

WHISTLEBLOWER

THE NEWSLETTER OF THE FARNHAM & DISTRICT MODEL RAILWAY CLUB

15 November 2020 – Special Edition No 18

EDITORIAL

We are about halfway through the 2nd week of our 2nd COVID lockdown, but this time round the weather is cooler and miserable. Afraid I cheated over most of the 1st week as it coincided with my long-awaited knee replacement operation at Frimley Green Hospital. Whilst lockdown was a good time for me to have the op, I now have to keep up with the exercise routine. At least this weekend I had Whistleblower to occupy my mind.

In response to my plea for articles on your current projects, Jim Edwards was very quick off the blocks with photos of his new layout. Additionally, Pete Novis has provided an excellent article on 3D Printing using Stereolithography apparatus (SLA) and, coincidentally, Railway Modeller's December issue also explores 3D printing. Both make good reading and may even tempt you to include a printer on your Christmas present wish list.

The next issue of Whistleblower will be Sunday 29 November. Do keep your articles, photos and links flowing; latest receipt is Saturday 28 November to give me a chance to get Whistleblower assembled and out on the Sunday.

Jon Faulconer

FROM THE CHAIRMAN'S DESK

ALAN RICHES

It is with great sadness that I have to start this week by telling you that our great friend and long-time member Alan Riches died on Wednesday. He was 85. He had been in declining health for some time with occasional falls and arthritis. His brother found him collapsed at his home on October 26th and he was admitted to St Peters Hospital, Chertsey where sadly, he contracted the dreaded Covid-19 virus from which he did not recover.

Alan had been a very full member of our Club for over 20 years and during that time had made an enormous contribution attending virtually every week, giving his modelling and construction skills to the OO Test Track, Geenfield Sidings and latterly to Hazelbury Junction. Whenever Greenfields was out at an exhibition, Alan would be volunteering his help in erecting and operating the layout; he was always happy to chat to the crowd!! Nearly every weekend Alan would tour the country visiting exhibitions large and small – and collecting tank wagons of which he eventually amassed over 120!!!

At this stage I don't know any funeral arrangements but I will pass them on in due course when known although the lockdown will severely restrict attendance.

OTHER POINTS

1. Can I please remind you that **membership subscriptions** are due from 1st November and up to this point only about one third of members have renewed. Please let the Treasurer have your sub as soon as possible.
2. **Modelling Competition** – We need your entries as soon as you can submit them. I'm sure that many of you have been spending your increased leisure time in producing some exemplary models which you would like to share with the rest of us. So, don't be shy, get out your cameras and let us have your entries.

Please stay safe and well during this difficult time and I look forward to seeing you when we can resume some sort of normal service.

Richard Puddephatt

NEW LAYOUT – James Edwards

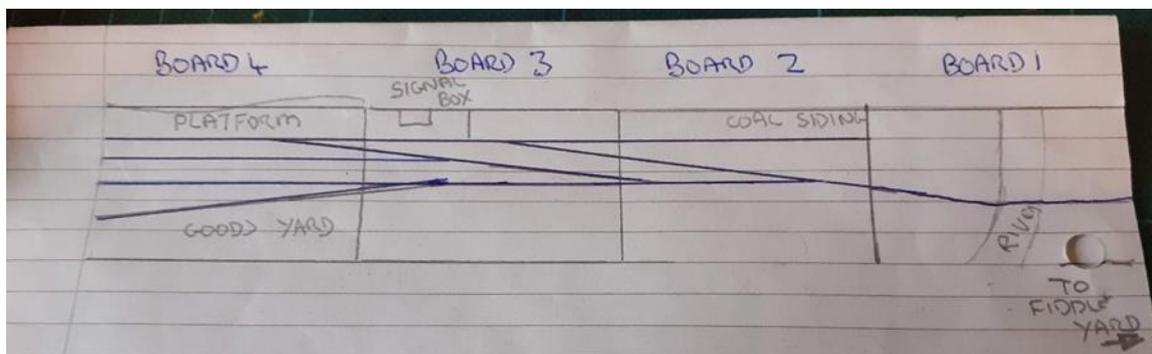
As my old layout Aldermouth is over ten years old I made a decision to make a new layout. I bought laser cut baseboard kits from Grainge and Hodder Ltd. I got 4 boards 900mm x 600mm with a 1200mm turntable fiddle yard. After fitting them together I added hinged legs. Fitting the baseboard together I use t-nuts and bolts with alignment with Pattern Makers Dowels. I did not use anything under the track on Aldermouth so I am trying the Woodland Scenics track bed. I have cut out a section on Board 1 for a river.



Board 1



Board 2



Layout sketch



Board 3



Board 4

The next thing to do is track laying and wiring. It will be dcc with sound and the signal box I built with no back on so you could see the inside will be on the front of Board 3. The layout will hopefully be an exhibition layout with a GWR theme as that is most of my stock.



Turntable fiddle yard



Progress so far

A GUIDE TO SLA 3D PRINTING - Pete Novis

For my birthday, my lovely girlfriend was strong-armed into getting me a Resin 3D Printer. After doing some research I decided that a good entry one would be the Elgoo Mars which at the time was selling for under £200. This type of 3D uses a vat of resin and cures the layers via a UV light. The model attaches onto the build plate and the 3D print is slowly layer by layer pulled out of the vat of resin until the print is complete and you're left with your object upside down. This is known as SLA which stands for Stereolithography apparatus. This differs from PLA printing where you use a spool of material, that is heated up and built onto the build plate, by a nozzle in layers.



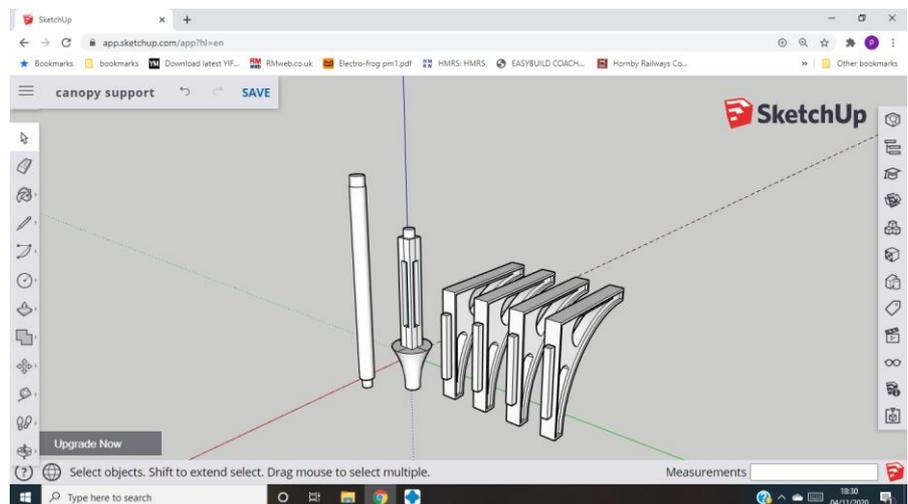
First off you need to have a file to print. These are known as STL files as that is the file format the 3D printer recognises. These can either be sourced online via sites such as thingiverse.com where creators upload their designs, some for free and some paid for. Alternatively, you can learn to draw and design things yourself, like I have done to create bespoke items.



Take for example this canopy support at Ilfracombe. I first look and see how the various components could be broken up. The brackets will be one, the fluted base another, and finally the column.

I use Sketchup Free online as I don't have to pay anything for it and there is plenty of videos on YouTube so you can learn the basics and work with the limitations of the free version. There is other software such as fusion 3d however they are paid for. If you were going to design something really complex you might need these but so far, I have got away with using the free version of sketchup.

All the components are drawn into sketchup. I've added slots and supports for everything to fit together rather than just gluing it all together with butt joints.

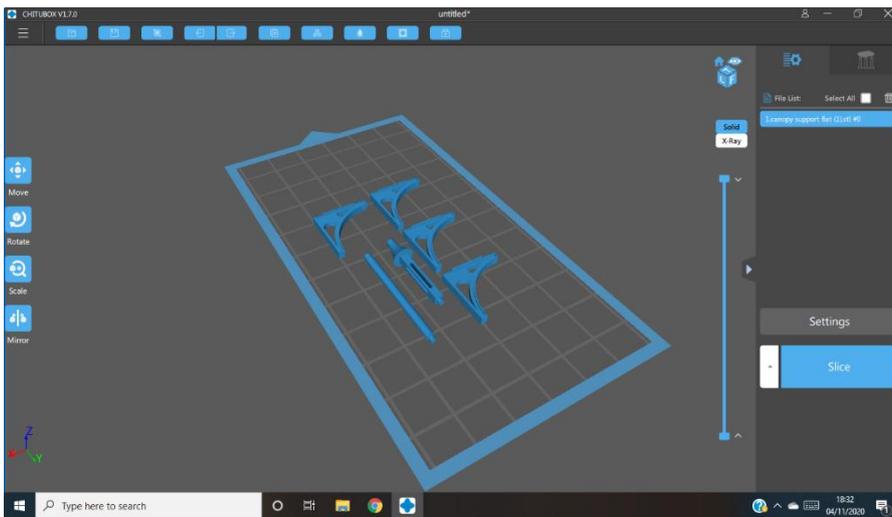


Scaling can be tricky, but I use a scale ruler to try and work out sizes and once printed you can eyeball it to see if it looks right. The software does allow you to be very precise however so if you have dimensions for the thing you are drawing you can just draw using them at full size and scale the model at the end of the process.

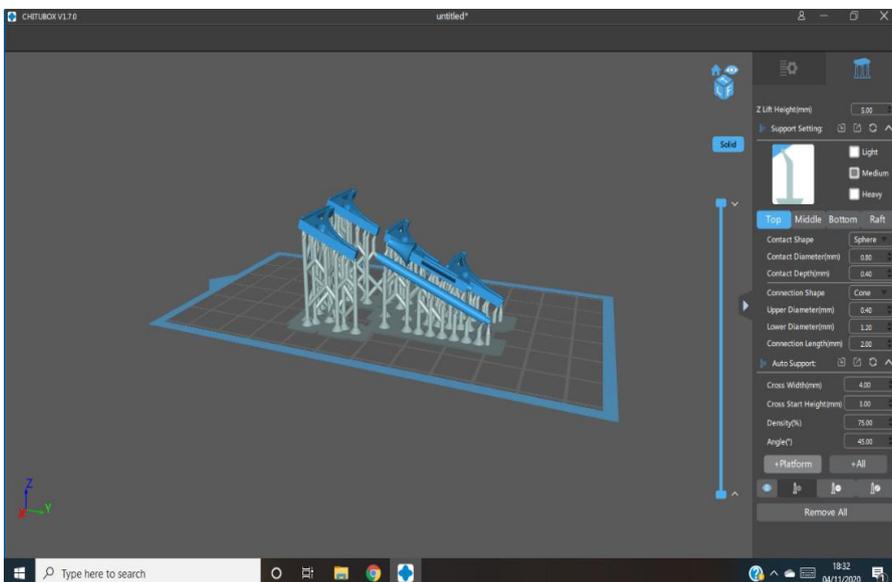
It is important to note that at this stage the software sees your drawing as several lines and faces. Once you are happy with what you have you either need to group them into individual components or as a group. This avoids complications later in the process where the slicing software or 3d printer can get confused. Sketchup then allows you to export the file as an .STL file to your computer.

We now use a programme that comes with the 3D printer but is also a free programme that you can download without purchasing called CHITUBOX. This programme lets you prepare the file you have creating for 3D printing by letting you add support material to aid your print in coming out without any defects and edit your 3D model. When importing your model into the software it sees the design as a solid object and will print it as such. Somethings this would be a massive waste of resin and would make the object awfully expensive and heavy

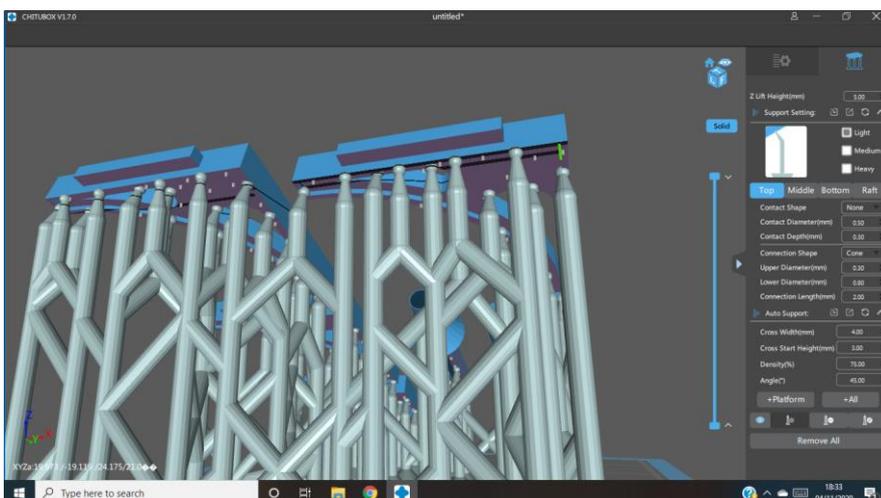
to print with a much higher chance of failure. The software therefore allows you to hollow out your model if you want and add drain holes for the liquid resin inside the model to drain out.



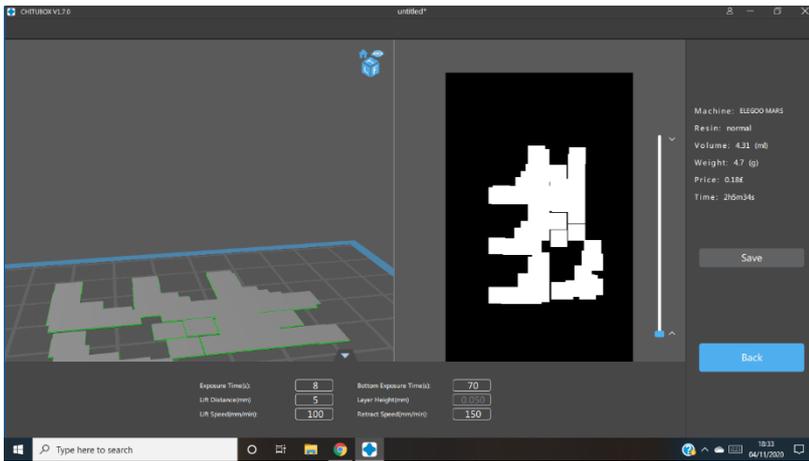
The model as drawn now in the slicing software. First up the components need angling around 30 degrees as this allows more support structures to attach to the model and will ensure a more accurate print.



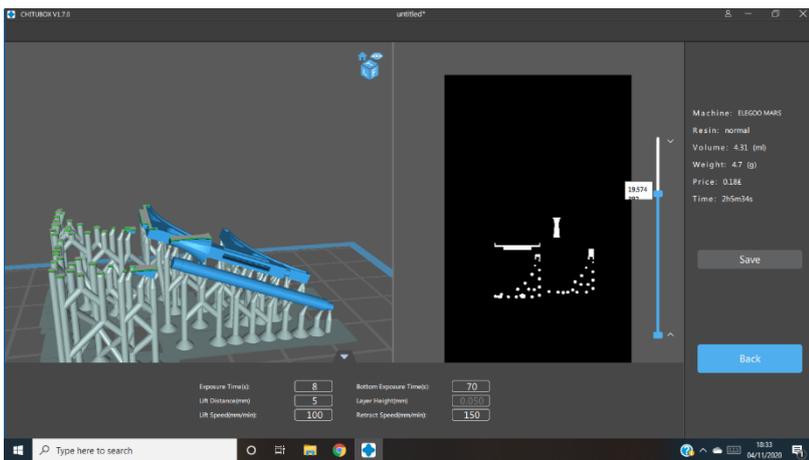
The software allows you to add light medium and heavy supports. And will automatically do this for you. Bear in mind light will leave less marks when you come to remove the material however the heavier supports will support the model more therefore ensuring you do not get a failed print. In this situation I used medium auto supports.



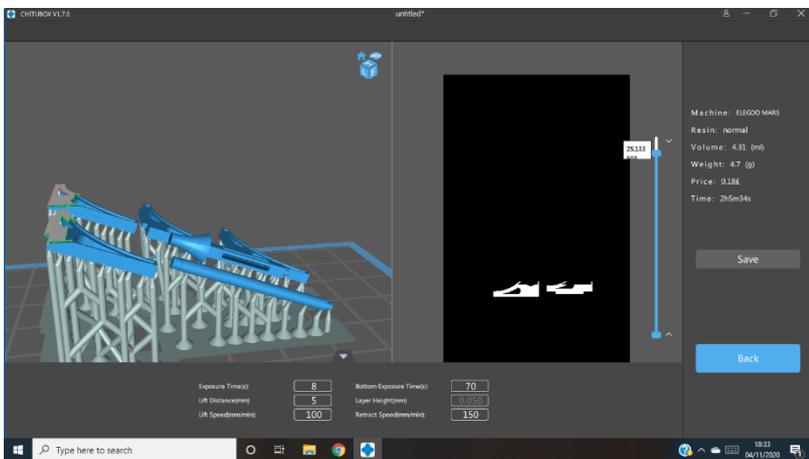
Auto-support is a good tool when getting started; however, it's not perfect see here where it has missed the corner of the bracket. You may get a warped corner, so I manually add in a light support where the green line is to ensure this does not happen.



Once happy with the supports its time for the software to do some slicing. This is where it works out how it will print each layer of the model. As you can see by these screenshots, we first have the base layer which will stick onto the build plate. This layer is exposed much longer than the others to ensure it adheres properly.



On another layer we see where it is creating the supports as well as the actual model.



And finally, near one of the last few layers we see the model being completed. On the right you also get an indication of how long the print will take and the cost estimate. You can add in the cost of the resin you are using, and it therefore works this out for you. All that is left to do is to save the sliced file onto the memory stick provided with the Elgoo Mars and you are ready for printing.

So, you just stick your memory stick into the back of the 3D printer, select your file, click print, and off it goes. Now it's time to wait and see.

This shows the model upside down on the build plate once printing has completed. You then get your rubber gloves and mask on as the resin is not great for your lungs or your skin. The build plate unscrews from the machine and you use the included scraper to detach the print and drop it into a tub of 99% isopropyl alcohol. This washes off all



the remaining wet resin. Next dunk the model in a water bath to ensure that all the remains of the resin are gone. At this point the model is still not fully cured so be careful when handling.



Finally, you need to cure the model this can be done naturally by leaving it in the sun therefore soaking up the UV rays or I use my mums UV nail curing light. A couple of minutes and the model is all cured. You can then gently pull the model / use the sprue cutters to remove your print from the support material and then clean up any marks by sanding or a small file.

It has taken a couple of adjustments to the design to get everything printing perfect and all the parts fitting together but that is the joy of having your own 3D printer. Previously I have designed parts and sent away to have the printed only to find that they have had some error when printing that could not be adjusted. In the background you can see that I have also 3D printed the concrete plinth to the wind break at Ilfracombe.

I hope this article allows people to get an idea of the process that is involved and encourage others to have a go. My next plan involves using a camera to 3D scan objects and people in the same vein as Modelu and then I will be able to print them too.

WATERCRESS LINE STEAM GALA – Mike Le Marie

Mike has provided pictures of a couple of the participants at the Mid-Hants Steam Gala on Sunday 18 October; more to come:



SR S15 506

Jubilee 45596 Bahamas



F&DMRC DIARY

Recent changes in **yellow**. Running starts at **14:00** in WCC (Wreccelesham Community Centre) Hall. Heading 'Run'g' = Priority use of Hall from 2pm; ALSO Tidy/vacuum Club Room AND Lock up

DIARY 2020 – ALL may change if vaccine available		
Date	Run'g	Event / Layout at Exhibition/Show
Wednesdays: Clubroom available from ~09:00 [use rear entrance]; Hall from 14:00.		
NOTE: Due to Gov't Lockdown, the Club's Programme is again SUSPENDED from Thu-05-Nov-2020; the AGM will continue via Zoom.		
Sun 01 Nov	--	Start of new Club Year [fees due]. Secretary to issue Formal Notice of AGM , viz. min. 28 days prior to AGM.
Wed 18 Nov	OO	
Tue 24 Nov 23:59	--	Entries for Club's online photo 'Modelling Competition' closes.
Wed 25 Nov	009	Final date for receipt by the Secretary of AGM Agenda items and Nominations (proposed & seconded) [viz. min. 14 days prior to AGM.]
Fri 27 Nov 00:01	--	View 'Modelling Competition' entries.
Wed 02 Dec	O	
Mon 07 Dec 23:59	--	Online votes for 'Modelling Competition' closes.
Wed 09 Dec	N	AGM via Zoom at 19:15 for 19:30 start [within 2 months of Club's year-end; voting only for paid-up 'Full' members]. To help co-ordination, Executive may meet in Secretary's garage. Winners of 'Modelling Competition' announced.
Wed 16 Dec	OO	
Wed 23 Dec	009	Last Club Day of the year

DIARY 2021 – ALL are subject to change / cancellation		
Date	Run'g	Event / Layout at Exhibition/Show
Wed 06 Jan	O	1st Club Day of the New Year
Wed 13 Jan	N	
Wed 20 Jan	OO	
Wed 27 Jan	009	
More to be added		<i>The following are known about events / Shows</i>
Mon 03 May	--	Early May Bank Holiday – usually a Group Open Day
Mon 31 May	--	Spring Bank Holiday – usually a Group Open Day
Sat 12 OR Sun 13 Jun	--	Farnham OO9 Show (other Clubs invited): WCC
Sat 26 & Sun 27 Jun	--	Wickwar (N): Perth Show
Sat 09 & Sun 10 Oct	ALL	F&DMRC Annual Club Show , Aldershot [Most of the layouts that were invited for 2020 will be attending.]
Wed 15 Dec		Dinner (optional) 18:30 for 19:00 @ The Mill House, Odiham
Wed 22 Dec		Last Club Day of the year