

WARWICKSHIRE

Industrial Archaeology Society

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FROM THE CHAIRMAN

The Association for Industrial Archaeology (AIA) is the UK's main national and international body for the research, study and promotion of industrial archaeology. WIAS's contact with the Association comes through the Society's group membership and individual AIA members who also belong to WIAS.

In addition, two conferences are of importance in maintaining these links. The annual conference takes place in September each year, and is well known to members, but also in April each year the AIA Societies Weekend is held in Ironbridge. This gives an opportunity for representatives from local societies to meet together, to share ideas and experiences, and to present material from their local area. This is built around a predetermined theme, and is co-ordinated by Dr. Ray Riley. This year, for example, the theme taken was brewing, and a number of talks were delivered on the subject. These included brewing processes, brewing architecture, brewing in Somerset, vinegar brewing, the refurbishment of

Southwick brewery, medieval malting and brewing, and the IA of consumption: The Pub.

The Brewery History Society also had a strong presence, and the BHS represents another organisation whose work is very much complementary to that of the AIA. Membership details can be gained from Mr. Jeff Sechiari, Manor Side East, Mill Lane, Byfleet, West Byfleet, Surrey KT14 7RS.

The final part of the Conference was made up of members' contributions, and the only disappointment was that Ms Sarka Jirouskova from the Czech Technical University, Prague (who had prepared a Powerpoint presentation on Czech breweries) could not show her material because the AIA had not laid on the necessary equipment - a surprising omission in the modern world. She also highlighted the work of the Research Centre for Industrial Heritage (founded in 2003), and the "Vestiges of Industry" Biennial Conference, with the next one being held in Prague and other industrial areas of the Czech Republic in 2007. Details are available from Pod Juliskou 4, Prague 6, 166 00, Czech Republic for anyone who fancies an overseas trip!

The Ironbridge weekend is designed to be informal and non-threatening, with talks supplemented by a local walk on the Saturday afternoon and a relaxed Dinner on the Saturday evening. John Brace and myself represented WIAS. One interesting feature was the

strength of representation of societies from the south of England - apart from one representative from Manchester, Warwickshire was the farthest north! I have been to several of these conferences and - depending on the theme chosen next year - it is probably time for the Society to make a presentation of some sort to raise our profile and that of IA in Warwickshire. When next year's theme is known, we will inform members, in the hope that this will stimulate potential input.

Martin Green

SOCIETY NEWS

Programme.

The programme through to December 2006, is as follows:

July 13th

AGM and Members' Evening: *Aspects of the Industrial Archaeology of North Warwickshire*

September 14th

Mr. Brian Jones: *The Birmingham Pen Trade*

October 12th

Mr. Mike Beech: *Foxton Locks and the Foxton Inclined Plane*

November 9th

Mr. Anthony Coulls: *Locomotion: NMR at Shildon*

December 14th

Members' Evening: *Brund*

Please note that, as usual, there will be no meeting in August. September will mark the start of the new 2006/2007 season of monthly meetings and subscriptions for the season will be due. Subject to the outcome of the AGM, subscriptions will be £10.00 per person or couple.

NEWSLETTER

Meeting Reports *by Arthur Astrop*

March 2006 Mr. Jeromy Hassell

White and Poppe

In late 1899, Alfred White, son of distinguished Coventry watchmaker Joseph White, and Norwegian-born Peter Poppe went into partnership and founded the small firm of White & Poppe. They opened a very modest workshop in Drake Street, off Lockhurst Lane, Coventry, with two employees and the intention of developing a single-cylinder engine for motor cycles. Barely had they started, however, than the demand for munitions in the Boer War secured them a substantial contract for making fuse bodies.

W & P were soon employing some 60 girls and 30 men. Fuse production was dominant, but the Company also developed machine tools for their own use and for sale. With the end of the Boer war orders for fuses ceased, so W & P returned to producing engines. Using clever design and interchangeability, W & P produced a range of one, two, three, four- and six-cylinder engines, also a novel design of carburettor of which 10,000 had been sold by 1910. Eventually, no fewer than 48 vehicle manufacturers were using White & Poppe engines, and in 1912 two of the firm's large 108-hp engines were powering the British army's Delta airship.

1912 was also the year in which the Company expanded into a new factory, fronting on to Lockhurst Lane. Here there were a drawing office, machine shops, engine erecting bays and engine and carburettor testing facilities. When William Morris sought an engine for his first car, the world-famous Bullnose Morris, he settled on White & Poppe. The car made its debut in March 1913, priced £175, and W & P received £50 for each engine. The contract with William Morris was clearly a *coup* for W & P, but the close association with him proved to be double-edged.

When a larger version of the car was proposed, William Morris went to the USA ostensibly 'to study mass production techniques', and he persuaded W & P to allow their chief designer (Hans Landstad) to accompany him. But Morris then placed orders for engines with an American supplier, and Landstad never returned to W & P. With the Great War imminent, W & P were soon back into munitions work and a new and much larger factory was built in Holbrook Lane specifically for that purpose. In 1914, W & P's workforce was 350. By 1918 that figure had risen to a peak of 12,000. The factory site on Holbrook Lane eventually extended to 141 acres, included hostels for 3,000 single women and 400 single men, together with 450 'cottages' for married

workers. On the site there were also 300 allotments, a 350-seat cinema, sports and social clubs, a full-size swimming pool and three canteens.

With the end of WW1, White & Poppe faced formidable problems. Munitions work ceased abruptly, they had lost the contract for Morris engines, and they were uncertain of their future. Should they produce their own car? Go into mass production? Buy the Holbrook Lane site? Or should they play safe by taking an offer for the Company which had already been made by Dennis Brothers of Guildford? That offer was accepted in November 1919, with Alfred White and Peter Poppe joining the Dennis board, but their firm's connection with Coventry gradually declined from then on. Today there is no evidence that it ever existed.

Jeromy Hassell is a descendant of Alfred White, has published a book on W & P, and his presentation was infused both with an intimate knowledge of his subject and an enthusiasm which made for a memorable evening.

Frank Whittle

Sixty-nine years ago, on April 12th 1937, an event occurred in Warwickshire that eventually was to have far reaching consequences for most of the developed world. The event took place without fanfare, in an atmosphere shrouded in secrecy and was witnessed by a mere handful of somewhat intrepid observers.

On that day, on a gallery of the B. T. H. Turbine Factory, at Rugby, Flight Lieutenant Frank Whittle operated for the first time his own creation: the world's first operational gas turbine turbojet. The engine, called WU (for Whittle Unit), was mounted on a rudimentary test-bed, with the jet pipe projecting through a window, from which a suitable pane of glass had been removed! Thick metal plates surrounded the test-bed to contain flying debris in the event of an engine explosion. Under these severely cash-strapped conditions Whittle brought his new engine to life.

Virtually uncontrollable over-speeding of the turbine and large patches of red heat appearing on the combustion chamber casing attended the early test runs of the engine. Flames leapt from the jet efflux and fuel vapour from leaking joints was ignited when it came into contact with the very hot combustion chamber casing. This inferno did little

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The First Specialised Engine Building Works

April 2006 Mr. George Demidowicz

The Soho Foundry

Between 1775, when James Watt entered into partnership with Matthew Boulton, and 1795, some 300 steam engines had been built in Boulton's Soho Manufactory in Handsworth, then on the edge of Birmingham. But by 1795 the partners recognised that Watt's patent had only five more years to run, royalties would then vanish, and the field would be open to competitors. Moreover, the Soho Manufactory, built in 1762, had been designed to make a variety of small products including jewellery, buckles, buttons, silverware etc. Not the ideal plant in which to build massive steam engines.

The partners therefore decided to build a special factory, the Soho Foundry, just a few miles from the Manufactory. This brand new plant, opened in Smethwick (now Sandwell) in 1796, was the world's first specialised engine-building facility and can justly claim historic significance as a key element in the history of the industrial revolution. In 1895, when Soho Foundry was sold to W & T Avery, it had a covered area of 220,000 sq ft and a multiplicity of buildings. Today, after a perilous period in which wholesale redevelopment of the site was threatened, it is now largely Grade II listed and much of the area has been identified as an ancient monument.

George Demidowicz has devoted many years to exhaustive investigation of the history of Soho Foundry, and is a recognized authority on the subject. He illustrated his talk with slides of many plans representing different stages in the development of the works, most of which came from the Boulton & Watt Archives now in the custody of the City of Birmingham. That archive also contains large numbers of unique photographs of the exteriors and interiors of the workshops when they were in their heyday, some of which Mr Demidowicz showed our meeting. An important feature of the Foundry was that it should be able to produce virtually all the components required to make Watt engines on site, including casting and machining the huge cylinders and flywheels.

Prominent among machine tools used in Soho Foundry were a massive cylinder boring machine and a very large-capacity lathe for turning flywheels. There were also large planing, slotting and drilling machines, and initially such equipment was designed and built by B & W for its own use. It was only in later years that machines from other makers were installed. Soho Foundry was also the first factory in Britain to be lit by gas. The system was developed by William Murdock, a brilliant Scottish engineer who

joined B & W in 1777. A row of cottages, now preserved buildings, stands in the main drive of the Foundry, and one was occupied by Murdock from 1817 onwards.

Control of the business eventually passed to the sons of Boulton and Watt, who enlarged it and increased its prosperity and importance as a centre of manufacturing excellence. Important marine engineering work carried out by B & W included the engines for Brunel's ship *SS Great Eastern*.

The remains of the Foundry came perilously close to being flattened in the late 1990s and were saved only by public protest and the unstinting efforts of those such as George Demidowicz. However, many of the original buildings which survive are in a parlous condition, and some have actually been classified as 'unsafe'. Highly specialised care and attention will be needed to preserve them for future generations.

Frank Whittle continued:

for Whittle's nerves and those of his trusted assistants. The few B. T. H. observers who witnessed these early test runs usually disappeared very rapidly, some seeking the relative safety of large cast-iron steam turbine exhaust casings!

The development of the gas turbine turbojet was a long and lonely road for Whittle. Official indifference, insufficient finance, the machinations of some of Britain's technical élite, all conspired to deny for this country the considerable technical lead conferred on it by Whittle. Germany was not nearly so hampered and thus was able to claim the prize for producing the world's first turbojet powered aeroplane. At the end of the Second World War Germany's technical lead in jet aircraft was overwhelming.

Nevertheless, we must not forget that it was a Warwickshire man, working against all kinds of opposition that started the world's first successful gas-turbine turbojet engine, in Warwickshire; an event that was to change our world.

John Willock

Apologies

Work commitments and a delay in the supply of copy because of holidays, have conspired to slightly delay production of this edition of the Newsletter. Hence it was not available at the June meeting as would be usual, so a post distribution has been undertaken to all members to ensure receipt.

Industrial Archaeology in New Zealand

May 2006 Mr. Martin Green

Aspects of the Industrial Archaeology of New Zealand

Popular visions of New Zealand as an agricultural country belie the diversity of industrial activity that has taken place in this small, isolated country, and our Chairman Martin Green revealed some of the remaining sites in his talk at the May Meeting.

New Zealand's first industries were associated with the exploitation of the country's natural resources. The sealing and whaling gangs that visited from Australia, America and Britain led to few permanent settlements, and it was the timber trade - particularly kauri timber in North Island - that gave the impetus to economic activity. Expanding demand for timber in the frontier economy took workers deeper into the forest and placed pressure on the methods of transportation to the coast. Bullock teams, log chutes, and driving dams were just a few of the methods utilised, before tramways and their locomotives became a familiar sight in the forests.

The kauri tree also produced a resin - kauri gum - that would ooze from the tree, solidify, and periodically fall into the undergrowth. The collection of kauri gum became commercially viable as new uses were developed, particularly in high grade varnish, and later in linoleum. Photographs of the gum-diggers and their working and living conditions emphasised the arduous nature of life on the gum-fields.

Fortunately, although only 0.3% of the forest remains, a strong conservation movement now exists for the kauri, and a Museum of the Kauri industry can be visited at Matakoho.

Gold was discovered at Gabriel's Gully in Otago in 1861 and brought a surge of prospectors. Familiar tales of a 'get-rich-quick' mentality were complemented by details of the role of the Chinese community in the Otago goldrush and the attempts to preserve their special heritage. Subsequent rushes took place on the West Coast of South Island - with many relics preserved as part of 'Shantytown' - and

on the Coromandel peninsular in North Island, with its water-powered stamping batteries.

The discovery of coal soon meant that Brunner was a hive of activity and the west coast coal communities established - and have retained - a special place in NZ industrial and labour history. One particularly impressive engineering structure was the Denniston Incline, bringing the thrills of the Big Dipper to the transport of coal!

An isolated copper mine on Kawau Island, and the Dominion Salt Works at Lake Grassmere, both provided powerful images of the way New Zealanders had sought to make the most of natural resources available. However, it was in the world of agricultural engineering that the resourcefulness and ingenuity of new arrivals found a real champion. Ernest Hayes emigrated from Warwickshire to assist with mill engineering at Rough Ridge in Otago in 1882. He discovered that agricultural implements were scarce, and began designing and manufacturing implements himself. He developed a vast range of items - from windmills to portable rabbit smokers - and his parallel wire strainer for fences became world-famous. The works are now preserved by the NZ Historic Places Trust.

The design and decoration of the white stone buildings of Oamaru indicate a thriving industrial past. This was a crucial area for the expansion of agriculture, and on the nearby Totara Estate the buildings used for the slaughter and storage of the first frozen meat to leave NZ have been preserved.

The final part of the lecture took a rapid look around some of the other sites that the Chairman had visited - the site of the first production of Portland Cement in NZ at Warkworth; the magnificent Dunedin railway station and the associated Taieri Gorge railway; the gasworks museum at Dunedin where virtually all the equipment originated in the UK; the baths at Rotorua; the steam ship T. S. S. Earnslaw on Lake Wakatipu; and the Art Deco architecture of Napier.

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