

TOOLS and PRODUCTS

for

WORKING

with

BALSA WOOD


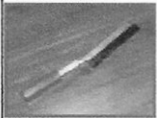
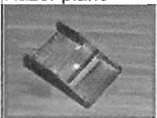



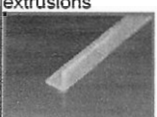
Working with Balsawood

By Paul L Daniels



Tools for working with Balsa wood

To make working with balsa as effective as possible, you will need to use the right tool for the right job. While there is certainly no end of tools that you can possibly use (or make!) for balsa, we'll out line the fundamental ones which will change the "chore" of working with balsa into a pleasure.

Tool	Average cost	Details
Surgical knife with No. 11 blade 	\$2.00~10.00	Without doubt, you cannot do without this tool. There is simply no way you can work with balsa without a nice knife and <i>sharp</i> blades. Ensure that your blades are always sharp, a blunt blade makes working with balsa a lot harder but it's still sharp enough that you can cause yourself some serious damage from overexerting. To save money on blades, learn to use a sharpening stone, a few quick passes with the stone and your blade will be ready for the job at hand.
Razor saw 	\$10.00~\$20.00	For balsa thicker than 4mm the knife should be replaced by a razor saw for straight cuts, especially if you're attempting to cut against the grain. Select a razor saw which has replaceable saw blades and make sure you always have a spare one. For the best cuts use the finest tooth blade you can obtain and don't rush the process. Use a mitre box to assist with keeping the saw upright and aligned.
Razor plane 	\$10.00	Much like the situation where people attempt to cut thick wood with a No. 11 knife rather than using a razor saw, a lot of people attempt to use sand paper rather than a razor plane to take off the bulk of balsa when shaping down. If you're filling your room up with balsa dust then you should be using a razor plane. A razor plane will let you shave down your fuselages, leading edges and trailing edges with such ease that you will never touch sandpaper for anything other than the finishing shaping. A sharp, well adjusted razor plane will feel like a hot knife in butter.
Balsa stripper 	\$10.00	Though this is more of a scratch-builder tool, the balsa stripper is still incredibly useful, especially if you find yourself spending a lot of money on strip balsa stock. If you consider that a strip of 3mm x 3mm balsa costs \$0.25, that means there are about 25 strips in a 75mm wide sheet of 3mm balsa, hence the total cost would be \$6.25... rather than spending \$2 on a 3" wide sheet of 3mm balsa and using a balsa stripper. Best of all, you can create strip widths that suit your project at hand as you need them. Definately a very versatile tool.
Steel ruler 	\$5.00	Such a simple tool yet very important. Don't try use plastic or wooden rulers as the balsa knife will typically slice right into them.
Mini clamps 	\$3 for 20	Often available in hardware stores in bags of 20, these mini clamps are incredibly useful. They are ideal for holding together small balsa parts while you're waiting for glue to set or simply for standing balsa parts up so you can paint them. Get a couple of bags, it's amazing how many you use at once
Aluminium extrusions 	\$3~\$5 for 1m lengths	Most hardware stores carry 1m / 40" lengths of aluminium extrusions for fairly reasonable costs. Get L and square extrusions of about 1" size on each side. Cut the 1m length into various smaller lengths and keep them handy, they make excellent right-angle braces for when you're gluing in fuselage sides, ribs etc.

Prep, Paint, And Protect - The Basics

Nancy Snellen, C.P.D., C.P.T for Delta Technical Coatings
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Although the fun of beginning a project is enticing, it is very important that proper preparation be done first. While few actually enjoy this it is far better to take the time to do it right the first time around and be truly happy with the end result. Delta has made crafting easy and fast with products designed especially to prepare, paint, and protect the projects that we've lovingly created.

Preparation means more than just getting supplies together and beginning, especially when one is doing woodcraft. The preparation is made easier when one is selective about the wood purchased. Pieces with knot holes, wood that is extremely rough or wood that is so green it is warped and perhaps has sap oozing from it is better left alone.

PREPARATION

It is important to seal the wood, and for this step Ceramcoat® All-Purpose Sealer should be brushed on and allowed to dry completely. This sealer is unique in that it is formulated to partially penetrate the pores of the wood and partially stay on top of the surface, thus allowing the moisture that is in the wood to be sealed in while outside moisture is prevented from penetrating it. Proper sealing will prevent the paint from cracking or peeling later.

Ceramcoat® All Purpose Sealer will not raise the grain as much as many other brands, so when the sealer has dried completely a light sanding with a fine grade sandpaper will normally smooth it and provide a nice painting surface. Again, after sanding, wipe the residue away with a soft, clean cloth or brush. Do not use a tack cloth as those contain chemicals, which can prevent proper bonding of the paint to the wood.

PAINTING

If the paint seems to drag add a bit more moisture to the brush. If you see brush strokes too much pressure is being used. Holding farther back on the handle can eliminate this. If the paint doesn't seem as smooth as you'd like, immediately brush across the surface using little pressure, then gently brush again in the direction in which it was applied.

Some people like to use a foam brush for basecoating. If this is your choice, wet the brush and blot it in a paper towel to remove the excess moisture. Fill the brush with paint and stroke it on just as when using a bristle brush.

Many people have problems basecoating. As a rule, this is because there is not enough paint in the brush and they try to stretch it out. The result is that some areas are opaque (meaning that you can't see through the paint) and others are streaky or transparent (meaning that you can see through the paint). Other times too much moisture is used and this thins the paint so it doesn't cover as well so patches of the surface are visible. Also, while gentle pressure eliminates brush strokes, it is important that enough consistent pressure be used on the brush to distribute the paint evenly. Enough paint, the correct consistency, the right pressure, and even strokes will eliminate basecoating problems.

Some colors are transparent colors and are not good for basecoating. Should you select a transparent color, know that several coats will be required for good coverage. Each coat must dry completely before another is applied. Other colors are opaque, and usually one well-applied coat of Ceramcoat® acrylic paint will cover nicely. If you do not know whether the color you selected is transparent, write a sentence on a scrap piece of wood and test by painting a stripe of color over it. When dry, if you can see through



Ceramcoat®
All-Purpose
Sealer



Ceramcoat®
Acrylic Paint



Ceramcoat®
Gel Stain
Medium

the paint easily, it is a transparent color.

When the basecoat has dried, some people like to sand lightly with a very fine grade of sandpaper. As a rule, this is not necessary but if it is done, for best results sanding should again be with the grain. Once more you will need to wipe away the sanding residue as before.

Some people will use a piece of a brown paper bag for sanding. This will work, but there are some drawbacks. If the paper is folded it is easy to mar the wood if too much pressure is applied on the edges when the paper is rubbed back and forth on the surface. Also, one must be sure that there is no writing on the paper as it can leave dark smudges behind. It is far better to use the proper tools and be happy than to use something else and be sorry. A sandpaper with a fine grit (# 400) lightly used will provide a smooth surface without doing harm.

Sanding may cause a second light coat of paint to be necessary. Any time another coat is required it is best to apply a thin coat. Delta Color Float™ is a good product to use for thinning the paint and will also create more open time. For this, you use 1 drop of Color Float with 1 ounce of water. You can mix a little of this mixture with paint that you've poured onto your palette or just dampen the brush in the mixture before you pick up more paint. Delta Color Float™ will make your paint dry a little slower, giving you more time if necessary to smooth out any brush strokes.

Another product that is very good for thinning paint is Ceramcoat Acrylic Thinner. Begin by mixing equal parts of the thinner and paint, adding more paint or thinner until the desired consistency is achieved. Some colors will require more thinner than others so do a test before using the mix on a project.

Dry time and cure time are different. The paint will dry to the touch in minutes. The actual amount of time for each will depend on the temperature and humidity. In order for the paint to cure additional time must be allowed. Again, the temperature and humidity will help determine the exact time this will take and the addition of the Color Float mixture will increase both the drying and curing time. One is usually safe in transferring and painting a design within a few hours and certainly by the next day. It is also much easier to erase any transfer lines after the basecoat has cured.

PROTECT

In order to both brighten the colors and protect the painted surface it is important that a good quality finish be used. Ceramcoat® Acrylic Varnish is an acrylic, water base finish that will protect the painting and is quite adequate for items that will be indoors and slightly used. For anything that will be subjected to the elements and receive a great deal of handling or use, it is best to use Ceramcoat® Exterior/Interior Varnish. This is a water base polyurethane finish that is very hard and durable. Both varnishes are available in Matte, Satin, and Gloss.

With either the acrylic or polyurethane base, for maximum protection one should brush on 4-6 coats of varnish, letting each coat dry between applications. Fill a large, dry brush with the varnish and work it into the bristles just as you did the paint for basecoating. A damp brush can cause white streaks or smudges to appear in the finish when it is dry. These white marks are very difficult if not impossible to remove, but using a dry brush to apply varnish over cured paint will eliminate that problem.

Fill the brush with varnish and work it into the bristles. Pick up more varnish and stroke it over the surface, going in one direction and using light pressure. Pick up more varnish as needed and continue until the entire surface is covered. Allow the varnish to dry completely between applications.

Varnish should be applied in a draft and dust free room. If desired, a light sanding can be done before the final coat is applied. Be sure to use a very fine grade of sandpaper, sand lightly, and wipe away the residue before brushing on that last coat.

Let the varnish cure for several days before placing anything heavy on it so as to prevent any dents being made in the finish. It is a good idea to wipe a coat of clear paste wax on the bottom of any painted object that is placed on the finished project, as this will prevent the two sticking together.

If one wishes to stain the wood instead of basecoating it, there are two schools of thought about using the sealer first. Some prefer to not seal but instead, apply the stain, wipe away the excess, and let it dry completely before brushing on the sealer. Others find that they have better results when they seal first, let it dry and then stain. In order to know which method works best for you, try both techniques on a scrap of wood before beginning the project.

It is good to know that you don't have to purchase special stains for your project because Delta has made it easy to create your own. Simply mix equal parts of Ceramcoat® Gel Stain Medium with your choice of Ceramcoat® acrylic paint and apply this with either a brush or clean, soft and dry cloth. You can add more or less color to the medium if desired. Wipe away any excess and allow the stain to dry completely before proceeding.



Ceramcoat®
Acrylic
Varnish

When painting a design on a stained surface the same technique is used as when painting on one that has been basecoated. After the painting has dried and cured overnight, erase any transfer lines and brush on the finish as directed above.

With a little practice one can prepare, paint and finish a project easily and beautifully with these fine quality Delta products.

TERMSSEALBASECOATTRANSFER

– the act of transferring a pattern to a surface. On a dark background a light transfer paper is used and on a light background, a gray transfer paper. To eliminate distortion a stylus or dry ballpoint pen can be used to transfer the design after it has been traced onto tracing paper. *NOTE – one should never use carbon paper to transfer designs, as the lines will continue to bleed out from under the paint. Instead, purchase Transfer Paper in the art and craft department.*

OPAQUETRANSSPARENTFINISH

- the final step, or finishing, of a project. Varnish is used to finish and protect a painted item. Several coats, with each coat drying between applications, should be brushed on to provide maximum protection and beauty. – permitting light to pass through so objects beyond can be seen; a sheer color that can be seen through – not transparent or translucent, solid – a color that cannot be seen through. – painting a surface with a base or background of color prior to finishing or painting a design. – to close off as pores of a surface, sealing them to eliminate moisture from escaping or being absorbed. For this first step in painting, a special product (Sealer) must be used. - After the design is completed and dry, it is best to allow the project to set overnight if possible before the finish is applied. This will allow the more recently painted area to dry as well as cure. The extra time will also prevent any white streaks or smudges, which can be caused by excess moisture in the paint when the finish is applied. - Select the color of Ceramcoat® acrylic paint that you wish to use as a basecoat. Dampen a soft, clean brush in water and blot it on a paper towel to remove the excess moisture. Fill the brush with paint, really working it into the bristles. Pick up more paint, enough to complete one stroke from top to bottom or side to side, and stroke it in one direction. It is best to paint with the grain of the wood. Again, add paint to the brush and stroke this on directly beside the first. Continue in this manner until the entire surface is covered. - If the wood feels fairly smooth when the hand is run over the surface, there is no need to sand at this time. However, if it feels very rough you will want to sand with medium grade sandpaper. *Always sand with the grain, never across it. This will assure you of a nice, smooth surface on which to work whereas going across the grain will result in less than satisfactory results. Before proceeding wipe away the sanding residue with a soft cloth or a brush used only for that purpose.*