

February 2016



Surrey Signal

An occasional newsletter
for the G1MRA Surrey Group



RHUL science festival March 5th

Our, by now traditional, season opener at the Royal Holloway, University of London Science Festival is on Saturday 5th March 09:00-16:00, with setup from 17.00 on Friday March 4th. The trailer will already be on site so we don't need Friday assistance at Guildford.

The venue is the same as last year: our fine Victorian Boiler House.



You'll notice a few changes on campus since last year; there is currently a very large hole near the main building which will shortly be filled by a huge new library.



Parking and pedestrian circulation will be quite severely affected by the building works, so please ensure that you use the official

event car parks. Drop off for unloading and loading only will be in the courtyard.

There will be a packed lunch for those who requested one and a pop-up café in the courtyard as well as our usual fixed catering outlets. Satnav users: programme in [TW20 0EX](#)

Surrey Oval 'prototypical' shock



Yes, this is real... About 50km east of Prague there is a 13.25km oval of track which is used for testing, amongst other things, 230km/h tilting trains. Rail operators from all over Europe use it. More at https://en.wikipedia.org/wiki/Velim_railway_test_circuit where you'll find pictures of a Class 92 under test.

Oh, it's only single track.

Trackwork complete

Peter slaved away in the runup to Christmas, and on 18th December was able to report that all of the planned track has now been finished. You see here boards 29 and 30 at the back of 24/24A. The rightmost track runs right across the front of the oval independently of the two running lines and connects with the outside steaming bay at the far end. Plenty of scope for Mike's 'naughty' Thomas engines to play shove-a-truck, and for independent electric shunting.



New member: Keith Burgon

Please welcome Keit Burgon, G1MRA member 5232. He has been a member of GMES for eight years, and as you can see in the photo has acquired a Class 66. In his day job, Keith manages the engineering workshop at the National Physical Laboratory where he been for nearly 40 years.



New member: Jeff Rose

Please also welcome Jeff Rose who works with James Mander. Jeff won't be able to make Tuesday afternoon meetings, but we hope to see him at other events.

Jeff is a mechanical engineer and likes heavy freight engines, so he has acquired a Bowande 8F which you may have seen him running at Guildford. He also has interests in OO gauge modelling, and is thinking of trying some Gauge 1 wagon kits.



This shot was taken at the Chemin de Fer Touristique du Haut Quercy.

Newish member: Yves Bozzo-Rey

Please re-welcome Yves who originally joined a few years ago and has recently restarted work on a Barrett Steam Models J38:



The J38 is the same loco kit that Elizabeth finished a few years ago. Yves was at Ken's in February and we hope to see him at many future events.

Alan's list

As most of you know, I am handling the sale of items from Alan England's estate. There is quite a mass of material including a large number of partially dismantled items. I want to especially thank Michael Wrottesley who has invested a lot of time in matching up various parts.

The initial list is now online at <http://www.cs.rhul.ac.uk/~adrian/AlansList/AlanSalesList.html>

There will be updates as new material is added: I will email folk as these appear. All enquiries to me please.

Peter's latest

Now that the trackwork is finished, Peter has moved from making very large objects to very, very small details on his 3D printer. This is harder than it sounds, because the printed plastic filament is quite thick, so to get a good result one needs to design to sizes which are multiples of the filament diameter.

This is a working tail light combined with a new BR corridor connection for a Mk 1. The battery and electronics are inside. It's a real work of art.



Surrey group attempts to corner world market in Lions

Well, not really, but my recent acquisition of a pristine Aster Lion kit makes (I think) the Surrey Group Lion pride four strong, and that is 0.5% of the entire production run.

I always wanted a Lion. I am fascinated by very early technologies of all sorts, because they show such variation. Once the basic engineering concepts are

worked out, designs tend to converge, but in the early days, everything is up for experimentation. For instance, I've had a footplate ride on the replica Planet which believe it or not has slip eccentric valve gear (as did Rocket).

When I bought my very first engine I was also offered a Lion, but foolishly turned it down. I've been looking out for one ever since, and in the last NL&J there was a pristine unbuilt kit for a very good price, so I snapped it up, and it is now under construction at work as a coffee-time project for Elizabeth and me.

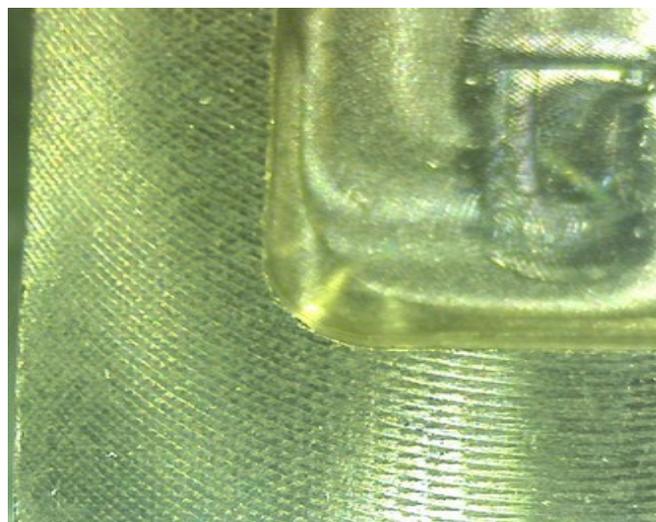


I am toying with the idea of having some Tiger plates made up to distinguish mine (Todd, Kitson and Laird built two 'luggage' engines in 1837 for the Liverpool and Manchester, but Lion's sister Tiger was scrapped long ago.)

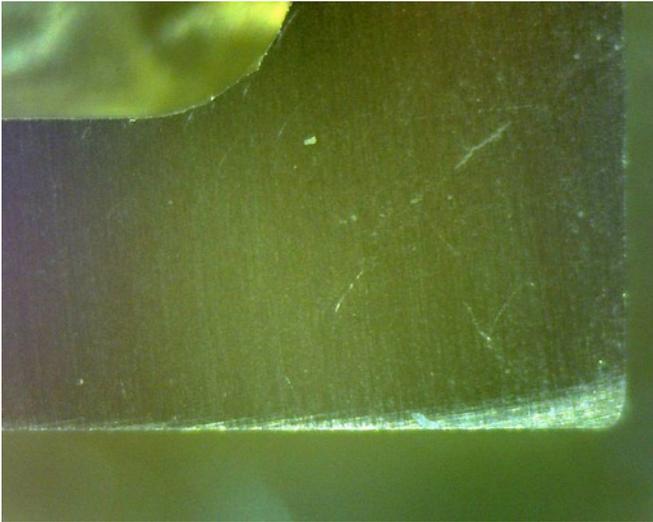
I also have a Lion engine unit that I bought from a member in Australia some years ago which I hope one day to incorporate into another early engine model.

Wet and dry: before and after

Step 1 in building a Lion is to lap the port face and the valve. I have one of those USB microscopes that I use for examining the finish on my usually-pretty-awful attempts at lathe and mill work. This is what the valve looks like before lapping.



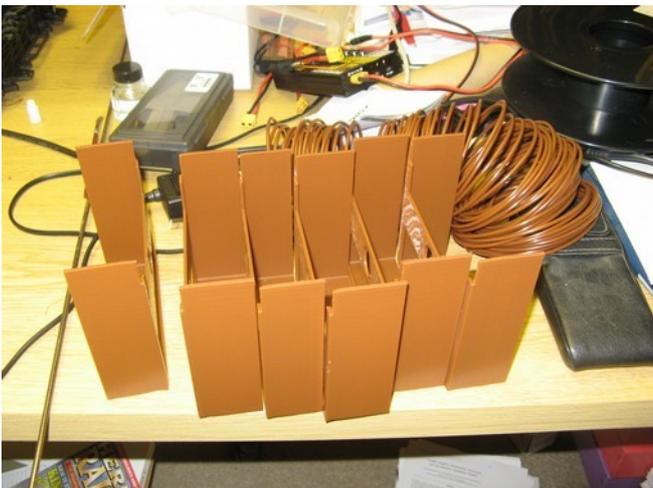
After being stroked a few times on a wet abrasive sheet, I got what I think is a reasonable finish, albeit with a bit of rounding on one edge.



When 3D printers go bad

I got a bargain on eBay a few months ago, and acquired a Lulzbot Taz for just over a quarter of the usual list price. Much more importantly, this is the same printer that Peter Jackman uses, so I hoped I could piggy-back on his experience. So it has proven: Peter came over and commissioned the printer for me, and I then started churning out 1:32 milk churns for Elizabeth's chocolate train.

Another reason for wanting to be Jackman-compatible was so that we could split the load of printing items for the Oval. My first job was to run off half a dozen of the new brackets that we are using to support the curtains that Christine and Mike have made:



My medium-term goal is to be able to print wagons. The graining that you get with a filament deposition printer mean that I am unlikely to achieve results anywhere near the quality of, say, a Northern Fine

Scale seven-planker, but I think I should be able to make something that is 'good enough for Gauge 1', in the hallowed tradition. Why bother? Well I want a train with at least 15 wagons in it. If I invested in NFS then that would be over £1,000. By my calculations, there is only about £1.20 worth of plastic filament in a complete wagon, so if only I can achieve the quality then the printer will have paid for itself twice...

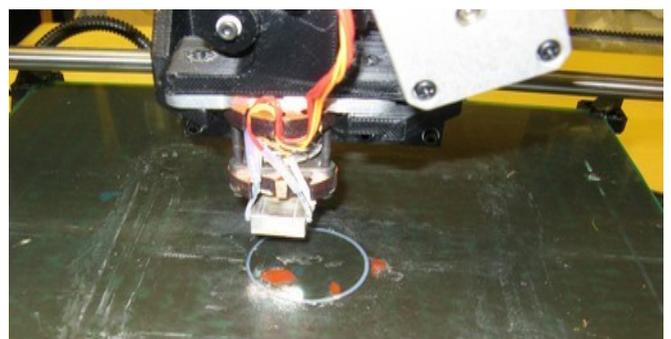
I am attempting to print wheels. They may wear very quickly, but of course I could always print some more. I have an old Marklin truck that I use as a dummy load on the track at home, and it has wheels that I think are made of ABS. It has done hundreds of laps without showing much wheel wear, so as an experiment I am printing identical wheels and will see how they do.



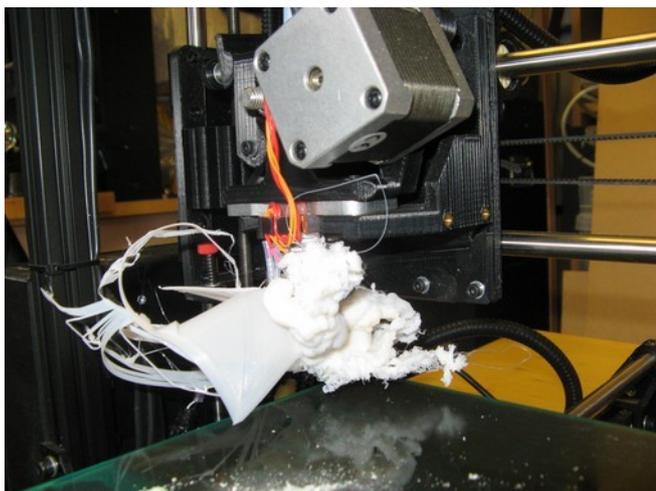
Here you see the Marklin wheels (black), an Association wheelset in steel and two of my printed wheels. Yes, I got radius and diameter conflated and my first attempt yielded a scale 7 foot driver, sigh.

Now, as anyone will tell you home 3D printing using filament deposition is most certainly not a mature technology. There are only two real problems: getting the prints to stick, and then getting prints to unstick on completion. (Actually, I simplify massively, but adhesion and release are the core challenges).

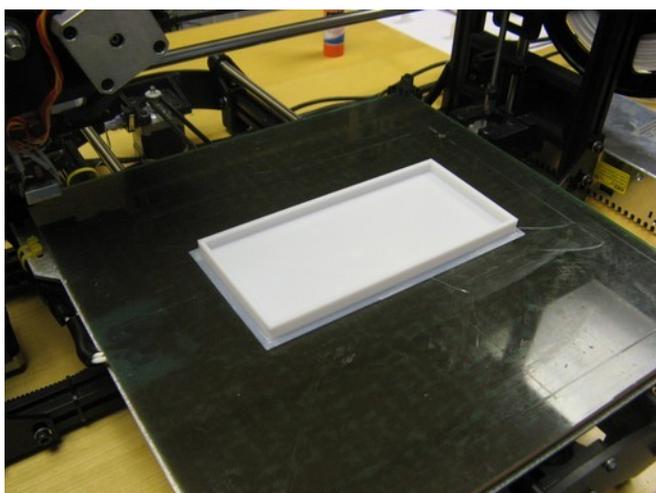
Here's a wheel starting to be printed on a very messy bed which I should have cleaned



Actually, that print was successful, but one evening I left the printer working on a wagon body which would have taken 14 hours to finish. Sadly, in the morning all I had was this:



Still, we always tell the students that things which are broken are more educational than things that just work, so I cleaned it off and persevered. Here's a rough test of a 3-plank body



Meanwhile, Peter has been working on detailing. Here is a 3D printed wagon side, complete with strapping.



Weekend runs at Mike Hensor's

Mike Hensor has very kindly offered his track on six occasions in 2016 as you will see on the fixture list. Meetings will start at 11.00am, with a mix of Saturday and Sunday runs.

He has three running lines now, and will welcome stream, battery, clockwork and even track powered electric. I have had a very nice time running at Mike's,

and I hope the opportunity to run on a weekend will help recruitment of members who are not yet retired.

Progress at Guildford

One of the challenges of the site at Guildford is that being at the bottom of a field it suffers from a sump effect, and the ground gets pretty squishy in winter. So as to keep the track usable, the team at GMES have now laid a permeable membrane, constructed a low wooden wall and infilled with wood chippings. It's a lovely effect.



Gauge 1 South East

Adam Houghton is organising a big meeting over the first weekend of July. For details and to book running slots, see <http://gauge1southeast.wix.com/2016>

Postscript



Peter sent this rather lovely shot of something he'd made.

Apparently it is a lube tank, metering needle and hot header/manifold.

So now you know.

Frontpiece

For the first issue of a new year I wanted to find an engine wearing an appropriate number. At first I looked for a nice shot of Peppercorn K1 class 2016 steaming into the future, but that didn't work out. Then I wondered about D2016 which was a Class 03 shunter. That particular engine is gone, so you get D2069 as a standin which usually lives at Shildon.

Photo by Phil Scott via Wikimedia Commons.



SURREY G1MRA GROUP

2016 fixture list as of 29/2/2016



Surrey group meets second Tuesday afternoons
Please refer to your membership list for venues

Tue 12 Jan	Sutton MEC	13.00
Fri 15 Jan-Sun 17 Jan London Model Engineer Show: Invicta Track at Alexandra Palace		
Tue 9 Feb	Ken Lowes	13.00
Sat 20 Feb	Bacon Butty Bash, Durrington; Salisbury and Stonehenge Track	
Sat 5 Mar	Oval at Royal Holloway Science Festival	09.00-16.00; setup Friday 17.00
Tue 8 Mar	GMES	13.00
Sat 9 Apr	Mike Hensor	11.00
Tue 12 Apr	Michael Wrottesley	13.00
Sat 30 Apr	Oval at G1MRA Spring meeting, Slough	All day; setup early Saturday
Sat 7 May	ASLRM show Reading: Invicta Track	
Tue 10 May	Martin Hulse	13.00
Sun 15 May	SMEC 81 st exhibition	13.30
Sun 22 May	Mike Hensor	11.00
Tue 14 Jun	Ken Lowes	13.00
Sat 25 Jun	Mike Hensor	11.00
Sat 2-Sun 3 July GMES rally		
Set 2-Sun 3 July Gauge 1 South East at The Laurels, Staplehurst		
Tue 12 Jul	Martin Hulse	13.00
Sun 24 Jul	Mike Hensor	11.00
Tue 9 Aug	Bob Boorman	13.00
Sat 27 Aug	Mike Hensor	11.00
Tue 13 Sep	Peter Jackman	13.00
Fri 16-Sun 18 Sep Oval at Model Engineer Exhibition, Brooklands; setup Thursday <i>Provisional</i>		
Sat 1 Oct	Mike Hensor	11.00
Tue 11 Oct	Guildford MES	13.00
Sat 22 Oct	Oval at the G1MRA AGM, Woking	All day; setup early Saturday
Tue 8 Nov	Sutton MEC	13.00
Tue 13 Dec	Bob Boorman	13.00

Forward dates for 2017

Sat 2 June Oval at the G1MRA 70th anniversary event, The Fosse, 10.00-17.00

Sat 14 June Oval at the G1MRA AGM, Wood Green Animal Centre *Provisional*