

WARWICKSHIRE

WIAS

Industrial Archaeology Society

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FROM THE CHAIRMAN

September marks the start of a new season for WIAS, and the forthcoming season is indeed a significant one. It marks 35 years since WIAS was born at a small gathering at St. John's Museum, Warwick, with a lecture from Barrie Trinder entitled 'Our Industrial Heritage', with a suggestion that it would be "Followed by a discussion on the possibility of forming a Mid-Warwickshire Industrial Archaeology Group".

The meeting was hosted by Toby Cave who went on to become our first Chairman, whilst I became the first Secretary. So 35 years of WIAS has meant 35 years of responsibility for me and this has not been without its strains and stresses. On balance, of course, it has given me enormous pleasure and acted as a stimulus to explore and record our industrial heritage, particularly in Warwickshire, Coventry and Solihull, and to be able to pass on my enthusiasm (hopefully) to others.

Where the next phase will take us is one unknown that faces many societies such as our own, with retirement from posts of responsibility increasingly evident. One of the strengths of WIAS is the successful functioning of our committee, and I am pleased to report that all have agreed to serve for another year. This does not mean, of course, that we would not welcome younger blood into positions of responsibility!

Following last year's successful pattern, we have just embarked on a new season of meetings with a continuation of the 7-3 split between 7 hybrid meetings (in-person and simultaneous Zoom) in autumn, spring and summer and

Zoom-only meetings in the 3 winter months of December, January and February. The major change that has taken place has been to move our meetings to the Warwick Prep School Hall, accessed from the Banbury Road out of Warwick.

This move was occasioned by safeguarding issues and the decision of the School to make the Junior School playground a no-go area for any non-members of the school at any time of the day. This meant that we had lost our (privileged) parking space, and that we would have to compete with Sports Centre users for available parking spaces. The school offered us the Warwick Prep School Hall as an alternative and we decided to take this option for the coming season, and to review the situation in June 2024.

These details were announced at the AGM, which included the Treasurer's Report from Victor Lobb indicating a healthy financial position for the Society. Victor's careful husbandry and meticulous accounting are greatly appreciated, as is his role with David Daniel in putting together a successful hybrid package. David – a recent recruit to the Committee – seems unflappable whatever may be happening to our internet connections.

The programme for the new season is set out on this page and you will note that the June 2024 date is left empty for 'A Celebratory Event for 35 Years of WIAS'. We are not really sure what form this should take – An eminent speaker from the world of IA? 35 memorable moments for WIAS? A publication of some kind – probably online? Members' reflections? At least, a celebratory cake and glass of fizz seem in order!

PROGRAMME

14 September 2023 (live/hybrid)
AGM and Members' 'Twenty's Plenty'. An opportunity for members to deliver short talks on topics of particular interest to them, lasting up to 20 minutes.

12 October (live/hybrid): Victor Riley
The Riley Story.

9 November (live/hybrid): Chris Clack
Harry Ferguson: Man of Vision.

14 December (zoom): Alan Hill
Milestones in Marine Steam Technology.

11 January 2024 (zoom): Elizabeth Thomson
Brickmaking and the Development of Canals in the Black Country.

8 February (zoom): David Skillen
Starfish, Stripes, Decoys and Dummies. Camouflage and Deception at War.

14 March (live/hybrid): Terry Merrygold
Sir William Lyons: The Great Opportunist.

11 April (live/hybrid): Mark Davies
The Work of the Chance Heritage Trust.

9 May (live/hybrid): David Daniel
Guns and Cars - BSA's Motoring History.

13 June (live/hybrid):
Celebratory Event for 35 Years of WIAS.

All meetings are on the second Thursday of the month and start at 7.30 pm.

Live/hybrid meetings are held in the

Warwick Prep School Hall CV34 6PL, with a simultaneous delivery online via zoom.

Details of the Zoom and hybrid options are available on our website.

www.warwickshireias.org

NEWSLETTER

Meeting Reports

April 2023: Peter Hoath

A View of Computing History - 22,000 years in 60 Minutes.

You could tell by the title that this was going to be a challenge and it was. However Peter's long experience in the computing industry and his current volunteering at the National Museum of Computing at Bletchley Park had clearly nourished an enthusiasm for the subject which made his descriptions and explanations accessible to his audience even if some of those present were occasionally just a little lost.

His first slide showed the 'Ishango Bone' from 20,000 BCE with marks on it which may have been used for computing (that word) a lunar calendar. The next slide showed a Sumerian abacus from 2700 BCE and then a Chinese 'Suanpan' from about 190 AD. All three of these enabled calculations to be performed by mechanical means. In the right hands their modern versions can compete with calculators even today.

Gutenberg's development of printing with moveable type in 1439 was a huge step towards disseminating knowledge and the seventeenth century brought logarithms, slide rules, binary notation and the work of Napier, Pascal and Leibnitz, all clearing the way for the mechanical devices of the nineteenth century.

Brief mention of the Jacquard loom, a mechanical device to pre-programme looms for complicated patterns, led on to Charles Babbage and his 1834 Difference Engine, Linda Lovelace and the beginnings of programming and the never actually built Analytical Engine. The holy grail of all this was the production of more accurate logarithmic and astronomical tables.

The notion of Boolean logic led to the Punch Card Tabulator of 1890 and the ability to analyse great quantities of data. The invention of the thermionic valve in 1904 by Sir John Fleming was a major step which would lead to the development of the first generation of modern computers including the massive machines that helped to break the World War II codes.

The story of how this was done formed the second part of Peter Hoath's talk. With the end of the war in 1945 researchers at the University of Pennsylvania built ENIAC, the Electronic Numerical Integrator and Calculator followed by UNIVAC, the first commercial computer for business and government applications. In 1949 at Cambridge a team built EDSAC, the Electronic Delay Storage Automatic Calculator, followed in 1958 by EDSAC 2. The drawback of these early machines was the heat produced by the myriad of valves required enormous cooling facilities.

Peter emphasised the part that women had played in the development of computers and particularly in programming. Dina St Johnston who in 1958 set up her own company to provide services to such as nuclear power stations. In the United States Grace Hopper designed programming languages including the early form of COBOL.

Cooling was not necessary with the second generation of computers (1959-1965) which followed the introduction of transistors or the third generation (1966-1970) based on the monolithic or integrated chip which compressed numerous electronic circuits on to a tiny piece of semiconductor material.

A notable character from this era is Dame Stephanie Shirley who early on experienced sex discrimination when her job application letters were ignored. Signing herself as Steve solved this issue but memories of the attitude caused her to restrict the employees of her first company - Freelance Programmers - to women. In due course F International became Xansa, employing 8500, by the time she handed over the management in 1987.

The fourth generation of computers which covers those from 1971 to today could be summarized as computers on a chip. From 1975 self-contained home computers were produced by numerous companies, they were 'cheap and cheerful' but largely self-contained and could not be made to talk to each other - and there were too many to choose from.

Important characters from this era include Doug Engelbart who developed the computer mouse, Alan Kay a pioneer in Graphic User Interface, Steve Jobs with Apple and Bill Gates with Microsoft and Windows.

Possibly more important than any of these was Tim Berners-Lee, although his 1989 idea of the World Wide Web could not operate without the others. Now we have more computing power in a mobile phone than in several tons of the early machines.

Peter then turned to the story of Bletchley Park and World War II Codebreaking. The principles of the Enigma machine itself were no secret, the Polish authorities had one that they offered to the French and British in 1939. The Poles had managed to crack the settings of the early Enigmas with the help of the Bomba, a device they had developed. It relied on the Germans duplicating the initial words of a message. However, the Germans further developed the Enigma adding more complications as well as realising the weakness in the way messages began.

At Bletchley Alan Turing and Gordon Welchman constructed the Bombe, an electro-mechanical device which imitated the working of the Enigma machine. Breaking the code relied on the assumption that a message might contain a 'crib', a certain word or phrase eg. a weather message and also knew that the Enigma would never encrypt a letter with the same letter. The Germans changed the settings every midnight and they used 60 different networks, the most important for the British was the U-Boat network. On good days Bletchley had cracked the code by breakfast. Admiral Donitz realised the situation and added a fourth wheel to the Enigma and it took Bletchley from February to October 1942 to crack this.

For the highest levels of secrecy, the Germans used a very different machine, the Lorenz. This machine, based on the teleprinter with its binary code system, had 10 encoding wheels which gave it 10,170 different settings, in itself unbreakable but still subject to human failings. Although he had never seen the machine, Bill Tutte, who Peter believed should be on at least the same pedestal as Alan Turing, deduced the configuration of the coding wheels, a magnificent achievement. This, coupled with a careless German operator who transmitted the same message twice using the same settings but with slight variations in the text, enabled the codebreakers to read the Lorenz messages. In this task they were assisted by a series of machines which culminated in the development of Colossus, perhaps the first truly programmable computer, which was built at the GPO research premises at Dollis Hill by Tommy Flowers. Colossus 1 was operating by February 1944.

Most of the Colossus machines were destroyed after 1945 but a replica has been built at the Bletchley Park Museum and can be seen when we go there on May 16.

Peter's audience went home fascinated, if somewhat mizzled, by the wonders of human intelligence.

May 2023: Max Hunt*Herbert Austin and the Longbridge Story.*

Slight technical problems delayed the start of a successful hybrid meeting which gave Max Hunt time to tell us about another of his interests – the Shelsley Water Mill. When the famous Shelsley Walsh hill-climb course was taken on by the Midland Automobile Club they almost inadvertently acquired the derelict water mill near the start of the course. In 2006 a small group of mostly pensionable members took on the task of restoring the mill which had been abandoned in the 1920s and by 2010 after Herculean efforts they had the mill working again. It is now the only working water mill in Worcestershire.

Technical problems solved; Max began to describe the life of Herbert Austin. Born in 1866, the son of a Buckinghamshire tenant farmer who moved with his family to be bailiff at Wentworth Woodhouse in Yorkshire. His son did not particularly shine at Rotherham Grammar School, except in technical drawing, and on leaving school at 16 he joined a firm of architects. This did not suit him as he wanted to work on things that moved, preferably with wheels and gears. An apprenticeship with the Great Northern Railway pleased him better. After two years, however, his uncle, Walter Simpson, visiting them from Australia, recognizing young Herbert's talents encouraged him to emigrate and work for his firm in Melbourne. In 1887, he joined the Wolseley Sheep Shearing Company as General Manager with a five year contract at a salary of £500 and a share of the profits. He personally patented several improvements to the sheep shearing equipment after a spell on a sheep station to study the tools in action.

Company reorganisation caused him to return to England in 1893 with his new wife, Helen. The Wolseley Company set up a factory in Erdington with Austin in charge to manufacture the shearing equipment but, as this was highly seasonal, Austin decided to expand into motor car manufacture. In his own time, he built a three wheeler with tiller steering and the engine under the seat. This was not particularly successful but his next effort was a 6hp four wheel vehicle which took part in a 1000 mile trial.

Nevertheless, the Wolseley company could see no future in car manufacture and Vickers bought the car interest, taking Austin with it. In 1905 Austin decided to set out on his own and bought a redundant factory at Longbridge advertising it as 'Where the Austin Cars will be built' and he began to take orders. Soon, with 270 employees, the business was manufacturing a range of 15 to 20 hp vehicles, mostly in a classic limousine style.

In 1908, Herbert Austin bought a 22 acre property, Lickey Grange, a house appropriate to a rising midland manufacturer. Indeed the 1912 census shows Herbert with his wife Helen, a daughter aged 20 and another aged 8, a son 17, a governess and five servants. Sadly, their son was killed in 1917.

When war broke out the company grew dramatically producing some 2,000 aircraft, 2,000 lorries and vast

quantities of shells and other munitions. Their workforce increased from 2,500 to 20,000 including 3,000 Belgian refugees. To help with accommodation Austin imported 200 cedar bungalows from Canada which were erected on company land. These still exist and now command a substantial price.

In 1919 The company designed the Austin Whippet. This biplane was intended for amateur fliers and had wings which folded back so that the plane could be fitted into a shed just 8ft high and 8 ft wide. Priced at £450 it did not sell and only five were built.

There was little market for the large cars that Austin had built before 1914 and with the general depression setting in after 1919 the company was in trouble and went into receivership in 1921. However, reorganisation with a new Finance Director, a new Production Engineer and Herbert Austin as Chairman, allowed the company to continue. Believing there was a market for a really small affordable car, Austin privately employed a young draughtsman, Stanley Howard Edge, to design the Austin Seven. It went on the market in the summer of 1922 at £150 and was an immediate success. For the next seventeen years it was made in numerous forms, saloon, tourer and sports. In parallel there were larger models, the Austin 12, the Austin 20 and others. The advertisements declared, 'You buy a car but you invest in an Austin'.

Herbert Austin had been knighted in 1917 in recognition of his work in WWI and in 1936 he was created Baron Austin of Longbridge for his charity work, particularly for his support of cancer research.

With the outbreak of war in 1939 The Austin Company turned to the production of aircraft, mainly using the giant new building at Longbridge constructed under the shadow factory scheme. As the ground level of this building was below the level of the take-off ground, an ingenious sloping lift was created to raise the completed aircraft some 30 feet to enable them to take off. In addition to huge quantities of all kinds of munitions Longbridge built 1,200 Fairey Battle aircraft, 300 Hurricanes, 330 Lancasters and 600 Stirlings as well as Beaufighters and fuselages for Horsa gliders. The heavy bombers had to be taken to Elmdon by road, through Birmingham, for final assembly.

The works escaped the worst of the German blitz with only one incident when six workers were killed. Austin made a point of attending all the funerals. He died in May 1941 and his wife died a year later. They were both buried in an unassuming grave at Lickey.

Max Hunt then briefly described the adventures of Longbridge works in post war years as it went through various hands, starting with Leonard Lord, then the company's amalgamation with Morris to form British Leyland and the production of the iconic 'mini'.

Altogether an impressive talk with excellent slides from Max, who clearly knew the story and kept us all engaged.

June 2023: Martin Green

N C Joseph Ltd., The Aluminium Works, SONA and Stratford Produce Cannery.

For our June meeting our chairman Martin Green treated us to a fascinating exposition of the achievements of the Joseph family in developing a very successful business in Stratford, manufacturing all kinds of domestic aluminium ware and then diversifying into canning fruit and vegetables. The talk covered largely the period from 1920 to 1970.

But first we had an outline of some family history with Hyam Joseph (1783-1878) and his wife Hannah (1788-1879) emigrating in the early 19th. century from Amsterdam to Sunderland where they ran a jewellers business for many years. Their son Joseph decided to move to Birmingham and their son Claude Barnett established himself as a picture dealer, possibly working with aluminium as well as wooden frames.) With his wife Flora they had four sons and three daughters – all four sons would be involved in the aluminium business.

In 1911 the family set up an aluminium holloware business in Moseley Road, naming the factory The St Eloi Works, St Eloi being the patron saint of metalworkers. This successfully contributed to military supplies for the First World War but, restrained by the site, the family decided to move. They picked on a property on the Birmingham Road on the edge of Stratford-on-Avon and applied for planning permission. This horrified much of the town and the local council and there was much vocal protest – with slogans such as ‘Vandalism in Arden’. However, supporters including Nigel Playfair pointed out that there was already industry close by, including the brewery and the gas works, and that Stratford needed employment opportunities.

Planning permission was granted in October 1919 and the factory building was soon in place. The company made a point of maintaining an immaculate floral display between the building itself and the road. The two brothers Barnett and Norman were the driving force behind this move. Norman had been badly wounded in 1915 while a platoon commander with the North Staffs Regiment, and he maintained strong links with the regiment alongside his business interests.

A limited company was formed in 1924 and a new company ‘The Aluminium Gold Company’ created in 1929. The Josephs would make anything and everything in aluminium from kitchen essentials to commemorative boxes for biscuit manufacturers. We were shown a particularly fine one made for J S Fry and Sons now in the V and A Museum. There were aluminium replicas of the FA Cup and a mysterious aluminium banana. The factory was a fine example of a modern manufactory with appreciative comments noting the absence of overhead shafting and lethal belt drives - the shafting was under the floor and the belting driving the spinning machines and much safer. Spinning was the principal process but stamping, plating and polishing were also needed.

The 1930s was a period of growth and innovation with the creation of the SonA brand. The output was prodigious, one order was for 40,000 saucepans and a Sub Post Office was set up on the site to handle the 5,000 parcels per day that were dispatched. By 1931 they were making half a million pans a month. In 1932 they made the cooking utensils for the unsuccessful Everest Expedition and in 1935 they gave aluminium Jubilee cups to all the children of the town.

Early in the 1930s, while passing a rubbish tip, the two brothers are reputed to have noticed that there was very little, if any, aluminium but large quantities of used tin cans. Realising the business opportunity, the family set up a new company, Stratford Produce Cannery Ltd, and built a new factory next door to the aluminium works. Despite the lack of experience, this business, which entailed the whole sequence of receiving the produce, sorting, checking, preparing, filling the cans, sealing, cooking, cooling, labelling and packing, was soon well established. Interestingly, while most of the operations in the aluminium works were performed by men the canning provided employment for women.

Output grew rapidly and they were soon advertising for more fruit and vegetables from the local farms, as well as for more workers. One example is that between 1935 and 1936 the firm produced one and a half million tins of peas for Marks and Spencers. The cans were supplied by market-leader the Metal Box Company.

War work was the focus from 1939 to 1945 with immense quantities of aluminium mess tins and parts for aeroplanes among the firm’s output. More women took over the men’s work in the aluminium factory.

The Joseph business was very much a family affair. Although Barnett and Norman were the main players, their two brothers Walter and Joseph were also involved, and Barnett’s two sons David and Alan were to eventually take over the business, which also employed their cousin Claude.

Post war there were new opportunities, such as the production of aluminium milk churns and the manufacture of aluminium wardrobes for some of the prefab houses. In 1948 the firm was exporting the shells for coffee percolators to the General Electric company in the US and Canada and GEC took a share in the business, establishing an Affiliate arrangement in 1965. At that time, the work was 44% industrial pressing and 57% holloware.

In 1962 the Distillers Company bought the canning business and renamed it Stratford-on-Avon Cannery, and a major expansion occurred in 1970 with a new factory on Timothy’s Bridge Road. The site was eventually closed in 2001. The aluminium business was fully acquired by GEC in 1979, but sold by them in 1983. It then passed through several changes of ownership before production ceased in 2006 and the site has now been cleared and replaced with housing.

Martin emphasised how the success of the firm could be attributed to four things: first an emphasis on quality, second an innovative approach and a willingness to seize opportunities when they arose, third motivated owners and lastly good employee relations. At its peak there were 500 working in the aluminium factory and 200 in the cannery.

Four members of the Joseph family were present at the talk and this was much appreciated; they had brought with them several examples of the firm’s products and a most interesting ledger with examples of designs and costings.

This account of a notable Warwickshire firm had clearly been thoroughly researched and was a very positive addition to local industrial history. Congratulations are due to Martin for a most enlightening evening.