Mining History: The Bulletin of the Peak District Mines Historical Society. Volume 13, Number 1. Summer 1996.

PLEASLEY PIT 1871-1983 COALFIELD AND HERITAGE REGENERATION PROJECT

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Abstract: Pleasley Pit was finally abandoned in 1986 when the shafts were filled. The two huge winding engines, enginehouse and headstocks were saved from demolition by listing, despite removal of the roofs. It now has the only substantial remains of any colliery in Derbsyhire. The site and the mine's development, so far as is currently known, is outlined. Proposals have been put forward, by the "Friends of Pleasley Pit", to preserve the site and make it available to the public.

INTRODUCTION

Pleasley is a village just west of Mansfield, which extends across the River Meden from Derbyshire into Nottinghamshire. Until recent years its people depended for employment largely on the colliery and the nearby Hollins' textile mills in Pleasley Vale: Closure of both has devasted the local economy, though its problems are shared by others in the Mansfield "travel to work area", with other recent local colliery closures including Shirebrook and Bolsover (both just out of sight), Sherwood, Silverhill and Teversal (which are within sight). Where Pleasley differs from the others is that there are substantial remains of the colliery still surviving, following listing by the local authority whilst demolition was actually under way. It is now the only pit in Derbyshire with substantial remains, though there are solitary headstocks at Shipley and Western Pit in mid-Derbyshire and engine houses at several others.

The sinking of Pleasley Colliery was part of a general late 19th century shift of mining eastwards to exploit deposits concealed beneath the unconformable Permo-Triassic cover, notably the Magnesian Limestone, which dips fairly regularly eastwards at some 3-5°. Many of the collieries which had developed in the middle of the 19th century and before had exploited a considerable part of the reserves of the premier coal, the Top Hard, on the open coalfield, so that most large companies acquired mineral properties further east in anticipation of their needs in the next century. The continuance of coal in the concealed areas had been demonstrated long before, but to exploit it any considerable distance away from the western edge of the outcrop was still a considerable risk, since the behaviour of the coal-bearing measures beneath was almost entirely unknown. This was especially so when the Stanton Iron and Coal Company acquired the Pleasley Park mineral rights in 1871 and soon after began sinking their shafts.

MINING ON THE CONCEALED COALFIELD

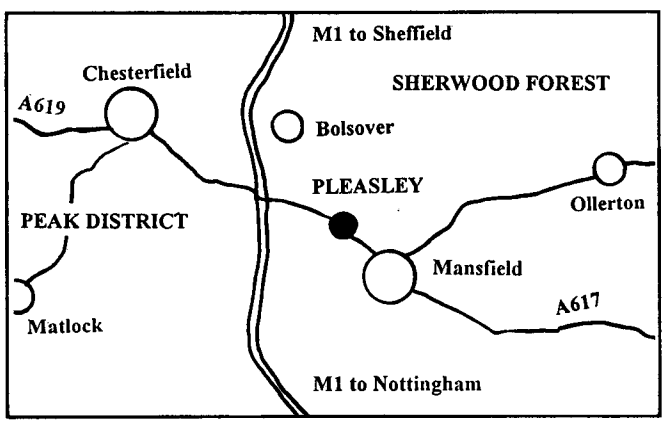
When the Stanton Company chose to sink through the Magnesian Limestone at Pleasley, it was a very brave business decision indeed - one which took other companies a further twenty five years to follow. Generally the credit for this "bravery" has been given to the Bolsover and Staveley Companies, who sank collieries near the western margin of the limestone to work beneath it, for instance at the Bolsover (1890) and Markham No. 2 (1895) sites and then further east, at Cresswell and Shirebrook in 1896 (Williams 1962 p.175-6). But they had the proven example of Pleasley to follow, sunk in the few years after 1871. In all cases the objective was the Top Hard seam.

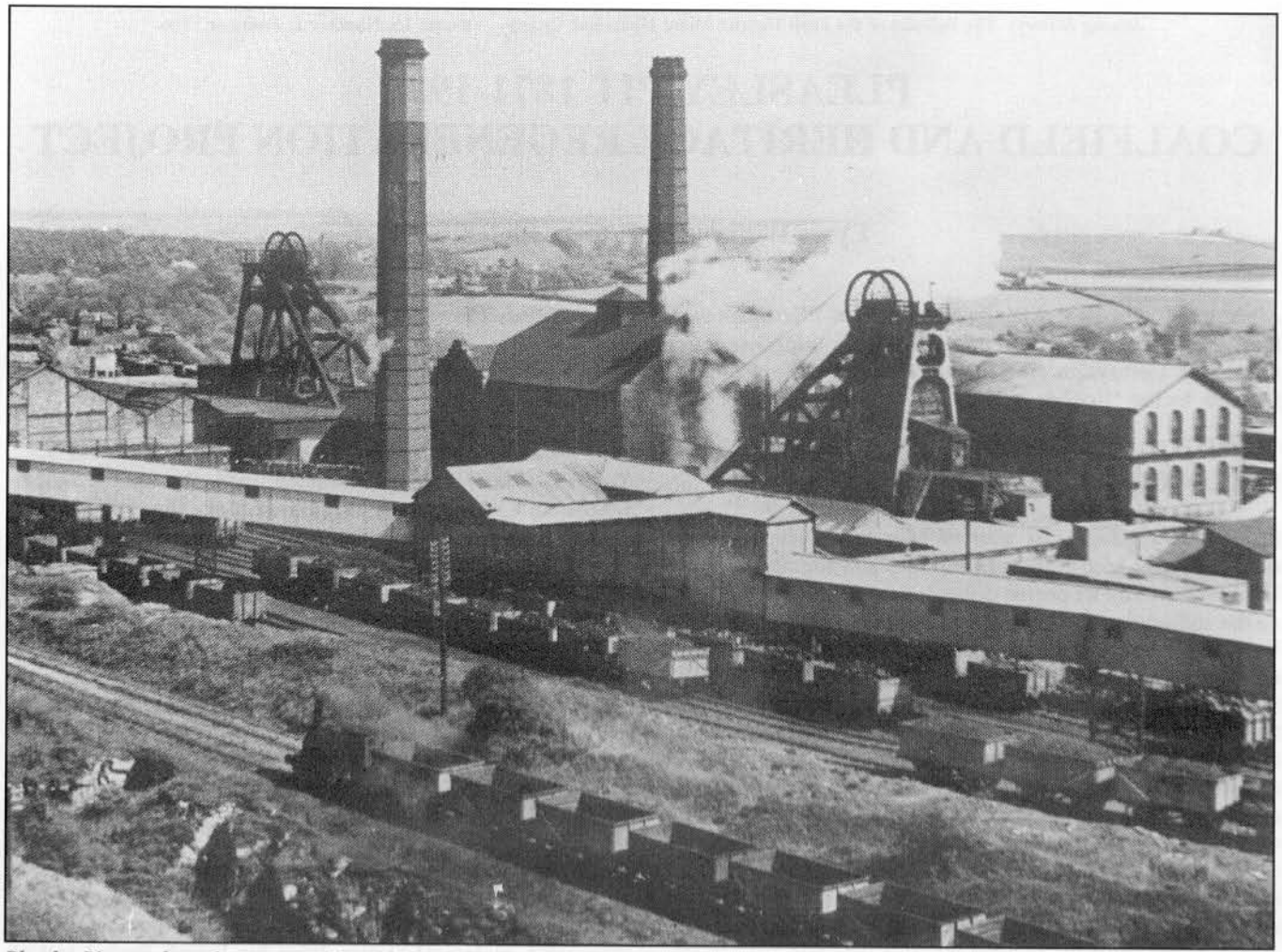
That the Coal Measures continued under the unconformable Magnesian Limestone was long known. John Farey remained a "giant" amongst early geologists and mining men even sixty years later and was widely read. He scorned the view that coal ended at the "yellow limestone", and listed some ten pits which had worked the "Bilborough Coal" beneath (1811 p.166-7; 194 *et seq*). These extended as far north as Conisborough in Yorkshire and south around Hucknall, Bilborough, Nuttall and, closer to Pleasley, at Skegby and Teversal, going on to say that the same coals

> "in 1805 were proved by boring ¼ mile north of the bridge in Plesley Town"

There may be a link here with his comments on boring for mineral veins, as carried out around Matlock. It seems likely that the results of the drilling were incorporated in his pioneering geological section from Sir Joseph Banks' seat at Overton, Ashover to Trustthorpe on the east coast near Sutton in Lincolnshire (we are grateful to Stuart Band for this information), though it is also clear, from the fairly detailed section he produced, that he did not appreciate the unconformity between the Magnesian Limestone and underlying Coal Measures.

With the benefit of hindsight, it is possible to reconstruct something of what must have happened. The Stanton Company, with their works near Ilkeston drawing on coal from the southern end of the coalfield, would have been particularly aware of the continuance of coal under the limestone, though no pits then sunk were to any considerable depth since the limestone thins southwards and they were all near the margins. They seem to have chosen to invest in new mines further north, partly since railway charges had diminished transport costs and since the prospect of acquiring large areas of mineral titles were less in their own area.



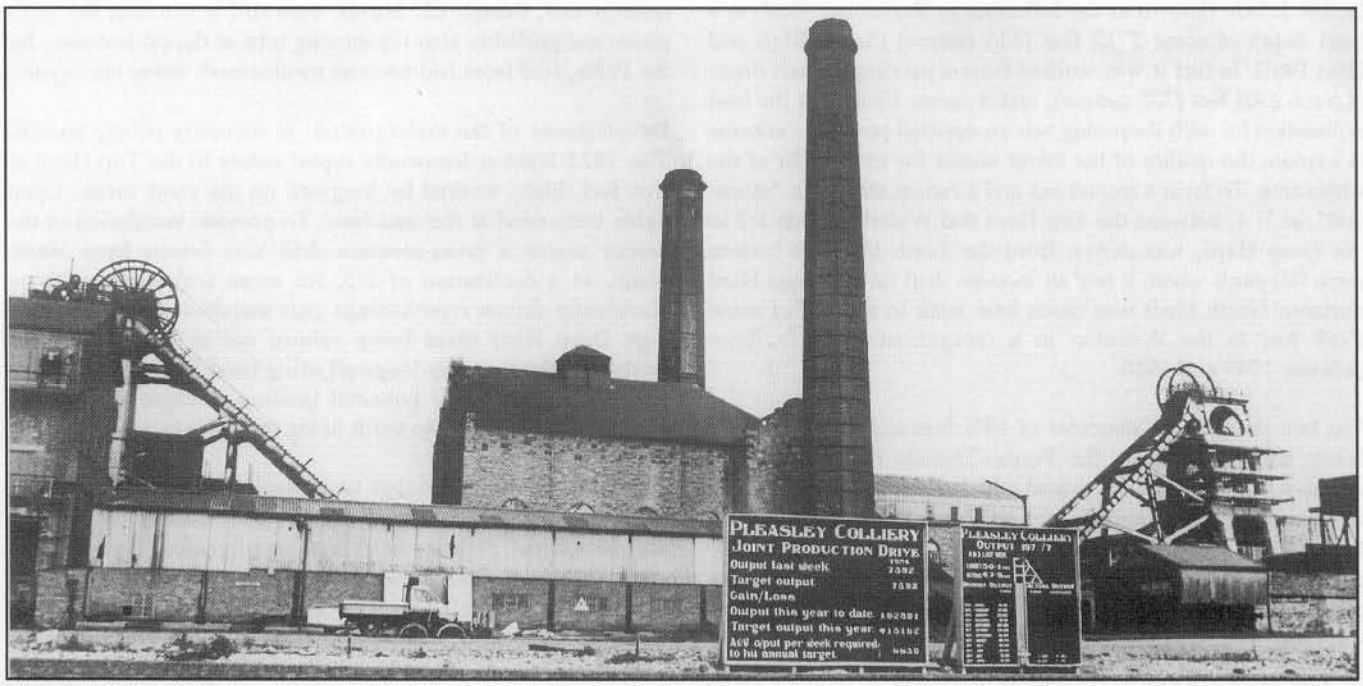


Pleasley Pit seen from the western side, with South Shaft to the right. The large adjacent building was the power house. Only the east side chimney survives today and the screens, buildings and railway tracks have all gone. (Photo: Metcalfe Collection).

When Farey reported in 1811, the deepest Colliery in the Nottingham/Derbshire area was only some 160 yards (which was followed with an exclamation mark in his list). This was at Nuttall, between Ilkeston and Nottingham under the "yellow limestone", more or less at the southernmost extent of its outcrop. At Pleasley the limestone and the marl beds above the Coal Measures are some 151 feet thick, and the first coal the drillers could have encountered to "prove" presence was a thin band at some 380 feet, with other thin bands at 400 and 420 feet. It would have been a considerable achievement to have reached these. The first, even remotely possible, mineable thickness of coal would be the later-named High Main at about 550 feet (up to about four feet thick, probably less here) or the Wales Coal at 650 feet. These coals, based on the evidence of the section, almost certainly were not reached. To sink to the Top Hard was a further 1000 feet or so. In competition with the shallower mines further west, these were totally impracticable mining depths at that time.

In the mid 1860s when the move north was decided, the Stanton Company also purchased rights at Teversal and Silverhill, and began sinking at Teversal in 1869 (Chapman 1981p103). Here the situation, despite the short distance, is very different from that at Pleasley. The limestone cover has been almost eroded away and the Coal Measures incrop (beneath the limestone) and outcrop at an anticline, bringing the lower beds, including the Top Hard, closer to surface. It was found at a depth of 644 feet at the Teversal Shaft, and there are, of course several coals above this which probably were worked at the earlier period. These upper coals would have acted as indicators of the geology, though all are poor coking coals. The Teversal sinking would have demonstrated that the Hard Coal dipped towards the north east, though because of faulting and the folding at Teversal, it would have been impossible to forecast how much with any accuracy, though substantial depths must have been anticipated. There is a possibility too, that the Company had access to the boring information at Pleasley, kept in the owners' estate papers, which at least would have demonstrated the thickness of the Magnesian Limestone there was not too intimidating.

The owners of the Pleasley Park Estate by this time were the Nightingale Family. In 1871 the head was William Edward Shore Nightingale and by 1895 it was owned by the the Trustees of (his daughter) Florence Nightingale. They leased the coal, and right to clay, stone and gravel for colliery building purposes and space to erect the colliery buildings and coke ovens and room for tips in 1871 to the Stanton Company, almost certainly for 25 years. It extended over some 1150 acres, and was to run for 99 years from the earlier date: it extended west and north of the River Meden (the boundary with Nottinghamshire, for an extent of about 2½ miles by 1 mile or a little less in parts. The lease was a fairly standard mining lease which must have been very similar to another negotiated in 1896 (DRO. (NCB) N13/90). This latter ensured the Nightingale Trustees received a minimum of £2800 annually in rents and royalties, and permitted working of the Top Hard (including those areas already worked) and the Low Bright or Furnace Coal. Pillars were to be left under the nearby St Michael's Church, and a barrier of unworked coal was to be left around the whole



Pleasley Pit in 1977 from the east side. The buildings to the front of the enginehouses (hiding the boilers from view) have since been removed. The joint production drive was not going well. Despite meeting the target that week, it was overall about 14% behind with more than a quarter the year gone. (Photo: Metcalfe Collection).

boundary to protect against other collieries (i.e. water inrush). Pleasley Vale and the Hollins' Mills there were also excluded from the lease, either because subsidence was feared, or perhaps since they had been sold with mineral rights at an earlier date. The Stanton Company was a partnership of John Gilbert Crompton, George .Crompton (all of a prominent banking family), Charles Edward Newton and John Thomas Barber. The Crompton connection (in recent years as Crompton and Parkinson) was to be an important one which helps explain the pioneering use of electricity at the mine. J.T. Barber may either be linked to the prominent 18th and 19th century local Barber and Walker Partnership active in the Erewash Valley, or to R.G. Walker, resident engineer at the Cinderhill Colliery (near Nuttall on the outskirts of Nottingham) and associate of the eminent firm of J.T. Woodhouse who were responsible for the sinking of Cinderhill for Thomas North. A colliery was bought from North's company prior to the move north (Chapman 1981), which probably was Cinderhill. Woodhouse were amongst the most eminent consulting engineers (Griffin 1977) and may have been involved at Pleasley as a consequence of these linkages.

Whilst the Stanton Company were acquiring the Pleasley estate, the railway companies were also active. Both the Midland Railway and the Great Northern Railway gained the right to pass next to the Colliery, and the Manchester, Sheffield and Lincolnshire Railway also put forward plans for connection. The railway did not arrive until after 1880, five years after the first coal was turned. This lateness must have been a major blow to the early hopes of the company, and for a time all consignments had to go from a roadside wharf, though their mines at Teversal were much closer to the railhead. Ironically the mine had the distinction of having electric power in use underground, by 1881 (DT 10 Sept 1881), before it had its full railway connections! The Tibshelf-Pleasley line of the Midland (later LMSR) ran on the west side of the colliery buildings whilst on the east side the Kirkby-Langley had been extended by 1898 to the mine, and later to Langley Junction: the 1898 O.S. plan shows land already laid out for its extension. There was a marked extension of sidings shown between the surveys for the 1898 and 1938 O.S. maps.

The actual choice of site may have been to keep it away from the scenic end of the estate, known as Little Matlock on the side of the gorge of Pleasley Vale. The colliery is sited on a hill just west of the village (or, more accurately, at the top of the western slope of the Meden valley), so that it is itself prominent, and has an outlook over a very wide area. Despite the site, the Permo-Triassic cover here was only some 154 feet thick. This is less than at any of the other deep collieries in the area, even those such as the later Sherwood Colliery which is a mile or so to the east and it must have seemed a most encouraging sign. In other respects, and in retrospect, the site was one of the least suitable, being up-dip of the bulk of the mine take and at a position where the upper "barren red beds" of the underlying Upper Coal Measures was unusually thick.

The pit-surface is sited on the Magnesian Limestone beneath which there are grey marls and at the very base sand and weathered broken material which has formed a breccia and soft sandstone: these sit on the weathered palaeo-surface of the Coal Measures, the so-called "barren red beds". They are barren in the sense that coal forming conditions had waned by the time they were laid down and it is necessary to sink a considerable depth before the first economic seam - the Clowne coal - is found. Here the company was somewhat unlucky - Pleasley (and the Shirebrook and Langwith collieries to the north were on the flanks of a syncline which made the desired Top Hard seam deeper than at collieries such as Sherwood to the east: Pleasley had to sink to a depth of just over 1548 feet to reach this horizon. This was very deep indeed for the time, though Shirebrook and Langwith were to be at slightly greater depths still.

PLEASLEY PIT

Between 1871 and 1874 both the shafts were sunk to work the Top Hard, with a working depth of 1609 feet (there are several different depths cited). The South Shaft was deepened in 1919-23, and passed through all the normal workable seams down to

the Blackshale (known as the Silkstone in Yorkshire) Coal, at a final depth of some 2712 feet (826 metres) (Smith Rhys and Eden 1967). In fact it was worked from a maximum shaft depth of some 2305 feet (702 metres), and it seems likely that the best explanation for such deepening was an assisted post-War scheme to explore the quality of the lower seams for the benefit of the whole area. To form a second exit and a return airway, a "stone-drift", at 1: 4, between the Top Hard and Waterloo, then 1:2 to the Deep Hard, was driven from the South Shaft pit bottom some 780 yards where it met an in-seam drift on the Deep Hard horizon. North Shaft was much later sunk to a depth of some 1769 feet to the Waterloo in a reorganisation of facilities between 1949 and 1956.

The two shafts had a diameter of 14½ feet and, to exclude the heavy water inflows in the Permo-Triassic rocks (800-1000 gallons a minute at the maximum which actually lowered levels in Mansfield sand quarries up to three miles away), were tubbed, with cast-iron segments, below 23 yards depth for 120 yards. Below this the shafts were brick-lined. This work was done by a Mr Brindley, a specialist shaft-sinking contractor, who may subsequently have been employed there as an under-manager. Further water inflows were met with in South Shaft when it was sunk deeper, at the Low Main seam, and was lifted out using water barrels during sinking and later by pumping in two stages, with pumps at the pit bottom and in the Top Hard, making 3000 gallons per day in 1919. In the 1970s the water lifted from the mine had risen to some 5600 gpd.

The sinking evidently went more slowly than was originally intended for another reason. George Crompton reported in 1881 that it had taken six years to bring the mine into full production because of the shortage of capital, though it actually needed no more than £100,000 to bring it to this point, including some workers' housing. Crompton, the County's principal banker had had to find friends to support the company in what were seven years of very low iron prices (Chapman 1981 p106).

Electricity was early used underground, probably the earliest use in England if not the UK. In 1881, probably before June when the experiment was still going on (Report of Council, June 1881), R.E. Crompton installed electric lighting underground in an experiment monitored by the Mines Accidents Commissioners. He generated the power by a new Bürgin dynamo built by himself capable of supplying 48 lights and another dynamo by Gramme which coped with 24. Cables were apparently taken down each shaft so as to prevent them accidently coming into contact, which suggests they were not continuously insulated, and were connected to (originally 30) Swan carbon-filament bulbs at the shaft bottom, held in wooden holders along the gates, and in special double glassed bulbs at the coalface. The latter were specially designed to be extremely robust, and were capable of being moved around, for instance illuminating the holing under the coal, where they gave a far superior light to the Clanny Lamp. Between the inner and outer glass bulb, there was sufficient air to rapidly consume the carbon filament if the inner glass broke, which supposedly reduced the risk of ignition of mine gases (*The Electrician* 25 June 1881). The following year permanent electric lighting was installed at the pit bottom. However, naked lights (which also no doubt gave better illumination than the Clanny) were still in use at the mine in the 1920s in areas away from the shaft.

By 1888, an electric winder was in use underground, supposedly (but unlikely) to have been a surface winder previously, used to haul coal up an incline of 1:12 over 850 yards, replacing the use of twelve horses. By 1908 eleven electric motors were in use underground, though 120 horses were still in use near the work places and probably also for moving tubs at the pit bottoms. By the 1930s, coal faces had become mechanised, using conveyors.

Development of the underground is currently poorly known. The 1922 Stanton Ironworks report refers to the Top Hard as five feet thick, worked by longwall on the short cross. Open lights were used at the coal face. To provide ventilation of the deeper seams a cross-measure drift was driven from North Shaft, at a declination of 1:3, for some 600 yards, with an electrically driven rope-haulage gear installed. The three feet high Deep Hard seam being opened out in 1922 was to be worked on the cross by longwall using hand methods, though a Siskol compressed air powered heading machine was in use. Men were to be taken to work using the haulage system.

The final Pleasley workings took place in the Piper and Deep Hard Seams, just south of the Hollins' Mill pillar, where Shirebrook and Pleasley workings interdigitated. Here the two seams came very close together to give a maximum thickness of coal and dirt of up to 3.1 metres. To work this on the P54s unit, a heavy duty face was developed, using particularly large Gullick-Dobson 4/250 powered supports. Other novel methods for the mine and area included a benthonite/cement packing system alongside the gates (Pleasley Colliery c.1982). Initially coal was brought out using the Pleasley Shaft, but by 1983 it was delivered through a drift to the (then) long-life Shirebrook Colliery (NCB North Derbyshire Area Review for 1985/86). Pleasley was closed in December 1983 except for the use of South Shaft which became a downcast for Shirebrook until a new underground booster fan there led to total closure and shaft infilling in October 1992. Shirebrook itself closed in the major round of closures in 1993. The several workable seams below the Piper and Deep Hard were never exploited, despite the 1920s deepening.

DEVELOPMENT OF FEATURES REMAINING TODAY

The original headgears were made of timber and wrought iron, replaced in 1900 and 1901 by early examples of steel girder structures produced by the Stanton Iron Company. The change-over from wood to steel headstocks at North Shaft in 1901 was accomplished over a single weekend, with the new headstocks being slid in to place using rails. A photograph of the period shows the mine briefly apparently equipped with three headstocks! Both steel headstocks were modified in 1976 by concrete reinforcing around the main legs, following corrosion, but mainly to allow use of heavier winding loads, on the South Shaft using mine cars. The South Shaft headgear was encased to a greater degree in concrete and brick building structures to provide an air lock necessary for use as the upcast. The air lock access to the shaft still survives.

The two steam winding engines are amongst the largest of the dozen or so one can still see in Britain, both of well known makers and of types not otherwise available at all. There is still some conflict of opinion over the types of winding engines installed, including the north winder still in place, which requires clarification. Chapman refers to the pair of engines at North Shaft as being a Worsley Mesnes of Wigan design built in 1874, modified during the 1920s, of which two other examples exist in the UK for comparison. A Stanton Ironworks document, however, refers to the North Shaft engines as made by the Lilleshall Company. There is evidence in circular wear marks on the west wall below the engineroom floors, of a different winding drum position,. There is agreement on the

cylinder diameters 40 inch, and the stroke of 6 feet, but not on the drum (the Lilleshall cited at 21 feet by 6 ft 6 inches, and the Wigan at 20 feet by 6 feet 10 in.The engine was later "Markhamised" by the Markham Company of Chesterfield.

At South Shaft the original engine, used for sinking operations, was apparently of a similar size-specification to that on the North Shaft, but made by Reader and Co. of Nottingham. To wind from the Deep Hard a new Markham and Co. Engine was put in with a stroke of 7 feet and cylinder diameter of 36 in., with a drum 21 feet by 10 feet. In turn, in 1922 this was replaced during the deepening to the Silkstone or Blackshale seam, with a pair of winding engines installed on the west side of the shaft, whilst the enginehouse was modified, and a new Markham Engine installed which Chapman says is 36 inch diameter by 7 feet stroke, and with a 21 feet diameter plain drum. This is the pair of engines which remains in place today.

The Markham engine winding drum and crankshaft, in late 1995. The scale is Bob Metcalfe (Photo: Paul Deakin).

Originally winding was done at both shafts using double deck cages, with two tubs (each of 14½ cwt) per deck, but this was changed when the South Shaft was deepened and later reverted again so that South Shaft wound all the coal in a triple-deck cage. Originally, too, guide ropes were used, but in the deepened shaft this was not possible and wooden guide rails were fitted. The final change probably came about in 1956 with two-deck cages on both shafts with three ton mine cars operated on fully-automatic circuits.

The back-to-back enginehouses, handsomely built using local limestone, have date-stones, 1873 and 1923, suggesting a rebuilding at the latter date, which is also supported by early photographs showing north and south houses had a similar roofline. The much larger south building was presumably necessary for the large Markham engine. The 1875-80 First Edition O.S. survey shows a building with a very similar groundplan to that now surviving, characterised by a "transept" between the two houses. The north enginehouse, which abuts the central "transept", was the last to be modified, perhaps in the 1949-56 changes or possibly more recently for the Markhamisation, when a new end-wall was built and it was re-roofed using steel girder and asbestos-cement sheet. The inside space is impressive, with very pleasing glazed brickwork. There is considerable scope for further investigation and it seems likely much more can be learnt about the engine houses from careful examination of the huge basement beneath the engines.

Apart from the enginehouses and headstocks, the only other surface-structure to survive on-site is the brick-built, octagonal chimney, one of two which were originally placed east and west of the main buildings.

WHAT HAS GONE

In January 1984 Pleasley Pit was merged with Shirebrook and many of the labour force were relocated to the latter. The North Shaft was filled the following year and many of the buildings were demolished. However, in the hours after work started to demolish the engine houses, in October 1986, they were the subject of an emergency listing, Grade 2*, and demolition was halted, though not before the North Enginehouse roof was completely removed, with half that of the South Engine. They have been open to the elements since 1986. In 1992 the South Shaft was filled and officially abandoned in October 1993. Both shafts were capped in November 1994. The North Shaft cap is visible at surface, that on the South is a few metres down, associated with the fan drift. Subsequently the site had windows and other openings sealed, by British Coal, to deter vandalism.

Though the boiler installations have been demolished, foundation remains may still be buried. They were not housed in a building and an underground tunnel apparently led into the ashpits. According to the 1922 Stanton Ironworks report, there were originally four different sets of boilers, placed around the site. By 1922 these had been reduced to a new range of nine 30 x 9 feet Lancashire boilers fitted with superheaters to work the winders at pressures up to 140 psi, and four remaining of the older boilers which continued to be applied to the fan, though this was to be converted to electricity.

In 1955 a plan of the works showed there were twelve boilers at the site, seven south of the east chimney and five to the north (DRO. (NCB) N42/1/44), serving the adjacent power-house and the winding enginehouse: all but one seem to have been mechanically stoked. By the time of closure this had been reduced to nine.

Nothing remains at surface of the two 40 feet Waddle ventilation

fans (information from Alan Hill), which were sited south of the South Shaft prior to 1896. At least part of the fan drift was sealed at the time of shaft infilling, but partial survival is likely. The fans, before electrification, had their own boilers, chimney and steam engines. There may be substantial sub-surface survivals of all these features.

Little also remains of the screens. These were on the western side and had boilers and a chimney, now also gone. This area has been disturbed by adjacent tip washing and reprofiling operations, but may still have remains below surface close to the main buildings.

The power-house was sited adjacent to the south headstocks, close by the boilers. The manufacturer "Oakes" and the date "1923" on one of the steam exhaust pipes suggests that it may date from that time, when use of exhaust steam in a condenser-equipped turbine was becoming common. The colliery was previously served by a Bellis and Morcom mixed pressure steam turbine, which probably used steam from the fan engine, utilising condensation of the steam to provide the pressure drop necessary. The new power-house extended this system and was designed to produce some 5000 kw. of electricity at 2200 volts, serving Teversal and Silverhill as well as Pleasley Colliery, by overhead transmission line.The power needs were later (1950s?) supplied by the grid and the powerhouse became just a sub-station, though it survived until the final round of demolitions.

The site also had all the usual offices and workshops, mostly sited on the east side of the site and all of which have also been demolished. Sub-surface survival of all but a few remnants of these is less likely, since the foundations would be shallow, directly on rock. Included in this group was the baths, which had to be demolished due to severe subsidence effects as normally-competent blocks of limestone "bumped" or dropped into sub-surface cavities.

Off the main site there are a number of other associated remains. Of the two railways, the trackbed of that on the east side is being kept as part of a system of trails and also has substantial environmental and botanical value. The waste heaps have recently been reworked by using a coal-washing process and now seem destined to become a country park following further landscaping. They will thus have little archaeological value.

The pit employed between about 600 and 1400 (peaking in 1953) men during its long life, many of whom, of course, were in-migrants, many of whose families still live nearby. To house them the management encouraged house building rather than build themselves. A substantial block of housing southeast of the pit appears to have been built by one of the directors of the Stanton Company as a speculation. Half of this, affected by a combination of subsidence and ownership-blight seems destined for demolition. Other rows of houses for colliers can be seen on the Nottinghamshire side of the border, but generally Pleasley escaped the over-uniform rows of housing seen at other sites of a similar age and in many respects would not be thought of as a "pit-village" at all, certainly not in the sense of nearby Shirebrook, Bolsover and Arkwright. There are, however, survivals in the names of streets and in the pub, the Stanton Arms and, of course, the Miners Welfare and adjacent sports field, all of which need, at the least, recording before memories fade.

The "Friends of Pleasley Pit", who include members of PDMHS (it is a PDMHS Supported Project), ex-pitmen, and people from the village, are concerned that the buildings and other aspects of the Pit should survive. To that end they have drawn-up a concept plan for the development of the site with the enginehouses and headstocks at the core. Partly because of economic disruption to coalfield communities, perhaps the worst of any area in Britain, it is anticipated that this "heritage and regeneration project" will be able to attract funds to allow preservation.

ACKNOWLEDGEMENTS

We are grateful for information and assistance from many people associated with Pleasley Pit and the National Coalboard/British Coal. Particular information in the form of typescripts and printed sources have been made available by Melanie Morris, the County Conservation Officer, English Heritage, Nigel Chapman (report on the engines and enginhouse), Alan Hill (colliery fans), Stuart Band (Farey Section) and George Findley (Pleasley P54 face), and by courtesy of the County Library and County Record Office. The photographs are individually acknowledged, but we are especially grateful to Paul Deakin for attending the site at short notice and taking the internal shots. Finally we are pleased to acknowledge the enormous efforts being made by the "Friends of Pleasley Pit" to preserve these fine relics of a time now gone.

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