

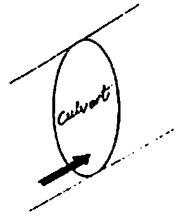
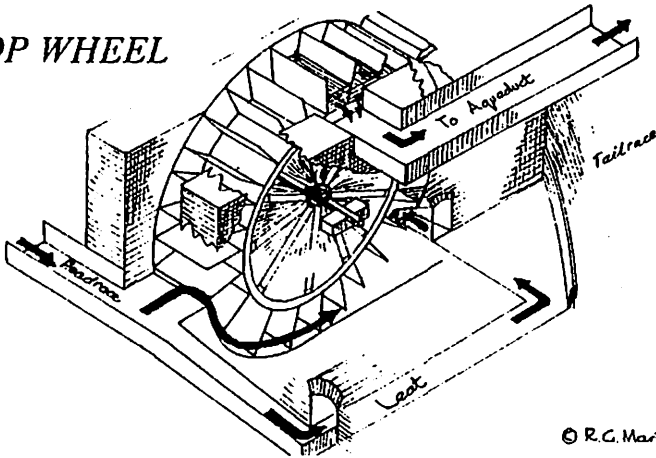
SUSSEX INDUSTRIAL ARCHAEOLOGY SOCIETY NEWSLETTER

Newsletter No 123

July 2004

WISBOROUGH GREEN
ORFOLD LOCK

SCOOP WHEEL

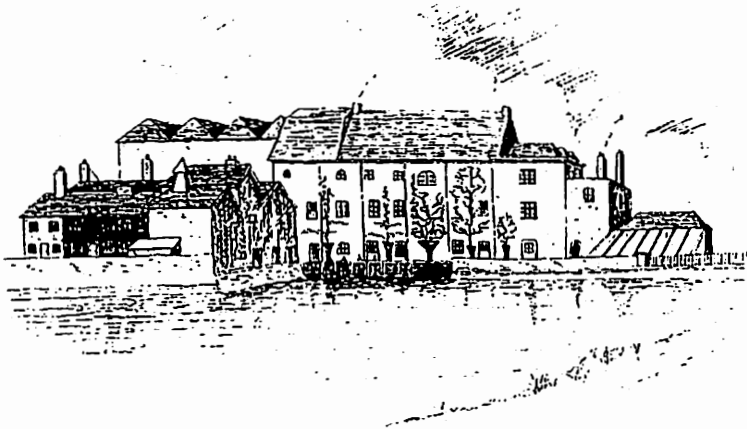


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Drawing of Bishopstone Tide Mills from an unsigned painting of about 1835. The drawing was made by Mr J.E. Martin and appeared in the *Sussex County Magazine* published by T.R.Beckett Ltd.

FUTURE PROGRAMME

Saturday 14th August at 2.30 pm. A walk around the remains of Tide Mills village, the site of the seaplane base, and Chailey Hospital at TQ 462104 led by Bob and Jill Allen. Park adjacent to the A259 at TQ 463005. Alternative parking at the Buckle car park, Marine Parade, Seaford TQ 469996 with a walk along the beach.

Contact Bob Allen 01323 896724

Saturday 25th September at 2.30 pm. A visit to the site of Battle Gunpowder Mills with Greg Chuter. Meet at the Farthing Wood car park on the B2095, Powdermill Lane, TQ 736143. Please wear suitable clothing and footwear for a walk in the woods.

Contact Ron Martin 01273 271330.

Saturday 9th October at 2.30 pm. Visit to Baynards railway station. Meet at TQ 077350. Numbers are limited to 30 but no dogs are allowed. Could members who should have been on the cancelled 22nd May visit please reapply. Places are available for other members.

Contact Robin Jones 01323 760595.

Saturday 23rd October at 7 pm. A talk by Tony Pratt on the *Wey and Arun Canal* at West Blatchington Mill Barn.

From other organisations.....

At Amberley Working Museum: open 10:00 am to 5:30 pm daily during August.

Sunday 25th - July Classic car summer picnic. *Cars of the 50s, 60s, and 70s, plus period picnic equipment, accessories and costumes .*

Sunday 22nd August - Harley Davidson ride-in. *A grand gathering of Harley Davidson motorcycles, riders and themed events to celebrate 100 years of this motorcycling legend.*

Sunday 5th September - Wood from the Trees. *Demonstrations by wood craftspeople, plus vintage timber machinery in operation.*

Sunday 12th September - 100 years of buses in Worthing. *A celebration of 100 years of motor bus operation in Worthing, with a chance to see (and ride on) a wide range of buses and coaches.*

Brede Steam Engine Society: 10:00 am to 4:00 pm

The water heritage site will be open on:

Saturday 1st August

Monday 30th August

Saturday 5th September

Hollycombe: Noon to 5:00 pm daily during August otherwise

Sundays and Bank Holidays,

plus Fairground at Night (7.00 pm to 10.00 pm) on:

Saturday 21st August

Saturday 28th August

Saturday 11th September

and

Saturday 19th September - Agricultural Day

SS Shieldhall: (023 80 223278 for booking)

Monday 20th July at 10:00 am Cruise from Shoreham to Southampton,
Coach return included.

If you know of any events which may be of interest to other members please let me know.

A WATER DRIVEN SCOOP WHEEL AT ORFOLD LOCK

Ron Martin

(See front cover illustration)

After the canal trip on Sunday, 23rd May, members of the Society visited the water driven scoop wheel at Orfold Lock on the Wey and Arun Canal. This was first brought to our notice some ten years ago when several members, including the late Frank Gregory, were shown a wheel pit for a low breast-shot wheel which had been installed to lift water from river level up to the canal which crossed the river by way of an aqueduct. A strange feature of the wheel pit was the dressed stonework which followed the curve of the wheel over the upper part. There seemed, at the time, to be no explanation for this and we all went away shaking our heads in bewilderment. Some time later, members of the Wey and Arun Canal Trust excavated the area immediately beside the wheel pit, where it had been assumed that there had been a cottage built over the top of a pumping system, such as at Coultershaw, where a water driven triple-throw beam pump had been installed at a similar date.

What emerged from this dig was a leat at low level which fed water through an aperture in the side of the wheel pit enabling water to be lifted by the wheel some 6 feet, to discharge into a launder which led to the aqueduct. In 1996, I carried out a survey of this structure and the member of the Trust expressed a desire to reinstate the wheel. I felt this was wishful thinking on their part - but how wrong I was! A wheel has recently been constructed and installed and on our visit we saw this in action. One interesting feature is that the bottom of each bucket has been arranged to slope toward the launder, to enable water to be more rapidly discharged.

The reason that this structure was necessary was that, when the Arun Navigation was originally constructed in 1787,¹ the northern end of the system was at Newbridge where there was a wharf, a warehouse, three limekilns and a well.² It had been originally assumed that the top pound of this navigation from Newbridge down to Orfold Lock, a distance of about 1¹/₄ miles would have an adequate water supply from the surrounding area. Evidently this proved to be unfounded, so something had to be devised to top up the water level in this pound. The interesting

thing about this system was that it appears to be unique as far as technology in this country is concerned. Wind driven scoop wheels were a common feature of the Fenland area for drainage and the technique of "norias" was well established in the Middle East and Spain, but nobody appears to have used this system here. One exception is the scoop wheel in the gardens at Painshill in Surrey where the water to be raised is contained within a series of spiral tubes. The system at Orfold probably became redundant in 1816, as the Arun Navigation was then connected to the Wey Navigation to create the Wey and Arun Canal³.

Our congratulations are offered to the members of the Wey and Arun Canal Trust, and in particular to Winston Harwood, who led the team to restore this unique machine, which will ultimately be used to lift water, as it was always intended, when the canal is subsequently extended to Orfold; a fine example of practical archaeology.

1. P.A.L., Vine, *London's Lost Route to the Sea*, (1996), 29
2. R.G.MARTIN, *Probable Well at the Old Wharf, Newbridge, Wisborough Green*, *SIAS Newsletter No.121* (January 2001), 10
3. P.A.L.Vine, *ibid*, 64

SUSSEX MAIN LINES – A YEAR 2004 SURVEY

John Blackwell

9. KEYMER JUNCTION TO SEAFORD

A link from the main London to Brighton line at Keymer (south of the present Wivelsfield Station) to Lewes was opened on 1st October 1847 and extended to Newhaven on 8th December of the same year. A single line from Newhaven to Seaford was opened on 1st June 1864, which was doubled in 1904 and singled again in 1975. Electrification of all the above routes took place in 1935.



Initially there were no Stations on the Keymer branch although allegedly trains stopped where the line crosses the present Junction Road at TQ 319196. The stop appears in the timetable for 1855 and a Station is clearly visible on the 1875 OS map at this point but I have not come across any photographs or illustrations of it. This Station closed in 1883 as part of an abortive scheme to build a flyover across the main line. Local resentment at the closure resulted in the opening of a new Station

to the north, in 1886. This was renamed Wivelsfield in 1896. The typical cast iron footbridge crossing the line at Junction Road survived until 1978 and in the eighties the signal box and early railway cottages were demolished. All traces of the siding which ran just past the old Station into the Keymer Brick and Tile works have been obliterated .



Plumpton Station opened in 1863 and remains a typical Victorian rural Station. The signal box dates from 1891 and is an in house LB&SCR design introduced to supplement output from Saxby & Farmer, and similar in appearance. Built of brick up to the window level, the roof is surmounted by a large ventilator. About 1985, the box ceased to be a block post, becoming a "ground frame" protecting the crossing. The box fulfils this function today, and is now the only location in Sussex where the old-fashioned level crossing gates, worked by wheel, are still operational. The box, gates and crossing keepers cottage opposite, with identification number painted on the house wall, were Grade II listed in 1986 and prompted the overnight demolition of the Worthing, West Worthing and Goring boxes by BR to ensure similar protection should not be awarded to them! The outline can still be discerned of an additional platform on the up side. This was provided in the early years of the last century for traffic to the adjacent race course.



Cooksbridge Station opened in 1851 with the down side buildings remaining intact today. Regrettably the signal box dating from about 1875 was demolished in the 1980s. The line proceeds towards Lewes passing the still clearly visible junction where the 1858 line to Uckfield diverged at Hamsey TQ 405121 (this is the alignment that would be used if the line to Uckfield was ever reinstated). The line then enters a tunnel that passes under the castle before emerging at Lewes Station, which has been covered in a previous article.



Leaving Lewes, the line to Eastbourne and Hastings crosses the River Ouse at Southerham before branching south to Newhaven and Seaford. The 1847 cast iron bridge, which crosses the cut from the Ouse to Glynde Reach at TQ 436073, has recently been restored. Southease opened as Southease and Rodmell Halt on 1st September 1906 and was served initially by two petrol railcars built by Dick Kerr & Co of Kilmarnock for the stopping service between Lewes and Seaford. These proved to be unsatisfactory and were replaced in 1912 by push-pull locomotives which operated the service until electrification in 1935. Southease Halt comprises a concrete footbridge and platforms. The crossing keeper's

cottage and signal box have been demolished. The minor road which crossed the line here and linked the A26 to Southease village has been closed but the interesting former swing bridge over the River Ouse remains as part of the footway at TQ 426055. It is the second bridge on this site, being built in the 1880s. The opening mechanism remains but since 1967, there has been no need to open the bridge for navigational purposes. To the south a lightly laid siding from Newhaven North Quay ran into Newhaven Cement works at TQ 448032 until closure in 1914.



With the opening of the line to Newhaven the way was clear for the commencement of cross channel services and in 1848 the London and Paris Hotel was opened for these passengers. Newhaven Town Station opened with the line in 1847 some 400 metres north of the end of the line on Railway Wharf where Newhaven Wharf Station was constructed. Dates and information on this station, like Keymer are scant. Today the up side of the Town Station retains the original flint building. A wooden drawbridge erected in 1794 carried the coast road across the River Ouse. It was replaced by a cast iron swing bridge in 1866. This bridge carried a tramway from the North Quay sidings to the West Quay breakwater. This huge breakwater was completed in 1889 after many years in construction and made the harbour non-tidal dependent for shipping. The tramway was principally for maintenance of this structure and the line ran along the top of the breakwater supported on arches that formed (and still do) a covered walkway offering some protection from the elements. For many years Stroudley Terrier No 72 *Fenchurch*, now preserved at the Bluebell Railway, was the motive power; until closure of the tramway in 1963. In 1974 the 1866 swing bridge was replaced by another, at a higher level to the north. However, if one walks to the quayside, past the Railway Social Club along the alignment of the old road, one of the pair of gates which were closed to stop the traffic survives; as does the now derelict police hut at the entrance to Railway Quay. To the south of this hut is the former four-road engine shed erected in 1887 and constructed in corrugated iron with wooden doors.



Immediately to the south are the, now listed, Marine Workshops of the LB&SCR, built in 1882, for servicing the engines of the cross channel boats. Many will I am sure remember the huge sheer-legs that stood on the quay in front of this building. The building to the rear of the workshops was a later power Station for the electrical supply to the quays. From the other side of the river can still be viewed, just to the south of the workshops, the gridiron in the river which supported vessels and enabled

their hulls to be worked on at low tide. Continuing to Newhaven Harbour Station, this was a rebuild or enlargement of the Wharf Station, presumably coinciding with the opening of the line to Seaford in 1864. Following wholesale demolition of the quayside sheds in the 1970s, all that remains of interest is the 1886 signal box, now with double glazing and air conditioning. Behind the down platform, next to the former Harbour Tavern, are the stables that housed the horses used for shunting wagons on the North Quay until about 1950. To the south of the Harbour Station was Mill Creek, an inlet for barges to the tide-mill at Bishopstone. Milling had ceased by 1879 when the Newhaven Harbour Company (a subsidiary of the LB&SCR) bought the mill and surrounding ponds. The inlet was filled with chalk from the excavations for the foundations for Brighton College and a new wharf to the south, East Quay, was constructed. In 1885 a fine new harbour station was built for the cross channel traffic later known as Newhaven Marine or Continental, this was completely destroyed by fire in November 1887 and rebuilt to the original ornate design by Longleys of Crawley. It was demolished in the fifties or sixties and a new station built in the seventies. Boat trains ceased not long after and the station now stands deserted.



Returning to the present Harbour Station the line curves away to the east passing the original Bishopstone Beach Station. This was provided for the inhabitants of the adjoining Tide Mills village and a siding curved into the mill. With the cessation of milling a tenancy was agreed with the Café Royal of Regent Street for use of the mill as a bonded warehouse. (despite Pat Berry's comment to the contrary, PRO Rail 414 101 refers) until 1900 when it was demolished. The halt as it had become closed in 1942 but the platforms are clearly visible at TQ461003. Half a mile to the east a new Station was opened in 1938 to serve anticipated residential development that was interrupted by WWII. Built of brick with a single storey office and shops in the 1930s *deco* style used by Southern Region, its chief interest is gun slits in the surmounting tower.



The terminus at Seaford is largely as built with the exception of the engine turntable at the east end which was removed on electrification, and the fine two storey goods shed, identical to those surviving at Littlehampton and Arundel, which was demolished in 1986 to make way for a health centre. Within the last two years the wooden signal cabin, similar to that at Cooksbridge, has also succumbed.

The host for this year's conference, the twenty second of the series, was the Hampshire IA Society. It was held at Churcher's College, Petersfield. This event seems to be gaining in popularity with over 200 delegates this year. A college environment suits the conference and apart from being a trifle chilly for the morning session and a very irritating sound system, which kept switching itself off, was of a very high standard with interesting contributions. A synopsis follows.

Milestones Museum – A Living History for the 21st Century.

This museum at Basingstoke is a state-of-the-art building erected and furnished with lottery funding. The story of its conception and construction was told by Alistair Penfold of the Hampshire County Museum Service. The original idea was to find a display area for the collection of road vehicles and agricultural machinery from Tasker's of Andover. The theme of an undercover living museum with street scenes from the nineteenth and twentieth centuries developed as exhibits were made available from other companies including Thorneycroft and Wallis and Steevens of Basingstoke. It looks impressive but if it was an outdoor collection like Beamish it would, to my mind, be more authentic; I have always regretted Amberley has not yet been able to develop a similar "street scene".

Shoreham Cement Works

Ron Martin gave a masterly account of the development and manufacture of Portland cement following its patent in 1824. Industrial activity at Beeding, or Shoreham Cement Works as it was properly known, began in the 1850s and expanded until it was a large manufacturing plant using a semi-wet process with two 350 ft rotary kilns. It only closed in 1992. The full story will appear in the next edition of Sussex Industrial History .

Things that Float, Fly or Fire – The IA of the Isle of Wight

Robert (not Ron again) Martin presented a fascinating insight into the island's industrial past. Ship and yacht building, aeroplane and hovercraft manufacture and military fortifications explain the title of his talk but other

industries abounded including, alum extraction, brick making, glass making, stone quarrying, lime burning, cement manufacture, coal mining and the supply of copperas and tobacco pipe clay. There is obviously more to the island than a windmill, a watermill and a preserved railway.

Ships, a neglected aspect of IA?

In a wry after lunch talk, Professor Ray Riley posed the above question arguing that as ships sink, or are scrapped at the end of their working lives, there is little to record. Using Portsmouth's naval connection Ray outlined the development of the nineteenth century warship and the slow introduction of steam power into the navy; due to the need for coaling stations to be set up around the world. The answer to the question is, in my opinion that ship building is IA, whereas the evolution of naval shipping falls into the military history and transport fields and is certainly not neglected.

The Wey Navigation, its Place in the Development of River Navigation

In an erudite paper, Dr Stuart Chrystall examined how the Wey Navigation, which opened in 1653, and whose route is largely unaltered today laid the foundations for planning and digging artificial cuts to the course of existing waterways i.e. canalisation. He argued and illustrated that if these principles had been adopted, other navigations in Britain would not have required later extensive alterations.

A Dream of Steam

Peter Hudson gave a potted history of the Hollycombe Steam Collection of fairground rides which developed from the collection of the late John Baldock which started over 40 years ago. In the early years he faced much local opposition and problems with the planning department, which meant the collection could only be opened for a restricted number of days each year. Combined with a spate of poor weather and high running costs he was forced to sell the funfair side to Madame Tussauds whilst retaining the narrow gauge railway and traction engine exhibits. Unfortunately, Tussauds was taken over and the rides disposed of but in 1985 volunteers took over the running and gradually exhibits have been repurchased and others acquired.

After the conference many delegates experienced the pleasures of the Edwardian fairground at Hollycombe with the gallopers, the *Razzle Dazzle* (built around 1908 and regarded as the world's first "White Knuckle" ride) which uses both rotational and tilting motion and the *Steam Yacht*, the 1911 equivalent of the pirate boat. It was like a senior citizens birthday party!!

Surrey Industrial History Group will be the host for the conference next year which will be in Chertsey on 23rd April. It will have transport as its theme.

EVERY'S LEWES IRONWORKS John Blackwell

Many thanks for the interesting responses I have received; in particular to Percy Upton's recollection of a school visit in 1938 and Alan Hill's reminder of his excellent publications '*Port of Lewes in the 20th Century*' and '*Lower Ouse Navigation 1934 – 1967*' both now out of print but available in the main libraries. These and other leads will be reported in the next edition of the *Newsletter*.

Meanwhile, I would like to start compiling a gazetteer of both John Every and ESE ironwork in the county omitting the ubiquitous drain and manhole covers and seafront railings and piers. So, poor if during any summer trips around the county or in your local area note down the location of any lamp posts or other ironwork bearing the above names and let me know.

(address as on back cover or e-mail johnblackwell@nltworld.com)

Joint Meeting with Chichester Museum Society - 10th February **Chris Bryan**

Bill Gage, Steaming Through Sussex.

Bill started with a slide of the statue of William Huskisson in Chichester Cathedral. Huskisson was MP for Chichester before becoming MP for Liverpool, only to be killed by the wheels of the '*Rocket*' at the opening of the Liverpool and Manchester Railway. This was followed by plenty of historic and interesting pictures.

1892 was a year of change which could be used to date railway pictures easily as the ballast no longer covered the sleepers thus enabling the wood to be seen clearly.

The railway bridge over the River Arun at Ford was moveable until 1938 allowing tall ships to dock in Arundel. The bridge was replaced in one weekend and the West Sussex Record Office has a cine film of the event.

The locomotive boiler explosion at Lewes on 27th September 1879 was an accident of note.

Bognor station buildings had their share of drama with the canopy being blown down and later the station gutted by fire.

Royal trains were featured with their special headcodes. Saxby of interlocking signal fame was a local man. The Brighton Works cylinder boring machine appeared again, SIAS members had previously had the story of it from Gerry Collins.

This had been an entertaining evening with plenty of anecdotes but perhaps it was shallow in technical depth. A package aimed at all levels could have been better for an audience of historians.

More Swing Bridge Sites **Chris Bryan**

Up to December 2003 the sites and remains of only three swing bridges had been established on the route of the abandoned Portsmouth and Arundel Canal between Ford and Hunston. The challenge has been to find others of the seven mentioned in the annual reports of the building of the canal. Tithe maps have proved to be the best source of locating further bridge sites and relating to a modern map. At Tile Barn Farm near Barnham the land owner was most co-operative when Adge Roberts approached him about digging to locate a bridge site.

On 4th February, digging revealed the pivot and cast iron lower bearing ring. This was the fourth swing bridge site to be uncovered in this area. The pivot ring will remain on public view at this site.

On 3rd March the team was joined by Glen and Debra Wallace to look for another swing bridge site at Lidsey. Glen lives in the converted pump house that was erected for the Portsmouth end of the canal. This time Aage Roberts used aerial photographs in the West Sussex Record Office taken in 1947 to establish the position of the site. It was somewhere in the vicinity of the sewage works, an oil well site and a maggot farm. Measuring from the corner of the sewage works to the estimated position there was no visible evidence above ground, not even a broken brick, even when the undergrowth had been cleared. First fork into the ground, however, hit the brick wall of a bridge six inches down. This dig established the wall on the north bank of the canal, but mysteriously, no pivot stone or ring was found. A return visit discovered amongst tree roots, on what would have been the south bank of the canal, not only a cast iron bearing ring but also seven 4 inch diameter cast iron balls still in situ within the ring. The land owner was delighted to have a ball as a souvenir. The pivot side has been back filled. The north wall is visible from the path through a line of trees. Five of the seven sites have now been found.

Walled Gardens of England

Murray Grossmith

I am currently researching the existence of walled gardens within the South East of >England. More specifically I am trying to track down Victorian walled >'kitchen' gardens, usually attached to an estate or large house, that may be >within your area. Many have been developed into gardens, nurseries, had housing built on them or lie in various states of disrepair. Sometimes the main house may be derelict or have been demolished, leaving only the grounds and gardens. I am particularly interested in those that may still be in a suitable state appropriate for renovation.

I know that this may not strictly fall within your usual remit, but with your knowledge and appreciation of history, and an understanding of the value of recording and preservation, I would greatly appreciate any information you or your associates may be able to give me by contacting Ron Martin (01273 271330) who will pass on any details.



Probation's turning of the Tide Mills Anit Chatrath

The Sussex Area of the National Probation Service, a major crime reduction body, is restoring one of the most historic sites in the county

Tide Mills, between Seaford and Newhaven, was the largest tide mill in Sussex during the 19th Century. The site has been neglected since it was destroyed by the Royal Artillery at the beginning of World War Two as part of a Coastal Defence Strategy.

The aim is for Brighton Community Punishment, part of the Sussex Probation Area, to protect the existing structures of the original village. Offenders are clearing debris from the site. Once this is completed, historical and ecological information boards for the public will be erected.

The Newhaven Port Authority owns Tide Mills and it has allowed Probation to restore it. The Ouse Estuary Project, East Sussex County Council and English Heritage also support the project.

English Heritage has provided specialist advisors who are guiding the Service and East Sussex County Council is funding the production of leaflets.

Brian Clark, chief officer of the Sussex Probation Area, said, "Probation proactively researched the history of the site and contacted the relevant agencies whose support has helped to make this work possible. Tide Mills is of conservation importance so particular attention will be paid to ecological considerations. The rehabilitation of offenders being punished on this scheme will benefit the community with a historical memento and also help to reduce levels of crime."

The Sussex Industrial Archaeology Society

registered Charity No. 267159

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(Copy for the Mills Group section should be sent to the editor of the Mills Group Newsletter, R.F. Jones, whose address is above.)