

POINT OF AYR COLLIERY, TALACRE, FFYNNONGROEW, CLWYD, (EX-FLINTSHIRE)

BACKGROUND.

The Point of Ayr Colliery dates back to 1865, when trial borings were drilled, their success leading to the formation of the Prestatyn Coal Company. This was abortive, and it was 1873 before the new West Mostyn Colliery Company was formed, sinking the No. 1 shaft to a depth of 100 yards. A heading at this depth struck a fault, and the site was abandoned. In 1883, the Point of Ayr Collieries Company was formed. The No. 1 shaft was de-watered and a new heading driven which struck the Five Yard Seam. From that point onward, the colliery's future was secured. The No. 1 shaft was extended to a depth of 215 yards and a second shaft, the No. 2 was sunk to the same depth. The seams worked were the Five Yards, Three yards and Two Yards Seams, the main output being a highly volatile medium to strong caking coal.

The colliery was re-organised after Nationalisation, and a new shaft, the No. 2, was sunk to a depth of over 300 yards., and from then on rail transport took over almost entirely the seaborne route which had used the colliery wharf, now the "outer harbour" and almost completely silted up. Present day output from the colliery is by road for "local" distribution and by "merry-go round" trains to the Fiddler's Ferry Power Station on the Mersey, replacing the nearer Connah's Quay Station, which is currently disused.

At the present time, work is going on to drive an inclined shaft to the main drift level, enabling coal, materials and men to be transported and reducing the demand for the vertical shaft haulage. This will render some of the present haulage machinery redundant, in particular, the old steam winder of the No.2 shaft, at present worked by compressed air, which is to be replaced by a small electrical haulage unit erected between the present engine house and the shaft. Details of the new scheme can be found in Mining Magazine for September 1987 Pages 226-237.

The No. 1 shaft is of small diameter, reputedly because the lining broke during sinking and had to be relined to a narrower diameter. It is worked by a single two-man cage, operated by an electric ex-underground haulage engine obtained from the closed Llay Main Colliery near Wrexham. The shaft is now only used as an emergency exit. It is fitted with airlocks, and an underground fan drift connects it with the stand-by ventilation plant. The hauler is installed in the original steam winding house. The motor is by Metro-Vick, and overspeed and overwind control is by a "Lilley" controller.

The No. 2 shaft is the main upcast, ventilation being provided by a large modern "Sirocco" type fan. The standby ventilation plant, situated between this and the No. 1 shaft, consists of a pair of "Aerofan" axial fans by Davidsons. The present winding engine (described in detail below) was installed in 1924/5 replacing the original, of which no details are known at present. The cages were not observed. At present the shaft is used for winding men and materials. Only one tub track emerges from the airlock at the top of the shaft.

The No. 3 shaft is the downcast, and currently the main coal winding shaft, using two-deck cages, each capable of carrying two mine cars per deck. These are originally of 30 cwt. capacity, increased to 2 tons by extended sides and ends. The surface car circuit is very short, tipplers discharging the cars into a bunker and conveyors which carry the output to the screens etc. A single track loop carries the cars via a "kick-back" to the other side of the shaft. The haulage engine is a geared A.C. electric winder of English Electric braking. The overwind/overspeed controller is of the "Lilley" type and the driver's position is elevated and enclosed.

The No.2 Shaft winding engine.

The No. 2 shaft engine house is of brick construction, the main operating floor being about ten feet above ground level. The entrance is on the left hand side, as one faces the shaft, by the drum, and reached by a flight of steel steps. There are four large windows on each side of the building, one of the central pair on the left being bricked up, while the rear one on the right hand side is partially blocked by the engineman's facilities. There are two smaller windows in the rear wall. Beneath the operating floor is a "cellar" divided

up by the masonry supporting walls for the engine, and containing the various linkages and electrical auxiliaries. At the time of inspection, it was flooded to a depth of several inches in sludge.

The winding engine itself is of the "duplex" type, having two identical sized cylinders of 24" diameter by 48" stroke in the classical 1:2 ratio. Steam admission is by piston valves, the valve chests being mounted inboard of the cylinders, all inlet and exhaust pipes being below the floor. The cylinders and valves are lagged, and covered by planished steel covers. The cylinder assemblies are mounted on long one-piece cast beds of a long "H" shape in plan, with the cylinders at one end and the main crank/drum shaft bearings at the other. These frames bear the cast-in legend:

"WORSLEY MESNES IRONWORKS LTD. WIGAN 1924"

There are separate supports for the piston tail-rod slides. The main cranks are of conventional steel 1/2 crank form with a throw of 24". The eccentrics are mounted inboard of the main bearings on the drum shaft on each side of the drum. Between these and the drum are a third pair of eccentrics which are connected with the cut-off gear.

The governor is mounted on the left hand frame about halfway along. It was driven by a wire rope or V-belt from a pulley on the drum shaft, but the corresponding pulley on the governor shaft has been removed.

The drum is of the parallel fabricated type, 12 feet in diameter and 5' 3" wide. The drum cheeks are in two parts, bolted together, with bolted on boiler-plate shells and brake paths. The brakes are of the conventional post variety, operated through spring nests from the brake engine.

The cross-heads move between 4-bar slides, the connecting rods having solid pattern big ends, the little ends being wedge and cotter adjusted.

The valve gear is of Gooch's motion, only the valve rod and die-block moving between forward and reverse positions. The cut-off gear, which gives control of maximum speed and expansive working is of Melling's patent type, driven by the 4 third eccentrics on the shaft. These eccentric rods drive two auxiliary piston rods above and below the main rods through rocking levers, their relative positions to one another being controlled by a linkage from the governor. The two sets of valve gear are directly connected by the governor linkage which is supported by stands above the gear, each of which carry small brass plates, one reading "Melling's Patent" and the other "Worsley Mesnes Ironworks." The patent has not been examined, but from inspection of photographs appears to control the ports between the piston valve chest and the cylinders, thus advancing or retarding the cut-off point of steam admission. As the engine is now working on compressed air, the governor has been disconnected and the cut-off gear is inoperative, being fixed at the minimum cut-off position, i.e. maximum admission.

The driving position is arranged on the right hand side of the engine house, beside the cross-head slide and consists of the throttle, footbrake pedal, reversing lever and a variety of inter linked electrical and pneumatic switches for backing out, men/coal changeover etc. The lever stands carry "Melling's Patent" plates which have been painted over. In front of the driving position is the depth indicator dial, driven from the right hand end of the shaft. This has only top and bottom positions marked, indicating no working intermediate insets. The drum has also only one landing mark on its rim. An A.T.M. type signalling system is in use, again with only two stations- the banksman's and a single onsetter's. The luminescent indicator panel is fixed to the wall in front of the driving position. The present overwind/overspeed gear is a Black's "Torque" controller, driven by a link from the main crank on the right-hand side.

The original auxiliaries are mounted in a line between the cross-heads in front of the drum splash screen. These consist, in order from left to right, of a Reversing engine, Brake engine and overwinder. These are all of the Melling's patent varieties. The reversing and brake engines are of the Inverted Standard designs, the reversing engine being the smaller of the two. The Overwinder is of the "Pneumatic" type, combining certain governing functions with overwind, overspeed and banking control. It is fitted with steam restriction gear which senses the pressure in the steam supply on approach to bank. The controller is not in use, its

functions being carried out by the Black's contrivance. In front of the controller is a complex pneumatic circuit, mounted on a board.

Comment on possible preservation.

Worsley Mesnes were prolific builders and re-builders of colliery winding engines, continuing to maintain and support this form of haulage long after more famous names had disappeared. So far as is known only two or three of their engines have survived, all "duplex" types, all of which had the "Gooch" valve gear. However, these are all of a more modern appearance than the engine described above, having "trunk" type cross-head guides, drop inlet and corliss outlet valves. This engine therefore represents a unique opportunity to preserve a modern representative of an older design. It is also fortunate in possessing its complete set of original auxiliaries, not to mention the unique Melling's expansion gear. Altogether it is a fine example of Worsley Mesnes work.

As an engine, it is typical in size of the engines which worked at medium and smaller collieries in Lancashire, both the present surviving engines at Astley and Sutton Manor being unusual in being compounds, rather than the more common duplex. In this regard it is to be regretted that the fine and unique Galloway duplex winder at Parsonage Colliery, Leigh, as well as the Walker engines at Bickershaw were lost. It is important therefore, that this opportunity to preserve a Lancashire built engine, and one by the last steam engine builder of modern history, should not be missed also.

In order to ensure that it is preserved in pristine condition, and in a form that can be fully appreciated, and in the event that acquisition can be agreed, I would strongly recommend that before any dismantling or movement of the engine is commenced, a suitable substantial foundation and bed be constructed at the intended preservation site to mount it on. I would hope that the Chief Engineer at the colliery is able to supply suitable general arrangement drawings to enable this to be done. Steps should be taken therefore, at the first available opportunity to acquire these, or have copies made. Similarly, an all-over cover for the engine is a must, even if it is not to be as substantially supported as the one in its present location. The details and design of such a structure, and the details of the possible dismantling, transportation and re-erection of the engine, I leave to those better able to report on them.

J.G. Isherwood,
For the R.R.S.S.L.
10th. October 1987

NOTE: The engine was subsequently dismantled (Not by RRSL) and after various moves is currently lying in pieces at Bersham Colliery near Wrexham.