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## NOTES ON THE ROCKLEY MINE

R.H. Bird

The Rockley mine is situated about one mile NNW of the village of Birdwell near Barnsley, at NGR SE337021. The engine shaft collar is at 234 ft. OD and the underground workings occupy an area some  $\frac{3}{4}$  of an acre in extent, near the confluence of the Rockley and Warren Dykes. The engine house may be seen from the M1 motorway in the trees to the left when travelling north.

The mine was worked for ironstone and stands on part of the Tankersley Ironstone belt, here known as Tankersley Park. This deposit has been worked from at least the 16th Century when the method of extraction was in the form of bell-pits. These are to be found in great numbers particularly in the area around the Tankersley Golf Course at which place they have been utilised as ready made bunkers. Between the years 1690 to 1750, the Rockley-Tankersley area produced 350 to 450 tons of ore. The rivers to the west of the belt, particularly the Don, provided the water power for forges and smelting furnaces playing a large part in the development of the iron and later, the steel industries.

An early furnace is to be found a few hundred yards east of the Rockley mine but as it was operational in the early 17th Century it played no part in the smelting of ore from the mine.

The mine site is of singular interest in that a Newcomen atmospheric engine was used here, the house of which still stands beside the pumping shaft. This house, which was renovated by the Sheffield Trades Historical Society during 1968-9, is well preserved. It is built of local gritstone and above the lever or bob wall the structure is of a castellated form. The building is tall rather than broad, a feature necessary to allow the incorporation of a boiler below the cylinder, which was typical of such early engines. The stack is built integral with the corner of the east (back) wall and square openings are visible in the sides of the structure which, no doubt, held the huge timber beams on which the cylinder rested.

Documentation of the engine is rather scanty. The keystone on the bob wall bears the date 1813, giving an indication as to when the house was completed and the engine installed. A note of 1823 states - 'The Rockley Engine Pit 28 yds to bottom of (chain?). The sump is  $17\frac{3}{4}$  yds deep in the engine pit. The engine cylinder 28 inches in diameter. A common engine. ' . The word 'chain' may apply

to that which worked over the arch bead on the outside of the beam but the statement is unclear. The total depth of the shaft, if the sump measurement is added, gives a depth of 137 feet. The ironstone here lies at a depth of 128 feet. One can therefore presume that this is the depth of the shaft when the mine ceased production but this has found to be untrue. The engine was dismantled and sold about this time (1823) by the owners who were Darwin & Co. This company were the forerunners of the present Balfour Darwins Ltd, the Sheffield steel makers. The selling of steam engines to other mines after only a short period was a regular practise and consequently the Newcomen at Rockley may have been a second or even third hand machine when purchased. The engine was sold to the Hesley Park Colliery near Chapeltown where it was reported to be still in use in 1872.

Remains of Newcomen engines and the houses that contained them are rare but those which do exist are usually found in the northern coalfields (a complete engine still exists at the nearby Elsecar Colliery). The reason for this is not difficult to find. Newcomens were extremely wasteful of fuel by virtue of their construction and this was true even after John Smeaton had effected considerable economies by jacketing the cylinder and other improvements. However, in areas where coal was abundant the Newcomen was retained unlike, for example, areas such as Cornwall which had no coal of their own and had to import all their fuel. In the north Newcomens were operating until quite late in the Nineteenth century because it was found that the boilers could easily be fired on small unsaleable coal, thus consuming this waste to an advantage.

The Rockley engine shaft was concreted-over some years ago. Measurements taken before this found that it was ten feet in diameter and lined with stone. At a depth of 14 ft. 6 ins. from the collar there is an inset which gives access to a small pumping adit which has its outlet in the south bank of Rockley Dike. This portal is a small square opening about 18 inches high and flagged with gritstone blocks. When the engine was working the water would be discharged into this adit instead of lifting it to grass. The shaft is very likely flooded to this horizon as water escapes from the adit during sustained wet weather.

Plans in the care of the N.C.B. reveal that the shaft is deeper than early references suggest. It is, in fact, sunk to a total depth of 171 feet. At this depth it cuts the Flockton Thick coal seam although there is no evidence that this was ever worked at the mine. Such a depth would only be necessary to provide a sump for pumping purposes. To the south of the engine shaft are two further shafts which have both run-in. These may

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have been opened to provide winding facilities during mining operations.

On the whole, the mine must have been quite important in its day and therefore it is difficult to understand why working was abandoned in so short a time. After ten years work the amount of blocked-out ground appears small in relation to the effort which must have gone into the building of an engine house, installing the engine and sinking the shafts.

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