

Colouring Wood Turning

CLEAR FINISHES AND PAINTS

The safety of the clear finishes we use on woodturnings is finally being accepted, after decades of concern by the public. This was based on the concern that there were metal dryers in our varnishes and oil finishes that make them poisonous. At one point, this was true. But now all of our clear finishes are safe to eat off of once the solvents have evaporated. Lead was the metallic dryer that was the culprit. It was removed by law from both pigments and clear finishes in the 1970s. This information is confirmed by experts such as Bob Flexner, in his book "Understanding Wood Finishing" (Fox Chapel Publishing 2010). Bob also produced an article that appeared in American Woodturner, Spring, 2008 Vol. 23 No. 1. The information was recently corroborated in the new AAW "Wood Fundamentals" program material by Rob Wallace, a well-known woodturner. Russ Fairfield even wrote a special article about it, coming to the same conclusion. (www.woodturnerruss.com/FSOriginal3a.html)

If you are using colors rather than clear finishes, then the pigments in the finishes can still be a problem. The lead, which was used in many pigments as well as dryers, was removed by law in the 1970s. Before that, it made as much as 50 per cent of the volume of some pigments – far more than the volume in dryers found in clear finishes. However, other toxic materials are still to be found in pigments. There are food-safe choices available in all the standard colors and they can be identified and used in mixing your own colors to create food-safe finishes. This is much better than buying cans of pre-mixed paint with unknown pigments.

The tubes of paint you buy at artist's supply stores all carry a lot of information. They list the names of the pigments (along with a unique index number for that pigment) that go into making up a particular color. Often there are several pigments. Armed with these pigment names and numbers, you can find out all the information you need on any hazards.

This information is stored at a site maintained by the University of Arizona which explores health and safety in the arts. It has sections on both pigments and preservatives used in painting and drawing. It lists a vast array of colors. From the nine blacks, for example, you can find that Mars Black (a standard color) has no significant hazards while Antimony Black is extremely toxic if ingested. The site is a searchable data base, so it is easy to find information.

The site is located at: www.tucsonaz.gov/arthazards/paint1.html.

The above data base specifically looks at any hazards caused by ingestion, inhalation or skin contact. It also lists other hazards.

Other information to look for on a tube of paint is an ACMI Approved Product Seal. It certifies that the paint is non-toxic both to children and adults – “that it contains no materials in sufficient quantities to be toxic or injurious to humans, including children, or to cause acute or chronic health problems”. ACMI, or The Art & Creative Materials Institute, Inc., is an American non-profit association of art and craft suppliers. To get the seal of approval, a product has to pass rigid standards set by a Toxicological Advisory Board and a toxicologist must approve the formulae for every color of every product and must approve every formula change.

A listing of certified products can be found at: www.acminet.org/CPListSearch.html.

The list is long as it covers arts and crafts materials children are likely to come in contact with, including felt markers, clay, crayons, etc. The listings on paints are about half way down the 60 page document.

STAINS: DYES AND PIGMENTS

The main difference between a dye and a pigment stain is the size of the colour particle. **Stains** are very large insoluble particles that are worked into the open spaces on the surface of the wood. **Dyes** are near molecular in size, soluble and occupy the open spaces in the cellulose structure of the wood. Since it is in the wood, the dye is more transparent and does not mask the wood grain like a stain. However, stains tend to be more light fast than dyes.

Dyes can be classified by the solvent they use: water, alcohol or oil:

Water soluble dyes – are easy to apply and are very slow drying , making them easy to apply without overlaps, and easily blended through a transition. They are compatible with oil and lacquer finishes. Water will raise the grain.

Alcohol and solvent soluble dyes do not raise the grain but can be difficult to apply as primary colour over large areas without having visible overlaps. They are a better choice when sharp colour separation is desired (e.g. grain painting).

The water and alcohol are carriers for the actual dyeing compounds. There are several categories of these, including fibre reactive, acid, direct, basic, vat, etc.

Some dyes are very light fast. Others are not. This varies not only with the type of dye (fibre reactive, acid, basic, vat, etc.) but also with the colors chosen. Basic dyes are extremely light-sensitive on natural fibres like wood and wool. Acid and reactive dyes are much more lightfast. Do not be put off by the term "acid" as it is normally vinegar. Direct dyes are not particularly lightfast, but there are exceptions. For fabric dyes there are good charts on light fastness. (www.pburch.net/dyeing/FAQ/lightfastness.shtml) Some fabric dyes are heat-setting and must be boiled into the material being dyed -- not a good technique for finishing wood. Some of them work if hot water is used to dissolve the powdered dye -- and then the liquid is applied to the wood.

If the instructions call for the use of soda ash in the process, use it, as it binds the colour into the wood or fabric. Not all dyes need it. For example, Rit and Tintex do not need soda ash added. Procion MX dyes call for it.

Toxicity is also a concern for any wood turners whose work is likely to come into contact with food, or be put in the mouths of children (such as toys). The first thing women generally ask when confronted with a dyed salad bowl is: "is this food safe?"

There is only one wood dye on the market that is sold as non-toxic. It is a water-based dye manufactured by Shellawax (U-Beaut Enterprises). At the time of writing, it is not available in North America. Manufacturers will not generally attempt to label their dyes as non-toxic because of the possibility that people will drink them straight out of the bottle. This is especially true of alcohol-based dyes which may contain Isopropyl alcohol. This is alcohol that has been contaminated to make it toxic. The actual dyes and pigment compounds themselves also can be toxic in varying degrees. However, on wood turnings, the amount of dye or pigment used is extremely small in most cases, and the alcohol or water has already evaporated. It is also generally under several layers of varnish, oil, or water-based finishes and can only be exposed if the finish is scratched or worn off.

An excellent source of information on toxicity is the Material Safety Data Sheet. There is usually a link from the manufacturer's website to the MSDS. Check Section 3 (Ingredient Composition/Information), Section 4 (First Aid Measures and, especially, Section 11

(Toxicological Information), which includes a section on what happens if the product is swallowed. Manufacturers are very cautious about their claims because of legal implications.

Always check what is in the dye or pigment. It only takes minutes to look up the MSDS sheet or to check on the University of Arizona site mentioned above: (www.tucsonaz.gov/arthazards/paint1.html)

All dyes, whether alcohol- or water-based, require a top coat to add protection.

WATER BASED DYES

1. **Mixing The Dye Solution** - The dye powder should be dissolved in warm (150°F) distilled water - ½ ounce of dye in ½ pint of water is a useful ratio that will yield a strong solid color. The dye solution can be diluted later if a more transparent color is desired. If you don't have a scale, then one (1) level Tablespoon is close enough. Mix well, cover the jar, and let it cool. Strain the solution to remove any sediments before using. The shelf-life of the dissolved dye is from 6 months to a year. Store it in a closed Mason jar in a cool dark place. Throw it out when a bronze colored sheen forms on its surface

2. **Selecting The Wood** - The wood should be bleached before using the light or transparent colors such as the yellow or red. If the grain will be accented, then use a strong open grain such as Ash or white oak.

3. **Dyeing The Wood** - An overnight wait every time the wood is wetted will insure that it is thoroughly dry for the next step. The following discussion is based on a solid uniform coloring of the turning.

4. Preparing The Wood - based on a solid uniform coloring of the turning

The wood surface has to be smoother than for any other finishing technique. The dye will accent every surface blemish, including torn grain, tool marks, and sanding scratches. But, natural defects and bug holes can add character to the wood. The wood should be bleached before applying yellow or red. The two-part wood bleach made by Kleen-Strip® will give good results without a lot of effort. Wet the surface of the wood with a damp paper towel while it is spinning on the lathe. Set it aside until the next day so that it is thoroughly dry. Surface dry isn't good enough.

5. **Final Sanding & First Dye Coat** - Sand with 600-grit or steel wool to just remove the

surface fuzz that was raised from the water. Sand in both directions to get a really smooth and whisker-free surface. Any more than this will expose a new surface. Liberon makes a pre-mixed water based acrylic wood dye. The acrylic reduces the amount of raised grain you need to remove. With the piece in the lathe, lightly moisten the wood surface with a damp paper towel, and then apply the first coat of dye. If the end color will be *black*, *this first application should be a dark blue*. This will color-correct the black, and prevent the formation of a bronze glaze on the surface. A *sponge brush* is an excellent applicator. Dip the handle in the dye to identify the brush after using it, rinse it out, and save it for the next time.

Spin the wet turning on the lathe and remove all excess liquid with a paper towel. Be careful not to throw dye around the room.

6. **Second Dye Coat** - Put the piece on the lathe and burnish the surface with a dry paper towel. This removes any loose dye from the surface, and should be done after every application. Moisten the surface with a damp paper towel and apply the second coat of dye. If the end result is to be black, then this is the first coat of black dye. If the final color will be the same as the first, then this will be the final application of dye. Burnish the surface with a soft paper towel while it is still wet.

7. **Third Coat of Dye** - Apply a third coat of dye if the final color will be black. If not, go to the next step.

8. **Applying A Finish** - We have several choices of finish. We can apply a liberal coat of paste or liquid finishing wax to the entire surface. Spin the piece on the lathe and wipe the surface with a clean towel while the wax is still wet. DO NOT use a hard finishing wax stick because it will abrade the dyed surface and remove the dye and grain enhancing wax.

Or, we can spray on a light coat of Deft®.

Or, we can apply a Tung Oil finish such as Waterlox® or Gillespie's®. Use Watco if there is nothing else available. Do not wait; wipe it off immediately with the piece spinning in the lathe. Done! Hold it up and admire!

9. Some Things That We Have Learned (The Hard Way)

Use distilled water because the metallic salts and chlorine in tap water will change the color and

reduce the shelf life of the dye solution.

If you are using two different colors, and they touch, the dyes can be kept from creeping into each other by burning a line where the two colors meet. Do this as part at the sanding stage. This cauterizes the cells so the dye has difficulty creeping through them into an unwanted area. You can use a wire with the piece spinning on the lathe to burn a line on spindles (do NOT wrap the wire around your fingers). On a bowl you can burn a ring with a piece of plastic laminate – the type used for kitchen counter tops. To help make a clean ring, use a skew to start the line, then hold the plastic laminate in the groove until the smoke rolls.)

Products

Product	Supplier	Recommended by / Comments
Aniline dyes (Liberon)	Craft Supplies	
bleach made by Kleen-Strip (2 part bleach)	Paint supply stores	

Advice

By Advice

Suggestions welcome...

ALCOHOL BASED DYES

Alcohol-based dyes allow you to speed up the process. They generally come pre-mixed. But some are concentrated and need to have more alcohol added. Follow the manufacturer's instructions.

Some dyes, such as TransTint can be mixed with either alcohol or water, making them very versatile.

One of the advantages of alcohol-based dyes is that they penetrate into surfaces where water-based dyes are repelled by natural oils or resins

Apply the dye to a very well sanded dry surface. Andy DiPietro uses Mohawk Ultra Penetrating Stain rather than a dye. Fiebing's leather dye works very well. If necessary, a second coat of dye can be repeated as soon as the alcohol in the first coat has evaporated (half an hour) You can use a hair dryer to speed evaporation. The rapid drying time makes it simple to try special effects, such as different colours of dye applied on top of each other. The combinations of dyes are endless, but it is usually best to start with a dark color (such as black). Each dried coat of dye is sanded back a bit to allow some raw wood to show through. Then a lighter color dye is added to enhance this wood. Often three colors are used, like black, then red, then yellow. Or you can use black then blue, or black, then green. Jimmy Clewes likes to start with blue. Then he sands the blue back with 400 grit. Next, he stipples on some green. He does not cover all the blue, but uses a folded paper towel put large stipples of green on the blue. He sands this very lightly with 800 grit, then stipples yellow between the green spots. Do not rub the colors. He likes Chestnut colours. They have 5 per cent shellac added to help seal the surface.

Experiment to find effects you like. Do not sand the last coat. If you get too much color on the turning, you can sand it off, or wash it off with alcohol. Use denatured alcohol for this as well as for thinning the colours. Once you have created the colour effect you want, let the colours dry overnight. Then seal the colour into the wood. Andy DiPietro uses a light spray of lacquer. Any other oil or water-based finish will work. Do not use an alcohol-based product like shellac.

ULTIMATE LIMING

If you want to really enhance the grain pattern by liming the turning, open up the pores and grain in the wood before you start dyeing it by brushing it with a brass brush. (You can also use sandblasting, but it is very expensive to set up a strong enough system.) You can hold the turning in your hand and use a hand-held brush, or you can mount the turning securely somewhere (like on your lathe) and then open the grain using a soft rotary brass brush in a drill. Use the wheel-type brush, not the cup-shaped one. Brush along the grain pattern with the

lathe stopped – do not spin the turning. Alternately, you can mount a large soft brass wheel on the lathe and, holding your woodturning, carefully follow the grain pattern to open up the pores as the lathe spins very slowly

Once you are happy with the openness of the grain, sand the turning lightly with 320 grit sandpaper (or finer) to remove any marks left by the brass bristles on the solid (non-porous) part of the wood. Do not sand heavily as you will destroy the effect you are trying to achieve by sanding away the open pores. Blow any dust out of the pores with compressed air.

Stain the wood as described above, seal the pores with Watco or Danish oil or a light spray of lacquer, and then add the liming wax (or coloured shoe polish – the wax, not liquid -- if you cannot get liming wax). Rub any excess liming wax away, using an oil/varnish wiping finish or clear liquid wax, if necessary to get it off the areas you want to remain dark. Let sit overnight, and finish it with another coat of Deft, or an oil-based finish.

You can create other patterns using a Dremel tool to cut lines or put rotary bits in the Dremel to add texturing. You can also create a chatter type pattern.

EBONIZING

Natural ebonizing can be done on any wood high in tannic acid. These include Oak, Ash, Walnut, Cherry and sometimes Maple. If there is not enough tannin in the wood, the finish will be grey rather than black. This can be fixed by making some strong tea and painting it on the wood – then ebonizing it again. The ebonizing mixture itself is very simple. Wash the oil out of some new steel wool using soap and water. Make sure it is not stainless steel wool. Then add a ball of steel wool to a jar with enough household vinegar to cover. Let it sit about a week and it will go orange. The acetic acid has attacked the iron in the steel wool and made an iron acetate. This mixture reacts almost instantly when it comes into contact with tannic acid to create a natural black stain. Use rubber gloves when applying the mix with a paper towel because your fingers are covered with various acids (including tannic acid if you handle tea bags). Put an oil or varnish stain over the ebonized area to protect it.

After about a year, the steel wool/vinegar mix in the jar ceases to be active and has to be replaced.

Products

Product	Supplier	Recommended by / Comments
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Advice

By **Advice**

Suggestions welcome...

BLEACHING (making your own two-part bleach)

(Bill Neddow) Bleaching wood is a technique used by many woodturners. It lightens the colour of the wood. This can be the end result the woodturner wants – or it can be the first step in dyeing wood. (It is particularly important to bleach wood before using yellow or red dyes). Bleaching can also be used to get a zebra-like effect on Wenge because the black lines stay black while the dark brown ones lighten considerably.

Wood can be bleached to an almost pure white if the initial colour is light. Over time, however, this white will darken to an antique bone unless some color is airbrushed on the piece to stabilize the original color. Birch and Manitoba Maple are less apt to darken over time.

Bleaching involves using dangerous chemicals. All safety rules have to be followed very carefully as you are working with chemicals that will actually eat your clothing, flesh, or anything else they get on.

The easiest way to bleach wood is to buy the two-part bleach kit made by many manufacturers. This is generally available from paint stores. It is HIGHLY recommended that you buy a kit. The chemicals are diluted for you to the correct proportions, and although dangerous, are not as dangerous as handling and diluting stronger chemicals. However, in recent years, it has become harder and harder to locate these kits and you may have to make

your own. Chemicals can be purchased from chemical supply companies that sell scientific or soap-making supplies.

There is generally a "Part A" and a "Part B" bottle of liquid in the kit. Usually, the Part A is lye (Caustic Soda) and is applied first. Then Part B is applied over it while the lye is still wet. The Part B generally is Hydrogen Peroxide. The lye causes the peroxide to break down rapidly and the bleaching is a side-effect of this chemical reaction.

The kits are handy because the chemicals come pre-mixed in the proper strengths. If you want to make your own bleach, you probably will have to dilute these chemicals. Read the safety instructions on the bottle and follow them. If possible, exceed them. These chemicals do eat flesh. Wear the proper protective clothing, including gloves and a smock and completely cover your face. Wear glasses with a face shield over them. Glasses are not good enough.

Use distilled water as the chemicals and minerals in tap water can have a major impact on the chemical reaction you are hoping to achieve.

If buying concentrated Hydrogen Peroxide, try to get a mix that is under 30 per cent Hydrogen Peroxide. Over that, and you will have to sign lots of papers and produce copious ID as highly concentrated Hydrogen Peroxide can be used to manufacture rocket propellents and explosives.

The Hydrogen Peroxide can be used straight out of the bottle if it is 30 per cent or less. Do not try to use Hydrogen Peroxide from the drug store because it is not strong enough. It is usually a 3 per cent solution – or less.

The Caustic Soda must be reduced to a 10 per cent solution. It is easiest to do this if you buy it already in liquid form, rather than in flakes in a can.

Store the liquids in plastic bottles you buy at the chemical supply company where you bought the chemicals. These will not melt and release dangerous chemicals like some plastic bottles. You can use glass – but it cannot have metal lids or rubber seals as these will be eaten away.

Products

Product	Supplier	Recommended by / Comments
Caustic Soda	Suppliers of soap-making and scientific chemicals	In Ottawa, Blended Specialty Chemicals, 1456 Cyrville Rd. www.bscchem.com
Hydrogen Peroxide	Suppliers of soap-making and scientific chemicals	In Ottawa, Blended Specialty Chemicals, 1456 Cyrville Rd. www.bscchem.com
Two Part Bleach	Home Hardware	Randalls, Bonds décor, Ottawa

Advice

By Advice

Suggestions welcome...

GILDING (Gold Leafing) (Bill Neddow) Gold Leafing is a term used to cover both the application of real gold leaf (expensive) or a metal leaf alloy that looks like gold (inexpensive and very effective). There is also real silver leaf (silver oxidizes, which gold does not do) as well as pewter, copper and bronze. To avoid the oxidation problem with silver, aluminum is often substituted. Variegated sheets of metal leaf are also available that mix in various colours including black, blue and red. There are also mica powders available in gold and other colours.

Gold Leafing can add a tremendous amount of life and interest to a wood turning. It can be used to totally coat a piece, but I prefer a more muted approach with most of the wood showing – using the gold leaf to emphasize one or two elements on a turning. It is very easy to overwhelm the wood as the gold leafing is a strong element. But, some experimentation will give you

stunning results.

The best way to learn gilding is to spend some time working under the guidance of a gilder. You can usually find a gilder in the larger cities. They tend to be friendly and helpful. From them you can learn the skills and procedures involved. If you have tried to transfer gold leaf from the book to your workpiece, you have found how difficult it can be. You will be amazed at how simply an expert can do it.

If you cannot locate a gilder, then there are many sites on the internet that will give you excellent instructions for gold leafing. They include:

<http://www.gildedplanet.com/gildingtutorials.asp>

<http://www.thecarvingpath.net/forum/index.php?/topic/1709-oil-gilding-process/>

There are also books available at your local artist's supply shop.

The following notes are meant solely as supplementary information to the videos listed above and are not intended to be a complete guide.

It is best to practice with the imitation gold leaf. First, it is cheaper – and you will be making mistakes when you start. Second, the leaf seems to be a little thicker than the real gold one and thus is easier to handle. However, once you get used to handling gold leaf, you will probably start using the real gold because the finish is so much more brilliant.

There are two techniques for gilding – water and oil. The water-based was used on items such as baroque mirrors. It is very delicate, both in its appearance and in its durability. Thus we will concentrate on oil based gilding, which can even be used outdoors.

Read the tutorials and follow the instructions. Preparation of the wood surface is extremely important. Gold leafing requires a non-porous surface, so the wood has to be sealed. In the sealing process, you can add colors which (because the gold leaf is so thin) will help change the tone of the final leafing to warm or cold. Any scratch, hair or speck of dust will be telescoped into a mountain or valley if it gets under the gold leafing.

Adhesive or sizing, comes in many forms, and all forms share one important property called open time. This is the amount of time that the adhesive stays workable after it has been applied. Some adhesives are ready to use in an hour or less and can be used for small project. Others

will have an open time of up to 24 hours and will allow the artist to apply the adhesive to large areas without having to worry about it drying out before leaf is applied. Also, the longer the open-time, the more brilliant the final finish will be. To keep dust off of the longer-setting size, place the piece being gold leafed under a box while you are not working on it.

Traditional adhesives are oil based, but in recent years water-based adhesives have become very popular. Cleanup is easier, and they are easier to apply. If you are doing large areas, you can even get the water-based adhesive in a spray can. I would make sure the materials used for sealing the wood are water-based if I was using a water-based adhesive, or oil-based if I was using an oil-based adhesive. It should not matter as the better water-based adhesives are compatible with a DRY oil base – but I like to be careful. If you do not know what was used to seal the wood, cover the sealant with a coat of shellac before laying down the adhesive. The gold leaf, when applied, acts as a barrier, so it does not matter whether you use oil or water based sealant over the gold leaf. Shellac was the traditional top sealer. While pure gold leaf does not need to be sealed a sealant is usually applied to help ensure that the leaf does not wear away over time. Composition and other leafs must be sealed to prevent oxidation and tarnishing.

If you are not sure whether you have real gold or metal leaf, you can identify what you have by the size of the pieces of leaf. The real gold leaf comes in packages that are 3 3/8" x 3 3/8" square. The metal leaf sheets are 5 1/2" x 5 1/2" or 6 1/4 x 6 1/4.

Products

Product	Supplier	Recommended by / Comments
Jacquard Pearl Ex pigment (657 Sparkle Gold)	Available from most artist's supply shops	
Mona Lisa Pale Gold Metal Powder	Available from most artist's supply shops.	

Advice

By Advice

Suggestions welcome...

TRANSLUCENT GOLD HAZE

(Bill Neddow) A beautiful translucent gold haze can be added to wood without the need of an air brush. It is simple and quick, and really adds a “Wow” factor to an otherwise plain piece of wood. I have used it on bowls or platters along with a bit of gold leafing on a bead and some ebonizing on the edge. You can actually use it in the interior of the bowl. Real gold powder (expensive) is non-toxic. So are the mica powders in the imitation gold leaf. (PearlEx even states this on the box.) The microscopic pieces of mica are coated with non toxic titanium dioxide and/or iron oxide.

Put a preliminary coat of finish on the wood to seal the pores. It can be an oil-based finish or Deft. Once this is dry (overnight), add a second coat of finish. Immediately put a couple of pinches of the gold dust into the wet finish. It does not take much gold dust – maybe an eighth of a teaspoon to do one side of a 14 inch bowl. There is real gold dust available, but it is very expensive. I use either Jacquard Pearl Ex pigment (657 Sparkle Gold) or Mona Lisa Pale Gold Metal Powder. I prefer the Pearl Ex. Immediately start to try to rub the gold off, spreading it all over the area you want treated. Initially, you will have streaks. Keep rubbing. The more you rub, the more you get a beautiful haze effect without any streaks. When your arm is tired, you are done. Let it dry and add another coat of finish over the top to protect it.

If you use a bronze or copper powder, you will get a beautiful muted bronze or copper tint to the wood. But it will not have the “sparkle” that the gold has. I have also tried Platinum and Silver, but they just look like dull aluminum.

Products

Product

Supplier

Recommended by / Comments

Advice

By Advice

Suggestions welcome...

Veridris/Rust

(Louis Vadeboncoeur) Verdigris gives the effect of aged copper (varying tones of greenish colour) and can significantly enhance the appearance of your piece or parts of your piece. Applying verdigris over burned areas (pyroed) can add depth. Verdigris comes in a two part solution, the first part being a solution containing a high proportion of minuscule copper flakes, the second is a reactive agent which through a chemical process gives the green shading. Follow the instructions carefully. Usually you apply two coats of the copper solution, the second after the first coat had dried, this ensures a good coverage. While the second coat is still tacky apply a very light coat of reactive agent. If the verdigris coverage is not adequate, add another coat of copper solution on the areas where you want more verdigris and then apply the reactive agent on that area. You may wish to re-pyro over the previously pyroed lines as the verdigris will cover mask it.

If sealing the verdigris with spray lacquer make sure that you spray very light successive coats, as a thick coat will remove the verdigris effect and you will be left with a copper colour.

Products

Product	Supplier	Recommended by / Comments
Verdigris two part solution	Michaels (phone first, not all Michaels carry it)	

Advice

By Advice

Suggestions welcome...

REDUCING COLOUR CHANGE IN LIGHT WOODS

The colour of many light woods can be significantly darkened by the application of finishes. This can happen as soon as the finish is applied to the wood. It can also happen (or worsen) over time as the oil darkens with age. Linseed oil darkens considerably with age. This may be acceptable in some cases. But, in many cases you want to keep the wood as light as possible. Yellowing does not improve Holly or Box Elder [\[J1\]](#).

The simplest way is to use a water-based finish (if you want the warm effect that oil provides, first apply a base coat of shellac). The newer ones on the market give a natural look and avoid the cold blue look that many earlier water based finishes had.

Other traditional finishes to preserve the natural colour are lacquer and shellac, applied under the oil as a sealer. This keeps the wood from soaking up large quantities of the oil.

If, for some reason, you need to use an oil-based finish the following procedures will minimize the colour change.

- Use a lacquer based sanding sealer. It is best to make up your own sealer by adding a reducer to Deft Semi Gloss Lacquer (Clear Wood Finish). It is too thick from the can and should be reduced by 50 per cent with lacquer thinner for use as a sanding sealer. Flood the sanding sealer mix onto the turning until the wood will not absorb any more. Clean off any excess with a paper towel and let dry at least overnight. If the weather is humid or cold, it might take several days to dry properly. Rub the surface down with fine synthetic steel wool or very fine sandpaper (600 grit). Do not cut through

the sanding sealer. (This helps with the adhesion of the oil coat.) Now add several thin layers of your favourite oil based finish.

- Use a pre-mixed blonde shellac, or mix you own using alcohol and shellac flakes. If you mix your own, make sure to de-wax it before using it. (These techniques were discussed earlier). Thin the shellac (especially the pre- mixed) up to 50 per cent – depending on the density if the original shellac liquid. To apply, follow the instructions above for the lacquer sealer. Let dry several days, sand the surface lightly and coat with the oil-based finish.

This has the advantage of not only keeping the wood light, but also saving money. Shellac is cheap and the Deft (at the time of writing) is \$19 a gallon. This compares favourably the \$30+ a quart that many oil-based finishes cost.

[\[J1\]](#)Or spalted woods. No discussion anywhere on how to finish spalted wood.

Polyall 2000

(Bill Neddow) Polyall 2000 is great for stabilizing spalted and punky wood. It is a polyurethane-based resin similar to the epoxy used to make fibreglass and the results are the same. The material being treated is turned into a hard piece of plastic resin reinforced by the base material (in this case wood rather than glass fibre). It was designed to repair punky spots in boats, rotting window sills and door frames as it stabilizes wood extremely well., It also sticks tenaciously to steel and aluminum and has become popular with auto restoration buffs.

I have used it extensively to rescue those beautiful pieces of spalted wood that have gone just too far to be finished using traditional methods. In fact, I like it so much I now treat any softened wood with it rather than trying to harden the wood with shellac, white wood glue, lacquer sealer, or other traditional methods.

The downside is that the working time is short. Be ready to work fast. You have three minutes from the time you start mixing the chemicals together until it starts getting hard. You can increase this time by a couple of minutes by using cold Polyall 2000. But never put these chemicals in the kitchen fridge. I find using a disposable bristle-type brush best for slopping it on the wood in a hurry. It is immediately sucked up into the punky spots. Keep coating any of

these dry looking spots liberally with the solution until they stop absorbing the liquid. A little excess is not a problem. Without wood reinforcement, it simply dries to a dark cream color. It will sink over a quarter of an inch into punky wood, less so in woods that are not quite as punky. It will not penetrate hard healthy wood. This means the piece should be turned as close as you can get it to final form before treatment,. Otherwise, you might have to re-treat a few really punky areas. (Any “patches” you have to make will not show.)

The upside is that it is hard enough after five minutes to turn. I take a light shearing finishing cut to get a finish I can start sanding at 220 grit or higher. You can do the same thing with a scraper. If you have any “creamy” lines of pure Polyall in deep cracks, simply trace over them with a felt pen, rub the ink down into the wood, and you have a new spalt line.

The Polyall turns the wood the color it would be if coated with an oil or a varnish. Thus, you can use varnish or oil over the Polyall to get an even finish. Oils will stick to the Polyall and give the same even finish (the oil does not soak into soft spots). I have not tried water-based finishes as I assume they would not be compatible”.

Be careful with the fumes from this product. Treat it like you would epoxy resin and either ventilate the shop well or do the treatment of the wood outside. It takes several weeks for the odor to leave the wood.

Products

Product	Supplier	Recommended by / Comments
Polyall 2000	In Canada, from Woodchuckers Supply. In the USA Google Polyall 2000	

Advice

By Advice

Suggestions welcome...

Sand Blasting (equipment, different grades of sand, process) – to be completed