

# WARWICKSHIRE

## Industrial Archaeology Society

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### EDITORIAL

The testimony of people once involved with what, by reason of passing time or technological progress, is now industrial archaeology, is something that is perhaps neglected. Only those who were there can truly describe how something was done.

With this in mind, this Newsletter sees a change in layout to publish a piece by Peter Chater. Peter's experience as a locomotive fireman gives a valuable insight into how the job was done and I am grateful for his contribution.

**Mark W. Abbott**

### FREIGHT TRAIN WORKING

I would like to give a detailed description of a journey with a heavy freight train, weighing more than one thousand tons and made up of seventy loaded wagons, between Leamington and Stratford on Avon. All the wagons are unfitted, that is with no continuous brake and are loose coupled. I have chosen this particular journey as it is quite undulating and a route I frequently worked over in the 1940s and early 1950s.

On leaving Leamington there is a falling gradient of 1 in 100, this takes the railway under the canal aqueduct, then immediately the track rises by 1 in 90 to climb over the River Avon thus forming a dip beneath the canal. The next part of journey is Warwick to Hatton, a long bank of 1 in 100. From Hatton to Stratford the route is generally falling, with a steep decline of 1 in 75 on leaving Wilmcote.

Most long distance freight and mineral trains were worked by tender engines as they carried more coal and water. As this train working that I am about to describe was destined for South Wales, I will suppose the engine to be a 28xx class 2.8.0 tender engine.

When the train is ready to leave Leamington and the signals are in the off position, the driver will create vacuum in the engine and tender brakes. When this is done the fireman will gently ease the tender hand brake and as it is falling gradient the engine will edge forward to take up the slack in all the couplings. This might be as much as a hundred feet. The guard at the rear of the train keeps his hand brake hard on until he reaches a point near the dip beneath the canal aqueduct, then releases it. When the driver on starting away knows he has a tight coupling throughout the train, he applies a little steam to keep it that way. The fireman would be busy making up his fire. On reaching the canal aqueduct the driver would apply maximum power to climb the gradient of 1 in 90 to the bridge over the Avon

and to keep the couplings tight. This is to prevent a snatch from the rear portion of train that is still on a falling gradient. (Every few weeks a coupling or draw bar would be broken here). When the train is completely through this dip, firing could start again. (When an engine is being worked at its maximum it is not easy to fire, as the blast from the chimney would take the coal off the shovel.) On arriving at Warwick the driver would bring his train to a stand in advance of the station to await the assistance of the banking engine to Hatton. (The prime purpose of this engine is to assist heavy trains, but it also has a secondary role; this being in the event of a coupling breaking to hold the train from running backwards.) The bank engine would buffer up to the rear of the train, the guard would hand this driver details of his train and then remove the tail lamp from his van. The bank engine driver would then whistle the signal code, two crows and one. (A crow is one long, three short and one long whistle.) When the driver of the train hears this whistle he repeats it and both drivers start off together. On reaching Hatton the bank engine would stop at the signal box and if lines were clear the train would continue towards Stratford on Avon. This is mostly a falling gradient, but very steep after leaving Wilmcote where the train would be kept under close control.

The remainder of the journey to Gloucester is fairly straight forward.

**Peter Chater**

# NEWSLETTER

## Meeting Reports *by Arthur Astrop*

**December 2001:**

### *Windmills and Watermills, Fishponds and Carpets*

From time to time events fortuitously conspire to reveal the depth of knowledge which resides, just waiting to be tapped, among the members of our own Society. Such was the case in December when, a bare 24 hours before that meeting was due to open, the scheduled speaker was laid low with 'flu. The Committee was immediately and urgently seeking a substitute. In fact, they needed to look no further than member Peter Chater who, despite the extremely short notice, stepped in with a full length talk on windmills and watermills, illustrating it with his own slides of outstanding quality.

Before the arrival of steam engines, windmills and watermills were the only sources of mechanical power available to agriculture and industry and, as Peter reminded us, from the 12th century onwards our countryside was increasingly populated with both. The evolution of the windmill saw three main types being developed, namely (in order of appearance) the post-mill, the smock mill and the tower mill. Peter explained the basic design principles of each type of mill in turn, also the various designs of 'sails', illustrating all aspects with sectional line drawings and colour slides of mills still surviving. The problem of turning the mill to face the 'wind of the day' was the first design challenge to be met, and was initially solved by arranging for the entire structure to be rotated about its massive stationary central post. Rotating the total dead weight of the mill was no mean task and was undertaken by the miller (and an assistant surely?) pushing on a long lever projecting from the base of the structure.

Eventually, of course, it was realised that it was really only necessary to rotate the cap of the mill, containing the sail spindle and the bevel crown and pinion which turned the vertical shaft driving the mill wheel. Soon the fantail drive also appeared, which meant that the mill would automatically seek to maintain an optimum position relative to the direction of the wind. Millers (and their assistants) must surely have thought the millenium had arrived. Peter's slides showed mills he has visited and explored in a large number of English counties, some of them lovingly restored, some adapted as dwellings, and some sadly in a state of dereliction. Among them were many old favourites in Warwickshire which most of us have seen but possibly not studied.

Turning to watermills, Peter started by briefly outlining the four main types, namely undershot,

overshot, pitchback and breast shot. He had excellent slides to illustrate each type and in sites as widespread as Bridgnorth, Bristol, Sheffield, Woodbridge, Blockley, Derbyshire and the Isle of Man. The latter, of course, boasts to this day the giant, splendidly restored Laxey Wheel (The Lady Isabella), which pumped a mine and developed no less than 200 hp.

The December meeting concluded with two short contributions, also from Society members. John Brace spoke about a long-forgotten country 'industry' centred on man-made pond systems for cultivating fish, and their associated stewponds for nurturing small fry. The design of the ponds in a group, and the systems of channels whereby they could be drained for maintenance when necessary, was quite complex. John drew particular attention to the fishpond/stewpond complex which once existed at Compton Verney from as early as 1738, records suggest.

Finally, Martin Green showed a short video on the Templeton's 19th century carpet mill, Glasgow. Dubbed locally The Doge's Palace, its exterior is notable for its highly decorative design and its polychromatic facing brickwork. The video also included developments in the design and manufacturing of carpets.

## Society News

### Programme

Sadly Brian Stokes, who was to speak on the history of Automotive Products at the April meeting, has died. A new speaker is being sought and members will be advised of the topic of the presentation once details are finalised. However, it is unlikely that the subject of the meeting will remain as Automotive Products.

### Lives and Times

The *Lives and Times* festival of Coventry and Warwickshire history will take place during the second weekend of June (June 8th and 9th 2002) in the War Memorial Park, Coventry. The Society has accepted an invitation to attend and further information should be available to members once the booking has been confirmed. The end of March is the deadline given for this confirmation, but this has proved optimistic in previous years.

Offers of help to staff the Society's stand over the weekend will be gratefully received. Please speak to Mark Abbott if you can spare a few hours.

# Steam Power Variety

January 2002 Peter Coulls:

## *A Cavalcade of Steam*

Few of us can claim to have had friendly GWR loco drivers blowing their whistles at us when we were babies in our prams, but that was how Peter Coulls was initially infected with the 'steam bug'! Then, almost as soon as he could walk, he was into train spotting and today he is a leading authority on virtually any machine or mechanism which is driven by the by-product of boiling water.

Peter started his talk close at home with early slides of Leamington Station and shots of steam locos of various classes. Gradually his pictures widened in scope to include Continental railways, locos and rolling stock, and he recalled how on one occasion in post-war Germany his enthusiasm for 'train spotting' nearly resulted in his being arrested. Unwittingly he had photographed an ammunition train and it required all his phrase-book German and skill at sign language to escape with nothing more than a stern warning.

As the use of steam locos steadily declined, Peter's interest widened out to include road engines, traction engines and, his particular enthusiasm, ploughing engines. He showed slides of a number of the latter and described the various ingenious methods whereby pairs of engines and steel cables were used to drag massive multi-share ploughs back and forth across large-acre fields. This technology was an early attempt to mechanise ploughing but it required considerable skill, not least in manoeuvring and positioning the engines on the edges of the fields, and was quickly (and one suspects thankfully) abandoned when the tractor appeared.

Ploughing engines, as well as road and traction engines, inevitably led Peter into the world of steam rallies and events such as the Town & Country Festivals where, because of his encyclopaedic knowledge of the makers and their types of steam engines, he soon found himself recruited to give running commentaries. The names of the engine builders he mentioned read like a roll of honour and the glory of many of the lovingly-restored machines shown in his slides, often in their original makers' colours, was a joy to see.

Peter also had some slides of the more unusual types of steam-driven machines, including a tram, a dredger, a jib crane, an excavator, showmens' fair engines and, believe it or not, a Haleson steam-driven motor cycle! The latter is believed to be the only example of its type still extant and if its performance was comparable to the famous Stanley steam car then its acceleration might have shown a

modern bike a thing or two. Another of Peter's slides showed a 'fireless' steam loco, a variation developed for use in hazardous environments such as munition factories. Steam drawn from a steam-raising plant off-site was stored in a heavily insulated pressure accumulator on the engine and, depending on usage, one charging could drive it for up to six or eight hours.

As a digression, Peter also showed a series of slides of the wholesale meat market and abattoir in Birmingham, built in 1903 and demolished in the 1960s. He drew particular attention to the ornamental facing brickwork of the massive building and to the stone heads of animals, also the City's coat of arms, which were incorporated to decorate the façade.

## Warwick Castle Mill

Long standing members of the Society may well recall an evening visit to Warwick Castle Mill. Organised a number of years ago, by Toby Cave, the visit enabled members to see the restoration work being done on the building, in preparation for opening the mill to visitors.

Since then the project seems to have attracted little publicity and it has been unclear what progress was being made. However, as reported in the Coventry Evening Telegraph of 19th December 2001, the intention is apparently to open the mill to the public sometime this year. A photograph in this newspaper showed machinery being unloaded in preparation for installation in the building. The only identifiable item was a horizontal cylinder Crossley steam or oil engine, which the accompanying text stated was, 'Part of the restored machinery that drives the mill...' (*sic*). In addition, the piece stated that visitors would be able to see both the engine house and water wheel in working order and that the 'mill house' would be recreated as it was in 1900.

The mill has a long history dating back to the late 14th century. Originally a corn mill, an engine house was added to pump water to the castle in the 17th century and in the late 19th century the Earl of Warwick set up an electricity generating station in the building. If the Crossley engine in the photograph is originally from the mill building, it was presumably part of the electricity generating equipment.

If any member can provide further information about the history of the mill or indeed the current restoration plans, please pass this to the Editor.

# Motorway History

February 2002 J. M. Carrington:  
*The Motorway Archive*

Work is well advanced on the compilation of a national archive which records the design and construction of the motorway network in the UK, and when it is complete the nation will have a research resource equal to those which record the history of the waterways and railways of this country.

As John Carrington explained, the archive was the brainchild of Sir Peter Baldwin, a former Permanent Secretary to the Department of Transport and current chairman of the Motorway Archive Trust. Some 200 volunteers nationwide are involved in providing, collecting and collating data and the archive is subdivided into three main sections, namely: Policy; Standards and Technology; and Planning and Construction. Along with the storage of records, the archive will include learning packages for schools, a website, and ultimately the publication of a comprehensive 3-volume motorway history.

John Carrington's career was intimately connected with the motorway system in the Midlands, notably through his years of service with the Midlands Road Construction Unit based in Leamington Spa. As John pointed out, unlike some European countries, notably Germany with its 1930s autobahns, Britain had no previous experience of planning, designing and building a network of motorways. As a result, when in the 1950s work on 'a motorway system for the UK' began everything had to be started from scratch. As a result there was a long, sometimes painful, and occasionally a rather costly learning curve to be endured.

The history of motorway building in the UK is largely that of the second half of the 20th century, and while there are now some 2,000 miles in Britain that figure is still relatively small compared with say France and Germany. In fact, a recent report has described the current motorway provision in the UK as 'sparse and inadequate for the nation's needs'.

Drawing on his firsthand experience, John described some of the problems of motorway planning and construction in the Midlands, masterminded by the MRCU and covering eight different counties and the Birmingham conurbation, with its 3 million population.

He gave insights into many of the Midlands motorways, including the BNRR (Birmingham Northern Relief Road), and the ill-fated BWOR (the Birmingham West Orbital Route), together with the M40, which was the first motorway in the UK to be the subject of a public consultation exercise. When the intention to build any motorway is first mooted there is understandably immediate intense speculation as to its possible route, with all the implications that carries.

To the fore in such speculation is often the local Press which is eager to show that it has 'inside information'. In one instance, John said, a well-known Midlands paper even assigned a journalist to record the position of all bore holes being drilled, and then published a map purporting to show the intended route of the 'new motorway'. Unfortunately, this bore no relation to the actual route with the result that a number of residential areas were unnecessarily 'blighted' for a considerable time.

Using a PowerPoint computerised presentation (have colour slides had their day?) John showed some splendid shots of motorways and their bridges under construction. These including the M54 (for which no fewer than six public inquiries were needed); the M42 where many public inquiries were also necessary; and the world-famous Spaghetti Junction. When the latter was first opened, a leading Midlands newspaper thundered that, 'an ambulance should be posted permanently on each loop, to pick up the bodies'. In fact, the safety record of this most complex junction has proved to be exemplary.

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