Experimental New Treatment for Wood

By Ron Kent, Hawaii

Prologue:

"I'll bet you own a restaurant," said the friendly supermarket checkout clerk. "No," I replied, "I'm a woodworker". "A woodworker? Then why..."???

Why, indeed! What does a woodworker do with five gallons of …. but I'm, getting ahead of myself! I will give you the answer to that question, which was only friendly banter at the checkout counter, but which may be of interest and use to other craftsmen. I'm going to tell you about a product and procedure that I developed a few months ago and now use as an integral part of every woodturning project. It involves a liquid that I use to soak all my wood, before, during, and after shaping and completing my work.

It had a very simple beginning: I bought a gallon of a product that promises to "stabilize and condition" wood. Tried it, liked it. Liked it enough to buy more and to incorporate its use in my daily production. I liked everything about it except the price: nearly fifty dollars per gallon!

I started wondering if there wasn't some other, more common liquid, that might do the same job. Something that might soak in, harden, and become part of the wood, bonding the fibers more firmly while also imparting a lubricating quality. It had to be transparent and non-staining. I started my search at the hardware store (Where else?) walking up one row and down the other, scanning each shelf for ideas. Then came the supermarket and the drugstore. One product caught my attention and seemed to hold a lot of hope....Clear acrylic liquid floor-wax! Transparent as water, promising to harden into a tough protective shield. Bonds firmly to the floor so certainly would bond to the wood fibers to form a dense composite. And anyone who has slipped on a newly waxed floor knows wax's ability to "lubricate".

Tried it, liked it...well, sort of liked it. Acrylic floor wax did indeed meet the criteria I had set up, but in doing so reminded me of another very important characteristic that I had forgotten to consider. Turns out that wax-impregnated wood does not take well to the multiple oil-soak technique I use to enhance translucence. The brilliant golden ambers now looked dusty and dull. And the price of the wax was little better than the conventional product I was hoping to replace. Back to the drawing board!

I tried a number of products over the next few months, haunting again the hardware store, drug-store, supermarket, and giant discount house; trying all sorts of concoctions, individually and in various combinations. In most cases the results were innocuous, in some, downright messy. Till one day, while on a shopping safari with my wife, I noticed her picking up a big bottle of syrupy golden liquid to add to our shopping cart. I made a mental note to give this a try when we got home.

Perhaps it is time to end the suspense. The liquid I tried and now find so useful is...are you ready for this?.... concentrated dishwashing detergent: Costco's Kirkland brand sells for about $7.00/gallon in Hawaii, quite possibly less in other parts of the country. (My guess is that this is their private label on a similar product with familiar major brand name, and that many or most other brands will deliver the same results.)

What are the benefits that I find? First, there is the advantage of stabilizing the wood; a great deal less "moving" and warping both while working on the vessel and after it is taken off the lathe. A second favorable difference shows up in cutting. The shavings are a delight! Clean, long, cohesive ribbons, both for fine trimming and for the macho adversarial plunge-cuts that characterize my favored rough-shaping "technique". It feels almost as if the wood has been lubricated and allows the edge of the tool to slide through the cut. I never did figure out what "conditioning" means. Whatever it is, I'll bet detergent does it!

Ah, and on the rare (Hah!!) occasions when I resort to using sandpaper it's a whole new sanding experience. For one thing, it allows sanding work that not only is green, but even wood that is soaking wet. The sandpaper still becomes clogged, mind you, but a couple sharp slaps on the bed of the lathe clears the grit and allows reuse again and again. And with dry wood, well. you have to try that to see for yourself. The closest I can come to describing the difference is to compare it to certain special woods (ebony comes to mind) where the dust seems to be tiny beads rather than that with which we are more familiar. Again, the sense of lubrication.

Technique:

Now back to my story.....! Though the experimentation never ends, I currently use a dilution ratio of one part water to one part concentrated detergent. (I've also tried diluting with isopropyl (rubbing) alcohol and suspect I get better penetration, but am not sure it justifies the added expense.) Even after this dilution, the result is a viscous, syrup-like liquid, leaving me to suspect that further dilution would heighten the economy without losing effectiveness. I vary the proportion each time I mix it, still seeking an optimum ratio. I do, however, regularly add eucalyptus oil to the mix - available at most drug stores. I use about one teaspoon per gallon. What does this add? A distinctive, pungent scent. It just smells good!

Green wood:

All of my work is on logs that I get from local tree-trimmers. They bring it to me as soon as the tree is cut, and I'm likely to start turning it the very next day. The wood at this stage is not only green, it is soaking wet! I strip the bark, mount the log, and rough-turn the shape to about one inch thick. (Attention NASA Engineers: Please read as 2.54 cm.). I remove the work from the lathe and slather on a thick coat of the mix, wait a few minutes for the foam to soak in, then repeat, as many as a half-dozen times, inside and out.

I haven't...yet...adapted detergent to my old "trick" of total immersion. (For many years I have used an open vat of Varathane...75 gallons of the stuff...for multiple immersion of completed turnings). A detergent" pre-soak"----at an early stage of turning---seems the logical next experiment to try. I'm planning a five-gallon tub for starters. (I also have begun experimenting with the mix as a "sealer" on end-grain of cut logs, waiting in my woodpile. I suspect it will decrease splitting and checking. As for other woods...woods not as porous as Norfolk Pine...well, I'd be very interested in hearing from you if you find out.)

After the soak---by whatever means---I set the work aside for a few days to allow detergent to permeate the wood, and become surface-dry.

Before I started using detergent this was a chancy thing to do. When I was lucky, the vessel-to-be only warped. I wasn't always lucky. There was a definite risk of losing the work altogether due to checking and cracking. With this new technique my experience to date has been minimal "moving" and zero checking.

At this point, I re-mount the workpiece and proceed using the usual tools and procedures, enjoying the benefits to cutting and sanding described earlier.

Dry wood:

I use the same procedure on logs that have dried out standing in the woodpile, and I find the benefits are even more marked. Norfolk Pine dries and spalts very rapidly in Hawaii's humid climate. Spalting typically starts within a month of the tree's cutting. By the fourth month the wood is almost completely black. Though there still is considerable moisture in the log, the wood acts as if it were dry. It is significantly more difficult to cut smoothly, and it is easily subject to bruising and tearout. This dark-and-dry wood drinks up detergent like a camel in the desert, but the overall process differs mainly in quantity. My goal is to penetrate...permeate...the wood with liquid detergent. Sometimes I start working the piece right after the soaking, before the detergent has even had a chance to dry. More often, though, I will subject the rough-turned form to repeated soakings over a period of days, then allow up to two weeks of standing before I finish the piece. Did I mentioned "conditioning" and "stabilizing? Let me now add another word: This wood acts as if it has been rejuvenated.

Effect on Finish:

I told you about trying acrylic wax and rejecting it because of its effect on the final finishing process. Detergent, on the other hand, seems to actually enhance my own particular technique. Remember, my finishing process consists of multiple cycles of soak, oil-sand, and dry. The detergent-treated vessel is fully receptive to absorption of the oil. It is difficult for me to be certain, but it seems to me that I am achieving even more dramatic translucence from the oils when using wood that was treated with detergent during forming of the vessel. How will detergent affect other finishing techniques on other woods? I haven't tried it, so I do not know, but my strong expectation is that, once dry, the detergent-treated wood will accept any of our standard, traditional finishes and that it might greatly improve cohesion of the new water-based products.

Safety:

We woodworkers should always be conscious of safety in our work..-..personal as well as environmental. (My membership card in American Association of Woodturners recently arrived in the mail with a Dayglo checklist of cautions). Our workshops are virtual minefields of chemical, mechanical, and biological hazards. The concentrated liquid dishwashing detergent, however, seems quite benign. The bottles carry only a mild word of caution: "In case of eye contact rinse thoroughly with water", and "if swallowed (swallowed??) drink a glass of water to dilute. Contact a physician." Oh, yes, "To avoid irritating fumes do not mix with chlorine bleach." The label also boasts that it is "specially formulated to kill germs on hands when used as a hand soap, contains no phosphorus, and has biodegradable cleaning agents." It even is "Safe for septic tanks".... though that doesn't happen to be one of my own concerns. Note: No mention of use as a wood conditioner or stabilizer. I think it is a safe bet that the manufacturer never envisioned this usage and it behooves us to make our own list of common-sense cautions. Primary among these is dust protection. I'm no more anxious to breathe detergent-treated dust than I am any other kind. Everything I've described in this article is still (may always be) in the experimental stage, with more questions than answers. "Benign?" Maybe, but I strongly urge everyone to use all of the normal precautions that accompany good practice in the shop.

About the author:

Ron Kent - thin oil-soaked, uplifted vessels turned from Norfolk pine are immediately recognized as his and his alone (though imitators have appeared). No one else has his minimalist/classical sense of form. The wood itself is an important part of the content. Norfolk pine is ubiquitous in the Pacific; legend has it that Captain Cooke saw to it that this very straight tree was planted everywhere to provide masts for sailing ships. Kent, like the sage wood pioneer. Wharton Esherick, seems to believe that all the wood you need can be found in your own backyard. Norfolk pine local (on Hawaii where Kent lives), renewable, and for the asking. Kent has an eye for spalting and, since he lives in the tropics, he now deep-freezes roughly turned pieces to halt the configurations where he wants them to stay. But translucency is Kent's miraculous innovation. Properly lit, his bowls glow. He can control the light by the thickness and the thinness of the walls so that the turned bowl shapes light. Kent turns light. There is one piece that only glows near the base. Others glow as if radioactive. The shadow of one's hand can be seen through the wood.

Left: Three samples of Ron's translucent, multiple-soaked, oil-finished thin bowls. To see other examples of Ron's beautiful work, and to read other unique tips and techniques that Ron Kent has pioneered over the years, visit his web site at:

http://www.ronkent.com/