



# Between the Lines

Land of Oak & Iron Mapping Project Newsletter

June 2021

Whilst we are still not in a position to announce any dates for the start of physical meetings, this month we are pleased to be able to update information about the preparations that are being made towards that goal. Our featured article this month is "The Coal Industry in the Land of Oak & Iron to 1800". We take a look at the primitive methods available in the 14<sup>th</sup> century before turning to the rapid development of industrial-scale mining during the 17<sup>th</sup> century, and the difficulties faced in transporting coal to market.

## Mapping meetings

This month we can announce that The Lodge is now available for meetings but only for very restricted numbers. We continue to look at alternative venues but some are not available for evening meetings. It would be helpful if you could let us know whether you could attend daytime meetings

As a reminder, the Trust have prepared a Covid-19 Guide for the leaders of LOIT activities, such as mapping. The guide is available on the LOIT website [here](#) for everybody to read. Some key points which require attendee co-operation are shown below.

- Numbers attending will be limited to ensure social distancing requirements can be maintained.
- Any requirements for masks to be worn, stipulated by the venue, must be observed.
- Places should be booked in advance and attendance must be recorded by the Trust.
- Equipment used must be wiped clean before and after the event.

## The Coal Industry in the Land of Oak & Iron to 1800

### Early Days

Prior to the 14<sup>th</sup> Century coal was used largely to support an agricultural society in the production of lime. By the 14<sup>th</sup> Century there was an established trade in coal on Tyneside. Coal mines were either tunnels, known as adits, driven into river banks, or relatively shallow pits known as bell pits where a vertical shaft was dug to the coal seam and the coal raised in a basket using a windlass. Only a limited amount of coal could be extracted before the pit collapsed or flooded. Other pits were sunk in the vicinity and the earth extracted during construction deposited in the abandoned mine.

### The Seventeenth Century

By the early 17<sup>th</sup> Century, coal was being mined on Tyneside on an industrial scale. The main area of activity was between the rivers Derwent and Team. The second largest area was in pits around Blaydon, Winlaton, Ryton and Crawcrook.

London was the principal market for Tyneside coal which by then was used as a domestic fuel owing to the shortage of timber. It was taken from the mines over-land to buildings on the banks of the Tyne

(staithes) and from there transferred to river craft (keels). These were rowed or sailed downstream where the coal was transferred to sea-going vessels (colliers). Staithes were constructed at Crawcrook, Stella, Blaydon, Swalwell and Derwenthaugh.

Coal was originally transported from the mines to the staithes by packhorse and later carts, known as wains, pulled by four horses or oxen, but this heavy transport damaged the land they passed over. Landowners tried to prevent the wains and it was against this background that wooden railways known as waggonways came into use on Tyneside. Although expensive to construct, a single waggon (a chaldron) pulled by one horse could carry twice the load of a wain and caused minimal damage to adjoining land.

There were possibly four waggonways built in the Land of Oak & Iron before 1659 at Winlaton, Blaydon Burn, Ryton (Stella Grand Lease Way), and Crawcrook. As the accessible coal near the Tyne became exhausted, mining activity moved south to pits at Chopwell, Crawcrook, Cowclose and Brockwell (south of Blaydon Burn).

Mining techniques remained primitive. Water was pumped from the mines by engines powered by water wheels or horses (horse-gins). In other cases channels were cut to allow the water to drain by gravity.

The rich coalfields around Wickham, Gateshead, Winlaton and Ryton were mined by Newcastle merchants. The export trade was closely controlled by the Corporation of Newcastle and an Act of Parliament (1529) determined that all goods shipped into and out of the navigable waters of the River Tyne had to be traded in the town of Newcastle.

In 1600 a Company of Hostmen was created in Newcastle, limiting the right to trade in coal to members of this Company. They operated a cartel, setting quotas and regulating prices. Several Newcastle merchants, such as the Liddells, Bowes, and Carrs had by this time become major land owners. Aristocrats such as the Hon. Charles Montagu, son of the Earl of Sandwich, moved into the area to take advantage of the booming coal industry on Tyneside.

*Continued overleaf*

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## The Eighteenth Century

The capital costs of the mines could only be afforded by the rich land owning classes. The Hostmen retained their powers, but were relegated to the role of intermediaries called fitters and they had no interest in restricting supply. Some of the coal owners, however, wanted to restrict production to force up prices, while others believed market demand was sufficiently high to enable prices to be maintained. This difference of outlook led to a dispute which resulted in bitter conflict, much of it played out in and around the Land of Oak & Iron.

In the first decade of the 18<sup>th</sup> century an organisation known as the Coal Office was established by leading coal owners particularly the Liddells of Ravensworth. The Coal Office was soon replaced by an organisation known as the Regulation and, in 1726, by the Partnership. The members of the Partnership were George Bowes of Gibside, George Liddell of Ravensworth, Edward Wortley, descendant of Charles Montagu, William Coatsworth and Thomas Ord, a Newcastle lawyer. They were universally known as the Grand Allies. The Grand Allies bought the mining rights in the manors of Whickham and Gateshead and set about building the Tanfield Waggonway which they later expanded. The secretary of the Coal Office and the Partnership was William Coatsworth, a Gateshead merchant. These organisations acted as cartels, attempting to restrict the supply of coal with a view to forcing up prices.

There were free-marketeering coal owners opposed to these cartels, particularly the Claverings of Axwell Park who had built the Western Way waggonway to serve their pits at Burnopfield, Dipton and Pontop. For over 20 years Coatsworth campaigned to restrict coal production by the Claverings, by disrupting the transport of coal over the Western Way. The Claverings fought back, building diversions and by routing it to the staithe at Derwenthaugh instead of staithe in Swalwell. Coatsworth finally achieved his long term aim of closing the waggonway when Francis Clavinger succeeded to the baronetcy in 1726, but within 2 years a new Western Way had been built by Lady Jane Clavinger and it remained in use from 1728 to around 1800. The Grand Allies were more successful in restricting production around Chopwell. Coal, however, was mined at High Spen and the Silvertop family of Minsteracres were able to expand production to the areas south of Prudhoe around Risemoor and Millmoss. During the course of the 18<sup>th</sup> century, technology was developed to enable deep mining of coal, only possible when drainage and ventilation could be managed and technology developed to bring large quantities of coal to the surface. By 1760 it is known that some pits were around 200 metres deep, although shallow pits no more than 6 or 7 metres deep were also being worked.

The first steam pump capable of raising water from several hundred feet was invented in 1712 by Thomas Newcomen but uptake in the North East was slow. In 1769 James Watt patented an improved steam pump and by the 1770s probably all but the shallowest and smallest collieries raised water from pits using steam pumps. Steam engines were also used for winding, enabling ever larger quantities of coal to be brought to the surface.

The traditional method of mining was to sink a shaft some distance from the seam to be worked. From the main tunnel (roadway) cross-tunnels would be cut at right angles through the seam leaving in-situ large pillars of coal - up to 12-15 metres wide. The coal extracted to create the tunnels was taken to the surface. In a typical coal mine there would be a grid of tunnels running through the seam. By the beginning of the 18<sup>th</sup> century it became the practice to construct 2 shafts to aid the circulation of air in the deep mine, one (the downshaft) to admit fresh air, the other (the upshaft) to draw out dangerous gases. Circulation of air was achieved by placing a fire at the top of the upcast shaft using a brazier, or lighting a fire at the bottom of the shaft in a hearth. There would also be a tall chimney at the pit head to assist the up-draught. Air was circulated below surface to ventilate critical areas by deliberately blocking up passages with bricks and lime and by erecting a series of trap doors attended by boys as young as 7 years of age. Older boys were used as putters to transport the coal from the coal face to the shaft, hauling the coal in baskets or pushing tubs along wooden rails. Horses were also used underground and older boys were charged to take care of them.

By the end of the 18<sup>th</sup> Century virtually all coal owners provided housing for employees. Rents were rarely calculated on an economic basis. Housing at this time was rudimentary. Most were built in rows (terraces) and some were back to back dwellings.

Between 1700 and 1830 there was a tenfold increase in the production of coal and labour was in great demand. Various forms of employment contract were tried, aimed at making it an offence for a miner to leave his employment before the end of a contracted period, usually a year. By 1760 these contracts, known as bonds, were in general use throughout the North East Coalfield. Binding would take place on a specific day of the year and colliery agents would offer bribes and drinks to induce miners to sign up and commit themselves to an owner for a year. The men would look for a payment known as binding money which would represent a significant bonus on their wages. Far from being regarded as an imposition, the bond system was much favoured by miners who were able to use it as a form of collective bargaining to improve wages and working conditions.



Coming up:

Physical meetings are suspended until further notice.

If you would like to join us in a virtual meeting get in touch with us at: [trust@loit.org.uk](mailto:trust@loit.org.uk)