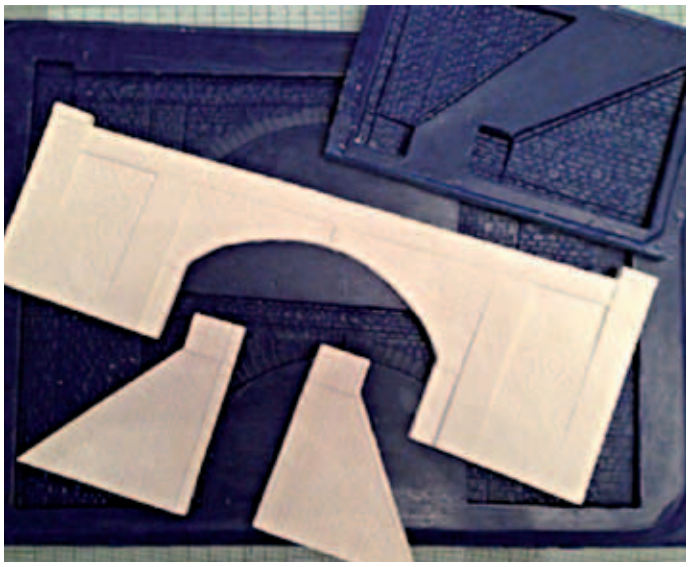
CONSTRUCTING THE CANAL BRIDGE

Some time ago Martin asked me if I would be interested in a project constructing and painting his Large Tunnel castings, to which I agreed to. It was too good an opportunity to pass up!

However, I could see the potential for using this for a "different" concept, other than what it was originally designed for.



Most of you are aware of my "Canal Project" that was semi-completed some months ago — semi-completed because the intention was for other buildings to be included in the overall scene!

One of these has been completed — the "Lock Keepers House". Now, we have the railway/road bridge finished which will eventually be combined with the Lock diorama.

The "final" piece that is yet to be started is the "Canal Pub". This will complete the scene that will then be incorporated into my Welsh Narrow Gauge train layout.

Hopefully, starting soon … once the "plan" has "gelled" in my brain because I have a habit of constructing all my buildings with absolutely no hard copy plans — only my imagination — the "mind's eye plan"!

I received the tunnel mould through the post, and my first thoughts were — "this is gi-normous" — am I going to have enough Hydrocal plaster in stock?", so I ended up buying this time a 22.5 kg pack of Hydrocal 105 — it worked out far, far cheaper than buying my usual 5 kg tub.

Making the castings was an absolute breeze — even though the moulds are very large I had no problems in pouring — and even more worrying — no problems in the casting releasing cleanly from the moulds!

However, I followed Martin's advice and used a paintbrush to "paint" the casting compound into the small nooks and corners to avoid as many air bubbles as possible. This was done after the compound was poured — then I jiggled the units around as much as possible in the usual manner to settle the mixture and to try and release those pesky air bubbles.

With some gentle manipulation at this early stage, I left the moulds alone to set. Once dried, I gently started releasing the casting and was amazed at how easily it came out, even though there was a lot of weight in the casting.

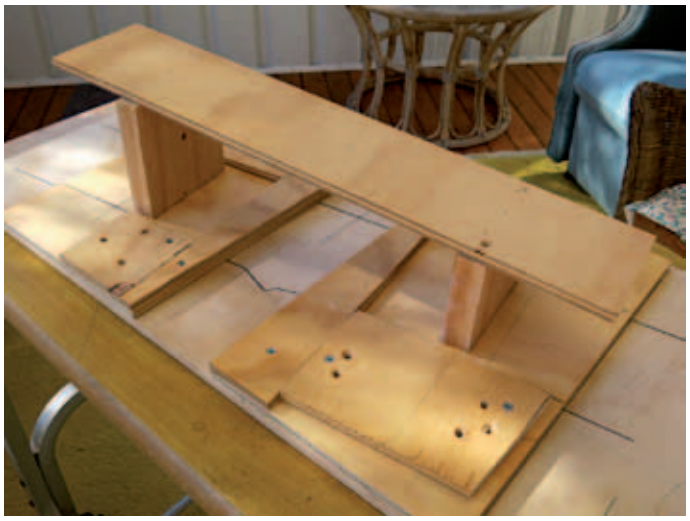
With great care the castings were set aside to cure overnight. A word of warning … DO NOT TRY TO HURRY THESE STEPS! If you were to try and release the casting too early you may find it will have a tendency to break in half, simply because there is so much weight in the final product!

My "disasters" all came later because of my carelessness during the construction. I ended up breaking both main castings on three separate occasions, in four different places — however, with some careful gluing I was able to resurrect the model back to normal, and now I defy anyone to find those areas where the breaks occurred! You

can see some of these breaks in the photo series. Done when "fitting" to the wooden structure!

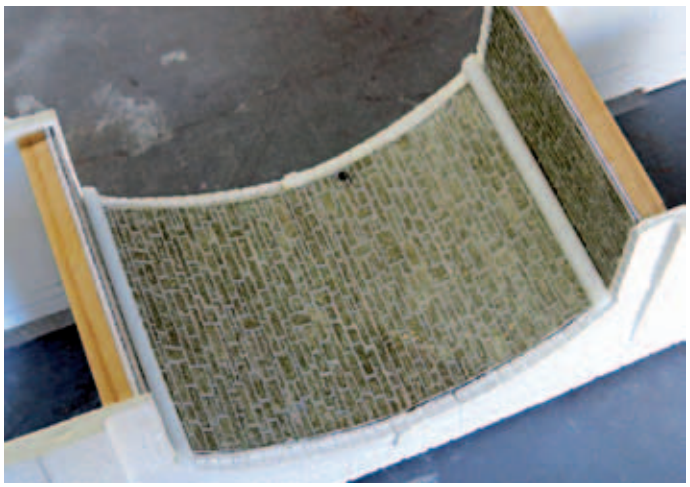
Because I was using this for a bridge rather than a tunnel mouth I had to figure a way of constructing the archway between the two sides.

First, I built the main base out of 7mm plywood, making the base big enough to have approaches at both ends of the bridge — then with scrap pieces of timber cut to the approximate final width of the bridge, I had four uprights to the necessary height allowing for another 7mm plywood road base (see following photos).



This would then create the supports for the castings to be attached to with the normal adhesive I use in my builds. But first I had to create the archway under the bridge.

Originally I was going to use the Linka "stone" tiles but after looking at the curvature I figured that this was going to cause too many hassles — instead I settled on using some FALLER embossed stone card because it would be so much easier to bend into the correct curvature.



I did however, also use a piece of photo mounting board as the base for the embossed card. Starting with a piece cut to the correct width and length (having worked this out allowing for the curvature first) I then scribed cuts crossways every 10mm on the BACK of the base card so that bending the heavy board would be easy and not cause any unwanted creasing or buckling ending up with a nicely curved archway.

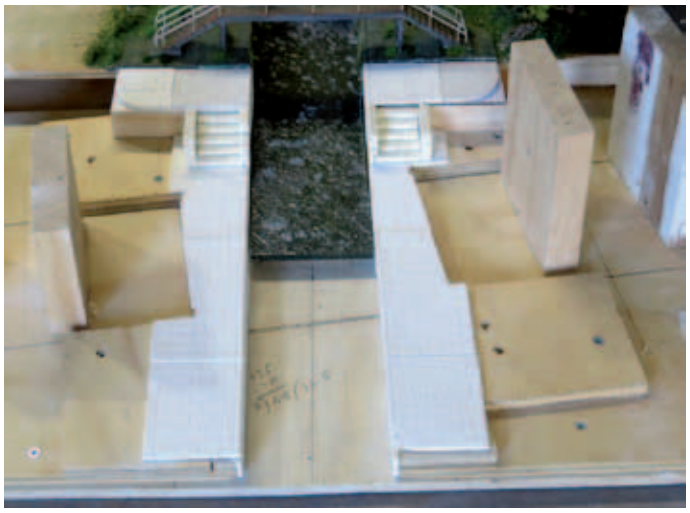
This was then affixed to the castings with sufficient scrap timber pieces for added strength and rigidity — this then gave me the final "width" of the road base between the bridge sides. Also in strategic places were glued horizontal supports for the actual "road base" plywood piece, and all set aside for a day for all the glues to dry properly!

Because I was going to be able to see the "raw plaster" sides of the bridge walls at road level, I wanted to apply a rough stone walling to the inside parts of the bridge parapets, and also have a "dry wall capping" — I used the Linka PS8 Dry Wall plastic mould for these pieces, cutting and fitting accordingly. These were adhered in the usual manner to the main bridge castings using a Canadian product called WELDBOND — it's a type of white PVA glue, but exceedingly strong and will glue pretty well anything, but also cleans up in water and dries clear.

The next step was to prepare the canal and docking areas, with the water piece also being cut from a piece of perspex, similar to the previous Canal Lock Project. The existing "tongue of water" fitted into and would butt up to the new water area. (See photo.)

Linka S1 "stonework" tiles were used for the sides and steps and also PS5 Pavement castings were again used to match in with the Lock for the docking and walking areas. Half Round capping was used to finish off the steps. The steps

themselves were created by also using the S1 Stonework tiles. These were all cut and fitted in place allowing for the shape of where the bridge would be positioned.



To hide gaps below the archway some of Tony Turner's 3D capping stone was used. At ground level where the bridge met the pavement I used the coping stones that are part of the S5 Stonework mould.

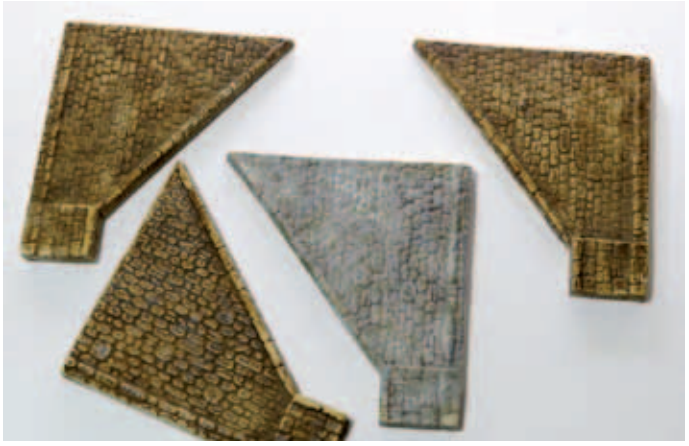
All of the ground level construction was then painted similarly to the remainder of the Lock, and then weathered with powders and chalks so that it would all blend with the existing.

Before assembling any part of the bridge into place I needed to go ahead with the side buttress pieces for the ends of the bridge approaches. These

moulds are also part of Martin's Tunnel Moulding pieces. These were poured and again "released" beautifully after being cast.

I decided to only use 3 pieces because one side at the "high" end of the bridge was going to have a shear rock face where it fitted into the Canal Lock diorama (see photo).

The next step was the painting of the end pieces and the bridge itself. I "trialled" a paint style on one of the end pieces using a base of Payne's Grey Acrylic paint, followed by variations of browns greens, a well as some Lamp Black and White (see photo below).



However, what I ended up using as a "base" to start from was a Brown Enamel paint very heavily watered down with turps. My reason for this was twofold; firstly, because there was such a large area to paint I felt if I flooded the casting with water it would break down some of the integrity of the casting compound; secondly, because I find that by using an "oil based" paint, it allows water based acrylics to be washed off easily without taking away any of the base undercoat.

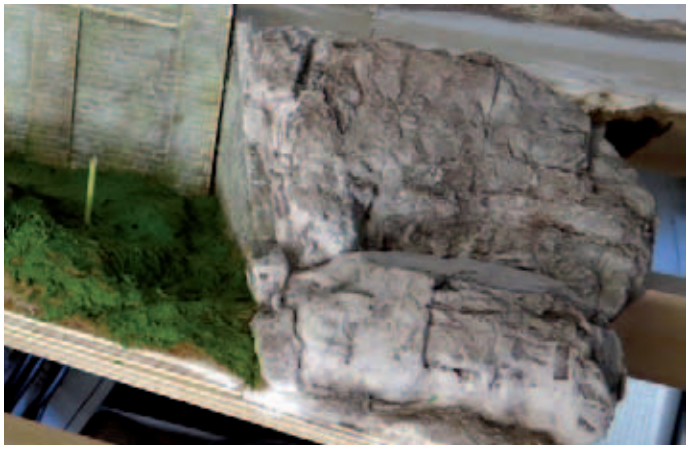
This then was what I used for the bridge and end pieces. Now here I departed from my normal painting method — instead of using acrylics to bring out the stonework colours, and also the "highlights and shadow" details of the stonework — I experimented by only using coloured chalks (actually artist's SOFT PASTELS).

I used combinations of mauves; browns; greys; blacks, whites; and moss green colours. These were first "powdered" by rubbing the pastel onto a piece of coarse sandpaper, and then applied with a variety of acrylic/watercolour paint brushes — large or small depending on the size of the areas covered!

I must admit I was very impressed with the results, and after doing it this way I think I prefer it to only using the paints method!

It was now time to fix the bridge and end pieces to the base wooden structure and create the rocky slopes of the railway/roadway embankments. For these I used ordinary Plaster of Paris castings made from WOODLAND SCENICS Rubber Rock Moulds. Suitable shapes and sizes were combined and adhered together with Cornice Cement used by Plasterers — also the "rock" pieces were embedded in a bed of the same cornice cement onto the wooden base, and then set aside to thoroughly dry out for two days!

For the base undercoat of the rocks, I again used a wash of Black Enamel and turps to create the dark shadow areas of the rocks. This gives a nice variation of colours to work with, with almost a limestone appearance, depending on the amount of colour flooded onto the plaster.

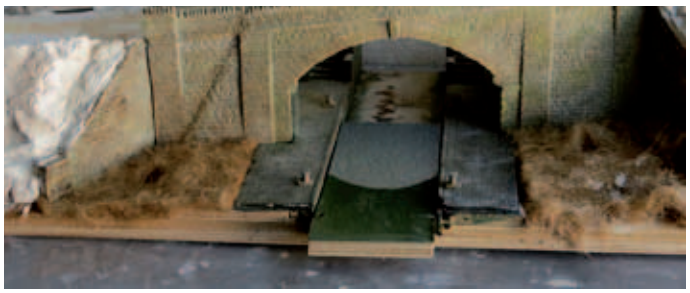


Once again I then used my artist's soft pastels to bring in the colour variations required on the rocks. You don't have to be real fussy with this because once ground coverings are applied, most of the

underlying rock sub structure will be hidden, but it is important to have "highlights and shadows" for good contrast.

Again, have a walk around the countryside and look at nature for inspiration in your modelling.

As a base for my grassy woodland areas, I used old fashioned Carpet Felt Underlay. Of course most carpet underlays today are foam or rubber, so keep your eyes out for the old carpet underlay felt at roadside clean-ups. The felt was roughly stuck down where needed and then simply painted with a sloppy wash of green acrylic paint and allowed to dry.



BUT…. I tried to keep as much of the water away from any existing plaster castings, otherwise it would soften the plaster — been there and seriously got caught out when building my train layout!

The roadbed at the top of the bridge had the Narrow Gauge track installed — here I intended to have the rails on one side and a roadway on the other, to allow both trains and road vehicles to be able to crossover the canal.

And so there you have it — Martin's incredible tunnel mouth adapted and changed to a sloping bridge of magnificent proportions!

Still … there's more … and the scenery is being covered in a separate article showing the different materials and methods used to "dress" the final scene. Along with a brief explanation how the Canal Barge was constructed … without plans, as usual!