Quick 'n' Dirty Guides #5

Terrain Type 1 (Summer look)

Raw Materials

The basic unit of my customised terrain is a 2 foot by 2 foot polystyrene board from TSS. If you do not know this UK terrain manufacturing company they use what are described elsewhere as insulation tiles of 50mm thickness. The dimensions of the TSS boards is not precisely 24 inches square so please measure them in millimetres and make calculations on this basis. I say this from bitter experience!

In addition to the tile(s) you will also need at different times during construction;
Sand (of various gradings)
Small rocks and pebbles
Plaster filler (Polyfilla, Tetrion etc)
Strong wood glue (water soluble)
Loose static grass (flock if you prefer)
Emulsion paint (water based domestic type in various colours of your choice)
Yacht or Marine varnish
Old newspaper
Masking tape
Modrock (plaster impregnated bandage rolls) or papier mache
Knifes of various sizes and/or small hacksaw
Thin wooden sheets sometimes called MDF (2-4mm thick)
Heat source (naked flame is ideal)
Small gardening fork
Plenty of space to work
Somewhere to leave the boards flat during drying

Step 1 – Planning and Preparation

Decide on the number and configuration of the boards you want to convert. The best way is to draw a plan on a sheet of squared paper. If you want to create a particular battlefield then the distance proportions and heights should be planned in advance. If like me, you wanted multi function utilitarian terrain which could be configured in a wide range of possibilities just ensure you have enough of the various types straight roads, curves, crossroads, rough ground, rivers, gullies, hills, village or urban to suit your needs.

My terrain was originally designed for temperate/continental climate areas of the Ostfront in the Spring-Summer period. I have since found that it works equally well for other periods and other locations!

In some respects the more anonymous the terrain the more useable it is. I built in bunkers, shell holes and firing pits which meant that many of the boards were really only useful in the period 1870-present. Retrospectively I should have done less of this.

If you are buying new boards as raw material take the plain ones as these are cheapest and you are going to carve them up anyway. These tiles are obviously available `pre flocked'. If you wish to work with them in this way or as simple unadorned white styrene boards it makes no real difference you can I believe, buy them in this state also.

This is a messy job so don't panic about how `ugly' the stuff looks during the initial stages, it'll come good well before the end!

Find yourself a place to work with some clear space such as a garage floor or loft. If you don't have the space indoors you may choose to do the boards one or two at a time rather than altogether. This of course will mean a little more prep and tidying and also the repetition of a few steps but the result will be the same. I finished the painting and drying of many of my boards in the garden during the summer. They were all painted and dried on one sunny Scottish afternoon and if it can be done in the rain capital of the planet it can be done anywhere!

Step 2. Cutting and gluing

Polystyrene tiles, even those of 50mm thickness can be fairly easily cut and shaped when heat is applied. DO NOT apply the heat directly as the boards will at best melt or at worst burn down your house! I have a gas cooker. I usually do my `carving and shaping' beside the cooker. I turn on a ring and heat the tip of a normal kitchen table knife in the open flame. It will not glow red and this is not necessary anyway. Leave it in the flame for 20 seconds. Be sure where and what shape you are going to cut and push the knife gently into the board. It will cut easily for 10-15 seconds before it requires reheating. This is not an exact science and can be a little hit and miss but you'll soon get the idea!

If you are trying to cut into a board to form a deep feature be careful to cut at a sharp angle so as not to pierce all the way through the board. Although `holes' are fixable they are inconvenient and take time to rectify.

If however you want to create deep gullies, balkas, river beds etc it is best to mark the profile of the feature on the board surface with a pen and then cut at an angle(dependent on how deep you want the sides/banks to be) all the way through the board. The piece that is cut from the gully/river can be recycled as part of a low ridge or hill feature later.

Depth and height can produce a striking effect on a wargames table so if we wish the deep feature to be finished properly we need to provide a `base'. This is where the MDF base board comes in. It is thin enough not to produce a `surface lip' when all the boards are fitted together but also strong enough not to warp when things are glued on top.

If the thought of a 2mm lip bothers you then glue all polystyrene tiles to MDF base boards. The MDF is usually bought in large sheets from you local home improvement centre and they will cut it to size if you ask them. Be careful that you give exact measurements in line with the tile size. If the MDF bases are slightly larger than the tiles you put on top then small gaps will appear between the boards.

The gluing should be done using water soluble PVA. Get `external grade' as it is extremely strong . When fixing your tiles or cut tile sections to the MDF base boards make sure all corners and road, river, gully entry/exit points line up. As the glue takes some time to cure then you have some latitude in positioning the pieces. Once glued then leave to dry for at least 24 hours but 48 is better.

Step 3.Plastering & flocking

When your base boards are dry the texture of river banks, rough ground patches, rocky outcrops etc can be created. Seal gaps and coat exposed areas of cut polystyrene with a layer of Polyfilla. Shape this with a knife, spatula or your fingers. Even if you do no more, the texture of this when painted will look pretty good.

I waited till this plaster was dry and then in many areas washed a coat of PVA glue-water mix and sprinkled with various grades of sand. When this dries you will have a very marked texture to paint and drybrush. If you wish to create `rocky outcrops' build up with spare bits of polystyrene from previous `cuts'. Supplement this with small sections of cork bark which can be painted up as realistic rock faces.

The floors of gullies and balkas can be done using the methods already described but rivers need a different approach. A deep river is easy, simply leave the base board exposed for the moment. A shallow river with fords or rapids needs patches of groundwork placed in chosen points along the river bed length. Do this with thin patches of tetrion/filler which when dry can be washed in PVA water mix and sprinkled with sand or pebbles of various grades.

Having done all of these things we are more or less finished with the groundwork. We must now turn to the grassy areas. I chose a very simple solution. I bought large plastic jars of static grass. I coated all of the board areas which I wished to have grass in the PVA/water mix and then quickly sprinkled large amounts of the static grass on these areas. You may have to go over certain areas more than once. Put a newspaper underneath to catch spillage for recycling. The colour of the grass you buy is immaterial as you will be repainting it.

Set aside the boards to dry.

CAUTION: I assumed 50mm thick insulation boards would be non warp-able but I have been proven wrong! Some of the boards have developed a slight curvature over a period of months. I believe this is due to contraction stresses created during the longer term drying of the PVA and some of the plaster.

Step 4. Painting & finishing

This is the easiest stage. Your biggest dilemma will be choosing the colours which are to be used. I went to the local DIY/Home Improvement warehouse and took a whole load of their colour charts which are used for house decoration paint. For your main base colour you will need a larger tin of paint mixed but for highlights and drybrushing the small tester pots will be totally adequate. Having had you paint mixed it only remains to begin the process of painting.

For the un grassed groundwork I used a dark chocolate brown for the base coat. Once this is painted on all groundwork areas begin your drybrushing process. I drybrushed up four tones with a final light coat of white over the extremely high relief areas.

For the grass colour I started with a surprisingly light shade of green and finished up with a yellow shade. After that I went back over certain areas with a darker yellow brown to simulate sun-burn on the grass.

A deep river should be painted in a dark blue or dark blue-green. You can either work toward lighter shades in the shallows or alternatively begin with a mid shade and paint darker toward the centre. Very fine flecks of white can be added as flow lines around shallows or islands.

A shallow river should be painted in lighter blue or green shades with a liberal dose of white around rocks and boulders. After completion of the painting the entire area should be coated in heavy duty marine or yacht varnish. Two coats may be necessary. Paint over the rocks with the varnish as this gives a nice effect.

Step 5. Specials: Roads and hills

An easy way to create symmetrical dirt roads is to take a small garden fork, heat it in the same manner as the knifes used to cut the boards and when the prongs are hot, trace the fork across your board. Criss cross the fork trails to produce a more realistic look. When finished, cover in PVA/Water mix and sprinkle with fine sand. You can paint in the same or a slightly different ground colour to the rest of the terrain.

For hills choose a plain board as the base. Roll up old newspaper in various size balls. Arrange these loosely on the board to create roughly the outline of your hill(s). When happy, tape these over the top in a network of strips (use masking or insulting tape) producing a basket design. Cut strips of modrock or use papier mache to cover this framework. You may have to build a few layers until it is solid. When dry, cover using the methods described in the other terrain building section (Step 2).

Some references on this site

Gallery Sections:

Crimean Battle Shots
WW2 Eastern Front 28mm
WW2 Western Front 15mm
War of the League of Augsburg – Army Organisation
Building a Demo game – Terrain sections