

North East Derbyshire Industrial Archaeology Society



NEDIAS Newsletter No. 58 – May 2015
Price: £2.00 (Free to Members)



Bole Hill Quarry, Wingerworth

On a grey day in February, Richard Carr led a number of members on a walk from the Saw Shed excavation up to Bole Hill Quarry and to the woods beyond. In this relatively compact area they saw a dozen or more charcoal burning platforms, a pair of Q pits used for making white coal (dried wood), and evidence of two bloomery sites in the form of iron slag dumps. Also the remains of the trackway used to bring stone down from the quarry to the sawmill, the (much altered) shed where the stone carrying sleds were said to have been stored, and the well preserved remains of a dam complete with parts of its oak lined sluice channel.



Photograph courtesy of Les Mather

A Piece of Engineering History

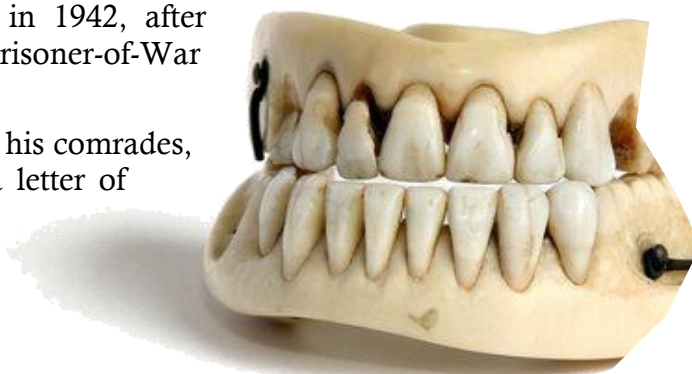
by Jacky Currell

My father, in the army as an electrical and mechanical engineer, was in Singapore, where I was born. Then, when the Japanese took it in 1942, after complete chaos, he was taken to the Prisoner-of-War camp at Palembang in Sumatra.

Here he set up a workshop to make many necessities for his comrades, such as surgical instruments – for which he received a letter of thanks at the end of the war from King George.

At the top of the list? False teeth! Vital for the prisoners?

I am so proud of my Industrial Heritage!



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WHAT'S ON?

NEDIAS Lecture Programme

Meetings are held at: St Thomas' Centre, Chatsworth Road, Brampton (opposite Vauxhall/Bristol St Motors) S40 3AW. There's plenty of parking in their own car park, including disabled spaces, as well as on-road parking in front of the Church. All meetings commence at 7:30pm.

Monday, 11th May 2015	Greg Lilleker: "The Story of British Rail's High Speed Trains" THE DAVID WILMOT MEMORIAL LECTURE
Monday, 14th September 2015	Colin Barnsley: "Five generations of knife making by the River Don"
Monday, 12th October 2015	David Amos: "A Brief History of Coalmining in Ashfield".
Monday, 9th November 2015	Chas Arnold: "Robert Blincoe, Ellis Needham and Litton Mill".

Other Diary Dates

9th May to 18th July 2015	"Down the Track" , an exhibition looks at the development of the railway lines in Chesterfield in the Victorian period and in particular the importance of the branch lines which connected to many local industries. Chesterfield Museum.
Running until 7th June 2015	"Humans in Ancient Britain" at Creswell Crags. A new national exhibition – how often does a NATIONAL exhibition open here! Put together by the Natural History Museum, and shortly to move off around the country. We get it FIRST, don't miss it!
Running until July 2015	"War Work- Sheffield Industry and WW1" . Tells the story of the impact of war upon Sheffield's industries and their workers: now until July 2015. Current exhibition at Kelham Island.
Running until 27th September 2015	"The Victorians" . An exhibition about life during the Victorian period. Revolution House, Old Whittington
Thursday, 14th May 2015	"John Whitehurst" by Jonathan Wallis, curator, Derby Museums. 7:00pm at the Gothic Warehouse, Cromford Canal Wharf, Cromford Mill. Booking recommended, 01629 825995. Entry £7.50 inc wine & cheese.
14th – 16th May 2015	"Rail Ale Festival" . Barrow Hill Roundhouse. Details: www.barrowhill.org
Monday, 18th May 2015	"The Building Stones of Sheffield" by Peter Kennet. SYIHS meeting, Kelham Island Museum. For info: Derek Bayliss (tel. 0114 230 7693, email v.bayliss@btinternet.com)

Thursday, 21st May 2015	“Colour-Rail Live” by Paul Chancellor. Images from the Colour-Rail Transport Archive. Images from around the country, steam and modern traction. 7:30pm Barrow Hill Roundhouse. www.barrowhill.org
Thursday, 28th May 2015	Porter Valley History Walk - A linear walk of 2 miles along the Porter Valley from Endcliffe Park to Forge Dam, looking at the industrial heritage of the area, and how the industry grew up along Sheffield's rivers. Hallamshire History. Info from Pete, hallamshire.history@gmail.com or 0797 2848946
Thursday, 11th June 2015	“Joseph Wright” by Lucy Bamford, curator of art at Derby Museums. 7:00pm at the Gothic Warehouse, Cromford Canal Wharf, Cromford Mill. Booking recommended, 01629 825995. Entry £7.50 inc wine & cheese.
Thursday, 18th June 2015	Mike Eggenton - East Coast: London to Scotland The show starts at London King's Cross and heads north to Wick with the odd diversion on the way. Features steam, diesel and even the odd electric. There will be a few industrials too. 7:30pm Barrow Hill Roundhouse. www.barrowhill.org
6th to 10th July 2015	Newcomen Society Summer Meeting. Join this trip in Swansea with the prospect of visiting the Tata hot strip mill at Port Talbot, hearing about Copperopolis and Brunel's works in South Wales, & taking a ride behind a Baldwin 4-6-2 up to 1313ft above sea level in the Brecon Beacons. Details at: 01235 352275, www.heritageofindustry.co.uk , info@heritageofindustry.co.uk
Tuesday, 19th May 2015	Fred Wood's Staveley Part 1 – Philip Cousins Fred Wood, a well-known resident of Staveley, has left his large and important collection of photographs in the care of Philip. Chesterfield & District Local History Society. 7:30pm Rose Hill United Reformed Church, Chesterfield (Rear Entrance)
Thursday, 9th July 2015	“The Lunar Society” by Rachel West of the Soho House Museum. 7:00pm at the Gothic Warehouse, Cromford Canal Wharf, Cromford Mill. Booking recommended, 01629 825995. Entry £7.50 inc wine & cheese.
Thursday, 16th July 2015	Andy Barclay - Peter Fox Collection Part 2 Following on from last year's popular show we now delve into images in the seventies and eighties from the late Peter Fox collection, although there will be a small selection of earlier images which were not included in last year's show. 7:30pm Barrow Hill Roundhouse. www.barrowhill.org
Thursday, 20th August 2015	Ted Hancock - The Midland in the East End of Sheffield - Part 1 A show detailing the lines, branches, yards and multiplicity of industries served from The Wicker and Midland Station to Grimesthorpe Junction. 7:30pm Barrow Hill Roundhouse. www.barrowhill.org
17th October 2015 to 9th January 2016	“Made in Chesterfield” . This exhibition celebrates the wide range of amazing and sometimes quirky products being made in Chesterfield today. Chesterfield Museum.

Visit to the Lion Salt Works – Thursday, 18th June 2015, tour begins 10:45am

We meet at the Lion Salt Works, Northwich, Cheshire CW9 6ES, for a guided tour of this historic open-pan salt making site on the Trent & Mersey Canal (Cost : £8) Tour start time: 10.45am.

Lunch can be taken at “The Salt Barge” opposite, typical pub grub, or bring packed lunch.



During the afternoon, we can walk (or drive) approx 2 miles along the canal to the Anderton Boat Lift, where visitors can take the half hour boat lift from canal to R. Weaver, or simply view this amazing site, one of the wonders of the canal world, from their museum and from the canalside.. (Boat Lift Cost is approx £10)

Maximum number for the tour of the salt works is 20. Now waiting list only for cancellations – we have already achieved our maximum limit.

**Visit to the Lea Wood – Monday, 13th July 2015, tour begins 6:30pm**

Members will recall the NEDIAS talk by James Hawkesley on the Lea Wood Project. Why not join a conducted tour of Lea Wood following the archaeological route through the Derbyshire Wildlife

Trust reserve, see Q-pits, charcoal burning sites, and ancient querns - and follow in Florence Nightingale's footsteps.

The tour of about two miles will be conducted by James Hawkesley who organised the recent Lea Wood Project and which revealed some of the industry of this delightful wood. The woodland flowers should be in full bloom.



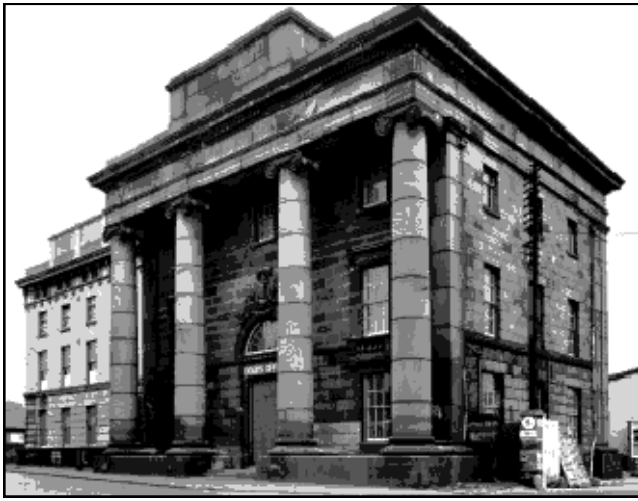
Wear stout footwear – just a couple of miles, but on steep tracks in some areas.

WINGERWORTH STONE: Where was the stone used?**Barbara Gilmore**

Following the recent 4th anniversary of the start of the excavation of Wingerworth Stone Saw Mill, this article covers the years from c1829 to 1920 by when the saw mill had ceased to operate and was sold. It aims to give a flavour of the uses and destinations outside Wingerworth for stone which may have passed through the saw mill.

In the *Derbyshire Courier* in April 1829 Jesse Rutherford, a farmer, quarry owner and stone merchant in Wingerworth, advertised that, in addition to operating Wingerworth and Stone Edge Quarries, he had added “new patent machinery” for sawing and manufacturing marble and stone chimney pieces, monuments etc. The freestone from Bole Hill Quarry was known for its quality and was used for staircases, landings, gravestones and lawn flags. The Stone Edge stone, on the other hand, was more appropriate for all kinds of heavy building work where strength and durability was required e.g. bridges and embankments.

Stone from both quarries was used at locations on the London and Birmingham Railway and the North Midland Railway lines. On 4 February 1835 the *Derby Mercury* reported that Stone Edge stone was being used in the construction of the Primrose Hill Tunnel in North London. According to the Camden Railway Heritage Trust, it was used as a foundation for the tunnel lining of brick. Rutherford was awarded the contract to supply stone for both the exteriors and interiors of buildings for the Railway at its Birmingham terminus (Curzon Street). The *Derby Mercury* on 22 February 1837 noted that the stone for the interiors was



ABOVE: Curzon Street Station, Birmingham
(www.birmingham.org.uk)

Examples of the stone's use in public buildings were in the Free Library in Birmingham (1862) and the Liberal Club (now Town Hall) in Burton on Trent (1882) where it was utilized for the main staircases.

Churches in the Chesterfield area and the Midlands used Wingerworth stone in their construction. St Thomas's in Brampton (1831), Trinity, Chesterfield (1837) and St Bartholomew's, Whittington (1862) included the stone. In the case of St Bartholomew's, Clay Cross, Bole Hill stone was used in 1857 to complete the 70ft spire. In 1856, chapels and other buildings at Spital Cemetery were built using it. Further afield, Holy Trinity, Rugby (1854) and Leamington Congregational Church (1849) also used the stone in their construction while at St

obtained from Bole Hill. In addition, a contract, presumably for Stone Edge stone, obtained for the three-mile Beighton stretch of the North Midland Railway, was announced in the *Derby & Chesterfield Reporter* on 14 December 1837.

Other significant engineering works using Wingerworth stone included the Temple Steamboat Pier and Landing-Stage on the Thames Embankment in London. In November 1866, *The Engineer* mentioned that the stone was used for the steps of the landing stage and landings above the culverts. Later it was used for the main floor, entrance steps and all internal steps and stairs in the engine house of Tees Cottage Pumping Station, Darlington dating from 1901 – 1904.



ABOVE: Liberal Club (now Town Hall) Burton-on-Trent
(www.burton-on-trent.org.uk)



ABOVE: Chesterfield Grammar School
(*The Illustrated London News*, 29 August 1846)

Leonards, Misterton (1864) and All Saints, Shawell (1866) in Leicestershire, it was used for a pavement and steps respectively.

Local schools also contained the stone. Bole Hill stone, in particular, was used for the new Chesterfield Grammar School (1845). Hasland National School (1864) and Dronfield School Board Schools (1872) and a new building at Staveley Grammar School (1901) were also built of Wingerworth stone.

This information is not exhaustive and research is ongoing. However, as the summary illustrates, the stone had a wide range of end uses as well as an impressive geographical spread.

School buildings are a neglected part of our national heritage. Compared with medieval castles and stately homes, they hardly get a mention in English Heritage listings and are generally regarded as utilitarian buildings without any architectural merit. I would contend that even our industrial heritage is better appreciated.

In a local attempt to highlight some of the architectural gems amongst school buildings, I have been doing some research into the work of Derbyshire architect George H. Widdows (1871 - 1946). Widdows was an English architect who pioneered changes to school building design in order to enhance the health of school children. He was also responsible for the design of about 80 schools in Derbyshire, where he became Chief Architect.

I have marshalled the results of my research into a Wikipedia article at http://en.wikipedia.org/wiki/George_H._Widdows. This includes a list of 53 of the schools designed by Widdows during the early part of the twentieth century. Many of these schools are in the area covered by NEDIAS.

George Widdows died in 1946, a year before the passing of the Town and Country Planning Act 1947. This legislation was the foundation of the current heritage protection rules and its associated “listing” of historic buildings by English Heritage. Since 1975, sixteen of Widdows’ schools have been designated as Listed Grade II, indicating that the buildings are nationally important and of special interest. Ilkeston School has received the higher designation of Listed Grade II*, indicating that the building is considered to be a particularly important building of more than special interest.

Although George Widdows has now received the respect he deserves from architecture, education, health and heritage professionals, he perhaps hasn’t received the same level of recognition from the wider public. As an example, in 2011, George Widdows was one of twelve historical figures selected from about 70 public nominations for getting a Derbyshire County Council blue plaque dedicated to them. However, when it came to a public vote, Widdows did not reach the final six chosen.

New Membership Categories for the Arkwright Society

Cromford Mills would not be here today if it wasn’t for the Arkwright Society – the charity that owns and manages this heritage site of world importance. Arkwright’s first mill of 1771, the world’s first successful water powered cotton spinning mill, became the model for other mills across Britain and abroad and earned Arkwright the accolade of Father of the Factory System.

Becoming a member of the Arkwright Society today means that not only will you help the Society to preserve this important heritage and Arkwright’s legacy for future generations, but also make a real difference to the lives of people today.

The Arkwright Society’s key objective is to regenerate the site and its Grade I listed mills at Cromford by creating sustainable new uses that contribute positively to the local environment and economy.

Its preservation work means it is able to provide training opportunities for the unemployed, work experience and volunteering roles for those seeking work but in need of first hand real life experiences in the workplace, together with volunteering roles for other members of the community. There are also imaginative and innovative education programmes for schools and colleges, new job opportunities for our local communities, and business premises for budding new entrepreneurs.

The Arkwright Society relies on fundraising and its own income generation as it continues to maintain, manage and restore Cromford Mills. However, it cannot do this without members’ help. Every penny really does count and becoming a member of the Society will help to ensure that Cromford Mills are as dynamic, innovative and creative today as they were in the 18th century. Why not help keep that spirit alive by joining as a member as subscriptions are vital to progress the regeneration programme at Cromford Mills.

Gold Membership

Exclusive annual Members' Event
Free car parking at Cromford Mills
Personalised tour for up to 4 people with complimentary tea and coffee
Unlimited free entry to the new Gateway (subject to opening)
One free admission to a single Arkwright Society lecture in the series (early booking advised)
Twice yearly 20% discount days in the Shop
Priority booking for selected events
Bi-annual Arkwright Society newsletter
Entry into a bi-annual prize draw

Silver Membership

Exclusive annual Members' Event
Free car parking at Cromford Mills
Priority booking for selected events
Bi-annual Arkwright Society newsletter
One complimentary pot of tea for two in Arkwright's Café or Wheatcroft's Wharf Café
Entry into a bi-annual prize draw

For further details about Arkwright Society membership please contact Catherine Roth on 01629 823256, visit www.cromfordmills.org.uk or email membership@arkwrightsociety.org.uk.

Chairman's Chat

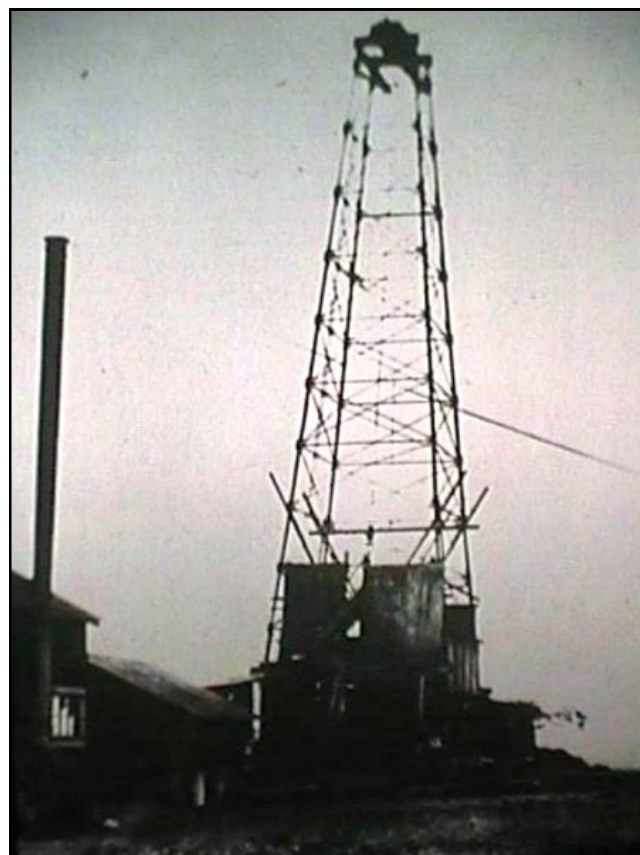
Cliff Lea

100 YEARS ON FROM WW1 we are being reminded of so many important and sombre events. This area played a significant part during the Great War, not least in supplying the vast tonnages of coal mined during the war years in North Derbyshire. Those working within the industry made great sacrifices, and total British coal tonnage during the war years varied between 250 and 300 million tons per year, a tonnage never to be exceeded in later years. No doubt Cliff Williams will be able to tell me the wartime tonnage for the Derbyshire fields.

However, coal wasn't the only fuel of great strategic interest during WW1. Oil was growing in importance, and since the UK had already made the decision to change the Royal Navy's ships from burning coal to oil, this had spurred the government to fund the first systematic search for oil in Britain – and north Derbyshire was to be the main and most important search area. The rest is history – we're approaching the Centenary of sinking Britain's first successful oil well, Hardstoft No 1 at Tibshelf, the UK's first oilfield.

The Centenary is to be marked during two conferences in London. The first in late October this year is to be hosted by the Newcomen Society. The second is a two day conference during March 2016 hosted by the Geological Society and the Petroleum History Institute. This will be followed by a field trip to Derbyshire and Nottinghamshire to view both the Tibshelf well site, and the later Eakring oil field, to examine the history, industrial archaeology and geology of the UK's earliest oil and gas fields.

During the fieldtrip a memorial plaque and information board will be unveiled at the Hardstoft well at Tibshelf, marking its 100th Anniversary – something in which NEDIAS can play a part. This is an important and historical Centenary and I aim to be involved with both conferences and the fieldtrip; I'll keep you posted on how things proceed over the coming months.



http://tibshelfpc.tripod.com/OIL_WELL.JPG

IA News and Notes

Mathew Boulton Memorial

A memorial dedicated to Mathew Boulton was placed next to James Watt's memorial in Westminster Abbey in October last. Wedgwood, a fellow Lunar Society member, described him as "the Most compleat Manufacturer in Metals", and it's appropriate that the memorial is constructed of cast iron.

Hear more about Boulton, Watt, Wedgwood and others at the talk "The Lunar Society" on 9 July at 7pm, given by Rachel West, curator of Soho House Museum, and to be held in the Gothic Warehouse at Cromford Canal Wharf (more info in "What's On" in this Newsletter).

EMIAC 89 – "Old Railways, Coal Mining and Windmills"

Saturday, 10th October 2015 at Swannington

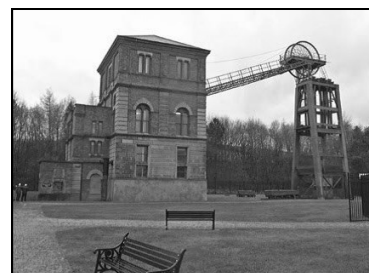
Swannington is a special village with a unique industrial history. Set in the heart of the National Forest, it was once the centre for all the early coal mining activities of North West Leicestershire. The first manorial rights were granted in 1278 to Sir John Talbot, who controlled the 13th century coal workings. In 1520 the manor passed to William Wyggeston, a prominent Leicester business man, who eventually set up various trusts in order to preserve Swannington's village status. Expansion of Swannington began in the early 1700s when new deep coal seams were worked, leading to an influx of miners and their families mainly from Shropshire. Swannington achieved prominence in 1829/32 with the opening of the Leicester & Swannington Railway which was promoted by local mine owner William Stenson and John Ellis of Beaumont Leys, Leicester, in conjunction with George and Robert Stephenson.

This conference looking at the industries and transport of the area will be held at Swannington Village Hall. A morning of talks will be followed by guided a choice of walks during the afternoon visiting sites of interest. Booking details available on NEDIAS website.

Friends of Bestwood Winding House

At the site of Bestwood Colliery in Nottinghamshire you can see the preserved 1876 winding house. This living museum gives a fascinating insight into the local industrial heritage. Visitors can take a trip to the top of the building (hard hats provided).

Further information david.amos99@ntlworld.com



New national exhibition "*Humans in Ancient Britain*" at Creswell Crags

Running until 7 June, a new exhibition at Creswell Crags, organised by London's Natural History Museum, brings together artefacts from sites all over the country and from national collections – in particular it's showing the "*Swanscombe Skull*".

The exhibition features some of the oldest human remains ever found in Britain – the Neanderthal *Swanscombe Skull*, found in Kent is thought to be 400,000 years old. Alongside this there are objects illustrating the rise of Homo Sapiens in Britain including an intricately carved 14,000-year-old harpoon point.

Prof Chris Stringer of the Natural History Museum said: "*There's great symbolism in the regional tour starting at Creswell Crags, where archaeological digs show that it's an area steeped in ancient human activity.*"

This is a great opportunity for us here, and a real coup for Creswell – it's only on now until 7 June, not to be missed.

Minutes of Meetings of the Cromford Canal Company, 1789–1799

The Derbyshire Record Society and the Friends of the Cromford Canal have announced the publication of the complete text of the earliest minute book of the Cromford Canal Company; it's edited by Hugh Potter and Philip Riden and is indexed and printed to the high standards for which the Record Society has been well known for nearly forty years. This new title is an important addition to published sources for the history of both the Derwent valley and the Erewash valley in the early years of the Industrial Revolution.

From Derbyshire Record Society, 9 Owen Falls Avenue, Chesterfield S41 0FR, enclosing a cheque payable to the society. Cost is £30 or discounted at £20 to members of DRS and FCC.

Chesterfield Walking Festival

The walking festival runs from 9 – 17 May, and has a few interesting ambles and rambles. There is a limit on numbers, booking is required through Chesterfield Information Centre, 01246 345777 / 8, from where you can also pick up a booklet describing all the other walks – there are about 60 running throughout the week.

David McPhie (07736 544050 – dmcphiepad@gmail.co.uk) is leading two walks linking “Chesterfield’s Three Railways” on Tuesday 12 and Friday 15 May, short circular three mile walks taking in the town’s three railway stations.

On Wednesday 13 May, there’s a four-mile walk along the “Archaeological Way” starting from Langwith/Whalley Thorns, and on Saturday 16 May you can book for a six-mile walk “Archaeology in the Landscape” in the Creswell and Elmlton areas.

We missed the opportunity to lead a NEDIAS walk this year, but we should make sure we lead one during the walking festival next year.

Pinxton Porcelain and the John King Workshop Museum

Last month we had a talk from Norman Taylor on Pinxton Porcelain. You can see more of the history of the Pinxton area in “The John King Workshop Museum” which is situated on Victoria Road, Pinxton, just three minutes from Junction 28. The museum is housed in the very workshop where John King invented the mine cage safety detaching hook, and contains much of the industrial history of the Pinxton & South Normanton area.

It has many exhibits dedicated not only to the Pinxton Porcelain Factory, but to the Mansfield Pinxton Railway of 1817 - said to be the world’s sixth oldest railway, and to Jedediah Strutt, South Normanton’s most famous son who invented the Derby Rib Stocking Machine, and who went on to partner Richard Arkwright.

Normally the Museum would be open on Sunday afternoons between April-October, 2.00 - 4.30. However, as Norman Taylor advised during his talk, it is temporarily closed at the moment, but expected to re-open again in the near future.

RIGHT: The model of the King Safety Hook in the Museum



Moor Ponds Wood and the Leen Valley at Papplewick

Some years ago, NEDIAS had a great trip and guided tour around the amazing Papplewick Pumping Station.

The Friends of Moor Ponds Wood are working on the remains of Papplewick's industrial past. In the woods can be seen the water courses and stone sluices which controlled the water from the River Leen.

In the late 18th century the Scottish entrepreneur George Robertson built up a system of millponds and channels to store water for, and feed water to his 6 large cotton spinning mills. In the 1780s he installed some of the very first Steam Engines to be used in factories. There is an interesting walk through Moor Pond Wood taking in some of the early industrial activity, and you can download a walk leaflet from the Friends of Moor Pond website, see <http://www.papplewick.org/community/FriendsofMPW.html> , or phone the Friends secretary at 0115 9632057 for more information.

Rolls-Royce during WW2

Cliff Lea

Rolls-Royce have recently signed the largest contract in its long and illustrious 109-year history, a \$9.2 Billion order to supply the power pack, parts and service contract for the Emirates airline. The Trent 900 engines will power 50 enormous Airbus A380 superjumbos which will be entering service from next year. These are enormous aircraft, and many airports will need to be remodelled to cope with them – this rankles with the US where R-R's competition lies, and whose airports such as Houston and Dallas need to be modified to cope.

Rolls-Royce has now won more than a 50% market share in engines for the superjumbo, in addition to being selected by the majority of the planes' customers. Its engines have been powering Emirates aircraft for 20 years.

The announcement of this enormous order is significant not only because it cements the partnership between Emirates and Rolls-Royce, but also because of the significant economic impact that this will have on aviation manufacturing in Derbyshire, in the UK and in Europe.

R-R is now a world beating company, and it has been for the last 30 years since the split from auto manufacture.

In total, the British aerospace industry has been a quietly and efficiently performing major global player for some decades. The airframe and aero-engine business combined makes the UK **the largest player in Europe**. The old British Aerospace which we came to know following amalgamation of a number of companies is now BAE Systems; this together with our plants which are part of Airbus, Bombardier, and a host of Boeing contractors and sub-contractors make for an impressive airframe industry. But the icing on the cake is that we also have the most successful aero-engine manufacturer in the world – Rolls-Royce. And let's face it, the power packs occupy almost 50% of the total market – the airframe is nothing without the aero-engine. Derek Grindell hinted at the amazing extent of the British aero industry when he reported on his visit to Sheffield University's Advanced Manufacturing Research Centre in *NEDIAS Newsletter No 56, November 2014*. This massive research centre is sponsored by over 80 British companies who work in this field.

The latest R-R contract demonstrates perfectly the extent of UK involvement, and the impact of this success in Derbyshire will be far reaching. This is high-value manufacturing, design skills using the country's best engineers, coming through after much sought-after Graduate apprenticeship scheme, cutting edge (sorry about this) machining technology, sheer professionalism in production. R-R has always appreciated that its most important assets are its people, and the skills they bring.

But let's not forget the history of this company, and particularly its wartime successes. It could so easily have been somewhat different if the company had been devastated by bombing during WW2. Thankfully, appreciating that the Derby site was a potential major wartime target, the company at that time took immediate steps to remove its design staff from the city.

When the Second World War was declared in September 1939, most of the Rolls-Royce engineering staff were moved from Derby, leaving only the main manufacturing facility at Nightingale Road. Several satellite

workshops were scattered around the Derbyshire countryside to duplicate essential work, to prevent the disruption of production. Belper, Milford and district were chosen as the evacuation area to accommodate really essential services, and several properties were requisitioned to accommodate them – **Belper was absolutely transformed**. The following sites were used:

Blounts Hosiery, Spencer Road	Aero Service, Print Room and Purchase for Tank Division
Blounts Hosiery Factory, Penn St	Powerplant Design Office
Assembly Rooms	Engine Design Office
Castle Factory, Derwent St	Performance & Stress Office , Rig Design
Unity Mill, Derwent St	Detail Drawing Office
Field Head House, Chesterfield R	Company Secretary's Office
Silkolene Oil Refinery (first floor over garage)	Buying Office
Silkolene Oil Refinery, Brook Cottage	Mr A G Elliott, Chief Engineer (later to become MD)
Swimming Pool	Detail Drawing Office & Rig Design Office



Mosquito with twin Merlin engines

The importance of this evacuation to Belper is underlined by the fact that both R-R's Chief Engineer and Company Secretary were to take up office in Belper, and it's unknown just how many of the staff were accommodated there in total. For some divisions, the evacuation continued until 1950. It is in Belper that modifications for the Merlin engine (of Spitfire and Hurricane fame) were to be drawn up.

However, the Belper drawing offices also worked on designs for the R-R automobiles, now particularly working on military tanks. One re-design for the Merlin engine was destined for use in the Cromwell tank, and older residents of the town might recall tanks lumbering around during the war years. Engine design at the time was led by Charles Jenner, who had joined Rolls-Royce in 1911, and as a member of Sir Henry Royce's personal staff, was responsible for much of the work on the 20 hp engine and its derivatives. The team was led by W J Rowbotham who became MD of the Oil Engine Division, and by Chief Engineer A G Elliott.

A test bed was set up on the Clan Foundry site on the A6 to replicate the engine compartment of the tank, with a wooden cover on which were mounted several glass thermometers and thermo-couples to record hull temperatures.

Whilst we now think of R-R's continuing development of aero-engines, and the latest order from Emirates is a fine example, in earlier decades, the auto activity was probably uppermost in the layman's mind. Interestingly, in the July 1948 edition of *Autocar* magazine, the Editor wrote:

"In the town of Belper, about ten miles from Derby, and situated in a valley by the side of the River Derwent, there is an unassuming factory premises called Clan Foundry, where the Rolls-Royce engineers, designers, testers and research workers revolve continuously in their special orbits.

It is a place where there is no room for doubt. Nothing is taken for granted. Every soul on the ground is intent that nothing should fail on a car once Belper has passed it out as sound. And that tradition, of course, is the reason for Rolls-Royce ... reaching the highest standards in the world, and maintaining their unique reputation through wars and the broken pieces after the wars.

Although tradition may be an abstract quality, the maintaining of a tradition is very definitely a concrete matter. It has to be carried on every day with wide-awake minds directing skilful hands to operate intricate machinery. No stone must be left unturned. Nothing can be left to chance. In Rolls-Royce engineering, belief has no place: only proof is valid."

It is this continuing search for excellence that has ensured that R-R almost 70 years later has remained on top, and still emerges as a world-beating company.

Bibliography:

R J Spencer: "Rolls-Royce at Clan Foundry, Belper".

M Tombs: *Autocar Magazine*, July 1948.



Cromwell tank entering Clan Foundry

And finally ...

.... The first battle tank ... from engineering drawings to final construction in 6 weeks!

Cliff Lea

A few weeks ago, Christine and I spent a great couple of days doing the sights of Lincoln. One of the real gems was our trip around the Museum of Lincolnshire Life. It covers all aspects of the history of the area, but one of the fascinating galleries recounted the industrial and transport history – famous names of Rustons, Hornsby, Marshalls etc. The gallery also houses and tells the story of the history of William Foster & Co Ltd., who were to design and make the world's first battle tanks. Foster's, as builders of agricultural machinery, were to be involved in the production and design of the prototype tanks, which were, in effect, agricultural tractors with armoured bodies.



Inspecting Foster's Mark IV tank, "Flirt", which took part in the Battle of Cambrai.

The "caterpillar" track had already been designed by the Grantham company Richard Hornsby Ltd in the early 1900s but with lack of interest at the time, the patented design was sold off to the Americans in 1911. Another example of a great British invention sold down the line.

Nevertheless, it was to be Foster & Co's Managing Director, William Tritton, who designed the first tanks in Lincoln just after the start of WW1. In 1915, he was designing his first prototype, called "Little Willie".

Talk about efficiency of British companies in those days – the paper design was started on 2 August 1915, construction commenced on 11 August, and the vehicle was completed, ready for trials on 14 September 1915!!

I bet there are similar tales of industrial efficiency to be told about Markham's wartime exploits .

Oh, and finally, why were they called "Tanks"? To hide the fact that these vehicles were weapons for use in battle, in the early days they were described in official documentation as water carriers, tanks for transporting water in Mesopotamia.

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