Wooden Kit Construction Techniques

By D. Scott Peterson
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I always wanted to write a tip sheet for building wooden kits. This is that attempt.

Tip one - Take the kit out of the packaging and start the darn thing. Collecting unbuilt kits is nuts, unless you plan on having your spouse sell them after you pass on. But even that my never happen. Usually they have no clue as to the value of these things and they wind up in the garbage or they get taken to the cleaners by some unscrupulous reseller.

These kits make beautiful models and the Laser kits fit together perfectly. No cutting of tiny little window openings in sheet wood, tabs and slots match, fit-up is a cinch, and the look of the finished model can make you look like an expert. With a few tips, even you will be surprised.

Tip two - Put a new blade in that hobby knife. I buy #11 blades from Hobbico or X-acto by the 100 pack. Your local hobby shop can order them from Walthers. I put a new blade in at least every project and often when cutting a lot, every few hours. You can also buy them in a smaller quantity, if cash is tight.

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Tip Three - Read the instructions, study the plans, study the laser cut sheets. Identifying all the pieces helps when you start to build the kit. I also like to determine what colors I will be using because I like to color the pieces while they are still in the sheet, so I need to know what and where the pieces are.

Tip Four - If I could give one tip, never use full strength paint with a brush. In fact I never paint, I stain with paints. First I like Floquil solvent based paints. I like to wrap a rag around the tip of my finger, put that over the open bottle of paint, shake, and then rub the paint into the wood. The best way to do this is while the parts are still connected in the laser cut sheet. This puts a scale amount of paint on the wood. If it is an older structure I stain the wood first with black shoe dye mixed with alcohol 5% to 95% (or dirty thinner). Then I rub the paint on in a thinner coat. This makes the paint look old. When building the model, sand the edges of the wood to remove the burnt black char from the laser as best as you can. Then when the model is glued to a point where you can paint the edges, do that with a thinned out amount of paint.

To prevent warping, stain or paint both sides of the wood. This is especially important with water based paints. While the coating is still wet, stand the wall section up so air can dry both sides evenly. Sometimes warping is unavoidable. With great care you can bend the piece back the other way once dry. Also walls can be reinforced from the inside with stripwood to pull out warps.

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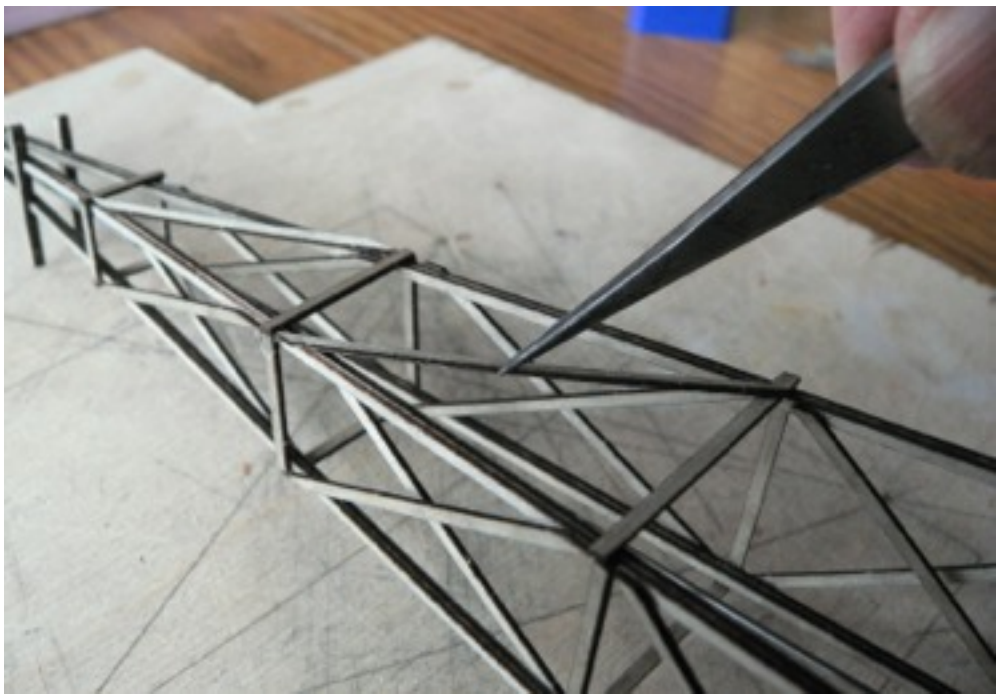
If you model for the outdoors as I also do, warping and dealing with this issue is alway a challenge. The best way to deal with outdoor models is to use only one material for construction. Mixing materials and their different expansion/swelling rates can only lead to warping or adhesive failure.

Stains - what I use. I purchase shoe leather dye from Fleet Farm, in the boot section at our store, and thin that down 95% to 5%. I buy the dark and medium brown and black. I have baby food jars with black stain, brown stain, and brown with black stain. I bought a gallon can of alcohol in the paint section. The gallon was cheaper by volume but harder to pour from the can. Try and get the highest alcohol percentage by volume as the more water in the product, the more chance for warping.

For staining the stripwood which comes in some kits I built a 25” long staining tray out of 1-1/2” PVC pipe with end caps. I glued the caps on the pipe and then ripped the pipe in half, the long way, on my bandsaw. I glued on small 3” long half pieces of pipe for feet on each end. I can stain multiple pieces of stripwood without making a mess (well that can be debated). I use a 1” brush for speed and I never clean it. The dye doesn’t harden and the extra color adds to the patina the next time you stain. I also have a small carpet remnant that I throw the wet stripwood on to dry. The carpet holds the stripwood up so air can dry all sides of the wood evenly, preventing warping.

Tip five - Use a tweezer on the small pieces. I have a favorite one that has fine points. I also have a second favorite that is a squeeze to open type. I use them when applying glue. I put the glue on the small pieces and then wipe off the bigger globs so I don't get squeeze out when gluing the two pieces together. The tweezers keeps the glue off my fingers.



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Tip six - Glue that I use. Most of the time I use carpenter's yellow glue. Elmer's has a nice little glue pen with dual tips, one at each end (see picture). I found mine at Menards. It holds one fluid ounce and can be refilled from the larger tip end. Just pull out the rubber applicator and refill from a larger bottle. Then reseat the rubber tip. The other end is the one I use. It has a fine point and applies a small amount right where I need it. Another suggestion is to clean the inside of the cap where the tip fits into the tip ring. If that fills with hardened glue, it will mash the tip and ruin it. I use my fine tip tweezer to clean it out every week or two depending on usage.

The other adhesive I use is an extra thick CA (cyanoacrylate) glue. I use this for gluing plastic to wood and other dissimilar materials. The thick glue takes longer to set and won't soak into the wood too fast. I also use it for quick dry applications, wood on wood, where I need something held together now, without clamps using a CA accelerator. This is a spray that instantly sets the CA glue. After gluing two pieces together, you can spray the stuff or take a plastic rod and dip it into the open bottle and then apply it sparingly. If you spray the accelerator, it will get all over the pieces and if you need to use some more CA glue where you just sprayed, it will set in a instant. If you spray anywhere near the open glue bottle, the tip will clog, then set, and you will have to clean it out.
Another glue tip - throw away that plastic cap that comes with the one ounce bottle of CA and use a push pin in the opening (see picture). The cap tends to leak glue and then it gets all over the outside of long spout. It will then stop sealing and the glue will set in the bottle. the push pin works beautifully.

I would rather use the yellow glue on wood verses the CA glue because the yellow glue takes paint better, can be sanded easier and doesn't leave shinny residue when dry. It also gives me more adjustment time when aligning the pieces together.

For very small pieces of wood or gluing many pieces at one time, I take a small piece of plastic, like from the5 plastic bag the kit may have come in, put a few small drops of

glue on it, and dip the end of the wood in the drop for more application control. The glue will take a while to dry because on the thickness, and it is easier to dip the wood rather than grabbing the glue bottle and squeezing it each time. This works for both the yellow and the CA glue.

Tip seven - Gluing in kit window glass. If the kit includes clear plastic windows, laser cut within a larger sheet, find out if the CA glue will craze the plastic. CA on clear styrene will craze and fog the clearness of the plastic. It won't look like it at first, and even if you are very careful, when it dries, it will travel and fog the clearness. Clear acetate isn't affected as much so you can use it on this material. To check, if the directions do not specify, test the CA on a small piece cut from the sheet. Wait a good 15 minutes as the thicker CA takes that long to fully set. It grabs sooner but fully sets later and that is when the fogging happens. Nothing detracts more than foggy windows.

Handle the window material with tweezers. Your fingers will leave fingerprints and that will attract dust. There is nothing more unattractive than big fingerprints in your windows.

Tip eight - I use clamps for gluing almost everything. I found a bunch of small 1" opening micro plastic clamps in a hardware store sale table. You can also find them at Harbor Freight. They are great for clamping flat stock together while the glue sets. I have a couple dozen of these.

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I also use Quick-Grip micro bar clamps. The style is older but can still be found. They have a 4-3/8” opening for clamping building end walls together. I also bought some brass flat stock .093” by 1/4”. You can get this 36” long from Walters (370-9736). I removed the steel bar and replaced it with the 12” or 18” long brass bars by cutting the 36” into pieces. I now have some bar clamps with a longer reach. They are not as strong as the steel bars and especially with the extra long reach, but I am not using much pressure on my models and I needed the extra length for longer buildings. I model in G scale and O scale so the buildings are bigger and longer. I also build HO models for our club and the same rules apply for those size models.

Tip nine - My eyes are getting older and I need a pair of magnifying lenses that fit over my regular glasses. It sure saves eye strain. The one thing you have to learn is how much closer things seem when painting. At first I knocked over paint bottles with them on so flip them up when moving your hands around the work bench.

Tip ten - the more light the better. You can't do your best modeling in the dark. Get a desk lamp or two. I sit in a bay window area when I can, in our dining area. I am extra careful there as even though I bought the dining room table, for some reason, it isn't mine.

Which brings up another point, I use a couple different sized self-healing cutting mats on the table for cutting and gluing on. I try to slip a piece of paper under the model when gluing to save glue buildup on the mat but I forget sometimes. A single edged razor blade held at an acute angle to the table scraps off the glue without marring the table too much. But I would never get glue on the table, Linda.

Tip eleven - I buy paint brushes as cheaply as I can for staining. I buy good brushes for painting figures and other tiny work. I have a bunch of baby food jars for thinning paint. I never thin in the paint bottle but in a jar. add the paint first, then the thinner, only adding thinner until the paint is at the right consistency. That all depends if you are staining with the paint or making it more opaque. Make sure you have all the wood you want stained handy and do them all at once, the thinned paint has a shorter life in the jars and staining one more piece because you scrimped is a pain. I usually stain weeks before I construct the model so this is important for me to remember.

Tip twelve - Staining sheets of wood for building sides. The one thing wrong with laser cut plywood is that the wavy grain in the plywood across all the simulated boards will not give you an individual board look. Stain the wood with one coat, then after that dries, take a smaller brush and stain some individual boards with another coat.

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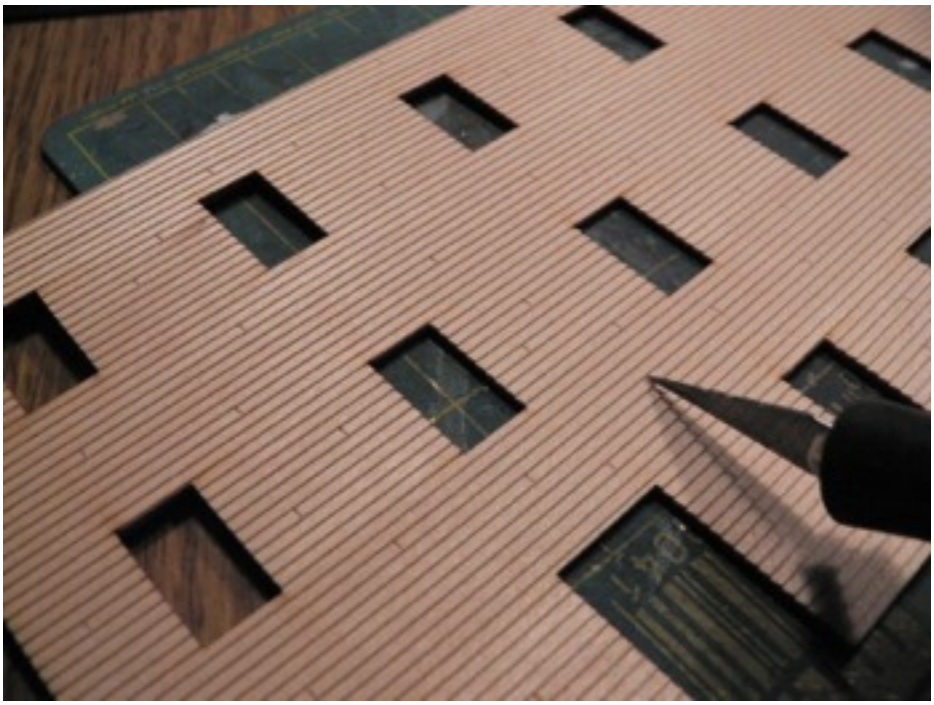
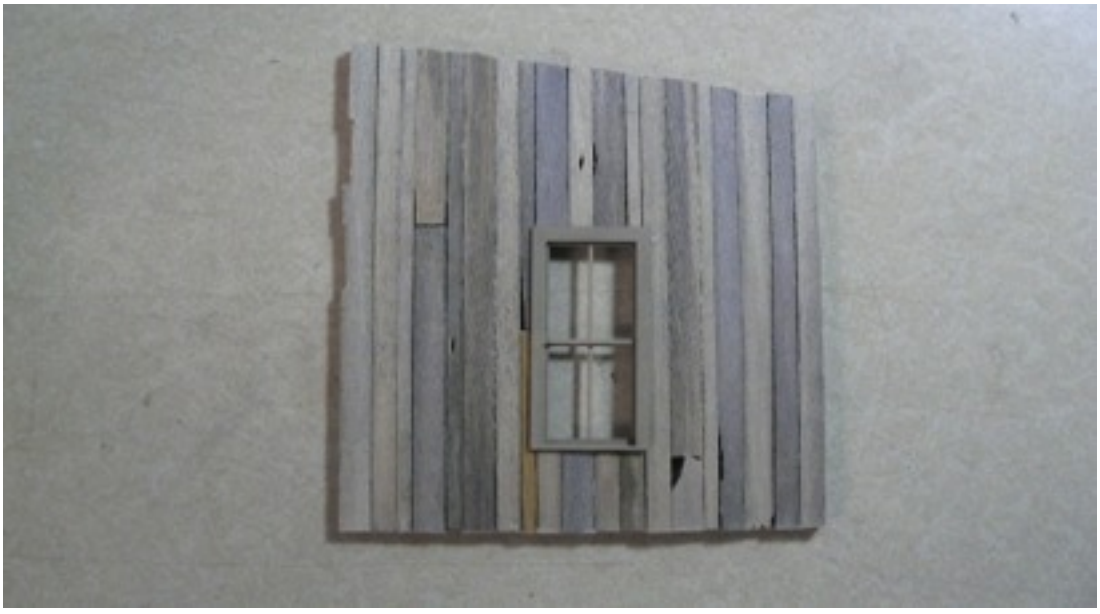


I also like to cut random perpendicular cuts to represent two boards in each run of the siding. It breaks up the similar appearance of the siding. Stain a second coat only up to the cut to make the boards look like they are two different pieces of wood. If the building is very old, you can twirl the tip of the hobby knife in the boards at random places to represent knot holes. Stain these darker also. Try a little thinned paint on some boards if you are representing reused lumber and also cut some notches in the board ends as if the boards are failing. Nail holes made from a sharp pencil also add to the realism. The graphite makes for a stained hole appearance. Of course walls built from individual boards gives the best appearance as seen below.



Tip thirteen - try some dry brush on pigment colors for finishing the model. These work great for rusting up some iron looking things or dirtying up the structure at the ground line. Be careful, too much doesn't look good and the stuff doesn't come off once rubbed in. Try it on a scrap piece first to develop your technique. These can be purchased at your local hobby shop in kits of colors for weathering. A.I.M. products, manufactured by Mark Ballschmieder, a modeler in my home town, are products I use.

Tip fourteen - the lonely can of spray paint. This stuff works great. If you love an air brush fine, but I hate cleaning the darn thing all the time so I buy camouflage flat colors of spray paint or other flat colors for big jobs. I use the air brush is for really fine work and weathering when the weathering powders don't work. Cleaning the spray can nozzle after spraying is important. Invert can and spray until clear. Not much paint is used on these small models, the spray cans will last a long while but if you let the nozzle clog, they don't sell new ones. If anyone knows where you can buy more nozzles, I would love to her about it.

Tip fifteen - I had a carpenter friend of mine cut a dryer vent hole in my home's rim joist and I put in a spray paint booth near the vent in the basement. I built the booth out of plywood to fit a 16" x 20" furnace filter installed at an angle. The filter knocks the paint particles out of the air before heading up the pipe. The booth has a light and a blower and vents out this second dryer vent. Don't cut into your main dryer vent. Nothing good can come from that.

I bought a plastic cake decorating swivel stand, put it in the booth, and spin and paint what ever I need. Leave the blower run for a while after painting to clear the air. It works very well. I don't get nearly as dizzy anymore. You can see the PVC vent pipe behind the spray paint cans in the photo.

Tip sixteen - make some sanding blocks. I take 1x2 lumber cut less than 11" long and glue fine sand paper to them. I make different blocks for different coarseness of paper. I also made a 1/4" plywood 6x9" block with fine sand paper stuck to it for sanding larger

flat pieces of wood. These are handy for sanding off the char from the laser cut edges and also shortening boards that are cut just a little too long. You can buy sticky backed rolls of sandpaper from your hardware store which works great. I use mostly 80, 120 and 220 grit papers. Use the silicone carbide type abrasives, they last longer because as they wear, they brake off in sharp pieces renewing the surface.

Tip seventeen - I use a lot of stripwood when building models and I have built a storage box for the various sizes that I use. It was made from a cardboard box and some mailing tubes. The sizes are listed across the top and down one side of the box. I also have a spreadsheet with the sizes and Walters part numbers on for easy reference when e-mailing in an order to Dave at the hobby store. The stripwood still in the plastic wrappers are odd sizes that didn't fit in the size category of the box.

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Tip eighteen - List of tools for model building. Here are the tools I can't live without.

See your favorite hobby shop person for the items below

1. X-ACTO Knife with extra #11 blades
2. Cutting mat
3. Sanding block (I make my own from a 1x2 and 80, 120 & 180 grit paper glued to it).
4. Small modeling files; flat, round and triangular
5. Tweezers; squeeze open, squeeze closed
6. Diagonal cutting pliers (rail cutters) for everything BUT cutting hardened music wire
7. Magnifying glasses for extra fine work
8. 6" ruler and a 12" ruler both metal for cutting against, scale ruler (On30 or HO), and a model framing square for setting walls to 90 degrees

9. Pin vise for small drills & an assortment of small drills
10. Razor saw for cutting and scraping wood to give a nice grain pattern.
11. Small needle nose pliers
12. Small clamps (I look for deals in the one dollar bins at the hardware store).
13. Masking tape (1/4", 1/2" wide) Painters tape for taping over partially painted projects. Double stick see through tape for holding stripwood on plans while gluing.
14. Adhesives; cyanoacrylate (super glue), Insta-Set CA accelerator, wood glue, I like waterproof wood glue for indoor and outdoor projects.
15. Paint brushes (assorted), paints and thinners
16. Paper towels
17. Small screw drivers (jewelers screw drivers, set of straight slot and Philips)
18. Rotary tool for grinding, cutting & drilling (nice to have but not necessary)
19. Bandages
20. I also have a small modeling table saw which I purchased from Micro Mark. I build lots of models so this is a luxury for most but not for me. I also purchased the carbine blade for it. You should see my finger. I also have a band saw and a table top drill press to round off the larger tools in my arsenal.

Hope you found at least one good tip in here.