

NEW SKILLS

As you all must by now be aware, for the past 4 or 5 years I have been building a 4" scale Burrell Scenic Showman's engine. The engine I chose to base my model on is "Dolphin", owned by Mike Dreelan from Aberdeen. The main reason I chose this engine was the absolutely stunning livery which is a common feature of all Mike's engines and also that it used to be owned by Frank Lythgoe of Warburton near Warrington. I have a picture of my daughter Emma standing next to it at the Chelford rally in the 1970s. I knew when I started this model that the hardest thing would be to get the paintwork to look at least something like the original and, to be honest, I wasn't at all sure this was something I would be able to do. My track record of painting models is not great. I have a tendency to rush the final stages of building a model in my eagerness to see it in steam.



Figure 1 This is a half size model of Dolphin, also owned by Mike Dreelan and shows the sort of thing I am aiming for.

The first lockdown provided the ideal opportunity to have a real go at doing a good job. There was no rush to get the model finished as there is nowhere to take it anyway.

I decided to brush paint my model using Craftmaster paints as this is what Mike used on both the full size and half-size versions. The main colour is called "Dreelan Crimson" and was mixed specially for Mike by Craftmaster, who were happy to sell me a couple of litres. I made a start with a coat of primer followed by two coats of high build undercoat and then 2 or 3 top coats, all rubbed down between coats. After a few months of fairly concentrated effort I had something that I was reasonably happy with. Now all that remained was the lining out, how hard could that be?

Figure 2 Rear wheel awaiting the top coats



Calm Down Boy, Take 100 Lines

The lining scheme for Dolphin is basically a thick gold line edged with black, then a thinner red line and finally an even thinner yellow line. The wheel spokes omit the red line between the black and yellow,

presumably due to space restrictions. In preparation for this I had armed myself with a Beugler lining tool with assorted heads, several bow pens, various widths of lining and masking tape, lots of different paint and lining brushes and a Bob Moore lining pen which I have had for some time and never got on with and to be honest find completely useless. The Beugler lining tool works well when there is enough room to use it (not on the spokes unfortunately) and also providing one can arrange for suitable guides to keep the lines straight. Guides can be made from plasticard held in place with bluetac, magnetic strips and edge followers. Some magnetic strip and edge followers are supplied with the tool.



Figure 3 Lining on the belly tank

In spite of having these expensive lining tools, I found that the easiest way to line most of the larger items (tank, tender, cleading and motion guards) was simply to use masking tape. I used various widths of tape, starting with ordinary painter's 1" wide tape to

define the inner edge of the black line between the gold and the red lines, 1 3/8" from the panel edge. I could then paint all of the black up to the edge of the panel. Once this had dried the tape could be removed. I then used combinations of 1/16", 1/8" and 1/4" wide 3M tape to define both the position of the lines and the distance between them.

So, for example in the picture of the belly tank above, I marked out the outside edge of the gold line on top of the black using a chinagraph pencil and a ruler, 1/2" in from the panel edge. I could then place 1/4" wide tape to the inside of this line. This tape simply defines the width and position of the gold and is only used to enable the tapes on either side to be accurately positioned. After which it is removed. 1/8" wide tape is then used to mask both the inside edge of the gold and the outside edge of the red. Another strip of 1/8" tape defines the position of the red line. This again is removed after the 1/4" tape which masks the inside edge of the red and the outside edge of the yellow has been applied. 1/16" wide tape is then applied against the inside edge of the previous 1/4" tape to define the position and width of the yellow line and finally, any old tape is used against the inside edge of the 1/16" tape to mask the other side of the yellow line. The 1/16" tape can now also be removed. In practice I found it easier to leave the tape covering what will be the red and yellow lines in place until after the gold had been done.

What I had then masked was a black section 1/2" wide from the panel edge, a 1/4" wide gold line, a 1/8" wide black line, a 1/8" wide red line, a 1/4" gap and finally a 1/16" wide yellow line. Time for a paint (or should that be pint!).

I used "Sign Painters 1 Shot" paint for all the lining. Originally I intended to use gold paint for the gold lines but I was not happy with the finish this gave – a bit dull looking. I then abandoned all thoughts of trying to save money and decided to use 23.5 carat real gold leaf instead with a gold paint undercoat. I have never applied gold leaf before but after watching several YouTube videos I

managed to convince myself that it looked easy. In practice it's not as hard as you may think. The procedure is to apply gold size to the areas where you want the gold to stick. Size is just a slow drying varnish and is available with various drying times. I used 3 hour size which means you paint on the size, wait 3 hours until it becomes just tacky and then apply the gold. Gold leaf is available in 3" squares which looked difficult to handle and probably very wasteful but also in rolls of various widths. I used ½" wide rolls of what is known as transfer leaf where the gold is pressed onto a thin tissue paper backing making it much easier to handle. To apply it you hold the roll between the thumb and first finger of the right hand and press the end onto the beginning of the line with the index finger of the right hand, through the backing paper. You then follow the line along, unrolling the leaf as you go. It helps to wear white cotton gloves when doing this. If you get any breaks or defects it is easy to go over the offending bit again afterwards. You then use a soft brush, the wife's makeup brush is ideal, to pat the gold down and remove any surplus.

Once the gilding has been done the rest of the red and yellow lines can be painted between the tapes previously applied. And then, after a few days to let everything dry, 2 coats of clear varnish are applied to add shine, protection and keep out the UV.

This all went very well but the thing that kept nagging away at me was how on earth I was going to paint the wheels. The rear wheel spokes are 1" wide. They have a wide gold line down the centre outlined with a black line and then a yellow line just in from each edge. At the wheel rim end of the gold line is a black edged gold diamond and two teardrops, a bit like a Fleur De Lys. The teardrops are only 5/32" wide. The front wheel spokes are much smaller and have the same design. I didn't fancy my chances of painting these freehand and couldn't think of any way of masking them and there was no way that the Beugler tool could be used between the spokes. After much thought it occurred to me that it should be possible to make some sort of stencil. There are 20 spokes on each rear wheel and another 12 on each of the front ones. They are lined on both sides so 128 stencils required!



Figure 4 Tools of the Trade

Vinyl Cutter plotters are widely available at reasonable cost. These are similar to a computer printer and can be used to cut shapes in adhesive backed vinyl sheet. The knife on the plotter is adjusted so that it only cuts through the vinyl and not the backing paper. The vinyl can then be removed from the areas you want to paint, a process known as “weeding”. Clear, low tack transfer paper is then stuck on the top of the stencil. The vinyl backing paper can then be removed and the stencil stuck onto the part you want to paint. Once the stencil has been stuck on the transfer paper is then removed and you can start to paint.



Figure 5 My Vinyl Cutter Plotter

The drawings below are designs I made for the rear spoke and rear hub stencils. Initially only the area of the stencil where the gold is to be applied is removed. Once the gold has been applied the black area is removed and the black paint applied. Finally the yellow area is removed and the yellow paint applied. Once the paint has dried the stencil can be removed.

Because the black area is next to the gold, only the outside edge of the line will be masked. The side of the line next to the gold has to be done freehand. By use of a fine brush and some care I did not find this too difficult. The gold has been applied over gold paint and this leaves a sharp edge which, with care, tends to guide the brush.

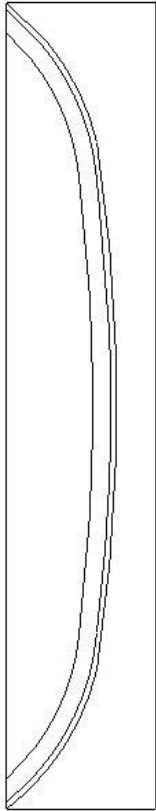


Figure 6 Rear Wheel Rim Stencil 40 required for each wheel

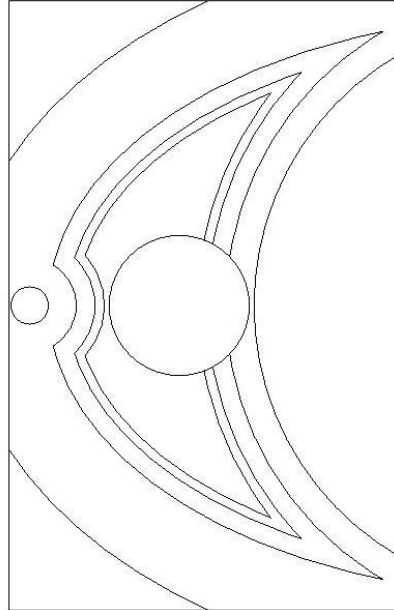


Figure 7 Rear Wheel Hub Stencil 2 required for each hub

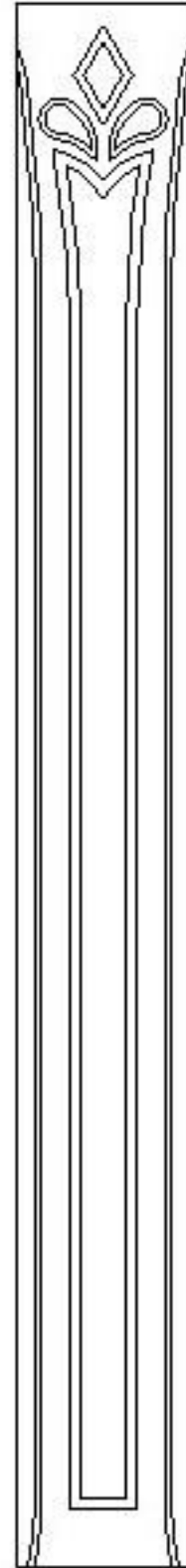


Figure 8 Rear Wheel Spoke

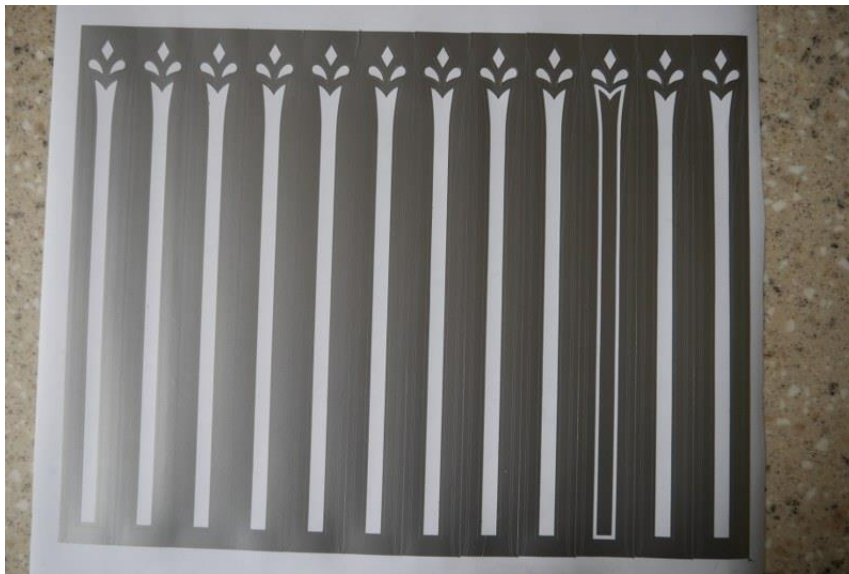


Figure 9 Spoke stencils after cutting and weeding out for the gold. I made a mistake on the third from right; I weeded out the wrong bit. The next job would be to apply transfer paper over the whole lot and then cut them out using a craft knife. The backing paper can then be removed and the stencils applied to each spoke. Then the transfer paper is removed and the gold applied. The black mask is then weeded out and the black painted and finally the same thing for the yellow lines.

The pictures above show the artwork for the stencils, done using Turbocad. The files are saved as JPG files so they can be imported into the vinyl cutter/plotter software. The rear wheel spokes are all different lengths so I made the stencils all the length of the longest spoke and trimmed them to the

length required. I then used making tape on each spoke to define the hub end of the gold line. After the gilding had been completed I painted the bottom black line with a fine brush. I was getting reasonably confident at this by now as there is a bit of freehand touching up to do and also painting round the fleur de lys and joining up the yellow lines on the spokes with the ones on the rim.

The plotter software can cut multiple copies of each design. My plotter is A4 size so I could fit a spoke across the plotter and cut several at a time next to each other. The vinyl comes on a roll so, in theory, the number that can be cut in one go is only limited by the length of the roll. In practice I found it easier to do them in batches of 12. The transfer vinyl used to hold the stencils together while they are applied is very sticky and highly attracted by static so anything longer than about a foot is a nightmare to handle and apply without creases.



The picture shows one of the rear wheels all masked and stencilled up ready to

Figure 10 The stencils applied.

receive the gold paint used as an undercoat for the real gold. The spoke rivet heads are also gilded and to keep them neat I used the plotter to cut masks for each one. There are 4 per spoke x 20 spokes x 2 sides x 2 wheels = 320 masks required. Gold is funny stuff to handle.

Static electricity is a nightmare and it also tends to stick to places where you don't want it. It seems to be particularly attracted to black painted surfaces. When the gilding was finished there were lots of small flakes of leaf everywhere. Care needs to be taken to remove this before the final coats of

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varnish are applied. Failure to do this results in a sort of sparkly finish which is quite attractive but probably not prototypical.



A couple more pictures. The one on the left shows the wheel following gilding and the one on the right was taken after the black mask had been weeded out of the first spoke. Black paint can now be carefully applied by brush around the gold.



The black and yellow lines have now been applied. All that now remains is to remove the stencils, touch up any imperfections, clean up and apply 2 coats of clear varnish.



The final result, another yellow line has been painted round the outside of the rim using the Beugler, tool the drive pins have been electroplated and the hubcap polished and fitted. I'm quite pleased with the result, time for more beer.

The next page shows pictures of my wheel next to one of Dolphins. I think that's about as good as I can get it although perhaps a bit more polishing on the hubcap.

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This paint is funny stuff, the colour looks completely different under artificial light and sunlight.

There are still quite a lot of small jobs to do on the engine. Not the least of which is the canopy. I intend to have a go at the lettering myself using stencils. I'm not sure how successful this will be so am preparing to get a quote for having it professionally sign written. One of the most recent jobs was to design a monogram to put onto the belly tank access covers. Mike Dreelan has a very ornate one on Dolphin but after playing around for 1 week with Turbocad, Autocad, Inkscape and Photoshop I finally admitted defeat and came up with a much simplified version of my own.

This is Mike's

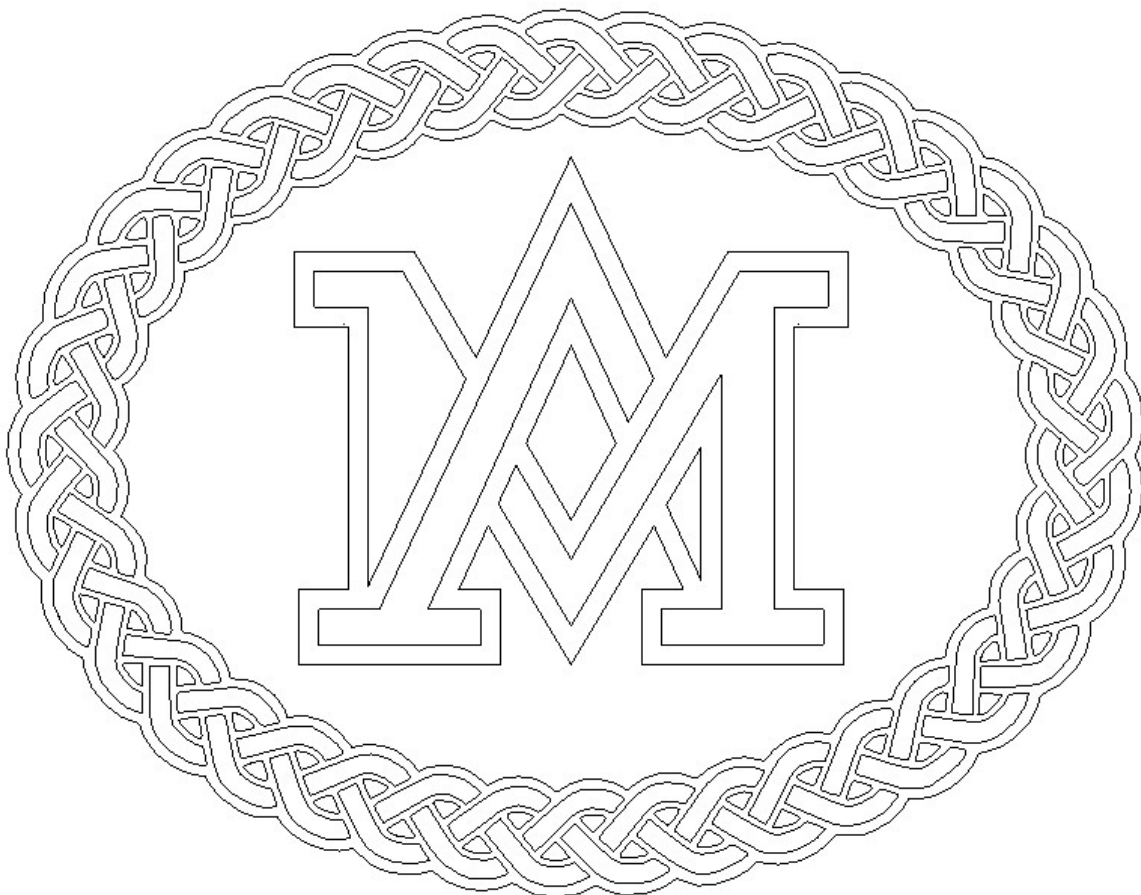


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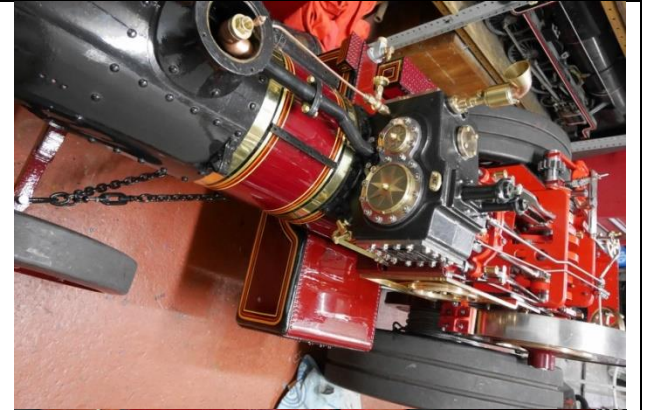
And this is what I finally came up with:



And here's the artwork used to make the stencil:



And finally, if I haven't bored you all to death yet, I've included some pictures of progress to date. Sorry about the quality of these, there isn't much room to get around the engine to photograph it.



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So far I have spent about 9 months painting this engine. I hope you think the results have been worth it.

If there is enough interest I can do another of these chronicles on electroplating. I have bright nickel plated most of the motion and various other parts using a kit supplied by Gateros Plating.

Hopefully this year will see the end of this dreadful virus and life can get back to some sort of normality. Hope to see you all again in the near future.

Keep safe and best regards,

Mike