J H Shand Ltd

Summary

From 1940 until the late 1980s J H Shand Ltd was an important employer in Axminster, and responsible for turning large numbers of technically-minded school-leavers from East Devon, West Dorset and South Somerset into highly-skilled engineers and technicians. For most of this time there were two main threads to the company's business: the design and manufacture or steel type (for use in office equipment and industrial marking systems); and the design, engineering and manufacture of tools and equipment for use by manufacturing companies (including, but not limited to, the makers of combustion engines).

The company re-located from London to Axminster early in World War II, initially occupying part of the new Axminster Carpets Ltd factory, but then building their own premises on West Street. At this stage the company was still owned and run by members of the Shand family.

In the early 1960s the company was bought by the Staveley Group, but this proved to be a mixed blessing. Membership of a conglomerate can be helpful in exposing a specialist company to additional sources of finance, management skills and sales opportunities, but when the wider Group experiences difficulties, all of its component parts tend to suffer. By the mid-1980s Staveley was struggling, and J H Shand Ltd did not feature prominently in their plans for the future, leading to the break-up and closure of the company.

The founding family

James Henry Shand was the son and grandson of two south London engineers, both of whom worked at the Woolwich arsenal. James Shand (his grandfather) had been an engineering tuner, while Robert Forest Shand (his father) was an engine fitter. James Henry was born in 1877, two years after his elder brother, who was also called Robert Forest Shand.

The two brothers married two sisters, from the Holtermann family, which had moved from Germany to south London some years before. James Henry had two sons of his own: James Roy Forest (born in 1901) and Leslie William (a decade later). It was these four: James Henry, his brother and his two sons, who were directly involved in the running of J H Shand Ltd.

By the early years of the 20th century both James Henry and his brother Robert Forest were living in Lewisham with their families. At the time of the 1901 census James Henry was recorded as being a 'steel letter cutter', whereas in 1911 his brother Robert Forest was a teacher rather than a practising engineer.

The origins of the company

We know from the company's own publicity materials, produced in the mid-20th century, that the family firm had been established in 1895, but exactly what it as called at that time is not known.

However, we also know that in 1917 Robert Forest and James Henry Shand became co-owners of premises at St Peter's Court, Lee Green, London SE12[1], described as 'motor engineers'. St Peter's Court is just off Eltham Road (now the A20), at the junction with Lee Road and Burnt Ash Road. These premises were not particularly spacious, but they allowed the brothers to pursue their interests in the manufacture of steel type, and the design of industrial machinery (i.e. what became known as machine tools).

The fact that the company was later known as J H Shand Ltd strongly suggests that James Henry was the prime mover, and in business on his own account from 1895, and that Robert Forest decided to join him in or before 1917. Although he had been a teacher in 1911, Robert Forest was later described as a Master Engineer.

In 1937 James Henry Shand died. By the time war broke out his brother Robert Forest was 64, and the business was largely in the hands of James Henry's two sons, James Roy Forest and Leslie William. When the Lee Green factory was in serious danger of being bombed in 1940, it was they who moved the business to new premises in Axminster, together with a significant number of employees. Their uncle and his family remained in the London area.

Leslie William Shand died in 1954, in his early 40s. His older brother James Roy Forest Shand remained Manging Director of the company until it was purchased by the Staveley Group in about 1964. Further information about the Staveley era will be found later in this document.

War work in the carpet factory

From 1940 for the remainder of the war the company produced parts for aircraft engines and other comparably high-tech components required in support of the war effort. This work would have been coordinated by the Government, with the result that at the end of the war J H Shand Ltd would have been much better known to policy makers and industrial leaders that had been the case in 1939.

The Supplement to the London Gazette dated 4 January 1944 carried an announcement that James Roy Forest Shand, Works Director of J H Shand Ltd, had been awarded an MBE for the work which he and the company had done.

The West Street factory

The West Street factory of J H Shand was built on a triangular site between West Street and the London-Exeter railway line. It faced the junctions with King Edward Road and West Close, and West House, and the 'JHS' logo on the railings along the West Street frontage still mark the length of the building's frontage. Its southern boundary was adjacent to the St John's Ambulance building.

In addition, the company had a social club behind the Guildhall.

The factory was built soon after the end of the war, and may have been started as early as 1944. However, the fabric of the building included a memorial stone to James Shand, and the date on that stone was 8 July 1946, which may well have been the day when the building was officially opened.

The façade facing onto West Street housed the company's management, and the drawing and design office. Behind this and towards the south (i.e. closer to the railway station), were

[1] Source: On-line London Gazette, dated 27 November 1917.

two long, tall bays where the machine tools and other specialist items of engineering equipment were made. To the north of these bays were several lower bays where the type making operations were housed. Closer to the railway line were located some of the more specialised activities, such as heat treatment and electric plating. The last expansion to the main factory was in 1978/79, when additional space for plastic injection moulding capacity was added. A new electricity sub-station was added nearby in 1983[2].

The type making business

Expertise in hard steel type making provided the foundation of the original business, and remained important to J H Shand Ltd throughout.

The company's original role was to supply individual letter type blocks to manufacturers of manual typewriters which they could build into their machines. The typewriter was becoming central to business offices in the early decades of the 20th century, when J H Shand Ltd was getting going in Lewisham. One of the company's special skills was to develop products which assured a more precise alignment of letters, thereby improving the look of the resultant typescript.

Typewriters required hard, sharp letters which would last for many years. This meant using steel, as opposed to the much softer lead-based type blocks used by newspaper and book printers. The difference arose from the way in which the type blocks were used: typewriters struck the paper (through a print ribbon) and needed to be able to work with multiple carbon paper copies, whereas newspaper and book printers rubbed ink onto whole sheets of type before pressing it onto paper, a copy at a time. Lead-based letters were much cheaper and easier to make, but would quickly lose their sharpness if used in a percussive printing system.

The manufacturing process involved skilled engravers making very precise letter moulds in specially hardened steel, which could then be used to press softer steel, leaving a raised letter.

Over time, the company and its customers developed many different ways of using the resultant type blocks: manual and electric typewriters, adding machines and other specialist office machinery, cash registers and franking machines, manual and roll-marking machines for industrial marking applications, and later a range of new impact printers for use in combination with computers.

The company offered about 10-12 main fonts, plus specialist ones (such as Russian, Hebrew and Arabic).

As well as producing raised characters for use in typewriters etc or for indent-marking metal or other packaging, the company made embossing type, in which the original letter or number was recessed below the surface, resulting in a raised letter or number when pressed into metal or plastic. This was the technique used to make credit cards, many millions of which were issued during the latter half of the 20th century.

Axminster Heritage Centre holds an archive of company brochures which illustrate the very wide range of ways in which type making expertise could be (and was) commercialised by J H Shand Ltd.

[2] Source for these dates: East Devon DC Planning website.

Later developments in type making

Electric typewriters allowed much faster typing than manuals ever had, but the faster the typist, the greater the likelihood was that the typewriter would 'jam' due to type arms clashing and getting stuck.

By 1961 IBM introduced their 'Selectric' range, these being the first 'golf ball' typewriters. Instead of each letter being mounted on an individual arm, all of the letters and numbers were mounted onto a 'golf ball' (actually more like a cross between a sphere and a thimble), which sat at the centre of the typewriter when not in use, but which when a key was pressed would rise up and strike the type ribbon with the correct character. With all of the characters on a single 'golf ball', this solved the jamming problem. The nature of the 'golf ball' also allowed the typist to change fonts at will. It might have been tedious to have to switch 'golf balls' so that individual words could be printed in italics (for example), but it was possible, and this was something which no traditional typewriter could achieve.

As soon as 'Selectric' typewriters appeared, the race was on among their competitors to develop other equally quick and flexible printing systems. In 1969 the first 'daisy wheel' printer was developed, followed a year later by the first dot matrix printer[3].

'Daisy wheels' were similar in concept to 'golf balls', but completely different in design. Each wheel contained a large number of spokes, each one with an individual letter or number mounted at the outer end. As the wheel span, the printer controls would in effect strike the chosen character, so that it would in turn strike the printer ribbon before returning to its normal position. Like 'golf balls', 'daisy wheels' could be changed at will, allowing multiple fonts to be used in a single document.

Some 'daisy wheels' used metal type, others employed hard plastic (much of the rest of the wheel being made of plastic). J H Shand Ltd specialised in the manufacture of plastic 'daisy wheels', and by the 1970s made much more use of specialist plastic injection moulding as a consequence.

Another technique used for specialist applications at Axminster was electro-chemical machining. Instead of using conventional moulds, a pattern could be transferred to the target block through electrolysis, by passing an electrical current through a suitable fluid.

Possibly the most significant technical development in office-based printing, from a commercial point of view, was the introduction, in 1984, of Hewlett-Packard's first desk-top laser printer, which greatly reduced the demand for mechanical impact printing systems.

The machine tools business

Leslie William Shand was a particularly skilled engineer, and developed another side to the business which made larger equipment including machine tools essential for the production of the high quality of type being manufactured. Although he died in 1954, this side of the business continued to thrive. Some of the tools made were also closely linked to the wider business of the Staveley Group (see below).

[3] Dot matrix printers were widely used in offices and other institutions where computerisation was important, but the output they produced was utilitarian in appearance. This was due both to the type itself and to the 'continuous feed' paper that they used, with its serrated edges. Although some small offices did use dot matrix printers for the printing of letters and documents, most companies reckoned that the impression that this gave was too 'cheap and cheerful' to be taken seriously by their clients.

Prior to the Staveley take-over, J H Shand had a wide range of specialist machinery, including shaping and planing machines, lathes and milling machines, slotting and boring machines, grinders and drills. They had oxy-acetylene and electric arc welding plant, a heat treatment shop and special salt bath and induction hardening facilities. All of this is listed in some detail on an undated schedule which was probably drawn up in the early 1960s. At that time the Tool Division employed 150 persons, with 32 in the design office (whether these 32 were included in the 150, or additional to them, is unclear). At that time the Works Director was Mr W West, and the Chief Design Engineer was Mr C D Camwell.

By the late 1960s J H Shand Ltd made a range of hydraulic open-gap pedestal presses, from 8 to 100 tons capacity. Unlike most of the machine tools which were made, these were produced as standard design presses, with a wide range of industrial applications.

As well as detailed sales brochures for the presses and general information on the engineering services offered by J H Shand Ltd, Axminster Heritage Centre has a series of photographs of the presses and other equipment installed in customers' factories. Major clients included the engine-making plants which supplied car and tractor factories. Not just presses were supplied, but special purpose machinery for applications such as porosity testing of engine blocks.

The Autumn 1966 edition of 'Staveley News' carries the story of a team from J H Shand which had to deliver a special-purpose machine for drilling and reaming holes in tractor gearboxes to the Massey Ferguson works at Beauvais, near Paris. The machine weighed 12 tons, and delivery had to be made during a seamen's strike. The team, led by Mr A Hadfield and comprising Messrs H Pickett, G Carter, H Ward and C Hooker hired a truck, managed to secure a place on a cross-channel ferry, and delivered it within 24 hours of loading at Axminster.

The Staveley era and beyond

Staveley Industries

In about 1964 J H Shand Ltd became a wholly-owned subsidiary of Staveley Industries, a rapidly-growing conglomerate with interests in minerals and machine tools, which until a couple of years earlier had been known as Staveley Coal & Iron Co. The well-regarded name of J H Shand was, however, retained, and, in line with Staveley Group practice, the company was given a reasonable degree of independence.

The purchase took place under the stewardship of Denis Haviland[4], who was appointed Joint Managing Director of Staveley Industries in 1964[5]. He then became Chairman and Managing Director in March 1965, until his resignation in 1969. A Spring 1966 copy of 'Staveley News' held by Axminster Heritage Centre confirms that by then J H Shand was firmly in the Staveley stable. When combined, these pieces of evidence strongly suggest that the purchase took place in either 1964 or 1965.

In fact, there had been some links between the two companies before 1964. In 1961 they shared a Chairman: Mr J P Hunt[6]. Furthermore, Denis Haviland may himself have known J H Shand from one of his previous jobs, because from 1959 until 1964 he was Deputy

[4] Source: Ken Tasker, personal communication, 2017. Ken Tasker was the last Managing Director of J H Shand.
[5] He was brought in by the previous Chairman, Aubrey Jones, who was then appointed to chair the Prices & Incomes Board by Harold Wilson's Government.
[6] Source: 'Power Behind the Screen' by Clive Jenkins (MacGibbon & Kee, 1961), page 67. J P Hunt was a Director of Midland Bank and many other companies.

Secretary at the Ministry of Aviation, and prior to that had been Under Secretary at the Ministry of Supply. His policy at Staveley was to buy up as many machine tool makers as he could, as quickly as he could, in an attempt to create a dominant player in Harold Wilson's 'white hot technological revolution'.

At or around the time of the Staveley take-over, James Roy Forest Shand left his position of Managing Director[7], and was replaced by Gordon Warrington, a professional manager from within the Staveley ranks.

Soon after Staveley Industries bought J H Shand they also bought Drummond Asquith Ltd, whose expertise lay in putting together 'turn key' packages of industrial equipment. One of their regular suppliers was a company called Hi-Ton Machine Tools, which made a range of hydraulic presses. Once Drummond Asquith joined Staveley, J H Shand was invited to develop a range of hydraulic presses in competition with Hi-Ton, which was very successfully achieved in 1967[8].

Ken Tasker joined J H Shand to assist with this task, and he subsequently succeeded Gordon Warrington as Managing Director of the Shand division within Staveley.

Gordon Warrington took an interest in external affairs. By 1966 he had been instrumental in setting up a Devon branch of the Institute of Supervisory Management[9]. Other Shand personnel who were involved in this included Messrs E L Wood (foreman of the Type Division), T Perham (a project and technical engineer), J K Lingwood (foreman of Type Forming) and W Galliker (project engineer, Type Equipment). Gordon Warrington was also made a member of the Economic Planning Council for the South West Region at around the same time.

J H Shand made considerable use of apprenticeship schemes to develop their workforce in the 1960s. Apprentices, like other employees, were drawn from a considerable area, with some travelling 20 miles or more each way each day, which was relatively unusual at that time.

Exports were very important to Staveley Industries, and J H Shand played its part. In the late 1960s 70% of the output from the type making division was sold overseas[10], much of it to the emerging computer companies in the United States. As well as supplying steel type wheels and steel block type to IBM, J H Shand counted National Cash Register (NCR) and Burroughs Corporation as major customers for steel type and component parts for mechanical-electrical adding machines and other specialist equipment. Burroughs later merged with Sperry Univac to form Unisys.

By the mid-1970s the British economy was in a very poor state, and investments in new car engine plants (and similar) in Britain were few and far between. Furthermore, because each such sale was in effect a 'one-off', the costs of achieving industrial sales were high, and the whole Staveley Industries Group was running on very thin margins. By contrast, J H Shand's type business was always profitable, making frequent repeat sales to established customers, many of them in the United States (see above).

[7] He had at least one other business interest, via a company called Axe Industries Ltd which had been established in 1948, in the manufacture and sale of specialist electrical insulation 'sleeving', using varnished cotton, silk and glass (Source: 'Electrical Times', Vol.113, 1948).
[8] Source: 'Staveley News' Winter 1967, page 13.
[9] Source: 'Staveley News' Winter 1966, page 5.
[10] Source: 'Staveley News' Spring 1968, page 6.

For much of this time the turnover of the type and machine tool divisions of J H Shand were roughly equal. At the peak, the type division employed about 300 people in Axminster, with a further 230 in engineering.

ABL Computer Technologies Ltd

As Staveley ran into difficulties, its managers looked for assets which could be sold, and in the early 1980s the J H Shand business was divided into two parts, which were re-named Shand Printing Devices Ltd and J H Shand (1982) Ltd. Both businesses were then sold to ABL Computer Technologies Ltd. ABL was based in London, and as well as Shand controlled manufacturing facilities in Switzerland, the United States and Japan.

Although the conventional type business and the special engineering business were both retained, what had really attracted ABL to Shand was the expertise in 'daisy wheel' printing.

Unfortunately ABL seriously mis-judged the US market for 'daisy wheel' printers, and over a period of 3-4 years high levels of borrowing in the US and Switzerland dragged the whole company down, with Shand's assets being used to service the debts.

With hind-sight it is easy to see how the introduction of the first desk-top laser printer in 1984 was the nail in ABL's coffin. Laser printing seriously eroded the demand for 'daisy wheel' printers, offering, as it did, a much easier way of changing fonts in mid-document, as well as reducing noise levels in open-plan offices.

Finally, on 21 October 1987, a receiver was appointed to J H Shand (1982) Ltd and Shand Printing Devices Ltd (and to ABL Computer Technologies Ltd)[11] at the request of bankers Guinness Mahon & Co, who had taken a charge over the companies' assets in 1984 as security for a loan. On 30 June 1988 both Shand companies (but not ABL Computer Technologies Ltd) were wound up[12].

What happened next

Although the Shand name was lost to the business in 1988, the skills of the workforce were not, and the receiver was able to sell important elements of technology and equipment to former Shand employees.

Nu-Type, whose factory is on Weycroft Avenue, Axminster, took on the conventional type business under the leadership of Cyril Hellier. Their website (nu-type.co.uk) shows the considerable continuity between what J H Shand was making in the 1950s and what they continue to make in the 2010s.

Other small businesses spun out of the ashes of Shand include plastic injection moulding and electro-chemical machining.

The J H Shand factory was demolished, and replaced by housing (Shand Park) as part of a bigger development bringing Tesco to Axminster.

[11] Source: London Gazette, edition of 16 November 1987.

[12] Source: London Gazette, editions of 24 June 1988 and 15 July 1988.