SUSSEX INDUSTRIAL HISTORY

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The British Syphon Company
Turnpike Roads to Arundel, Worthing and Littlehampton
Brewers of East Sussex
West Cliff Railway, Hastings—Engine Room
The Lamp Posts of Ditchling

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SUSSEX INDUSTRIAL HISTORY

Journal of the Sussex Industrial Archaeology Society

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THE BRITISH SYPHON COMPANY LIMITED

Hampden Park, Eastbourne

David G. Jones

In 1957 The British Syphon Company Ltd. and its two subsidiaries, The Riley Manufacturing Company and The Conveyor Construction and Engineering Company, moved into brand new premises on the Brampton Road Industrial Estate, Hampden Park, (Fig. 1) from locations in London. This was part of a trend to relocate firms away from the metropolis and into areas where new employment opportunities would be welcome. Eastbourne Borough Council had already been successful in attracting the American pharmaceutical company Armours to the new Industrial Estate a year or two earlier, and more would re-locate later including Edwards Instruments, Photax, Spray Finishing Systems, Wilkinsons Electrical and the Scotch Bakery.

Fig. 1 The new factory on the Brampton Road Trading Estate in Hampden Park, Eastbourne with the railway station in the left distance.

Many of the British Syphon and Riley employees and their families moved down from London with these companies, most being provided with private rented housing on the 1939-built Highfield Estate in Hampden Park about half a mile from the factory. Therefore, as well as being work colleagues, they became close neighbours in the adjoining roads of The Hydneye, Knoll Crescent, Port Road and Manor Road. Prior to the move, those who had taken up the offer to re-locate had travelled down to Hampden Park so that they could choose their houses from those on offer by the landlords Groves Builders and Contractors Ltd. Obviously the higher management were able to purchase their own houses out in the country, with, for example, Mr.Eugster the Managing Director moving into the property *'Courtlands'* near Catsfield. This relocation involved a fairly large influx of 'Londoners' to the Eastbourne area, which has continued up to the present time, although these days it mainly comprises those retiring from the Croydon, Kingston and Lewisham areas. The new factory was proudly described as 'where modern equipment, flow-line engineering and quality control combine to produce syphons more economically and more efficiently than ever before'.

Founded in London

The British Syphon Company was founded in London in 1882 as manufacturers of soda water syphons for the drinks industry, a market largely dominated by the French up to that time. The early syphons, known within the company as seltzogenes but also as gazogenes elsewhere, comprised a large glass double sphere shaped bottle with a wire mesh protecting shield, surmounted by a cast tin top in which was housed the lever-operated valve system for allowing the discharge of the pressurised soda water into the glass. Although the shape of the bottle changed over the years, tin continued to be used for the tops but had disadvantages in that it was relatively soft and also prone to thieving because of its high value. However, in the late 1930s new technology enabled stamped and extruded nickel alloy tops to be introduced (Fig. 2). Both the tin and nickel alloy tops were chromium-plated involving several processes including polishing. Eventually nylon plastic injection-moulded tops were introduced in the 1950s with the advent of that

Fig. 2 One of the nickel alloy top syphons on display in the King George V bar on Platforms 3 and 4 at Horsted Keynes Station, Bluebell Railway.

much more modern and appropriate material.

From 1897 the British Syphon Company was sited in the mainly residential area of Barnsbury Street, Islington, London N1, in a four-storey building which previously housed the Islington Proprietary School, founded in 1830. The company employed 200 people, many being women on the assembly line in what was a mass production environment. The early tin tops were made in the firm's own foundry and all the subsequent machining was also carried out on site, the only bought-in items being the glass bottles, springs and rubber sealing rings. During the Second World War an associate company, British Landing Gears Ltd., had been set up to assist the war effort by manufacturing articulated tail wheel struts for various aircraft including the Beaufort/Beaufighter, Barracuda and Master/Martinet types. Although the offices were in Milner Square, just off Barnsbury Street, manufacture was carried out in The Riley Manufacturing Company's factory in South Lambeth Road. One of the Beaufighter tail wheel struts took pride of place in the foyer of the Eastbourne factory, but its current whereabouts is unknown. The Barnsbury Street building was demolished in 1984 following a period of use for greeting card manufacture after the British Syphon Company had moved south.

Prior to the move to Hampden Park, the syphon tops in production were the nylon Mark V version introduced in February 1953 to replace the earlier Mark III type, both being made in injection moulding machines of which two were state-of-the-art 'Netstals'. The first design of nylon tops had a separate tin seating disc inserted after moulding to cope with the constant opening and closing of the valve, but when the excellent wearing properties of nylon became apparent this was dispensed with. The new Mark Six top, identified by a stainless steel anti-split ring around the skirt (Fig. 3), was introduced from the start of production at Hampden Park and continued up until the product ceased being made. As would be appreciated, the injection moulding tools had to be designed and made to the highest precision, which was the responsibility of the purpose built tool-room on the ground floor of the two-storey part of the factory at the north end. Central to the tool-room was a precision Swiss jig borer located on a deep concrete foundation, necessary because outside the building ran the London to Eastbourne main railway line which saw the heavy steam hauled *'Birkenhead Flyer'* come through once a day!

The engineering subsidiary, The Riley Manufacturing Company, was previously located at 256 South Lambeth Road, London SW8, and manufactured bottling machinery including a range of dedicated syphon filling machines. This long

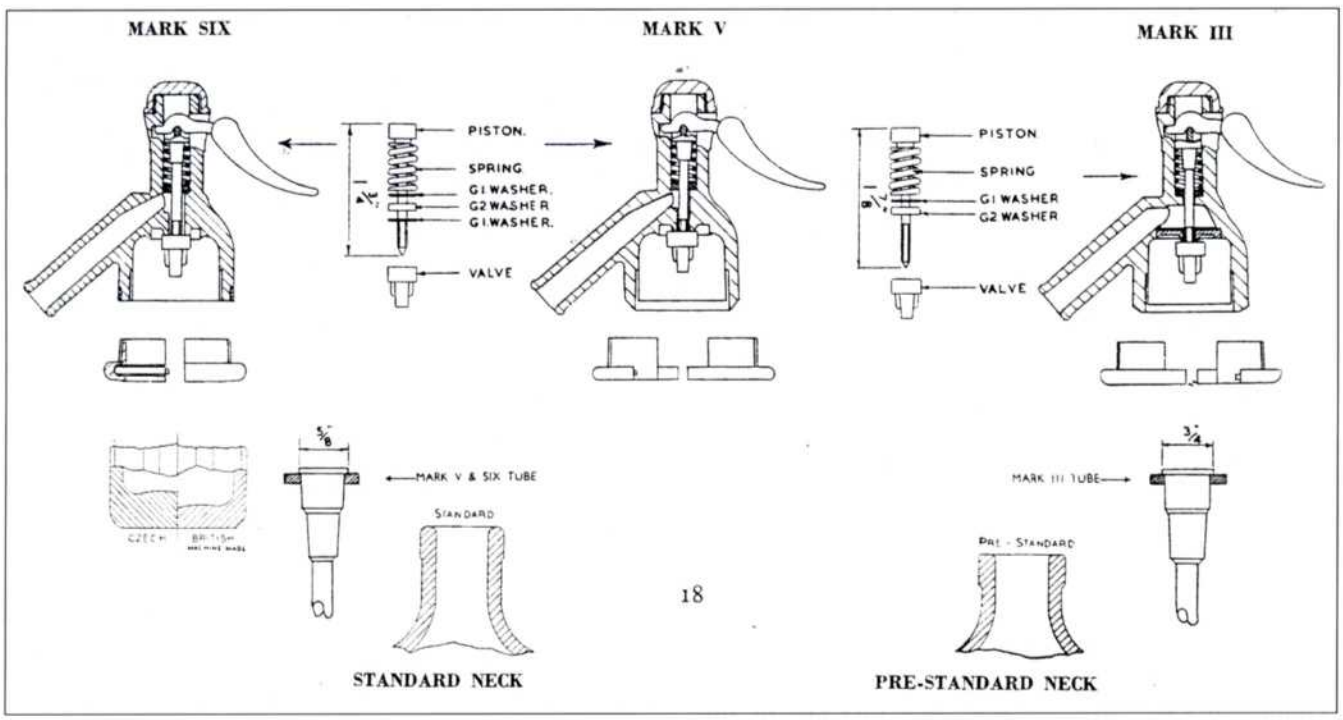

Fig. 3 Sectional drawings of the main product, the nylon soda water syphon top. On the left is the Mark Six, of which many thousands were made each week at the Hampden Park factory.

established firm founded in 1878 by Mr. F. G. Riley, was taken over by the British Syphon Company in 1942 and therefore moved at the same time to join the parent company in Hampden Park in 1957. Riley Manufacturing made a complete range of machinery for the drinks industry including CO_2 producers, carbonators and filling machines, many being exported all over the world to small and medium sized bottling companies. Two sizes of syphon filling machines were manufactured at Eastbourne, the 3-Head *'Junior'* with a capacity of 25 dozen 30/40 oz syphons per hour, and the larger 9-head *'Major'* with a capacity of 70 dozen per hour. The 6-head *'Minor'* machine had been dropped from the range following the move from London. These machines, where the syphon was loaded in an inverted position into nylon cups, needed specific features, known as fill and snift phases, necessary when filling containers under pressure where there is no natural outlet for the displaced air. High pressures of up to 200 p.s.i. were encountered during filling, so it could become quite dangerous to the unwary. The glass bottles, usually supplied by United Glass Ltd., came in three sizes of 30, 35 and 40 fluid ounce capacity depending on the design, of which there were three, the *'Regent',' St James'* and *'Pall Mall'*. All types were tested up to this proof pressure in the Hampden Park factory on a special 'upright loading' syphon filler made by Riley Manufacturing, where an explosion from the shop floor was occasionally heard when one of the flawed bottles went off.

The other subsidiary, The Conveyor Construction and Engineering Co. Ltd. had been formed to market the overhead conveyor system designed for transporting the empty bottles and assembled syphons around the factory. It was felt that this system, comprising an overhead track made of pear-shaped section tubes on top of which ran a large roller with a smaller guide roller underneath, could have applications elsewhere so this separate company was established to exploit the system. Sales of the conveyor system were promoted through advertising and attendance at the annual Mechanical Handling Exhibition held each May in London. An important early customer was the Buxted Chicken Company, latterly Grampian Foods, the broiler chicken suppliers situated conveniently only 15 miles north of Eastbourne. In April 1960 representatives from a competitor Teleflex visited Hampden Park with a view to a buy-out of this conveyor subsidiary.

Starting at Eastbourne

Production of soda water syphons started at the new Hampden Park factory on 20 August 1957 and many thousands were made each week, all for specific customers with their names and trade marks being sandblasted onto the glass bottles using individual paper transfers coated with a special paint which shielded the areas of the glass to be kept clear. Thousands of individual metal master plates engraved with each customer's design had to be kept in stock so that the paper transfers, one for each bottle, could be made from them to provide the image on the glass. It should be remembered that syphons were used again and again, and the refurbishment business was very important. The customer base was worldwide mainly comprising small to medium breweries and drinks firms such as Moorhouse Bros. of Liverpool, W. R. Butler of Dorking, Rawlings of London E6, M. Barraclough of Baildon, Simpkin & James of Leicester, Cantrell & Cochrane of Belfast, C. L. Innes & Co. Ltd. of Auckland and Hamilton, New Zealand, plus various Sussex firms including Pink's of Chichester.

Fig. 4 On the left is a Schweppes syphon with their early distinctive knurled cap. The bottle is of 30 ounce capacity, whereas the other is a 40 ounce *'Regent'* style with a red standard Mark Six top. In between is a miniature scent syphon with a cast tin top.

However, the largest customer by far was Schweppes who had a distinctive chromed cap on their natural coloured nylon tops (Fig. 4). As a promotional side-line, miniature syphons for perfume were made for the most important customers and these were received back for refilling and gassing each year free of charge around the end of September, ready for Christmas. They had tin tops like the earlier full size versions although in late 1962 a design for nylon tops was proposed but could not be justified in terms of tooling, bearing in

mind the relatively small quantity involved.

The single-storey factory was divided into two, with the main machine shop on the west side nearest the railway line, and the syphon manufacturing area parallel to Brampton Road. Machine tools consisting, among others, of a Dean, Smith & Grace centre lathe, a Brown & Sharpe milling machine, an Archdale radial drill, a shaper, a Butler planer and various Herbert and Gisholt capstan lathes were mainly used for making parts for the bottling machines, but a row of Brown and Sharpe and C.A.V. automatic lathes (see SIH Nos. 23 and 33) in an echelon formation turned out thousands of syphon parts a day. The piston in the heart of the syphon valve was made of brass, an easy metal to machine, so the automatics were able to cope with several thousand before needing attention to the cutting tool and self-opening die head. The later introduction of stainless steel for a subsequent quick-disconnect plug and socket for a new dispensing line was a more difficult machining operation.

The lever of the soda water syphon was a pressing made from 12 gauge brass on one of the Taylor and Challen presses, then chromium-plated in the firm's own plating shop located in a separate building at the back. Several were then mounted in a jig and loaded into the injection moulding machine to have nylon handles of the appropriate customers' colour moulded on. Similarly the brass pistons had a moulded acetal head onto which the lever operated, and the glass down-tubes also had a ferrule incorporated onto the end. Because of unavoidable variations in the bottles, the sealing neck washers, made by the London Rubber Company, came in a range of thicknesses but all had to conform to the correct 'shore' hardness figure which had to be checked regularly using a test meter fitted with a spring-loaded gauging pin which pressed into the rubber. After each top was assembled, it was passed over to be mounted onto its bottle and then the complete syphon was hung onto a loop in the overhead conveyor system for onward testing and despatch.

Riley Products

The Riley machines were of a much lower production volume and therefore individually hand built, taking several weeks from order placement to despatch. Most of the castings in these machines for the water valves and feed assemblies were of gun metal, with all those coming into contact with syrup being silver plated. The filling nozzle on the 12 and 18 head bottling machines which plunged into the bottle had to be very hard wearing so was made of 'Monel', quite a difficult metal to machine. Some of the gear castings were later made of 'Mehanite' and the star-wheels which guided the bottles were manufactured in the relatively new composite material 'Tufnell'. The three main Riley products

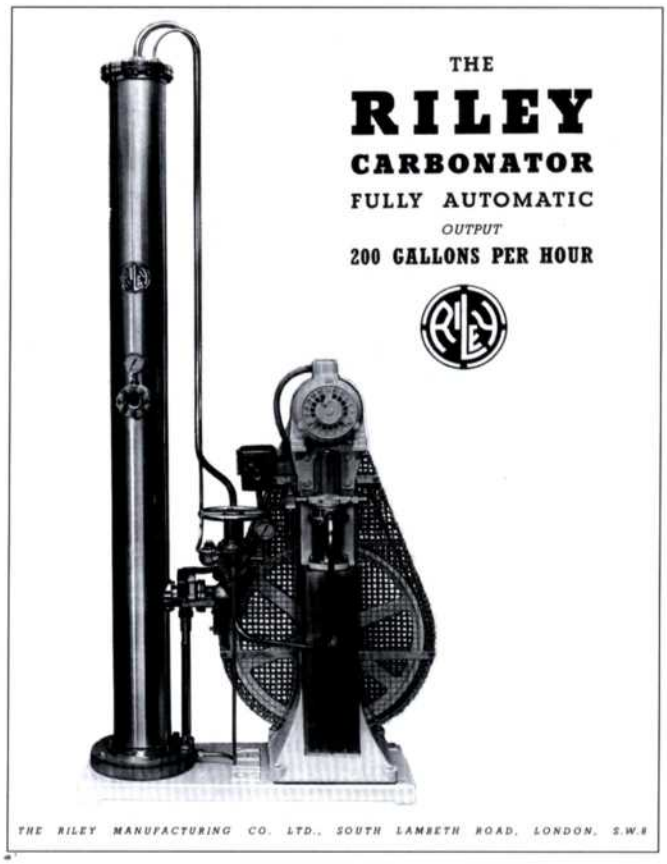

Fig. 5 The 200 gallons per hour Riley Fully Automatic Carbonator.

were the syphon filling machines previously mentioned, automatic soft drink bottle filling machines of 12 head and 18 head versions, and the carbonators (Fig. 5); tall specialist pumps which introduced carbon dioxide gas into the water under pressure to provide carbonated water – the fizz in the drinks. The bottle filling machines combined the three main functions of syrup, fill and crown and were aimed at the medium drinks companies. Crown corks were fed down from an oscillating hopper with a special sorting system to make sure they arrived ready to be pressed down onto the bottles the right way up! The 12 head machine could fill 160 dozen 10 ounce bottles per hour, 95 dozen 26 ounce bottles per hour or 65 dozen 40 ounce (quart) bottles per hour, and the 18 head version obviously had 50% more capacity (Fig. 6). Changing the bottle

size involved adjustments to the height of the syrup/crown head and the fill supporting tables, conveyor width and the star wheels. Speed adjustment was by way of a handwheel on the front, which moved the electric drive motor along its support slides thereby opening up the driving belt cones, so changing the speed of the machine. As time went by many Riley customers merged into larger concerns so required higher throughput bottlers and had to look elsewhere, particularly to Italian firms who produced typically 100 head units.

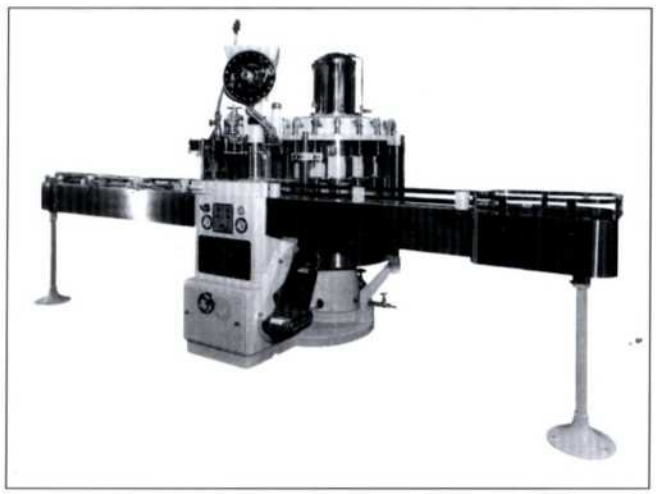

Fig. 6 The largest in the range; the Riley 18 head Automatic Bottling Machine.

Carbonators were manufactured initially in 3 sizes of 200, 300 and 400 gallons per hour capacity but later rationalised to 250 and 350 gph versions. They were used to produce carbonated water to feed into the filling machines and described in the sales brochure as 'giving needle-point sparkle to soft drinks'. They were basically a tall 9 foot high tower in the top of which was a fine spray head through which water passed at pressure down into the carbon dioxide gas so as to provide full saturation. An exit pipe located at the base of the tower took the carbonated water to the filling machine as part of a continuous process. An optional bicarbonate injector could also be supplied when straight soda water was being produced as distinct from flavoured products like lemonade and fizzy orange.

The first Riley unit to be despatched from Hampden Park was a 9 head *'Major'* syphon filling machine destined for importers H. & C. in Bluff, New Zealand, probably for one of the two major aerated water suppliers there, either Thomsons or Lanes of Dunedin. The unit left in a wooden crate on the firm's own circa 1947 Fordson flatbed lorry on 30 August 1957 and attracted a note and photograph in the local paper, the manufacture of such machines in the Eastbourne area being topical news. After unloading the crate at London docks, the lorry then continued to Morpeth in Northumberland to deliver the second unit, a 12 head automatic bottling machine to Waters & Robson Ltd. The main trade fair was the Brewers and Allied Trades Exhibition, or Brewex as it later became, held at Olympia each October, where the latest equipment was shown and promoted. Resulting orders for 12 head bottle filling machines came from such firms as Mellersh & Neals of Reigate, and Strawsons of Liverpool. Having been established in the height of the Empire, there had always been a good export business with an order for SAMS of South Africa going through the works at the time, so orders for three 18 head bottlers from Egypt in December 1957 justified the expense of the exhibition. It was usual to require sample bottles from filling machine customers for matching to the feed conveyor and star wheel system to eliminate any possibility of jamming, and to supply additional guides if required for different sizes of bottles.

Official Opening

On Friday 18th October 1957, the official opening of the new factory took place when Aldermen and Councillors from Eastbourne Borough Council, together with other local dignitaries, were invited to tour the new plant, guided round by the managers and apprentices. This was followed by lunch hosted by the managing director Mr. E. J. P. Eugster at the Burlington Hotel, opposite Eastbourne pier. The apprentices were not invited! On the following day, a Saturday, the factory was opened up for all relatives and friends of the employees to view the new works.

Mention was made earlier of the tool-room where the complex injection moulding tools were made. A small room off this area was dedicated to tool and cutter grinding and was equipped with a Cincinnati No. 2 Cutter and Grinding Machine, very useful for keeping milling cutters, drills, self-opening die heads and circular chasers in top condition, together with a surface grinder with a magnetic vice for press tool maintenance. Much emphasis was placed on keeping all cutting tools sharp as it was recognised that this ensured a top quality product. The company was a subscribing member of the Production Engineering and Research Association (PERA) based in Melton Mowbray where advice and

information on up-to-date machining techniques could be obtained. Apprentices attended courses here in Leicestershire to learn the latest technology, but PERA also had a very futuristic looking mobile exhibition unit which toured the country and visited Hampden Park on occasions including June 1960.

Above the tool-room on the first floor of the two-storey part of the factory was the administration, accounts and drawing offices, from which excellent views could be obtained of Q class locomotives shunting coal wagons in the goods yard next to Hampden Park station and the regular Class 4MT tank engines to and from the 'Cuckoo' line! The Drawing Office produced all the designs and drawings for every new product and also housed the very old hand-painted drawings from the early 1900s in fireproof filing cabinets, these having to be referred to when queries arose about the early Riley semi-automatic fillers, many of which were still in use. One of these was once preserved as an exhibit in the Birmingham Museum of Science and Industry when it was in Newhall Street just off the city centre, but was not transferred to *'Think Tank'* in Digbeth when the Museum moved, so its current location is not known. In the 1950s drawings were produced in pencil onto tracing paper supplied by E. N. Mason of Colchester, but the more important General Assembly drawings were subsequently traced onto linen with ink to provide a more hard wearing master. As this linen paper had a slightly greasy surface, it had first to be dusted with talcum powder otherwise the ink would not adhere. The Uno stencil system was a boon for carrying out the lettering and numbering on these drawings even though it took longer than by freehand. Prints were made from these drawings on the dyline copying machine for use on the shop floor.

The drawing office was also responsible for the production of Instruction Manuals which were produced on a duplicating machine, although some of the specialist manuals were individually typed and then illustrated with real photographs stuck around the text. Later the silk screens for adding customers' names and logos to the cooling units were designed and produced by the draughtsmen, and to this end a dark room was established near the entrance of the factory, as the process was based on a photographic method. The silk-screening process is similar to the glass bottle sandblasting method but instead of fine grit being used to roughen up a glass surface, a thick coloured ink is squeezed through the parts of the silk screen that are not coated to provide an image on the plastic product. The dark room also produced the negatives for the offset litho Rotaprint machine on which instruction manuals were later printed, this being a modern replacement for the old messy Roneo duplicating machine which used the once universal waxed sheet typed stencils.

New Product Lines

In 1958 Schweppes showed an interest in cooling systems for under-bar and counter use so The British Syphon Company embarked on designs for soft drink and lager dispensing equipment resulting in a need to enter a new field: refrigeration. Contact was made with refrigeration component suppliers such as Tecumseh and Danfoss so that these new units could be designed and manufactured. A new trade name *'Coldflow'* was coined and various cooling modules and associated containers, taps and connectors were introduced. An American company Cornelius, located at Anoka on the northern outskirts of Minneapolis, was already making such equipment and some were being sold in the UK. However, due to the close ties between British Syphon and Schweppes, who had the licence for producing Pepsi Cola in the UK, headway was made in selling into this market. The basis of the dispensing tap followed close on the design of the syphon, although controlling the fizz was a particular problem in the first models, eventually needing the introduction of a restrictor controlled by an 'atomiser' screw adjuster on the front of the tap. New bending jigs had to be made to produce coils of the long stainless steel tubes through which the drink had to pass from container to tap, and also the similar copper coils for the refrigeration circuit, both being submersed in a bath of water to create a heat exchanger. A new range of quick-disconnect plug and socket assemblies incorporating automatic opening and closing valves were designed so that when a container of a particular drink emptied there could be a rapid changeover. The introduction of such parts made from EN58F stainless steel necessitated the purchase of specialist machine tools in November 1960 such as the German-made Boley turret lathe (Fig. 7) and the large Butterworth automatic lathe. Both these machines suffered from initial teething troubles, but eventually became reliable and well used. To make space the older Newall, Herbert and Kitchen & Wade capstan lathes were disposed of.

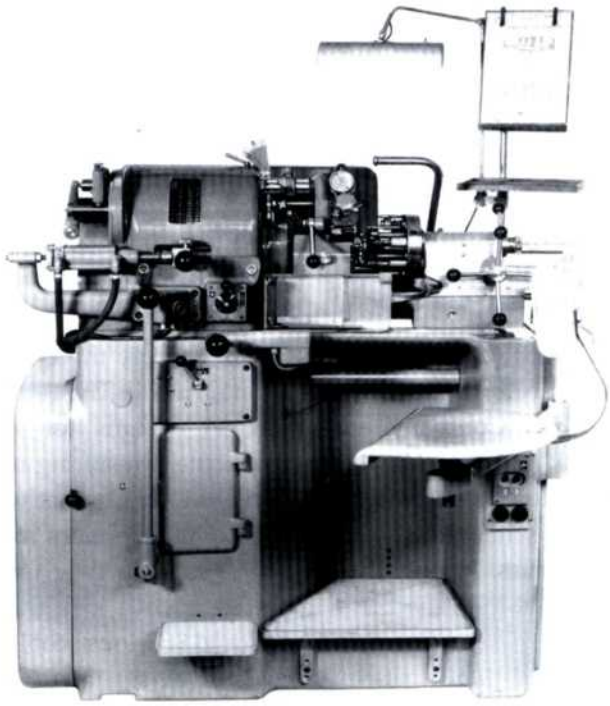

Fig. 7 The Boley RD 25 Turret Lathe, made in Esslingen/ Neckar, Germany, and used for making most of the small stainless steel parts in the drinks dispenser units from late 1960

Sales of the new dispensing equipment went well following visits by VIPs from Schweppes and Pepsi in January 1959, with orders for dispensing valves being placed in batches over the following months. Coca Cola personnel visited in April 1959 so business further expanded for the range. Other major customers included Corona and Guinness, this latter firm needing a modified dispensing valve to provide the 'head' on the dispensed drink unlike most of the soft drink manufacturers who did not want any froth at all. A boost to this business came in March 1960 with a £5,000 order from Pepsi-Cola (Fig. 8). The traditional range of products was not abandoned altogether as a 4-head rotary syruper and a hand syphon filler for smaller drinks firms were introduced at this time. Sales were also quite healthy for the 12-head bottle filling machines with new orders from New Zealand and Ireland supplementing those from the UK.

Because the taps on the new pre-mix units would be in contact with a variety of soft drinks and needed to be operated many more times a day than the soda water syphon valves, the pistons had to be made of stainless steel. Therefore in December 1959 a design with a rectangular slot was introduced which could only be produced using the broaching process. It was first decided to adapt the Archdale radial drill, but it was not easy to control the downward stroke even with a special guide bar in place, resulting in the slender and expensive broaches being snapped off whilst they were being pushed through the tough stainless steel. Tests were tried with trichloroethylene as a lubricant which showed some improvement, but eventually a purpose-built broaching machine was bought early in 1960 which, combined with the introduction of tallow as the cutting agent, was found to be even better. The new range of dispensing equipment incorporated new fixing devices such as circlips and also introduced new processes into the works including spot-welding and vacuum-forming. This latter process was for the plastic outer containers and baths of the cooling modules, the various shapes of which could be moulded from a single plastic sheet of ICI *'Darvic'*, by warming it and pulling it down by vacuum over a wooden former.

Syphon Decline

At this time, sales of traditional syphons started to decline with the advent of a new sleeker version of the established *'Sparklets'* syphon (Fig. 9), made by the similarly named but unconnected British Oxygen Company, where ordinary water could be put into a

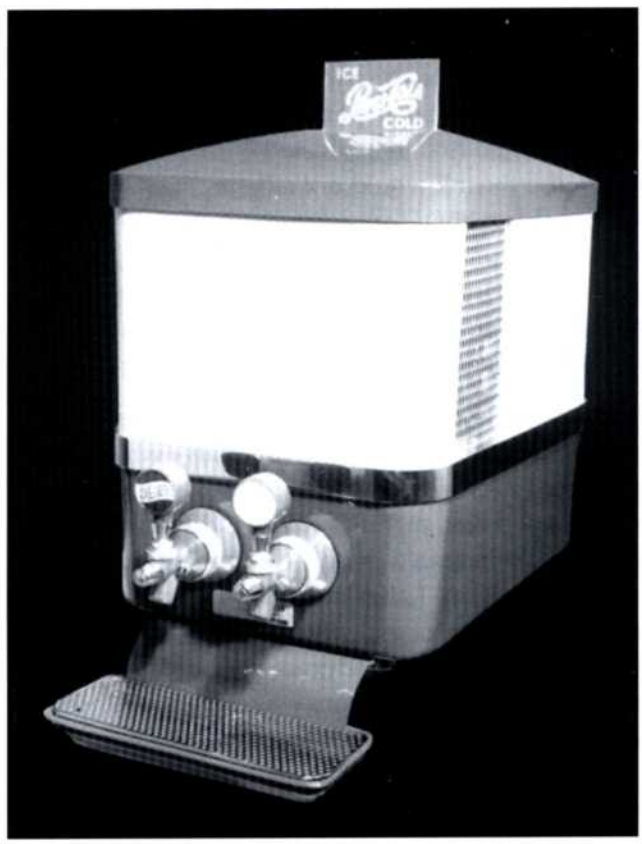

Fig. 8 One of the range of soft drink counter dispense units; this one being for Pepsi-Cola

Fig. 9 The BOC *'Sparklets'* syphon which took an increasing share of the market from 1960 onwards. The flap opposite the spout is where the compressed gas bulb is inserted.

special lined aluminium bottle and then a pressurised gas bulb introduced into a side chamber to provide the fizz. Previously this product had a rather old-fashioned look with its glass bottle covered in a wire mesh and had not had much effect on sales of the traditional syphon. The new Coldflow range was a useful replacement line, and eventually the name of the company itself was changed to Coldflow Ltd., especially as the sales of Riley bottling machines had also started to decline. Most of the counter and under-counter units had names starting with C to reflect the Coldflow brand name, so units such as the *'Console'*, *'Consistent'*,' *Compact'* and *'Companion'* started to appear, later to be joined by *'Consolette'* and *'Conference'* models all with different features for various uses in dispensing drinks. The associated under-bar storage containers were supplied by Rubery Owen of the Midlands but the quick-disconnect valves were designed and made by Coldflow using circular form tools which had to be regularly sharpened. Later, tests were made with negative rake cutting and carbide-tipped tools and examples made of 'Stellite'. There were two versions of the quick-disconnect valves, one for the drink and one for the pressurised carbon dioxide, with small differences in diameter to ensure that the drink connection could not be pushed onto the gas connection and vice-versa. One of them had a left-hand thread to ensure that two of the same type could not be used on the same canister. Further machine tools were purchased early in 1961 including a 'Pacera' triple drill and an engraving machine.

Mr. Eugster was always keen to promote the company and attract new talent so on the occasion of the Commonwealth Technical Training Week in June 1961, local schools were encouraged to visit, resulting in pupils from Bishop Bell and Ratton schools being given tours of the factory. Sadly a year later in July 1962 he passed away at the early age of 60 and fellow director Mr. H. C. Medlam took over the Managing role. Mr. Edward Eugster is buried in Langney cemetery opposite the chapel, along with his widow Patricia who died many years later in 1991.

At the end of 1962 a new timber-clad canteen next to the railway line at the far Eastbourne end of the site was opened and everyone had a free meal to celebrate the occasion. As with many companies of the time, the canteen was divided into three separate areas for senior staff, office staff and shop floor personnel. This new building was also used for social occasions such as the party at Christmas. Other activities in the social calendar included tennis matches in Hampden Park, very popular car treasure hunts around East Sussex and golf matches across the Downs with the final hole being in the dogs' drinking water bowl at the Eight Bells, Jevington! These golf events were the brainchild of Charles Eugster, son of the late Managing Director, who eventually left the company in June 1965 to seek a career in another field.

Contact with other companies on the Brampton Road Trading Estate resulted in Smith and Ouzman, the printers opposite, being given many of the contracts for producing leaflets and accounts documentation, although the instruction manuals were still produced in-house by the drawing office. Advertising and design of the sales leaflets were the responsibility of the Eastbourne firm of Gordon, Scott and Barton who are still based in Eastbourne as

GSB Associates. Armour Pharmaceutical on the other side of Brampton Road, mentioned earlier, also became a customer in November 1963 when a purpose-built machine for bottling 'Syrtussa' cough mixture was supplied. This unit became known as the R30 *'Rileymatic'* and resulted in a further order from Riker of Loughborough for a similar design in 1964, but it was not really successful due to the client's insistence on a very fast throughput causing foaming of the mixture in the bottle (Fig. 10). Unlike the drinks fillers which were self-pressurising from the carbonated water, the cough mixture machines needed a pump, so in an effort to solve the problem it was decided to replace the original locally made Howard lobe type with a Neumo air driven piston type made in Newhaven. However, it did not really solve the problem so eventually this market was abandoned.

Fig. 10 The Austin A30 van used locally and to transport the cough mixture machine to Loughborough. The flatbed lorry behind was for delivering the large Riley machines. Opposite is Smith and Ouzman, a long established printing firm who are still there.

A small competitive manufacturer, Mayo Syphons, a supplier to the Cooperative Wholesale Society and to local company Chapman and Peters of Newhaven, was experiencing a similar decline in the market so in January 1965 they were taken over by BSC. The other competitor was Shardlow Syphons who made an almost identical product and supplied firms such as Britvic Soft Drinks of Chelmsford, but they eventually disappeared from the scene. Latterly, syphons produced by the British Syphon Company had the legend 'A Coldflow Syphon' on the sandblasted design, thus indicating its later manufacturing date after the change of company name. New products for the drinks industry included further versions of the pre-mix and dispensing equipment plus, in July 1966, a canned beer dispenser for use in the home, an increasing market. At the same time the name 'Coldflow' was painted on the side of the factory in large letters replacing the Riley name and reducing the British Syphon Ltd. name to that of the owning company. Riley machines continued to be made, with a further 12-head bottler for Waters & Robson Ltd. of Morpeth being despatched in May 1965.

A further departure from the core business of drinks dispensing came in early 1967 when the *Tankometer* was introduced. This was designed to monitor levels in underground tanks at petrol stations and consisted of a tall lozenge-shaped hollow metal float suspended in the fuel and connected to a dial gauge arrangement in the forecourt. The idea was that staff at the station could easily check how much petrol was remaining at each pump without the need for a dipstick, but with the trial installation at Stratford, East London being destroyed by vandals over the first night—something not anticipated by those in sedate Eastbourne—it was back to the drawing board!

The company continued in the drinks cooling and dispensing field, designing and manufacturing more modern equipment including electric pumps to replace the earlier method of using CO_2 gas bottles to provide the dispensing pressure. They became well-known for these products, many of which were sold worldwide and appeared in such prestigious places as the Wimbledon centre court for the players' refreshments. Three of the cooling units were also fitted in Pullman Car *'Lydia'* to provide cooling for drinks on the ill-fated Flying Scotsman-hauled business promotion railtour of the U.S.A. in 1970. These coolers were still in the vehicle when the author visited Green Bay, Wisconsin in 1991 to discuss the repatriation of this and another Pullman back to the UK.

Merger

In due course, a merger in 1972 between the British Syphon Company and a competitive drinks dispensing company, J. F. Eardley Ltd. of Sheffield resulted in British Syphon Industries plc being formed, thus creating a bigger Coldflow which provided a complete cellar-to-bar equipment capability. Expansion took place at Eastbourne with the result that further premises were needed nearby in Marshall Road and at Hawthorn Road plus a separate research unit at Hailsham, a total of six buildings in all, but with the head office in Edmund Road, Sheffield. Eventually the merged firm, now with over 500 employees, became a takeover target by IMI Cornelius who had extensive premises in Alcester and Brighouse as well as the original Cornelius company in Anoka, USA, with the inevitable result that has befallen other manufacturing companies in Sussex, that of closure of factories in the South and consolidation in the North and Midlands.

Coldflow closed the main Brampton Road factory on 28th September 1990, so ending 33 years of this type of manufacturing in the town. The main building is now the *'Trax Leisure'* indoor kart racing centre and the outbuildings were taken over by a van hire business. Finally, it should be mentioned that soda water syphons have now become collectable antiques especially the very rare ones with either the tapered clear bottles or the plain amber coloured bottles fitted with tin tops. These can reach up to £50 each, whereas even the common Schweppes types can attract prices of £10 or more depending on condition. Syphons are often displayed in period shops and in museums throughout the world at such places as 'Yesterdays World' in Battle, the Broads Museum next to Sutton Windmill in Norfolk and at The Kauri Museum, Matakohe, New Zealand, so some artefacts of this interesting but largely unknown Sussex industry can still be seen.

Acknowledgements

Thanks are expressed to ex-employees Mr. L. Fields and Mr. R. F. Jones for information on the Company before 1957 and after 1967 respectively, and to the Islington Museum for supplying details of the very early history of the firm. Most of the other information for this article has come from the Company's brochures, sales leaflets, spare parts lists, drawings and trade magazine extracts in the author's collection, supplemented by his own detailed diaries and recollections of the ten year period covered.

About the author

David Jones, C.Eng. M.I.Mech.E. commenced his five year engineering apprenticeship with The British Syphon Company Ltd. in August 1957 after leaving Eastbourne Technical College in its final year before closure. The apprenticeship involved a mixture of three years in the drawing office (Fig. 11) and two years on the shop floor which included specialisation in Tool & Cutter Grinding and Capstan & Automatic Lathe Setting. His subsequent five years as a Design Draughtsman was followed by a move in September 1967 to a similar post at the instrument division of Crawley-based Edwards High Vacuum known as Edwards Instruments in Marshall Road, also on the Brampton Road Trading Estate, Hampden Park.

He joined the Sussex Industrial Archaeology Study Group, subsequently SIAS, in April 1968.

Fig. 11 The author at his drawing board in 1963.

TURNPIKE ROADS TO ARUNDEL, WORTHING AND LITTLEHAMPTON

Brian Austen

Introduction

The first article in the survey[1] covered, in the main, the Rape of Chichester; this section extends eastwards and includes the southern part of the Rape of Arundel and the south-western part of the Rape of Bramber. The agriculture of this area varied considerably. The rich brick earths of the coastal plain were, by the beginning of the nineteenth century, capable of producing 34 to 40 bushels of wheat per acre.[2] Market gardening and livestock fattening were other agricultural occupations. Nearness to the sea made export of commodities relatively easy. The coastal plain, wide in the Chichester Rape, however, narrowed progressively to the east. North of the coastal plain were the South Downs raising sheep on the uplands and in the river valleys fattening livestock. Beyond the Downs at the scarpfoot and in low Weald mixed farming was practised, with greater concentration on cattle rearing and dairying.[3] Wheat yields were lower here with 24 bushels all that could be expected in the West Grinstead and Pulborough areas.[4] Up to the end of the eighteenth century the only town was the ancient borough of Arundel which acted as an administrative centre for the area, having access to the sea by the river Arun. In common with other West Sussex towns an attempt was made to connect it directly with London by turnpike in the mid-eighteenth century but with limited success. It was not until 1803 that it was permanently linked by turnpike to the Capital by a somewhat roundabout route. The growth of Worthing as a coastal resort had resulted in a turnpike connection with London a year earlier, and a branch from this provided a link to Littlehampton, then developing its potential as a port, shipbuilding centre and resort. Two west-to-east turnpikes were initiated in the second decade of the nineteenth century, linking Storrington to the line of the present A27 to the west and to the east a connection with an existing turnpike to Steyning. Both were associated with schemes devised by local landowners to divert public highways away from their residences, and neither carried any substantial traffic (fig. 1).

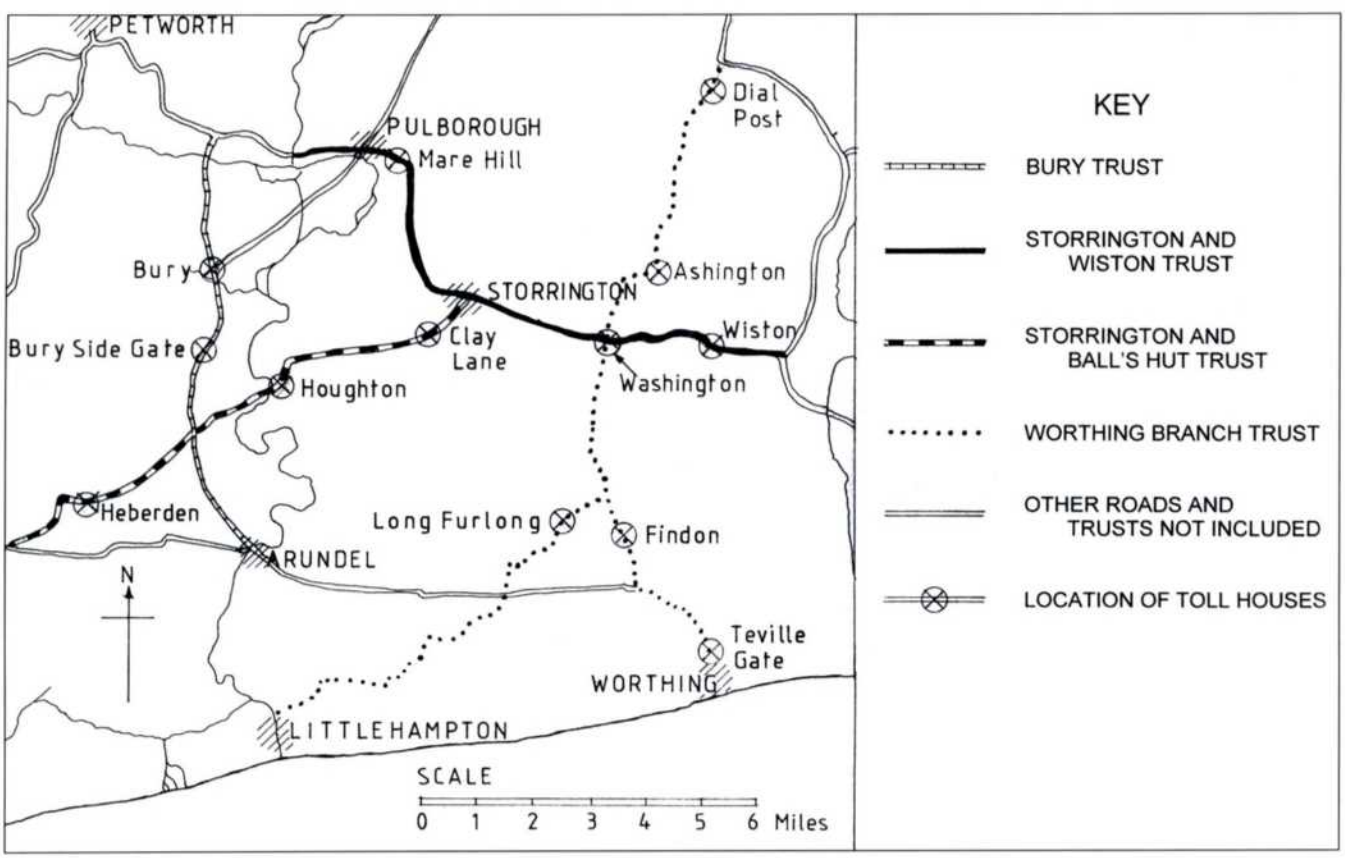

Fig. 1 Map of the turnpike trusts in the Arundel and Worthing areas (Ron Martin)

The Bury Trust (1803)

Chichester had been connected to London by turnpike in 1749 and Petworth eight years later. Arundel, comparable in size with Petworth, deserved similar accommodation, and an act was passed in the same year as that for Petworth for turnpike connection. Arundel was a town of some importance with a weekly market for corn and one fortnightly for cattle. It was a river port capable of accepting ships drawing 16ft of water and traded mainly in timber, coal and corn. The opening of the Wey and Arun Canal in 1816 further enhanced the town's trading prospects. It was a centre for the petty sessions and a borough court also sat. Although the Castle had suffered from the siege of 1643, some rebuilding had taken place since, and extensive works were carried out from the end of the eighteenth century when the Castle again became the main seat of the Dukes of Norfolk.[5]

The Act of 1757 was for a turnpike from Guildford by way of Alfold, Loxwood, Newbridge, Adversane, Pulborough and Coldwaltham to St. Mary's Gate, Arundel.[6] The road followed the line of the present A281 to Alfold Crossroads, B2133 to Adversane, the A29 to Whiteway's Lodge and the A284 to Arundel. It was an ambitious scheme which was never realised in its entirety. The southern end provided problems and funds may have been exhausted before completion. Toll gates were set up on the southern section at Roundstone Common (Wisborough Green) and at Pulborough Bridge, but a further act of 1778[7] specified that no tolls were to be taken at these gates from 1 June 1779 until the road was properly repaired. South of Pulborough Bridge flooding of the road was a perpetual trouble, especially in winter, and only solved in 1936-38 when the West Sussex County Council built a new bridge at Pulborough and raised the causeway to the south six feet above the level of the flood plain.[8] The turnpike trustees effected little improvement to the southern part of the road after 1778 though the county bridge at Newbridge, previously of wood, was replaced by one in stone, completed in 1787.[9] Eventually an act was passed to abandon the section of road south of Newbridge effective from 5 July 1799 and maintenance reverted to the parish authorities.[10] It is significant that road books published to assist travellers suggest that they reach Arundel via Petworth (Cary) or Parham and Houghton Bridge (Patterson).[11]

Fortunately for Arundel, the Stopham branch of the Petworth Turnpike Trust had been open from 1757 and at Fittleworth Common the gap to Arundel was only 8 miles and 2 furlongs. An Act to turnpike this road to St Mary's gate, Arundel was passed in 1803.[12] Already, before this date improvements had been effected at the Arundel end. The Duke of Norfolk had by 1793 obtained permission to divert the London road north of the town away from the Castle park which was being landscaped at the same period as the Castle rebuilding was taking place. A further diversion, planned from 1796, was incorporated into the line of the turnpike scheme of 1803.[13] This work provided the trustees with a newly improved route as for Whiteway's Lodge where it connected with the existing road down Bury Hill to Bury village (present A29) and then via the present B2138 to Fittleworth Common.

The Trust controlled just over eight miles of road and incomes were modest. Toll collection was rented (farmed) to outsiders. In the year to 1 May 1820 income was only £156[14] and throughout its existence it struggled and often failed to pay the interest due on the amounts initially raised to effect the road improvements. By 1851 interest arrears had occurred in 28 of the 48 years of the Trust's existence. From 1832 to the end of the decade 3% was being paid on capital raised except in 1832 when it was 2%. The amount should have been 5%. The Trustees could report that the road was in good condition except for three furlongs that were in the parish of Houghton. This the Trustees blamed on the parish authorities who were uncooperative. Four hundred loads of broken flints had been provided by the Trustees for the repair of this section and the Trustees had agreed to pay for half of the cost. Parishes had an obligation to provide statute labour (or money in lieu). Statute labour was abolished in 1835 but there was still an obligation on the parish to raise rates for the road maintenance.[15]

During the early decades of the nineteenth century Arundel flourished and its population rose from 2,188 in 1811 to 2,803 in 1831, the number of houses rising from 404 to 537.[16] In 1809 attempts were made to revive the plan for a direct turnpike from Broadbridge Heath west of Horsham, by way of the present A264 directly along the line of Stane Street (A29) through Billingshurst and Pulborough to join the Bury Turnpike at the point where its line branched towards Fittleworth Common. Plans were deposited and an estimate of the cost was obtained but no further action taken.[17]

During the early decades of the nineteenth century coaching developed along this line of road with daily services from Arundel to London, Littlehampton and Bognor from the Norfolk Arms. The "Comet" stage coach operated three days in the week via Pulborough and the other three days via Petworth. With traffic on the increase the Trust's powers were renewed by Act of Parliament in 1825.[18] The operation of these coaches, however, terminated in the mid 1840s with the opening of the coastal route of the railway from Brighton to Portsmouth. A station was opened on 16 March 1846 at Lyminster, named "Arundel & Littlehampton", three miles south of Arundel. A further blow came with the opening of the Mid-Sussex line directly from Pulborough to the town in 1863 parallel to the turnpike for much of the way.[19] Powers to maintain the turnpike were again renewed in 1853 but by then revenue was falling. Annual income from the gates had remained at £200 or more, and at times reaching £300 until 1847 but after that year they were to fall and were less than £200 in most years.[20] The Trust was eventually wound up effective from 1 November 1881.[21]

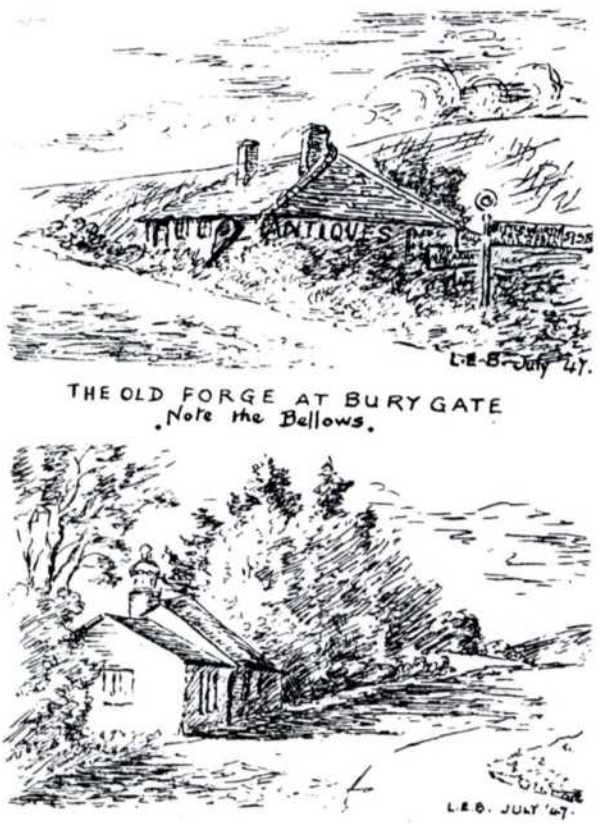

Fig. 2. The forge and tollhouse at Bury (L.E. Brown, *All about Bury*).

Tollhouses

Throughout its existence the Trust maintained only one gate across the turnpike and one side bar. Both were in the parish of Bury.

Bury Gate TQ 010154

An order for the erection of the gate was made in April 1804. There may well have been a previous gate at this point from the earlier 1757 scheme, as the Trustees in 1804 specified that it was to be placed "where the old Turnpike Gate lately stood". The tollhouse was a rectangular single-storey building with a hipped roof on the east side of the A29 a short distance south of the intersection with the B2138 road from Fittleworth Common. The house survived until the 1950s, being sketched by L.L. Brown in July 1947 (fig. 2). Opposite was a forge, the building of which still exists.[22] This was used as an antique shop from the late 1940s and now is the premises of Sussex Farm Foods. One writer has incorrectly suggested that this forge building was the tollhouse.[23]

Bury Side Gate TQ 009132

This side bar gate was erected in May 1805 and extended across the road leading from the turnpike to West Burton and Bignor, close to the centre of Bury Village. It was erected to stop traffic avoiding the toll at Bury gate by travelling through West Burton village. A house on the south side of the lane, also facing the A29, was used by the gate keeper. It belonged not to the Trust but to the Duke of Norfolk.[24] Subsequently the cottage was used as a sweet shop and was stated to consist of one room with a tiny passage and larder. It was no longer in existence by the late 1940s.[25] This side bar appears to have been unpopular with the Bury inhabitants and in August 1819 a notice was published warning that any person "pulling down or destroying any Turnpike Gate, Rail or Bar or any other fence" might face on conviction seven years transportation. In April 1843 a scheme was devised allowing inhabitants of the parish of Bury access for "cattle, horses, carts except timber carriages" for a monthly payment of 5s (£0.25). Despite this the Trustees agreed in June of the same year to proceed against Charles Heath for "cutting down and destroying the side gate lately erected at Westburton".[26]

Milestones

Eight milestones were produced and erected by John Armstrong who in April 1834 submitted his bill for

the work. Wooden direction posts were also provided by the Trustees.[27] A complete line of milestones or posts is shown on the one inch Ordnance Survey maps of the 1920s but none now survive. By the 1960 survey only one is shown about 2½ miles north of Arundel at TQ 003097 but even this could not be located.

The Worthing Branch Turnpike (1802)

Until nearly the end of the eighteenth century Worthing hardly existed and only "the humble huts of a few fishermen scattered along the shore" were to be found in this part of Broadwater parish.[28] The 1790s were, however, to see change. The success of Brighton spawned a number of West Sussex resorts aimed in the main at those who sought a quieter life where health mattered more than pleasure. The visit of Princess Amelia to Worthing in 1798 promoted its popularity[29] and only four years later the turnpike arrived, shortening the distance and avoiding the steep gradients on the route across the Downs via Steyning. Expansion became rapid with six new streets being laid out in the three year period to 1805.[30] The population of Broadwater parish, mainly living in the new town of Worthing, had risen to 3,558 in 1821 and was 4,576 ten years later. Coach services developed with equal pace. In 1800 there was only a single coach operating to London three days during the week, but four years later the service had become daily during the season. By the height of the coaching era in 1839 there were not only two services daily to London, each licensed to convey 4 inside and 11 outside passengers, but the town was also served by routes to Brighton to the east and Littlehampton, Bognor Chichester, Portsmouth and Southampton to the west.[31]

The turnpike which was authorised in 1802[32] commenced at the southern extremity of West Grinstead Park where it diverged from the Horsham to Steyning Trust road which had been in existence from 1764. It followed the line of the present A24 road south to Ashington and Washington, passing through the Downs using the gap at Findon, to its end just south of Teville Pond in the Parish of Broadwater, less than a mile from the coast. A Mr Heath of Horsham was responsible for the road improvements carried out which not only eased the gradients but reduced the distance by two miles compared with the route via Steyning.[33]

A major change occurred when the powers of the Trust were renewed in 1823.[34] The southern part of the road from Offington Corner to Worthing was abandoned because of opposition to the turnpike gate on the outskirts of Worthing near Teville Pond. It did, however, add a substantial branch commencing at Findon and extending through Clapham and Patching (the present A280) to the line of the Shoreham and Arundel road (the present A27), then by way of Angmering and Rustington to Littlehampton. Powers were obtained to restrict a number of roads, particularly in the Findon area, to bridle ways, to counter toll evasion. A new line of road was authorised at Angmering which would enable Ham Lane to be closed. The length of road now controlled by the Trust amounted to 19 miles, 7 furlongs and 39 rods with four turnpike gates in place.

Traffic increased as Worthing grew in importance and revenue appears to have been sufficient to maintain the road in good order. In the year to 29 September 1811 tolls for the three gates had been let for £1,065, each of the gates producing over £300 in rental income. By the year to Michaelmas 1829 revenue was lower at £734 2s 7d (£734.13) but expenditure was only £532 5s 4d (£532.27) and interest at 5% due on the £4,100 raised for initially improving the road, was paid in full.[35] In 1840 the road was reported to be in good repair with no part reported for lack of maintenance.[36] The fortunes of the Trust were, however, shortly affected by railway competition. The London, Brighton & South Coast's line from Brighton to the west reached Worthing in November 1845 and Chichester in June 1846 and ended coach services both to London and along the coastal fringe of the county through Worthing. In February 1848 Horsham was joined to the rail network but as no directly parallel rail route was opened the turnpike was able to maintain a flow of local traffic originating at either the northern or southern railheads. The opening of the Horsham to Shoreham line in 1861 would have had a more limited effect and the Trust may well have benefited from passengers travelling from West Grinstead station.[37] The Trust's powers were renewed by parliamentary act twice after 1823 but it eventually lost control effective from 1 November 1878.[38]

Tollhouses

Teville Gate, Worthing TQ 148033

The most southerly toll gate and its associated house were built at the point where the Trust commenced,

about a mile north of the shoreline and between Worthing and the village of Broadwater. From the Trust's commencement the gate was unpopular with the more affluent inhabitants and tradesmen of the area who were obliged to pay a full toll for short local journeys. As early as 1805 they petitioned for the closure of the gate. The gate was located at the point where the road from West Tarring joined North Street and as early as 1814 the buildings of the town had expanded north as far as the site of the gate. The ill-will aroused was such that when the Trust's powers were before parliament for renewal in 1823[39] a clause was included disturnpiking the southern section of the road, but allowing the Trustees to erect a replacement gate between Offington Common and Findon. At this point the tollhouse became redundant and ought to have been demolished in accordance with the law. The inhabitants of the parish of Broadwater at a meeting in September 1822 had resolved to use every means to ensure that no tolls were collected on any road within the parish boundaries. In May of the following year they offered the Trustees £100 to purchase the land on which the tollhouse stood and to fund the removal of the gate. The gate and the house were, however, passed to a Mr Carter, farmer of post-horse duties, and appear to have survived until the mid-1840s[40]. Fortunately the gate was the subject of a watercolour by the local topographical artist, John Nixon (c1760-1818).[41] The tollhouse was a single-storey building with a door and a lattice window facing the turnpike. It was timber-framed and weatherboarded with a brick chimney and slated roof. The gate across the road was of the usual pattern and of three bars. It had a side gate which allowed pedestrians to pass through free of charge. In the immediate foreground is depicted Teville Pond with the Cross Street windmill beyond (fig. 3).

Fig. 3. The Teville tollhouse, Worthing c1810, watercolour by John Nixon (Worthing Museum & Art Gallery)

Findon TQ 126077

Fig. 4. Findon tollhouse photographed 15 May 1938

The tollgate was authorised in the 1823 Act as a replacement for the Teville Gate. It was situated on the west side of the present A24 immediately north of the point where the lane from High Salvington mill joins the road.[42] Despite being 21 years later in date than the original tollhouses, the gatekeeper's house had a number of features in common with them. It was timber-framed and weatherboarded, had a door and window facing the road and slated roof. It differed to the extent that it had a weatherboarded porch with a hipped roof to the front and a double hipped roof to the house. Two chimney stacks are shown in photographs of the building but it is possible that the rear one might be on a more modern extension (fig. 4). A number of photographs and a drawing survive, the

latest of which was in 1946.[43] It was demolished soon after. Henfry Smail states that there was a side gate in the village of Findon known as Nep Gate[44] to close roads running into Findon from the direction of Steyning. No such gate is shown on the tithe map of 1838[45] and the purpose of such a gate is not clear. The use of this road, the former route to Worthing via Steyning, might enable a traveller to avoid a toll at Wiston on the Storrington to Wiston Trust of 1810 but no toll could be avoided on the Worthing Trust. Parliamentary returns also fail to indicate any side gates on the Worthing Trust.

Ashington TQ 133156

The tollhouse was to the west side of the old line of the Worthing to West Grinstead road, the A24 having now been diverted to the east of Ashington village. The tollhouse was immediately south of the stream and south of the village centre. A garden amounting to four perches surrounded the tollhouse and a further 29 perches of land north of the stream was owned by the Turnpike trustees and was used as a garden by the gatekeeper. In 1840 this was S. Richardson.[46] The house no longer exists and a modern garage has been built on the site. About 150 yards north of the site of the tollhouse on the west side of the road there are two modern dwellings, one named "Tollgate Cottage" and the other "Tollgate House". No illustration of the original tollhouse has been located but it probably followed the pattern of the other cottages along the main road, being a weatherboarded bungalow with a slate roof and a window and doorway in front elevation.

Dial Post TQ 154196

Fig. 5. Dial Post tollhouse prior to its demolition in 1937 (Weald and Downland Open Air Museum)

On the west side of the old line of the A24 immediately south of the point where the B2224 branches off towards Shipley on a site of 9 rods.[47] The bungalow was weatherboarded and in its later years showed two windows to the road, though it is likely that one of these replaced a door. The house survived until 1937, being demolished some time before October of that year (fig. 5) probably with the intention of improving the road intersection.

Branch Road to Littlehampton

The branch road from Findon to Littlehampton was turnpiked in 1823 and reflects the growing extent of Littlehampton's importance both as a port and a shipbuilding centre and as a sea-bathing resort. Previously it would have been accessed from London by way of Arundel over a road maintained by the parish authorities. Prior to the Trust taking over the branch road, Richard Walker of Michelgrove House had already improved much of the northern line of the road to provide access to his estate and thus the act of 1823 stipulated that no toll bars were to be set up within one mile of the "Gun Inn" at Findon and between the present A27 and the "South End of a certain lane called Long Furlong in the parish of Clapham".[48]

Long Furlong TQ 101075

Architecturally one of the most ambitious of all Sussex Tollhouses. In essence only a small two-storied house with a hipped roof, one room on the ground floor, the other above, initially accessed by a ladder. Additionally there was a small office at the front from which tolls could be collected through the only window on the road face. The stuccoed front, however, is in the Gothic style, then popular, with a pair of flanking towers to the crenellated façade which is raised to sufficient height to disguise the roof line beyond. The tollboard was probably displayed in the gothic recess above the front window. The reason for this elaboration was undoubtedly the proximity of the tollhouse to Michelgrove. The estate had been bought from Sir John Shelley by Richard Walker, a Liverpool merchant, in 1800 and by 1814 the house was reported to be "full of workmen of every description" acting on the new owner's instructions to "restore the mansion to its pristine state with considerable additions". An "incredible sum of money" was expended embellishing the whole "in the most florid style of Gothic architecture". Humphrey Repton was recruited as the architect responsible.[49] It is possible that Long Furlong tollhouse started life as a lodge which was to be "erected at the extremity of the park on this east side".[50] The grounds of Michelgrove were to be laid

out by Repton. The ambitious works over-extended the resources of the Walker family and in 1828 Richard Watt Walker, son of Richard Walker, was obliged to sell the estate to the Duke of Norfolk who promptly demolished the house.[51] It has been stated that Richard Walker became involved in a dispute with George Cross, the stage-coach proprietor, who operated, amongst other routes, a stage-coach from London to Arundel, Littlehampton and Bognor. As a consequence Richard Walker built the road past Long Furlong and set up a rival service from London to Littlehampton in opposition to Cross to ruin him. His brother John was his partner in the venture. No dates are provided for this episode, which it has not been possible to verify. Road books, directories and guides of this period only list the service of George Cross from Littlehampton via Arundel.[52]

Fig. 6. Long Furlong tollhouse photographed in March 1938

The Worthing Trust may have purchased the land and building from Walker or it may have been a completely new build by the Trustees in 1823 and provided with its gothic details as an eye-stopper when viewed from Michelgrove. At a much later date it was considerably extended at the rear. It was in this form by March 1938 when it was trading as "The Old Gate" tearooms (fig. 6). It achieved fame in 1970 when, with its stuccoed front painted buff below and white above, it featured in national advertisements for Crown "Stronghold" weatherproof paint.[53]

Milestones

The one inch Ordnance Survey map as late as 1929 showed a full range of milestones along the course of the Worthing to West Grinstead road but not on the branch. All now appear to have disappeared. Initially the Trust appears, as the law required, to have provided direction posts and milestones and in 1814 mention is made of the guidepost north of Offington "which is a very useful one to strangers" and the fourth milestone.[54] The only mileage marker for which a detailed description survives was that on the east side of Broadwater in Worthing. It was an iron plate bearing the figures "55" in relief and was 25 yards south of Broadwater Manor House. It survived into the late 1940s. This section of road was that disturnpiked following the first Trust renewal act of 1823.[55]

No turnpike connected Worthing westwards towards Littlehampton but the growth of traffic between coastal resorts did result in surveys being carried out in 1825, 1831 and 1834. The surveyors involved were C. Dethrick (1825), D. Leggatt (1831) and Charles Hide (1834).[56] No parliamentary act resulted and by the 1830s the possibility of early railway competition would have inhibited investment in such schemes. A photograph has been published showing a thatched single-storey dwelling at Goring crossroads, named as a tollhouse, but in the absence of a turnpike, usage for collecting road tolls must be doubted.[57]

The Storrington and Ball's Hut Trust (1812)

One of a number of east to west links established during or just after the Napoleonic War period. It joined at Storrington the recently opened Wiston Trust (1810) providing a connection at this end with Steyning. It progressed westwards on the line of the present B2139 crossing the River Arun at Houghton Bridge and then rising to meet the Bury Trust (1803) at Whiteways Lodge. After this it descended in a south-westerly direction along the line of the present A29 to meet the Arundel to Chichester road at "Ball's Hut Inn". In length it was 10 miles and 1 furlong. The traffic was largely local and, in common with many of these cross turnpikes, the income insufficient to both maintain the road in good order and pay interest due on the sums raised initially for the road improvement. Of Storrington, its starting point, it was stated in 1839 "there is little trade attracted to the town, and that which it does possess is chiefly of a domestic nature, assisted by the market which is rather a large one, for corn."[58] The Trust was conceived at a time when grain and other agricultural prices were high because of the effects of the Napoleonic War, but there was another non-economic factor which was probably of greater significance. At a distance of two miles to the west

of Storrington was Parham House, owned by the Bisshopp family. The house was described in 1813 as a "fine old seat, though considerably modernised....standing in a rich park abounding with deer and stately groups of oaks and other timber."[59] Sir Cecil Bisshopp of Parham was the largest investor in the turnpike, providing £2,000 of the total cost of £4,550 compared with only £1,500 by the Duke of Norfolk.[60] The existing road to Amberley and Houghton Bridge passed close to Parham House and Sir Cecil was determined to divert it around his park along a new line so that he could close up the existing line of the road. The new road diverged from the old one (the present A283) almost immediately after Storrington and veered left, aiming almost directly along the foot of the South Downs, avoiding not only Parham but Amberley village and joining the old line of road close to the chalk pits and lime works. Land for the new road was purchased from the Commissioners for enclosing the common fields at Amberley for £40 9s 9½d (£40.49). West of Houghton Bridge a new line of road improved the ascent to Whiteways Lodge.[61] The road was surveyed by John Heath and the cost estimated to be £6,691 13s 0d (£6,691.65). It was 4 furlongs shorter than the existing road.[62] There were 75 objectors to the Parliamentary Bill, mainly farmers and tradesmen but despite this an Act authorising the turnpike was passed on 5 May 1812.[63]

Initially two gates with associated tollhouses were provided, one at Heberden, Slinfold, and the other just east of Houghton Bridge. Progress in improvement of the western section of the road, where the Duke of Norfolk showed an interest, was rapid and in 1818 it was stated to be "tolerably well completed". Little action was to be seen in bringing the line east of Houghton Bridge to completion, however. This was largely a new line of road. Travellers objected to paying tolls at Houghton gate to find that after about a half of a mile they met a section unfit for traffic until near Storrington. The matter came to the attention of the Earl of Egremont and the Trustees were threatened with legal action unless passage through the gate at Houghton was allowed without toll being demanded. Legal opinion was sought but the advice was that the collection of toll at Houghton was legal regardless of the fact that the road was not finished. The work was not finalised until 1829.[64] Tolls were initially collected by the Trust but from 1820 were farmed out. The amounts received from the farmers were never sufficient to meet the expenses and outgoings. It was noted in 1851 that arrears in interest had occurred in 31 of the years of the Trust's existence. Initially Houghton toll was let for £74 but later, when the right to collect tolls from Clay Lane gate was added, they never reached more than £130. Heberden fared better initially with £140 being received in 1825 but thereafter it declined and a mere £80 was paid in 1832.[65] In 1840 it was reported that the road was "in good order" with no part under indictment" but income was only £200 3s 4d (£200.17) compared with expenditure of £242 12s 10d (£242.64) and no interest was paid on the sums raised to build the road initially which amounted to £5,500.[66] The Trust was little affected by railway competition and stage coach traffic only briefly used the road. The opening of the Amberley station in August 1863 might even have boosted traffic as both from the west and from Storrington a toll would have been paid by all but pedestrians. The powers of the Trustees were renewed as they expired but ceased on 1 November 1880.[67] Creditors of the trust at the time of winding up were Richard Holmes, Baron Zouche of Parham, Col. Henry Dixon and General Wilmot Bradford.

Tollhouses

Heberden SU 974086

On the south side of the present A29 halfway between Chichester Lodge and New Lodge of Dale Park. The tollhouse occupied a plot of 22 perches in extent.[68] An advertisement was issued in April 1813 inviting tenders for the building of tollhouses at both Heberden and Houghton and in November of the same year £130 1s 6d (£130.08) was paid to John Hartwell of Arundel for brickwork on both houses and in December £154 to Francis Bowman of Amberley for carpentry. A tollkeeper was appointed in February 1814 at a wage of 7s. (£0.35) a week.[69] When the trust was wound up the tollhouse and garden was sold in November 1880 to Charles Fletcher of Dale Park, Madehurst for £40.[70] The tollhouse does not now survive and no illustration has been located. It is not unreasonable to assume that, as it was constructed to common plan provided by the Trust, erected by the same builders and at the same time, it was similar to the one at Houghton.

Houghton TQ 026118

Situated on the north side of the present B2139 road to the east of Houghton Bridge. It was built in 1813 and a tollkeeper was appointed from April 1814 at a

Fig. 7. Houghton tollhouse photographed 29 May 1938

weekly wage of 8s. (£0.40). In addition to the gate across the turnpike a side gate was placed across the road from North Stoke and Burpham and objections were raised against this in September 1817.[71] The tollhouse was sold to the Rev. George Clarkson of Amberley in November 1880 for £60 at the time of the winding up of the Trust.[72]

The tollhouse survives, though subsequently altered and enlarged. The walls are faced with coursed flint with brick quoins and it has a slated roof. The front door is in its original position though the porch is a later addition. The two windows to the right of the door appear to be original. Extensions at both ends are of brick and are currently painted white. There may be some subsequent extensions to the rear but the Amberley tithe award map of 1846 already shows a back protrusion for half of the original length of the house. Since the winding up of the Trust the building has been used for various purposes. A 1938 photograph (fig. 7) shows it as a shop catering for both the local population and visitors who could buy ice creams, picture postcards, photographic film and mineral waters, and could even hire a boat. In addition the shopkeeper acted as parcels agent for Southdown Motor Services, provided a public telephone and acted as a branch of the County Library Service. It continued as a shop into the 1980s[73] but is now a private dwelling.

Clay Lane TQ 071134

This tollhouse was built later than the other two as it was on the line of the new road avoiding the grounds of Parham House. It was not until 1821 that tenders to erect the house were invited. John Hartwell and Joseph Exam of Arundel tendered for the brickwork at £43 12s 0d (£343.60) and Thomas Challen of Storrington for the woodwork, plumbing, glazing and painting at £78. The reason for the establishing of this gate is not clear. The only additional traffic that it could collect tolls from was that arising from the village of Amberley and as a consequence the takings were small. In 1821 Houghton toll had been let for £74, yet in the following year, when Clay Lane was added, £87 was the best of the tenders received. This practice of both gates being let as a package continued, the rent for both rising to £130 in 1825 but falling back again to £104 by 1832. A proposal to move the gate to Storrington Common "or such other convenient place" made in April 1823 was quickly rejected. As a result of this decision orders were given that the south and west walls of Clay Lane tollhouse were to be roughcast against the weather.[74] On the closure of the Trust in November 1880 the house was sold for £65 jointly to Sir Robert Phillimore and the Rev. George Horton.[75]

Fig. 8. Clay Lane, Storrington tollhouse

The tollhouse survives, on the south side of the road close to the Clay Lane intersection. (fig. 8) This lane runs north to meet the Pulborough to Storrington road (A283). The tollhouse is of coursed flint with brick coursing, quoins, corbel table and window surrounds. It originally had a slate roof though this is now tiled.[76] The west side is pebble-dashed. The centre of the façade to the road is the original tollhouse and had two windows and a door, the latter now walled up. There are more modern one bay extensions to both the left and the right and to the rear where the entrance now is. The house is called "Paygate". Originally it must have been of the same pattern as Houghton.

A single storey flint and brick building near the Police House at Ball's Hut (SU 952070) has been named as a tollhouse.[77] This structure is clearly not a tollhouse. It is beyond the extent of the Storrington and Ball's Hut line of road, facing on to the old line of the A27. It was built post 1847 as it is

not shown on Warbleton tithe award map, and no mention of such a tollhouse is to be found in the Trust's minutes or in parliamentary returns.

Milestones

None appear to survive though the law required their erection. None are shown on a 1920 one inch Ordnance Survey map.

The Wiston Trust (1810)

The branch of the Petworth Trust, dating from 1757, had connected that town to the Arun Navigation at Stopham Bridge. The Wiston Trust Act of 1810[78] commenced at Stopham Bridge, on the present A283, and then passed through Pulborough and Storrington to connect with the recently opened Worthing turnpike at Washington. The road then continued its south-easterly course to within about two miles of Steyning where it made junction with the Horsham to Steyning Turnpike of 1764. The Wiston Trust was twelve miles in length.

As in the case of the Storrington to Ball's Hut Trust, two years later, Sir Cecil Bisshopp of Parham had an interest in diverting the road away from his house and also rerouting that from Greatham Bridge to Storrington. The old road from Greatham proceeded in a south-easterly direction over Greatham Common and through Parham Park, close to the House. Objectors petitioned the Earl of Egremont. They claimed that the new line of road from Greatham was longer by above a mile, but eventually had to accept a new route from Greatham Bridge directly to the east, joining the turnpike north of Parham.[79] When the Trustees had their powers renewed in 1831[80] a further diversion was authorised though evidence suggests that work had been completed three years earlier. The diversion was to be to the east of Storrington and Sandgate in Sullington parish where the road was diverted to the south of its former course. George Gibson, the owner of Sandgate Lodge had extended it in 1825 but the existing road passed close to his house. In order to enlarge his grounds he purchased land from the Earl of Egremont to allow a more direct route south of Sandgate towards Washington, and sought powers to stop up the existing line.[81] The diversion was ready for use by March 1828. Yet a further alteration was proposed in 1841. This was at Wiston where it was suggested that the existing road be diverted away from Parsonage House. The new line would run south of the Gamekeeper's House, improving the exit from Wiston Park and eliminating a sharp bend. The proposer was Charles Goring of Wiston. Work was complete by January 1846, the new road being 27 feet wide and covered with "fresh flints properly broken spread to the extent of 150 bushels to the square rod".[82]

In 1840 the entire road was reported to be "in good condition" with "no part under indictment" and income from the Trust was sufficient to pay some interest to those who had initially raised the £3,587 10s 0d (£3,587.50) to improve the road.[83] Three tollgates were set up, at Marehill Pulborough, Washington and Wiston, all of which brought in a steady income. All were let by the year to farmers and the sums raised by this method varied from year to year. During the period 1825-60, however, they were in the range of £105 to £162 for Pulborough, £120 to £186 for Washington and £90 to £162 for Wiston. No direct railway competition developed though stations were opened at both ends of the line of road, at Pulborough on 10 October 1859 and Steyning 1 July 1861. The opening of earlier lines along the coast appears to have had no impact on toll revenue.[84] The Trust continued to operate until 1 November 1877 when the roads reverted to parish control.[85]

Tollhouses

Marehill, Pulborough TQ 065184

On the south side of the A283 just before the turning to West Chiltington. The tollhouse and associated garden were on a plot extending to 11 rods.[86] The house no longer remains and no illustration has come to light. In November 1830 the trustees discussed the removal of this gate but it was agreed that the toll gate be continued.[87] When the Trust was wound up the tollhouse appears to have been demolished in the interests of road improvement for in November 1877 Sir Walter Barttelot of Stopham House paid £14 for "all that piece or parcel of ground heretofore a garden and a portion of the site of the Turnpike Toll Gate house".[88]

Washington TQ 120134

On the north side of the A283 just before the intersection of this road with the A24. The tollhouse and garden occupied 13 perches. In October 1830 it was ordered that a "wash-house be erected at the back of the Tollhouse...for the convenience of the gate keeper" at a cost not to exceed £10.[89] In

November 1877, after the winding up of the Trust, the cottage was sold to George Rowdell of Washington for £60.[90] No illustration of the tollhouse has been located.

Wiston TQ 153135

Fig. 9. Wiston tollhouse photographed in 1970 (Brian Austen)

On the north side of the A283 close to the entrance to Wiston Park. In July 1810 it was ordered that the gate "near Buncton be placed at the east side of a piece of land of Timothy Shelley Esq. leading into Wiston Park". The existing road was diverted at this point over land belonging to Timothy Shelley with Charles Goring of Wiston Park receiving the line of the old road.[91] When the Trust was wound up in November 1877 the toll cottage was sold to the Rev. John Goring of Wiston Park for £60.[92] The tollhouse survived but in May 1970 it was unoccupied and showing damage to the overhanging roof caused by passing traffic. It was scheduled for demolition at an early date, and the site was levelled soon thereafter. The original tollhouse was a two room bungalow fronting the Steyning to Washington road, 22ft 3ins in length and with one sliding window in this face, though a door was probably originally on this elevation also. Later the building was doubled in size with a further two substantial rooms and one small one added to the rear, and the main entrance place on the west front away from the road. It was now a U–shaped building . The tollhouse was of brick construction and displayed decorative bargeboards painted white, indicative that the enlargement took place at or after 1877.[93] (fig. 9) The Marehill and Washington tollhouses may initially have been of similar size and construction to the original part of the one at Wiston.

Milestones

None recorded, nor are these shown on the 1920 one-inch Ordnance Survey map.

Turnpike Development

The turnpikes of this southern section of the Rape of Arundel and the south-eastern section of the Rape of Bramber were all of early nineteenth century date if we exclude the abortive attempt to construct a turnpike to Arundel authorised by the Act of 1757. The late arrival of turnpikes was a reflection of the relative unimportance of towns in this area prior to the early nineteenth century. Only Arundel was of significance, playing a role in the administration, judicial control and commerce. Early in the nineteenth century the expansion of the sea-bathing resorts of Worthing and Littlehampton were to promote improved lines of roads, turnpiked to ease the lot of the traveller. Two west-to-east turnpikes made an appearance at the beginning of the nineteenth century, one extending the line of the branch of the Petworth Trust eastwards to near Steyning and the other providing a connection from Storrington towards Chichester. It is significant that one of the main urges for these trusts was the desire of local landowners to improve the parkland around their houses. They no doubt also hoped that agricultural prosperity generated by the Napoleonic War would continue into the post-war period. The collapse of grain prices and the burden of maintaining a rising population for which there was insufficient work, stifled any hope for additional road traffic that would have provided income sufficient to provide an adequate return to those who had invested in the road improvements.

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The Survey of the tollhouses and milestones on which this article was based was carried out in the summer of 2005 by John Blackwell, Peter Holtham and the author. John and Peter shared in the research at the record office and libraries.

BREWERS OF EAST SUSSEX

Peter Holtham

Introduction

The Bridge Wharf Brewery belonging to Messrs Harvey & Son (Lewes) Ltd., happily still operating, is the last historic brewery in East Sussex.

Below is a comprehensive list of all brewers known to have operated in the county up until World War II. Present-day county boundaries have been taken. West Sussex was covered in *Sussex Industrial History* No. 34 published 2004. Brighton and Hove will be the subject of a later article.

Sadly there are very few visible remains but where some do exist these are marked [VR] followed by a map reference. Since the terms "brewer" and "publican" are often synonymous it is possible that some entries may relate to pubs that did not in fact brew their own beer. Sometimes the name is that of the owner rather than the operator. Several small post-war independent concerns and brew-pubs have since come (and gone) but these will possibly be covered by a later article.

Sources

The main source of the information has been the County and Town Trade Directories found in the various reference libraries. This has been supplemented by Town Rate books where available.

Acknowledgements

The writer is indebted to Graham Holter, Reg Towner, and John Hodges for providing and confirming some of the information.

Explanations of the text

Since Directories are not usually available for every year the symbols "-" and "+" have been used to mean "before" and "after" the stated date. "Taken over by" has often been abbreviated to "t.o.b." and transferred to "tfd". Any facts that cannot be verified are followed by a question mark (?)

The writer would be pleased to provide additional information on any of these entries and to receive further information if available.

ALFRISTON

The Old Brewery

-1802+ Worger, James

"The George Inn"

-1839+ Woodhams, John (brewer & maltster)
-1845+ Woodhams, Thomas (maltster)
-1851+ Pagden, Charles Henry (brewer)

ASHBURNHAM

Broadbread Street, Northlands,

-1851+ Golden, Joseph
-1861/69+ Golden, Mrs Elizabeth

BATTLE

The Battle Brewery, 15, High Street,
[VR at TQ 747159]

-1828/39+ Goodwin, Charles
-1845+ Goodwin, Charles Augustus (brewer and at the "Conquering Hero")
-1851/61+ Leney, Walter
-1865/73+ Runnacles, Henry
-1877+ Runnacles & Armstrong
-1881/85 Armstrong & Stephens
1886/1908+ Baily, James & Edward
-1911 Nov. Baily & Co.,
12 lic. houses t.o.b. Ballards & Co. of Lewes

AND:-

-1793+ Martin, Thomas (location?)

BODLE STREET GREEN

"The White Horse"

-1886/98+ Pankhurst, Edward Peter (brewer?)

COOKSBRIDGE

The Cooksbridge Brewery, Hewin Street, Hamsey

1823 established
-1839/51+ Cheesman, John
-1855/1912 Norman, George
1912 Telling, H.G.
7.8.1912 Destroyed by fire. Off licence sold to the Southdown & East Grinstead Breweries

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DITCHLING

Sandrock Brewery, North Street

-1828/61+ Rowland, Peter (maltster)
-1869/77+ Unwins, William (brewer)
-1881+ Unwins, William (brewer & maltster)
-1886+ Unwins, Willam Robert (maltster)
but 1885 "Sandrock Inn" sold to Mews brewers of Portslade

AND:-

-1841+ Muddle, Thomas brewer in Eastend Lane
-1855+ Ashdown, Thomas (brewer & grocer) (location?)

EASTBOURNE

2, Duke Street and East Street,
Brewers & Soda water mfrs.

-1869+ Bignell, John & Co., -East Street
-1873+ Bignell, John -2, Duke Street
-1877/86 Bignell, John & Co., -East Street
1886/1914+ Bignell, John -2, Duke Street.

The South Street Brewery, 2, South Street

-1773 Rason, John
-1780 Rason, Samuel and William
(Rason, William occupied a small malthouse)
-1784/93+ Chapman, George(?)
-1802+ Hurst, George(?)
-1811/14 Richard Buckley Stone in partnership with David Chapman (?)
-1832+ Newnham, John
-1845 Hurst Family
1845/65+ Cooper, Robert
-1869+ Cooper, Bros. tfd to Junction Road

The Eastbourne Brewery, Junction Road,

1869/73 Cooper Bros. Archambo and Charles
1874 voluntary liquidation

The Star Brewery, High Street, Old Town,

1777 established by Hurst, William
-1802/39+ Hurst, George
-1845+ Hurst Harry
-1851+ Hurst, Alexander
-1859/86 Hurst, Alexander & Co. "Star Brewery"
1886 Became public company purchased by Colonel Cardwell
1965 t.o.b. Courage Barclay & Simmonds Ltd
1967 brewing ceased.
c.1971 demolished after fire damage

The Golden Hop Brewery,
74, (now 20A), Seaside, [VR at TV 618992]

-1877+ Hollingham, Edward
-1881/6 Gates, George
1886 Business acquired by the Star Brewery

The Lion (Steam) Brewery,
2, Pevensey Road, [VR at TV 616990]

1858/61+ Diplock, Caleb & son - wine & spirit merchants only
-1865/69+ Diplock, Caleb & son
-1873/81+ Diplock, Son & Pepler
1885/90 Young & Rawley
1890/1914 Young & Rawley Ltd.
1914 Bankrupt, t.o.b. Abbey & Sons of Brighton
Premises became a bus depot.

FOREST ROW

"Brambletye Castle Hotel"

-1886/94+ Histed, George

"The Swan"

-1900 Henry Beaman
1900 Acquired by Ballard & Co., Lewes

FRANT

The Frant Brewery, The Leafwood Brewery
Bells Yew Green [VR at TQ 605359]

1862 founded at the "Royal Oak"
-1861/66 Batchelor, Thomas
1866/c78 Batchelor, Thomas & Ware, George
c1878/86+ Ware, George
1893 new brewery built

-1889/Feb. 1925 Ware, George & Sons
Feb. 1925/29.6.1950 Ware, George & Sons Ltd
1950/54 J.W. Green
1954 Flowers of Stratford-on-Avon, brewing ceased

HAILSHAM

The Hailsham Brewery, Battle Road [VR TQ 589100]

1808 founded
c1827 Gooche, Thomas
-1832/39+ Pagden, Peter
-1845+ Campbell, James
-1851/55+ Hurst, Harry
-1858/85+ Overy, Robert
1887 (new brewery built)
1887/90 Olney, D.N.& B.N.
1890/1901+ Knight, John Gray
1902 Lynn, George
1903/30 Lynn, Herbert
1930/40 Molesworth's Poynings Breweries Ltd
1940 closed

AND:-

-1839+ Thompson, Reuben (location?)

HASTINGS

The Eagle Brewery, Court House Street

-1839+ Fermor, E & Amoore, W
-1845+ Amoore, William
-1851/55+ Amoore, Wm jun.
-1858+ Amoore, Mrs Ellen R
-1861+ Farn & Stewart
-1865/68 Mills & Sons
14.9.1868 Brewery destroyed by fire, business continued as dealers.

The Hastings Brewery, 61, High Street,

c1802 Founded by Breeds, Thomas
-1809/10 Breeds, Thomas & James
1810/1811 Breeds, Thomas
c1811/19 Breeds, Thomas & Mark and Farncomb, Thomas
1819/1839 Breeds Thomas (died 1839)
1839/75 James Breeds (son.) T/A Breeds, Thomas & Co
1875/97 Breeds, Thomas (son) T/A Breeds, Thomas & Co
28.10.1897/10.4.1931 Breeds, & Co. Ltd
1931/46+ Breeds, & Co. Ltd bought by George Beer & Rigden Ltd) - brewing ceased although bottling continued
March 1952 brewery buildings sold

The Phoenix Brewery, 8/10, Court House Street

1799 Business Established by Thomas Burfield
-1809/33 Breeds, James
1833/1902 (grandsons) Burfield, Thomas James Breeds & Burfield, Charles, later succeeded by Burfield, Herbert
1902/08 Burfield, J & Co.
-1908 Taken over by Smith & Co., Lamberhurst Ltd and brewing ceased. Premises became a beer store and later a Watney's depot

The White Rock, Stratford Place, Marina

c.1831 Built
-1832+ Tindall, Henry
-1839 Duedney & Fagg
1839/45+ Duedney & Hurst
-1851+ Pagden, P
-1855 become Gray's wine merchants.
1885 demolished

The Castle Brewery, 8, Stonefield Road,

1846 built
-1851+ Quaife, T
-1855+ Townsend, John

-1858+ Townsend, Benjamin
-1864 Cheal, John
1864/67+ Cheal, Mrs Harriet
-1869+ Watson, David Souter

AND:-

-1832+ Woodhams, John Later, brewer, West Hill,
-1793+ Hovenden, Thomas (location?)

HERSTMONCEUX

The Old Brewery, Gardner Street,

-1811+ Everest, James (maltster)
-1820/1839+ Everest, James
-1845/51+ Everest, Mrs Mary
-1861/65+ Harmer, James
-1869+ Aylward, Thos John ?
-1873/1910+ Wright, Robert

The Phoenix Brewery or New Brewery, Gardner Street (-opposite the Old Brewery)

-1869/77+ Page, Charles

Windmill Hill [VR at TQ 647121]

-1869/75+ Harmer, James (at windmill site)
-1881+ Winchester, John (premises to the east)
-1886+ Edwards, William (do)

HURST GREEN

-1845/51+ Kingdford, Flavius Ebenezer

LEWES

Ballards Brewery, Bell Lane, Southover,

-1845+ Morris, Joseph (maltster)
-1848/51+ Morris, William (maltster)
-1858/69+ Morris, Mrs Ann (brewer)
-1861/69+ Morris, Benj. (maltster)
-1873+ Trower, George
-1877/1898 Ballard & Co.
1898/1924 Ballard & Co., Ltd (H.J. Beeman).
1924/1930 Page & Overton
1930 closed, demolished 1980

The Bear Brewery, Bear Yard, High Street, Cliffe,

1787 "newly erected"
c1798/1801 John then later son Richard Rickman
1801/17 John Rickman II
1817/27 Tamplin & Wood (Thomas Roff Tamplin died Nov. 1827)
1827/38 Wood, T
-1839/55+ Wood, George & Alfred
-1858+ Monk, Edward
-1861/95+ Monk, Edward & Sons
January 1898 Taken over by Southdown & East Grinstead Breweries, brewing ceased

The Bridge Wharf Brewery 6, Cliffe High Street, [V at TQ 419102]

c1810/38 John Harvey (brewing at the Bear Brewery premises)
1838/55+ Harvey & Son at Bridge Wharf
-1858/1928 John Harvey & Son
1929/the present Harvey & Son (Lewes) Ltd

The Castle Brewery, Castle Gate Street,

1749 "established" by Chester, Robert
later Cooper, William
-1784/1805+ Cooper, Robert Chester
-1824/32+ Langford, Benjamin & John.
-1839/50 Langford, John
1851/55+ Langford, Alfred
-1856 Langford, Frederick
10.9.1856 Sold.

24/5, South Street, Cliffe,

-1851/63 Leney, Isaac
1863/1865+ Leney, Isaac (exors of).

Cliff Brewery, South Malling Steam Brewery, South Malling Brewery, 135 Malling Street, South Malling

1821/42 Berry, Thomas
1842/45+ Wymark & Son
1845+/49+ Berry, Henry (maltster)
-1855+ Collyer, Ralph "Cliffe Brewery"
-1858+ Goldberg, Casimir J.A.
-1861+ Gresham, Wiles & Brown "Cliffe Brewery"
1864 brewery rebuilt after a serious fire
-1865/69 Elmsley, Alexander "Cliffe Brewery",
1869 do."South Malling Steam Bry"
1876/77+ Elmsley & Freeman
-1881+ Elmsley & Co.
-1886/95+ Lyell Brothers
1889 pubs sold to Tamplins of Brighton
-1897/99 Bishop & son "South Malling Brewery"

The Southdown Brewery, Thomas Street, Cliffe, [VR at TQ 422105]

1838 brewery built
1838/43 Hillman & Thomson
1843/+ Hillman, John
-1849/69+ Hillman, John & Alfred
-1873/86+ Hillman, Alfred
1888/94+ Hillman, Bernard & Harold

1895 Manning, A.G.S.
1895/1920 Southdown & East Grinstead Breweries Ltd.
1920/24 leased to Tamplins of Brighton
27.3.1924 sold to Tamplins Ltd. of Brighton,
25.4.1924 in liquidation

The Southover Brewery, Southover,

c1780+ Brewery founded by William Verrall (lived 1721-1788)
-1784/1805+ Verrall, William (son)
-1823+ Verrall, Henry & Cave, Stephen
-1828/90 Verrall, William (father & son).
1890/97 Verrall, Francis
1897 Brewing ceased, brewery sold
1897/1905 Page & Overton's Brewery Co., Ltd of Croydon brewery, depot
1905 (demolished)

The Star Lane Brewery, Fisher Street,
[VR at TQ 414101]

-1734/74+ Elliot, Obadiah & Brett, William
-1784+ Scrase, Henry
-1794/96 Charles Scrase & Chitty
8.10.1796 Chitty, Chrisophilus
-1805+ Chitty & Willard
-1812+ Chitty & Co.,
-1823/4+ Beard & Thomas
-1828/39+ Beard & Chitty
-1845/73+ Beard, Edward
-1877+ Beard, Thomas Edward
-1881/1933+ Beard, Charles Ernest
1936/1958 Beard & Co., Ltd.
January 1959 closed. Brewing and bottling undertaken by J Harvey & Son.

AND:-

St John Street,
-1839+ Cripps, John
St Nicholas Lane,
-1839+ Dumbrell, Richard brewer & cooper
West Street,
-1839+ Feast, Mary
Southover,
-1839+ Pescodd, Richard

MAYFIELD

Tinker Lane, Hadlow Down
-1851+ Gravely, Mrs Elizabeth

MOUNTFIELD

The Vine Hall Brewery, Vinehall,
-1873+ Workman, Henry (The Bell Inn)

NEWHAVEN

(Much of this information has been supplied by descendants Reg Towner and Judy Grimes)

The Ship Brewery, 6, High Street,

-1791/5 Tooby, Reginald
1795/1827 Wymark, Thomas

The Tipper Ale Brewery,

c1760 Brewery founded by Thomas Tipper.
1785/1829 Dean, Edward
1821/29 leased to Brooker, Richard
1829/37 Brooker, Richard
1837/58 Stone, Thomas
1860/86 Stone, George & Towner, Robert
1886/+ Towner, Robert
-1898+ Towner Bros. (C.W., E., and H.A.)
-1902/11 Towner, Charles William
8.8.1911 taken over by Rock Brewery, Brighton

At the "White Hart Inn", Riverside (query whether brewed here?)

-1832/46 Towner, Charles William
1846/c60 Towner, Robert

"The Flying Fish", Denton
-1895+ No further details

NEWICK

The Newick Brewery,High Street
[VR at TQ 417214]

-1839/45+ Gilbert, William & James
-1852+ Gilbert, William
-1855/61+ Kenward & Capps
-1865/69+ Gilbert, James (exors of)
-1873+ Gilbert, William
1882/83 Brewery rebuilt
1881/94 Hammond, Joseph
1894+ Brown, Ernest L,
-1898+ White, L.S. & Co.,
-1901+ Buckland, J.C.
-1902/08+ Roberts & Co., (may not have brewed here but used premises only as a depot?)
-1910/14+ Freeland & Watson (do ?)

RINGMER

The Wellingham Brewery,

-1839/66+ Durrant, Robert
-1869+ Breton, James
-1873/1908+ Crosskey, Albert Ward
-1910/13 Hey, Arthur
1913 bankrupt, premises later burnt down

ROBERTSBRIDGE

"Langham Cottage", Station Road,
[VR at TQ 736235]

-1845/51+ Adams, Thomas
-1861/75+ Adams, Thomas

"The Pig & Whistle", High Street,

-1815+ Robinson, Thomas
-1845+ Chrismas, Thomas & Tilden

AND:-

-1794+ Tyrell, Abraham

RYE

The Albion Brewery, Ropewalk,

-1832+ Aylward & Fisher
-1839+ Aylward, William
-1851/55+ Aylward, Thomas John (Ropewalk)
-1855+ Aylward, Thomas William (Mint Street)

The Eagle Brewery, King Street. a.k.a. The Landgate Brewery, Batchelors Brewery, Bowens Brewery, [VR TQ 921207]

-1851/73+ Batchelor, James
-1877/c1896+ Bowen, John.
1900 Taken over by A Leney & Co., of Dover (whose name still appears on the wall) and used as a depot.

The Guldeford Brewery, Military Road, East Guldeford,

c1826 established
-1839/58+ Chapman, Samuel Herbert
-1861+ Chapman, Mrs Ann
-1865+ Chapman, Herbert & Elliot, Thomas
-1869+ Chapman, Herbert
-1873/93 Chapman, Herbert Verrall
1893/1909+ Chapman Brothers (Ltd. in 1901)
1911 demolished

The Strand Brewery, The Strand,
[VR at TQ918202]

-1798/1824 Meryon, Lewis (died 1824)
1824/-1850 Meryon, John & Holloway, William
26.6.1850 brewery premises sold.

AND:-

-1798+ Proctor, Nathaniel (and maltster and corn merchant)
-1832+ Smith, Jeremiah at Cadmoro

ST LEONARDS

The Crown Brewery, Shepherd Street,

1831 founded.
-1839+ Evenden, John
-1845+ Godfrey, Thomas
-1851+ Eldridge, William Mantell
-1854/-58 Eldridge & Young
1858 Eldridge, William Mantell
1858/64 Hewett, Edward
1864/74 Hewet, Edward regd as Hewett & Co
1874/76 Hewett, E & Wells, C.
1876/85 Hewett, Edward died 10.3.1885 .
1885/1907 exors of Hewett, Edward

1907/13 Hewett & Co., (in voluntary liquidation)
1913 Taken over by Breeds & Co., Ltd, Hastings and brewing ceased

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SEAFORD

The Elm Brewery, Croft Lane [VR at TV 484990]

-1877/81+ Woodhams, Thomas King
-1885/86 Beak & Son
1886/+ Beak, William Edward
-1889+ West, Frank
-1894/07 Stone, Albert
20.2.1907 Severly damaged by fire.
-1912/17+ Sexton & Balkan (Taken over by Ballards & Co., Lewes)
-1919/22+ Sexton & Sons,(latter merchants only).

The Brewery, 35, High Street, [VR at TV 484990]

-1851/61+ Woodhams, Thomas
-1865+ Woodhams, T & Son
-1869/75+ Turner, William Webb
-1877/81+ Troughton & Son
-1887 wine & spirit merchants only
-1902 (Used as a depot by Robins E. & Sons of Hove whose name still appears on the wall).

AND:-

-1828/32+ Brooker, William (location unknown?)
-1828/32+ Pitcher, William (do.)
-1839+ Gorring, Thomas (do.)
-1839+ Templeman, Joseph (do.)

STAPLECROSS

The Staple Cross Brewery, [VR at TQ781224]

-1855/61+ Beck, William
-1865+ Beck, Charles
-1869/73+ Gilfin & Riley
1878 sold and became an oast house.

TICEHURST

The "Bell Inn",

-1851/55+ Adams, J & Son

UCKFIELD

The Lion Brewery, Framfield Road,

-1873/81 Luckhurst, Alfred (dead by 1881)
1881/2 Luckhurst, Charlotte -administrix
-1884+ (Mitchell & Gosling?)
-1887 Delves, Charles & Tress, William, t/a Delves & Co., bankrupt
-1889/1904+ Bruce, Francis R
-1906/09 Crawford, Algernon & Ray

The Uckfield Brewery, High Street,

1793 Inscribed on wall "Built by J.W". (who?)
-1828/39+ Newnham, John
-1845/66 Hallett, John Taylor
1866/85? Sinden, Edmund John
-1886/89+ Silvester & Co.,
-1894+ Sinden & Tasker
-1898/1901- White, L.S.
-1902 Knight, John
1902/08+ Roberts & Co.,

AND locations unknown:-

-1828/51+ Kenward, Edward (maltster)
-1855+ Kenward, Edward (brewer & maltster)
-1858+ Kenward, Edward (brewer)

The Rose Brewery,

-1851+ Gravely, Joseph

WADHURST

The Holmesdale Brewery, High Street, Durgates,

-1873/86+ Wright, Gregory
-1894/1906+ Wright, Gregory & Son
-1908/25.4.13 Wright, Gregory & Sons

WIVLESFIELD

-1869+ Wickham, Mark (location unknown?)

WEST HILL CLIFF RAILWAY, HASTINGS—ENGINE ROOM

Ron Martin and Clem Gill

The West Hill Cliff Railway runs from the Bottom Station in George Street, Hastings to the Top Station on the West Cliff at TQ 821095. The line runs approximately south to north and this orientation has been used for all descriptions in this article.

The 1-in-3 gradient West Hill cliff railway, Hastings

The railway was constructed in 1891[1] and comprised a tunnel driven through the cliff with a track length of 152 m (500 ft). and a rise of 52 m.(170 ft) at a slope of 1 in 3. It was originally powered by an Otto gas engine fixed in the Engine Room beside the Top Station. This was replaced in c. 1922 by a Tangye heavy oil diesel engine, which was used until c.1970 when an electrical powered system was installed. The diesel engine is still in situ but disused.

The Otto gas engine was of 16 h.p. and was located in the position of the present diesel engine although sunk in a pit about 0.60 m (2 ft) below floor level. The power was transferred to overhead line shafting and thence by belts to a low level counter-shaft and thence to large pulleys on the worm shaft, two loose and one fast, driven by open and cross belts, thus driving both ways. This shaft was of steel and had two worms cut out of the solid, one being right-handed and the other left-handed. These drove two powerful worm wheels on the shaft on which were keyed two mortice spur wheels which engaged directly with the main hoisting wheel.

Description of the Building

The Top Station of the railway is sunk below the surface of the ground to avoid it being obtrusive and is an unroofed structure with battered brick walls on the west, north and east sides. To the north of this is the Wheel Room which is now roofed and with a viewing window from the Top Station.

The Engine Room is located to the east and north of the top station. It is 6.11 x 9.70 m (20'0" x 31'10") internally with an Annexe to the south 2.55 x 4.05 m (8'4" x 13'3"), which gives access from the Staff Room to the Engine Room and also contains a compartment with a WC pan and a high level cistern and a lavatory basin. To the east of the WC compartment are two oil storage tanks mounted on a brick and steel joist stollage (See Appendix). To the south of the Annexe is the present Staff Room.

The external and internal walls of the Engine Room and Annexe and the division walls between the Annexe and the Staff Room are 640 mm (2'0½") thick and comprise an inner skin, half-brick thick 115 mm (4½") in stretcher bond, a 75 mm (3") cavity and two-brick thick outer skin 450 mm (1'6") thick in English bond. All the brickwork is built of bricks 3" thick laid with four courses rising 285 mm. (11¼") The walls of the WC compartment are 215 mm (8½") to the north and 115 mm (4½") thick to the east. All the walls are fair faced and most have been painted. The two skins of the walls are tied together with wrought iron wall ties.

In the south side of the Engine Room there is a blank opening with a segmental three-ring arch over. (See Appendix.) In the north end of the west wall there is a high level recess 1.58 x 1.25 m (5'2½" x 4'1") the external walls of which do not have the inner half-brick skin. The soffit (see Appendix) of this recess is 1 m (3'3") above general soffit level and is lined with corrugated sheeting.

The soffit of the Engine Room is two bays wide and three bays long. It comprises 75 x 255 mm (3" x 10") softwood joists running south to north at 350 mm (14") centres with boarded pugging (see Appendix) between joists supported on fillets and acting as permanent formwork to the weak concrete filling over. In several places the joists have decayed and are no longer extant. The ground over the top of the soffit is about 1.2 m (4 ft.) of earth.

The ends of the joists are supported intermediately on 50 x 50 mm (2" x 2") timber fillets spiked to the two timber flitch beams (see Appendix) T1 and T2, comprising two 150 x 300 mm (6" x 12") members with an 18 mm (3/8") steel plate core, strapped together with steel straps to top and bottom, bolted through the full depth of the beams. The joists, where abutting the walls, are built in. As originally constructed there were probably similar joists and

two more flitch beams to the eastern half of the room which have since been removed and replaced by precast concrete beams.

The ends of the flitch beams along the central spine are supported by two cast iron cruciform columns, C3 and C4 150 mm x 150 mm (6" x 6") at the base, tapering to 125 x 125 mm (5" x 5") at the top with triangular gussets and cap. Column C3 has been strengthened with the addition of two 7" x 3½" steel channels C1 and C2 located at each side and stiffened by steel straps. The northern flitch beam T1 has had the load on it relieved by two 5" x 8" steel I-beams, B6 and B7, one at each side supported at their east ends by columns C1 and C2. Similar beams B8, B9, B11 and B12 which are located in the east bay were presumably installed to relieve the load on the former flitch beams.

Along the south to north spine there are 5" x 10" steel I-beams , B1, B2 and B3. These are supported by the columns C1 and C2 and on the cap plate of column C4. An additional 5" x 8" steel I-beam has been inserted adjacent to the north wall to carry the ends of the timber joists. There are various steel lifting beams located over the engine and oil tanks.

There is a run of 4" diameter line shafting extending from the west to east carried on cast iron bearing boxes built in to the external walls and on two intermediate bearings supported on cast iron brackets bolted to two 6" x 12" steel I-posts. The line shafting has one 22" diameter take-off pulley, between the two intermediate bearings and at the west end the shaft has a keyway, where presumably other pulleys were previously located. Apart from the one in the west wall, all the bearings have been removed and the line shafting has been disconnected in the centre and is not in its original location. It has been drawn in its original position.

In the Annexe there are two low level 10" x 3" steel channels supported on 5" x 5" steel I-beams. The channels run east to west and pass partly through a small blank opening leading into the Wheel Room. The channels do not appear to be bolted down, although this was not confirmed due to the difficulty of access.

At the west side of the Annexe there is a timber ramp with three steps at the top and one at the bottom for access from the Staff Room to the Engine Room. The recess in the northwest corner of the Engine Room appears to have previously been fitted with doors as there is the remains of timber blockings built into the brickwork. There were originally two double-hung sash windows at the west side of the Annexe fixed sloping in the wall of the Top Station. One of these is extant but the other has had the sashes removed and fixed glazing applied to the frame secured with beads.

The opening from the Engine Room into the Wheel Room has a segmental three-ring arch over and is infilled with timber glazed panelling containing a door, and is partly covered with corrugated steel sheeting.

Description of the Machinery

No manufacturer's nameplate can be found apart from "TANGYE" cast into the cylinder head. The *"Instructions for Working"* and the parts identification information sheets are of a general nature and give no information as to the specific type and size of the unit and it would appear that several versions and sizes of this engine were produced.

The engine has a cylinder bore of 12" with a stroke of approximately 20", the flywheel being 78" diameter and 8" wide. The power take-off is from a 27" diameter pulley adjacent to the flywheel via a flat belt, probably to the existing line shafting above. This shafting may have been for the original gas engine but there is no indication of anything further.

The engine rests on a concrete plinth 375 mm (1' 9") high.

Fuel and Fuel Storage

The 1891 installation required a town gas supply and part of this still exists. The piping is 2" bore cast iron with lead caulked joint passing through the wall of the northwest recess. More recently some screwed steel barrel has been incorporated running across the soffit to drop down at the corner of the stollage supporting the starting oil tank.

The diesel engine was designed to run on a quite viscous grade of fuel but a lighter grade was required for starting and warm-up purposes. Two heavy rectangular fuel oil tanks are located in the Annexe. A small vertical cylindrical tank is sited to the north of, but is separate from, the engine and is raised on a timber stollage. This contains a quantity of light diesel oil used for starting from cold and is original. A smaller heavy fuel heater/filter unit is sited close to the front of the engine. Heating of the heavier oil was provided by the exhaust.

The heavy gauge vertical cylinder in the area north-

east of the engine is believed to be a compressed air receiver. Air at approximately 300 p.s.i. (16 bar) would have been required for starting purposes but there is no evidence of the means of compressing the air.

Two exhaust mufflers are still in situ, one adjacent to the engine and one located higher up in the recess in the east wall. Interconnecting pipework and the final vertical exit pipe to the outside are mainly missing.

Two other 700 gallon (3,182 l) rectangular tanks mounted on a brick and concrete stollage at the south side of the Engine Room may have been used for engine water cooling purposes.

Interpretation

It seems likely that, as originally built, the 75 x 255 mm joists were supported by four flitch beams, of which two are extant, the ends being carried by columns C3 and C4. It is probable that both columns were originally at the same level with the cap supporting the flitch beams. The pugging to carry the weak concrete filling was probably laid in order to form a surface suitable to carry a damp-proof membrane.

At a later date the ends of the flitch beams probably became decayed, and to relieve the load on them, the transverse beams B6, B7, B11 and 12 were inserted and also the longitudinal beams B1, B2 and B3. It is also possible that the northern column C3 began to sink and to reinforce this the two steel channel columns, C1 and C2 were inserted probably on a new foundation. At the same time as these alterations were being made the northern ends of the 75 x 255 mm joists which were built into the external wall probably became decayed and the additional beams B4 and B5 were inserted.

What is unexplained is that the northern flitch beam T1 bears on the top of the cap of column C4, whereas the southern flitch beam T2 bears on the top of the 5" x 10" beams B2 and B3. The only explanation is that the southern column was lowered by 255 mm but the reason for this is unknown.

The original installation has been presumed to have been carried out in 1891. However in the article published in *The Engineer*[2] there is reference on the accompanying drawing (attached to this article) to *"Old Waiting Room floor level", "New window" and "Window to be altered into doorway"* which suggests that the 1891 installation was not the first to be built on the site. There is no knowledge of this earlier construction.

The drawing in the article in *The Engineer*[3] shows overhead line shafting in about the same location as the present one and it is presumed that this was from the 1891 installation. and was re-used for the diesel engine adaptation. It is unknown what the pulley located between the two brackets drove. It is noted that the bearing of the shaft of the diesel engine has been cut into the brickwork of the west wall and it is probable that this was done in order that the belt drive would be in the same place as that for the gas engine, which did not have an external plummer bearing (See Appendix).

The ramp and steps at the west side of the Annexe were probably inserted after the diesel engine was abandoned as this would have fouled the belt drives from the engine to the low level shaft. As originally installed in 1891 there is a narrow staircase here and the belt drive from the overhead shaft is located to the east of this.

APPENDIX

Flitch Beam is a type of beam made by taking a baulk of timber, sawing it in half, turning the two halves back to back and inserting as a steel or wrought iron plate between the two pieces and then bolting the three together. Such a beam was stronger than the original baulk.

Multi-ring arches are used as structural elements and are built in separate rings each 115 mm (4 ½") high, in order that the number of voussoirs in each ring can vary, with a different radius.

Stollage is a support to a tank or barrel built of timber, brick or concrete.

Soffit is the underside of a structural component such as an arch or vault, as distinct from a ceiling which is the inner lining of the upper surface of a room.

Plummer bearing is a bearing for a shaft on a brick or iron support separate from the engine.

Pugging is the infilling of the space between joists with boarding, to support material such as sound deadening or, in this case, concrete.

REFERENCES

1. *The Engineer*, 24.07.1891, 74 and 75

2. *Ibid*

3. *Ibid*

THE HASTINGS INCLINED TRAMWAY—ARRANGEMENT OF ENGINE HOUSE AND WINDING GEAR

MESSRS. WAYGOOD AND CO., LONDON, ENGINEERS

(For description, see page 74)

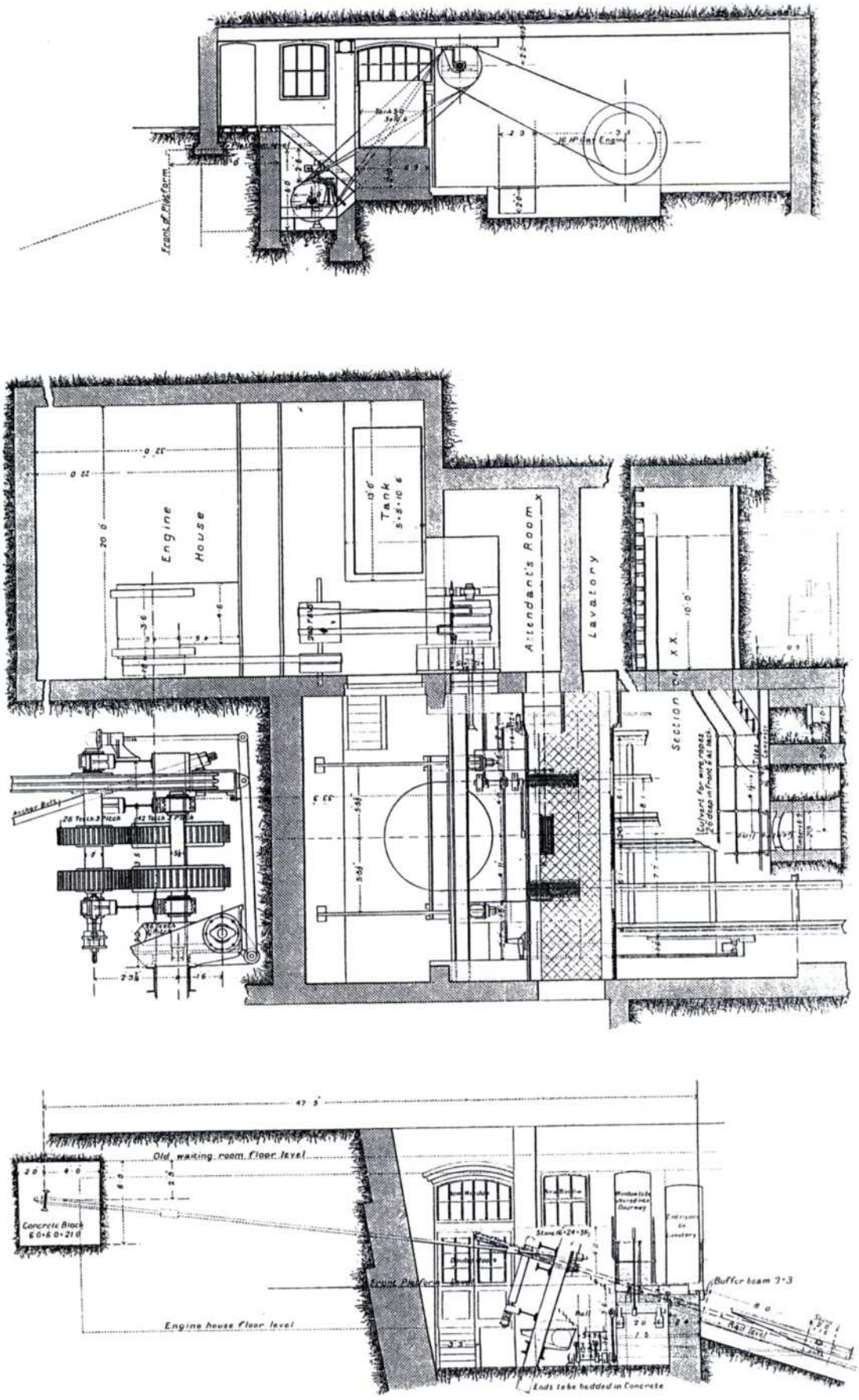
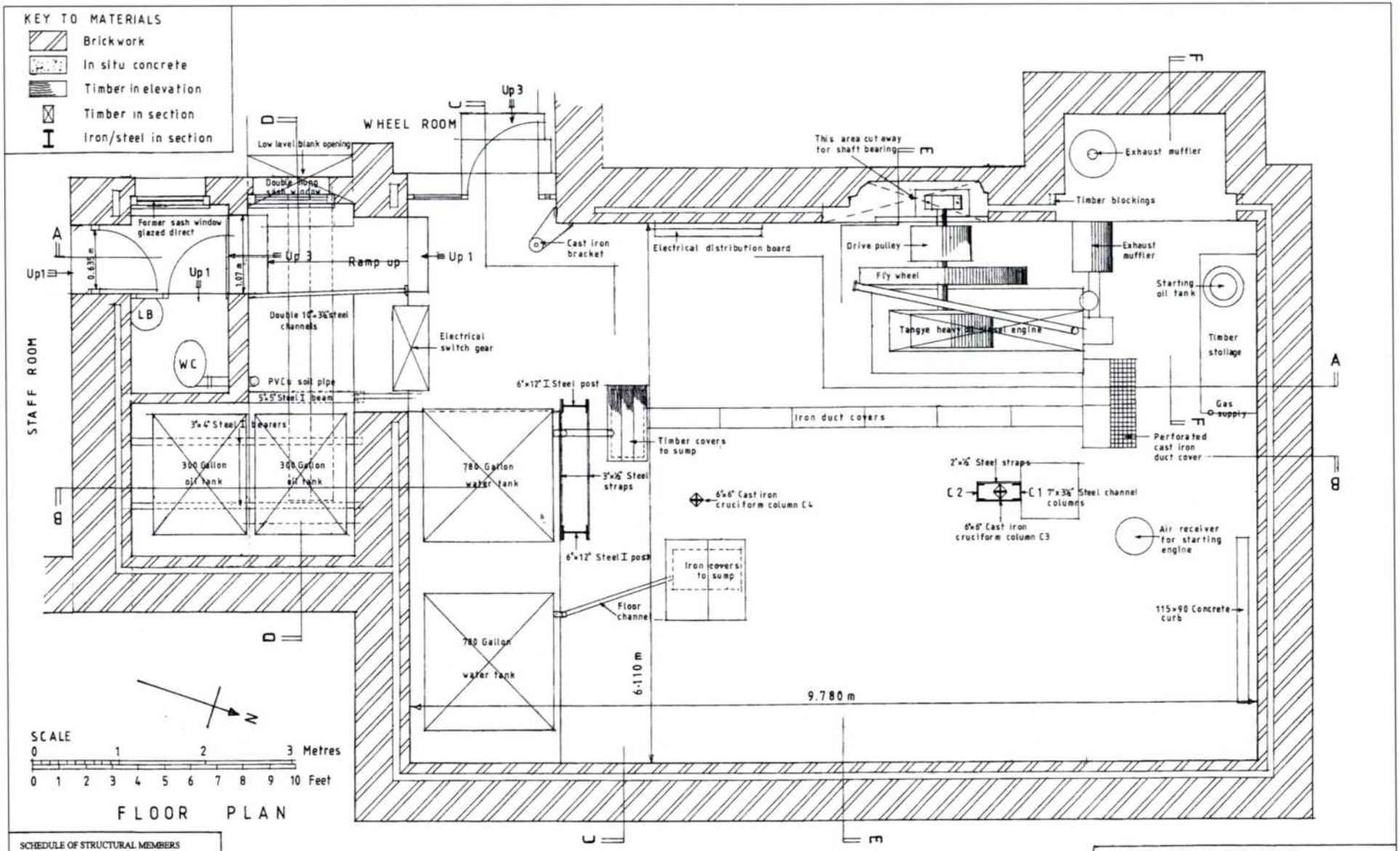


Illustration accompanying the article in *The Engineer* of 24th July, 1891



SCHEDULE OF STRUCTURAL MEMBERS

B1 - B3 - 10" x 6" x 42 lb. Steel I beam

B4 - B11 - 8" x 5" x 28 lb. Steel I beam

C1 and C2 - 7" x 3.5" x 20.23 lb. Steel channel

C2 and C3 - 6" x 6" Cast iron cruciform column

T1 and T2 - Timber double 6" x 12" flitch beam with 12" x 0.75" steel plate

T3 - 12" x 6" Timber beam

HASTINGS - WEST HILL CLIFF RAILWAY

ENGINE ROOM

HASTINGS - WEST HILL CLIFF RAILWAY
MOTOR ROOM - Survey as existing
Drawing No. 1 PLAN AT FLOOR LEVEL
SCALE: 1:20 (on A1 SHEET)
Drawn by and © R.G.MARTIN, 42 Fairmer Avenue, Saltdean, BRIGHTON, BN2 8FG (01273-271330) December, 2005

SCHEDULE OF STRUCTURAL MEMBERS

B1 - B3 - 10" x 6" x 42 lb. Steel I beam

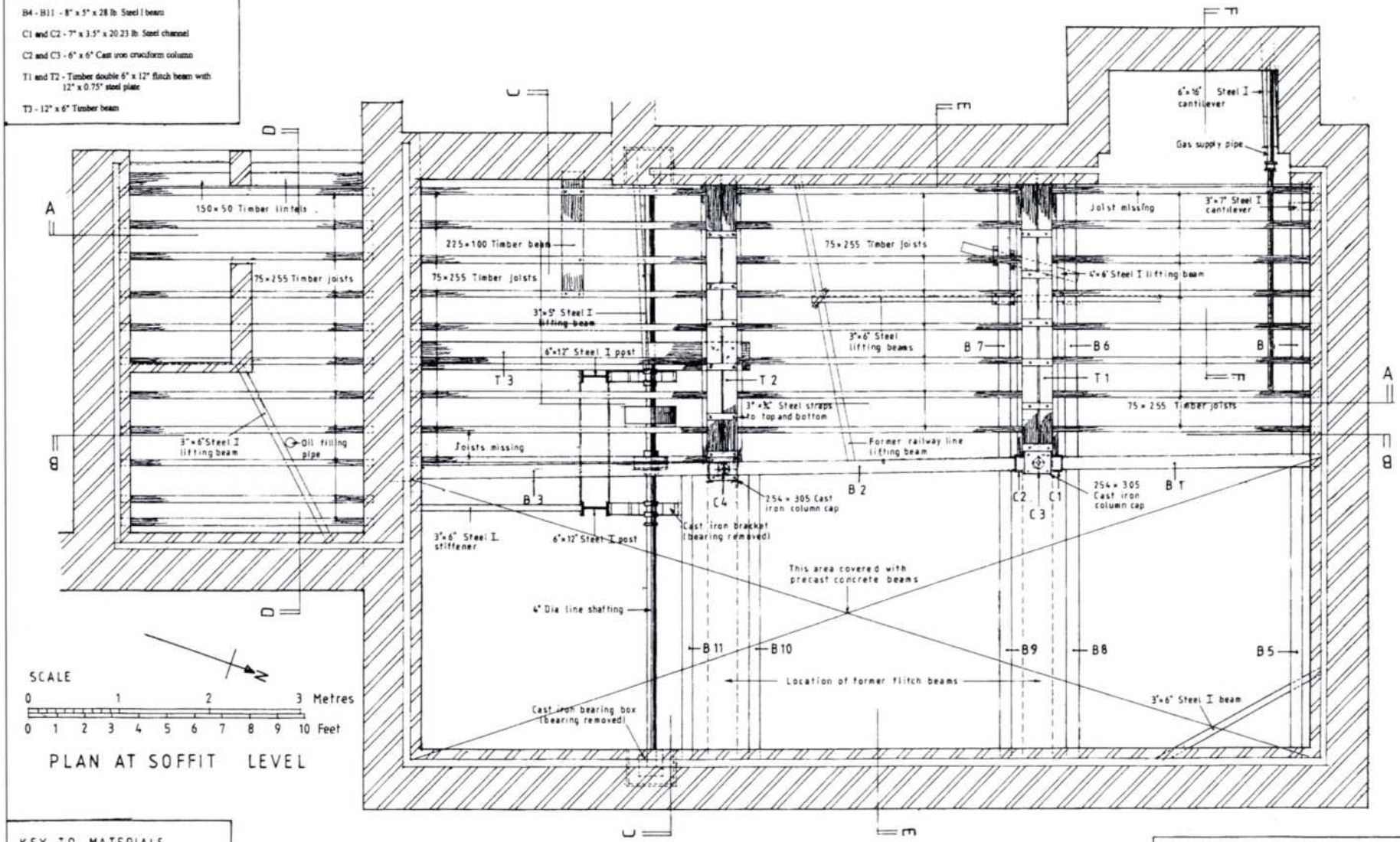
B4 - B11 - 8" x 5" x 28 lb. Steel I beam

C1 and C2 - 7" x 3.5" x 20.23 lb. Steel channel

C2 and C3 - 6" x 6" Cast iron cruciform column

T1 and T2 - Timber double 6" x 12" flitch beam with 12" x 0.75" steel plate

T3 - 12" x 6" Timber beam



SCALE

0 1 2 3 Metres

0 1 2 3 4 5 6 7 8 9 10 Feet

PLAN AT SOFFIT LEVEL

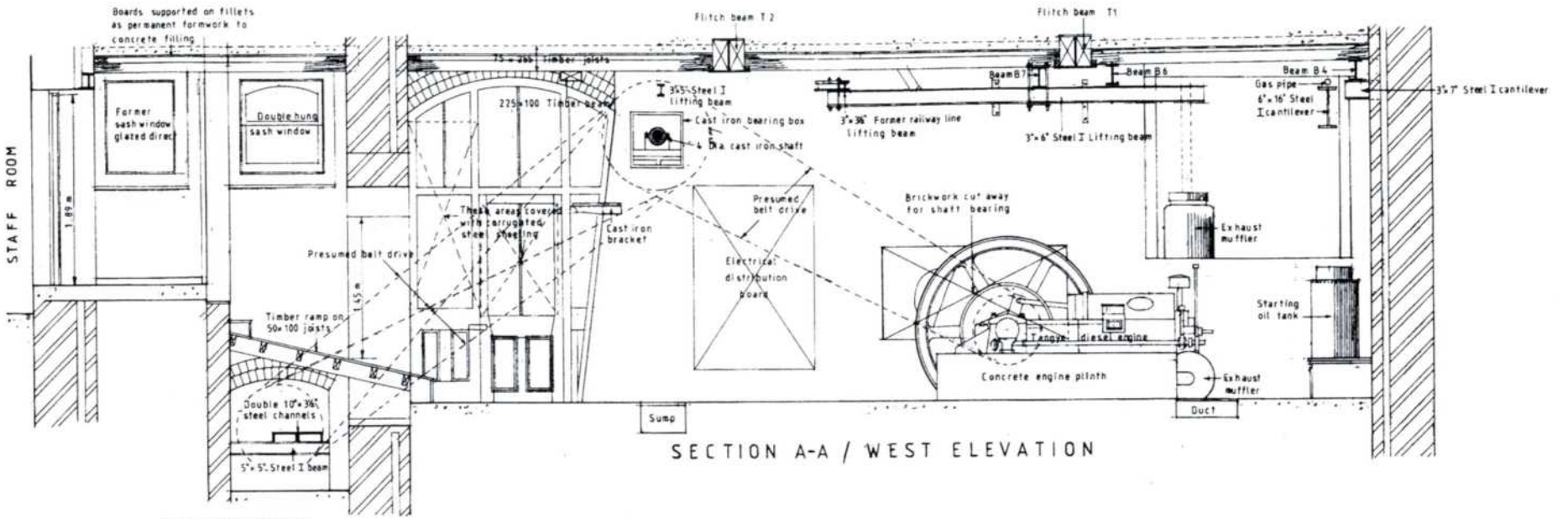
KEY TO MATERIALS

- Brickwork
- In situ concrete
- Timber in elevation
- Timber in section
- Iron/steel in section

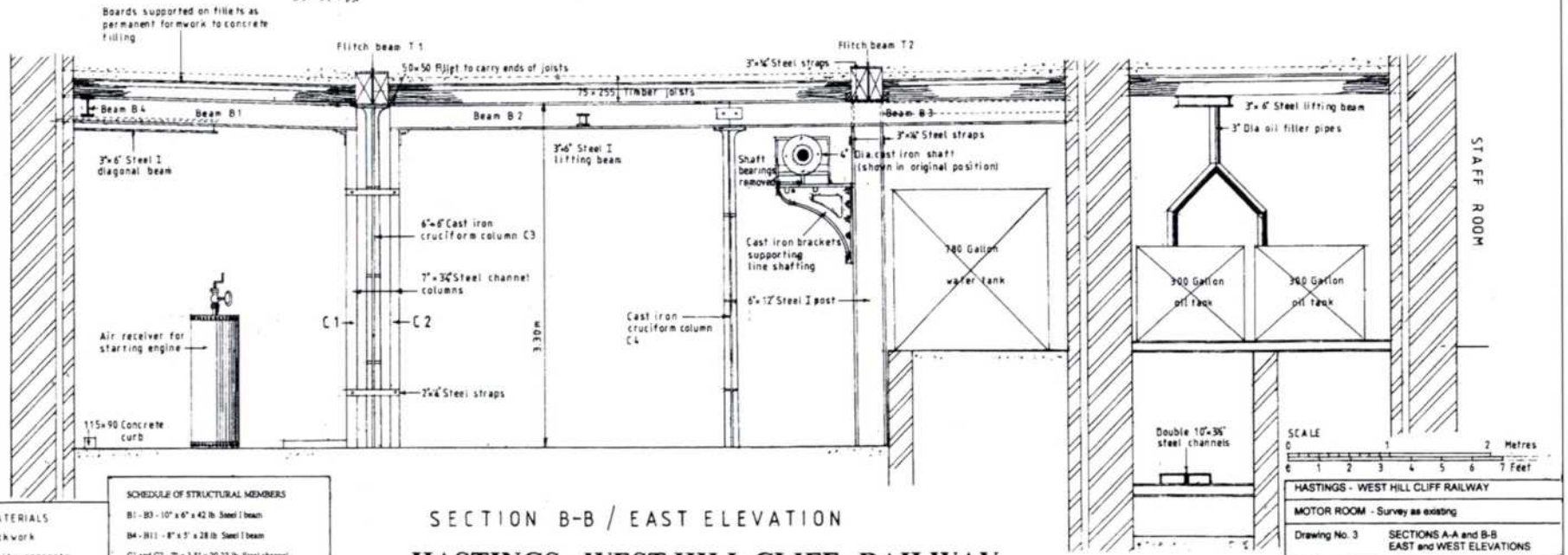
HASTINGS - WEST HILL CLIFF RAILWAY

ENGINE ROOM

HASTINGS WEST HILL CLIFF RAILWAY
MOTOR ROOM - Survey as existing
Drawing No.2 PLAN AT SOFFIT LEVEL
SCALE: 1:20 (on A1 SHEET)
Drawn by and © R.G.MARTIN, 42 Falmer Avenue, Saltdean, BRIGHTON, BN2 8FG (01273-271330)
December 2005



SECTION A-A / WEST ELEVATION



SECTION B-B / EAST ELEVATION

KEY TO MATERIALS

- Brickwork
- In situ concrete
- Timber in elevation
- Timber in section
- Iron/steel in section

SCHEDULE OF STRUCTURAL MEMBERS

B1 - B3 - 10" x 6" x 42 lb Steel I beam

B4 - B11 - 8" x 5" x 28 lb Steel I beam

C1 and C2 - 7" x 3.5" x 20.23 lb Steel channel

C2 and C3 - 6" x 6" Cast iron cruciform column

T1 and T2 - Timber double 6" x 12" flitch beam with 12" x 0.75" steel plate

T3 - 12" x 6" Timber beam

HASTINGS - WEST HILL CLIFF RAILWAY

ENGINE ROOM

HASTINGS - WEST HILL CLIFF RAILWAY	
MOTOR ROOM - Survey as existing	
Drawing No. 3	SECTIONS A-A and B-B EAST and WEST ELEVATIONS
SCALE: 1:20 (on A1 SHEET)	
Drawn by and © R.G.MARTIN, 42 Falmer Avenue, Saltdean, BRIGHTON, BN2 8FG (01273-271330)	
December, 2005	

THE LAMP POSTS OF DITCHLING

John Blackwell

In 2004 the Society was approached by John Hollands, who was staging an exhibition at Ditchling Museum entitled 'Up Our Street', to provide a suitable display. The SIAS Field Guide[1] contained an entry relating to the cast iron lighting standards and it was decided that this would be a suitable subject and a survey was undertaken. The Museum subsequently produced a typescript[2] of notes by Jean Ellis, a former Parish Council Chairperson, made in 1996 from the minutes of the Lighting Inspectors and the later parish council minutes. These are deposited at ESRO and have been used as the basis of this article[3].

A year after the opening of the Keymer & Ditchling Gas Works in 1867 (situated in the goods yard of Hassocks station) a public meeting of Ditchling ratepayers was called at the "Bull Inn". At this meeting it was agreed to light the village under provision made in The Lighting and Watching Act of 1833, whereby a parish could chose to elect gas lighting inspectors to oversee and administer the installation and operation. It was laid down in the Act that the inspectors (of whom there were to be no more than twelve and no less than three) must be resident ratepayers assessed on a rateable property valuation of not less than £15 per annum and they must by law meet on the first Monday of the month at noon.

At this first meeting, held on the 19 October 1868, seven inspectors were elected—to be known as the Inspectors of the Ditchling District for Lighting, and it was also agreed that they should have the power to call for and raise an annual rate in the sum of £45. It was subsequently discovered that four were ineligible, being shareholders in the Gas Company, and a further meeting was held on the 14 December 1868 where the remaining three were re-elected, namely Wm Kensett, John Attree (who was appointed treasurer) and Stephen Andrews. Mr Thomas Sinnock Jnr was appointed to collect the rate (set at 6d (2.5p) in the pound) at a salary of 5% of the rate collected. Sinnock was also the Secretary to the Gas Company.

The lighting area[4] was that part of the parish lying between and including Mr Francis Scrase's house on the west (Ditchling Court), cottages in the occupation of Joseph Cave, Richard Mitchell and James Chatfield (Chatfield, an agricultural labourer, resided at Elm Cottage[5] now Wild Goose Cottage in East End Lane, Mitchell and Cave were his neighbours) on the east, Mr James Brooker's house (South View, now two houses, 4 and 4A Beacon Road) on the south and to the north Mr James Dumbrell's house (North End House, now Dumbrells)[6]. East End Lane was at that time part of the main east-west route through the village, the present Lewes Road being undeveloped. The Gas Company was asked to supply lamps and lamp posts, including lighting and extinguishing and keeping them in repair from January 1 1869 to March 25 1869, the total number not to exceed twelve. The Gas Company responded on the 23 December 1868 with a cost for the quarter year of 25s (£1.25) per lamp, the hours of lighting to be: January 5pm-11pm, February 5.30pm-11pm, March 6pm-11pm, omitting the three days before, and the two days following, a full moon. Initially there were eight lamps[7] but in less than a year there were fourteen, and the cost had dropped to 18s 9d (94p) per lamp per quarter. In the next twenty-five years only two more lamps were added and the costs remained constant.

After that there was a steady increase in the number of lamps, rising to 31 by 1914 and costing £1 0s 6d (£1.025) per lamp per quarter, equivalent to an annual charge of £2 1s 0d (£2.05) for the two quarters, 1 October to the 31 December and 1 January to the 31 March. There was no lighting during the summer months. The 'no lighting during a full moon' clause had been dropped by 1910. The duties of the Lighting Inspectors were taken over by the Parish Council in 1895 following its formation in 1894. In 1905 the Gas Company was requested to substitute more powerful incandescent burners in place of the originals. During the Great War the lamps had not been lit and as the ratepayers then rejected the proposed increase in prices the village remained in darkness until 1923-24 when, following a close vote, half the lamps were lit. Full lighting resumed for the winter of 1924 but at a cost £1 10s 6d (£1.52) per lamp per quarter. In 1925 the lighting area was extended, as there had been a considerable amount of building to the north, south and east of the village. A further extension took place in 1938 to take lamps as far north as Southview. During World War II the lamps were again unlit and because of the austerity regulations they were not all relit until October 1949. A further extension of the lighting area took place in 1951 to include new parts of Nevill Cottages and Shirleys. By 1956 there was a

total of 51[8] lamps and costs had risen to £2-18s-0d (£2.90) per lamp per quarter with the annual lighting rate now 8d (3p) in the pound. At some stage (probably in the inter-war years) time clocks had been fitted and the services of a lamplighter dispensed with, as in September 1955 it was recorded that the clocks were worn out.

By the 1960s it had become essential to replace the increasingly unreliable and inadequate gas lighting, coupled with the difficulty of obtaining suitable posts for new lights[9], as post-war housing increased. Various schemes were discussed, including one by Bleeco[10], a Brighton company, who produced two schemes in 1963. Scheme one proposed 55 lights using 125w colour-corrected mercury lamps and utilising existing electricity poles. Scheme two was for more lights but using 80w bulbs. The villagers were keen to retain the existing posts—as late as May 1965 they were seeking assurances from the South Eastern Gas Board (SEGAS) that, if overhauled, the gas lighting system would be satisfactory for the next 15 years; this was, not unreasonably, declined. The South Eastern Electricity Board (Seeboard) had written in August 1964 that it was "impractical to use existing standards and lanterns" but eventually this was the course of action followed with the purchase of new 'Victorian style' lanterns from the lighting company Phosco[11] at a cost of £21 10s 0d (£21.50) each. An additional 10 gas lamp posts were purchased from British Railways, ex Lewes station which was being converted to electrical lighting, through the good offices of Mr D W Lewis, a parish councillor, for £40 with transport costs by Messrs Greenfield of a further £14. The scheme was for 59 lamps and the conversion was carried out by Seeboard commencing in September 1969 at a cost of £3,160 (plus that of the lanterns) and is substantially as can be seen today. The lamps were to be alight half an hour after sunset until midnight throughout the year, and 6.30 a.m. to half an hour before sunrise from October to March inclusive. The annual charge was estimated as follows:-

Cost of supplying electricity £3 16s 6d (£3.825) per lamp x 60	= £229 10s 0d
Time-switch charge £1 12s 6d (£1.625) x 4	= £ 6 10s 0d
Repayment of loan (conversion costs)	= £380 0s 0d
Total	£616 0s 0d

This compared with the current annual charge for gas lighting of £506, necessitating an increase of 1d in the lighting rate.

A survey undertaken in 2004 (updated in 2006) of the village's lamp posts shows three distinct types which are detailed below.

Type 1 (Fig. 1) are the original posts manufactured by the firm of W. C. Holmes and Co. These were supplied and installed by the Keymer & Ditchling Gas Works in 1869. The company was established towards the end of 1850, at Whitestone Ironworks, Huddersfield by William Cartwright Holmes, who was then only twenty-three years old, and under whose guidance and hard work the business expanded and prospered[12]. Within a few years equipment for gas works and street lighting was being provided to a large number of provincial towns and urban districts; these included nearby Burgess Hill in 1866.

Fig. 1 W. C. Holmes post in East End Lane

These posts have a height from ground level to the top of the column of 9′ 10″ (3.03m) with a further 2′ (0.62m) below ground. The base section 3′ 3″ (1.0m) high is of hexagonal section each face being 3″ (0.08m) wide, with a full height recess. Above the base a tapering fluted column rises to join a double ladder-rest projecting 12″ (0.31m) each side. On one face of the base section is cast W C HOLMES & CO HUDDERSFIELD. The hollow cast

iron post contained the gas supply pipe that fed the burner and mantle.

It is postulated that eight of these posts were supplied by the Gas Company at the beginning of 1869, possibly from stock or a prior contract. From old postcards the locations are the junction of old and new Brighton Roads (now Beacon and Clayton Road), South Street opposite The Jointure, West Street at the entrance to church, High Street opposite East End Lane, and possibly four in East End Lane[13]. By the end of 1869 a further eight lamps had been installed; these could have been of the same design, or bracket lamps[14], or possibly the fluted columns.

There are five of these posts remaining, of which four are in East End Lane and one, obviously re-sited, in Common Lane.

Table 1 details the exact location of the five remaining posts.

Type 2 (Fig. 2) are fluted columns supplied by John Every of Lewes.

John Every started his foundry in Lewes in 1832 at the bottom of North Street. Following a fire in 1835 that completely destroyed the works, he moved to premises near Cliffe Bridge. With business prospering, and the railway company looking to extend their goods yard, he opened his well-known Phoenix Iron Works in North Place in 1861, casting street furniture, seafront railings and decorative ironwork for piers in Brighton, Eastbourne, Bognor, Worthing and Hastings. Hard times struck after the Second World War and in 1951 the business was sold and renamed East Sussex Engineering (ESE). By 1969, when much of the site was taken over for the construction of the Phoenix Causeway, casting of iron artefacts had long ceased[15].

Fig. 2 An Every post in Church Lane

These posts, No 46[16] in an Every's catalogue, are 9′ 5″ (2.90m) high, with a further 2′ (0.62m) below ground; the fluted column tapers from 12″ (0.31m) diameter at the base to 3″ (0.08m) at the top.

There is a small variation in that some have EVERY LEWES, in raised lettering, cast into the column; it is postulated that these date from 1896[17] (or possibly 1869, see above) whereas those without lettering are assumed to date from 1926 to 1951.

These are the most numerous, totalling 34. Tables 2a and 2b give the exact locations of these posts.

Two other examples are worth noting. The barley-twist post at the centre of the churchyard is most likely a modern copy of an Every product, No 47[16] in their catalogue; there are no identification marks. Records indicate this is a recent placement i.e. after conversion to electricity. A single example cast by ESE for use with electricity (i.e. not a gas conversion) can be found on the northern boundary of 12 Common Lane, 'Fingle'. Its origin is unknown.

Type 3 (Fig. 3) are ex London, Brighton and South Coast Railway (LB&SCR)

These, as stated above, were obtained from Lewes railway station when it was converted to electric lighting in 1969. Although no manufacturer's name can be found on the posts, they are likely to have been cast by Every's, who were responsible for much of the ironwork when Lewes station was re-built in 1889. They are of a standard pattern that could be found on many of the company's stations. The design is particularly pleasing, with acanthus leaf decoration where the octagonal base narrows to the fluted upper portion. Each post is 7′ 2″ (2.21m) high with a further 2′ (0.62m) below ground and a hexagonal base 2′ 10″ (0.87m) high with 2¼″ (0.06m) wide faces. The column above does not taper. Only

eight appear to survive; the other two have presumably succumbed to time or accident. A very similar design, but cast by C. J. Reed at the Regent Foundry in Brighton, is to be found at the entrance to The Twitten on Lewes Road. This foundry was established during the Regency of George IV and cast the towers for the Chain Pier at Brighton in 1823. It is possible that this post also came from Lewes station and could therefore have been one of the ten obtained.

They were used in areas where previous illumination was deemed to be inadequate or where new building or changes had taken place, i.e., south end of Shirleys, Beacon Road and the pond (old Court Farm) area.

Fig. 3 Ex Lewes Station post near pond

Table 3 gives the exact location of these posts.

In addition to the C. J. Reed example there are three other 'gas' posts[18] that were probably obtained in the late 1950s or early 1960s when additions or replacements were difficult to obtain[9].

Sewer Ventilation Pipes (Fig. 4).

It was noted during the survey that there were three

Fig. 4 Sewer ventilation pipe in The Twitten

Victorian sewer ventilation or "stench" pipes. These are located at North End next to Dumbrells, at the corner of High Street and East Gardens, and in The Twitten against the east wall of Sunnyside Cottages. The latter is the only one that retains its long upper pipe. The manufacturer or supplier was Ham Baker of Westminster; nothing is known of this company other than that they supplied water hydrants for refilling the horse-drawn bowsers that were used for watering the roads in the Meads district of Eastbourne.

Tables

Table 1 - W. C. Holmes columns:

Street	Exact Location
East End Lane	South side at No 32, entrance to The Twitten
	North side at No 45 Cherry Tree Cottage
	North side at No 71 Walnut Tree Cottage
	North side at junction with Lewes Road
Common Lane	East side at north boundary of Hamper's Croft

Table 2a - Fluted Columns marked Every Lewes, assumed pre World War I:

Street	Exact Location
East End Lane	North side at No 15 Primrose Cottage
	South side at No 70 The Rookery
	East side at No 100 Tye Beams
	West side at No 88 Kennel Cottage (was Dog Kennel Cottage)
The Twitten	East side at No 9
South Street	West side at south end of No 15 (moved from opposite side of road)
Beacon Road	East side at No 18 (was the garden of No 20 Greyladies)
	East side at No 28 Braidlea
High street	West side at No 43 Colstock, opposite East End Lane
	East side at No 34 (was Dowsings) next to Forge
	East side at No 54 Dumbrells (moved from opposite side of road)
	West side at No 59 Paddock View (moved from No 61 was Heytesbury)
East Gardens	At entrance driveway to Grove House
Lewes Road	North side at No 35 (was Nestons)
	North side at No 41 41A 43 (was Sandy Patch now three new builds)
	North side in school lay by (resited as school built 1983)
	North side at eastern end of school lay-by
	North side at Beardsland
Nevill Cottages	Centre of roundabout opposite No 15 (probable resited post)

Table 3 - Every Fluted Columns, no lettering, assumed 1926 to 1951:

Street	Exact Location
West Street	In churchyard by entrance steps
Lodge Hill Lane	By footpath to Museum near pond
East Gardens	South side at no 28
The Dymocks	West side at no 8
Beacon Road	East side at no 38 Gospels opposite entrance to Nevill Cotages
	East side opposite south entrance to Long Park Corner
Shirleys	West side at No 19 Nye Beacon
	West side at No 29

Table 2b - LB&SCR ex Lewes Station posts:

Street	Exact Location
Lewes Road	North side in school lay by (resited as school built 1983)
	South side at No 74
	South side at No 82 Hare Nap
	South side opposite No 96 Bracadale by entrance to Shirleys)
Fieldway	South side opposite No 7 Fieldway Cottage
Shirleys	East side at No 8
Farm Lane	At entrance to recreation ground opposite No 87 Lattenbells
Beacon Road	Opposite north entrance to Long Park Corner (resiting)
Long Park Corner	At No 16 (probable resited post)
	At No 32 (probable resited post)
West Street	South side at west end of Wings Place (resiting)
Church Lane	At Glebe Cottage
High Street	At corner of Boddingtons Lane (was entrance to Church Room)
Common Lane	East side at entrance to Southview
North End	West Side next to No 3 Gate House (was Irongate)

References

1. B. Austen, D. Cox, J. Upton, *Sussex Industrial Archaeology—A Field Guide*; Phillimore 1985.
2. Ditchling Museum. Gas Lighting 1869-1996 Ref 85 21 125.
3. ESRO, Vestry Minutes 1864–1874, Parish Council Minutes 1874-1972 P308/1/1/1-40.
4. Lighting area was the area within which the annual lighting rate was levied and was not necessarily the area lit.
5. 1871 census.
6. Lighting area boundaries are quoted in Jean Ellis' notes but not in the deposited records at ESRO. However as Ellis had access to all the parish council and its predecessor's paperwork there is no reason to doubt its accuracy.
7. Seven lamps were erected "at places that shall be pointed out" but eight were accepted as being lit from 1 February 1869 -1 April 1869, the addition being at junction of "the old and new Brighton roads".
8. Minute re gas supply contract with SEGAS 29 March 1956. Gas provided to:-

46 lamps with 2 light No 2 burners
4 lamps with 3 light No 2 burners
1 lamp with 3 light No 2 burner at Cross Roads.

9. In 1956 it was proposed to move redundant lamps in Keymer Road to new council houses at Long Park Corner. In 1959, for proposed additional lamps at Shirleys, SEGAS were unable to obtain lamps. In 1961 it was proposed to purchase two standards from Eastleigh Council but no action taken.
10. Brighton Lighting & Electrical Engineering Co Ltd, 10a St Martin's Place, until 1960s then relocated to Newhaven. Responsible for lighting schemes in Brighton and Lindfield among many others.
11. Phosco Lighting Co Ltd, now trading as CU Phosco, of Ware, Hertfordshire.
12. Information provided by West Yorkshire Archive Service.
13. Lamp at junction Beacon/Brighton Road now removed (replaced by nearby modern lamp standard), lamp at churchyard entrance replaced by ex Lewes station lamp, lamp opposite East End Lane replaced in 1946 (now Every fluted column).
14. In 1926 the bracket lamp on White Rails Cottage, North End, was moved to a column on waste ground by the entrance to Court Gardens Farm. A repainting contract to be let in 1950 had two bracket lamps, at Gatlands (SW corner of crossroads) and on the Sandrock public house (this bracket was subsequently moved to NW corner of Sandrock Cottages next door).
15. Author's notes; little has survived in deposited records of this once important company.
16. Undated Every catalogue in possession of Sussex Archaeological Society.
17. Minutes record a new lamp in The Twitten near Unitarian Chapel in 1896 and at Dog Kennel Cottage, East End Lane, in 1897; no earlier dates can be verified.
18. At junction Keymer Road/ Lodge Hill Lane, at junction North End/Orchard Lane, at Common Lane 20m south of DITCHLING sign. It is suggested that the lamps on Common Lane, erected in the 1930s, were originally fluted columns and that these were re-sited to other parts of the village to maintain a homogeneous pattern explaining the present 'odd' replacement lamps that remain on this outlying stretch.

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Photographs: front cover—Harvey's Brewery, Lewes (Peter Holtham)
Back cover, from top to bottom—
British Syphon Company products (David Jones)
Victorian lamp post, ex Lewes Station, now near Ditchling pond (John Blackwell)
Former tollhouse, Clay Lane, Storrington (Brian Austen)