WARWICKSHIRE Industrial Archaeology Society

WIAS

NEWSLETTER

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FROM THE CHAIRMAN

With the onset of New Year, thoughts inevitably turn to the prospects for meetings, conferences, and visits that may lie ahead in 2011, and I thought it would be appropriate for me to mention the City Safaris run by Heritage of Industry. This is a small, friendly company which has been organising specialist industrial history tours to many parts of the world including the UK, Europe and further afield for more than 21 years. I give the tours a special mention in this Newsletter because one of the City Safaris for 2011 is to the Heart of England, based in Coventry, from 24 to 27 March. Full details are on the website www.heritageofindustry.co.uk.

Heritage of Industry is also the exclusive overseas tour provider for the Association for Industrial Archaeology, and they have organised some magnificent overseas trips. They plan to go to South Australia and Tasmania in November 2011 to coincide with the 16th Engineering Heritage Australia Conference in Hobart, Tasmania.

There are members of WIAS who have been on these domestic and overseas trips, and I am sure they would be happy to pass on their experiences to any interested parties.

WIAS has more modest targets, but plans to try and increase the number of visits it makes to industrial sites and premises, some of these directly linked to our monthly meetings.

All that remains is for me to send best wishes for the New Year to all members and supporters of WIAS. I do hope that the Society can contribute to your enjoyment of industrial archaeology and industrial history during 2011.

Martin Green

Umberslade Hall Drive Bridge

Continuing the series of occasional articles on historic civil engineering works in Warwickshire.

A detail of the main arch of the bridge, note the fine quality of the stonework

Just to the east of Tamworth in Arden the route of the Birmingham & North Warwickshire Railway from Tyseley to Stratford upon Avon crosses over the driveway leading to Umberslade Hall. The bridge which was built here is a superb example of late skew masonry arch bridge construction. The bridge has three spans on an acute skew angle, the arches being semi-elliptical in form and built in finely dressed ashlar sandstone. A small stream flows through the easternmost arch. The first three courses of masonry in the arches are horizontal, above these is a single course of blocks cut twice the normal size and notched to receive the skew blocks which comprise the remainder of the arch. The centre span is 39 ft and the side spans 31 ft on the skew. The bridge dates from about 1908, the railway having opened on 1st July of that year. The Engineer was H. D. Smith, the Resident Engineer for the GWR and the contractor was C. J. Wills & Son. The bridge is built to a much higher standard than most of the other bridges on the line, presumably for the owners of Umberslade Hall.

The Birmingham & North Warwickshire Railway was authorised in 1894. This line was projected privately as a direct route from Birmingham to Stratford upon Avon but did not make any progress until 1900 when the GWR took over the project and built the line in its present form from a junction with the GWR main line at Tyseley direct to a junction with the Great Western Hatton to Stratford line at Bearley. This route, together with a line between Honeybourne and Cheltenham, opened in 1906, gave the Great Western a new direct route to Bristol largely independent of the Midland Railway.

National Grid Reference:
SP 119709

Roger Cragg

PROGRAMME

January 13th 2011
Sarah Chubb, Sandwell Borough Archivist:
Chance Brothers: glassmakers of Smethwick

February 10th 2011
Peter Cross-Rudkin:
The life and works of John Rennie (1761-1821)

March 10th 2011
Anthony Leahy and Martin Green:
Nelsons of Warwick – gelatine and a great deal more

April 14th 2011
Tim Booth:
Warwickshire Mills, news of research and updates on the state of various mills in the county

May 12th 2011
Members Evening:
a chance for several short contributions from members

June 9th 2011
Damien Kimberley, of Coventry Transport Museum:
The Coventry motor-cycle industry

Meeting Reports

October 2010: David Mills
The Walsall Leather Industry

Unfortunately, Mike Glasson the Curator of the Walsall Leather Museum was unable to speak to us but he was represented by the Assistant Curator, David Mills. David has spent 21 years with the Museum and authored many publications about Walsall, its people and its industries.

He began by setting Walsall's industrial history into context. The Walsall Arboretum Lake is the remains of an old limestone mining site and served to illustrate the extent of the local mining industry. A view of the High Street in the 1840s showed what recent rebuilding had destroyed – and the rebuilding leaves much to be desired. However, at that time, Walsall's leather industry was about to take off from an interesting base.

Whilst there is no reference in the Domesday Book to the town, it can trace its history for over 1,000 years and evidence of metal working in Walsall exists from as far back as 13th century. This is not surprising in view of the fact that all the necessary raw materials were available locally: iron ore, limestone, charcoal and later, of course, coal. By the 15th century the lighter metal trades, in particular the making of small items in iron and brass were well established. Some of these manufacturers were already specialising in horse furniture. Three Walsall loriners occur in 1435 and thereafter the trade is often mentioned. A century later, in 1540, the antiquary Leland noted that "Ther be many Smithes and Bytte Makers yn the Town".

A Loriner makes and sells bits, bridles, spurs, stirrups, saddle trees and the minor metal items of a horse's harness. The word Loriner is derived from the Latin lorum, a thong, bridle or reins, and seems to have entered the English language, from the French, as Lorimer. The craft has long since disappeared from the City of London but the Worshipful Company of Loriners is one of the oldest of the City Livery Companies and national centre of the craft today is mainly in and around Walsall.

Before the Industrial Revolution, bits, spurs, stirrups and buckles would have been hand forged and produced in small family workshops, mainly in the back yards of the loriners' dwellings. Walsall products were reaching a wide market by the mid 16th century. By the late 17th century, the saddlers' ironmongery trade was becoming highly specialised and articles could include parts made by several different craftsmen. A variety of patterns were produced, as evidenced by Robert Plot in the 1680s when he noted several designs of spur, five types of snaffle with six varieties of end, six types of bit, four sorts of stirrup, and other ironwork including curbs, chains, bolts, rings, swivels, saddle-bars and plates.

The industry continued to prosper in the eighteenth century as life in Britain became more affluent and improvements in the roads led to an increase in horse-drawn transport. A list of trades in 1770 includes nineteen spur and spur rowel-makers, eleven stirrup-makers, five bit-makers, eighteen snaffle-makers and ten saddlers' ironmongers.

Against this background, together with the railway boom which saw many hundreds of trains daily passing through the town, one Thomas Newton (1810-1889), an established Loriner, saw the opportunity to develop a saddlery business which offered better returns than lorinery. Newton is considered the father of the commercial saddle trade and recruited many skilled leatherworkers to his burgeoning business.

Any survey of Georgian/Victorian England will show that horses were an essential part of Victorian economic and social life. The working horse was still the chief means of power on most farms, the military were in constant action abroad and the local transport of people and goods depended on horsepower. In total there were something like 3.3 million horses in late Victorian Britain. All needed saddlery, collars, harnesses and other equipment, and Walsall could supply everything.

In the last decades of the 19th century the Walsall leather trades entered upon a 'Golden Age' of unprecedented prosperity. Exports boomed and Walsall firms sent their products to most parts of the British Empire. Foreign wars provided a particularly lucrative source of trade

The Walsall manufacturers were swift to adopt new methods and the first sewing machines were in use by the 1860s. However, suspicions about the quality of machine stitched saddlery persists to this day but anecdotally, the difference between the so-called top and the better quality products is said to be none but only dependant on the purchaser's wallet.

The coming of the internal combustion engine began the inevitable decline for Walsall's leather and lorinery industries which had employed some 7,000 people. Albeit in a mass of tiny and often primitive backyard workshops, intermingled with a handful of factories each employing perhaps two or three hundred people. At the turn of the 20th century Walsall was home to nearly a third of Britain's saddlers and harness makers. Some diversification was attempted into such products as dog coats, bags, gloves and belts but the glory days were over by the 1930s.

Turning to the Leather Museum itself, this is housed in the 1891 building of J Withers & Sons, Manufacturers of Horse and Carriage Mountings, Spurs, Bits & Stirrups. Rebuilt, restored and extended, today visitors can discover why Walsall became the British leather goods capital in a working museum which seeks to celebrate that great tradition and to reflect the achievements of the leather craftsmen and women of Walsall.

In atmospheric, recreated workshops skilled leather workers demonstrate the process of hand-crafting leather goods such as wallets and purses. The displays around the museum tell the stories of the Walsall leather trade and feature splendid examples of local craftsmanship past and present, including saddles made for the Royal Family and exciting contemporary designs.

Walsall is still home to over ninety leather companies between them making an astonishing variety of items which are exported to most parts of the world.

November 2010: David Bright & John Brace
Water in Warwick

David Bright opened this members evening with the second instalment of his work on the Mill and Engine House at Warwick Castle. He preceded the detail with an account of how he became an archaeologist; thanks to accompanying an American visitor to the Castle and noticing the water wheel. A subsequent discussion with the then Manager led to David assisting in the development of the story of a neglected aspect of the Castle's history – domestic electricity generation.

A preliminary investigation of the mill area found that whilst the building had already been practically stripped out fortunately the relevant Castle papers were already in the possession of the County Archives.

David's datum for his presentation was the floor of the Engine House and he dealt with those elements that lay beneath it. Maps by Speed (1610) and Fish & Buckman (1711) showed possible water sources or leats for a wheel but the tunnels under the engine house had been bricked up at some time in the past. There was evidence of a turbine pit but no machinery.

A most useful piece of evidence was Lady Louisa Greville's painting of 1763 showing the Castle from across the river with the Mill House and wheel in the foreground. This view is at 90 deg to that of the Canaletto painting of the Castle.

From the archives came evidence of the original turbine. This was supplied by Gilkes of Kendal whose invoice dated 21 November 1894 showed that a Thompson Vortex Turbine was delivered and erected for the sum of £482.18.0. From this and the other residual evidence it had been possible to deduce all the elements of the 13 HP (10Kw) machine arousing the possibility of new power generation as part of the project.

More detailed investigation of the original layout drawings showed the inclusion of an eel trap alongside the water wheel. This aroused the interest of the Castle's present owners, The Tussauds Group, and the involvement of one Bernie Hall, an eel catcher. Any redevelopment would need to include some form of eel rack.

Returning to the technology of the generating plant, the turbine was supplemented by gas engines as the load increased together with a bank of storage batteries. A particular point of interest, and one of the weaknesses of the installation, was the 'chevron' or 'herring-bone' gear wheels incorporated into the drive mechanism from the water wheel. David had found similar mortise and tenon gear wheels at an old mill in Totnes as well as a technical article on moulded helical gears which showed the extraordinarily high foundry standards that were available at the turn of the 19th Century.

In 1983, consulting engineers Mander Raikes & Marshall were commissioned to report on the water flows of the River Avon. Water driven turbines need a steady flow and cannot cope with low summer levels nor winter floods. Furthermore, an inconsistent demand pattern makes planning very difficult. Various alternatives are being examined including the AUR Water Engine, an ingenious device that converts water flow into a reciprocating movement, the Kaplan Turbine and 'pod' turbines.

David left us with the promise of Part Three: 'Gas Engines, Dynamos and a Hole in the Roof' to come.

John Brace then entertained us with 'The Taste of Water' a wry look at the Warwick Syphon, not some receptacle for carbonated water but an integral part of the town's new (1876) water supply system. After reviewing the use of siphons by the Romans to carry water supplies over a hill John offered some contemporary views on the state of Warwick's water.

"So bad has been the state of the town water this week that no one, unless driven by sheer necessity, would use it for domestic purposes."
Warwick Advertiser 17 February 1866

After a tumbler of town water has stood for 30 hours. "It is yellow, muddy and so opaque that I cannot see one object in the room through it, nor can I define the outline of a strong gas light."
Warwick Advertiser 17 February 1866

"Its present condition [That is of the town water] is scandalously filthy -throughout the town it is regarded only suitable for water closets and watering gardens." "Being softer than any other water it is also used for washing but is so often muddy that white things cannot be washed in it." "Wherever possible it is not used for drinking - where so used let it stand till it gets clear or tie a piece of muslin over the tap to catch the creeping things that are sometimes 3/4 inch long." "While water from some pumps was perfectly transparent; that from others contained fibres and floccule; whilst from a few it was so thick and foul that even the town's water was drunk by preference."
E. Pritchard 1876

Pritchard was a consulting engineer with a need to promote his business which, at that time, was to improve the water supply to Warwick. He had even published a book on the subject before completing the project. His difficulty was to connect the source, between Hatton and Haseley, with the town but a hill lay in between. Unfortunately, the hill consisted of sand and gravel and could not be tunnelled or cut. Pritchard, consequently, proposed a siphon and vacuum pump solution and a drawing exists of waterwheel driven air pumps.

A search for precedents of such siphons had found none until a description of a flood control system on the Ouse near to Lynn in Norfolk was unearthed. Contemporary illustrations showed work on a coffer dam behind which was the dam proper. Other pictures of the dam showed details of pipes that were siphons. Could this have been the precedent for Pritchard?

John's pamphlet, *The Warwick Improvement Works* is a fuller account of the efforts to improve Warwick's water supply.

December 2010: Simon Topman MBE
Acme Whistles

A slightly nerve-jangling start (for the Chairman) was resolved around 7.45 when the speaker emerged from the kitchen behind a large box muttering about mis-directions from the car park. Thereafter, Mr Whistle, Simon Topman MBE did not disappoint and gave us a most memorable evening; instructive, informative, hilarious, noisy and above all imbued with the confidence that comes from being in total command of his subject.

Birmingham is many things to industrial archaeologists, but to few can it be 'the whistling capital of the world'. Simon's company, The Acme Whistle Company, is 140 years old and the sole survivor of the seven companies that made, over the years, some 1,000 million whistles between them. Acme's contribution being around half of the total. Interestingly, at the company's premises in Birmingham's Jewellery Quarter, can be found complete records and much of the production tooling for all products made since 1900, a treasure trove for historians and most useful for repeat orders.

In 1870, Joseph Hudson, a farm worker from Matlock moved with 17 members of his extended family into four back-to-backs in Ladywood. Hudson was a resourceful toolmaker and together with his mechanically-minded brothers rented a small workshop for 3/- a week. Amongst other things he made were whistles. This turned out to be the right product at the right time.

The Metropolitan Police force needed to replace the policeman's rattle with something less clumsy but which demanded attention. Tradition has it that Hudson was inspired by the sound made when he accidentally dropped his violin. The breaking strings 'let forth a dying breath' with a jarring discordant note which he set about replicating. The resultant whistle was tested by the police on Clapham Common and found to be audible at a range of over a mile.

The police liked the sound and promised Hudson a large order. He returned to Birmingham a happy man but became worried at hearing nothing for several months. He went back to London to find that the police had mislaid his address and had given an order to another manufacturer to produce whistles to Hudson's pattern. Happily for Hudson he prevailed on both parties to cancel the arrangement and he secured an order for 21,000 whistles. He even obtained an advance of £20 as working capital! Incidentally, the London Bobbies expressed a preference for the old rattle as it was a more effective weapon than the small whistle. However, the rest, as they say, is history.

The new policeman's whistle generated a lot of publicity with questions in Parliament and letters to the Times usually asking whether others could use the new whistle. As the use spread in the UK so there opened up the possibilities of 'Empire Trade'. Within a year Hudson was employing some 50 people in the jewellery quarter. All this was good, but how can a sound be advertised?

A brilliant solution was provided by the Pall Mall Gazette, a newspaper always looking to break new ground opened a special telephone line on 22 March 1884 to allow the public to hear the new police whistle being blown. The 'official whistler' was exhausted after six busy days! Today, prospective purchasers can hear all the different Acme whistles on the company web-site.

Hudson was a prolific inventor and a good business man with a restless spirit that was forever seeking new users for his whistles and new ways to produce a different sound. Sports referees needed something authoritative and the introduction of the pea (never the dried pea of legend but a cork pellet) gave birth to the legendary Acme Thunderer.

Hudson's success allowed him to move to the more salubrious surroundings of the village of Handsworth where he became involved in the development of the Heathfield Estate surrounding Heathfield House, the former home of James Watt.

As the owner of the 53rd motor car registered in Birmingham, Hudson was more aware than most of the many cyclists for whom he devised 'the cyclist's road clearer' which is still made today as a sound effect as is the Acme Song Whistle, fondly remembered by fans of the Clangers.

Simon Topman is a brilliant raconteur with a huge sense of humour. His recollection of an early radio phone-in when he was asked where the peas for the whistles came from – answer - grown by ourselves on 16 acres of pea fields around the factory was typical. When challenged by a listener from Hockley who could not recollect any such fields he responded that thanks to genetic modifications all their requirements could now be grown in a few window boxes.

Other examples included the saga of the Titanic whistles and the missed opportunities to exploit the success of the film wherein a genuine surviving example from the ship was used. Kate Winslett demanded $5 million to use a gold replica at the Oscars ceremony. An order for 7 million whistles for the Iraq army that took 18 months to complete. Incidents at international trade fairs that challenged diplomatic relations – a French competitor took exception to a rendition of the Marseillaise on a duck caller and many more. The Loch Ness Monster caller and the wartime lion roarer to scare Japanese defenders of Pacific Islands were but two others.

Hudson's technical expertise lived on through his sons and subsequent generations of management. Today, Acme has more than 40 active patents in place and exploits a range of modern manufacturing technologies. The company has a policy of introducing two new products a year which, together with a strong brand image, keeps them ahead of the competition.

As well as running Acme, Topman devotes much time to a special school charity which receives all the proceeds from his talks. Members purchases on the night added some £400 to his fee.

Finally, who could ever forget the tale of the vote of thanks at the WI meeting? As the voice at the back of the hall was heard to say: 'whatever shall we put in the minutes?'.

Your reporter knows the feeling well!