

# A Bridge Too Far

BUILDING AN ARNHEM BATTLEFIELD

By Kyran Henry

The bridge at Arnhem has been the source of numerous miniature wargames battlefields in multiple scales. I remember witnessing a huge 20 foot long Market Garden table in 28mm at a gaming convention many years ago and being forever hooked on the desperate stand made by the Colonel Frost's British paratroopers inside the Arnhem perimeter.

When Mike Haught began work on *A Bridge Too Far* he had planned from the beginning to create a set of storyline scenarios that covered the desperate action of Colonel Frost and his men inside the British perimeter around Arnhem bridge.

So, armed with diagrams aerial photos and military maps project Arnhem began!



## TOOLS & MATERIALS

Rare Earth Magnets  
GF9 Static Grass: Green  
GF9 Clump Foliage: Summer  
GF9 Fine Basing Grit  
Black Spray undercoat  
Textured Spray paint  
0.08" (2mm) thick cardboard  
5' x 4' (152 x 122cm) 3mm thick hardboard sheet  
5' x 4' (152 x 122cm) 2" (40mm) thick insulation foam  
2' x 2' (2mm) thick hardboard sheet  
1" x 1" (26 x 26mm) Pine box strips  
2" x 1" (40 x 26mm) pine boards  
PVA glue  
Liquid Nails (4 tubes)  
Retractable hobby knife  
Hack saw or Jig saw  
Electric/cordless Drill  
Counter sinking tool or drill piece  
2" and 3" screws  
Polyfilla  
SP Marker  
Tape Measure  
Metal Ruler  
Plastic card  
Stone Wall plastic card



integrity to the board without adding a huge amount of weight. I have described this process at the end of this article. Reinforcing is not necessary but will definitely increase the life expectancy of your gaming board. If you intend to reinforce you should do so now.

### Roads and embankment

Working from what we had sketched out at the start of the project I cut up two of the 0.08" (2mm) card sheets into the required roads sections based upon my plan measurements and glued them onto the board with PVA glue allowing 24 hours to fully dry.

Cut and shape your embankment prior to gluing it to the board. You will find that it is easier to cut and apply your stone textured plastic card to the front of the embankment at this point as well. Mark out your road and cut in the base of your



building as per the design sketch. Once prepared attach the finished hill to the table using PVA glue.

Using a small amount of putty clean up the join with the road and any rough areas on your hill side.

Tip: I used PVA to glue the card down as it attaches smoothly rather than running the risk of an uneven surface that the Liquid Nails could cause.

### The Plan

Before starting any project of this size it's worth spending some time sketching out a plan and preparing your materials list. Mike and I reviewed a few different sketches before settling on one that made for swift construction without compromising game play.

### Building the board

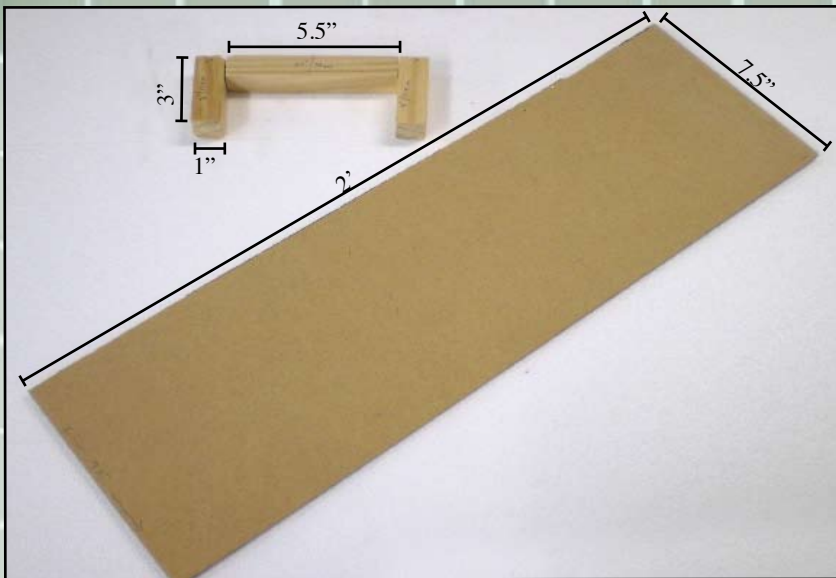
After some deliberation we decided to make the board a 5' x 4' (152 x 122cm) piece to allow for troop deployment and extra manoeuvring during the game.

Starting with the 5' x 4' 0.12" (3mm) hardboard sheet we attached 2" (40mm) foam with liquid nails to the rough side of the board. Liquid nails is great for a quick and strong bond between foam and wood.

Tip: Make sure you smooth the liquid nails out when applying it as it generates a mild amount of heat when curing and if left in a large lump it could partially melt the underside of the foam that you are using.

About two hours after applying the liquid nails, I reinforced the board with a frame on its underside. This adds structural





## A Bridge Too Far

During the two days of drying time, I could begin work on the bridge sections. At this point we had to make our largest historical deviation as the bridge to correct scale would have been over 10 inches wide and would take up far too much of the boards play area. So we went with a slightly scaled down bridge for easier play.

## Sections and Magnets

I decided to build the road in removable sections to make storage and transportation easier. After looking at the scenarios in *A Bridge Too Far* it became evident that adding an extra piece that jugged off the board would be helpful in the Graebner scenario so I cut three sections 2' long x 7.5 inches wide.

The frame for each of the pillars was made using 1"x 1" pine strips cut and glued together with Liquid Nails (you should be able to get the strips from any DIY store.) Using the measurements

shown above, I cut and prepared two support pillars. One for the centre of the first bridge section and one for the extended bridge section.

The join support between the standard section and the extended section was very important. After fiddling with a standard sized pillar, it became obvious that I needed to double the width so I cut the same 3'' and 5.5'' lengths but from a 2'' by 1'' strip of timber.

Next step was attaching the road section to the embankment. I elected to do this with Liquid Nails that I had spread very thinly. After this had dried, I used Polyfilla filler to ensure it smoothly blended into the embankment.

I encountered problems with getting the extended section to stay where I wanted it to. The peanut gallery suggested drilling in magnet holes and then using rare earths to hold it together. This turned out to be a godsend and meant that the table could happily survive a good jolt without the bridge falling over. I pre-measured all the magnet holes prior to drilling and then after checking polarisation glued the magnets in using super glue.

I wanted a stone effect on the pillar supports so I used a textured spray paint to give the pillar the correct feel (you can get these from any good DIY store). After a couple of liberal coats, the pieces were ready for undercoating.

The final stage was attaching the 2'' and 1'' support pillars to the centre bridge section and the 1'' support to the extended bridge section.

## Plastic Card

It was now time to make things look pretty. One of the bonuses of using 2mm thick hardboard is that you can get "I" beam plastic strips that have a 2mm gap so they fit perfectly onto the edges of the bridge. This gives a nice industrial finish to the bridge.

I also cut some thin plastic strips to glue along the edges of the road section on the embankment to create a curb.

I used an old HO scale model pedestrian bridge to make the two staircases. Using some plastic box sections I was able to create the support pillars for both staircases. The staircases are quite plain but definitely serviceable for gaming requirements



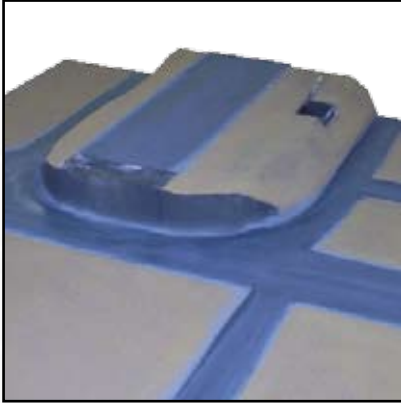
## Sand and Flock

Sanding and flocking your table correctly is one of the key aspects of making your table durable.

This is quite an easy six step process.

**STEP ONE:** Using PVA glue, attach fine basing grit to the open white sections of the board. You will want to have your glue quite thick for this process and you will want to allow 24 hours drying time.

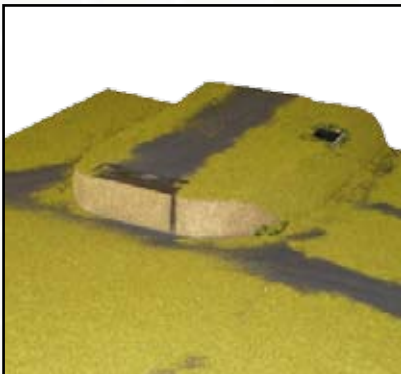
**STEP TWO:** Shake of the excess sand onto



some newspaper to recover what you can. Paint a watered down coat of PVA over the top of the sand. This will seal the sand onto the board and increase the boards durability. Again, leave 12 to 24 hours for it to dry.

**STEP THREE:** Undercoat the entire board. You can paint on the undercoat but, to save time, I used flat black spray paint undercoat and sprayed the whole board.

**STEP FOUR:** Paint and dry brush your fine grit and roads. For this process I took a bottle of Vallejo German Camo Brown (826) and a bottle of Vallejo Desert



Yellow (977) to a paint store and had them match the colours in an Acrylic paint. I then base coated all of the grit German Camo Brown and after it dried I used a soft bristle brush to drybrush on a coat of Vallejo Desert Yellow. For the roads I used Vallejo German Grey (995). I painted a solid colour first using a size 8 flat brush and then added a one drop of Vallejo London Grey (836) to three drops of German Grey and watered the paint down to apply the top coat. I painted the top coat using broad strokes down the lengths of the road. As it dried it resulted

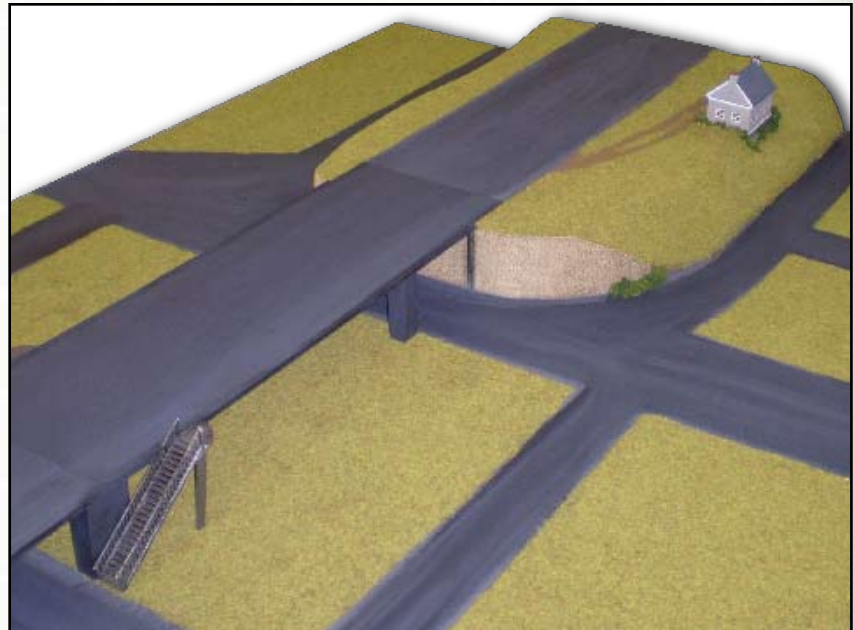


in a well-travelled looking road texture.

**STEP FIVE:** Use a liberal coat of PVA glue to attach the static grass to all the grit sections of the board (this is referred to as flocking), leaving two small sections to represent the road on the hill to the house.

**STEP SIX:** Use Clump foliage to cover any irregularities that your construction may

have caused. On my board I had two of these one around the house on the hill where I had cut in the lower storey of the house and one at the edge of the stone work where I had cut incorrectly. Repairs and tidy ups of this nature will often occur and with a bit of thought they end up looking like you had planned it.





## Buildings, Walls and Trees

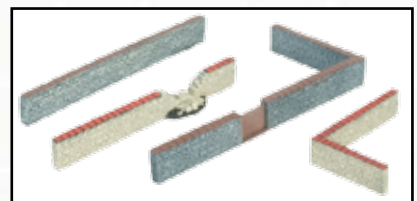
Fortunately when I started this project we had just received a set of sample 15mm buildings from Gale Force 9 for Battlefronts upcoming European Village set. These buildings come in a multitude of different styles and textures including a corner store building and were perfect for my Frosts perimeter board.

Included in these samples were various village wall sections which helped flesh out the green building areas of the table as well as offering excellent cover to troops during the scenario.

The buildings and walls come out of the box pre-painted and each level of the buildings is removable so they are excellent for this type of project.

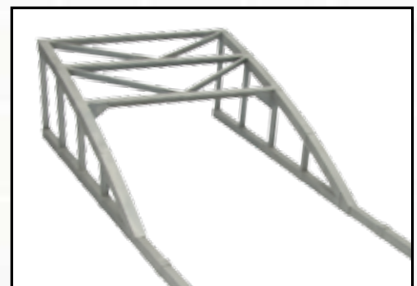
I decided to repaint some of the wall sections in a sandstone colour scheme to create some variation on the table.

Arnhem had quite a large number of trees and parks throughout the city centre, so we based up some Woodland Scenics trees on washers, flocked the bases using the same techniques as I used on the board and then placed them as per the scenario map.



## The Bridge

The Bridge piece wasn't really necessary to the table project however when I mentioned what I was working on to Jason Buyaki at Gale Force 9 he offered to make me a bridge section out of hardboard and Plastic card. Due to the layout of the table I only needed the beginning of the arch and the edge supports which Jason was nice enough to make for me. I painted them by undercoating all the pieces with spray black primer and then painting the sections with Vallejo Gunmetal Grey (863).



*Jason's bridge structure.*

## Reinforcing Your Table

Building a durable gaming board is very important for any table and is actually far easier than most people realise. Even preexisting game boards that you have at home can be framed out and given a new lease on life.

This technique for framing is designed to be lightweight and durable without costing you a fortune. It also allows you to store your boards upright as the frame will prevent warping.

Starting with 2" x 1" pine boards, cut the lengths that you require for your board edge and central brace. The bigger your board, the more central braces you will need as a rule I have a central brace for each two foot section of board.

Once you have all your brace boards cut, place them into position on the board and drill or counter sink your screw holes. Once I had all these marked out I used Liquid Nails to attach the board as well as running 1.5" screws into the drilled holes. Try to get your framing boards as flush with the base board of your table as possible. Leave the board to dry overnight.

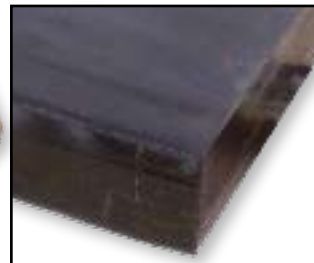
It is worth noting that you should insert your screws by working down the length of the board (do not do one end then the other with the middle screw last). Attaching the screws in line will help to pull your board out flat and prevent warping. This is very important when framing out an older board that you have had for a while as it will have already begun to warp in one direction or another.



2' x 4' (61x122cm) framed board section.



Use Liquid Nails and screws to secure your frame.



Use cloth tape for a solid finish.

## The Table Edge

To get a nice edge on the table, cut out strips of 2mm thick card to the correct size and attach them using liquid nails. A long piece of pine and clamps will help to secure the card to the side of the board alternatively you can brace each side with



Attach card around the edge using Liquid Nails.

boards and heavy weights to hold them in place. You will need to allow about six hours drying time for all four sides as you want these to be very secure.

After they have dried, use black cloth tape to wind around the board thus making the corners strong and giving a nice solid finish.

## The Finished table

**After all the construction it was time to set up the table for the scenarios. Following the scenario layout from A Bridge Too Far I deployed all the houses and terrain and we were ready to start playing scenario one.**

