

Reading Society of Model
Engineers
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Polish railways PKP 2-6-2 OL 49 23 leaves Wolsztyn for
Poznan on the morning of 15 May 2008.

Photo John Billard

**RODS, POLES & PURCHASES
GOING FOR A BURTON
SEEN AT ASHFORD
HOME OCCUPATION**

A VIEW FROM THE CHAIR

John Billard

I wish all members good health. This crisis has had a worldwide affect and has come right home to us at RSME. With all activities suspended for the duration the clubhouse and site has been put on a care and maintenance basis as far as we are able. Regular visits are being made to see that all remains well and that is the case so far. Members have even taken on grass cutting for which we must be very pleased and grateful.

Peter Harrison has reported that he was contacted by Reading Borough Council and RSME was invited to apply for a £10,000 “coronavirus” grant as a ratepayer. Not expecting success Peter responded. The unexpected result was that this money has now been deposited into the RSME account. The trustees will consider this outcome for the benefit of all in due course.

In the meantime some of us are fortunate that we have plenty to do during the current lock down restriction. It would be good to hear from members via PROSPECTUS on any matters that may interest other members.

The trustees had a “virtual” meeting on 20 April to keep things ticking over. This is to be sure that we will be able carry on as before after we were so rudely interrupted.

Once again best wishes to all.

RODS, POLES AND PURCHASES

by David and Lily Scott

Work on Jessie continues with various parts.

My favourite tip to keep on being inspired during our long projects is to. Always have something next on the list waiting for you in the workshops next session! Just started or some metal sorted out for it.

I had the rods ready with another set up to thin them down with all the stops out, set up and ready. Remembering that on long milling cuts not to stop or even ponder for a moment. Having stops on both axis of the milling machine, also means that I can come into the work and exit at the end to leave an almost polished finish.

On the first roughing cut speed on a turn over was important as it curved almost a millimetre up in the middle. 1/16” for us older who work in all sizes! “You had time to check?” Yes, but taking off almost 3/32 evenly both sides worked well a bit at a time. This was done by end milling quite roughly and took minutes. A superb use for older and possibly damaged cutters.

A new to me holder for £10 began as a bargain for 1-inch diameter cutters. But soon gave me problems as it wouldn’t fit the R8 spindle. Hardened of course which meant almost two hours with Tungsten and Diamond files on the slot and top diameter. Then to add insult to injury it had a slight wobble! But it worked even if we cut on one side only. Hint just file three more flats for the huge grub screw and the cutter will last three times as long. Removal of ancient grubby wax, reviled it to be a Hall and Pickles another bargain got

some time in the past, and incredibly sharp.

Keeping things sharp is a wonderful diamond file from a visit to Tiranti about two years ago. Yes it eats High Speed Steel with ease and gets a few more cuts out of various replaceable tungsten cutting tips as well.

There are usually two different ways to do something and the reversing pole is no exception. The top part is as usual a brightly polished tapered handle in stainless steel. Thoughts of turning and milling the whole 6 ½ inches out of some 3/8 diameter free cutting stuff sends me on a search.

Fruitless, so it's down to a cunning solder-less plan to make it screw down onto an extended pole turned, threaded then milled to a taper. This then means that the stainless can be machined in two settings with the 4 BA hole and taper. Followed by the rounding off of the top when screwed onto the pole for a moment having done the thread. Our Train of Events working with us today superbly.

The drawing shows a flattish top but my version has a lovely dome. I chickened out of mounting it on a 4 BA screw instead wrapping it in masking tape and holding in the 3 jaw. After all I was just filing and polishing a radius.

The other day it didn't end well and my love of mixed measuring came back to haunt me with another visit to the MIG welder in our club. This was for the two outer bits of the reversing stand. 1/16 too small each side. Several blasts to build up and some careful filing and no one would know! OOPS. Again my favourite filing buttons were made from some 10 mm steel rod to rotate on the 6 BA bolts. File and polish as usual. The curved edges were next but having spent quite some time on the part. Were a bit too tempting to set up in the mill with a large diameter cutter and risk a dig in. I hand filed and checked for symmetry by drawing round and swapping sides. Just a bit more and onto polishing. A tea break, and a chance that a guy calling himself Martin Zero on YouTube found himself upon the footplate of a Hawthorn Leslie Locomotive. Stop framing to advantage, some quick sketches and cold tea. But wonderful results.

Then the pole got a "Just another cut down to the line" and it was too much... I know which project that will help! The dear J7. But he gets to be called something else on the odd occasion to cover copyright! Mine is Tina as all road going Trams wear skirts. Then another gets cut out quickly and I am more careful this time and we get a bigger bottom. I make some 11.5 mm filing buttons and it will look better when the ¼ hole gets reamed in it for the pivot. Well at least the mini 4 jaw is set ready this time. I cheated and have now got several with the jaws round both ways. Yes, a 4 BA thread just goes over a 1/8 thick plate slightly bigger on the width. Think of a FOBCO drills depth stop thread only very tiny.

Everything is 4 BA at the moment so I finally fix the mounting plates onto the rear sand boxes.

A nice clean and the glue is almost instant and does not tend to move? Yes, a slightly old bottle of Loctite spread and pressed together. Double checked

and left. There is a right one as well he jokes!

First project in the morning is drilling and tapping three holes in through the backs.

My hint is to drill and bore for the countersinks first as the box is a very odd shape for pressing down on hard. Yes, I couldn't resist getting all these holes to line up as a matter of pride.

My six screws are too long and a wonderful way of shortening is to hold them in the chuck. Head outwards and in with a round tool-bit to start. Use a large half round file to cut and de-burr at the same time as they rotate. Twist off the little pip and do another. Keep going as we will need six more for the front boxes bases. These screw in first time without burrs.

Perfect progress on all parts... Then I make another purchase. A Progress drill advertised down in Guildford, as the drill I have is great for small holes and high speed.

We arrive and it is during the Early Rainy Season. He has just cleared the back garden but with luck it is to the side in a packed outhouse. His wife arranges some power but honestly there is just room for the cable when she stands in the doorway... Lucky for us as the dogs she is holding back sound very vicious. Our driveway is currently in a bad way but with a huge 4 x 4 blocking, we have to slide our way onto the neighbours even worse concrete path. Being all downhill to the road helps, but I didn't know Guildford was subject to earthquakes? I brave a look at several compressors he will have for sale in a hastily constructed workshop. The garden now being twinned with several in the Wye and Severn valleys after the flood-waters had receded!

Back home I took each part off separately from the back of the car and lugged out. The column being a solid piece amazed me in its weight. Of course all bits being superbly made. But looking at the current state of the paintwork! It would not look out of place bolted onto the back of some camouflaged military equipment. The table gave me a smile of approval at the jokes.

With our own garden now resembling the Fox Tor Mines on Dartmoor the bits sit waiting for some drying out before any moving is considered. 1974 was a very dry summer prompting us on a school expedition to take a short cut across them back to camp.

The other rod is the reversing one on a taper, 11 1/2 inches long, and having a forked end.

My cunning plan is to hold a 2-foot length of 3/8 square in the vice up to the end as a register. Sat on parallels while up the other end it gets clamped down to more parallels and the stops are set.

I do two cuts then rotate to do the other side. Two more and back to the other side. Finishing cuts down to the stops reveal a lovely slight bow towards the middle as the cutter pushes it out of the way. Then the taper down to the forked boss. Again we get some deflection during the cut. Once the rod is

slotted, radius on the ends, and polished it looks superb and not tending to look thinner in the middle.

Our old Greek column trick being used again.

It says POLISH on the drawing and is very visible.

Assembling the chassis with the now rebuilt rear buffer beam lifts dull spir-its and adding the reversing pole and complete sanding box raises them even higher. Add the boiler holding brackets and it is SMILE for the camera. Our last shot.

Thoughts to everyone also confined to various workshops and hobby spaces throughout the world.

(And also to those not as fortunate as some of us Ed.)

All photos David Scott



Right Milling the main rods - a lovely set up that can be used for all sizes.



Left Filing the sides of the reach rod. Notice the subtle bowing.



Milling using vice and parallels. Very repeatable.

Right Thinning down the tops. Yes, it shows the combination lever.



Left Does it fit so far? Nice sandbox!

GONE FOR A BURTON!

by John Spokes

A couple of weeks before COVID-19 came seriously knocking I went on a coach-trip to Burton-on-Trent to the National Brewery Centre, a Museum dedicated to the history of brewing. In fact, as I write this, I am reminded that this was my last truly enjoyable experience prior to lockdown. I was in two minds whether to go, as I'd purchased the last ticket on the 52-seater coach. However, the wiser or more timid trippers (a large number) wrote-off their subscription and "social-distancing", yet to be formally invented, was not difficult to practice.

Burton's expansion as a beer town derived from the local aquifers, which contain significant amounts of gypsum, calcium sulphate, which is very im-

portant for making Pale Ale, and in the days of The Empire particularly contributed to the longevity of India Pale Ale, IPA, both major brewing products. Another important brewing ingredient is Malt, prepared from barley, steeped in water and then allowed to germinate, originally in a malthouse, to produce starch. Malthouses were a familiar sight in many towns. Reading still has a couple, now converted to apartments, near the IDR, where the Colley Branch ran. (Remnants of rail track can still be seen in the nearby roads.) The malt was laid on perforated ceramic tiles which formed the malthouse floors and warm air was passed through. To ensure even germination the barley, about a foot deep, was continuously turned. This was done manually using a malting shovel, back-breaking and monotonous work, although many maltsters mechanised, using vertical, rotating helical paddles which moved on rails over the malthouse floor.

After about 5 days the germination process is terminated by kiln-drying the malt. The extent of kilning ultimately decides the colour of the product: amber ales require light kilning, whereas, barley for stouts are heavily kilned, almost roasted. The grain is then crushed and sieved to remove the husk and placed in a Mash Tun (photo *right*) together with hot water and heated to about 160 F. In here the starch in the grain is converted to sugar, essential for the subsequent fermentation process. These early mash tuns, with their heating coils, stirrers and perforated bottoms, required to separate the wort produced from the solids, were wonders of the coppersmiths art. It was not uncommon in Victorian and Edwardian times for some VIP, such as a member of the British Roy-



alty or European monarchy to begin the mashing process and the subsequent brew would be named after them and bottled as such. Many examples of these brews, surely by now with undrinkable contents, are exhibited in the Museum. In some special cases a mash tun took on the name of one of these important dignitaries and this name recorded on a brass plaque fixed to the wooden insulation around the tun.

The wort from the mash tun flows to a kettle, again traditionally made of copper, where hops were added to give flavour and aroma and the whole lot boiled, which also sterilises the beer. After cooling the strained liquor passes into the fermentation tanks where yeast is added which converts the sugars to alcohol and the product is then filtered before being bottled or casked in barrels, originally wood but now aluminium. The waste yeast goes, literally, “next door” to make Bovril.

I have simplified the process considerably and the brewing alchemy to produce the different type of beers; strength, flavour and colour, was, and still is,

under the control of the Master Brewer, a god in his limited domain – something like a Boiler Tester in RSME??

One of the first breweries in Burton, ultimately becoming the largest in the world, was started by William Bass, who at first ran a transportation company which he sold to Pickford's and used the funds to establish his brewery in 1777. His Red Triangle (for Pale Ale) and Red Diamond (for Strong Ale) were the first trademarks to be registered under the UK's Trademarks Registration Act of 1875. The Act came into effect on 1 January 1876 and Bass sent an employee to queue over New Year's Night in order to be the first in line to register. A bottle sporting the red triangle appears on a famous painting by Manet of a bar in the Folies Bergère. (Photos *right* and in close-up).

Apart from local consumption, Bass exported beer via the Trent and Humber to Baltic countries, but the transformation of Burton as a brewing centre began with the arrival in 1839 of the Birmingham and Derby Junction Railway, which facilitated an increasing distribution network. From this main connection a large internal rail system developed, amounting to 90 miles at its zenith. (Bass alone accounted for 16 miles.) This system was used for importing raw materials and exporting the numerous types of product., Imports were not only for the brewing process, but also support industries such as wood for barrels and coal for boilers, brewery locomotives and steam engines. Photo *below*



is a compound tandem engine used for power generation.) This maze of internal lines caused problems as many level crossings, peaking at 32, sprang up in the town. In 1859 locals unsuccessfully petitioned parliament to do away with some of these, as moving around the town had become very difficult. It is

said there were never any bank robberies in Burton as any get-away strategy would be doomed to failure! In the Museum is a very large model of Burton in its hey-day, complete with the railway system. Photo 4 *next page* shows about half of the model. Much of this industrial landscape has disappeared and one can pick out on the model the very small area remaining and now



occupied by the National Brewery Centre, part of which is in the old Worthington Brewery where a micro-brewery has recently been established.

A highlight of the working year at the Bass Brewery was the annual train excursion for employees. These began in 1881, when the destination that year was to be London but was changed to Scarborough because of a smallpox epidemic – sound familiar? From 1900

to the outbreak of WW1, when the excursions ceased, no less than 17 consecutive trains ran conveying over 11,000 people. The trains departed at 10 to 15 -minute intervals, the first departing at 4 a.m. and the last return train arrived back at Burton at 2.30 the following morning. These feats of logistical engineering were all organised by one man, William Walters, Bass’ Traffic Manager. He retired in 1915 aged 74.

A few other items that caught my attention were:

A large collection of beer cans some



of which dated from the mid-19th century. Of course, these had soldered joints – not particularly healthy – and some more recent ones: Watneys Party Seven, Skol lager, Double Diamond. Aaah, My Youth!

Some vehicles converted to look like beer bottles and casks and used primarily in the ‘60s and ‘70s for advertising. (Photo above left and above right)

For me the piece de resistance was the replica of an Edwardian pub (*right*). I say this because in the 1950s my paternal grandparents ran such an establishment in the back-streets of Market Harborough, a small market town in Leicestershire. At that time comparatively little had changed from Edwardian days, per-



haps the cash register was more modern and pewter had been replaced by glass, but the beer engines were on the bar and in the Games Room was a table skittle board (*right*) which also formed part of the furniture in the bar room at the Museum. This was quite a lethal game, I recollect; the wooden “cheeses”, traditionally made of laburnum wood, would occasionally fly off the surrounding leather padding, escape the netting and ricochet amongst the spectators. Apparently, this type of skittles game was peculiar to Leicestershire.



Finally, no self-respecting museum should be bereft of the ubiquitous Gift Ship and this was no exception. Ok, there were the usual fridge magnets and pencils, but outnumbering these more insignificant items was beer in plenty, racks and racks of the stuff. I'd already partaken of a couple of beautifully conditioned pints in the Museum Bar, so I purchased a few more for home consumption. My choice: two bottles of Brexit Burton Bitter (remember Brexit?) and a bottle of the Czar's P2 Imperial Stout at 8% alcohol. *Cheers!!*

ANALYTICS Where Wolverton Pug looks at photos taken by the editor

English Electric shunters and the Ashford steam crane 1st December 1963.

Taking centre stage in the picture is the ex Southern Railway 350 bhp English Electric 0-6-0 diesel shunter one of three (15201, 15202, 15203), designed by Richard Maunsell and built in September/October 1937 at Ashford Works as numbers 1, 2 and 3. And went new to 75C Norwood Junction. They were renumbered 15201/202/203 by British Railways in October 1948. 15202 was loaned to the War Department between 1941 and 1945 and worked on the Martin Mill Military Railway north east of Dover hauling rail mounted naval guns along the coast for bombarding German occupied France 21 miles away! Diesels were used as steam would risk detection by the Germans.

Following the end of the war they were returned to work at Norwood Junction yard. 15202 and 15203 moved in 1951 to Old Oak Common for use in Acton Yard. They returned to the Southern Region between March and May 1953. By early 1957 15202 was at 73C Hither Green, the other two remaining at Norwood Jn.

15202 moved to 73F Ashford in the period 4 weeks ended 9th December 1963, so had not been at Ashford long when John photographed it. It was withdrawn from there in November 1964 and cut up at Cashmore's yard in Newport South Wales in November 1966.

The loco next to it is one of the follow-on build of 26 EE 350 bhp 0-6-0

shunters authorised by Bulleid. 15227 was built at Ashford and went new to 73C Hither Green in February 1951. It was transferred to 73F Ashford in early 1959, went into store there in August 1969, withdrawn in April 1970 and scrapped at BREL, Eastleigh in May 1970.

I am guessing that the steam crane is the 36 ton (Cowans and Sheldon or Ransomes and Rapier) which was based at Ashford to cover the line to Tonbridge and Redhill.

Just visible between the two EE shunters is a Crompton type 3 diesel (class 33) in original livery.



SECR birdcage set1st December 1963

With the crane mentioned above are two SECR birdcage brake vehicles. The one next to the crane is DS127 which research reveals was an H. Wainwright, non-corridor lavatory third brake, no S3520S built at Ashford in March 1913 and transferred to departmental stock as staff and tool van no. DS127 in March 1956. The coach with it is DS128 formerly SECR brake third lavatory no S3496S (built October 1913 by the Metropolitan C&W Co.) The crane jib rests on a runner vehicle which looks like DS6095. DS126 was 'Birdcage' BT No. S3448S, DS127 and 130 were 'Birdcage' BTL Nos.S3520S and S3515S respectively. All were converted in 1956 and were condemned in 1964.

It is interesting to note that BR ordered 22 new breakdown cranes in 1959 as part of the Modernisation Plan. 12 x 75 ton and 10 x 30 ton. All were steam powered except the last two of each type. The 10 new 75 ton steam powered cranes were converted to diesel hydraulic between 1976 and 1978 at Derby Works. The eight 30 ton new steam cranes were used on other work such as permanent way works for the Chief Civil Engineer. The two 30 ton diesel cranes were used on the SR.

S.R. South Eastern Sectional Appendix dated 1 October 1960 shows the following: Motive Power crane No.DS80 - 36 tons lifting capacity, tool Vans Nos. DS126, 127 and 130. (*Additional material from Peter Bassett*).

How to occupy myself staying at home by **Tony Roberts**

Well, not exactly railway news, but we all now have a chance to revise our bits and pieces and show our good ladies that we can at times tidy up.

Reorganise my study.

I have been encouraged to sort out all my books into sections. (Julie is good at this)

Shelves of: aircraft, boats, railways and “what does this come under?”

I have plenty to read on the railways shelf and have started volume one about the Western Maryland Railroad which is very instructive.

For my birthday last week, I was given a Metcalfe set of cottages to build. This will probably keep me busy for weeks. However, I abandoned this project this afternoon for a walk across the park and found that the bluebells are already out. And this evening there is Mastermind and University Challenge to test my brain cells.

I look forward to being back with you in our clubhouse to resume Tuesday evenings with the layout.

Keep safe and well.

*Members—let me know what **you** have been doing! Editor*

DIARY

All events have been cancelled for the duration of the health emergency.

Comments by RSME members on any subject appearing in Prospectus are welcomed by the editor.

Opinions expressed in PROSPECTUS are the personal views of the contributor and cannot be taken as reflecting the views of the club committee or editor.

The deadline for the June issue is 18 May. This is the final date.

Contributions may be submitted in hard or soft copy to the editor.

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