SCALE MODEL TUTORIALS AND GUIDES

MAGAZINE

SMTG

ISSUE 7 August 2017

LEARNER EDITION

Welcome to the Special Learner Issue of the Scale Model Tutorials And Guides magazine.

Thanks to all who contributed and shared their skills, experience and knowledge.

Enjoy the edition and please remember that we cannot continue with the magazine unless you send in your articles.

SMTG

GIRLS LOVE A GUY WHO HAS BEEN PUBLISHED IN SMTG MAGAZINE

Reverse masking.

Want to paint some pin stripes? Or maybe the yellow tips on a propeller or the yellow ring on the nose of some bombs?

Try reverse masking. Prime the part first to provide good tooth for the paint to come, allow to cure, then paint your stripe colour first, mask off the area to remain that colour once cured then apply the main colour. Once touch dry remove the tape and voila.... yellow prop tips, ring around bomb or beautiful pinstripes.

The key points are to let the primer and the yellow (or whatever other colour) cure properly, gently buff down the tape or mask to ensure no bleed. If bleeding under the tape persists consider using bare metal foil as your mask instead.

This same technique can be used for more complex shapes like lettering etc (use decal lettering as a template and draw onto tracing paper or similar then transfer onto bare metal foil or frisket film then cut out).

Beginners Guide to the tools you will need, by George Maher

Hi folks welcome to the hobby of scale plastic modelling. In this article, I will give you some ideas on basic tools to assist you in your model making.


Working from left to right in the picture:

1. Snips. These are used to remove parts from the sprues that models come with. 2. Scissors. Useful for cutting thin sheet foil when making flags etc. 3. Swan Morton scalpel. Also, useful for removing small parts from sprue and for trimming plastic seam lines. 4. Razor Saw. A great tool for cutting balsa wood, resin parts. 5. Steel Rule. A very necessary tool if you use a scalpel to trim work. The scalpel will not damage the rule as it would a plastic ruler. 6. Pin Vice. Handy little tool for drilling with very thin drill bits. For instance, drilling the barrel of a 1/35 scale weapon. 7. Metal tweezers. For holding small parts while attaching them to your model. 8. Plastic tweezers. I use these for holding decals in hot water.

In this picture, I have included some tools that are not must haves but eventually are worth buying. Again, from left to right. 1. Various scribing tools. These come as a set and are useful when you start playing around with putties and 'Air Dry' clay. 2. Sandpaper sticks. Again, you can get these as a set in various grades of coarseness. Handy for rubbing down parts for a smooth finish. 3. Photoetch Bending Tool. Many kits on the market come with their own fret of photoetch parts. So eventually you might want one of these. 4. Hand Vice. Another good tool for holding parts or a figure while you paint.

These are just my thoughts on basic tools folks, it's not the be all and end all. Most, if not all of these tools, can be bought online. Amazon, E-Bay and there is a good range on Historex Agents' website. If you're lucky enough to have a model shop nearby they will stock a range. In the UK, Hobbycraft is a good source for tools.
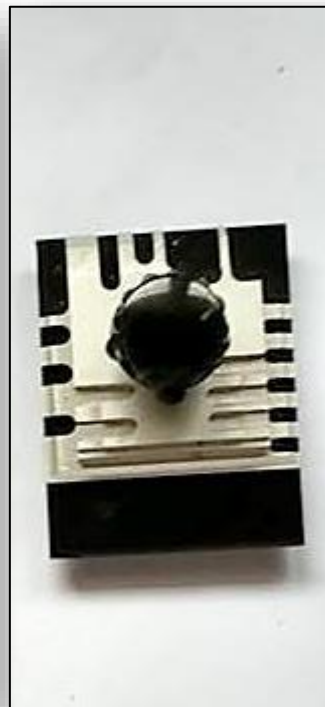
Beginners Guide to Paints, Glues and Brushes.

So, you bought your first model kit. You sit down and then you read the box top. This model requires cement and paints to complete. Oh fudge. Well I hope to give you an idea what is available.

Let's start with paint. Without paint your model is just a piece of plastic or resin. Paint is colour and colour for us humans is life. Let's start with enamel paints which, many years ago, were the first choice for most modellers.

The tins in the picture are Humbrol enamel paints – probably the most popular enamel paints back in the day. Still available today and the range is vast.

Enamel paints nowadays have more or less been replaced as top choice by most modellers. Acrylic (water based) paints are now numero uno choice for modellers, even the pro modellers prefer them. Very quick drying. Very intense and vibrant colour and the coverage is far superior to enamel based paints. Will give you a run down on some of the popular brands.

Vallejo Model Colour. Very popular brand of acrylic paints. The range covers probably every colour you could possibly need.

Vallejo Model Air. Same manufacturer but as it says on the bottle, this range is aimed at the air brush using modellers. It can be used in an air brush straight from the bottle. Again the range is very large. For brush modellers, this range should not be overlooked. The paints can still be used with a brush and many of the colours are additions to the model colour range. In other words, even more colour options for us modellers.

Vallejo Game Colour. This range as suggested is aimed at the wargaming modellers. However, the colours are very vibrant and different so offer the plastic modeller even more paint options.

Tamiya acrylics. I would say next to Vallejo acrylics the Tamiya range is up there in popularity. Again, the range is large. They are reasonably priced.

Italeri acrylics. Have added this pic to let you see that there are many more choices of acrylics on the market. It's fair to say that Vallejo and Tamiya are two of the big favourites but never be afraid to shop around and experiment with other brands.

It would be rude of me not to mention oil paints. Many figure modellers and bust modellers use oils. Very slow drying time but excellent blending properties. Daler Rowney are among the best on the market.

Glue.

There are hundreds of glues out there for modellers. I have put 4 on show for you and will explain them left to right. 1. Tamiya Extra Thin. This is my glue of choice for building model kits. 2. Gorilla Super Glue. Only started using this recently but it's now my super glue of choice. Many models have photoetch parts these days and superglue is needed to attach them. 3. PVA Wood Glue. Excellent glue for diorama work. Sticking down static grass etc. 4. Gorilla Wood Glue. PVA glues' big brother. It's very strong and sticks most materials easily. Again, excellent for diorama work.

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Finally, a little bit of advice on brushes. If you buy them cheap, be prepared to buy them often. Most of the model manufacturers sell brushes in little sets but they will not last long. If you want brushes that will not only last a fair few builds but give you a quality finish buy Kolonsky Sable Brushes. A set of six various size Sables might set you back £10.00 UK. Historex Agents sell a set on their web site.

Just for the record folks, I don't get any deals from any of the companies I have recommended in this article. Not yet anyway! I hope I have given you some food for thought regarding paints, glues and brushes.

Welcome to a great hobby, and to the best free mag in the universe!

Happy modelling.

There are far too many paint options these days and far too little information as to what can be safely applied over what.

As a super simple rule of thumb I suggest the following:

1) Allow each application of paint or clear coat to CURE thoroughly before applying the next. CURE means it is totally, absolutely 100% dry not just touch dry.

2) Preferably apply same paint types over each other. ie. acrylic over acrylic, lacquer over lacquer and enamel over enamel.

3) If mixing media, then play safe and use chemically milder subsequent layers over each. For example apply lacquer or acrylic over enamel. Acrylic only over lacquer and only acrylic over acrylic.

I will reiterate though that the safest option is to stick to the same media wherever possible.

This tip concerns paint over paint and does not necessarily include weathering although weathering over a protective clear coat is recommended as is allowing all to have cured thoroughly before applying weathering methods.

WARNING: Avoid like the plague any automotive spray paint that contains Toluene. Toluene is a thinner used in many automotive paints and is one of the ingredients in styrene, it will melt it!

L Paint Chipping By David Reader

This model has been primed in Red, then two light fine-mist coats of hairspray followed by Dunkelgelb/Yellow (water-based acrylic) for the base coat. Using some simple tools, we will be chipping and scratching through our base coat to produce these wear effects.

Here we are using a section of Schürzen side armour (pictured in the first image). Alight application of water is brushed onto a portion of the armour section. Take care in avoiding any over-application or puddling of water. Let the water sit for at least a minute.

Many different tools can be used to produce scratch effects. Here we will use a toothpick to create our scratches. Lightly drag the tip of the toothpick over the wet paint surface to expose the Red primer coat underneath. Be careful not to be too forceful when dragging the toothpick. If too much pressure is applied, you may scratch through the primer and expose the underlying metal or plastic surface of the model.

Based on real-life examples and photo references, one can produce scratches of varying lengths and in different directions. Scratches may be continuous or intermittent.
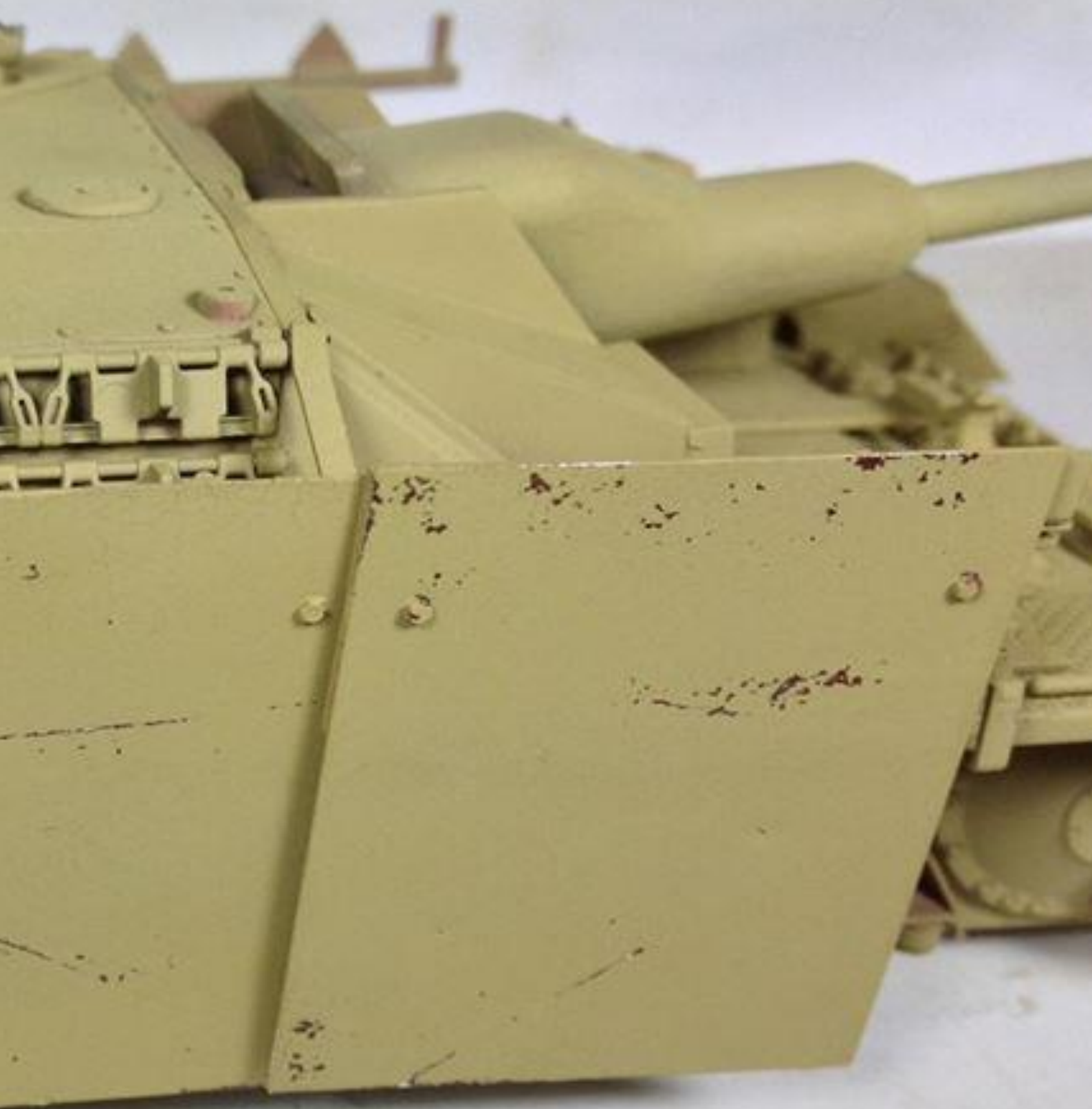
To create chips, use the ends and sides of a brush's bristles. Use stroking and scrubbing motions to produce different chipping effects. Try to keep the chipping relatively small, subtle, and scaled appropriately.
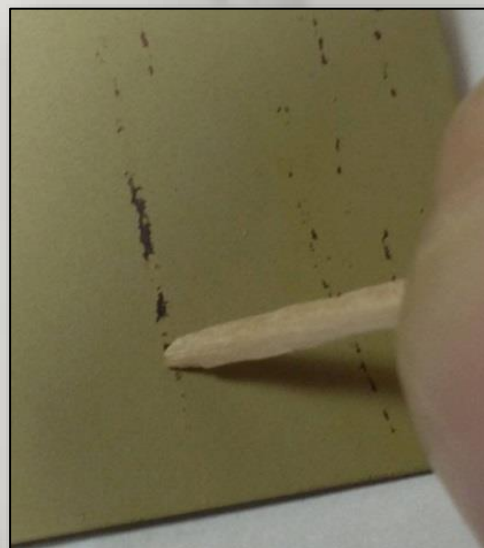
More Schürzen armour panels with chipping and scratch effects. The finer scratches on the centre section were done with a piece of PE sprue. Different items produce different effects, so experiment!
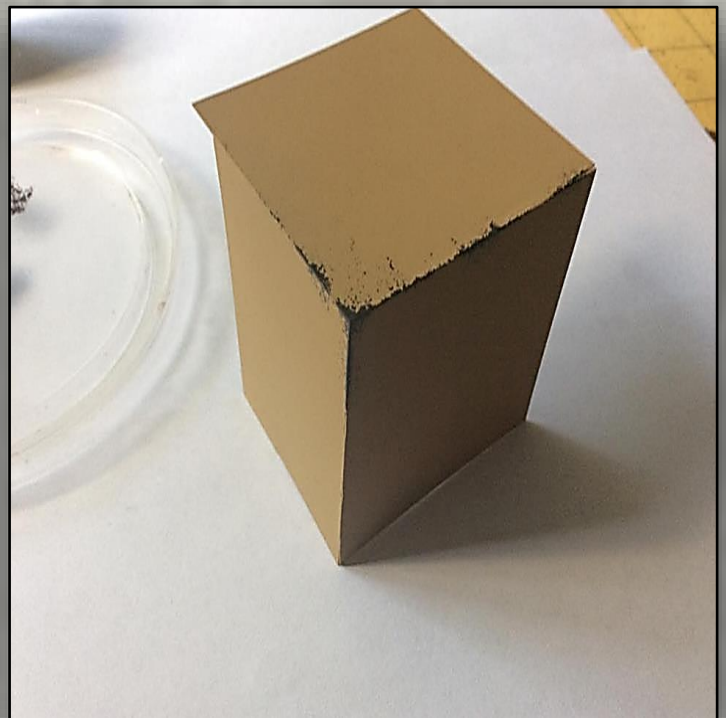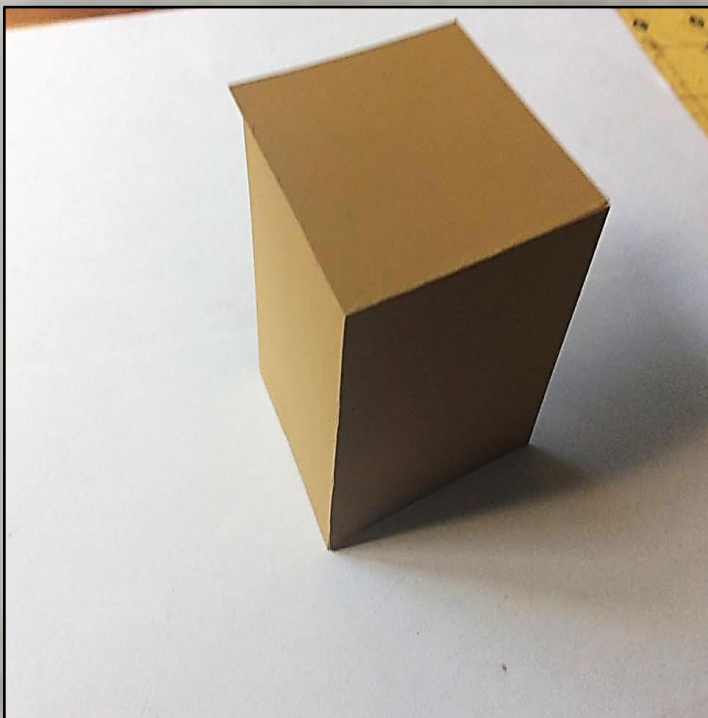
Here's a very quick, and I think effective way to create a chipped effect. I use Tamiya Dark Iron XF-84. A piece of sponge, (cheap bath sponge will do). And an old lid to dab the sponge on.

I shake the paint and when I remove the lid, there is paint collected in the lid. So I use the paint pot lid to dip the sponge in. Dab some paint on the sponge and then dab the sponge on the old lid to get rid of excess paint. It's a bit like dry brushing - the less paint the better!

Try to work out where the paint will get chipped. Corners, hatches, anywhere that damage and wear can naturally happen.
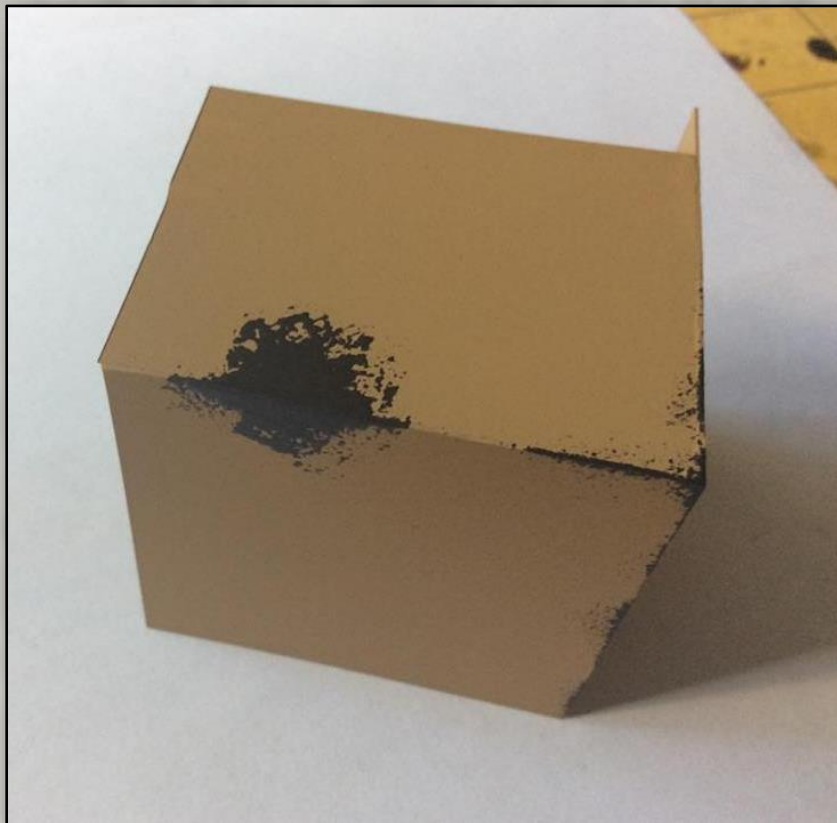
The pictures above show what happens if you dab too much paint on. You get a big splodge!

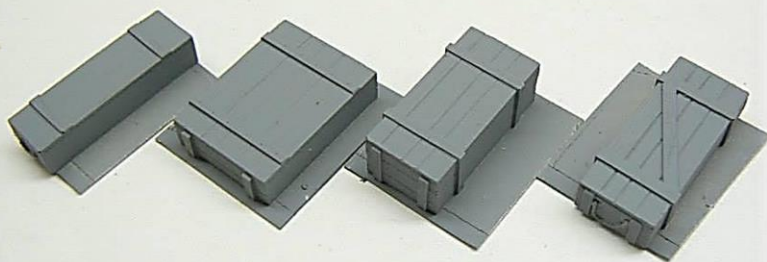To add a bit of new damage I use Tamiya Flat Aluminium XF-16.

And Tamiya Red Brown XF-64 for a little bit of weathered old rust look.

Painting realistic wooden crates by Geoffrey Charman

The crates were fixed to a piece of
thin card with double-sided tape and
primed with a thin coat of grey
acrylic automotive primer.

The crates were brush painted with thinned coats of

Vallejo Model Colors Green Ochre, Medium Flesh

Tone, a 1:1 mix of Olive Green and US Olive Drab, and
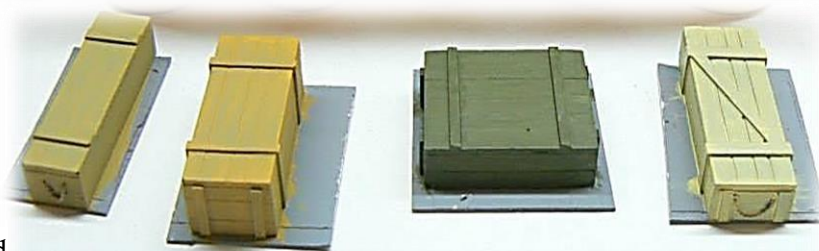
Buff (respectively). These were then left to dry. I then made a very thin wash using Winsor & Newton Ivory

Black and Burnt Umber oils with white spirit, and made sure to blend it thoroughly.
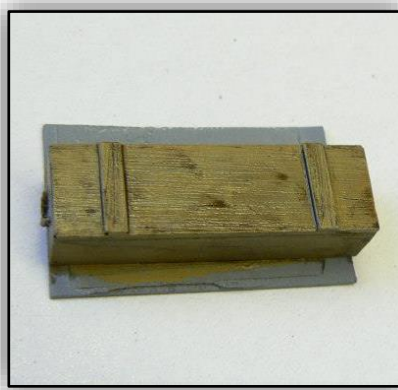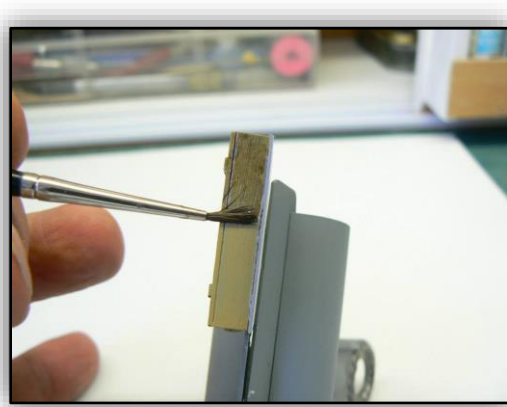
Using a small long-bristled brush, I ran the side of the brush along the wood grain and coated the entire surface of the crates (applying the wash uniformly isn't necessary, as pooling will simulate knots in the wood). Crates were left to dry for 24-48 hours.
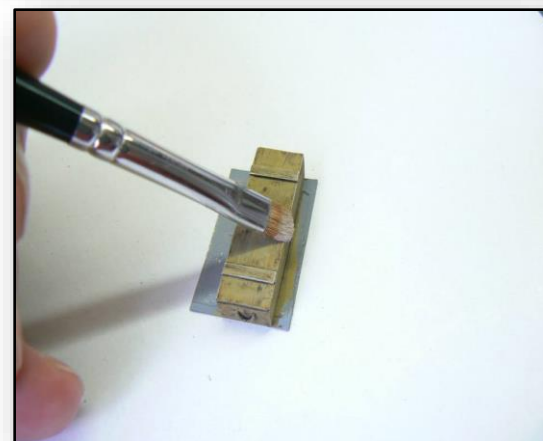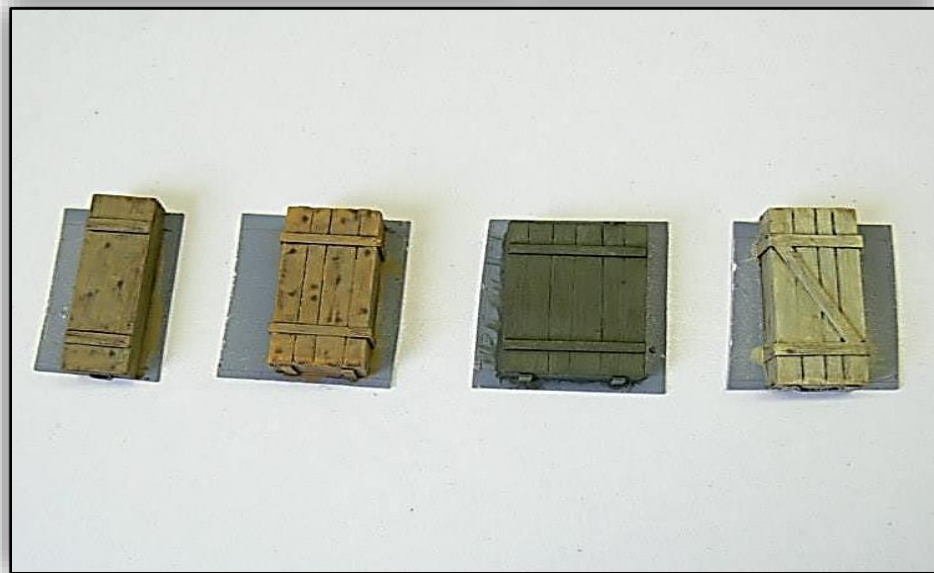
The crate edges were lightly dry brushed with a Titanium White oil using the tip of the brush. Wiping most of the paint off on a tissue the crate surfaces were then dry brushed using Titanium White oil, having gone against the grain of the wood. If you find you have applied too much paint, use your finger to remove it as using white spirit would remove the wash layer as well. A final layer of dry brushing was done using Naples Yellow. This gave a more mellow tone to the highlights. Once all paint had dried, the crates were ready to use.
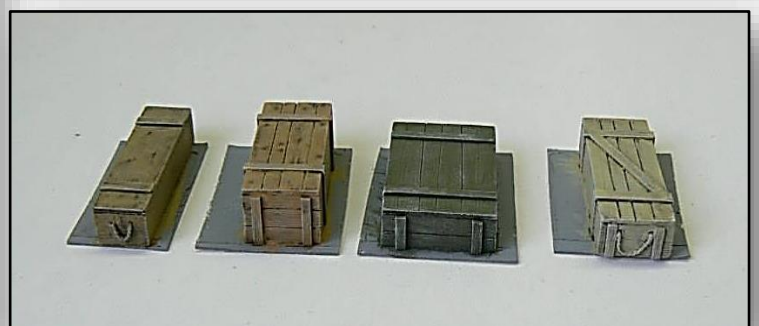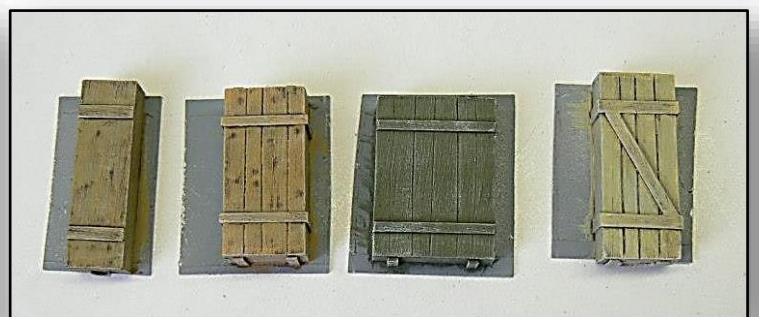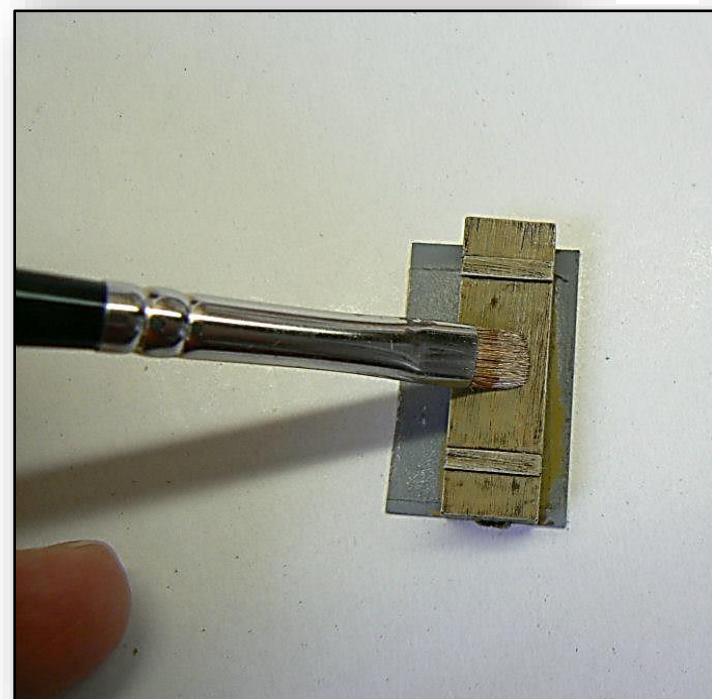
When Black is not Beautiful

This is mainly for the figure painters but there are certainly applications for modellers as well, especially the black-basers and pre-shaders among you.

In most art forms involving colour (oil painting, watercolour, ink drawing and painting and colour pencil) the use of pure black is largely avoided if not outright frowned upon. Black is flat, it is a complete absence of light.

Our use of black largely stems from childhood. We are taught white and black are opposites with white being the cleanest and brightest and black is the darkest. Well white is not in fact the brightest, yellow is. And whilst black is definitely the darkest it is totally flat and lacks depth. White is also flat by the way (see my article on white in Files on the Group Facebook Page).

The reality is what we often perceive as black in life is in fact our minds just being lazy and giving us a quick answer. Most blacks are either brown based or blue based. The night sky is actually a deep, deep blue without much in the way of ambient light. The only way we see absolute black is with an absolute lack of light to reflect colour back to our eyes, no matter how dark.

Another factor affecting shadows in everyday life is a phenomenon known as reflected colour. Let's take an extreme example: a red jacket worn next to a white shirt. A degree of red will reflect off the white shirt and a degree of white will reflect onto the red of the jacket. A more natural example is a rose, the red of the bloom is reflects onto the green of the leaves closest to it and vice versa.

In the shadows of clothing there are very few spots where there is a total absence of light (therefore allowing black to exist). No matter how infinitesimal there is almost always some ambient or reflected light making its way in there. So folds in a blue jacket should really be a deeper, darker blue, shouldn't they?

Aside from black making flat shadows lacking depth they are also uninteresting to the eye. Open your mind to the idea of shadows being an interesting feature in and of themselves. On a blue jacket try mixing some reds with deeper blues to darken the shadow areas. Green, add more blues and maybe some dirty yellows (Naples or Indian Yellow or even Ochre). Shadows made of deep colour will be exactly that – Deep. Deep and interesting, our eyes love colour and drift quickly away from lack of colour. Deepening your shadows will also showcase your base colours far more effectively than black ever will.

Instead of making shadows with black learn to use your eyes to really see and force your brain out of first gear and do some actual thinking.

Now get into that man cave and start splashing some paint about and have fun!

L Smoke Effects by Andy Smith

I use **Model Master** acrylic *'smoke'* for my exhaust and gun port weathering. I have also used a mixture of dark brown and flat black acrylics in the past too. The mixture is thinned 50/50 with acrylic thinner to start, and sometimes I use as much as 70% thinner. The dilution basically depends on the colour of the surface I am weathering.


The lighter the surface colour, the thinner the mixture. I use a dual action airbrush at around 10 psi. There is very little product coming out of the airbrush at this low pressure. After testing on a paper towel, I start at the source of the stain, be it the gun ports or the exhaust pipes, and create small thin lines in the direction of airflow.

I try to visualize how the smoke will travel as it exits the source, and where it will gather along the surface of the 'plane. I hold the airbrush at an angle, almost parallel to the surface. I spray from front to back, and slowly let these light, thin lines build up along the wing or fuselage. This requires many passes to build up the colour for exhausts, but not very many for gun ports. This is a thin mixture, so you must take a moment to let the passes dry a little before continuing in order to avoid pooling of the mixture.

Once the trail pattern is established, I begin to darken and thicken the lines at the source. The further away from the source, the lighter and thinner the stains, so I spray three quarters of the line, and then half, and then one quarter, etc., until I get the desired effect.
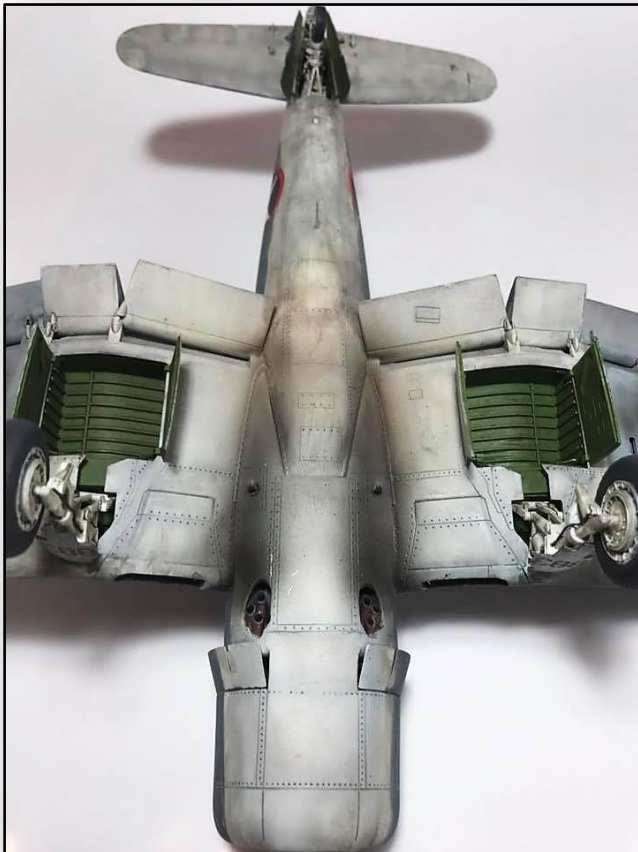
L Barbed Wire by Marcus White

Tools & Materials
- 1x Length of Wood (approx. 18 in. long)
- 3x 4 in. Screws
- Electric Screwdriver or Drill w/ Drill Bit
- Masking Tape

- Spool of 0.5mm Fuse Wire
- Cyanoacrylate Glue (CA Glue/Superglue)

Attach the screws to opposite ends of the length of wood, approx. 18 in. apart to form the barbed wire jig.

Attach 1x 4 in. screw to the drill bit to make a cross shape. This formation jig will be used to create the primary length of wire. If you already have a better jig, you may use that instead

Cut a length of the 0.5mm fuse wire 41 in. long. This length will provide enough wire to attach it to both the barbed wire jig and the formation.


Attach the tips of the wire to opposite ends of the screw in the formation jig.

Attach the middle point of the wire around one screw on one side of the barbed wire jig. Turn on the screwdriver while keeping the wire taught against the barbed wire jig. This will twist the wire strands together. Continue twisting the wire, and be sure to avoid any knots or over-twisting as this could cause the wires to snap. Once finished, remove the wire from the formation jig and attach it to the other side of the barbed wire jig.

For the barbs, begin by wrapping another length of 0.5mm fuse wire around the primary wire strand to
form loops. For each loop, wrap the wire around the primary strand twice. Continue this for the length of the wire. Place a dab of CA glue on each attachment point.

Dab CA on each loop on the main wire
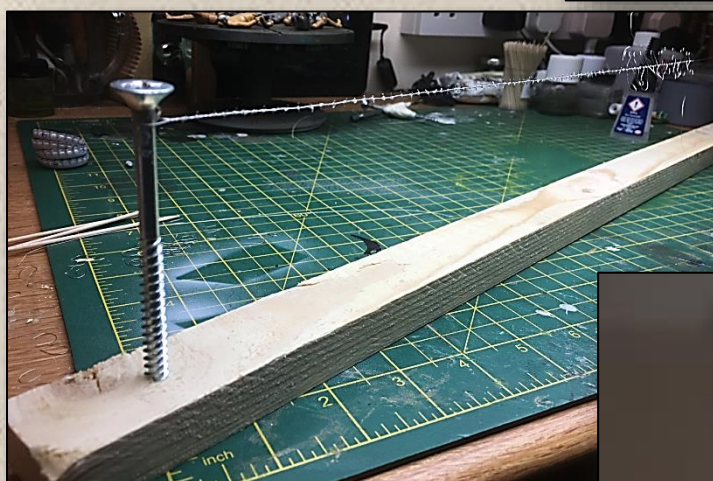
Once the CA glue is dry, cut off all of the wire loops. Make sure to leave a small length for the barbs.

Loops cut to reveal the barb
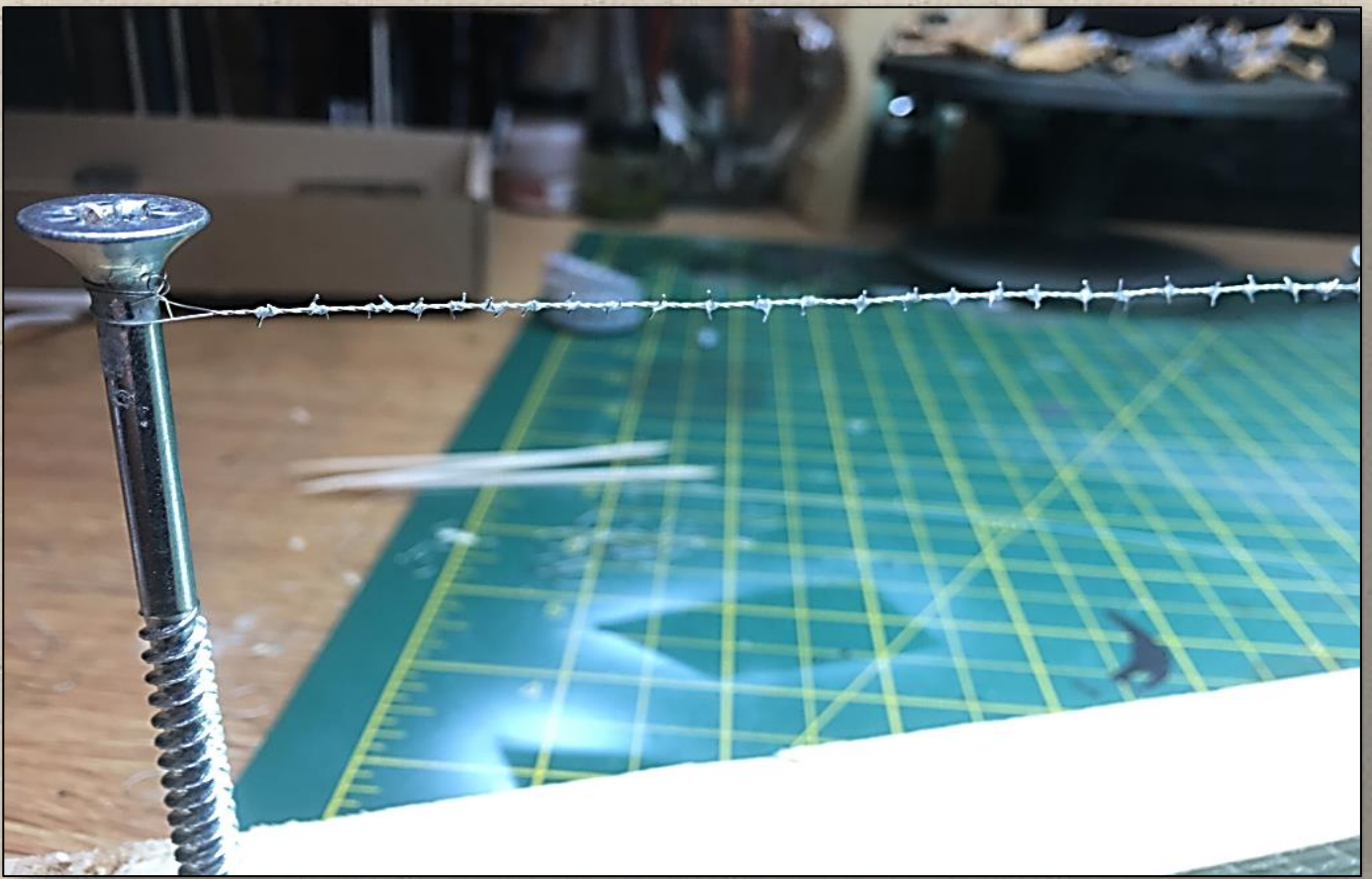
Once the loops have been removed and you are satisfied with the barbs, paint the wire to achieve your desired effects! I use combinations of galvanised steel, gunmetal, and rust colours to paint and weather my wire

L DIY Masking Fluid by Glen Cauley

Making your own liquid mask is quick and easy!

There are only 3 ingredients:

  * white (PVA) glue (a dollop)
  * dish soap (1 drop)
  * food colouring (1 drop)

White Glue

Dish Soap

Food Colouring

Dollop   **1 drop**   **1 drop**

1. Mix the ingredients together.
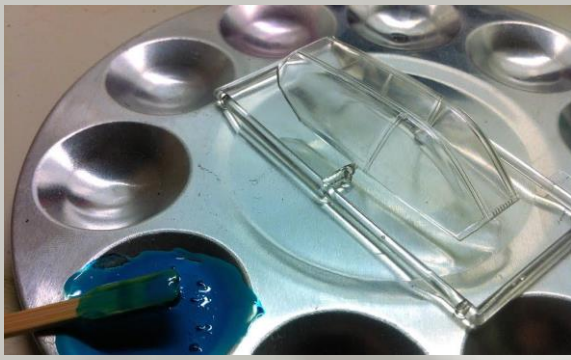
2. Brush the liquid mask onto the clear part, and deliberately apply over the edges.

3. Allow to dry until transparent (lightly tinted).

4. Trim the mask using a very sharp knife (scalpels are preferred); score very lightly along the frame edges to avoid damaging the plastic.
5. Remove the excess mask from the areas to receive paint.
6. Paint the part, allow to dry.
7. Remove the liquid mask using a toothpick as a lifter/scraper.

You can clean the brush by rinsing in water.

PICK YOUR POISON BUT DON'T LET IT BITE YOU

You started building kits. You had no art background or training. The kits came complete with colour call outs and your hobby shop was able to help you choose your paints. The paints conveniently matched the numbers in the instructions and were already premixed.
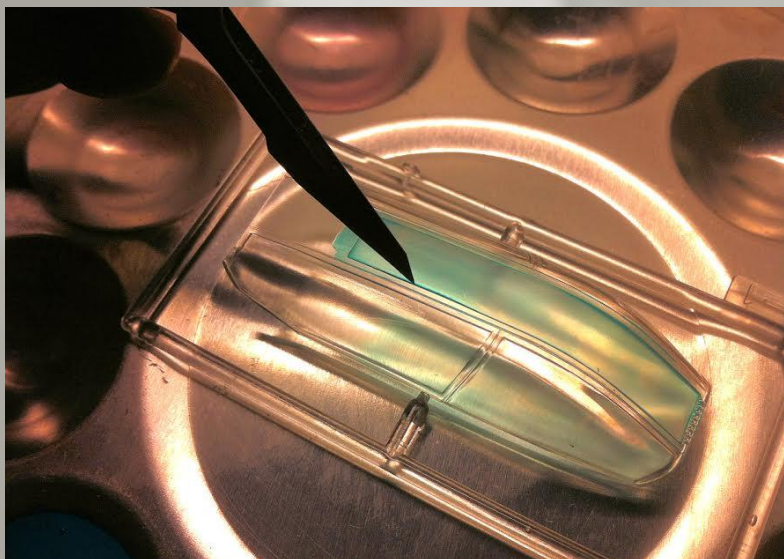
Then you started doing a little more research on your builds and you bought books about them. You may even have started noticing the instructions didn't always get it right and there were discrepancies between them and the books.

Now you are in various modelling groups on Face Book. You see all these brilliant paint jobs by others.

You are still using premixed modelling paints but are finding it harder and harder to always achieve your aims.

Sound at all familiar?

Try thinking of painting as similar to driving a car. You don't need to know how to strip and rebuild the engine in order to drive it but some basic knowledge on how to change a tyre, check the oil, pump the tyres and jump start a flat battery are probably a good idea.

Whether you are an advocate of acrylics or a devotee of enamels don't let them restrict you. Don't be such a slave to premixed colours that you can't recreate the shades you want.

There are a few simple things you can do to prevent being a slave to premixed paints.

1) Purchase a colour wheel to help you learn the basics of mixing.
2) Purchase a selection of artist oils (if you use enamels) or artist acrylics (if you swear by acrylics). You can add these to premixes to alter their hue and even to strengthen their coverage and tone.
3) Experiment with making your own mixes. You will learn a lot in a surprisingly short time and achieve some stunning outcomes either by design or happy accident.

Love your premixed paints by all means but learn how to improve on them and alter them to extend their usefulness. Don't let them enslave you!

TERRAIN, TREES & FOLIAGE

How to make a PVC Tree Trunk by: Mike McElhaney
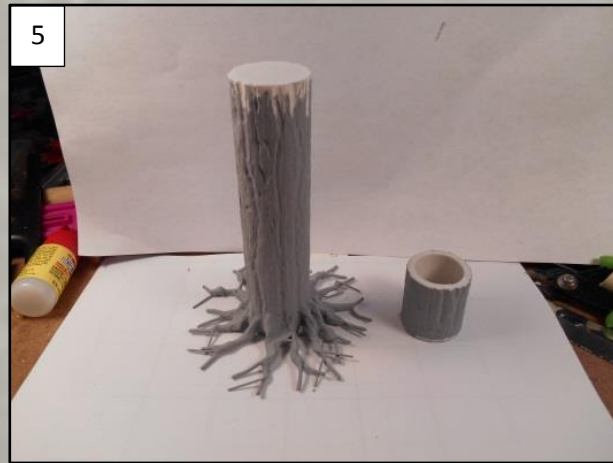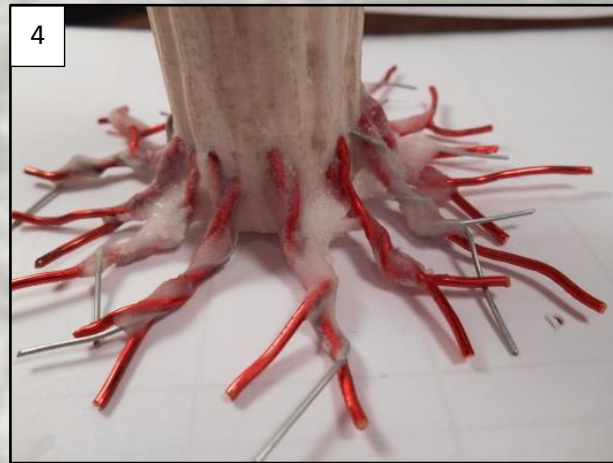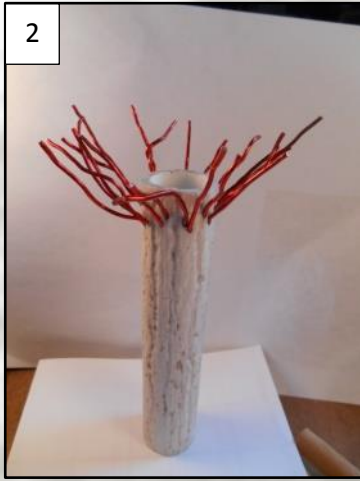
(Photo 1) Cut a section of PVC pipe in a scale-appropriate diameter. Carve deep gouges in it with a Dremel or hand tools and rough up the surface by dragging a razor saw down it lengthwise.

(Photo 2) Drill holes in the base and superglue larger wire strands into them for thicker roots. Twist them together as desired.

(Photo 3) Drill additional holes and add smaller wire strands for thinner roots. Twist them together as desired.

(Photo 4) Cover the roots with superglue, then sprinkle them with baking soda. This will add substance and texture to the roots. Repeat this until they are filled in to your satisfaction. The surface will be rough, but can be sanded if needed.

(Photo 5) Cut a piece of sheet styrene and attach it to the top of your tree. Cut and smooth it so it fits seamlessly on the pipe section. Once capped, prime the tree.

(Photo 6) Base coat the tree using the darkest colour in your palette. Here I've used dark brown.

(Photo 7) Dry brush the tree using progressively lighter brown and grey tones. Dry brush selected areas using green to simulate moss.
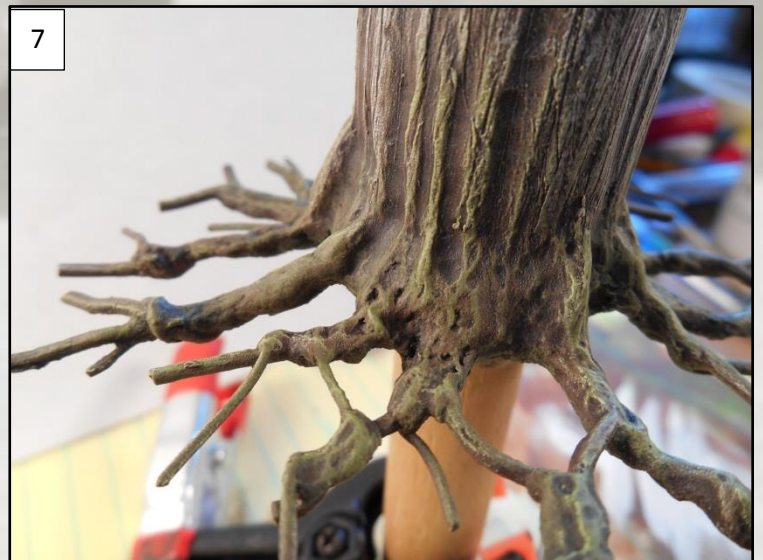
Rock Base by Marc Jones

Tools – Airbrush – Grex Trinium T3 (3mm nozzle), size 2 flat brush, ripped bits of sponge, size 2 round brush

Paint/ products – AK interactive retarder, water, iso-alcohol, black Stynylrez primer

Vallejo paints Medium Sea Grey 70.840, Chocolate brown 70.872, Stone Grey 70.884, Black 70.9850, Model Air - Wood 71.077

Mig paint – earth A. MIG-073, Grey Shine A.MIG-911

AK interactive Paint – White AK738, Summer Light Green Spots AK3063

I wanted to start off by giving a quick explanation of the techniques such as thinning acrylic paints for an airbrush, 'stippling', washing and black basing so you are aware of how I achieved these results in the following guide.

First off – thinning paints for the airbrush. I personally as a beginner had massive problems with getting the right consistency for airbrushing as well as the dreaded tip dry that ruins everyone's fun. With this technique, you can airbrush away with minimal issues. The paints I use are primarily Vallejo, Ammo and AK interactive and the following method works great with all these brands. I find the easiest way to mix this up is by getting a dropper bottle approx 100ml to start. Get a ruler and divide the bottle up into equal parts using a permanent marker. Now fill the first 3 marks with iso-alcohol, the next 6 with water and the remaining mark with AK retarder. You will find this mix flows consistently, doesn't dry on the tip and has some self-levelling qualities due to the retarder and alcohol mix. To airbrush with this mix, simply add the same number of drops of paint as thinner so to get a close on 50/ 50 mix. – this is sprayed at 20 psi or 1.5 bar.

Next technique I used was stippling, this is simply using your brush tip or sponge to essentially stab at your project. I find the best results are achieved when getting most of the paint off your brush or sponge so not to apply to thickly and achieve gradual and subtle colour changes. I should note, you don't want to thin your paints for stippling.

Dry brushing – this is one that you will hear a lot. I remember when I first started out thinking "ok, so you want me to paint with a brush that has no paint on it!" but it literally is painting with a brush that has basically no paint on it! What you want to do is get your un-thinned paint and stick the tip of your brush into it. Now take some dry kitchen towel and wipe it all off, and I mean wipe it ALL off! Then take the brush and graze over (with a bit of aggression – not too much, but you don't want to be too gentle either) notice that the raised details are getting a bit of the colour on them but nothing else is? Dry brushing is hugely useful for this and you'll hear about it a lot. It takes a bit of practice to understand how much paint to leave on the brush, and everyone makes the mistake of thinking that you've taken enough off only to find that a load of paint was left behind!

Lastly, washes. I know a lot of people have different ways of making up washes, I've tried a lot of them and find that the simplest works for me. Using the aforementioned thinner mix, simply add 30% paint to 70% of the thinner. This is where you want to make sure your paint is very thoroughly mixed! With the little dropper bottles it's best when making a wash, to pop the top off and get a skewer or paint mixer and give it a really good stir making sure to scrape the bottom. Once you've stirred, give it a good shake to make sure all of the pigment is as even as possible. This will help to stop separation of the paint as it's going to be quite thin. Application of a wash is really as simple as slapping it on and moving it into the crevices, and around with the brush. Because of the addition of the retarder it won't dry too quickly and will allow you to further water it down directly on your project if it's too dark or to move it into the crevices.

Black basing – This is a technique that takes a few goes to get right, so try it on some spare material before applying it to your project. It essentially means priming in black, marbling in a base colour and working up from there. It's very useful in order to get colour variation form the start as in this case rocks aren't one colour but rather darker and lighter, in random, uneven patterns. This is also very useful for any kind of modelling where you are trying to achieve realistic looking paint wear. In my case I took the Stynlyrez primer (un-thinned, straight into the airbrush) and evenly covered my rocks at 25psi. What you want to do then is get your base colour, or 'mid-tone' as its sometimes referred to, and very lightly (20psi) draw squiggles and uneven patterns all over the project until it looks something like this –

Once you've completed this, let the 'marbling' dry for about 5 minutes (or in my case - get the hair dryer out for 30 seconds!) Now take the same colour and very lightly and evenly put a coat over the whole project. You should start to get the idea of the desired effect once you've put down this coat. I can't stress enough that you want to make sure the coats are put down very thinly so to not completely cover up the previous layer. What we are looking for is the darkness of the black to show through slightly and the marbling will show through as almost highlighted areas. I would recommend checking out 'Pre-shading vs Black Basing' on Chris Becker's YouTube channel, as I think having more of a visual idea of what it should look like before starting will help with your results.

Now on to the painting of the rocks!

Start by black basing and using the Vallejo stone colour thinned to 50/50 with the aforementioned thinner. Once this is completed - on to your sponge. As rock is not one colour but rather a random assortment of different colours I used a few different shades of grey over the stone colour. Get your sponge and put some of the colour on and then wipe 80% of it off onto a piece of kitchen towel. Now use the sponge to 'stipple' unevenly all over the project to build up some colour variation.

Once you've done this with a few different greys we will give it a 'wash'. Make sure your project is dry before washing as the paints will bleed together if you don't.

I used some green, some light browns and black; as rock will have some moss, mould, dirt, watermarks and all sorts of grime on them. Take your wash and apply in random places on your rocks, some larger patches and some smaller. It helps at this point to Google of images of rocks so you can see where the different colours are likely to be on rocks. Now take your brush and flick paint using your finger all over the rocks in a random way, this will look great as it simulates random dirt etc. You'll notice that because the paint is so thin it really doesn't change the colour too much but that's what we are looking for. Once you are happy with some of the washing take your grey and add a tiny bit of white to it and dry brush over the entire thing. This will help add some highlights and really bring the detail out of the rocks.

Lastly, to bring it all together and mix the colours together so they aren't quite as stark, take your airbrush and add a wash mixture of the base colour. Spray at 10psi as the colour is so thin you don't want it to splash. This should be a really thin layer and acts as a filter to blend the colours together so nothing is too stark.

One last thing I'd like to add. If you are a beginner it is very easy to get frustrated with your work not looking like what you see from the pros. If you focus on getting each step right; black basing, washes, dry brushing, stippling etc. your results will move forward in leaps and bounds. In model painting it's all about layering up your paints. Most of the time my projects look terrible until the last 2 layers of paint brings it all together. Most importantly HAVE FUN!!

Rock Face and Boulders by John F Byrne

I decided to make some moulds for myself rather than buy them. I used Mouldmaster latex rubber to create my moulds. Basically you put on a number of layers building up the latex rubber mould of the original, rocks in this case, and then cast in plater off that.

I put two very thin layers of the latex over some stones I found in the back garden. When each layer had dried I added another until I build up about five layers. I then put a layer of gauze bandage over the last dried layer and added a thick layer over that. When dried, I added another layer of the latex and my moulds were good to go.

I wanted a flat surface to put the latex over so added Das Clay to the bases to make sure the cast was flush with no under flow, which would make it difficult to remove the plaster when cast. I sculpted some crevices in after it dried with a flat square blade.
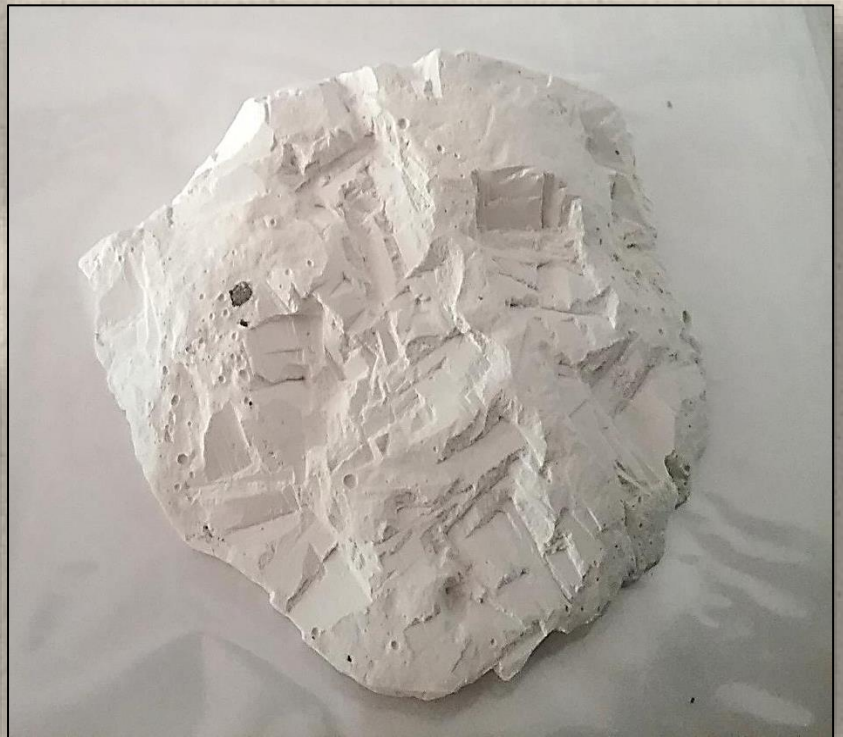
The next stage was to make my three colour washes. Yellow Ochre and Burnt Umber were made from Windsor and Newton acrylics. Essentially it is just a blob of the paint watered down until I like the look of the colour, and a black wash made from Tamiya XF1 Black, again watered down, probably 15 : 1 ratio.

The painting technique is called Leopard Spotting.

Using the three colours I first started with the yellow and dropped it into various areas with a sponge.

When happy I did the same with the brown. Make sure you leave plenty of unpainted areas before moving on. I left these to dry, which only took a few minutes, and then did an overall heavy wash of the black, which actually becomes grey as it soaks into the plaster. More coats of each can be added until you are happy with the look, but this was enough for what I wanted.
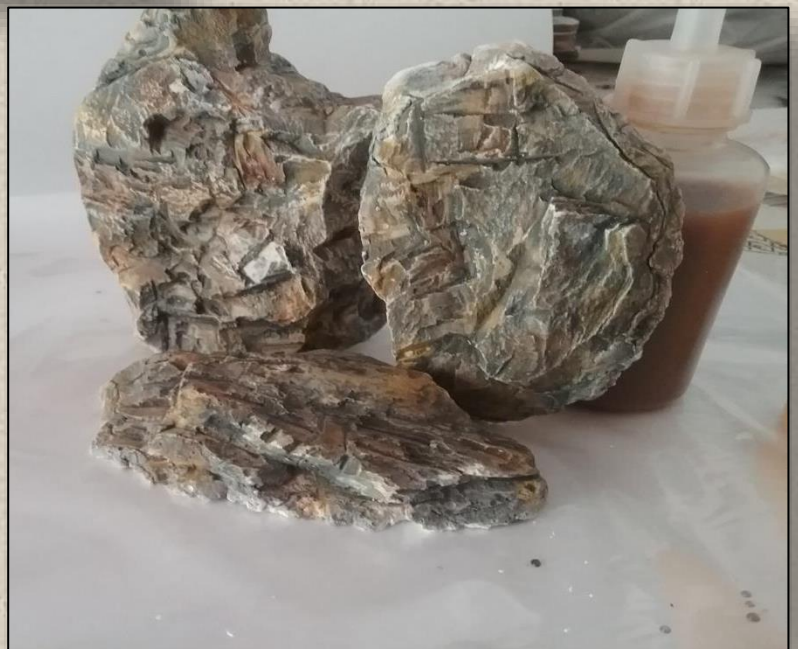
Afghan Terrain by Marcus White

This is to be used as a firm base for a diorama, so I made a frame for the base, thinking about final presentation.

Here is how to replicate this result.

Cut a polystyrene sheet slightly smaller than the base, then build up your base by cutting more sheet roughly into the shape of the terrain you're looking for. For cutting polystyrene I use a sharp skinning knife, but you can use a hot wire for this also. Once happy with the rough layout, fix the polystyrene to the base and to each other with the PVA glue, and pin with cocktail sticks.
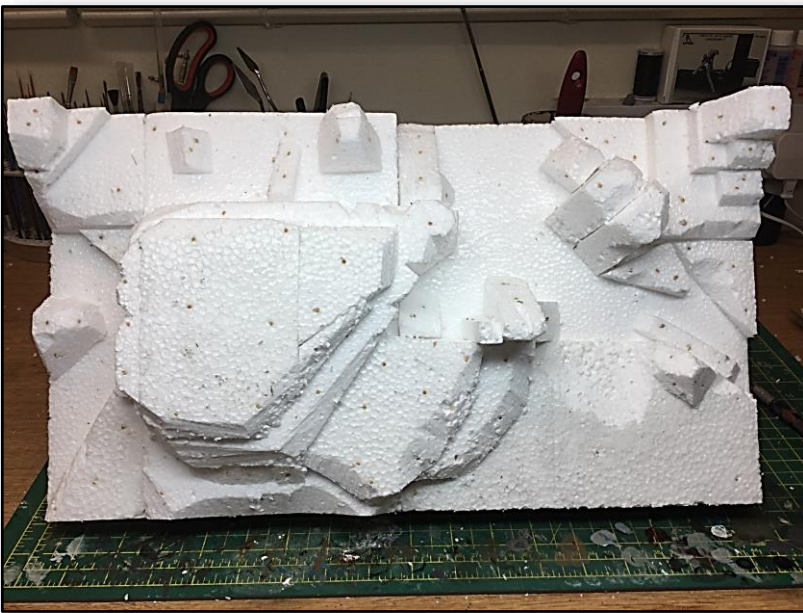
Shaping the terrain.

When the polystyrene has dried to the base (step 2) continue to shape the terrain with a knife taking off any odd lumps. Now mix PVA and Polyfilla into a thick slurry, then apply to the surface of the polystyrene. You could add stones or grit for extra strength and texture at this stage. I didn't, as I wanted to shape the mountain. When the mix is drying, use cocktail sticks or sculpting tools to shape texture in to the mountain.

Surface texture.

When you're happy with the look of the terrain, leave it to dry – the top mix can sometimes shrink slightly and may take a few days to dry properly. Fill in any gaps using more slurry, then add texture to the surface. For this diorama, I added 'sand' in the form of chinchilla dust. Now you need to make an edge to the base. I use plastic card for this. From the plywood base hold up sheet of plastic card and with a pencil draw the edge of the terrain, then cut the card and cement to the sides of the diorama, giving you neat flat sides to enhance the scene. Now prime the whole scene, I used black to give depth to the final colours. Mask off the sides when dry, then with acrylic paints, working from dark to light, build up with greys and browns doing more and more dry brush coats.

Weathering.

To complete the scene, you can use weathering pigments of your choice. I used artist's chalk pastels fixed in place with artist fixative.

Material used:

Ply wood

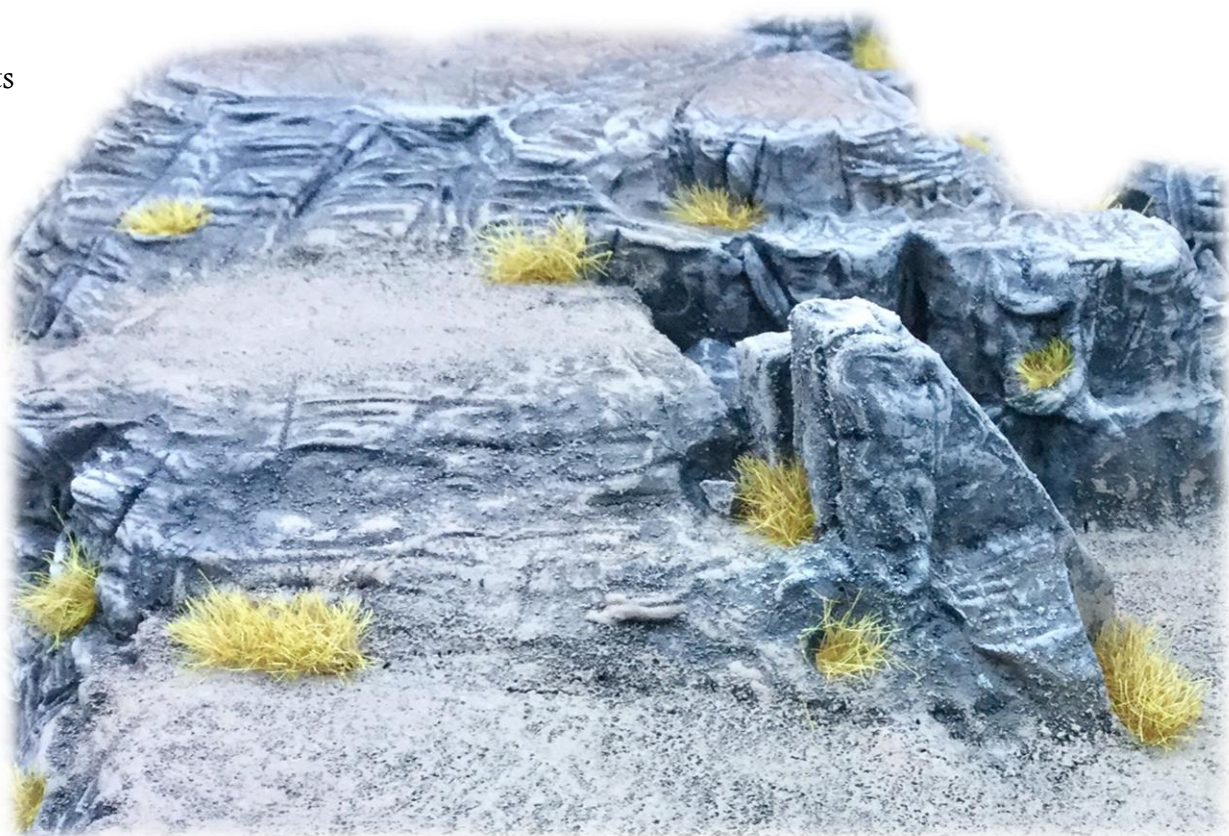Polystyrene sheets 20mm

PVA wood Glue

Cocktail sticks

Polyfilla powder

Chinchilla dust

Primer paint
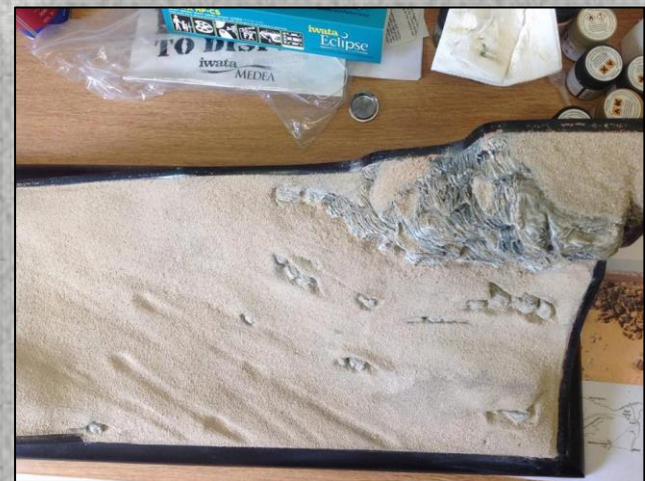
Artist acrylics

Weathering pigments

Another rock face sculpting in air dry clay. Polystyrene substructure, air dry clay, toothpick sculpt.

Making tracks, using cling film as barrier, cocktail stick as temporary axle on model wheels, press into clay through cling film to leave an impression.
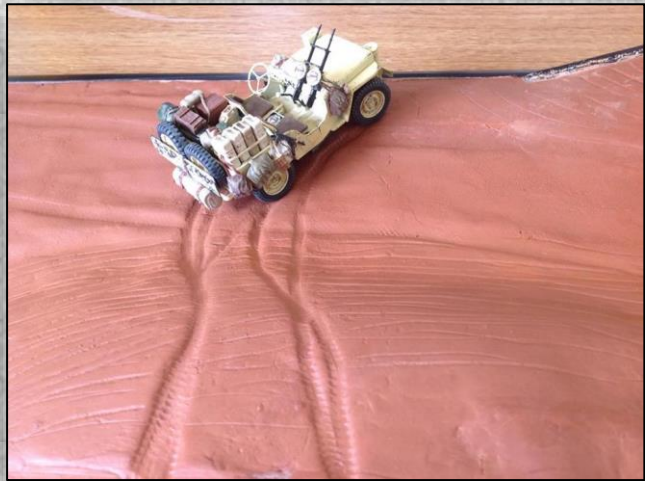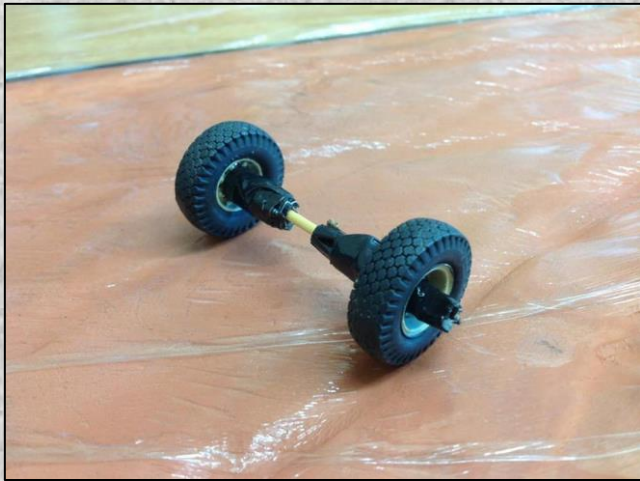
Plant leaves by Marcus white

Some masking tape, some wire, some paint and a little imagination….
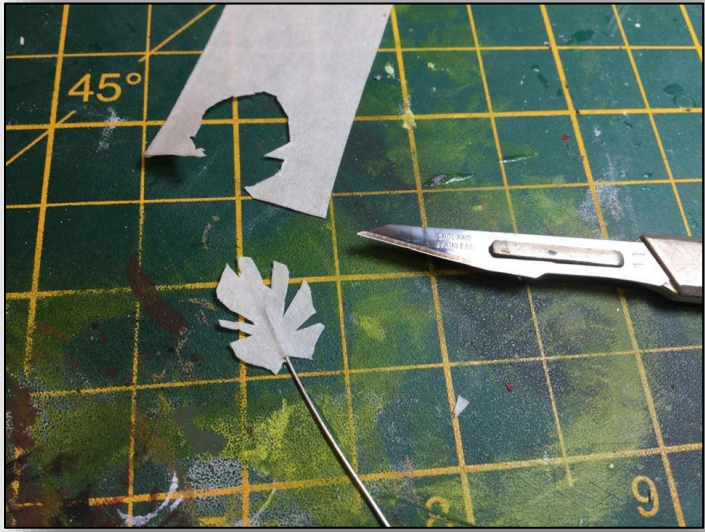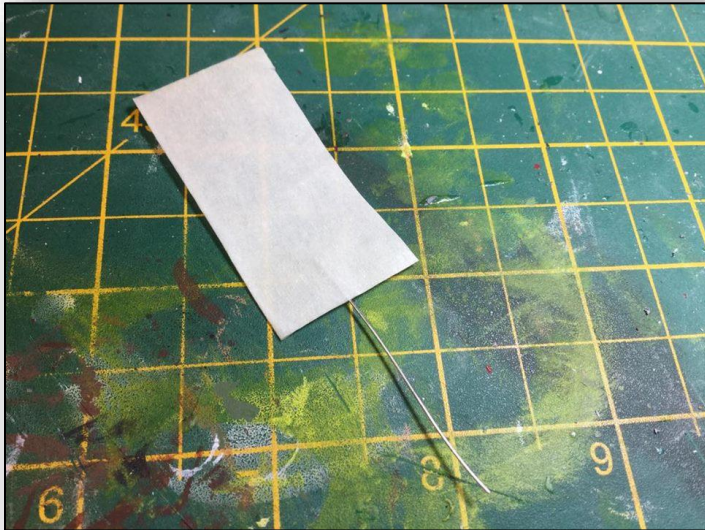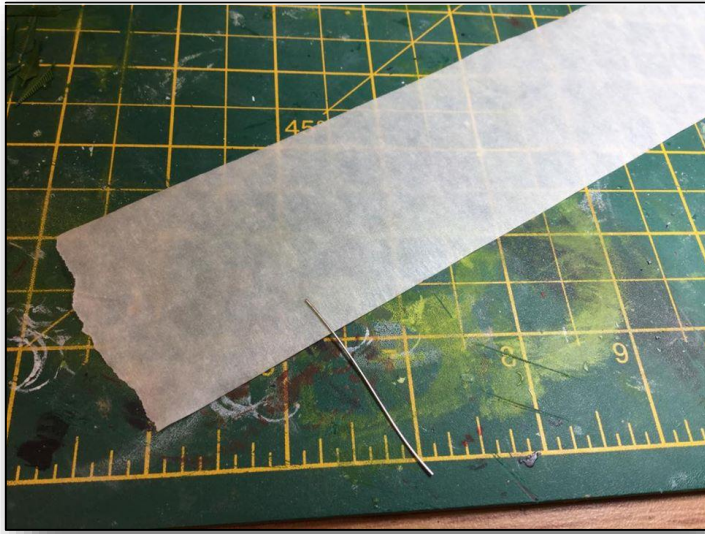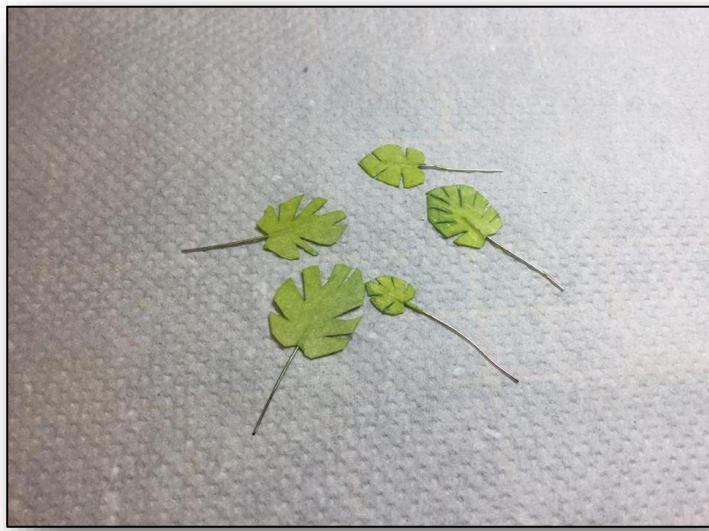
L Palm Trees by Andrew Moffat

Pic 1. Use a piece of dowel cut to length required. I used larch decorative from the garden centre.

Pic 2. Use a sharp knife to form raised edges.

Pic ¾. I used some old packaging but any kind of felt/fibre material brushed to fray the ends will do. The idea being to resemble dead fronds.

Pic 5. I used a used tomato puree tube but have also used heavy tin foil.

Pic 6. Cut to shape leaving a tail to push into the tree.

Pic 7. With a straight edge flat on the leaf mark a line with a pencil.

Pic 7/8. Cut the fronds – you don't have to be too particular.

Pic 9/10. Make some holes in the top of the bole of the tree and push the fronds in and shape them to suit. Add paint.

Pine Trees by John F Byrne

We begin the tree making process with a round balsa wood dowel, sized to suit your diorama needs

(1) We use a sharp hobby knife to scrape along the length of the dowel in order to pull up the wood. This will imitate small branches and debris jutting out from the trunk of your pine tree.

(2)(3) These images show the evolution of the pine tree, from a smooth dowel to simulated rough bark and tree limbs.

(4) Completed scraping. Once satisfied with the achieved effects, we then remove chunks from the base of the dowel if it will be used as a fallen tree trunk. Removing bits will simulate rotting from where the tree has fallen on the forest floor.

(5) Continue to remove debris from the end of the balsa wood dowel until you achieve the desired effect. Different amounts of debris removal can be used for standing, rotting, or fallen trees.

6

(6) To achieve deeper striations, we use a sharp pointed tool and drag it along the length of the tree trunk. This will create a more realistic worn bark effect.
.

(7)(8) To paint the tree trunks, we begin by covering them with a heavy wash of Tamiya XF-1 Black mixed with water. The balsa wood will soak up the wash, so multiple coats may be required. Once dry, we can then dry brush layers of Tamiya XF-10 Flat Brown and XF-64 Red Brown as desired.

7

8

9

(9) We then dry brush Tamiya XF-58 Olive Green and XF-61 Dark Green onto the tree trunk to simulate moss.

Next we will examine a method of creating realistic foliage for our pine trees.

For this tree we will use an asparagus fern. This plant is readily available in flower shops or hardware superstores.

If you want the branches to retain their needles, you must first preserve them.
To do this, we will need some glycerine. Glycerine is available from many pharmacies and chemists. We soak parts of the fern in a 2:1 mixture of water to glycerine in a container. These bits of fern were left to soak in our solution for approx. 4 days to ensure maximum absorption.

(10) After four days, the fern branches were removed from the solution and left to dry on paper towels.

The fern branches will eventually fade and change colour if left untreated, so to add a more permanent colour to them we airbrush thin layers of Tamiya XF-58 Olive Green and XF-61 Dark Green.

Our final step is to drill
small holes where we
want our pine tree
branches to be located.
Apply a small amount
of glue to the branches,
insert them into the
drilled holes,
and allow time for the
glue to dry.

We are now ready to
mount our pine tree to
our diorama!

How To Make A Stone Wall
By Geoffrey Charman

Mix up a batch of All-Purpose Powder Filler and add some stone coloured water-based paint

Take a lid from an ice cream or spread container. Make sure it has a raised border.

Spread the powder filler mixture onto the top of the lid and leave it to dry.

When the mixture has fully dried, remove it from the lid. Using your fingers or a pair of pliers, break the dried filler into smaller pieces. These smaller pieces will be used to assemble your stone wall.

Using cyanoacrylate (CA) glue, glue the pieces into place.

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Masking stripes on fuselage, wings, tails or many other curved shapes quickly and hassle free.

Place a layer of Clingfilm over fuselage, wing etc to be marked. Then place a rubber band or tie a length of cotton or monofilament etc at edge of stripe to be masked. Fold back the cling film over the rubber band or mono and you now have one edge of the stripe masked. Repeat on other side. Spray the stripe.

This method works for vertical and angled stripes and is quick, easy and cheap.

FIGURES

Phil Hought
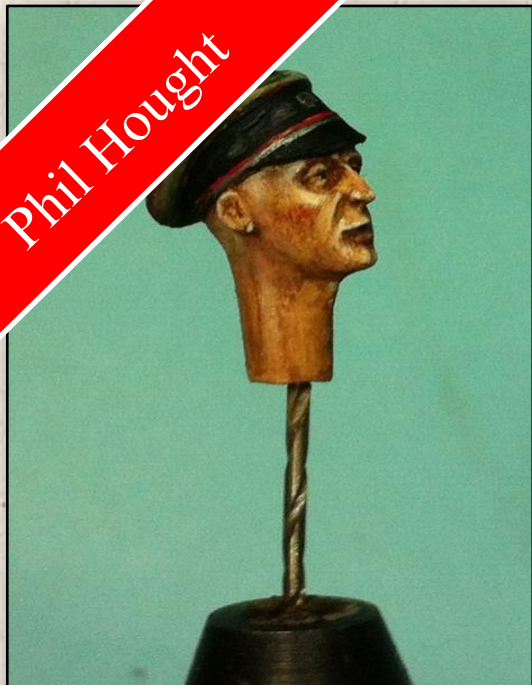
Tamiya's 1/35 scale tank commander from the tank crew set, built up from the box and cleaned up...he's going in a 'what if' build of a walking tank, so the camouflage scheme I'm using for his uniform is not historically correct.

First off, the neck was hollowed out using a jeweller's burr and the sleeves were cleaned out a little with a chisel.

The paint process I use works best on non-camo uniform, as better shadows are created, but for this figure it'll be fine.

Next, the whole body is undercoated with grey primer then sprayed with a darkened Vallejo paint mix of dark brown sprayed upwards, thereby creating the shadows.

Next, a lightened brown mix is sprayed down the body, and this creates the highlights, a further lightened brown mix is sprayed to emphasise this.

The first camo colour added is Vallejo German camo green using a brush, then the light colour of the camo, which is buff; it's a variation of Italian tent camo – that's my excuse anyway!
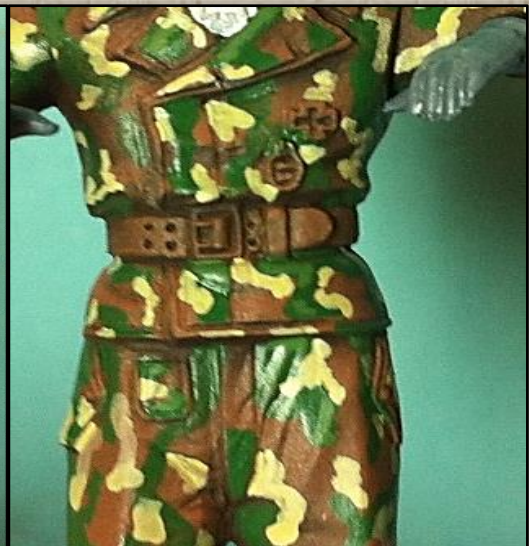
A thick-ish wash of raw umber and Vandyke brown oil paint thinned with white spirit was then added and left to dry for a couple of hours. A sepia type colour is what you're after. This was then removed with downward strokes using several cotton buds. This process accentuates the folds and weathers up the uniform. These were highlighted on the upper edges of the camo with lightened versions of the initial camo colours.
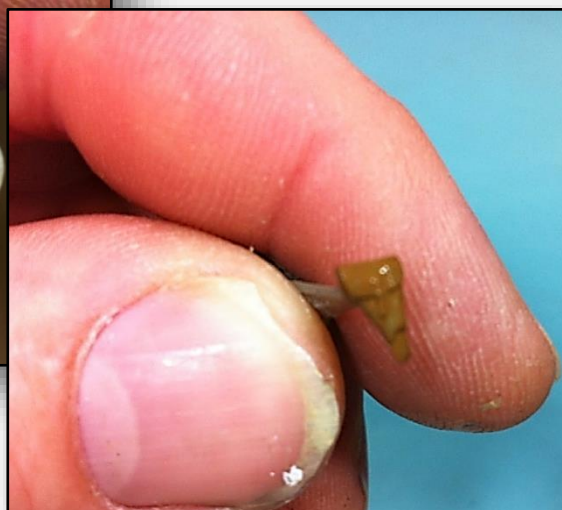
The belt was given a coat of burnt sienna and Vandyke brown oil paint and left to dry. The holster was painted Vallejo earth brown, then a coat of black oil, which was then removed using a cotton bud in a downwards motion and left to dry. Wear on the holster and belt was added with a water soluble pencil crayon when the figure was fully dry and matted off, as the matt gives the crayon something to stick to.

Medals were painted with any form of bright metal colour acrylic, and afterwards pin washed with black oil paint. The collar and epaulettes were detail painted using acrylics and a long thin nail art brush I then added the head, making sure to set it in the right position. Further dark coloured pin washes were added to pick out creases and the like.

The gloves are undercoated in a light grey then given a coat of dark grey oil, again removed to leave highlights. Further highlights were picked out with a brush and a very light grey mix of oil. The same process with the shirt but a little more white was added.

I've selected a resin head in 1/35 produced by Hornet for this guide. I find a well-defined and properly casted item will save you a considerable amount of time prior to painting.

I base coated the head with Vallejo Model Colour Iraqi Sand, no priming necessary. I set this aside for 24 hours to allow ample drying time.

Once the acrylic base coat was dry, I mixed up a 1:1 blend of Georgian Raw Umber and Burnt Sienna oil paints, and thinned it with white spirit.

This blend was applied over all flesh areas; then put aside for an hour to allow some of the thinner to evaporate.

Using a cotton bud and a light downward motion, I removed most of the oil paint from the raised surfaces. Paint was left in all the nooks and crannies however, with a small amount to tint the face.
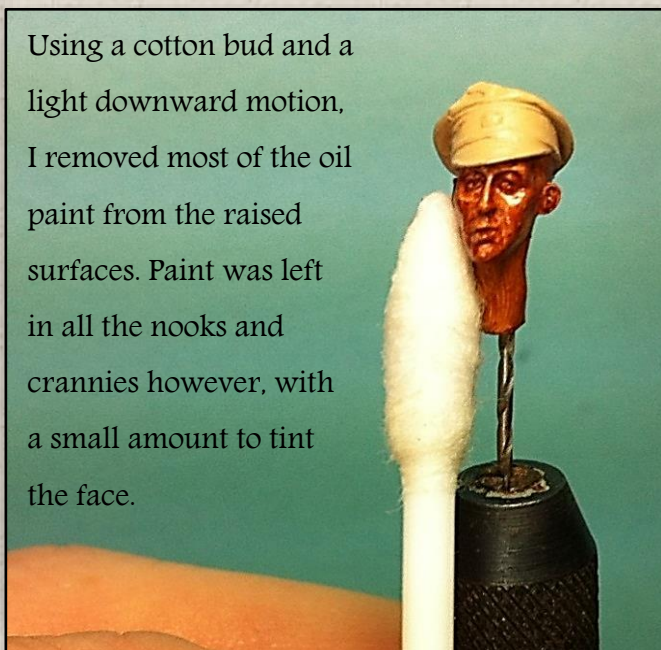
The face should look something like this.

I typically don't paint the whites of eyes, as you wouldn't see them if you were looking at a person from a distance. This figure has wider eyes, however, so I opted for painting them. I used Vallejo Model Colors Ivory and Black for the eyes (White is too stark and bright, but Ivory offers a nice alternative).

The paints are Daler Rowney Georgian oil paints.

From the left, Flesh Tone, Raw Umber, Vandyke Brown, Yellow Ochre, Burnt Sienna, Lamp Black, Titanium White by Windsor and Newton, Magenta, French Ultramarine and Cadmium Red.

Using the darker shades on the palette (primarily brown shades), I added shading to the more prominent facial feature as well as around the eyes.

I added a mixture of the red tones to the area just below the cheek bone on the cheeks and a little below the Adam's apple. I also started to block in the main areas flesh colour.

I used a 10/0 brush with a long tip for detailing and a 5/0 brush for blending. Once the paint had been applied, I began blending areas together by following the contours of the face. I used a cotton bud to remove any paint. Occasionally the base acrylic colour would show, but this was intentional.

The face after the application of more flesh tones and darker browns.
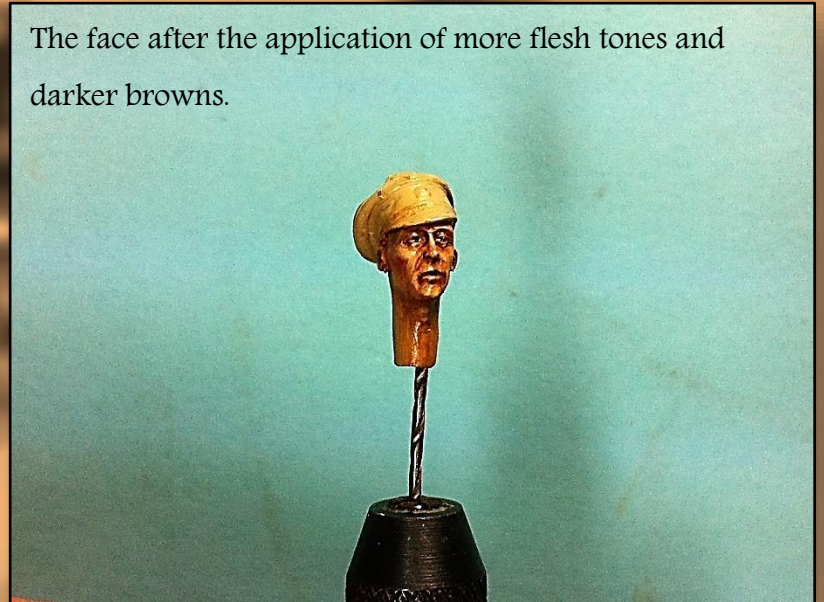
Below you can see the progression of the face, as lighter tones were added to pick out highlights and darker tones were reapplied as needed. It's always best to work dark to light, as this allows you to build up your layers.
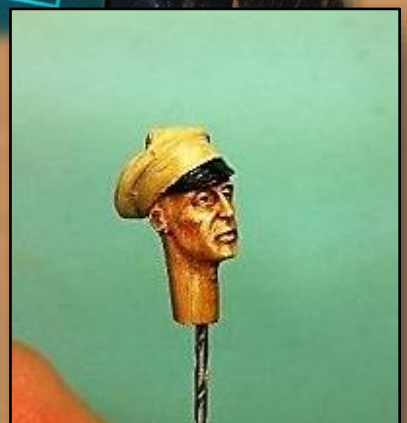
Final highlights were added using a very light flesh tone blend (I try not to use just White as it could make the face look chalky).

Details to the cap were added using a nail art brush. The fabric portions of the hat were first base coated with lightened Vallejo Model Colour Field Grey, followed by an application of an oil paint blend. This was then removed with a cotton bud using the same method as for the face. Emblems were painted with Vallejo Model Colour Flat Aluminium, and the red piping was painted using the aforementioned nail art brush. Highlights were added with oil paints.

Once completed, the head was then sealed with Vallejo Matt Model Colour Varnish.

Here you can see the same Hornet head before and after painting.

Here are the 4 colours I used

DEL
LOR
vinílico

No tóxico, no contiene,
Non toxic,
does not contain:
As, Cd, Co, Cr, Hg,
Pb, Sb, Se

U.S.A. ONLY
Art & Craft
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Conforms to ASTM D-4236
NO HEALTH
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ACRYLICOS VALLE
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N° R.F.

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135

843 CORK BROWN

No tóxico, no contiene
Non toxic,
does not contain:
As, Cd, Co, Cr, Hg,
Pb, Sb, Se

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HEALTH
LABEL
Conforms to ASTM D-4236
NO HEALTH
LABELLING REQUIRED

17 ml

875 BEIGE BROWN

The face gets a coat of flat flesh colour, which is left to dry completely

Here the faces have received their 4th coat of paint in order to get an even tone. All very wet coats. 60%paint 40% water

I now add a very wet coat of wash made up of the cork brown. 25% paint 75% water. This is painted all over quite generously and it comes out quite subtle to slightly show the depth of detail once it has dried.

A second coat follows, with the same ratio and wetness. This is allowed to dry fully.

I now add coat of beige brown wash, which gives a much better depth of shadow. Only painted in deepest shadow and recessed areas.
20% paint 80% water.

After the washes.

I start to highlight using flat flesh and white.

This picture is just flat flesh 20% paint 80 % water

This is white mixed in with flesh 90% flesh 10%white also wet. Same ratio as before.

Highlights can be added to again and again until happy. Adding slightly more white and to the highest raised points to the face, the nose, the cheeks and upper lips.
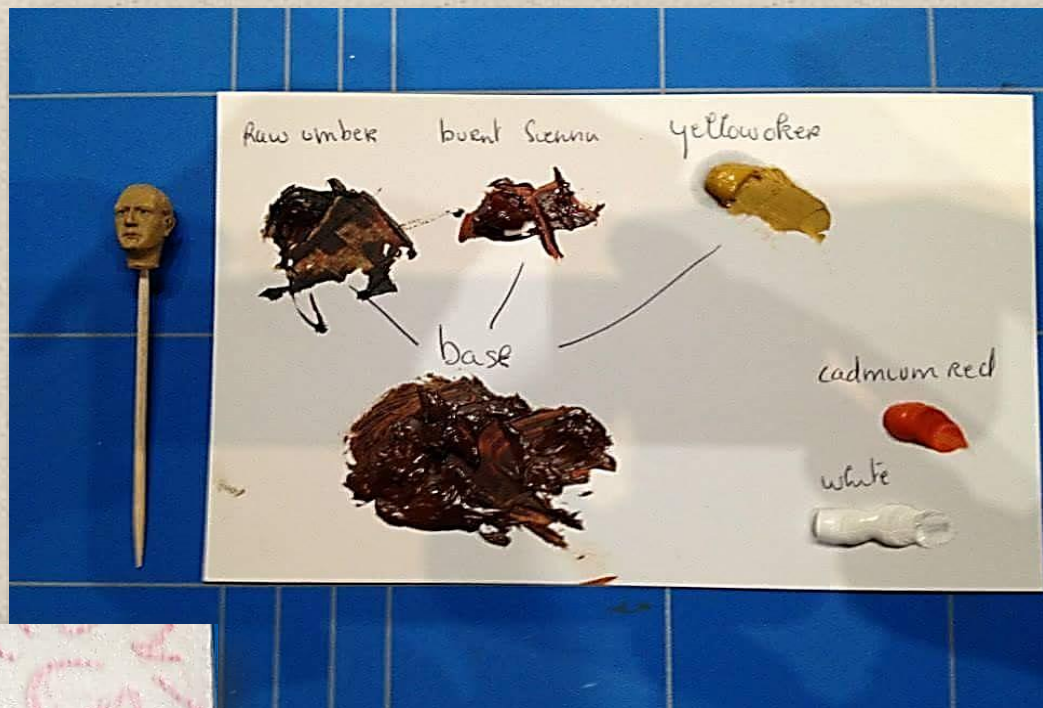

Once happy with the highlights I go back with a wet wash of beige brown – 80% water 20 % paint, to the deepest shadow to tie together or an all over cork brown wash.

OIL PAINTS

Mix the Burnt Sienna, Raw Umber, and Yellow Ochre to form your base colour.

Cover the entire face with the base colour.

(Below) With a flat brush, remove the excess paint until shading on the face starts to emerge. Repeat the process as needed, remembering to clean the brush frequently by wiping it on a paper towel. Avoid using thinners to clean your brush, as they will break down any paint you've already applied.

Apply Raw Umber to areas with facial hair. Blend the Raw Umber into surrounding areas of the face.

Apply White to raised areas, like the eyebrows, nose, cheek bones, and ears. Blend the White into the surrounding areas of the face.
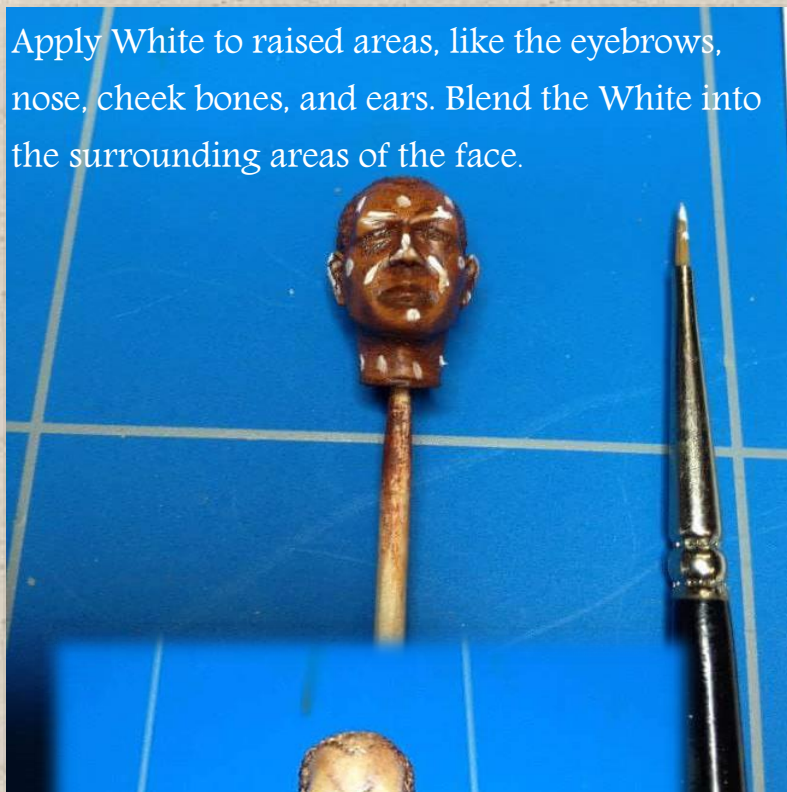
Apply Cadmium Red to the cheeks and bottom lip. Once again, blend the Cadmium Red into the surrounding areas of the face.

Finished face. This face has taken approx 35-45 minutes to complete. Here, the hair and eyes have also been completed. The hair was painted with various oils and the eyes were painted with acrylics.

Add realistic hair to your model
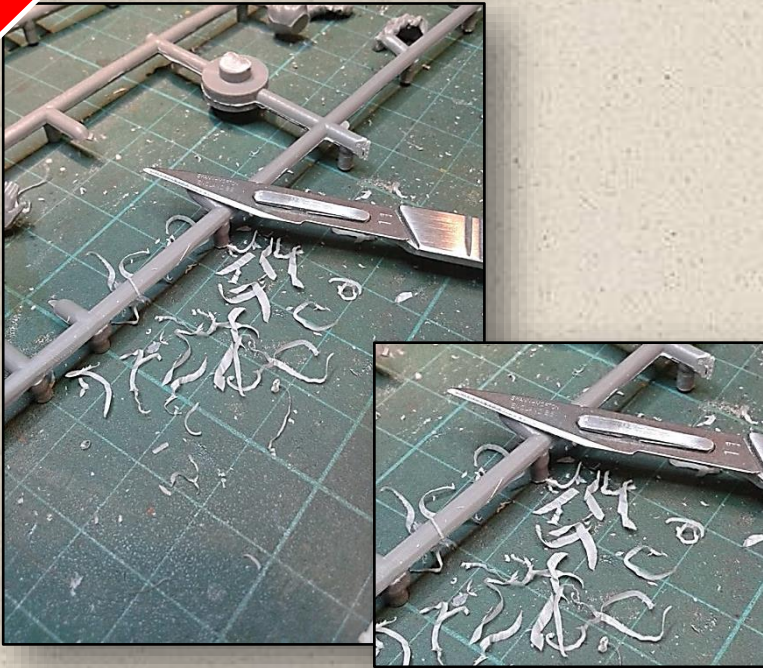
From a piece of sprue, lightly scrape
off some plastic with a scalpel.

You'll need good old Tamiya Extra
Thin...

Use the brush provided with the
TET to place your 'curls' of sprue
on the model.

Leave to dry overnight, then prime.

Quick, but not dirty technique to paint 1/35 figurines

A model maker sometimes hesitates to add figurines to accompany his model, at the risk of downgrading the whole. The painting of the figurines is then perceived at best, as a waste of time. While there are excellent tutorials on the net, in specialized productions and magazines, I will try to show you the way I do these paint jobs to obtain an acceptable result without spending too much time on painting.

When I returned to this hobby after 35 years, I decided to use acrylic in place of oils as the drying time is much faster. As I prefer to work in an iterative way, that is to say that the end result is achieved by a number of separate processes converging in order to achieve that result, and motivate myself through mini-projects, the immediacy offered by acrylics suits me well, but imposes an adaptation to the way I painted in my youth.

Here we go…

Step 1. The preparation of the figurine.

The bare figurine, mounted, sanded and fixed on a support (for example a rod that will allow painting without having to touch it) will receive a primer coat (with airbrush or bomb) with a colour close to the one that will be seen most on the finished figure, in this case I am busy painting a dozen DAK figurines so I used a sand-coloured tint. Avoid applying this coat with a brush so as not to drown out the fine details of the model.

Step 2. Blocking in.

Each part of the figure will receive its basic colour – flesh for the visible parts of the body, sand/green for the uniform on the jacket and trousers, brown for shoes, etc.

Step 3. First and only dry-brush.

Why use this technique which, ultimately, will have no visible effect? Simply to make your life easier! With a flat brush use a light tint, for example a beige, and 'lightly' (not to add too much paint) brush the figurine after having previously dried the brush on paper. The objective is to make visible the most significant details which will greatly help us in the coming steps.

Step 4. The Black Line or 'Comic Style'.

We will 'draw' on the figurine all the lines of separation in black using a brush that makes the tip 'well' (I use a 3/0 which has the merit of holding more paint than a 5/0). This black line will mark the strongest shadow areas of the figurine. It's not necessary to be too precise, knowing that certain defects can always be corrected later in the process.

Step 5. The shadows.

With the 3/0 brush, mark the shadow areas with shades slightly darker than the base colours. Marking these areas means following the movement of a crease with the brush, from the most shaded area to the most visible area. It is important to never use too thick a paint mix, but to always dilute the colour until you get something that does not completely cover the shade of the undercoat. This is equally valid for most shadow/light effects in order to achieve a fading effect.

Step 6. The highlight areas.

Again, with the 3/0 brush, we will cut in the most visible areas of the figurine with shades brighter than the base colours. Here, the objective is to mark the counterpart of the shadows – the highlights, but not yet the effects of light. With this step we will be able to rectify some areas of shadows and some black lines.

Step 7. Light effects

This step can be repeated several times until the desired result is achieved. With tints even clearer than the previous stage we will illuminate the seams, the finer details, and so on. One can go so far as to use a very clear tint, quite diluted, and return to the same reliefs several times, in successive filters, to accentuate the effect.

I often start with the face to give life to the figurine and I devote enough time until such point that I feel I've achieved the desired result. It's important for the rest of the story of the diorama, so that's why I'm going to spend a little more time here.

For the eyes, I use a mixture of white and flesh (70:30) in each of the eyes – very little, however. For the irises, I use a sharpened toothpick dipping the point in blue, brown or green paint and then, with a finer point – a black dot ... that's all. The shadows of the face are created with a mixture of flesh base + flat earth + shade flesh, approximately 50:25:25, increasingly diluted for less shady areas (under the chin, the nose, under the eyebrows) and less diluted for demarcations (collar of the shirt, behind and inside the ears, nostrils, the edge of the hair and hat/helmet). A base flesh colour is diluted to 'prepare' the areas of light and rectify the above shadows. This is an important step for me to verify that I am on the right track. For the light effects let's work again in successive steps, with diluted paint, and gradually bring light with tints that are progressively clearer (but without ever reaching white) but on less and lesser areas of the face.

We will finish with the lightest shade on the edges/lobes of the ears, the ridge of the nose, the tops of the nostrils and possibly the forehead if it is clear. Everything will depend on whether you want faces marked or not, it is ultimately a matter of taste, the main thing is to give an expression – a life to your figurine.

That's it! I probably forgot a few details, but the goal was to show you the way I avoid spending days on just one 1/35 figure. Basically, depending on the number of details (equipment, weapons, etc.), over the course of a day, with some pauses, an acceptable result might be expected. This technique is valid for 1/35 scale figurines, painted with acrylic. Smaller scales will certainly require some more shadows to give more depths.

Please find, here after, some pictures of the diorama 'Benzin' with the figure featured in this tutorial in place:

In the following guide for painting faces please note all the acrylics are from **Vallejo**

341 – Flesh Base
342 – Highlight Flesh
343 – Shadows Flesh

Step 1: The head is place on a spike (I know that's barbarian)

Step 2: A light base colour, usually light brown, is applied with spray or airbrush

Step 3: 80% White & 20% Flesh Base for the eyes

Step 4: Iris is filled in with Dark Prussia Blue with a black dot in the center and a light blue one on the left

Step 5: 1st "mask" with Flesh Base

Step 6: Darkest shadows (50/50 Flat Brown & Shadows Flesh) – Nostrils, inside of the ears, the lines of helmets, caps, etc.

Step 7: Blending of shadows and mask with diluted mix of Flesh Base & Shadows Flesh (50/50)

Step 8: Blending with diluted Flesh Base

Step 9: Highlights with mix 50/50 of Flesh Base & Highlight Flesh:

Step 10: 2nd highlights with diluted mix 70/30 of Flesh Base & Highlight Flesh

Step 11 & 12: Diluted mix 30/70 of Flesh Base & Shadows Flesh on the sides of the face and application of black on headsets and the helmet borders in order to see if the result is conclusive, and to my liking.
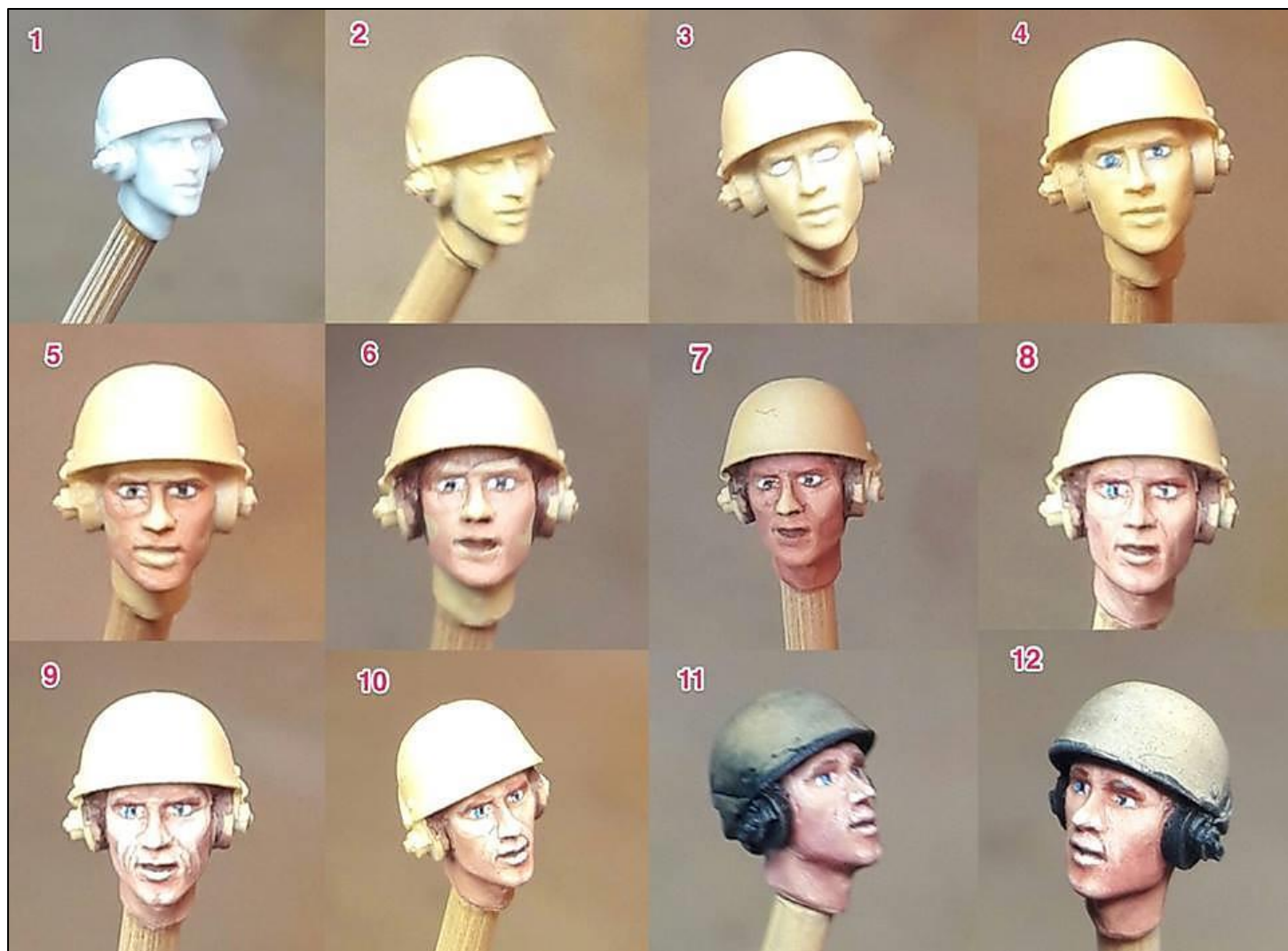
Adding a wash to a figure

Step 1. A basic 1/35 scale figure and great start for a new modeller. Most of these figures are available from manufactures like Tamiya for a reasonable price and a wide range of poses. I have used a WW2 American Tank crew member, and base coated in khaki paint (base coat is just a term used to give a model an undercoat so the additional coats of paint 'stick' to the subject).

The next step was to give 'him' a coat of dark brown (I am only painting his bottom half so you can see the before and after pictures) you could use any brown , khaki or grey depending on the uniform.

Once the paint has dried the fun part begins, you can now start to give the subject different washes (wash is a term used to apply a very thin coat of paint to a model so that the paint just settles in the creases or folds to enhance shadows). I gave him a darker shade of brown wash and allowed it to dry. Once dried, you can always add another wash. A quick guide is have a look at what you're wearing – i.e. a coloured tee shirt, jeans etc. and notice the different colours that the creases create (if you have a grey t shirt some parts could look dark grey or even white).

You now can start to weather the uniform (this means making the uniform/clothes look real). Again look at what you're wearing, and try to imagine the tops of the creases and folds). I use the base coat of brown and lighten it with white or even just use a light brown. If you look for an old flat 'stubbly' brush that you think is ready for the bin, this is perfect as you need the bristles just to touch the tops of the subject you're painting . Just dip the tip of the old brush into the paint then wipe most of it off on a piece of kitchen roll or rag so when you look at it, it seems no paint remains on the brush. To weather the clothes, I use an up and down and right to left sweeping motion to apply a VERY small amount of paint to the tops of the trousers, but remember it is easier to add more weathering rather than trying to remove it. Once you are happy with the first phase of weathering – let it dry

The next stage is to add the 'muck and dust etc'. This can be done by doing the same method of weathering but using greys and very light browns , but please remember that less paint is better and not to overdo it . Slowly build the weathering layers up and if you're not happy with the progress just have a look at any item of clothing you see whether it is on TV , in your wardrobe or outside and use your imagination . It's a HOBBY so enjoy
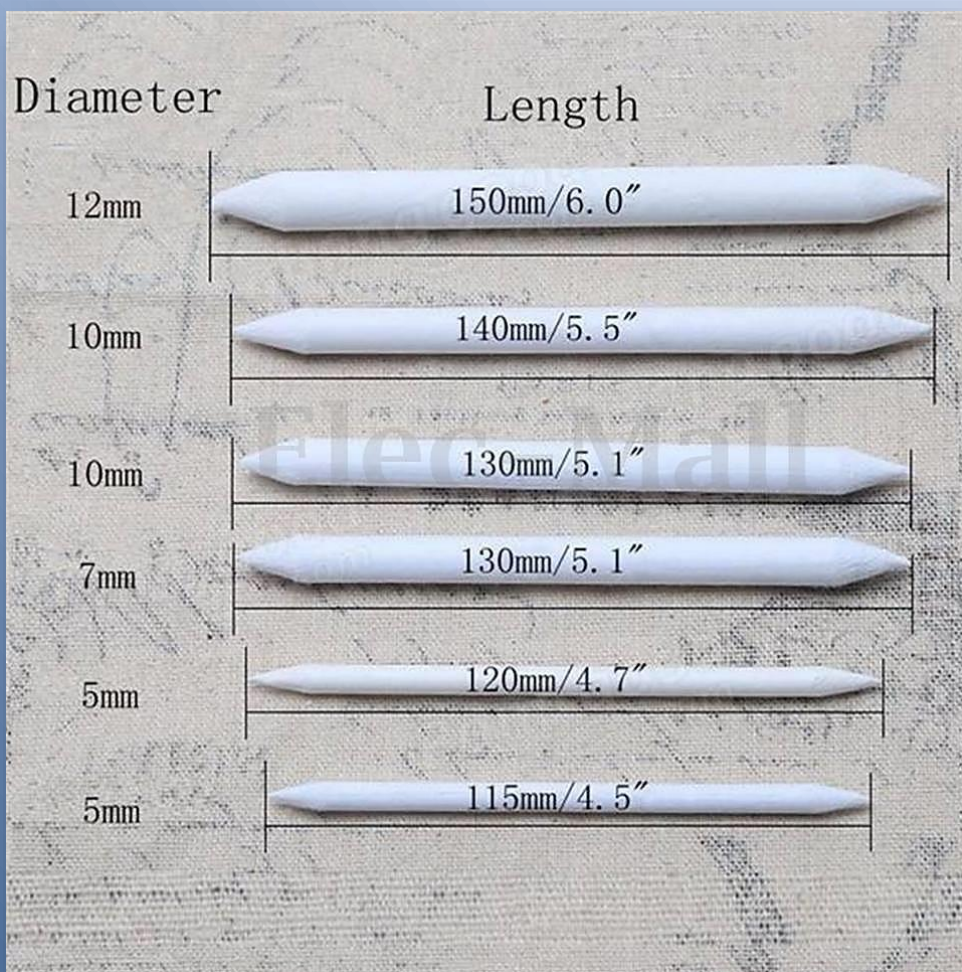
Add a range of graphite and blending stumps to your tool box.

Graphite can be used to create gunmetal by using your fingers to rub over flat black base on guns. The sheen from your skin oils increases the look.

Graphite can also be used on cannon and howitzer breach slides, canopy tracks and rails, worn metal on wings, fuselage and tank hulls, Engines and many other uses.

It's dirt cheap and using different grades will give you different levels of shine.

Blending stumps come in many sizes and are also dirt cheap. They are perfect as graphite applicators and for buffing. (Available in art stores).

Diameter	Length
12mm	150mm/6. 0″
10mm	140mm/5. 5″
10mm	130mm/5. 1″
7mm	130mm/5. 1″
5mm	120mm/4. 7″
5mm	115mm/4. 5″

JOIN

The rest of the published guys.
Submissions to
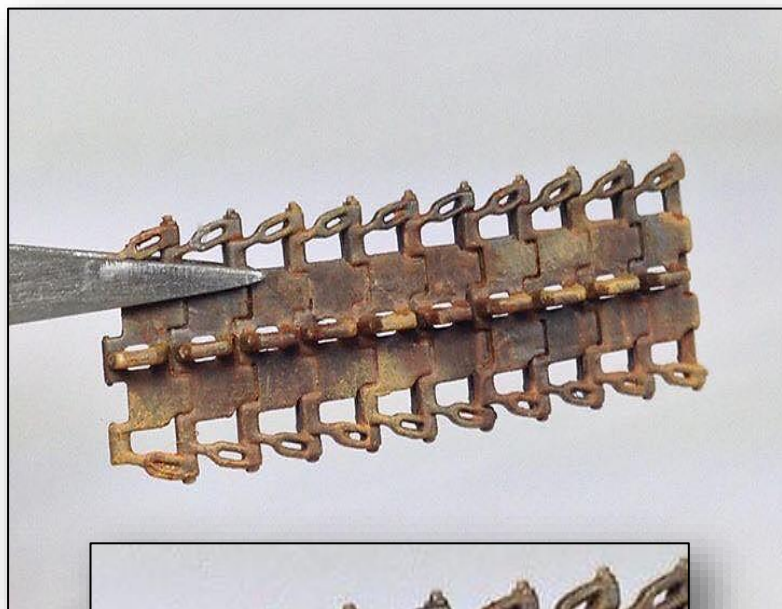magteam123@gmail.com

WEATHERING

Weathering Tracks, by David Reader

I have found the following method for rusting spare track sections to be quite effective, as it gives a more random selection of rust tones without a monotone rust effect application. The spare track section in this example is composed of Dragon's individual track links for mounting on the hull of a late production StuG. IV.

The products used for this finished were all acrylic based and include these Vallejo products: 1) 'German camouflage black brown' as the base paint colour, 2) 'Dark rust' wash, 3) 'Light rust' wash (all acrylic based), 4) 'Fresh rust' pigment, and 5) Tamiya weathering palette 'orange rust'.

I started the process by airbrushing a thin coat of acrylic primer, followed by a coat of German camo black brown as the base colour of the tracks. This produces an acceptable dark track colour, staying away from the fresh steel colour where weathered spare track sections are desired. I then started on the rusting effects by brush by first applying two light overall coats of dark rust wash, followed by the light rust wash added in selected locations. I didn't necessarily wait for one wash to dry before adding the second, thereby allowing some hue mixture. Next I mixed a small amount of fresh rust pigment with a matte medium pigment fixer and applied small amounts by brush on areas of selected track links instead of a general application. This help make a more random arrangement of rust hues. Finally, I used pigment from Tamiya's weathering palette, applying it with the applicator provided, again onto certain areas of the tracks. I then when back and touched up a little here and there with the fresh rust pigment mix to lighten certain track links a bit more. Note in the track photos that the darker base colour of the track links still shows through in several locations, again stressing the uneven nature of a section of rusting spare track links.

Burnishing Tracks

Now I see a lot of posts from people who are disappointed with their burnishing liquid results. These were done using **UMP Burnishing Fluid**. But before I put the tracks into the liquid, I always wash them in hot soapy water. I use any washing up liquid designed for plates etc. Give them a good scrub with a toothbrush, and then rinse off with hot water. I pat them dry with kitchen towel, followed by a blast with the hairdryer just to remove any water that's stuck in crevices etc. I mix the UMP 50/50 with water in a tray, stir it well and ensure it's deep enough to cover the tracks. The tracks are then immersed into the mixture and left for 4 minutes. I then scrub them in the mixture with a toothbrush to ensure the liquid is getting everywhere it needs to. I then leave for another 4 minutes. Remove the tracks and rinse. As you can see I've got a nice even finish without any big glaring white metal patches.

Weathering Tracks

Firstly, I used burnishing fluid on the tracks to get a nice even base to work from. Once that was completed I gave the tracks a wash of dark brown. While the wash was still wet I used the following pigments, (pictures overleaf) starting with the darkest first: *Raw Umber, Raw Sienna, and Light Yellow Ochre.* I just dip a dry brush into the pigments and work my way along the tracks, tapping the brush. I'm not looking for an even coat, as mud etc. doesn't stick evenly to everything. Using a stippling action with a stiff brush, I go along each track working in the pigments. Do this for each colour. I also add a tiny dusting of track rust pigment along with the last coating of pigment – and I mean a tiny amount! It's just to add contrast, that's all. Before the tracks are dry, wipe along the contact surface where the tracks would meet the road surfaces, and set the tracks aside to dry. The pigments will appear a lot lighter once dry and you can then see if anywhere needs a touch up.
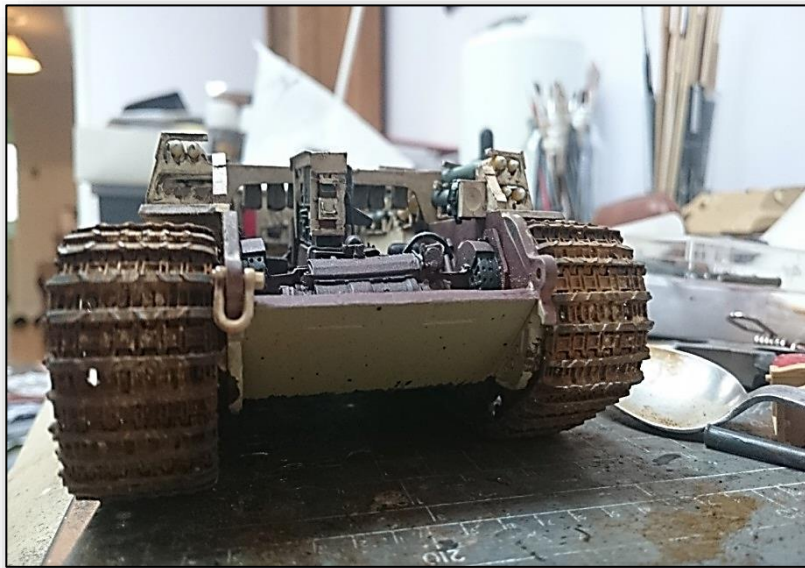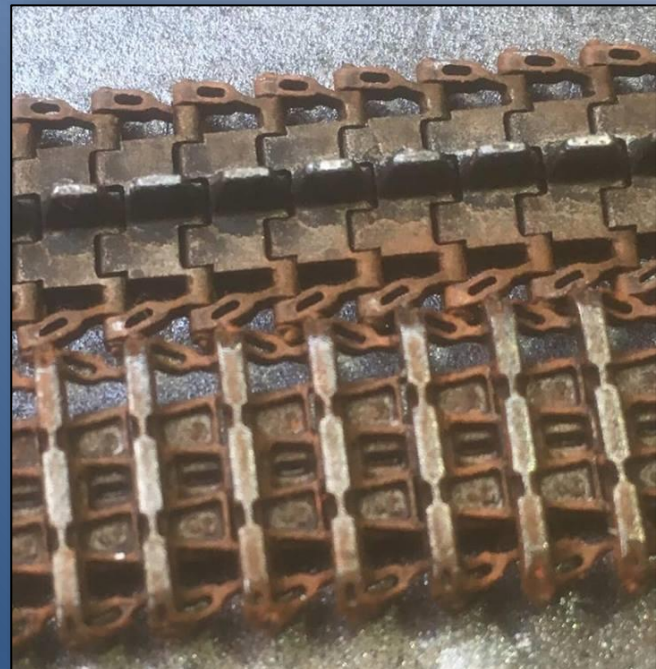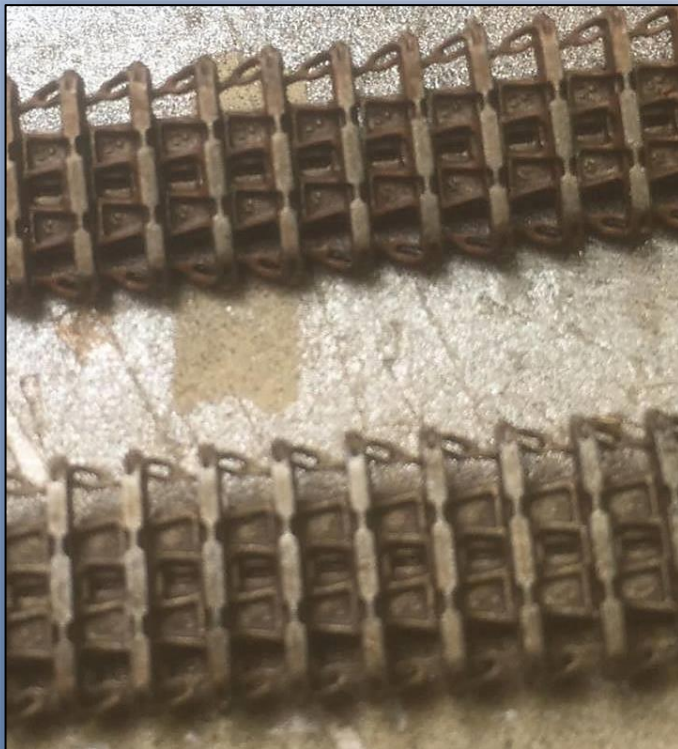
Once you're happy with the effect, use a steel metal colour on your finger to rub on the high contact points where the tracks meet the road. That's it really. It's just a question of time and patience, as you don't see the full effects until they dry and the colours come through. I've still got the inner track to do yet but I'll do that once I fix the tracks on. I'll add dust before I fix them though. The weathering will blend the wear marks where the wheels rub the tracks (they're a bit stark at the moment). And there you go. Hope this helps you.

EARTH PIGMENT
25 Grams
BURNT UMBER
John Penny Restoration Ltd
Unit 10, City Indutrial Park, Southern Road
Southampton SO15 1HA   www.jpennyltd.co.uk

EARTH PIGMENT
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RAW UMBER
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25 Grams
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Southampton SO15 1HA   www.jpennyltd.co.uk

L Weathering Friulmodel Tracks, by Paul Black

Here's a short guide as to how I weather tracks , I've used Friulmodel tracks here, but it works the same with plastic individual track links and the kit supplied type, first step is to prime the completed tracks. I used Matt black as I find it better for the metallic colour to follow. Next up is a coat of the basic track colour, I mix this from two Vallejo colours, 75% oily steel & 25% metallic grey. This was sprayed on but works just as well with a paint brush. When dry, a coat of matt varnish is applied. I used Humbrol, and this stops the next few steps eating into the paint that's been applied previously. A general wash is applied next, using AK Interactive Track Wash applied with a wide flat brush. You don't have to be too particular with this as it's thin & flows into details easily. When that dried off, I then applied some Citadel Ryza Rust. This is like a paste – you paint it onto the high points of the tracks in a dry brushing style and it goes on bright orange, but don't worry! As you brush it over the tracks a few times it darkens down. Stop when you reach the look you're after. I work on 5 or 6 links at a time to avoid it drying out.

Then, when your'e happy with the look – let the whole lot dry out, then rub some smooth wet & dry sandpaper gently over the track treads until the base colour shows through (these are the worn areas of the track that hit the ground). You can also add rubber marks on the insides of the tracks where the tyres are in contact. This isn't really necessary but it's another step if you fancy giving it a go. I then rub some black Mig pigment on with a cotton bud to the areas that the wheels hit. A final step is to rub some gun metal pigment – again by Mig, over the track high points. This gives any exposed areas a metallic look I just dip my finger into the pigment & rub it over the track high points, and that's it.

Hairspray chipping technique by Tom Rijnberg

The easiest, most fool-proof way of creating depth and realistic wear and tear in your model.

Although easy on paper, this technique still seems to intimidate some modellers. As you are starting out in the hobby, one of your main fears is messing up a model. Follow this guide on hairspray chipping, take the plunge, and revel in the fact that you've just mastered another very handy and versatile technique!

Step 1: Planning:

To successfully apply this technique, you need to determine some factors first. The number one factor is: what do I want to chip? Is it merely the outer layer of paint, to reveal the primer, or even the bare metal underneath? Do I want multiple layers of chips to show the life my model has lived, being sprayed and resprayed over the years? Or do I want to use this technique to imitate a winter whitewash camouflage pattern? All is possible, but to achieve your specific goal you need to plan.

My first dabble with hairspray resulted in this winterised Polish T-60

Chipping colour:

Tarnished metal and wooden planks. Different media require different undercoats

Note that I've primed these models first in a grey primer. Undercoat your model in the colour you want your most heavy chips to be in. I went with red brown, but you can use black or another shade of brown/grey. Make sure to paint surfaces that are of a different medium, such as the wood on these hulls, in the appropriate colour as well.

1) Areas of chipping:

As you can see here, I did not achieve full coverage with this layer. That's fine. You don't even need to paint the entire model, but instead concentrate on the areas you want to chip. Just make sure to document where these areas are. If you are like me and you don't want to think too much, just spray the entire surface with a decent coat of paint.

2) What hairspray to use?

Simple really. The cheapest nameless rubbish you can find. Mig Jimenez's argument against using hairspray is that it's hard to replicate from modeller to modeller as different countries sell different hairsprays. While technically true, buying the cheapest hairspray you can find negates any problems 'proprietary' hairsprays might give.

You could opt to buy some 'chipping fluid', as most major model paint brands stock these nowadays. The technique described in this article is the same for those products. That said, if like me you are a fan of the old school ways, and like to save some cash here and there, cheap no-name hairspray is the way to go.

Simple 'euroshopper' hairspray works best
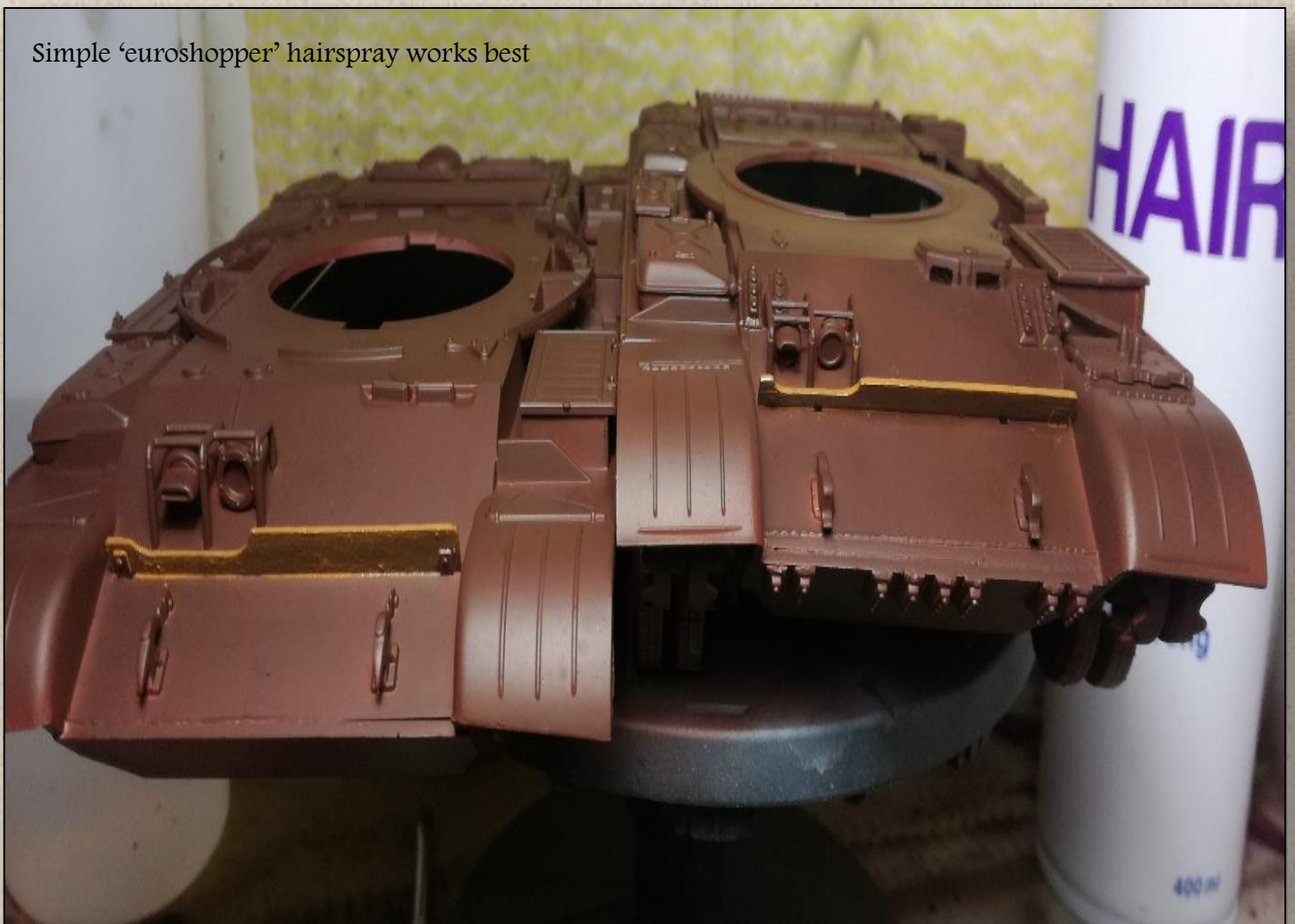
Step 2: Applying hairspray

This step really is as simple as it sounds – really! But there is one thing to keep in mind. More = more, meaning the more hairspray you apply the easier it will lift the paint and the bigger chips you will end up with. Therefore, be liberal with your application, but don't overdo it.

There are three ways of application, with the first being the easiest. Straight from the can. Spray your model with short, controlled bursts, just like you would spray paint. You can come back later and give it a second once-over to make sure you got everything covered.
The second method is to decant the hairspray and apply it using your airbrush. Personally, I'd say this is just an extra step in the process, with more clean-up, but if you want that extra control this is the way to go.
The third method is decanting the hairspray and applying it with a paintbrush. Again, I wouldn't do this as it makes the process unnecessarily time consuming.

Hairspray will stink up the place, so do make sure to crack open a window.

The Tamiya T-62 is glistening from its coat of hairspray. The T-55 already has its basecoat at this point.

Step 3: Applying the basecoats

Let the hairspray dry fully. I let mine dry overnight. Once dry apply your basecoat – Ammo by Mig, Sand Yellow in my case. As we are going for a multi-layered chipping effect in this example there will be a lot of drying time involved. After the initial basecoat is dry you can apply another coat of hairspray, and let this dry as well. Once dried up, apply your camo scheme like you normally would. Remember, the thinner you apply your coat of paint, the easier it'll chip.

Step 4: Chip ahoy!

Once your paintwork is reasonably dry, grab a fairly stiff brush (one you can afford to bust up) and some water from the tap. Apply the water with the brush, working in small sections, and attack the paint with the brush in a jabbing motion. Work slowly, in a controlled fashion, but keep the chipping random and in logical spots.

Move around the model, chipping through the layers of camo colours until the undercoat is visible too. Use a toothpick for longer scratches. Again, work slowly. You can always go back and add more, but once chipped – it's chipped. Look for logical areas: fenders, grab handles, toolboxes, rivets, hatches etc. In a way you can treat this technique as a form of 'reverse' dry brushing.

This model took me about 15 minutes to fully chip up. In the case of a winter camouflage as shown above, simply paint up the model as usual and spray the hairspray over the finished paintwork before applying a (quite thinned down) layer of white paint. Let it all dry again and have at it with the brush, same as before, keeping in mind the logical places of wear and tear. Of course you could first chip up your model as shown in this article, and then apply a whitewash on top. The only limiting factors are your imagination and your daring, so get cracking!

I'd like to show you how I did the effects for rain, grime and rust streaking. I'm far from an expert on this but here goes.

First, using a 00 brush I add marks to where I think rain, grime or rust streaks would form. This is allowed to sit for 5mins.

Next dip a flat brush in thinners, wipe off any excess, then draw the brush down to create streaking lines. These lines can be short, long, thick – whatever effect you are trying to achieve.

Keep cleaning your brush with thinners and wiping the excess off, to remove any excess streaking.

clean brush with spirits

When painting barrels, I always follow the same rules to begin with.

I start off by priming the piece with grey primer; I usually use Halfords Grey as I find it suits my requirements, but any primer will do.

This is left to dry completely, overnight if possible.

Once the painting begins I use one of two approaches.

In the **first** example I began by painting the primed barrels with DOA German Grey, using a paintbrush, although using an airbrush would be as good. Our group sponsor supplies this brand which I found gave a really good result.

Next I dry brush **Tamiya** *chrome silver* over the barrels. I intentionally add this to areas where wear and tear would occur naturally, like the bottoms of the barrels and on the pumps.

Using a stiff bristled brush, I dry brush **Citadel** *Ryza Rust* over the barrels, I also use a stippling motion to 'spot' the rust in certain areas for a different effect.

As soon as the previous layer is completely dry, I use the same dry brush and stippling approach with **Tamiya** *NATO Brown.*

I continue to add layers of the rust colours until satisfied with the overall look of the barrel.

The **second** technique I employ is as follows:

The barrel is primed as before and left to dry completely.

I use Tamiya XF1 for a black undercoat.

Tamiya Olive Green is then stippled on as an overcoat. You could use the hairspray technique here but I found this way much quicker. If I was doing a larger project then I would definitely use the hairspray method…mentioned in the magazine in David Reader's guide to paint chipping.

Once again I use Citadel Orange for a rust colour, and stipple this all over the barrels and also on tops of them for added interest.

The final touch here is to paint a thin layer of Humbrol Enamel Clear Red over the barrel, which gives a lovely red hue to the piece and helps to make the other colours blend beautifully.

Quick and Easy Fuel barrels by Jaroslav Matejcek

From left to right...

1. Base paint **Vallejo** *field grey*

2. Base chipping with sponge mix 50/50 *field grey* and *white*

3. Chipping with **Vallejo** *German camo brown*

4. Oil dot fading with Ammo Oilbrushers

5. Final steps with rust streaking, pigments and fuel stains. I used a soft pencil on the edges

for metal effect.

Simple CA (super glue) Applicator.

Take a short length of fuse wire or similar, fold in half, twist end around a toothpick to form a small loop at one end then snip the loop with side cutters. Pour a small puddle of CA onto an old bottle cap or whatever, dip loop of wire applicator then apply to desired part.

Remember to first wipe around and on the area where CA is to be applied to remove skin oil traces and preferably arrange a light constant airflow across drying piece. This will help avoid 'bloom' which is the vapours settling on skin oil traces and crystallizing.

Colour Mixing

When mixing colours always begin with the lightest colour first.
For example, if you are making a light blue, start with white and slowly add blue.
If making a green then start with your yellow and slowly add the desired blue.
This helps avoid waste by making a far bigger mix than you wanted.

Fingerprints

To help avoid leaving skin oils on a model or figure, preventing paint taking properly or just leaving marks have a pump pack of hospital alcohol gel hand wash on your bench and use often.
Its dirt cheap and evaporates fast and kills skin oils.

LED & LIGHTING

Simple electronics in the context of lighting models.
Rick Fornalski
Starship Model Lighting & Electronics Group
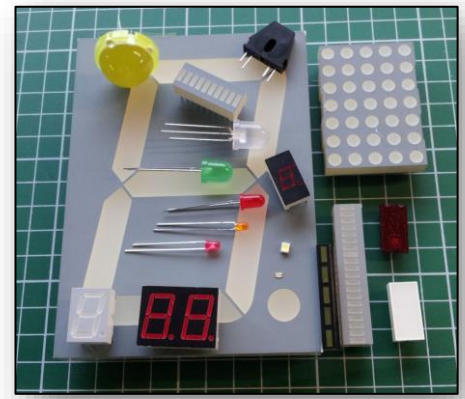
1) The right way.
First, there is NO right way, one way or any 'way' of lighting a model.
Each build is, and unless you are building multiple identical models, always will be, fairly unique in the way you lay out the LED's or whatever lighting medium you chose to use. The light blocking technique may differ and the end result will have subtle variances with any other identical model built by someone else and THAT is what makes lighting models so much fun.

The Basics.

LED's.
Light Emitting Diodes now come in all shapes, sizes and colours.
They operate in exactly the same way in that a small current causes the light emitting semiconductor material to emit light of a particular wavelength (colour).
The amount of light (brightness) is related to the amount of current.
Because of how the eye perceives brightness, doubling the current that creates light in an LED is not perceived as being twice as bright.
This is one of the factoids that will affect your perception of the brightness of an LED in a model. Doubling the current in an LED is NOT perceived as a doubling of the light output.
An LED is a creation of particle physicists, as are transistors and most other semiconductors.

I mention this because the LED, as we are discussing LED's specifically, exhibit a voltage drop across them when current is passing that is governed by the laws of physics and so, another small factoid is that not all LED's are the same though they all are identical in that you MUST limit the amount of current that you allow to pass through them in order to…
a) make then light at a desired brightness and
b) not to self-destruct if you provide more voltage inadvertently!
This image shows a small selection of filament lamps compared to a 3mm LED together with the circuit diagram of the part.
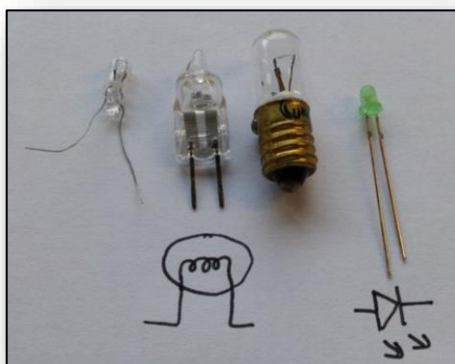

The wire ended lamp is still popular in railway modelling as, when under run, these produce a nice warm glow that LED's cannot, as yet, reproduce.

Just so we can get them out of the way now.
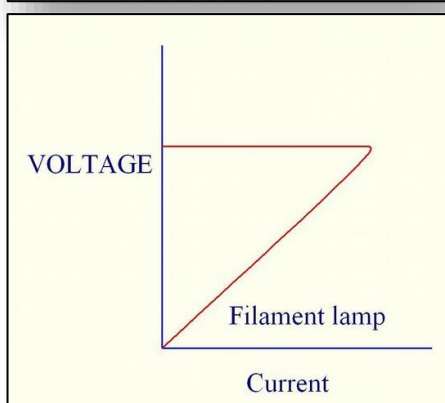
This graph shows the current (in red) through a filament lamp as the applied voltage across it is brought up from zero, through the nominal operating voltage and above until the filament finally fuses, and the current drops to zero leaving the voltage across the filament supports.

The lamp does indeed get brighter as current increases. Many photographic filament lamps are simply massively over run lower voltage lamps with a considerably reduced lifespan. This is an idealised (not 100% accurate) representation of a current limited, say, a white, LED.
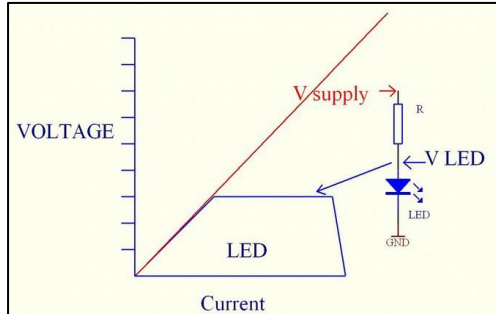
The applied voltage to the top of the resistor/LED network is shown in RED. This is shown rising from zero and the LED current rises accordingly.
Remember this is an idealised diagram as there are things going on beyond the scope of this very basic document.
In BLUE, you see the Voltage across the LED.
Note how it stabilises at, in this case, around 3.1v which is typical for White/Blue/Pink LED's.

This stabilisation is NOT as perfect as the diagram shows. (*idealised*, remember?) but it's close enough. 'Excess' voltage is lost across the resistor and in all cases, the LED voltage plus the resistor voltage equals the supply voltage.
As the applied voltage increases, the LED current also increases, as does the brightness but remember that a doubling of the current is not perceived by the eye as a doubling of light output.
At some point, as we increase the supply voltage, the current passes 20mA.
20mA is the current used by manufacturers to allow YOU, the end user, to distinguish between many LED's that may be more or less efficient at producing visible light.
It is not, and I repeat NOT a specified minimum (or maximum) current for the LED, simply a value that allows for industry comparisons.
In fact, if 10mA is bright enough, then the increase of light from 10 to 20mA is almost imperceptible. This also represents a halving of the battery life of any local supply you may choose to use.
As the current rises still further, light output doesn't increase but the radiated HEAT from the device does, The colour of the light changes as the LED material starts to break down until eventually, the device fails and possibly goes short circuit, reducing the voltage across the device to near zero, LOTS of current flows through the resistor and you have killed the LED forever.

How do LED's differ from filament lamps?

Filament lamps, or bulbs, are manufactured to glow at a specific brilliance when a specific voltage is applied across them. So, you have 1.5v, 3v, 6v, 12v 24v, 55v, 110v and 240 volt lamps.
A 12v, 1 watt hand lamp bulb is dimmer, for instance, than a 12v 60 watt automotive headlamp bulb.
Running a 12 volt lamp at, say 6v will certainly produce a dimmer light output but most notably, the colour of the light changes from a brilliant white to a dull orange and as the voltage and current drop further, the wire stops glowing altogether.
An LED, let us discuss a WHITE led, will exhibit a specified light output, expressed in milli Candelas at 20mA.

20mA is historically used as a reference current so that YOU, the end user can, for instance, chose the brighter of several white LED's when driven with 20mA.
There is NO reason why you cannot run the LED at considerably less power than 20mA.
In fact, given three LED's with different light outputs at 20mA, you can be assured that the brighter of the three will still be the brightest if you chose to run the same test on all three LED's with, say, 1mA of test current.
Without reproducing a graph for further explanation, simply accept that an LED will continue to produce light proportional to the current passing through the LED as long as there is sufficient voltage to drive the quantum physics.

A Series circuit with LED's

This is a typical LED arrangement.
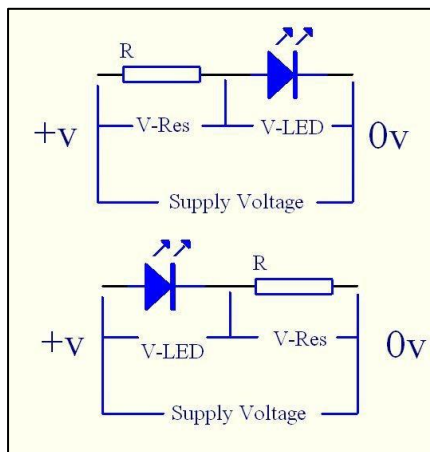
V-Res is the voltage developed across the resistor which is performing the current limiting function, and V-LED is the voltage across the LED
The sum of the voltages across the LED and resistor will add up to the Supply Voltage
This too is a series circuit and as far as the current in the circuit is concerned, is IDENTICAL to the first circuit in that the current and ALL related voltages remain the same. It is of no matter in what order you wire the LED, or LED's if there are more than one (more on series LED's later) and the resistor (you can use more than one resistor, though one is typical.

The ONLY important factor is that the LED MUST be the right way round for it to create light.
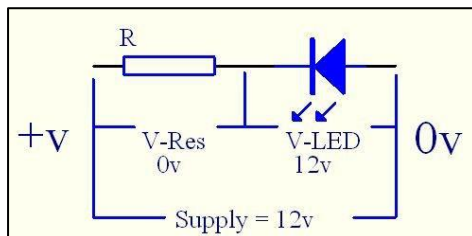
Note that THIS circuit is wired incorrectly in that the LED 'arrow' is NOT pointing in the direction of conventional current flow, Positive to Negative.
Note the voltages around the circuit.
LED's almost never 'fail' in an open circuit so if you ever see a high voltage across an LED, it is almost certainly wired up backwards.

Because the LED is not conducting, it is therefore not creating any light and it is blocking any current flow and so there is NO voltage dropped across the resistor and all of the supply voltage appears across the LED, which, because it is a diode first, (which just happens to create light second), it remains PERFECTLY SAFE and provided you do not exceed the rated reverse voltage of the diode, NO harm will come to the diode or driving circuitry. (you have to feel a right Charlie, but it will pass)

The LED Current Limiting Resistor.

Why it is vital and how to calculate it.
When an LED (or any diode) is conducting, it exhibits a 'forward voltage drop', that is, a small voltage is 'lost' across the diode.
A silicon rectifier diode exhibits a forward voltage drop of around 600-700mV.
Other diodes exhibit a "Vf" of 200-300mV.

A LIGHT Emitting Diode will exhibit a Vf of around 3.7v in a white LED, and 1.7v in a Red LED and around 2v in a green LED.

Other colours are available and each has a slightly different "Vf" caused by the physics of manufacture and operation.

We can do nothing about this voltage OTHER than to accept it exists AND also accept that the LED will TRY to keep its Vf constant.

As current through the LED is increased, the Vf will try to remain constant and the LED will glow brighter until the excess current is dissipated as heat and the physics break down, the colour of the LED changes dramatically and the LED eventually either dies a death or is so severely damaged that light output and efficiency is reduced dramatically and the LED is effectively useless.

To protect the diode and to limit the current that can pass through the LED from the applied supply voltage, we use a resistor.

OHMS LAW.

We must touch on ohms law here IF you are to forever be free of Web Based resistor calculators.

This section is a copy from *'Modeling Electronics Course - Vol.1 – Basics' Resistance, and OHMS Law.*

Because I have always thought in analogous terms and images, I find that memorising formulae can be a bit daunting so I use the following Triangle to assist me.
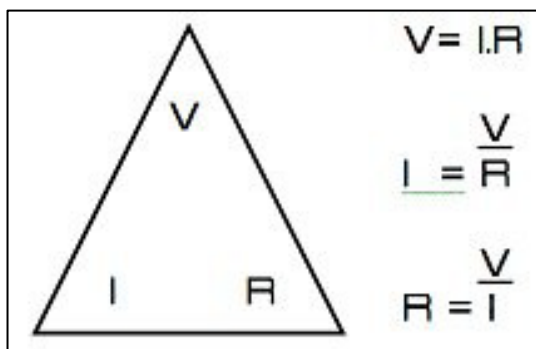
Where V is the Voltage in the circuit,

I is the Current (in Amps) and R is the resistance in ohms.

THIS is where we sometimes hit the first wall if mathematics is not a strong suit, but fear not.

The triangle simply states that V = I.R (the 'dot' means *multiply* as 'x' can get confusing).

Note that I and R are on the same level and we take this as being multiplied together in the triangle.

I = V/R - note that the position of V in the triangle is OVER the R in the triangle.

R = V/I - again, V is OVER the I in the triangle, so, if you remember the triangle, you know ALL THREE of the formula in one hit... Easy?

As we tend NOT to deal in AMPS which is a lot of current, especially if lighting a model, we can work in Milli-Amps (1/000 of an amp) and, as we will rarely work in tens of ohms, we can work in 1,000's of ohms and the triangle remains the same except that 'I' (current) is in Milli Amps and 'R' is in Kilo ohms (thousands of ohms). Provided we keep to kilo ohms, and milliamps, the maths just falls out with the correct answer in volts, k ohms or milliamps.

Let's have a small example to prove this to you.

Consider a 10 volt supply (yes, 10 - it makes the maths easier), and a 1,000 ohm resistor.

The answer will be given in Milli Amps because we are using thousands of ohms, thus

V = 10

I(amps) R(ohms) or I(ma) 1(k) I is unknown and here R is shown in K ohms.
From the triangle, I = V/R

10

----- = 10 Because we are working in K ohms, the answer is in mA, =

10mA

1 (k ohms)

Also…the 'hard way'

10

Current = ----- = 0.01 AMPS = 10mA

1000 (ohms)

Which is a bit more cumbersome as you need to deal in moving decimal points which, if you are not maths savvy, you can get wrong and can end up with an answer hundreds or thousands of times higher or smaller than you should get, so, again..... deal in K ohms, that is JUST the number, NOT the "000" part and the answer will be in Milli Amps.

So, if dealing with a 4700 ohm resistor, just use 4.7 in the triangle and the numeric answer is in Milli amps.

Let's do this again with a 10k resistor and a 10 volt supply and calculate the current...

I = V/R … = 10/10 = 1 mA (dealing in k ohms, gives us an answer in mA)

Just to prove the point, now the 'hard' way.

I = V/R …

10

= ----- = 0.001 A ... a bit less 'friendly', but is actually the same as 1mA.

10,000

The Ohms Law triangle will remain with you forever. It is simpler to remember than a mess of three formulae.

Let us apply OHMS law to some circuits and see how easy it is to calculate the desired resistor value.

We will, in ALL cases, assume a 10mA LED current NOT 20mA.

You are free to recalculate for a barely perceptible increase in brightness that doubling the current gives you. You may care to prove this factoid for yourself. Because, once we light up an LED, we may want to make it brighter or dimmer, there is NO need to deal in excruciatingly accurate numbers as we are limited to a set of fixed resistor values that, unless we want to get slightly deeper into ohms law and learn how to calculate how to create a resistor value from 2 other resistors (resistors in parallel), we are limited in THIS basic tutorial, to series resistors, i.e. adding the values up.

For this example, I shall also use WHITE LED's and a 3 volt "Vf" noting that even if you use 3v for red and green LED's the end result is extremely close so that you could swap red to green to white to pink LED's and not have to recalculate the resistor value assuming that the LED brightness is satisfactory in context.

YES, there will be a change in brightness and YES, the current will change BUT … I am NOT trying to teach you maths to 'n' decimal places, I am showing you the basic concepts and also showing that you do not NEED to exhibit super accuracy as it unlikely that you will even perceive the difference by eye because the percentages of change we are dealing with are small.

Feel free to reproduce the exercises using a 1,7v and a 2v LED and check for yourself that the planet remains in orbit and nobody dies.

So, let's crunch some numbers using a 3v LED and a target current of 10mA.

I chose a supply voltage of 12 volts because, 12 volts is easy to acquire from numerous plug top power supplies.

I DO recommend that, if you are lighting your first model from such a supply, you stick with the same power supply voltage in all your models so that you can mix and match power supplies, because they are all 12 volts, with no fear of damaging anything by accidentally plugging in a 12v PSU to a model designed for 3v.

IF you adopt varying model voltages PLEASE ensure that you use DIFFERENT plug and socket arrangements to mechanically prevent you (or a helper) from doing damage to a loved model.

Consider this simple series circuit.
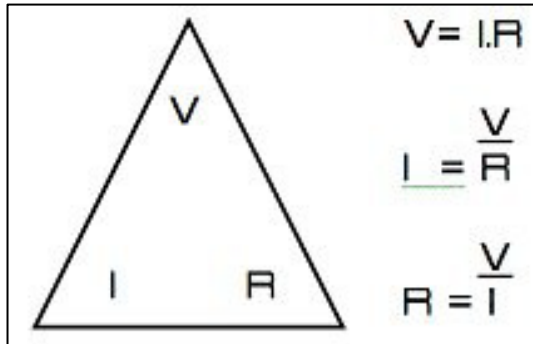
What do we KNOW about the circuit?

We KNOW the LED "Vf" is 3v and that we need to lose

12 - 3 = 9 volts across the resistor when 10mA is flowing.

From Ohms Law (remember the triangle?) we know that

$R = V/I$.

$R = 9 / 10mA$

$R = 9000 / 10$

$R = 900$ ohms.

Now 900 ohms is NOT a preferred value. The closest you can get in a single resistor or 1k OR 820R also, because this is a LEARNING experience, let's calculate EXACTLY the current using 1000 and 820 ohms.

$I = V/R$

$I = 9 / 1,000$ (answer in AMPS)

$I = 9000 / 1000$ (answer in mA)

$I = 9mA$. a 10% reduction.

Now again.

$R = 9 / 820$

$R = 9000 / 820 = 10.97$ mA, a 10% increase.

NOW... the LED voltage MAY be 3.1v or 3.7v depending on the manufacturer so let's repeat the whole deal using a 3.7v diode and 1k and 820 R.

V now = 12 - 3.7 = 8.3v

First the current limiting resistor for 10mA

$R = 8.3 / 10mA$

$R = 8300 / 10$

$R = 830$ ohms. NOT too far off the 820 low value or even the higher value (lower current) 1k ohm.

So, I HOPE you can see that getting anally accurate over LED current, voltages and resistors will get you not much further on that adopting simple rules of thumb and approximations.

Now...

Let us discuss something different but relevant.

Consider we have a model that uses 9 (nine) white LED's; something basic that we MAY need to run off batteries at times.
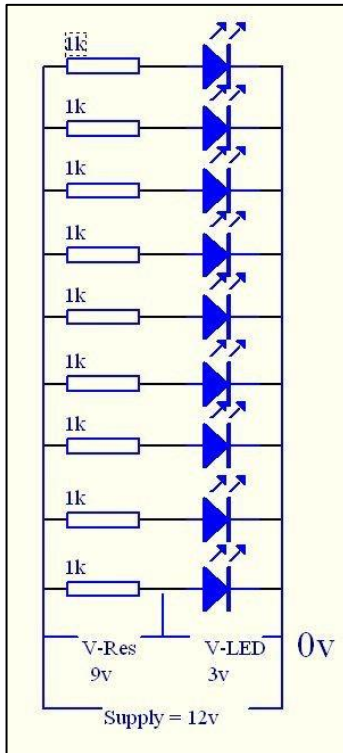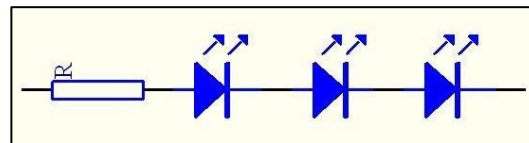

Consider the following 9 LED's as we have calculated above all passing 10mA.
The total current required is 9 x 10mA = 90mA.
As we have a 12 volt supply, we can see that most of this voltage is being simply thrown away across 9 resistors.

Consider now, this circuit. >>>>

This looks interesting but if we examine the circuit, we can KNOW the following.
The Vf for each LED is 3v.
The current we are designing for is 10mA and so 10mA is passing through ALL the LED.s
The voltage across the resistor is now …
12 - 9 = 3v.
Calculating R for 3v at 10mA
R = V / I
R = 3 / 10mA
R = 3000 / 10
R = 300R
NOW, we know that 300 ohms is NOT a preferred value though we COULD make this up from 3 off, 100R resistors BUT that almost defeats a secondary objective of using series LED's in that we can use just one resistor.
The closest preferred value is 270R.
Let's calculate the absolute current using a 270R instead of a 300R.
I = V / R
I = 3 / 270 (in amps)
I = 3000 / 270 (answer in mA)
I = 11.1 mA. Shock horror?... I don't think so.
But wait, these LED's MAY have a Vf of 3,7v
Let's recalculate for 3 x 3.7v
Vr = 12 - 11.1 = 0.9v
R = 0.9 / 10 mA

R = 900 / 10 A
R = 90R
The closest value is 100R but wait... What did I say about anally accurate maths?
Let's just CHECK to see the effect if we CALCULATE using a 3v LED and we actually USE 3.7v LED's with our originally calculated 270 ohm resistor.
I = Vr / R
I = 0.9 / 290 (amps)
I = 900 / 270 (mA)
I = 3.3 mA.
Now THIS is a third of the desired current so you WILL see the effect BUT, again, the error is not disastrous but let's swap this around and see what the effect is of calculating for 3.7v LED's and using 3v LED's.
Note that with a single LED and resistor, the effect of ignoring small Vf variances of LED's is masked by the considerably higher percentage of lost voltage across the resistor.
You may have to take some extra care when the number of series LED's, (when you add up the Vf's), gets close to the supply voltage.
IF you get down to one volt (or less) across the current limiting resistor, the circuit WILL become more sensitive to small changes of diode voltage (because the small change is multiplied by the number of diodes.
So, we are going to use the 100 ohm resistor we calculated from the 3.7v LED calculations and see what effect we see if we actually fit LED's with a Vf of 3v.
I = (12 - 9) / 100 (amps)
I = 3 / 100 (amps)
I = 3000 / 100 mA
I = 30mA
Now, 30mA is 50% more than the light emitting test or reference current of 20mA and it is MORE than likely that this current, whilst it may not damage the LED in the short term, it IS on the high side so you can expect a shorter than typical 100,000 hour life of the LED and you may find the LED (and resistor) getting hotter than is maybe comfortable for the surrounding plastic or paint.
You are unlikely to be able to spot the light output increase of 30mA over 20mA but you most certainly WILL detect the change from 3 to 30.
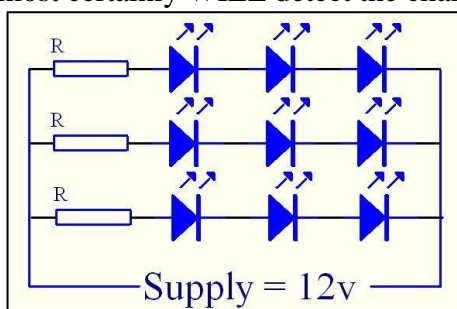
So, let's recap. 9 LED's all arranged as 9 separate, 10mA circuits require 90mA from the supply (or battery).
9 LED's arranged in 3 banks of 3 require 30mA.
IF you run off batteries, this is a significant reduction of total power required.
IF your batteries start to flag before the competition judging takes place, your simple 'failure to appreciate' the value of a careful electrical design might well lose you that top spot at the end of the day.
So does it cause more problems than it solves, using series LED's ?

Apart from having to consider with more care the current liming resistor, in the example above, we reduce the total power requirement from batteries or a power supply from 90mA to 30mA.

IF you wanted 10 LED's rather than 9, then 5 sets of 2 LED's would work equally well.

There is no hard and fast rule and, because this is YOUR model, you have to consider several things when determining HOW to light the model.

IF you can add (or lose) ONE led and make calculations easier or solve a current demand issue, then do not be afraid to at least consider the option in your build.

The old complaint that a series circuit is unreliable in case one LED fails is not valid when LED's have a life of 100,000 hours.

This argument was valid in the days of time limited filament lamps but not today.

TEST EXAMPLES.
Consider the following LED circuits.
Some will work and some will not.
See if you can determine which are the faulty circuits.
I have designed some to tax you but, if in doubt, you should work the numbers.
Consider this diagram offered to you by a 'Friend in Need'.
What questions do you need to ask about the LED's specifically?
Run the numbers using a few typical LED voltages to prove your thoughts.
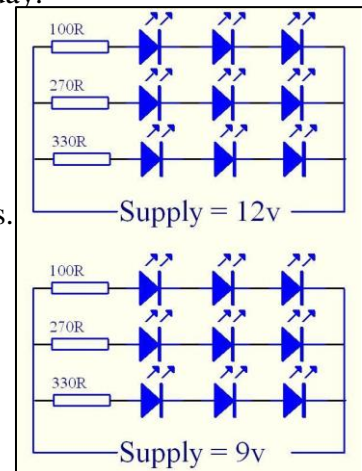
Your 'friend' tells you that the circuit doesn't work as expected and the bombshell "I used a 9v supply instead of a 12v supply" is dropped.
Run the numbers again.
Is there ANY situation where ANY of the LED's will light?
Hint. The colour of the LED will affect your answer
Now, something a bit trickier...
Consider this circuit:
Assume 1.7v RED LED's.
Run the numbers.
Is this a trick or a darn good piece of test equipment?
Consider this circuit.
There is one RED and one GREEN LED.
Does it work?
If it does, what does it do?
If it doesn't work... explain why it doesn't.
As you design your lighting rig, you MUST be able to design a circuit that you KNOW will work because the last thing you need when you switch on and nothing, or only a few LED's light up, is to find that you have reproduced exactly in your model a faulty circuit.
For this reason I strongly recommend that you build your circuit out of the model, on the bench, and soak the entire rig for several DAYS if necessary to weed out any weaknesses in solder joints or super cooking LED's.
So, we have examined LED's to exquisite levels.
What have we learnt?
LED's are not switches. They will create light as long as current is passing.
The 20mA current bandied about is a TEST or REFERENCE current SIMPLY to gauge light output between LED's and not a minimum or maximum current.
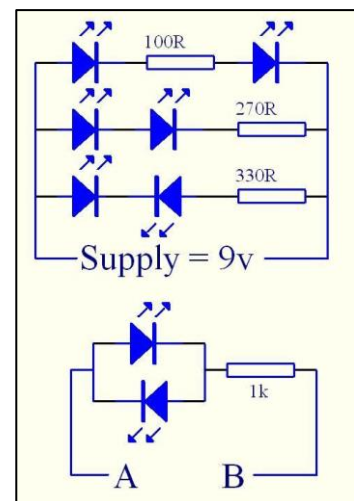
The value of the current limiting resistor can vary quite a bit without dramatically affecting the light output.
Connecting an LED up the wrong way will not hurt the LED or the driving circuit.

Here is a final tweak for you to play with.
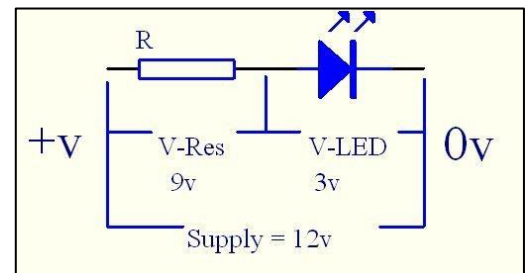Consider a 3v LED, a 12 volt supply and a 1,000 ohm resistor..
As it stands, the current is 9 mA.
Now, let's add a silicon diode in the circuit.
We know that this diode has a Vf of 0.7v.
How does this affect the LED current?
The total Vf's of the circuit are the LED, (3.0v) and the additional diode (0.7v) so we get 3.7v which we deduct from the 12v supply to get Vr (*voltage* across the *resistor*).

I - V / R
I = (12 - 3.7) / 1000 (amps)
I = 8.3 / 1000 (amps)
I = 8300 / 1000 (mA)
I = 8.3mA
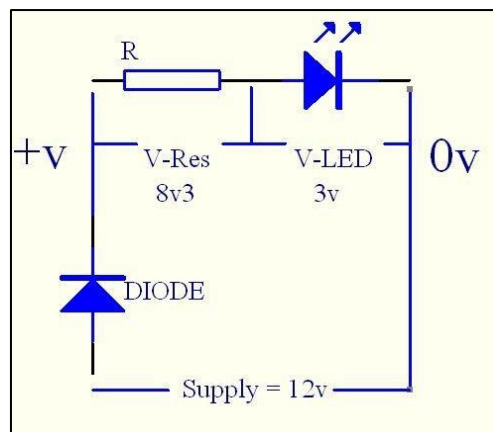
The current drop is small but adding the diode is easier than tweaking the resistor value should we wish to knock the LED brightness back in one or many LED's without recalculating one, or many series resistors, so you can fit a diode to a model with many, many LED's and reduce the entire rig output with just ONE component and NO fussy recalculations. You can add more than one diode if you need more current reduction.
Whilst this is a simple tweak you may never use, it is a valuable factoid that may save you some heartache or considerable effort in a built model when you find that the whole or part of the rig is too bright.

Starship Model Lighting And Electronics Group

LEDs with Stephen Jones
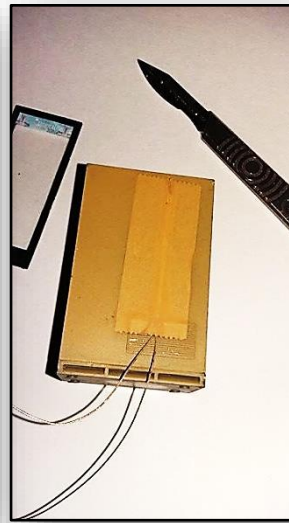
Fit the LED to the inside of your model, in this instance I was illuminating a fridge, and fed the LED through the back, attaching it to the top of the fridge. I then secured the wiring on the back with tape; the rest of the wires will be concealed within the diorama later.

You then need to attach/solder a resistor to the + wire, which is usually the longer of the two wires attached to the LED when you unpack it. This is then secured to a 9V battery.
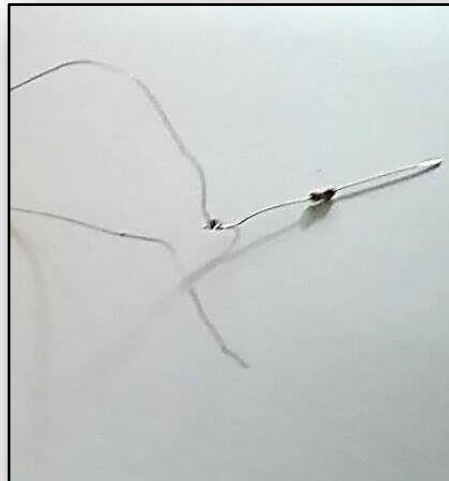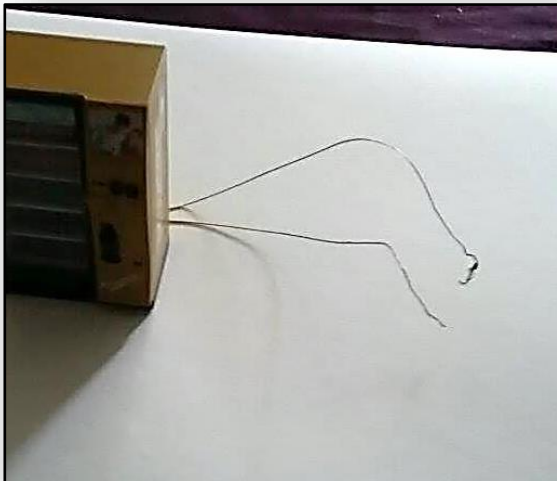
You can run the wires through a switch if you want to have control over the illumination or you simply wish to highlight certain part of the diorama.

This is a very simple technique which can lead to incredible effects and results with the addition of more LEDs.
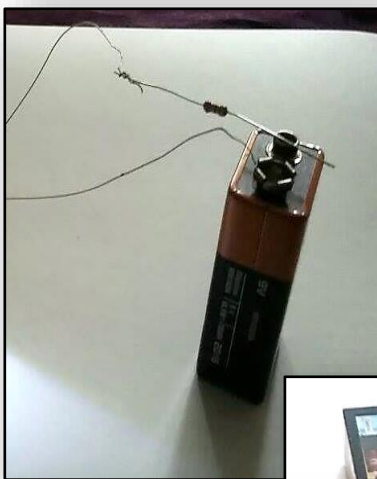
# How to build working spotlights for any diorama by

Stephen Jones

These were bought for around £8 and are from Bronco Models, and I believe there are three different types.

Simply drill a 1mm hole for your wire, clean out the interior as there is a lump to represent a bulb – clean that out.
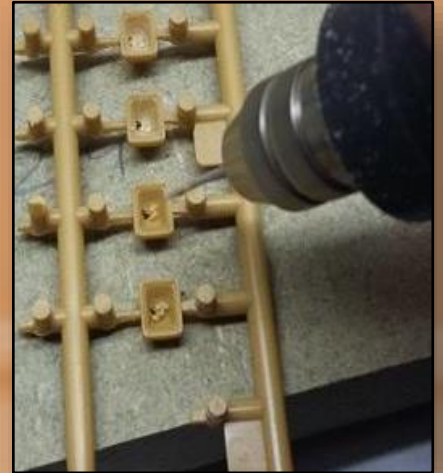
Arrange your lights however you like. The wires are so fine on these bulbs you can do spotlights or light rails on cars etc. and have no problems concealing the wires.
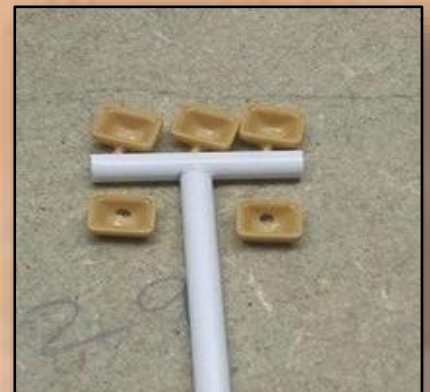
Next, I'm fitting Litz 603 bulbs, but there are lots of variations, sizes and colours to choose from. Simply pass through the drilled hole and glue in place. This is the fiddliest part – getting the bulbs to stay where you want them while you glue. I dabbed thick super glue in using a tooth pick.
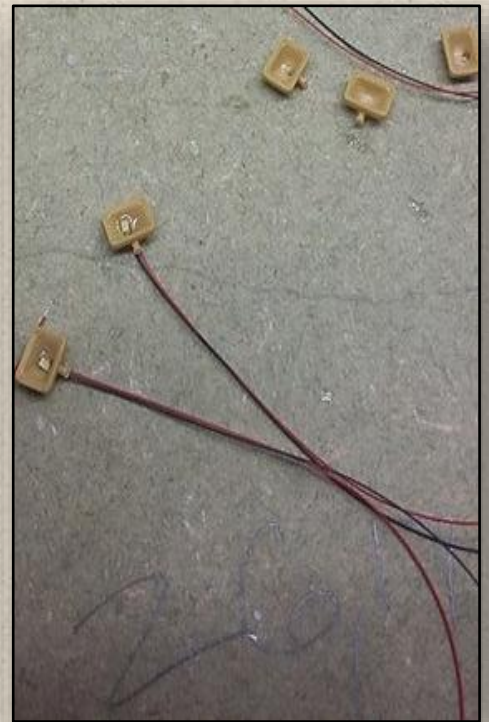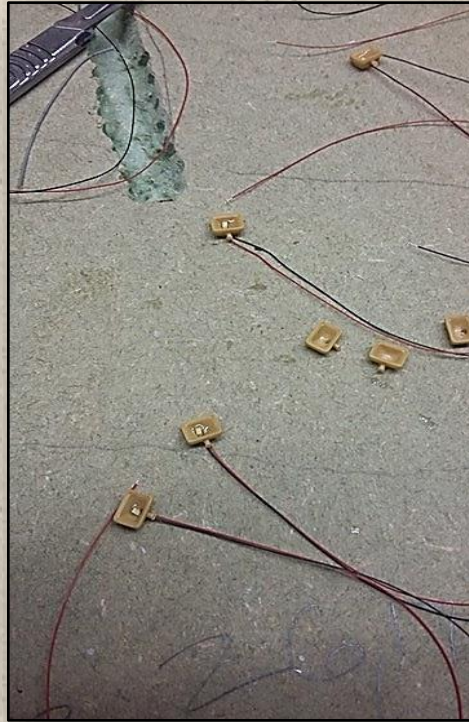
At this point, all you have done is put a plastic box over the bulb. Once properly dry, paint around the Litz with some chrome paint and fix on the lens using Krystal Clear.

Then it's simply a case of hiding your wires! In this case it's through the centre of some 4mm hollow tubing. Also, so you don't get light leakage you must fill the wire hole. Here I used Vallejo filler as I like the accurate, long thin application nozzle
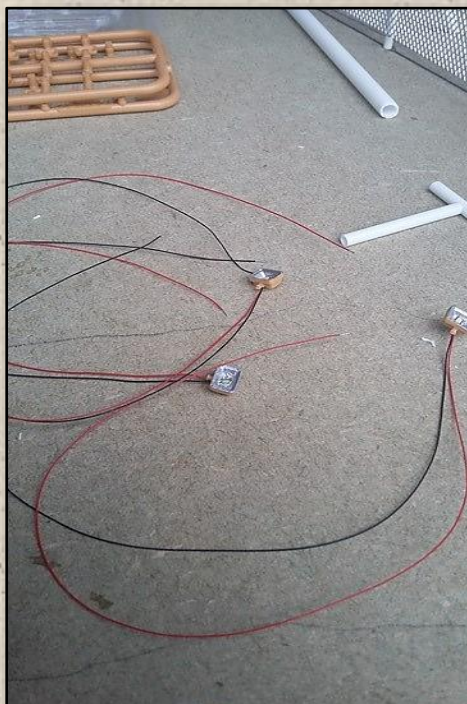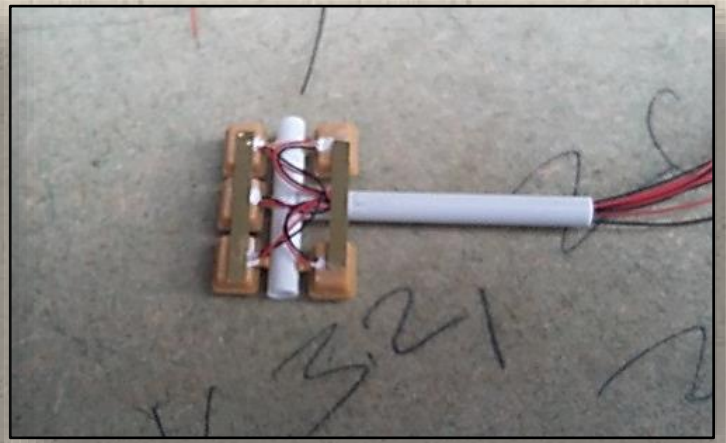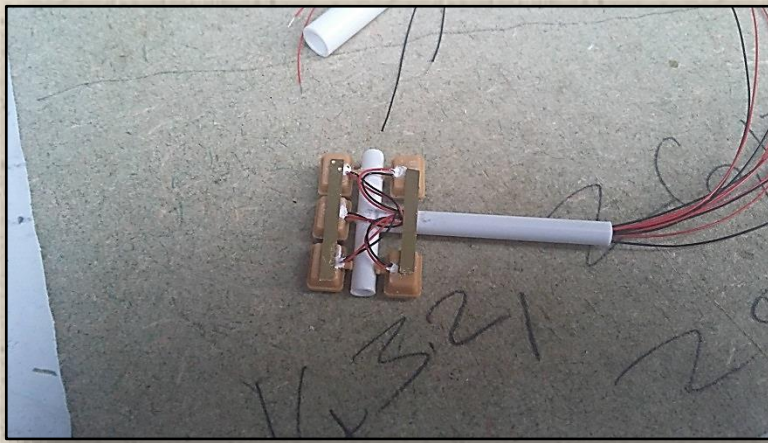
This may look complicated, but it's not. Simply glue your lights in your desired positions one at a time. It doesn't matter about the wires getting mixed up with each other.

The photo etch is simply to make it a bit easier to handle as it's very fragile.
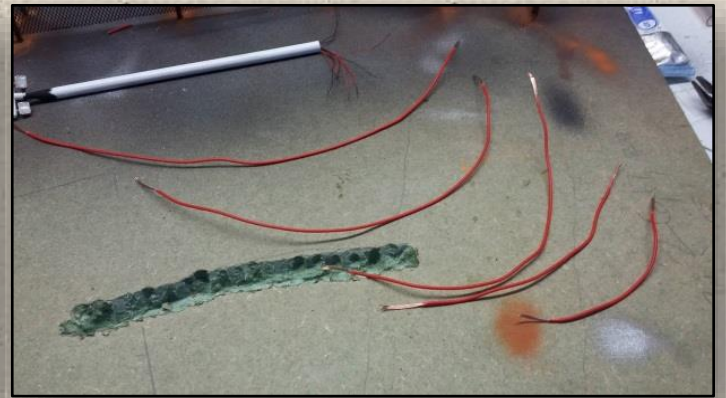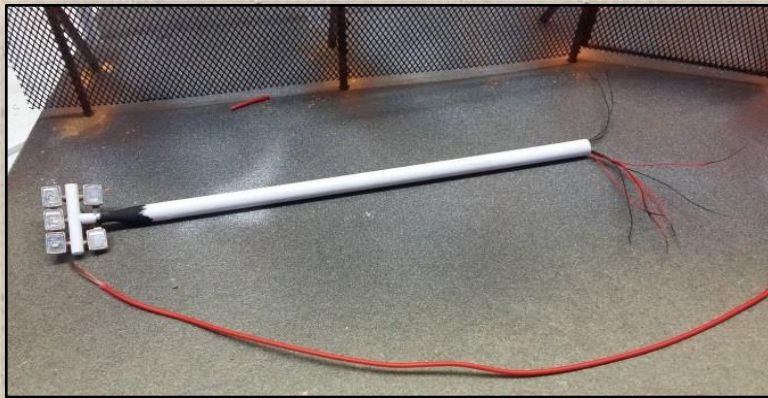
I then added a thicker hollow to be to the desired length, making sure the wires were long enough to work with at the business end.

And now it's time to extend the positive wires. I cut 5 different lengths so that any bulky bits were still able to pass through the small hole in the base.
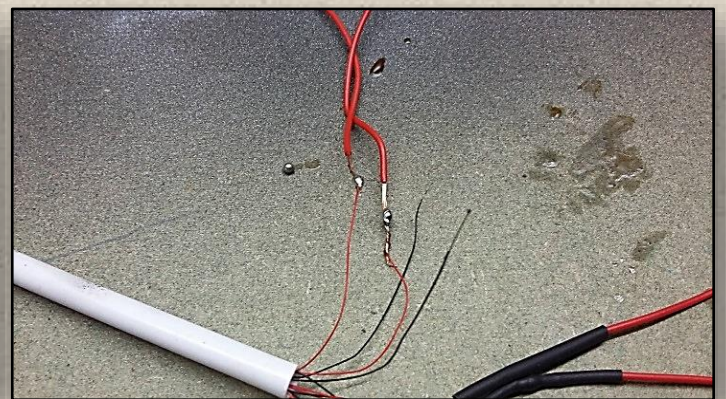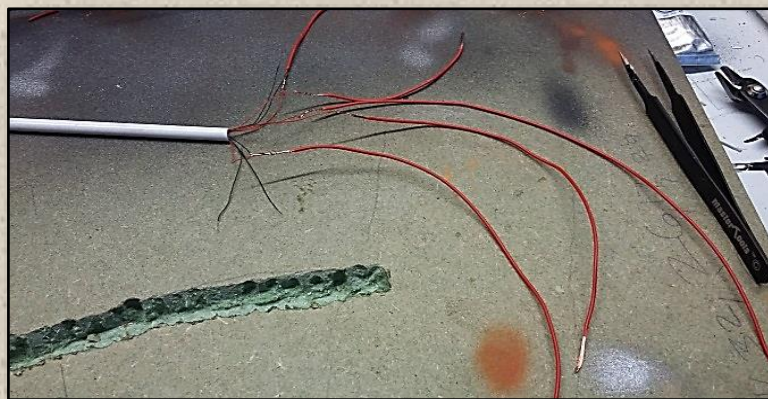
Simply twist one on to each red wire then solder and cover with heat shrink tubing for protection.

As you can see I'm no expert at soldering but it will suffice and I feel sure they will hold together.
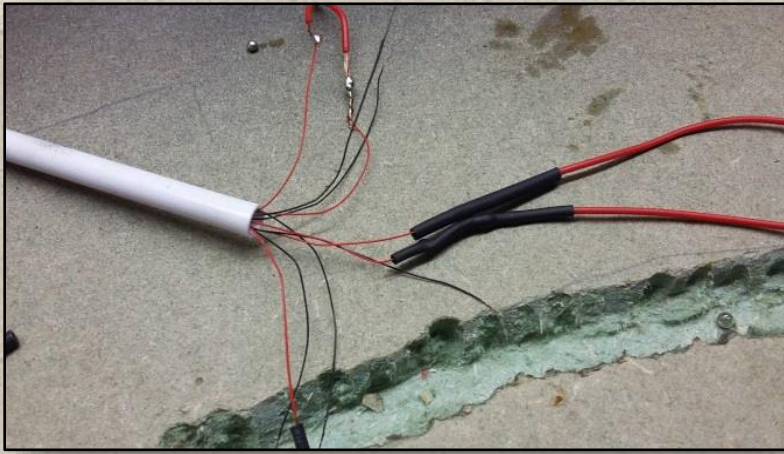
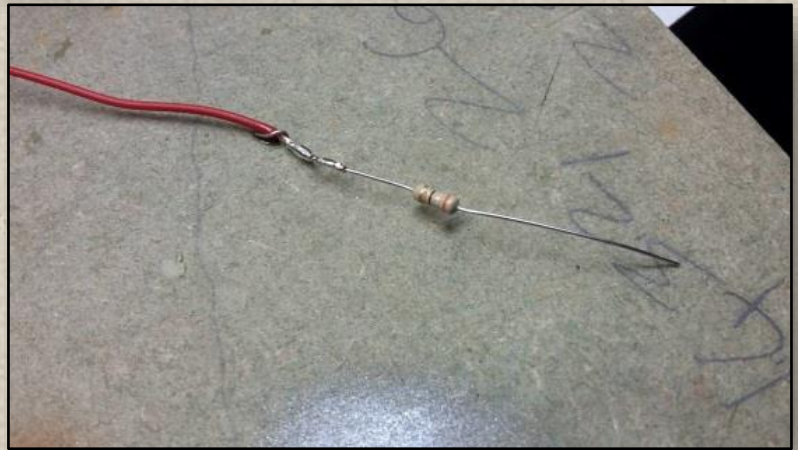Shrink tube to keep it all neat and tidy, as well as offer protection to the soldered joints.

On the end of each red wire a resistor is required. This is the bulky bit I mentioned earlier. If all the wires were the same length you would not fit all 5 through the hole in the base. Simply solder these on (non-directional).

…and you end up with this.

Now you need to add some more wire on the other end of the resistor to make all 5 lengths the same, and then cover the resistor and bare wires with heat shrink tubing. On this occasion, I joined all negative (black) wires together and used just one wire for them all. I'm as yet unsure if I could join all the red and use just one resistor for all?
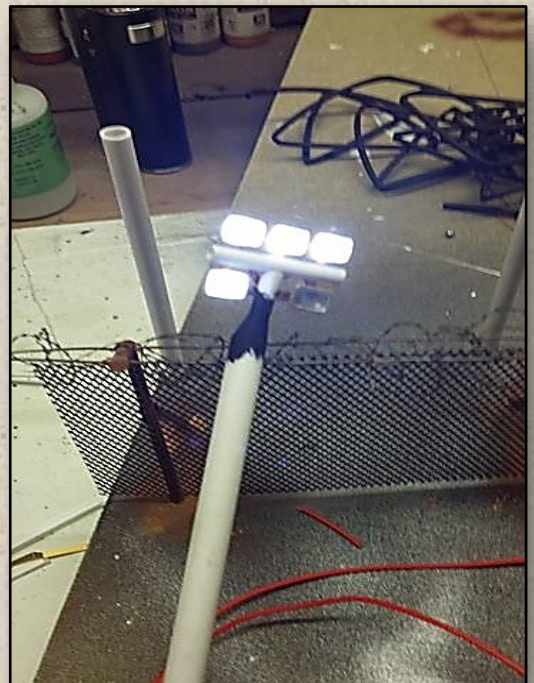
Simply add a 9v battery, *et voila*!
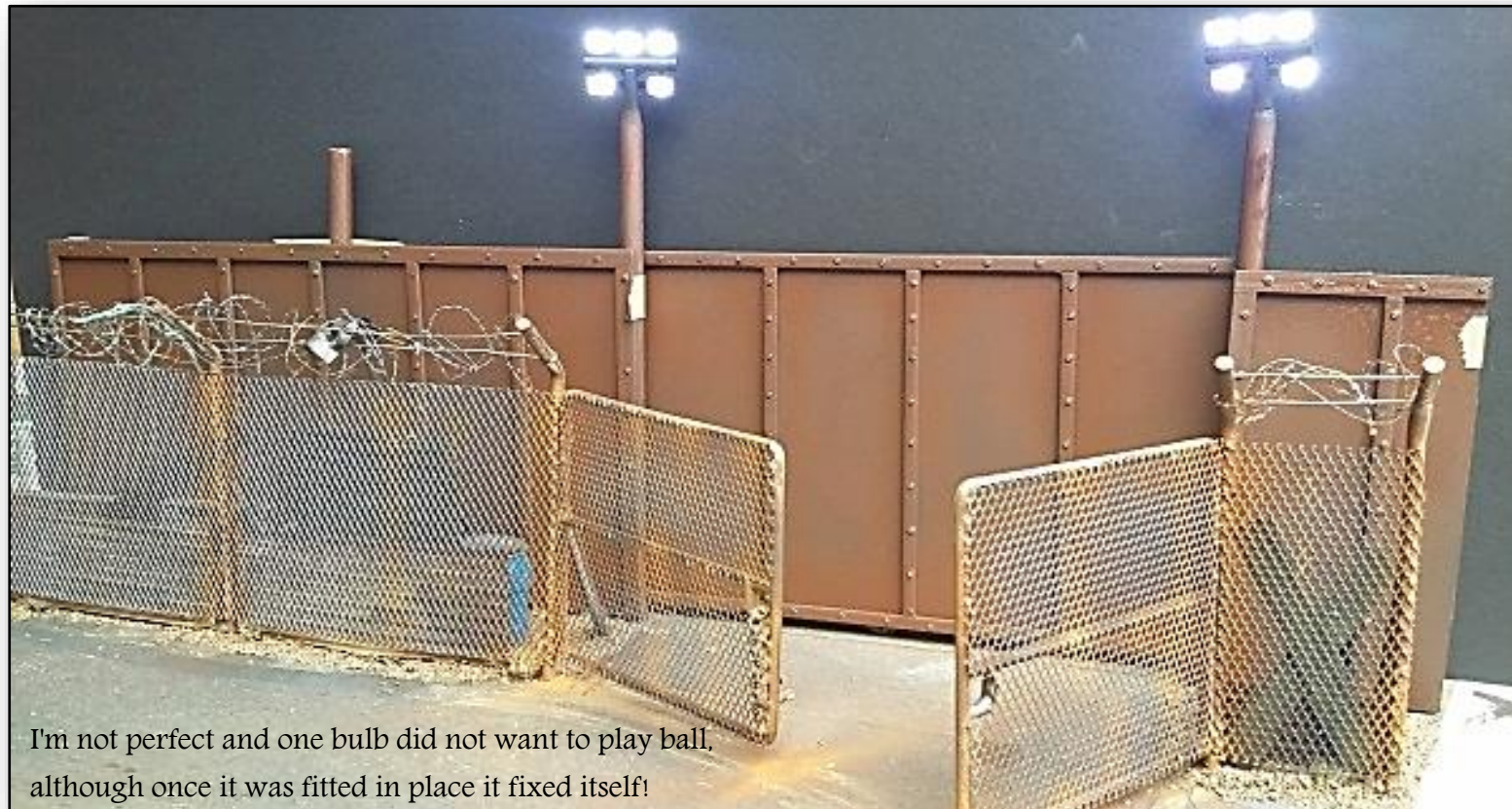
I'm not perfect and one bulb did not want to play ball, although once it was fitted in place it fixed itself!

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Dapple schemes

Simple card masks for dapple schemes with beautiful soft edges.

Many German WW2 subjects featured dappling as part of their camouflage scheme. A simple and highly effective way to apply these is simply draw a few random shapes of right size on some stiff card (index cards are ideal) and then holding about 5mm away from model airbrush over in appropriate colour. Aerosol will also work. You can even do same on acetate sheet if you want to have some you can reuse again and again.

It is a dead easy technique, takes just minutes to make 10 or so shapes on a card and seconds to paint and voila you have beautifully soft edges on the dappling.

Bf109E-4/N W.Nr5819 Kommodore JG26 Flown by Maj. Adolf Galland (Final score 104) Dec.1940 Audembert/France
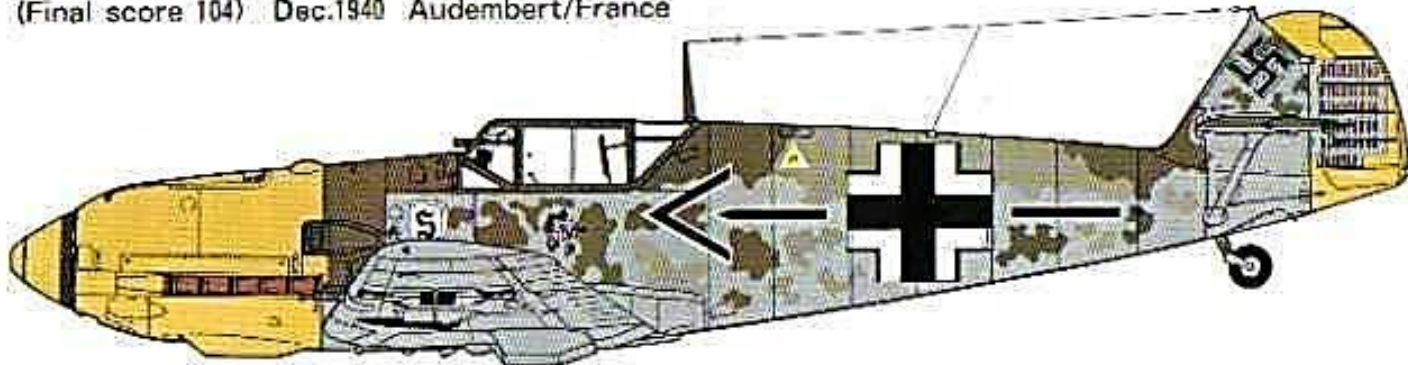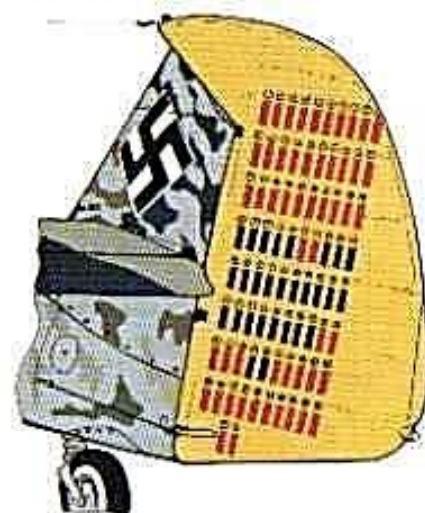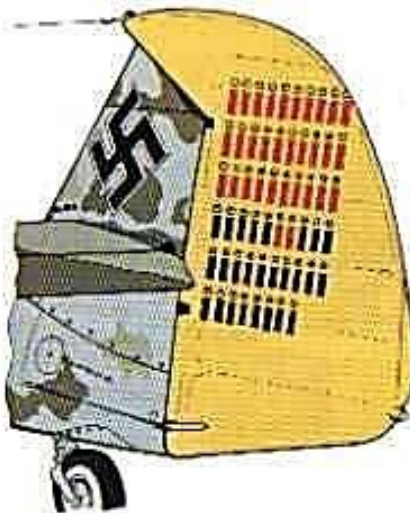
JG26 "Schlageter" of Galland's Bf109E-4/N

Rudder score marking of Galland's Bf109E-4/N

Rudder score marking of W.Nr5819 after transfer to Kdr/E.Gr26

Personal marking of Galland's Bf109E-4/N "Micky mouse"

COLOUR HARMONISATION OR FILTERING by Aaron Shane Joustra

I use the above as they are now the accepted terms for the method I am about to describe.

I normally apply this step after any pin wash but sometimes I do it beforehand. It is definitely done before any chalk pastel weathering or paint chipping is done.

Many people seem confused by this technique and overwhelmed thinking it highly technical and difficult to achieve. Good news people this process is actually simpler than a good pin wash and most other techniques.

All you are aiming to achieve is a harmony between the various colours used in the overall paint scheme. A single tone camouflage like Olive Drab or British Dark Green would not have a filter applied at all as there is only one colour so nothing to harmonise with.

A filter is done with OILS. You do NOT use acrylics and preferably not enamels. USE ARTIST OILS.

Before applying a filter it is best to spray or airbrush on a coat of SATIN to the whole model surface. You do NOT use a gloss as that will give gravity too much influence and you don't want a heavy matt finish totally resisting paint flow. Satin is the perfect finish to allow reasonable flow and resistance to gravity. Let your camo colours dry a MINIMUM of 24 hours if not 48. Allow the same for your Satin clear coat. (I don't give a tinkers what the paint instructions tell you or a friend or some cool modeller on some other page. I am not them and I am recommending what I find works best for me).

Let's take a simple Desert Yellow and Mid Stone or Dark Stone paint scheme. Remember the idea of the filter is to harmonise the colours.

To harmonise the two colours you need to pic a tone that shares characteristics of all the colours used. In the above example a yellow or gold ochre would do nicely. Ochre shares colours in common with both Desert Yellow and Mid or Dark Stone. The same would be true of a Green and Brown or Green and Tan camouflage scheme.

You might wish to darken or lighten the Ochre tone used somewhat depending on whether you want a slight lightening or darkening of all or some of the camouflage colours. Remember though that the impact will be only about a 5% difference to the tones applied.

Once happy with the mix of the tone decided on for your filter you need to thin it with 90 to even 95% thinners (in this case turps). Now take a good size brush round, flat or filbert and dip it in your highly thinned filter then quickly start to paint the WHOLE model surface in it. Do not try for neatness, do not try for finesse. Just slop it on roughly evenly and brush it over the whole surface. Now let it dry 24 hours.

Now picture the filter as a layer of lightly tinted highly transparent stained glass. Effectively what you have just done is apply a very thin layer of tinted stained glass to your camouflage scheme. This stained glass shares tones with all the colours in the scheme and will just subtly unite and harmonise them. It will also add a very subtle but hugely effective quality of depth to your work.

And that folks is all that is involved in applying a Colour Filter to a model. It is not a massively impacting effect. It is not hugely complicated. It does not require years of skill and experience.

All it requires is:
A) Enough time for the camouflage colours to have thoroughly dried.
B) Enough time for the SATIN clear coat to have thoroughly dried.
C) You have chosen a colour mix that shares tonal qualities in common with all the camo colours present.
D) You have thinned it with 90% to 95% Turps.

You can if needed apply more than one filter but that should be very rare.

Filters are most commonly applied to armour models but can also be applied to aircraft and ships. Filters can also be great and highly effective on figures, especially on those multi tone camo schemes the Germans were so fond of, or the US with their Tiger Stripe camo in Vietnam. A filter can also be great on modern troops on deployment to Iraq or Afghanistan.

APPLYING A PIN WASH
This is my preferred method and materials for pin washes.
I use artist oils or enamels as I prefer the flow characteristics of them compared to acrylics when thinned. Acrylics can be very grungy due to the greater surface tension of water and that the paint tends to separate from the water faster than enamels or oils from mineral spirits; potentially creating an unwanted granulated or sludge like appearance. Also oils and enamels are dead easy to wipe off if a mistake is made and to clean up. Finally, with oils or enamels there is no call for applying a gloss or semi-gloss clear coat prior.
First I mix a tiny amount of my desired colour. This is usually just a few shades darker than the surface I am applying it to. I would never use black as a pin wash as I am not trying to recreate the death star trench merely accent the depth of the panel lines. I also tend to apply pin washes to the areas around access panels more than elsewhere as I feel, if anything, pre-shading or dark marble basing (note I did NOT say black basing) to the rest of the surface.
I use clean bottle caps as my temporary throw away palettes for washes. So I take a small amount of my desired mix and place it in the bottle cap, followed by Mineral Spirits to thin. I am looking for a mix that is about 90% thinners, essentially just dirty turps. I can always apply a second wash over the first, once dry, if the first doesn't prove to be enough. I use a second bottle cap to place a few drops of clean mineral spirits. Now using a fine round brush (0,00 or 000) I dip it in the clean spirits and run a line of it where I want to apply a wash. Then dip the brush in your thinned paint mix and then touch it lightly with the point of your brush only to the start of where you just applied the clean turps. Your wash will flow from the brush and race along the prepared line of clean turps. I use a piece of kitchen towel or cotton bud dampened in clean turps to wipe up any untidiness or mistakes. Keep repeating the process till satisfied.
Once finished throw away the used bottle caps and wash your brushes and move on.

L Vehicle washes by Ash Guest
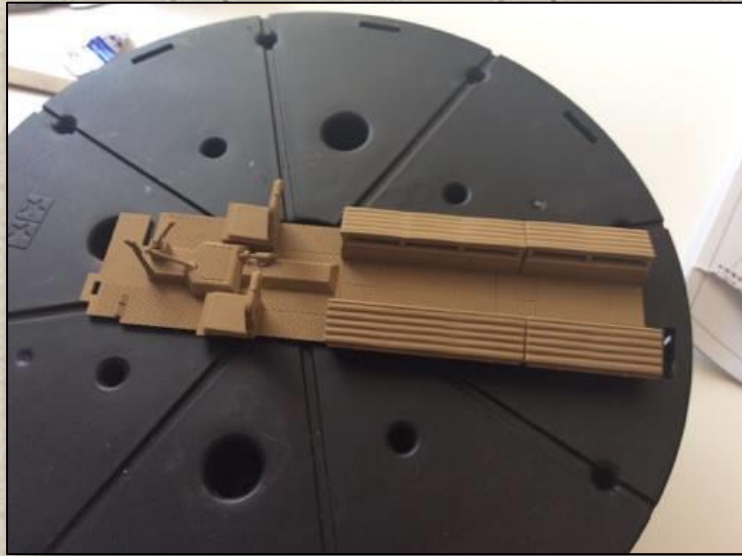
An easy way I find to add weathering to an interior, especially on a half-track. I use the sponge method... this is where we dip the sponge into a small amount of paint and dab any excess on a surface. I use an old microwave dinner lid. The idea is to get a finish that looks worn. Here I'm using Tamiya metallic grey XF56, it's not too shiny but looks like fresh wear.
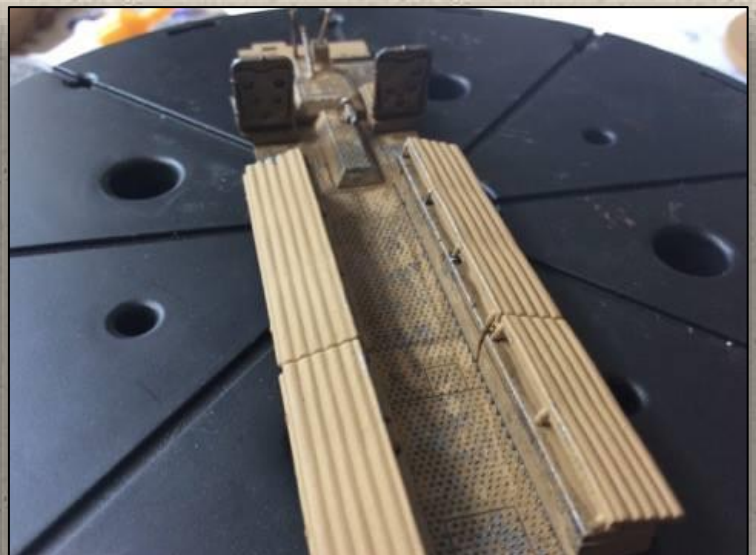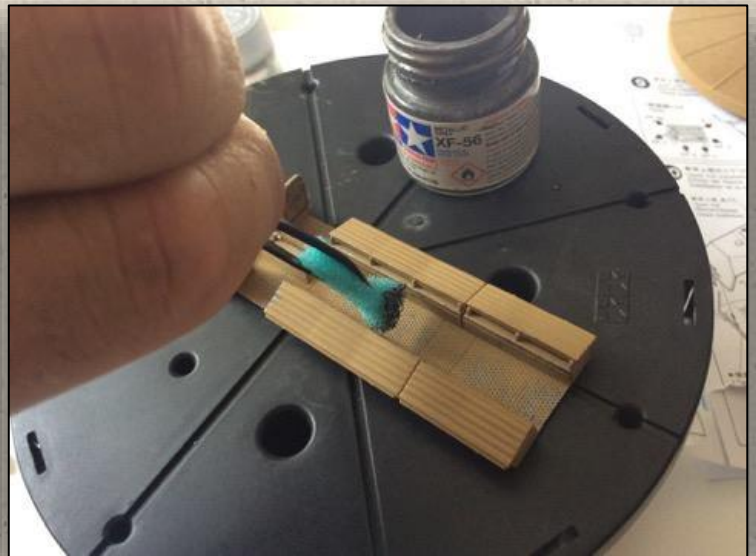
So, what is a wash?

A wash is a very watered-down paint. Some make their own with thinners added to the paint in the case of enamels, and oils and water for acrylics. I prefer to use ready made myself. They come in a verity of shades and help bring out the details, especially in areas with raised or inverted moulded detail in the plastic/resin of your model.

Once dry, I've used a wash of Citadel Nuln Oil... I find this product very easy to use, it gets into all the nooks and crannies and also helps to make the 'wear' not too shiny.

Get the details painted in and then gently wash around them which helps everything stand out.
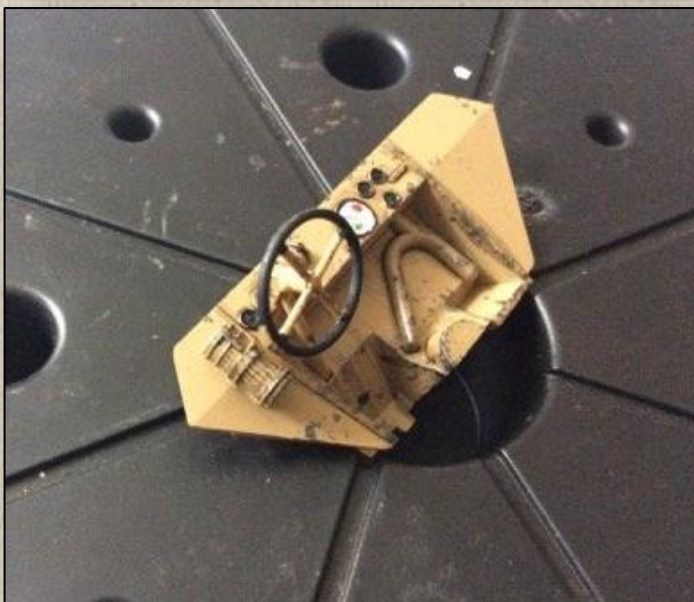
Now we detail with colour – things like the seats where there are grooves. Again great places to use a wash, and these seats will take on a wooden effect. So after base coating, we move on to painting your main colour. Here it's Tamiya Wooden Deck Tan. I've used a lighter wash, this is Citadel Sepia Wash.
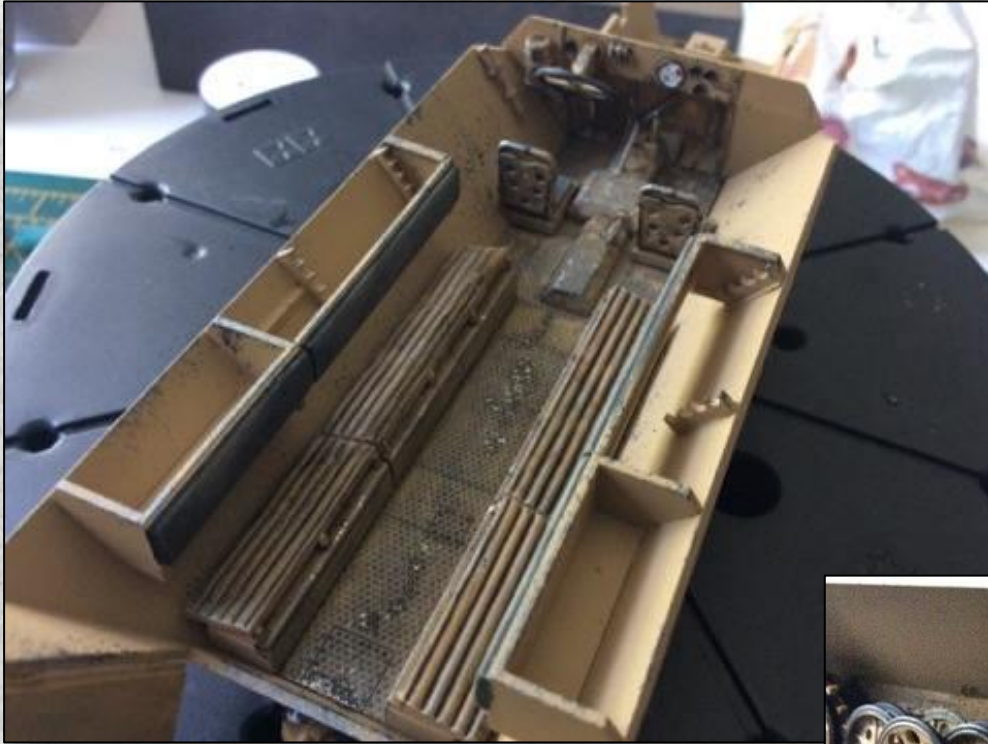
In some areas I've used a bit of the darker wash to pick out a bit more here and there and again in the grooves where there might be more shadow.

There are many places a wash will help with details, areas such as the wheels are a great place to pick out details that you may not even notice!

BEFORE

AFTER

I don't have an airbrush so I'm a brush painter. I've picked out the gaps and ridges again with the dark wash (Nuln Oil). The camo paint is dry brushed on (we will cover that soon) to give it a bit of an 'in the field' dodgy paint job!
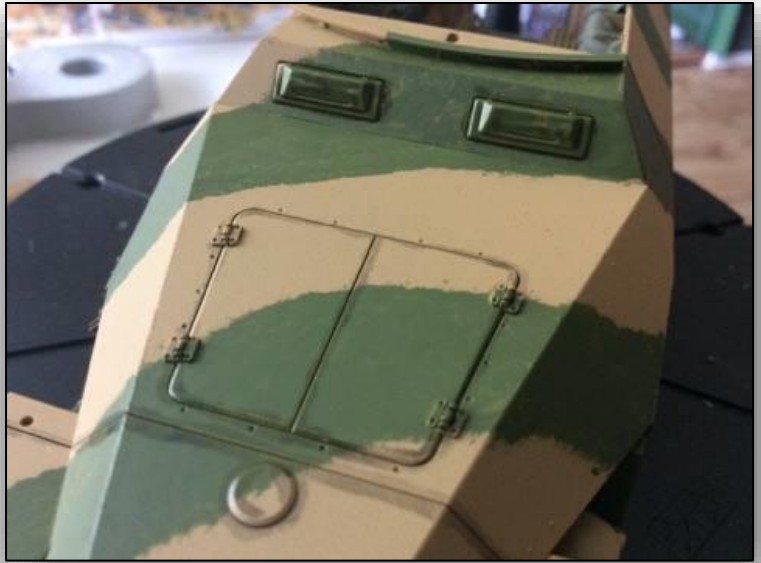
Another great thing with the wash is that for weathering, you can make your subject look a bit wind and rain smeared! I use a very soft brush for this. Try not to use too much wash though! Now gently stroke the brush down from top to bottom, it doesn't have to be neat or uniform. This is called *streaking*.

Now when all the streaking is dry, I use Tamiya Weathering Master. it comes with a little applicator which has both a brush and a sponge – the brush is great to make a dusty effect and the sponge is great for smearing!

L Using a superglue/chalk dust filler by Brian Innes

Here is a quick tip on using superglue mixed with chalk powder to create a filler.

While building my Moebius Model's Batman kit, I found a nasty seam on the rear of Batman's boot. I have deepened it slightly using the back of a craft knife so that the filler can take a better hold.

To create the filler, I scraped some chalk from a child's drawing chalk (available in many colours, very cheaply). I chose blue to create a nice contrasting filler. I put this powder onto a glass sheet.

Next, I added a few drops of superglue, and mixed it into the chalk powder. By varying the amount of superglue to chalk powder, you can alter the consistency of the filler.
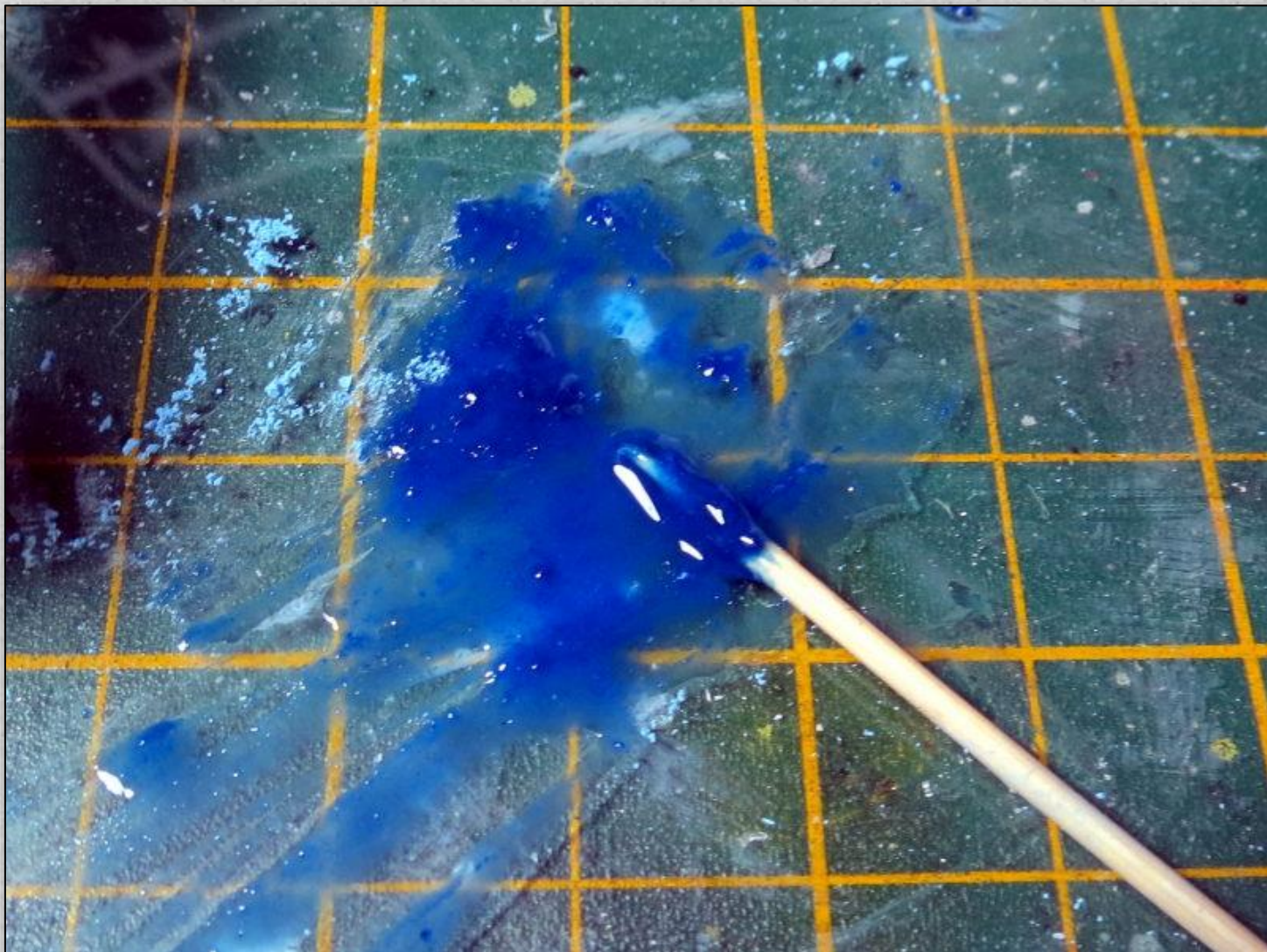
I quickly applied it to the seam, letting it cure for a few minutes at most.

Take care not to let the glue/chalk mix cure for too long, as it can then become difficult to sand.

The advantages compared to using a solvent filler? It doesn't affect the plastic, and is very easy to apply and sand.

Textured concrete walls from foamcore by Simon Bell

Step 1

Cut your foamcore shapes out using a sharp craft blade or a specialist cutting tool. Tip – make sure the blade angle is consistent throughout the cut to ensure straight edges.

Step 2

Soak the pieces in water in a bowl/sink/bath, depending on size, for up to an hour. Then peel off the facing paper. Tip – if it doesn't lift off cleanly, with no tearing, soak it some more.

Step 3

When the pieces are dry, add texture by scraping the surface with a blunt metal edge. I use a set of cheap sculpting tools I bought on eBay. Experiment with direction & pressure of scraping effects.

Use the same tools to 'carve' cracks, scrapes and other damage into the surface.

Dig out craters and other battle damage using a craft knife.

For areas of severe damage, glue a scrap piece of board on the back of the main piece to give more depth for excavation

Step 4

Paint the pieces. I started with Vallejo grey surface primer. A light black pre-shade spray around the edges and then a base coat of Vallejo light grey. The base coat was deliberately sprayed unevenly for tonal variation.

Apply washes to the whole surface. I started out with Vallejo grey wash to add depth to the textured surface.

Different washes can be used to add visual interest, as well as oil and pigments, as you prefer (tip – test paints & solvents on a piece of scrap foamcore before working on your pieces!)

BONUS SECTION

Zdenko Bugan

Scale Modelling

Squiggly turned cowling
Step By Step
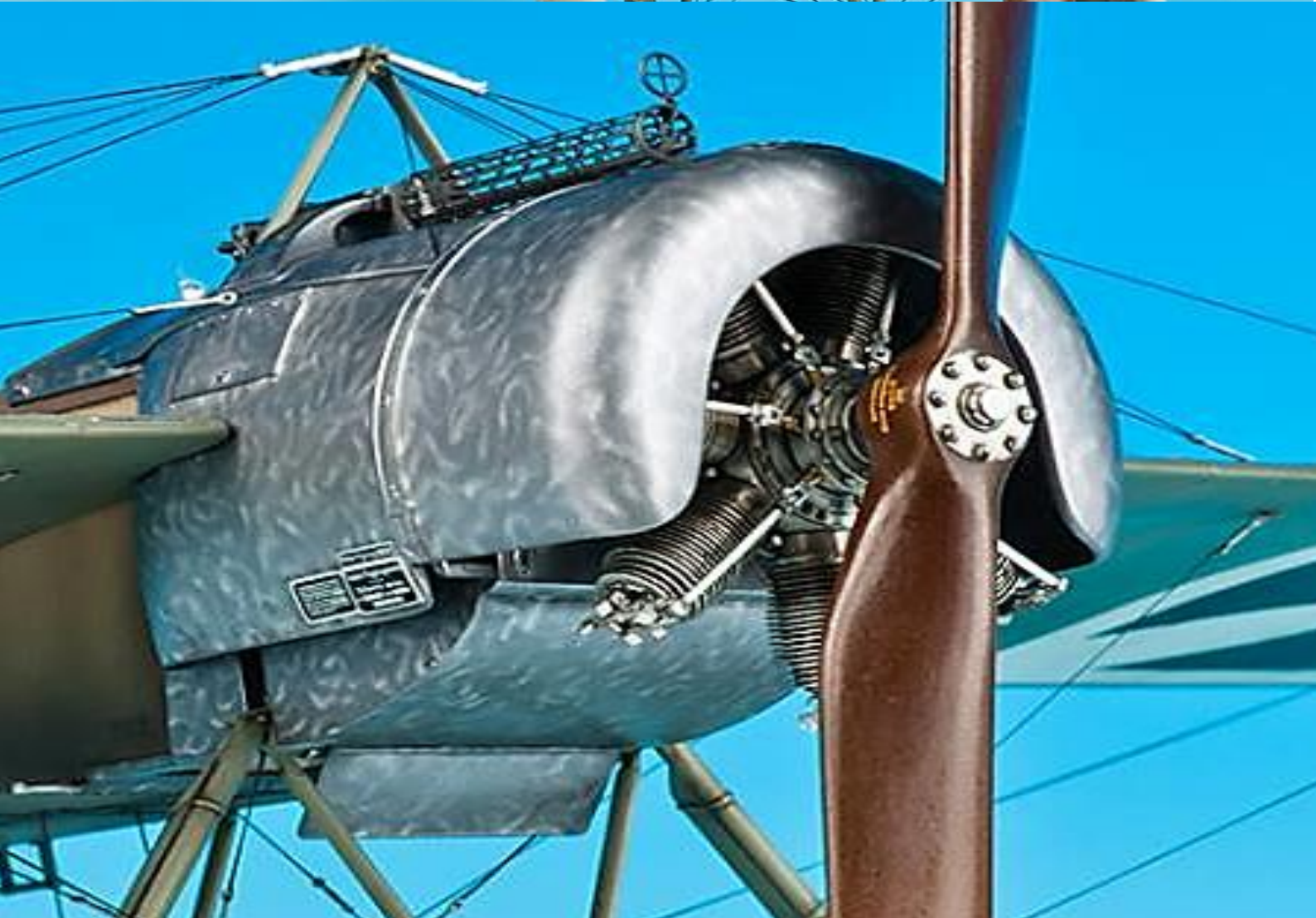
I would like to show you this picture from the Wingnut Wings website first to give you an idea what we would like to achieve. Aluminium cowlings on early Fokkers were most of the time 'polished', and the result was this kind of interesting surface with irregular light snakes on the darker background.

Step 1

To achieve really smooth and metallic glossy surface, I polished all the cowlings with 2000 grade sandpaper and then also with polishing paste. I then washed them in detergent to remove all remains of polishing paste that can stick into recesses.

This whole technique will be based on airbrushing of two metallic colours – the darker one will be Mr. Metal Color – Iron, and lighter one will be Mr. Metal Color – Aluminium, both from Gunze or GSI (I really don't know which name is right at this moment). These two colours have one special property – they can be polished. The advantage of this is a perfectly realistic metal surface, but there is also a disadvantage – after you use them, you can't stick masks, or even use some heavy weathering, because it will damage the surface. So, I decided to do these metal parts as the last step, when all the other sections were already painted. The first colour that is airbrushed is Iron. Just spray it over and don't polish it yet. Keep it matt as it is to dry properly.

And now comes the most difficult part. Using airbrush gun with 0,2mm nozzle, I sprayed thin snakes on to the dark surface with lighter Aluminium colour. What is crucial here is to have the colour fairly well thinned and make those snakes random, but still quite the same in thickness and intensity. I really recommend you practise the technique first on some old CD plastic cover or plastic scrap, you will never get this right on your first attempt, believe me – I didn't!) But don't give up, you will get it right after some practice, don't worry.

Unmask all the surroundings and enjoy
your new metal Fokker cowling!

Step 4

Step 5

E13 /15

Grass Airfield Terrain
Step By Step

Step 1

I decided to present one of my models on a nice solid base with part of an airfield terrain and one figure of German mechanic from Kellerkind miniatures. So, at first I of course obtained a nice wooden base, already pre-stained in dark brown from my favourite local carpenter.

Step 2

To protect the sides of the base from all those colours and weathering products, at first I masked its sides with normal masking tape used to cover furniture when you are painting your walls at home. The cheapest one from Tesco was absolutely sufficient.

The upper side of my wooden base was scratched using a knife to get a better grip for additional layers that will be glued on to it.

Step 3

Step 4

The first layer that was glued on top was a pancake of modelling clay covering the whole surface. So, I first applied white glue all over the wooden base...

Step 5

...and then put modelling clay on it and pushed by hand to properly adhere to the base. You can buy this modelling clay in all hobby shops, actually this one was even bought in Tesco together with masking tape.

While the modelling clay was still wet, I cut its edges to cover the exact shape of base top.

Step 6

Step 7

While the surface still wasn't dry, I once again applied white glue on the top of the modelling clay...

... and sprinkled small stones, sand and dust over it. A bit of pressure using your palm is needed to get it tightly stuck to the clay.

Step 8

This is how it should look like after the last step.

Step 9

Step 10

If you want to make shallow ditches where you can put the wheels of an aeroplane, so it will not unrealistically float over the scene, now is the time, whilst the clay can still be shaped. Just place some clingfilm over the base to protect the wheels of a model from all that dirt and dust.

Step 11

After everything dries (at least for 24 hours), we need to then gently remove any loose sand and dust particles using a soft brush.

Step 12

And now we can start with painting. I prefer to use an airbrush for this because it covers the surface with paint nicely. When you use a brush, modelling clay tends to absorb a lot of colour into itself, so you will need to paint it multiple times. I recommend all those dusty and earth colours like Tamiya Buff, Flat Earth, Red Brown, Tan etc...

Step 13

Grass was made from a product sold by Model Scene company – it is available in sheets, you can just tear it to any shape you want and once again use white glue to fix it to the ground.

Step 14

Edges of grass foam can be a bit sharp, so we can make them more realistic by adding some separate tufts of longer dry grass. These are also sold by Model Scene in various colours.

I enhanced small details like loose stones using additional colours by brush to create more variety and contrast.

Step 15

To give more depth to details, I used dark brown filter to wet various sections of dry earth. Filters will flow around details and add once again more contrast and diversity to the terrain.

Step 16

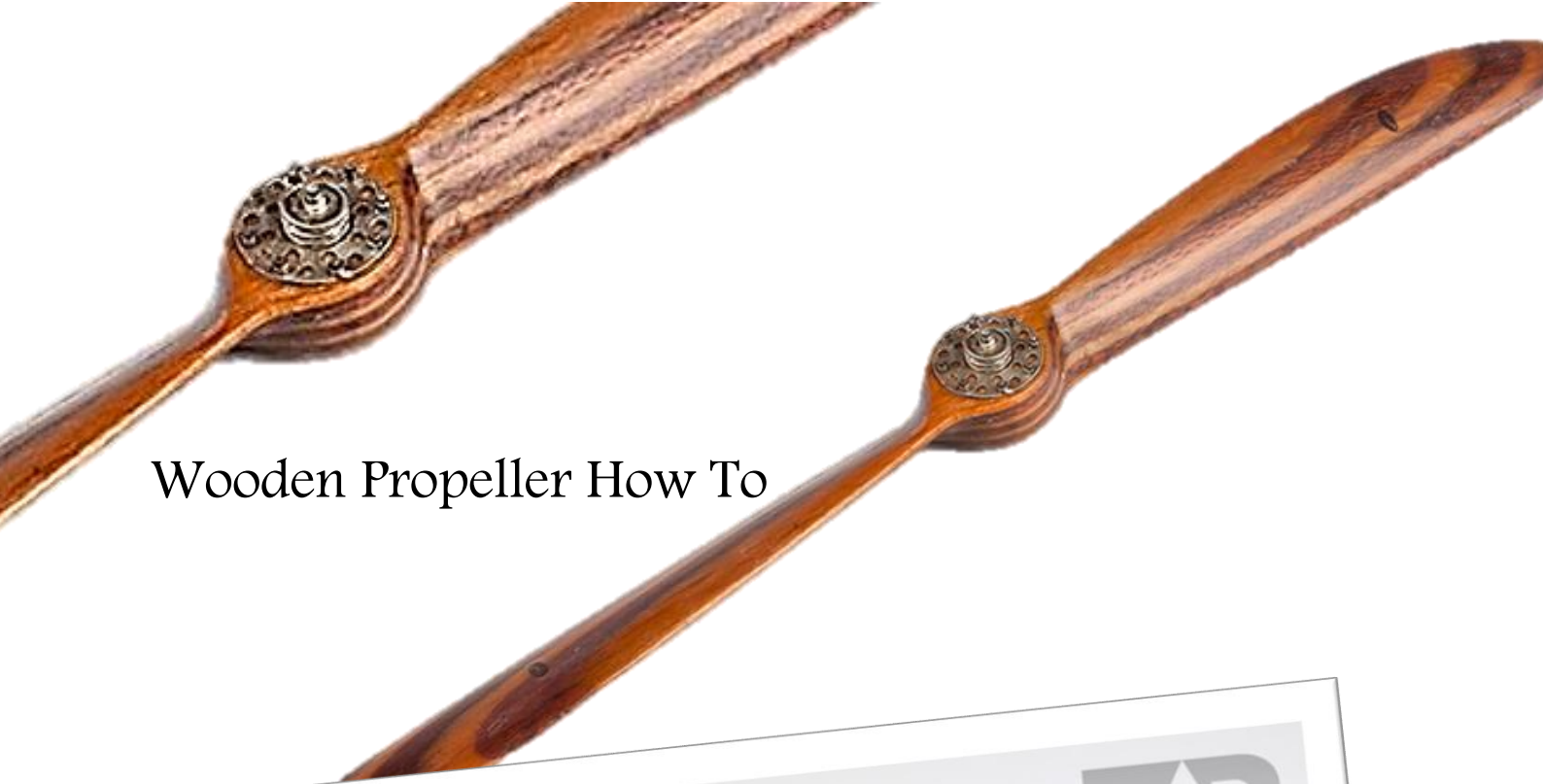Let it all dry during the night...

…and we're done!

Now just add some small diorama accessories like a Rumpler, a German mechanic and your little diorama is finished!

Wooden Propeller How To

Let's start! I always take original plastic propeller part as a template. The original one was around 5mm thick, I wanted to have at least 7 separate colour layers present, so I needed veneer plates 0,7mm thin.

You can obtain these wood veneer sheets from your local carpenter or hobby shop. To stick them together, you need to use epoxy two-part glue. Glue them all properly together and put under some heavy weight to dry. This way you will get a nice tight sandwich from which we are going to cut our propeller.

I usually make 2-3 of these sandwiches, you usually destroy the first one so it is always good to have few more available.

Step 2
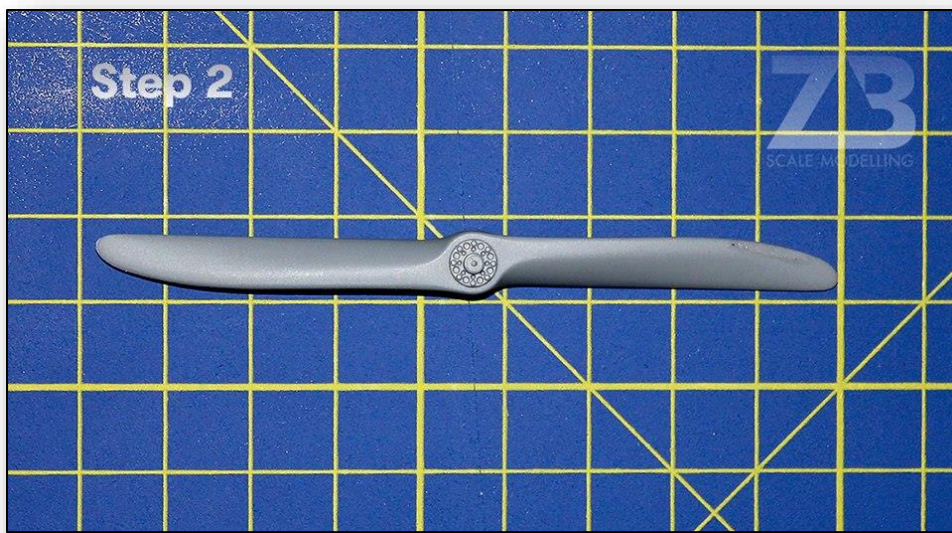
Now we need to transfer the shape of the propeller to our wood sandwich. You can just simply outline the original plastic part by pencil. If you want to be more precise, you can take a photo like this...
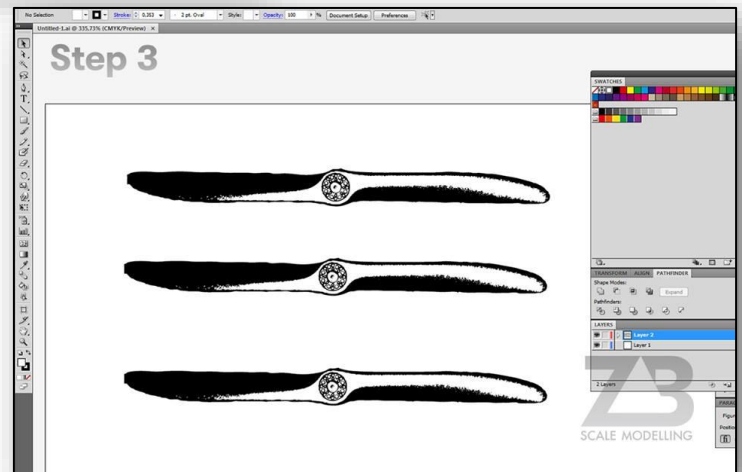
... and process it in vector editing software like Adobe Illustrator. I used the vectorize filter to get only black and white shape and then printed it to paper with proper proportions and glued it to my prepared wooden piece with white glue.

Step 3

Step 4

And now the funny part begins. We need to cut our piece of wood around the printed shape. At first I use a thin saw to get an overall shape, always keeping some margin around...

...then I use files and a scalpel to get the final nice and smooth shape.

Step 5

The next step is to create a proper side profile of the propeller. Once again I use the original plastic piece as a template and sand the ends of the future wooden propeller with sand paper to get the correct shape.

And now a bit of carving skill is required. With sharp scalpel (really sharp, believe me, you will always cut yourself faster with a blunt knife than with a sharp one), we need to slowly work on the final shape of our propeller. Always go slowly and remove material in thin layers. When you cut away too much, there is no way back, so be really precise here.

As a final step, I always varnish my propellers with gloss lacquer. If you want to unify dark and light layers together, you can also use some of clear colour lacquers. Orange one will give you more warmth...
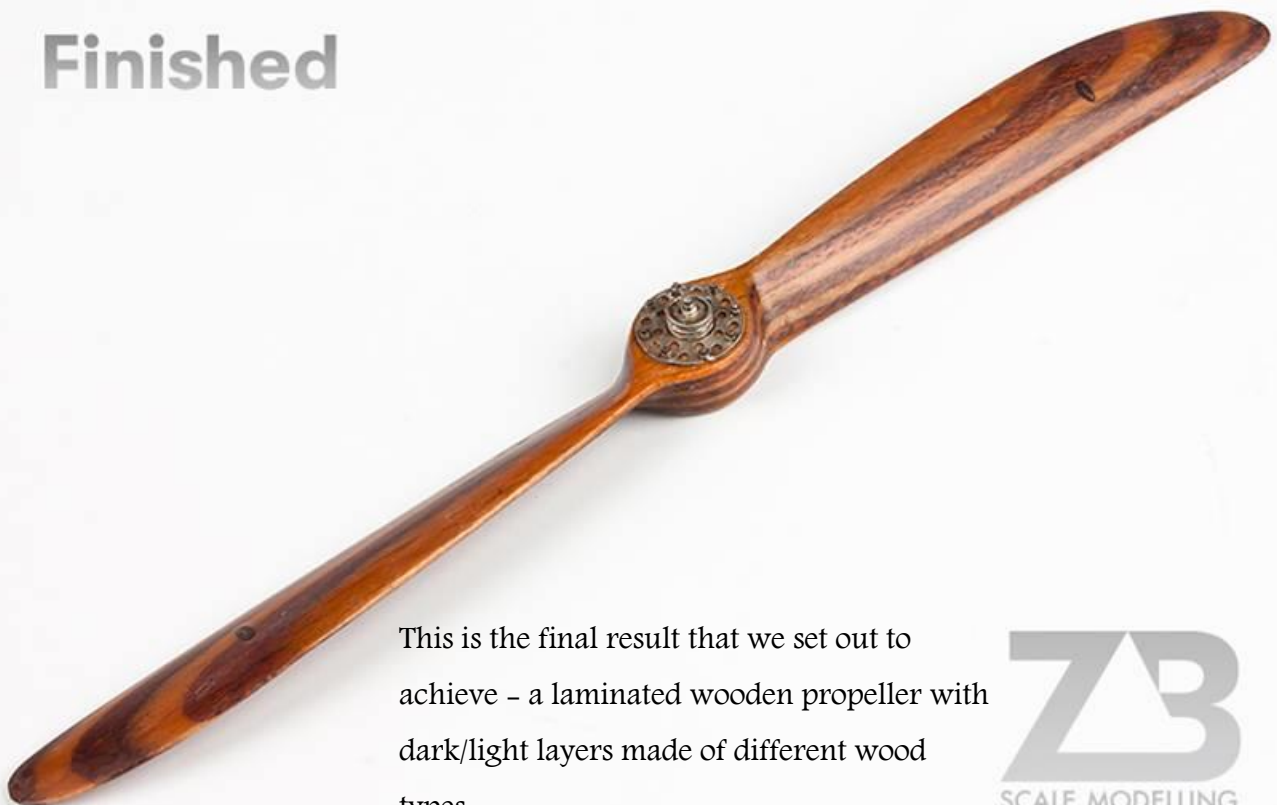
... if you find it too orange in colour, just overspray it with Smoke Gray clear lacquer and the brown appearance will return.

Enjoy your new wooden propellers!

Step 9

Finished

This is the final result that we set out to achieve – a laminated wooden propeller with dark/light layers made of different wood types.

Realistic wood
using oil colors

Step By Step

There are many tutorials showing how to create realistic wood on your models. I would like to show you some of them and we can start with probably the simplest one – creating wood texture by smudging oil colours on an acrylic base.

The base layer of acrylic colour will right from the start set the colour and darkness of the final result. In this case I wanted to have the sides of the interior in a quite dark and reddish hue, so at first, I airbrushed brown Mr. Color over the whole. You can also create lights and shadows by lighter/darker colours to vary the surface and make it more interesting. What I really recommend is to finish this first step by overspraying the result with semi-gloss varnish. If you use matt Tamiya colours, the surface will take too much oil colour and will be too dark. But in this case, Mr. Colors from GSI have semigloss finish right from the bottle.

Step 1

Alternative - light wood

I wanted to create a nice contrast between the dark sides of the interior and the light internal structure. So I sprayed all the wooden skeleton parts with white and sandy colours.

Step 2

When everything dries properly, we can start with an application of oil colours. Take a little piece of sponge and apply oil colour directly to the surface. As I mentioned, I wanted a bit of a reddish wood, so I used Burnt Umber oil. If you would like to achieve a more neutral looking, brown-ish wood, Raw Umber is a great alternative. But as always in modelling, experiment, experiment and experiment, try also different oil colours for fun.

Step 3

Leave the oil colour to rest for some 15 minutes and then start smudging it with your sponge in the direction of the wood grain, until it starts to look realistically subtle.

This is that one secret additional step that will distinguish you from all the guys around. When the oil colour is half-dry, take a soft, dry brush and really without any pressing, go lightly over the oils to soften them even more. Now the wood texture is in scale and really realistic.

Step 4

After 24 hours, the oils should be nicely dry to the touch. I then recommend to overspray the result with acrylic/lacquer varnish to fix everything.

Step 5

Final Result

And that's it! Quite simple, right?

You can see the fully completed model in my new gallery here:

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951377&type=1&l=3b97c68189

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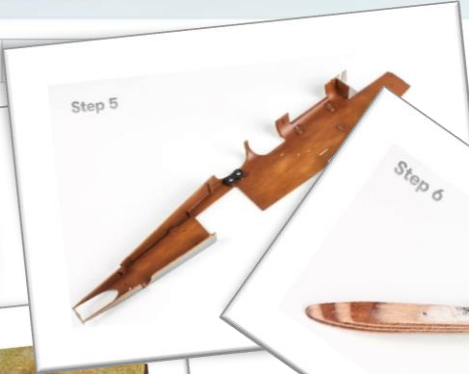
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WF20004, 1/6th scale Coppergate Saxon
£30.00

ISSUE 8 IS NOW UNDER CONSTRUCTION.

IF YOU HAVE AN ARTICLE OR TIP PLEASE SEND IT IN TO THE USUAL ADDRESS:

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