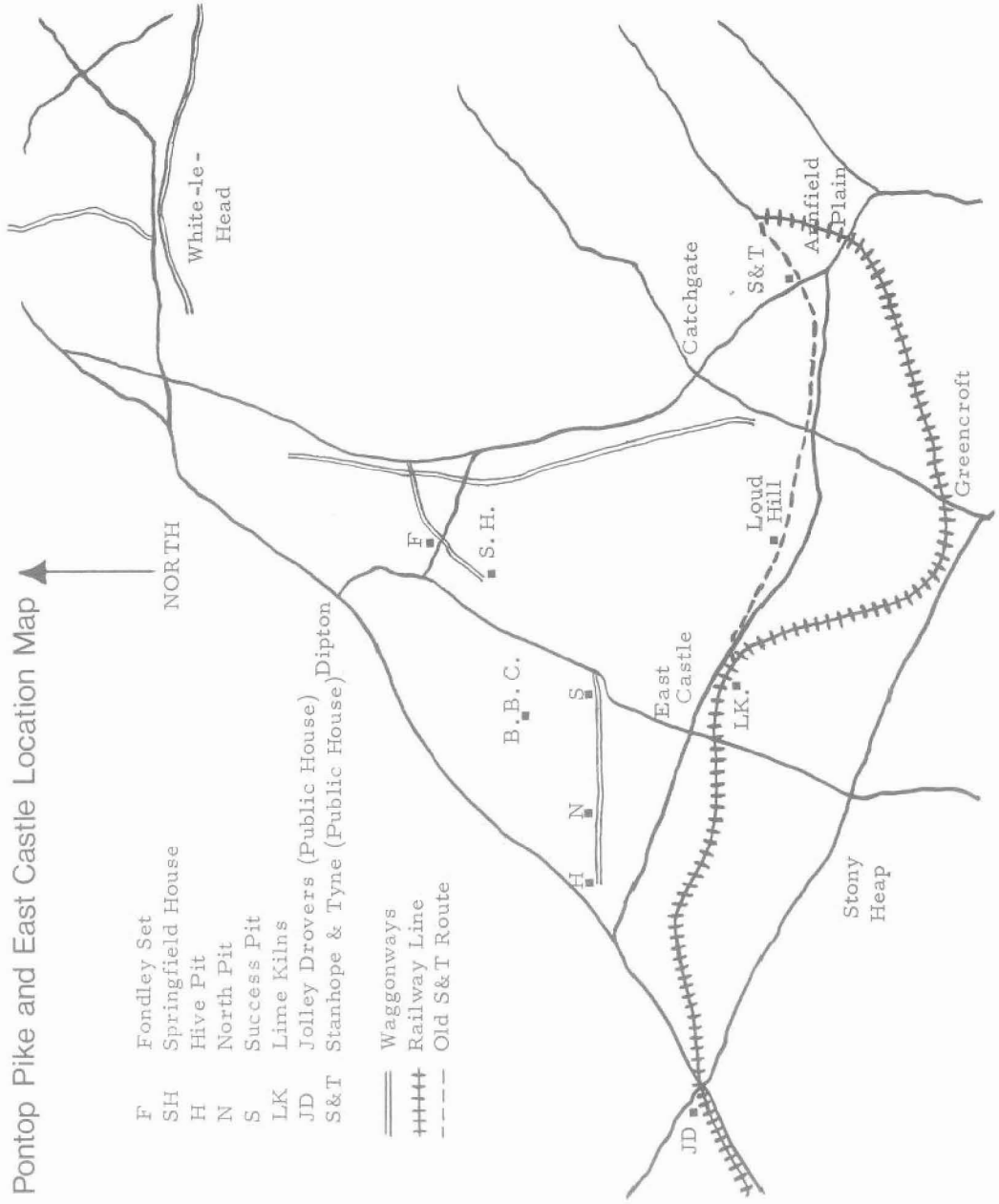
The party then retraced its steps back along the waggonway, towards the East Castle to Dipton Road. We had been to the end of the waggonway, or rather, we had been to the beginning of it. This waggonway, possibly dating back to 1730 or even earlier ran from Pontop Pike to Derwenthaugh Staithes.

Coming back along the waggonway we began to concentrate our attention on the middle distance to the south of us. We could see Eden Colliery (shaft not now used) and we could see the railway line running between Annfield Plain and Consett. This is the line by which iron ore is transported from Tyne Dock to Consett. In parts, this line runs along the route of the "Stanhope and Tyne Railway", some of the line we were looking at, from Leadgate to East Castle, is original Stanhope and Tyne.

I believe that the original Stanhope and Tyne has been at a lower level than the existing line, and I would think that the original line crossed the road at "The Jolly Drovers", as a level crossing and not by a bridge as at present. Likewise I suggest that there would have been a level crossing over the East Castle to Stony Heap road and to support this point I directed attention to the railway embankment. Looked at from the distance, a dark line is clearly visible about half way down the embankment and running along its length. This I believe shows the original level of the Stanhope and Tyne Railway.

We then directed our attention to where the railway line and the road come close together just beyond East Castle. At this point the road begins to rise as it climbs up "The Loud" and the railway line turns away from the road as it skirts the Loud and maintains a level track by running to Annfield Plain via Greencroft. Instead of turning away from the road, the original Stanhope and Tyne Railway went straight on, crossed the road and ran up to the top of the Loud. It then ran down the other side of the Loud to Annfield Plain, crossing the Annfield Plain to Catchgate road by a level crossing beside a public house in Annfield Plain, which is called "The Stanhope and Tyne."

That part of the Stanhope and Tyne line between Consett and East Castle was operated by locomotives and there are remains of loco sheds at East Castle. Incidentally, East Castle is more often referred to as "The Bantling" by older local residents. To pull the trucks to the top of the Loud, and to lower them down to "The Annfield Plain", there was a standing engine on top of the Loud. Looking across from the site of the North Pit towards the Loud, it is not possible to detect any evidence of the old line, but it did exist a few years ago. Close to where the road and railway approach each other and a little back towards the cross roads at East Castle was the site of East Castle



Colliery, otherwise known as the "Bantling Pit" or even more commonly as "The Bantlin". By this time the group had returned to its original setting off point.

Before going down to East Castle we decided to investigate the possible route of the waggonway beyond this point. It is almost certain that it crossed the East Castle to Dipton road and ran across the fields to Springfield House, but there is no evidence to be seen. There is, however, substantial evidence of the waggonway between Springfield House and Fondley Set.

The party then went down to East Gate cross roads. To the west of the road leading to Stony Heap there is the site of a stone quarry; to the east and just on the roadside the remains of a red-brick wall can be seen, which was part of a water tank associated with the Bantlin' Engine Sheds. There is little left at East Castle in the way of houses, one stone built house which used to be a public house and a short street of red-brick "railway houses." There is a railway signal box close by, but this is unmanned now.

We then went to the south side of the railway line to look at six lime kilns. These were very close to the line which, as previously stated, is part of the old Stanhope and Tyne Railway. The kilns are built in an arc and are about 35 ft. high. This is so as to utilise the hillside, which is rather steep. The top of the kilns are just a few feet below the level of the railway, assuming the level was lower.

Between the line and the lime kilns are the remains of stone pillars which have been used as supports for two 'tubway' tracks. These would have been used to load the kilns from the railway. Materials may have been brought to sidings, loaded directly into tubs and then tipped into the top of the kilns. The line of tracks suggest one track for full tubs going to the kilns, and the other track for empty tubs coming from some industrial relics of the same period and the structure has an unmistakable air, even yet, of 'quality' building. The inscription in the centre of the partly collapsed kilns informs us that they were built in 1833 for "The Stanhope and Tyne Railroad Co." and that the Engineer was called Harrison. (Note the use of the word 'railroad' instead of 'railway').

Judging by the size of this site it seems likely the industry was on a fairly large scale at East Castle. Limestone could have been brought there from Stanhope district, mixed with local coal and the finished product taken along the Stanhope and Tyne Railway to Tyne Dock. It is fairly certain, therefore, that East Castle or The Bantlin', as it was more often called was a busy, bustling centre of industry in North-West Durham."

Early Bus Services in County Durham

S. A. Staddon

The motor bus, although a very important element in public transport leaves no traces of its presence, unlike railways (and to a certain extent tramways) which can be traced on the ground on on maps many years after they have ceased to function.

One way to study the motor bus is through old timetables and I recently had the opportunity to study two of Northern General Transport Services. The first one was dated April 1925, when Northern was quite a small company with only three garages (at Chester-le-Street, Stanley and Sunderland) and was to a certain extent still ancillary to the BET owned tramways of Gateshead and Jarrow. At that time only two services reached Newcastle - the '9' from Blaydon via Swalwell and the '10' which ran from Stanley and Pickering Nook Road Ends with alternate buses going by Annfield Plain or Tantobie. Both these services used the Redheugh Bridge and terminated at Bewick Street near the Central Station.

Several services started from Gateshead of which the most important were '1' and '2'. These two ran to Durham via Chester-le-Street starting under the railway bridge at the foot of High Street and terminating by the County Hospital in Durham. Buses ran every 10 minutes to Chester-le-Street, thence every 15 minutes to Durham, on a route which had been pioneered by Gateshead Tramways who had started such a service from their Low Fell tram terminus in 1912. Other services from Gateshead were the '22' which ran via New Washington to Sunderland and on to Murton and South Hetton; the '25' whicl ran from Wrekenton tram terminus to New Washington and the '26' which started from Melbourne Street and ran to Hebburn and Jarrow. The map in the timetable also showed a service '24' to Grange Villa via Birtley, but this did not appear in the timetable itself.

Chester-le-Street where Northern's first garage was opened, was the centre of a number of services. Service '3' was to Stanley via Craghead; '4' to Consett via Stanley; '5' to Lumley via Second Pit; '6' to Edmondsley via Sacriston and '6a' to Sacriston via Edmondsley. There was also a route '15' from Sunderland and a most unusual one, the '12', with a sparse service to Houghton in the early morning, and a similar return service late at night. One can only presume that Chester-le-Street worked some of the services

through Houghton and that these were buses going to take up or coming off that service.

Service '7' another one on the map only, ran to New Washington via Fatfield and this may have been to provide the buses for the New Washington - Wrekenton Tram Terminus service.

Northern's second garage at Stanley would provide buses for the '10' to Newcastle and probably some of the buses on routes '3' and '4' from Chester-le-Street. These were the only services at Stanley, but there were two services from Consett. The '17' ran to Flint Hill via Leadgate and Dipton, and the '19' was a through service from Castleside to Consett and thence on to Medomsley, Allendale Cottages and High Westwood. The absence of a service '18' suggests that the '19' was once two separate services.

The remaining services were based upon Sunderland. Of these the '15' and '22' ran to Chester-le-Street and Gateshead respectively. The '8' ran to Durham via Newbottle and Houghton, whilst the '8a' ran the Easington Lane via Houghton Cut, and then split in two with alternate buses going to Easington Village and Haswell. Two services to the south were the '21' to South Hetton via Murton and '23' to Dawdon (with a '23a' providing a link between Seaham Harbour and Murton). The one remaining service was the '14' to South Shields which like all Sunderland services, bar one, started from Union Street, the odd man out was the '22' which was the through Gateshead - South Hetton service which stopped in Bedford Street.

None of these services was very frequent except that between Gateshead, Chester-le-Street and Durham, and most services were at half-hourly intervals with extra buses on Saturday and journey times were considerably slower than today. Thus it took 78 minutes to go from Chester-le-Street to Consett compared with 57 minutes today. It is noteworthy also that these services were generally complimentary to the railways and tramways - there was no direct service from Gateshead to Sunderland and no service at all from Gateshead to South Shields.

The second timetable was that of January 1932, by which time many changes had taken place. The "New Tyne Bridge" was now opened and all services to Gateshead now ran across this bridge to Newcastle. Direct services were now running from Newcastle to both Sunderland and South Shields, the Chester-le-Street to Consett services were now linked with the Sunderland services and other services had been extended so that Northern buses now reached West Hartlepool, Middlesbrough and Bishop Auckland, and a limited stop service was in operation to Leeds, Huddersfield, Manchester and Liverpool. The services of the Sunderland District Omnibus Co., the successor to the Sunderland District Electric Tramways, and for a while a competitor of Northern were also included in

the timetable for since 1931 this company had been a wholly owned subsiduary of Northern, although still retaining, even to this day, its own buses in their distinctive blue livery. The frequency of the services showed little change from 1925, but speeds had been improved almost up to today's standards.

There were quite a number of joint services in this timetable; names such as "United" and "Diamond" are still with us. Others such as "General County", "Smith's Safeway", "Nicholson" and "Venture & Reed" have now vanished, although the latter survives as "Venture".

Looking at these two timetables and comparing them with today's is like looking at a spider's web. In 1925 the main strands had been completed with Chester-le-Street as their centre; in 1932 they had been extended and a small amount of infilling doen. Today it is a web of great complexity though the basic framework still remains.

Review

The Beginnings of Industrial Britain
S.D. Chapman & J.D. Chambers.
University Tutorial Press, 1970, 56/- (£280)

If industrial archaeology is to achieve the success of 'coffee-table book' production, then this work will surely be seen to have shown the way. Mr. Chapman and Professor Chambers have produced a scholarly yet readable work which happily follows that aphorism attributed to General Pitt-Rivers : "Describe your illustrations, do not illustrate your descriptions".

While writing an introduction to the fast-developing studies of the rise of industrialism; balancing the practical side ("industrial archaeology") with the economic, the authors have drawn upon many fine illustrations, some contemporary, others demonstrating the wealth of material lying in wait for the enterprising photographer.

F.A.

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