

Painting Solid Wood Models

Rev A

A forum member requested details on the finishing process which I use for a solid model. Thought others may be interested so I have posted this as a reference. There are certainly other methods for painting a solid wood model. But this may provide a starting point for folks new to creating solid wood models and wishing to develop an appropriate paint finishing method.

-Model Maker

1) Fill in any defects with filler as identified during construction / sanding before applying sealer or primer if an automotive primer is to be applied.

2) Sand the wood with 220 or 320 grit paper as final sanding before applying sealer. 320 grit is preferred.

3) Seal the wood - 2 coats Bin Shellac white primer for pine models with sap streaks. Use the spray can to eliminate the messy brush clean up for shellac. For woods without sap streaks, apply 2 coats of thinned oil based polyurethane or use wipe on oil based poly.

Bin shellac prevents sap seepage in pine. Oil based poly is also good for this but is not as good as shellac. Be careful with straight shellac from a can as it may contain wax which can impact adhesion of subsequent finish coats. Check to determine if the shellac contains wax.

- No need to wet the wood before applying the above sealers as shellac and oil based poly don't raise the wood. Both approaches seal the wood.
- Lightly sand after first and second coat using 400 or 600 wet paper. 600 is preferred.
- Spray the Bin outside due to the fumes. It goes on thin (almost like water) and when dry it sands very smooth. It can be sprayed down to a much lower temperature than automotive primer.

4) Prime with water based primer. I have two cans - 1 white and 1 gray. I decanted some left over water based acrylic primer into two 1/2 pint cans and had the paint store add some grey colourant to one can.

- I've landed on initially brushing 2 coats of grey. Then apply 2 coats of white, wet sanding after the second coat and after the 4th coat using 600 grit paper in each case. If you see any pin holes after the second coat of primer, you can add some putty to address or simply dab on some extra grey primer to build up locally.
- When sanding the 4th coat of primer, if you sand too much, the grey primer will be exposed before you break through to the wood. If a little bit of grey is exposed, don't worry. But if for some reason there is a significant area, brush on another coat of white primer and wet sand. The wet sanding of the 2nd coat and 4th coat should in both cases remove any brush marks.
- You should be careful in selecting the water based primer. To determine if the proposed primer is suitable apply a couple of coats to a scrap piece of wood. When the second coat is dry after the manufacturer's specified recoat time wet sand the painted test area. The wet sanding should produce a very smooth glass like finish, and the removed paint should be in particle form. An

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unacceptable primer will clump and peel during the sanding process. I've tried several primers from the major brands - Dulux, Benjamin Moore, etc. They sand out very smooth.

- Oil based primers can also be used but involve more fumes, a more difficult brush cleaning process and may have a longer time between recoats.
- Note: When wet sanding the primer on straight sections of the model, I use a piece of scrap wood as a sanding block and wrap the wet paper around it. This removes any high spots and aids in levelling the surface. For non flat areas, I simply rub the wet paper without a backer.
- As an alternate, automotive spray primer can be used. This will allow skipping the sealing and brushed primer coats above since these primers will seal the wood as well as prime it. Each coat of primer should be sanded.
- It really doesn't matter whether an automotive primer or water based primer is used as long as the result is a sealed wood surface and a smooth as glass finish after the final sanding of the primer.

I am not very good at using spray paint which results in runs and build up in scribed control surface lines. Brushing the primer provides the ability to build up specific areas with thick coats of primer or apply thin coats adjacent to scribed lines, etc. to prevent filling these with paint.

5) Apply base color(s) / camouflage. Folks often have their preference for paints. I started with Tamiya since I airbrush the colour coats and have stayed with this brand. But there are certainly other good brands. I use the manufacturer's thinner to dilute for airbrushing, rather than a home brew.

Paint can also be applied using brushes. But most brushed on water based paints these days don't seem to level like the old oil based paint. Brush painting models is a skill I have not developed. I find air brushing provides a very smooth surface although there is certainly a financial cost to obtain the air brush equipment (air brush, air source, respirator, etc.) as well as a learning curve.

Note: Tamiya paints in a bottle can be very difficult to apply by brush. They are primarily intended for airbrushing. Consider other model paint brands when brushing. Craft acrylics and paints from other sources can also be brush painted but should be tested on a primed scrap of wood when first being used since the opacity can vary between colors and manufacturers.

Of course, spray paints can also be used if an appropriate colour is available and you are comfortable controlling the spray pattern and coverage.

6) After base colours / camo are complete, apply a separator coat of gloss water based varnish for decals and any additional detail painting. I use a couple of acrylic varnishes - Createx and General finishes applied with an airbrush. Other brands are also available. Spray lacquer can be applied, but I had a bad experience with it dissolving the Tamiya paint. There's a trick to applying the lacquer since it cures "hot". I haven't mastered the technique for applying lacquer, so I stay with water based varnish. There's also a trick to thinning the water based varnish for airbrushing or brushing. It requires thinning to flow properly when applied and the amount of water varies by brand. I always used distilled water for thinning. Water based acrylic varnish is also available in spray cans, but I have never tried it.

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- I try to paint some of the markings (rondels, large insignia's, etc.) using masks cut out using a silhouette craft cutter. The separator layer of gloss varnish applied before I commence adding these painted details allows me to correct any issues, etc. if required without damaging the base colours / camo. These supplemental details are painted using an airbrush and/or brush, depending on the detail

7) Apply any decals – My decals are home made using decal paper and a colour printer. There are numerous internet references on how these are made and attached.

8) Final clear coats - Apply 2 thin coats of high gloss water based varnish. Very lightly rub the first coat with a fine (1200, 1500, 2000 or even 3000 grit) foam backed sanding media being careful not to sand over any decals. You can also use the paper sheets since it is a very very light sanding. The foam backed sanding media follows any curves better than the paper. If the final finish is to be gloss, don't sand the second coat. But if a different level of gloss (semi gloss, matt, etc.) is required, lightly sand the second coat. The high gloss water based varnish provides the best physical and light protection for the finish and decals even under a semi gloss or matt final coat.

9). If the final finish is to be semi gloss or flat apply the appropriate finish.

- Note: For matt and semi gloss final finish, don't be afraid to blend two different types of gloss water based varnish. For grey coloured planes, I have found a mixture of 1 part semi gloss with 2 parts flat provides an eye pleasing matt finish. It's also more durable for handling and cleaning.

Please note:

- I don't use Future. It's not supposed to yellow, but I have read some internet postings which indicate it does eventually turn slightly yellow. Some folks have also indicated it can be difficult to apply using an airbrush.
- Don't use any oil based poly urethane other than for initially sealing bare wood since it will yellow over time.

