

## 20TH CENTURY MINING - MILL CLOSE MINE

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The story of Mill Close Mine in the 20th century is simply illustrated by the first line from "A Tale of Two Cities" by Charles Dickens: I quote "It was the best of times, it was the worst of times ...". The fortunes of the mine may be split into roughly three sections, 1900 to 1930; 1930 to 1940; the remainder.

For the first part, from 1900, the legacy of the 19th century was a traditional Derbyshire mine, with steam pumps to remove the water, a fairly stable workforce numerically (about 160 underground and 76 at the surface) and some mechanical dressing plant. The ore was wound up Lees shaft and transported under the Stanton Lees road to the dressing floor near Warrencarr shaft. The miners also used the same shaft with its 1860 Thornewill and Warham engine to descend to work. The dressed ore was taken by horse and cart to the smelter at Lea, a distance of about 8 miles. Two shafts, Warrencarr and Baby and Alice were for unwatering the mine with three Cornish engines. Jumbo was an 80" engine of 1875 vintage, Baby a 50" of 1860 and Alice 60" of 1857. These last two pumped up the same shaft.

At this period the mine was run by the trustees of the late Edward Miller Wass since his assets failed to sell after his death in 1886. After the turn of the century, efficiency improvements were made to the dressing floor, probably by Daniel Morgan, the Engineer, with better jigs and the replacement of the round buddles by Wilfley tables. These were then replaced in 1914 by Deister tables which enabled ores of lead and zinc to be separated better than previously.

Lees shaft was deepened to 73 fathoms in 1901 from the original 50 fathom level and worked to the north. In the years up to the Great War, the mine returned a profit averaging about £28,000 per annum.

Around this time, the aerial ropeway, known locally as the "Aerial Flight", was installed, running from the "Crow's Nest" on Jumbo engine house across the River Derwent to a field at the side of the present cricket ground, later the site of the "Skin & Hide" and later still the present picnic site. The ropeway was made by Bullivants and was powered by a D.C. motor of 16 brake horse power. The length was 3,064 feet and it had a rope speed of 450 feet/minute. It carried 10 to 12 tons of coal up and 20 tons of gravel down per hour.

The location of the ropeway was strange as it was supplied with coal by cart from Darley Dale railway station only about 200 yards away. Possibly Wright, who supplied the coal and was at some stage a shareholder in Mill Close, either owned the intervening land or had been able in some other way to prevent the extension of the ropeway to the station yard.

Joe Webster rode in a bucket of the ropeway for a bet but can only assume that the management did not find out at the time as I was not told he was dismissed, a likely fate in those hard days.

A couple of years ago, during excavations behind the former offices of the mine, later H.J.E. Stores and presently the headquarters of Ecobat, several buckets, hangers and a large wheel from the Bullivant system were revealed. I have two buckets and several rather twisted hangers at home, the wheel was broken during extraction. The cableway probably closed in the late 1920s with the coming of better transport. The Glossop report of 1923 records the use of a Foden steam waggon to carry the ore to Lea.

A winze was sunk from the 73 fathom level to test the limestone under the toadstone using money from the Ministry of Munitions during the War but to no avail. The winze was afterwards known as the "Munitions Winze".

After several years of troubled labour relations, with five strikes or lockouts between 1917 and 1919, the company was sold in 1919 to the Bradford Vale Mining Company. Shortly after it was operated as "The Mill Close Mines Ltd." when a private flotation brought in such local shareholders as George H. Key and Tom Wright (the coal supplier). The new owners took over a union-free and skilled work-force. They operated the mine at a loss until 1922 when it was re-capitalised and Consolidated Goldfields took a major interest. They had commissioned two reports from Dr. Malcolm McLaren in 1920 and 1923, the summary of which was that the mine was probably almost exhausted but the proven reserves would offset some of the cost of a full exploration (production was about 45 tons of lead ore per week) and a speculative investment should be made. Goldfields provided technical assistance and the registered office was at Moorgate, London but the local directors ran the mine.

Between 1920 and 1929, efforts were concentrated on working many minor joints and veins to the west of the main vein, under and beyond the village of Stanton Lees, and on the most northerly extent of the main vein. Production from the many workplaces gave small profits after 1925 and a rather better one for 1929 as described at the Eleventh Ordinary General Meeting, held at No. 1. London Wall Buildings, London, on 6th August 1930. The Chairman, Mr. John A. Agnew, indicated how the fortunes of the Mill Close Mines Company had changed since the previous report.

*.... It is only seven months since we presented the previous year's accounts to you and I then explained why we were so late in convening that meeting. This year we are glad to meet you within four months of the closing of the year's accounts, and to be able to disclose a greatly improved financial position. When I last had the pleasure of meeting you I gave you some indication of the state of affairs, but I confess I scarcely expected to be able to report a profit at the Mine for the twelve months ended 31st March 1930, of £54,988, against a loss of £19,263 during the previous year, and this notwithstanding an*

*average price realised for our pig lead of only £22 19s 0d per ton. It is true that this price was only 6s 8d per ton lower than for the previous twelve months, but our profits have suffered considerably by reason of our being unable to deal at the Smelter with the whole quantity of concentrates produced at the Mine, and in having to sell the surplus concentrates at a returning charge much higher than would have been our own smelting costs had we been able to treat the total quantity at Lea.*

Nevertheless, the Company had accumulated losses of £31,365 of which £24,269 was for the year to March 1929. There was a bank overdraft of nearly £59,000. These difficulties had been foreseen and around 1925, the decision had been made to sink a winze or internal shaft near the northern extent of the workings on the 70 fathom level. At this point there had been much ore and a good flow of water called "The Boil-Up", considered to be a propitious sign. (A more scientific statement of this phenomenon was published by W.W. Varvill (a surveyor at Mill Close) under the title "Secondary Enrichment by Natural Flotation" in *Mine and Quarry Engineering* in 1962. I am not qualified to comment on its validity.) The new winze, strangely called No.1, was sunk to 103 fathoms and here penetrated the toadstone. Levels were driven off at 84 fathoms and 93 fathoms and all three levels struck rich deposits of ore, together with large flows of water. The 103 fathom level was used as the main haulage level and was about 10 feet wide and seven feet high. The good prospects revealed justified massive investments in the mine.

This takes us into the second age of Mill Close in the 20th century, the years from 1930 to 1940. The requirement for extra pumping led to the greater use of electric pumps and enabled Jumbo to be scrapped with Baby and Alice kept on stand-by. In 1933 the top section of the Jumbo engine house was removed to the level you see today, and a new electric winding house built to wind from Warrencarr shaft which was fitted with new pitch pine guides down to the 70 fathom level. These guides are still in place, disappearing into the dark water. Two 500 ton capacity steel bins from Plowrights of Chesterfield were installed near the shaft, one for Stanton ore and the other for Haddon ore (the ore was identified by placing one or two sticks in the wagon). The cost was budgeted at £9,000. In 1933 a new power house was commissioned in case of failure of the local grid and proved its usefulness during the year. The grid fed a sub-station on site and it had (and still has) two supplies known as "Ashbourne" and "Darley". Steam capacity, which featured extensively in the 1923 Glossop report, was being phased out and old machinery either converted to electricity or replaced.

In 1930, Tom Wright, shareholder and coal supplier to Mill Close, died leaving £146,192 in his will. Len Millward, also a haulier, who I interviewed years ago, said that Tom Wright was "making money in his sleep" carrying 14 loads of coal each day with 28 stockpiled for the weekend. The new haulier was Frank Toplis who features regularly in a diary for 1936 as the provider of cars to take injured men to hospital. The diary records the meter readings from the sub-station belonging to the "Notts and Derby Power Company" and all out-going telephone calls.

After the conversion of Jumbo or Warrencarr shaft, the Lees shaft was only used for man-winding and for equipment. All these changes were in place by October 1933 and production rose by over 500 tons per week. In the year ending March 1934, some 81,629 tons of ore had been raised, yielding 39,757 tons of concentrates. This abundance of raw material gave rise to a new problem, lack of smelting capacity at the Lea smelter. Despite the installation there of two new Newnam Hearths, ore had to be sold. The obvious answer was the construction of a

new smelter on site, with the use of a small diesel loco to convey the ore from the dressing floor to the furnaces.

This plant, costing £30,000, was operational in November 1934 and consisted of six Newnam Hearths, capable of dealing with over 700 tons of concentrates per week and a blast furnace for the treatment of the rich slags. A modern fume recovery plant and gas neutralisation system using slaked lime was part of the installation. At the year ending 31st March 1935, 7,000 tons of galena had passed through the new smelter and 10,228 tons through the old smelter at Lea. The total pig lead produced was 12,177 tons against 6,125 tons the previous year, although the price had dropped from £12 1s 0d to £10 15s 11d.

At the Seventeenth Ordinary General Meeting held at the Chatsworth Hydro, Matlock on 4th July 1936 an interim dividend of 2s. 6d. was declared (it had been 1s 0d the previous year). A write-off of plant and assets, except the free-hold of Lea Smelter totalled £51,015 and £50,000 was transferred to General Reserve. Development had been 6,000 feet mainly to define a new orebody at the northern reaches of the mine below the 129f. level. The new ore had been brought into production by sinking a winze (No. 2) to 144 fathoms and working in a north and north-westerly direction. A difficulty with the new reserves was that they contained an increasing percentage of blende or zinc sulphide. This necessitated changes to the treatment plant. For the year 1935-6 ore production was 110,078 tons as against 108,118 for the previous year. However, galena concentrates amounted to 28,718 tons as against 38,660 tons, showing the falling off of ore grades. Compensation was found in a rise in the price of Best Soft Foreign Pig Lead to £15 12s 1d. A total of 4,055 tons of slags from the Newnam Hearths were stored and a back-log was sold. Whether this was because the blast furnace was not operating or could not cope was not stated.

On 25th February 1938, the firing of a shot caused water to break into the main workings and flooded the mine to a depth of 200 feet, rising to the 103 level, despite the recent upgrading of the pumping system on the 144 level. Rates of pumping had risen throughout the life of the mine: 1,000 gallons per minute in 1887; 1,600 gpm in 1920; 2,000 gpm in 1929; 2,350 gpm in 1932; 4,300 gpm in 1937 and then, suddenly, 5,580 gpm poured into the mine. The shot, fired by Fred Boam of Winster, had tapped the Pilhough Fault and, when new pumps had been obtained and installed, led to the removal of nearly 8 million gallons of water per day, almost 36,000 tons. The winning of ore was at a standstill until 8th May with about 400 miners laid off.

Despite the flood, tonnage milled was only just below the previous year's level at 104,610 tons but again, the percentage of lead was reduced because of the greater proportion of blende. The galena tonnage was 13,521 and blende tonnage 16,543 although 6,034 tons of that was from low-grade material produced in the previous year. Pig lead production was 10,013 tons at a price of £19 0s 9d.

The Mill Close of the 1930s seems to have been the place at which local men wanted to work. Wages were good, work did not disappear in bad weather as it did in the quarries and the jobs appeared to be secure. The farmer near where I lived across the valley from Mill Close used to claim, somewhat bitterly, that nobody from that side of the river Derwent could get set on at the mine. This was not completely true (a neighbour worked on development) but there was a grain of truth in that families from the limestone area on the south side of the river had a long history of working in the lead mines. The mine operated a three

shift system of eight hours, each shift working under a deputy who was assisted by a foreman. Labouring rates elsewhere were 1s 0d per hour but the mine paid 1s 2d or 9s 4d per shift. The man in charge of a gang received 10s 2d and would usually have his firing papers. George Shimwell, an experienced man who had started at the mine in 1916, was paid 16s 0d plus a bonus depending on the distance cut when he worked there in the 1930s.

During the enforced shut-down of the mine, the surface tips were re-worked for the ore not recovered in better days with less efficient treatment plant. On 10th May 1938, whilst loading a lorry with tailings, the heap collapsed burying one man. As they went to help, the other three in the gang were also covered. Rescuers found James Byatt alive but badly injured, two men, Thomas Ball and Victor Barnes dead and one missing. The body of Richard Bond was recovered three hours later. The dead were all aged about twenty.

After the flood, development was accelerated. At the furthest extent of the mine, a raise was put up to a height of 400 feet to no effect. "Stinkwater Raise" was disliked by the miners since a fine spray of mineralised water affected their eyes and even the wearing of goggles did not prevent the illusion of rainbows and rings from irritation. Winzes were sunk to 154 and 164 fathom levels but the ground was barren. Leslie B. Williams, the Mine Manager, persuaded the Directors to persist in the search for ore but by June 1939 it was widely rumoured that the end was near. The decision was taken to clear the remaining reserves, remove any useful equipment and allow the mine to flood. At the end of June 1940, mining ceased and the mine was abandoned in August 1940 after salvage operations.

A local tale says that there is as much ore still in the mine as ever came out, but Mill Close Mines put great effort into looking for the ore and never found it. A second tale has it that the mine was flooded deliberately by the Germans. It is true that several managerial employees had German-sounding names but they were of South African extraction and were there because of the Goldfields connection.

The Report of Directors on 24th September 1941 shows that a trading loss of £10,388 was incurred in the five months to 31st August 1941. The company was in receivership from the 2nd July 1940 and was showing a profit from the treatment of surface accumulations by the Receiver from the beginning of September 1941. Retreatment of the main dumps (river side of road) was completed in March 1941 and work moved to the Cowley and Hillside dumps which the Chairman thought would not last long. Smelting continued until the end of February 1941, when the plant was sold to Messrs. H.J. Enthoven and Sons of Rotherhithe, London, where that company remains to this day. Contrary to Mr. Annan's forecast, the tips were treated for much of the period of the Second War by the Ministry of Supply although it did not need to be a profitable exercise in war-time.

Including this later work, the total production of lead concentrate (at about 82% Pb) from Mill Close was 434,000 tons from 1861 and 91,000 of zinc concentrate from 1904.

A considerable number of the employees of Enthoven after the War were former Mill Close men. Some had done their military service, some had gone into other mines for the duration of the war and some never left, working on the dressing floor.

The remaining 60 years of this century, as far as lead mining is concerned, are all "bad times". Although not involving Mill Close Mine, the rest of the 20th century is easily covered.

Enthoven's dipped their corporate toe into the mining water at the end of the 1940s when they started working Portaway Mine at Elton where they presumably thought water problems would be fewer. This lasted a few years and produced very little ore. I have been told that faulting of the vein was the cause.

Derbyshire Stone re-opened Riber Mine in 1951 following diamond drilling from the surface to test the extent of the Great Rake on High Tor eastwards. Three holes were drilled diagonally, each about 650 feet long and the vein was intersected in all three at the estimated depth. The first hole passed through a payable band of galena in a calcite vein 4 feet thick but the others only found blende in the calcite. The vein was lower than any old workings were expected, although no plans were available. An inclined shaft was sunk to intersect the vein and eventually it was found that the first drill hole from which the galena was recovered had missed an old stope by 3 feet. "T'Ode Man" had been there already.

Magpie Mine was worked in the 1950s but the bottom was never reached and pumping ceased about 1953. Thereafter, stoping on the 92f. level continued, encouraged by the Korean War, but that work stopped in 1958.

Some ore is still produced in Derbyshire as a by-product of fluorspar, calcite and barytes mining. Laporte Minerals sold a small tonnage to H.J. Enthoven who mixed it with the feedstock derived from recycled batteries.

This fairly sorry end to the present century of lead mining in Derbyshire is unlikely to change in the next. Mill Close Mine closed because of water, high royalty payments and lack of reserves. The current London Metal Exchange lead metal price of about £310 barely encourages recycling, let alone mining, of lead and the thought of applying for planning permission for extracting and treating this so-called "deadly" metal is enough to discourage anybody - unless of course there is not enough to provide batteries and people risk losing the use of their cars!

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