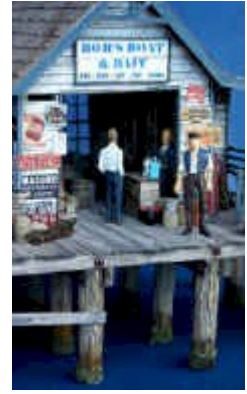




MY SCRATCH BUILDING TECHNIQUES

A Clinic with Laurie Green MMR



How many of you have walked into a model contest room at a convention like this and have thought to yourselves “Gee, can these guys walk on water as well!” And you then leave shaking your head and muttering to yourself that you could never achieve that standard. Also, when you are looking at these models you realize that they have got that something extra that looks just right, but you aren’t sure what that something is or how to achieve it! In this workshop I’m going to show you how you can achieve this contest award winning standard in your work, and show you just how easy it really is. You should be able to reach a standard that is your best, maybe not on your first attempt, but with a little perseverance, some basic simple techniques, a few tools and the right materials, you should be able to build structures that will stand up well in any model contest and of which you will can be very proud of. Talk to any of the guys who have models in the contest room and they will tell you they didn’t start off in this hobby building models to the standard you see in there. We have all made a start, some of us a lot of years ago, and have learnt through trail and error, attending clinics like this, reading magazine articles, talking to our fellow modellers, etc. and have slowly improved our skills and techniques. We all have plenty of skeletons of models hidden in the dark recesses of a locked cupboard somewhere that we don’t want anyone to see! So don’t be disheartened if your first attempt isn’t as good as you would like it to be. Just keep trying and you will improve.

MY TOOLS

I don’t use many tools, and none of them are out of the ordinary. Most of you would already have them in your toolbox. We all have our favourite tools, and we guard them with our life. In fact I think I will get buried with mine just in case! These are my most important tools, and with these I could build almost any model with just these few. They are:

- A No.11 scalpel handle and blades (or any suitable sharp modelling knife)
- Fine Exacto razor saw and mitre box or large cutters
- A steel scale ruler and a steel metric ruler (some have imperial on the other side)
- Large sanding pad (with sand paper both sides)
- A piece of 1" aluminium right angle, 3" long with 80 grit sand paper adhered to one face
- A good set of steel tweezers
- Pin vice and set of fine drills



Because I am a compulsive weatherer of my models, I have quite a range of weathering tools that can do some very horrible and brutal things to wood and plastic (and you're fingers if you are not careful). The main ones are:

- A coarse rasp
- A file brush (used to clean out metal files & available from most hardware shops)
- A rust removal wire brush in a 1" dowel handle - (available from auto shops)
- A pointed dental probe



Well, that's it! Not a lot of tools are required, and none of them are expensive, and the whole lot could fit into a large pencil case.

GLUES

I primarily use aliphatic resin yellow glue like ELMARS when gluing wood to wood. I pour a small amount into a film canister lid, and use a toothpick to apply the glue. Other glues that I use occasionally are ACC (Superglue or Loctite), and Selley's KWIK GRIP™, which is an acrylic adhesive – it's great for attaching metals such as corrugated aluminum to wood or cardboard and is available at most hardware stores. As well I use styrene cement for styrene to styrene.



WOOD & OTHER STUFF

Most of the prototype structures that I build are made of wood. Thus wood is my major material, with the vast majority being from MOUNT ALBERT TIMBER. I do scrounge other timber where I can find it - I have been known to use coffee stirrers from Starbucks (they are a perfect 10"x1" in 'O' scale) and BBQ matches (they are a perfect 6"x6" in 'O' scale). Ramon dowel (available from hardware and timber outlets and available from 1/4" up) is perfect for all my wooded piles.

Other materials I use are the standard stuff that we all use, Clear styrene, Evergreen styrene sheet and strips, cardboard, various types and thickness of paper, scale corrugated iron, and brass rod, strip and sheets.



PAINTS

Most of the paints are the pretty standard hobby paints, and are mostly acrylic for ease of cleaning plus there are no side effects if they are mixed or painted over each other. Up until recently I have almost exclusively used TAMIYA™ paints, always using their flat colours and have been happy with the results.



Recently I have tried, with good results, paints by HOWARD HUES™ (www.nobleminis.com), which are made for the military figure painters. They come in a nice variety of earthy colours, cost the same as TAMIYA™, but you get twice the amount for this price. I do use a couple of thinners based paints because I can't get the equivalent in acrylic, mainly a red and a blue by HUMBROL™ (an English based hobby paint) that I use for my rust effects. I also use several types of automotive spray undercoats.

STAINED, WEATHERED & PAINTED TIMBER MY No.1 TECHNIQUE

Most of the model structures that I build are of wood, and usually of a fairly aged appearance. We need to be able to take new, clean timber like Mount Albert Lumber produce and make it look old and grey, as if it has been out in the worst of many a winter.

I always individually distress, weather and age all my timber before it is assembled. This gives every piece an individual look rather than a bland even look if you do this after the model is assembled. While this can strain the patience sometimes, the results are well worth the effort. You don't need anything exotic to achieve this special finish. The method I use is a three-step process.



Step 1 - AGEING THE TIMBER

With every piece of timber I use, I drag the fine Exacto saw blade down every face (except on fine sections) I do this to impart a weathered grain effect, to break the smooth surface so the stains will soak in well, and to achieve a surface that chalks and paints will adhere well to. I also attack the end grain with the file brush to obtain the same effect. The more you drag the brush over the end grain, the deeper the grain will become. If you are feeling really nasty, you can take to any of the surfaces with the rust removal brush. This is great on end grain, but can sometimes make the other surfaces a bit furry.

My favourite and most used tool, the surgical no.11 handle and blade can now be used to cut deep and shallow 'V's into the bottom of boards, slice edges off and do other horrible things to age the timber. It's time now to use the dental probe. You can impart deeper grain by dragging the point into the timber, especially on the bottom of boards where the timber is rotting



away and where the 'V's have been cut. This tool can also be used to add knotholes by pushing the point in vertically and twisting around. The grain lines around the knothole can then be added. Nail holes can be added the same way.



Step 2 - STAINING THE TIMBER

My basic wood staining material, which I use to stain all my timber components with, is a mixture of inks and rubbing alcohol. The brand of inks I use is made by “**ART SPECTRUM**” and come in **SEPIA** and **BLACK**, and are made locally in Melbourne. The ratio I use is 5 ml of SEPIA, the same amount of BLACK, mixed into 200 ml of the rubbing alcohol (Isopropyl Alcohol), which is available from chemists and some supermarkets

That's a ratio of 1: 1: 40

An eyedropper, also available from the chemist, is ideal for this job. The final colour is a personal preference, and can depend on the species of timber you are trying to simulate, and onto which sort of timber you use to model with.

This mixture works beautifully on “Mount Albert” and “North Eastern” timbers. You can also add more SEPIA than BLACK to the base stain to get a warmer stain or add more BLACK than SEPIA to the base stain to obtain a cooler grey stain, or add more alcohol to lighten the stain. I also mix up a small jar of darker stain by adding more of the brown and black, which I to use to dip the ends of boards in to simulate rot caused by water and other weathering effects

Now that we have the basic stain ready to go, using a cheap 10 mm wide chisel brush, slop the stain on every face and allow to dry. Because it is an alcohol base, it's dry in about 15 minutes.

Step 3 - THE FINAL AGEING

The final step is to achieve that well weathered, silvery grey look and the effect of areas that are rotting away. For this I use pastel pencils. The types I use are made by **CONTÉ** (a French company) and are available at art supply shops. They come in a range of about 12 colours, but the ones I use for this step are the **WHITE** and the **BLACK**.



First, holding the pencil at a low angle to use the long edge of the pastel, lightly drag the pastel over the face of the timber.

You don't have to be perfect here, as we want an un-even covering. When all the faces have the white added, use the black pencil the same way to add darker areas of rot, especially on the ends of boards and around knotholes. As a final effect, use a black 0.5 Fineliner pen (from newsagents, art supply shops and drafting supplies) to highlight knotholes, deep grain, nail holes and the edges of split timber.

A SPECIAL EFFECT

If you want the effect of total split timber, where a board has broken in half, using the sharp knife cut a series of shallow V's across the board. Tightly grab each end of the board and then pull and twist at the same time until the board rips apart giving a very long jagged break. Thinned balsa wood is great for this effect. Re-stain the jagged ends with the ink/alcohol stain and



add some deeper split effects with the dental probe and the Fineliner pen.

ROUND TREE PILES



A lot of the early structures like saw mills, mines and wharves and piers used tree trucks with the bark stripped away as the main support structure. I use these a lot to vary to type of materials used in my structures. 9 mm diameter Ramon dowel is great for this, as it is a very similar colour to Basswood and stains up the same colour.

To give the dowel a well grained weathered effect you can use a coarse rasp to deeply grain the face. Because I use a lot of this dowel in my structures, I have mechanized the process. I purchased a 4" brass wire brush and collet from the local hardware, and inserted it into my 240-volt drill. I then fitted the drill into a jig with a table and guide where the brush just pocks through the table. With earplugs in and safety glasses on, I turn the drill on and drag the face of the dowel over the spinning wire brush, slowly rotating as I go. The longer you hold to dowel over the same spot, the deeper the grain effect. The end of the dowel can be done the same way. The dowel can be now being stained and pastels applied as described earlier. For piles in a wharf scene, a thin strip of paper can be painted brown, dusted with rust powder and then glued around the pile, close to the top. An orange pastel pencil can then add some new rust runs.

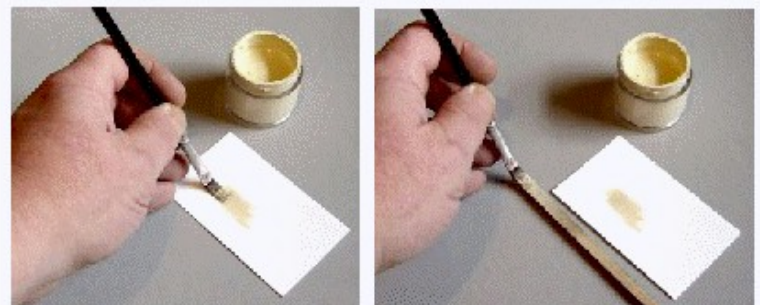


PAINTED TIMBER

Painted timber can range from a fresh coat that totally covers the timber right through to a few flakes clinging to a few sheltered spots. To achieve this variety of effects we need a variety of methods.

METHOD ONE: DRY BRUSHING

The easiest way to achieve a weathered paint effect is to dry brush the boards with paint. This entails dipping a flat chisel artist brush into the paint, wiping most of the paint off by lightly dragging the brush over some paper until only a small amount of almost dry paint remains. Then start to drag the brush down the grain, starting from the top of the board where the paint is less



weathered. Less paint should be applied at the bottom of the board. I always apply a first coat of a slightly darker colour first, then come back with a lighter shade and pick out various boards. This colour is also used under eaves or areas where the paint is protected and thus not as weathered.

METHOD TWO: PENCILS & PASTELS

For a real weathered paint effect where there is almost no paint left on the board, collared pencils and pastels give a good finish. With the timber stained, take a coloured pastel pencil or a good quality pastel and holding it at a very low angle, drag the pencil or pastel across the board until the finish is achieved. Several colours, such as orange, yellow and grey can be used to achieve a varied weathered effect. After the pencil or pastel has been applied, you can go back with a small brush and the shoe dye and further enhance the deep grain and rotten board ends. This works well as the shoe dye won't cover where the pencil or pastel has been applied, and it tends to accumulate in the deeper grain. Small dabs of the same collared paints can also enhance the effect.

METHOD THREE: DABBING ON PAINT

Using a scrap piece of terry-toweling material (used in bathroom robes and hats) place over your index finger and hold tight. With a large brush apply some paint to the tip and then lightly dab onto the boards. Every so often change the position of the cloth to a fresh area and continue to apply the paint until the desired effect has been achieved. After you have dabbed the required area, use a thick paint and a small brush add some small areas of solid paint, especially in sheltered areas where no weathering has occurred.



NOTE: Any of these methods can be combined or overlapped; it just depends on the result required. The best way is to try some test samples

WEATHERING CHALKS

Weathering chinks are great for that final touch on any structure or piece of rolling stock. The main types I use are rust and other natural collared powders from **BRANGDON INDUSTRIES**, who manufacture a super fine chalk that will stick to almost anything. The other main chinks that I use are sold by **STONEY MOUNTAIN** who have a boxed set of 12 weathering collared chinks in browns and greys and blacks that is ideal.



I kept the main colours in wide flat re-sealable boxes so I can hold the part over the chalk, dust it and allow the excess to fall back into the box. This keeps the chalk from getting over every on my modelling table. I normally apply these with a short stiff brush. I have as well collected a series of other chinks from various manufactures that I keep in a set of

small plastic draws (the type sold to hold small screws or other hobby stuff) and use these when I need that special colour.

WEATHERING METAL

One thing you will always find around a railroad yard and old structures is rusted metal. Even the most well maintained metal would show some sign of deterioration. Over the years I have tried many methods to achieve a realistic rusted metal effect. Some worked really well, others were only reasonable. The latest method seems to give me good results all of the time.

SMALL DETAIL PARTS

Small parts such as nut/bolt/washer castings, small pieces of styrene, paper and almost any other material can be made to look like rusted metal. They are painted with a black or dark brown paint, and when dry, dusted with powdered rust or rust coloured fine chalks. Commercial tile grouts also have some good rust colours, and work well. It is a little bit courser than the chalks and often needs "Dullcote"TM applied to ensure it stays where you want it too.



CORRUGATED IRON

This is usually pressed aluminium and comes in 8 feet or 10 feet long sheets by 24 feet long. I always cut it into approximately 3 feet wide sheets. The aluminium sheet that I use, which is a scale thickness, is manufactured and sold by "VR Models" and is available from Peter MacDonald - Phone: (03) 5367 3601 or vrmmodels@optusnet.com.au.



It is too thin to etch with ferric chloride (available from Dick Smith Electronic Stores), as it simply disappears before you can stop the chemical reaction. This acid can be used on thicker aluminium, but take all safety precautions when using it. To etch this thinner material I use 'LIQUID DRANO - Professional StrengthTM', available from most supermarkets, which is used to clear domestic drains. Pour the DRANOTM into an old metal tray and place the sheets into the liquid. Liquid Drano is a very mild acid, and will take several hours to etch the aluminium. This etching allows paints and chalks to adhere nicely. Just keep an eye on the process and remove when the desired effect has been achieved. Wash the sheets in water to stop the chemical reaction.

FOR A NEAR NEW EFFECT

Remove the sheets from the DRANO™ when the sheets have been mildly etched. For an almost new, but slightly weathered finish, paint the sheets with a flat aluminium paint. Maybe just a touch of rust on some of the edges will vary the final effect.

FOR A WEATHERED EFFECT

For a more weathered effect, but when the sheets are still in reasonable condition, apply more of the chalk powders (the best I have used are made by BRANGDON INDUSTRIES). Vary the amount and colour on each sheet, as corrugated iron does not age uniformly. This effect can be seen in the photograph above.

FOR A REALLY WEATHERED EFFECT

Allow the sheets to etch to the stage where the edges are starting to be eaten away and holes start to appear in the sheet. Wash in water to stop the etching process. Instead of painting the sheets with aluminium, I now use a dull red and dark blue paint (I use Humbrol™ wine red #73 and muted blue #104, but the choice is yours as to what brand you use). With both cans open and a 1/4" chisel brush in hand, dip into the blue paint and apply onto the sheet, and with the brush still wet, dip into the red and over-paint the blue. Vary the amount of red used on each sheet so you get a variety of colours from red through purple to blue. When all the sheets are painted and allowed to fully dry, brush on various coloured rust powders, varying the coverage on each sheet. Again, the best I have used are made by BRANGDON INDUSTRIES. Finally, with a lighter ochre coloured powder, dab on blotches at random to represent areas new rust. Don't over do this effect, and leave some sheets without any. The object is to achieve a set of sheets that look similar but have subtle differences in colour and rust spots.



SHEET METAL

A lot of flat sheet was used on structures, as well as being used for roof edges, capping and guttering. A great base material to use for this is artist's watercolour paper. It can be purchased from all art supply shops and comes in a large sheet for about \$5.00. Cut to the required size, and paint with the aluminium paint or the red and blue paint depending on the effect required. Dust with the rust powders to match your roof effect. Where you need to bend this paper for things like roof capping, score about a third of the way through with a knife and bend over a straight edge.

In fact, anything can be made to look like a piece of rusty old metal using the methods outlined above. Check out some of the examples below.

OTHER ROOFING MATERIALS

Other materials are used for roofing. One of the most common used is tarpaper. There are several methods, each with its own particular use.

CAR ROOFS: Many of the rolling stock that we model have tarpaper on their roofs to keep the weather out. When the model is ready to have the tarpaper added, I paint the roof with a matt black

paint. When this is dry, I paint a thick layer of PVA white glue over the roof area, and then gently lay one ply of a normal tissue over the glue, being careful not to tear the tissue. You can gently push the tissue into place, but leave the tiny folds that appear. This simulates the aging effect of the tarpaper. Because the tissue is so thin it allows the black paint to show through to different degrees and achieves a varied areas of colour from dark grey to white. This method can be seen on the structure above.

STRUCTURE WALLS AND ROOFS

I use a totally different method here. From the art supply shop, you can obtain a large sheet of black construction paper for about \$6.00. This a pulp type paper, and when you tear it across the sheet, it doesn't tear straight through, but sheers across the paper leaving the rough matted interior of the paper, which simulates the tar with the outer paper torn away. I cut the paper into 4 foot wide strips to the required length of the wall or roof, and with 80 grit sandpaper, sand the outer face to thin it down, as well as rough the surface. Don't worry if you crease the paper, as the next step is to hold the paper with both hands and place creases over the sheet. The sheet can now be torn across at an angle or an edge torn away or to any shape that looks a well weathered piece of tarpaper.



If you want holes in the sheet, drip a large drop of Superglue onto your sanding surface, allow to dry, place the sheet of paper over the blob and sand until a hole appears, as can be seen below.

When your sheets are to this stage, I use a large flat brush and apply a beige chalk and gray chalk over the entire surface to weather the matt black of the paper. The final effect is achieved with the CONTÉ white pastel pencil, which I use to highlight the creases we made in the sheet. Apply the pastel at a low angle and smug with the tip of your finger. The black CONTÉ pastel pencil can also be used to add

different shades to the tarpaper. The effect can be seen opposite as well as above on the back wall of the 'McPhee Lumber Company's maintenance shed'. Once the tarpaper is attached over the wall of random width boards, weathered 2"x 1" battens are added to complete the effect.

IN SMALLER SCALES (like HO and N) tar paper can be simulated with masking tape, by simply applying the tape and painting to the desired colour and applying some weathering chalks.

SOME FINAL EFFECTS

Rain and other weathering effects will form runs of rust from things like nails and bolts, vertically down walls, posts etc. To simulate this effect, you can use a mid-brown artist watercolour pencil. Draw the lines of rust onto the object and with a fine brush and clean water; soften the lines by drawing the

damp brush down them. Further runs of new rust can be added over the top of this and left as streaks. The orange pastel pencil by **CONTÉ** is perfect for this.

ROOF SHINGLES

I used to use a paper guillotine and sit for hours upon hours cutting and applying 1000's of individual shingles to a structure (my Rico depot had 6000 on it), but no more. I have recently purchased pre-cut paper shingles from "**PAPER CREEK MODEL WORKS**". They come in a letter sized sheet and are well printed on heavy paper and laser cut in the normal random effect of real shingles. They are a delight to attach to a roof and give a great effect. I doubt if I will use any other method after these. I bought mine through their website and you can reach there site by using the link below.



Some Online References:

WEBSITE LINKS

My Site	www.lauriegreen.net
Paper Creek Models	www.papercreek.com
Howard Hues	www.nobleminis.com
Bragdon Enterprises	www.bragdonent.com
Mt. Albert Scale Lumber	www.mtalbert.com

EMAILS

My Email	lauriegr@bigpond.net.au
VR Models	vrmmodels@optusnet.com.au

I hope you have enjoyed this clinic and make the opportunity to try out these methods. None are difficult to do and I'm sure you will achieve great results, maybe not at the first attempt, but you will with a little practice.

Cheers

A handwritten signature in blue ink, appearing to read 'Laurie'.