

Background Information:

Early Mining



There is evidence for coal being used as a fuel in Britain which dates back to the Roman occupation. After the Romans left Britain there is little evidence of coal in use until the 1100s, although it was probably still used by blacksmiths in places where it was close to hand.

Drift Mines

Coal was first used where it was exposed at the surface. Drift mines might follow the seam from the surface or cut down at an angle through rocks to reach it. Some coal seams are still accessed by drift roadways, and they have continued to be used as a way in or out of mines.

Bell Pits

Bell-pits were sunk to reach coal in shallow seams, up to 10 metres below the surface. A vertical shaft would be dug down to the level of the seam, and coal extracted around the shaft. When the risk of the roof falling or lack of ventilation became too great, the shaft was abandoned and a new one sunk.

Pillar and Stall

This technique used pillars of coal to support the roof, and coal was extracted around the pillar. Known as pillar and stall, bord and pillar, or stoup and room mining, once the coal in the stalls had been excavated, the pillars continued to support the rocks above. Miners would sometimes return to the workings to take coal from the pillars, a dangerous practice which often caused accidents.

Ventilation

As miners worked further from the shaft, a system of ventilation was required to move fresh air to the workforce. For this, a system of ventilation doors would direct air around the underground workings. There would often be two shafts – a 'downcast' shaft for fresh air to be brought in, and an 'upcast' shaft for stale air to be taken out, or at the least a single shaft divided laterally to help the air flow.

In early mines, a fire at the bottom of the upcast shaft would draw air through the workings. In this case the upcast shaft would also be the furnace shaft. The shaft acted as a chimney for the smoke and gases to escape.

Later, large fans on the surface moved air through the underground workings. Ventilation doors were still needed to direct the air, and continue to be used in coal mines today.

Introduction of Machines

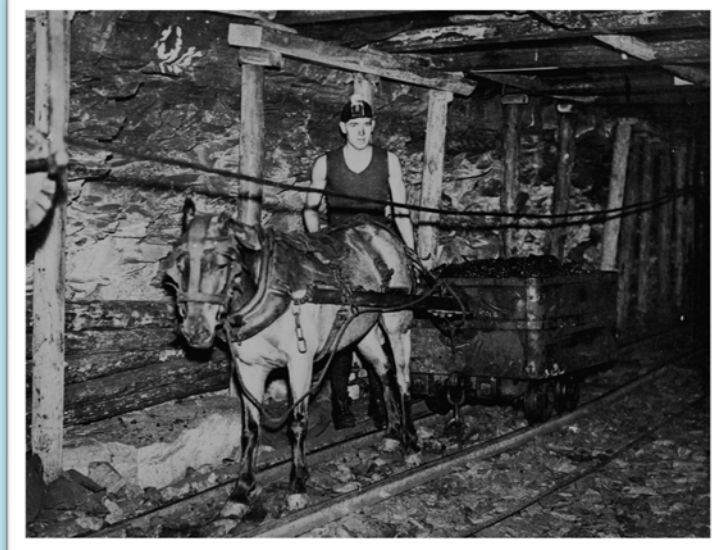
The Industrial Revolution started in the 1700s, with improved technology for mining coal and providing a much larger market for the use of coal. From this point, coal mines became deeper, more widespread and the workforce began to grow. The demand from industry for more coal for steam engines, transport and for homes encouraged the production of more efficient machines and methods of mining.

The first machines used in mining were steam powered engines designed to pump water out of mines, allowing shafts to be sunk to access deeper seams. As workings became deeper, and increasing amounts of coal were dug out, steam engines became more widely employed to transport people and coal up and down the shaft.

Until 1842, it would be common for whole families of mothers, fathers and children to be employed together in the mines, each with a role: the hewer, who would dig the coal out; the getter, who might load the coal into a tub or a corve; the hurrier and the thruster, who would pull or push the tubs and corves; and the trapper, often the youngest member of the family, who would be responsible for keeping the ventilation doors shut until a tub needed to pass through.

In 1842, a parliamentary Act was passed in Great Britain preventing children under ten years old and women from working underground. This caused problems for mine-owners who were without a large part of their workforce, but also for families who had no other means of income.

Following this, in the 1800s, ponies became more widely used as a means of transport for pulling coal tubs underground and on the surface. In the 1900s, more processes became mechanised, and larger scale mining techniques became possible using motorised coal cutting machines and compressed air powered picks for driving roadways.



A pony and driver.

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