



# Paint Perfection Part 2

## Tips & Tricks for Varnishing the Inside of Your Canoe

by Pam Wedd

**OK,** you have sat watching *Hockey Night in Canada* one evening with your new badger brush in hand flicking and stroking out all the dust and loose hairs from it. Now, it's time to get varnishing!

Hold on a second. Let's not forget the "Three P's of Painting" (and varnishing)—Preparation, Preparation, Preparation. The only way to get a really good finish on your canoe is to make sure you have done all the proper work beforehand. Once you've finished the prep, if you use a good brush and good varnish, in no time you'll be a painting like a pro.

Any canoe that comes into my shop always gets a good cleaning and washing with a solution of TSP—trisodium phosphate. It is a great grease cutter and is often used before painting. When I work on an old canoe, I always worry about what might have gotten inside it over the years—motorboat oil off the surface of the lake, sunscreen or hand cream dropped in the bottom, peanut butter and jelly sandwiches, fly dope, fish innards. The possibilities are mind numbing. TSP helps me sleep better because I know that the canoe has been cleaned out well. TSP is usually sold as a detergent powder in a "milk" carton. I put about four tablespoons in a half bucket of warm water and go over the whole

inside thoroughly with a cloth and soft bristle brush, which in my case is a well used kitchen scrub brush. Then I rinse the canoe well with a hose. After this treatment, any dirt and grease that would have prevented the new varnish from adhering will be long gone.



All varnishing jobs begin with a clean surface. So, Step 1 is cleaning the canoe with TSP and a scrub brush.

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### Check the Varnish

While you are washing is a good time to evaluate the state of the old varnish on the canoe. Lots of flaky, whitish-looking surface varnish usually indicates that someone has put some polyurethane on, which is now peeling off. Canoes are generally varnished with spar varnish, which tends to be flexible, a good thing for wood that is continually expanding and contracting with moisture. Many other clear finishes, like some polyurethanes, are much harder and less flexible. When these finishes are applied over the spar, the two flex at different rates, which leads to peeling. The other reason a finish is peeling could be that the previous person who worked on the canoe didn't adhere to the "Three P's" and probably had never even heard of TSP! A sure sign of this is the sand and pine needles buried in the varnish.

Another thing to look out for is blistering that goes right to the bottom of all the layers of varnish. I sometimes see this if the canoe has been restored previously and stripped of its inside varnish at that time. These big bubbles under the varnish mean that the very first coat did not adhere. Perhaps there was too much moisture in the wood (i.e., it wasn't properly dried) at the time of varnishing. Maybe they didn't sand at all. Or maybe the stripper was not cleaned off properly before the new varnish was applied. Who knows?

In either of these cases, I would probably advise the owner that the canoe needs to be stripped totally of all old varnish. Sometimes with the flaky varnish, a good hard sanding will remove most of the offending layer. But in both cases even though you have cleaned, sanded, and varnished properly, there is no guarantee that the previous coats won't continue to fail. All your hard effort will be wasted. It's best to go right back down to new wood and start from scratch. (We don't have time to go into varnish stripping details here. That will have to wait for another article.)

## Handy Sanding Hints

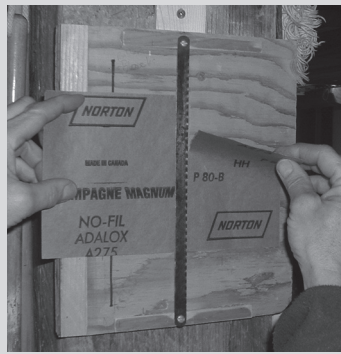
### Learn to Fold

Perhaps the most important trick I have learned in my shop is how to fold sandpaper. I learned this trick from Will Ruch of Ruch Canoes years ago.

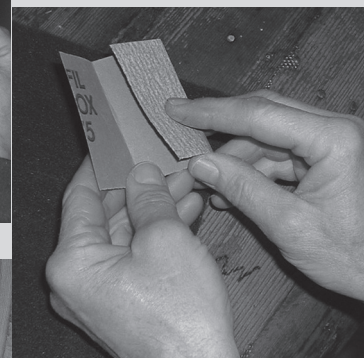
First, tear the paper into a usable size. I have a hacksaw blade mounted on a board to tear mine. For an inside sanding, I divide the full sheet into eighths, ending up with pieces about 2½ by 4 inches. This small piece gets folded into thirds. In this way, the paper won't slip around as you sand with it as it would if it were folded in half, and the folded layers give it some heft as opposed to a single layer. As one side loses its grit, you turn it over to the second side and then finally refold it to get to the third. If you fold it into fourths by folding it in half and then half again, you will end up rubbing grit surface against grit, thus wearing away half your paper before you get to it.

### Save Your Fingers

Another thing Will taught me was to wrap masking tape (at right) around the ends of my fingers to protect them from the ravages of the sandpaper when doing an interior of a canoe. Wearing gloves is clumsy, but without any protection you can wear the tips of your fingers pretty quickly and make them tender. The masking tape is just the ticket.



An old hacksaw blade mounted on a board serves as a handy cutter for the sandpaper.



Folding the sandpaper in thirds makes the job easier (above).



Masking tape will save tender fingertips when sanding.

### Prepare the Surface—Sanding

So, let's assume the canoe interior isn't flaky or blistering, but is just worn and perhaps bare in places. This is better; it can be re-varnished. Once the canoe is washed and been allowed to dry for several days, it's time to move on to sanding.

New varnish needs a roughened surface to cling to, which is why you must sand before and between each coat of varnish. There are lots of different kinds of sandpaper, but my favorite is Norton Champagne. This is an open coat (which should cause less clogging) aluminum oxide that seems to last about twice as long as other papers I have tried. 3M makes good paper, too. Don't scrimp by buying cheap hardware store paper. You will use twice as much, and it will take you five times longer to do the job. Sanding an interior is already pretty time-consuming—albeit meditative—work, but I don't need to make it any more so. There are other canoes in the shop calling for my attention.

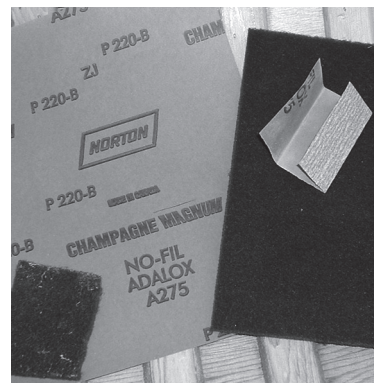
The first rule of sanding is to always go with the grain—except when you can't. There always is an exception to a rule, and I find these exceptions occurring on the inside of a canoe. All sanding will leave some scratches, but any scratches that are made in the same direction as the grain won't really show. I can easily sand the ribs with the grain (up and down), but the planking poses a problem. It is not really feasible to sand with the grain—back and forth between the ribs—on the planking, so I am forced to sand across the grain. Usually this is only a serious problem when dealing with bare wood, as the sanding will leave some scratches. The job is to minimize these

scratches. Once the canoe has a coat of varnish, further sanding scratches aren't really visible, and the next coat of varnish flows and hides them all.

I tend to use 150 to 180 grit paper on the ribs but would not use anything coarser than 220 on bare wood planking. I also use Norton Beatex purple sanding pads on the planking. These are a lot like the green Scotch Brite® kitchen scouring pads but finer. Because they are flexible, they are great for the sides of the ribs as well. On my new canoes, I have the luxury of pre-sealing my planking before it is installed on the canoe. I can then sand each piece with the grain as it is put on the canoe. Once it is time for the first coat of varnish, I don't have to touch the planking at all, only the ribs.

### Final Preparations

I am finally getting close to picking up my brush, so now is no time to take shortcuts. I thoroughly vacuum the inside of the canoe, starting from one end, doing a rib, the planking, and then next rib. Use a round brush on the end of the hose and give it little wiggles to help coax the dust out from between the planks as you go. A crevice tool works best to get right in the



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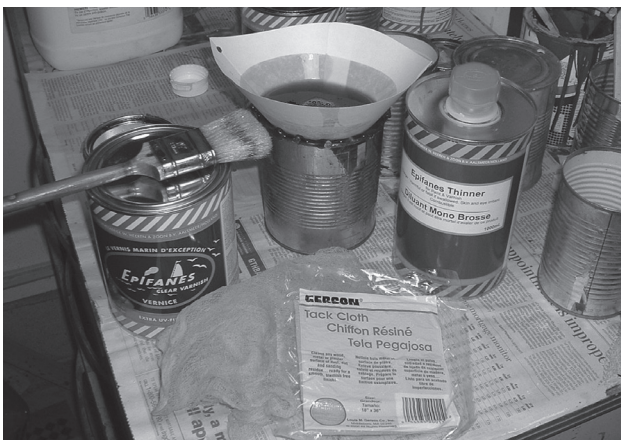


*After sanding and vacuuming, blow out any remaining dust with a compressor. Tip the canoe on its side and do a rib, then the planking, then the next rib, left to right.*

ends and up under the decks. I am right handed, so I like to start at the left end of the canoe and work my way left to right. This means that the vacuum hose is off to the right and ahead of me as I go, and not trailing and dropping dirt into the part of the canoe that I have just vacuumed. I give the gunwales a good vacuuming, too, as I go along. To finish off, with the canoe tipped up on its side, I blow the remaining dust out with my compressor. Again, I do a rib, then the planking, and then the next rib, going left to right.

### *Varnish*

I put four coats of varnish on the insides of my canoes, and five coats on the gunwales. Each coat takes time to sand and time to varnish, so it is worth your time to use good varnish. I was once at a trade show and sat opposite another canoe builder. We had both put on four coats of varnish. His was a hardware store spar, and mine Pettit HiBuild. There was no comparison in appearance—and one would like to think—in durability. The other canoe looked to have only about half the number of coats as mine. We both probably spent as long in application, but people certainly stopped and commented on my canoe's finish.



*For successful varnishing (after careful preparation of the surface), use a badger brush and a good varnish. Filter the varnish if the can had been previously opened, and warm it a bit if it's cold. Before the final coat, use a tack rag to clear away any last bits of the dust. And don't forget your charcoal filter mask!*

In the past, I have used Pettit HiBuild and Z-spar 1015 Captain's Varnish, and now I use Epifanes Clear Gloss varnish. Each has its own color and feel upon application, but all are good varnishes. The Pettit seems to be getting harder to find, but the Z-spar and Epifanes are readily available. I am sure there are other exterior marine brands out there that are good. Each will be a bit different in color, final gloss, and feel upon application, but just make sure it is oil based with some UV filters. Pick one that you can easily purchase and use it until you get the hang of it.

I like to warm my varnish a bit in the cold season by setting it in my furnace room or placing it in a large can of water on an electric element. I don't want it hot, but just warm enough to help it flow. I also tend to filter my varnish, particularly if the can has been open before.

On bare wood I thin varnish about 60/40 (varnish to thinner). It's probably best to use the company's recommended thinner, but I have been known to use plain mineral spirits. For the second coat I use a 75/25 ratio, and then the third and final coats are 90/10 or 95/5. I was told never to shake the varnish can or stir varnish, but you have to mix the thinner in somehow. Just don't overdo it to avoid stirring in lots of bubbles. I find the Epifanes varnish pretty much foolproof, and it seems to be good no matter what I do to it. If you use a different brand of varnish, check on the back of the can for preparation and thinning instructions as they will vary from one to the other.

### *Paint Room*



*After loading the brush with varnish, tap it lightly on the inside of the can to remove the excess. Don't dip the brush in quite so far when doing the planking.*

I am lucky to have a 12- by 20-foot paint room in my shop. It has room for two canoes, a baseboard heater to control the heat, a floor drain in the concrete floor, and lots of lighting. This room makes it possible for me to paint all times of the year and even when I have been ripping planking all day long in the main part of the shop. Having a separate room is certainly helpful in controlling the amount of dust in the finish, and the extra lighting helps me to see what I'm doing. If you lack the luxury of a paint room, you might decide to varnish early in the day when the dust has had a chance to settle overnight.



*With a freshly dipped brush, and starting in the turn of the bilge, or about halfway between inwale and bottom center line (at left), work the varnish up to the inwale and then down to the center. Begin with one rib, then do the next, then go back to the planking in between, thus picking up the varnish from the sides of both the ribs on either side. Repeat the process, skipping over the planking to the next rib. After completing a set of four or five ribs, move to the other side of the canoe and repeat the process.*



*After varnishing a set of four or five ribs (below), the next step is tipping. Using just the tip of the brush, start under the inwale and make a nice even stroke to the bottom, following the same rib, planking, rib sequence. With practice, you will learn to “feel” the varnish. Brush right through the center line and overlap, raising the brush gently at the end.*



### *Varnishing Techniques*

Once the canoe is cleaned and thoroughly prepared, I am ready to varnish. With can of thinned varnish and badger brush in hand, I don a charcoal filter mask. The ends under the decks are always a bit of a challenge and I tend to do both sides at the same time. I do my best to get into the very ends and all edges of the ribs. (Psst! Don't tell anyone, but sometimes I have been caught using a foam brush with its square sides, which works nicely to get into the ends and those cant ribs' edges.) Once I get as far as the end of the stem, I just do a section four or five ribs wide, one side at a time, to the center line. Then I go around to the other side and finish those ribs. If instead, you go down one side of the canoe and then back up the other, by the time you are returning you will find that the varnish in the bottom is starting to set up and you will get quite an overlap mark. By flip-flopping back and forth from side to side, four or five ribs at a time, you will avoid this problem. Because Tom MacKenzie of Loonworks has such long arms and makes such little boats, he can do the whole inside of his canoe from the one side and doesn't waste his time walking around from side to side. I look at the “travelling time” as a chance to stand upright and stretch and marvel at my wonderful varnish job.

As far as real brushing technique, I like to dip my brush in about a half inch or so, tap it lightly on the inside of the can from side to side to get off any excess varnish, and then apply it by starting in the middle of the turn of the bilge. I work the varnish up to the inwale and then down to the center. I find that it's hard if I start under the inwale with a

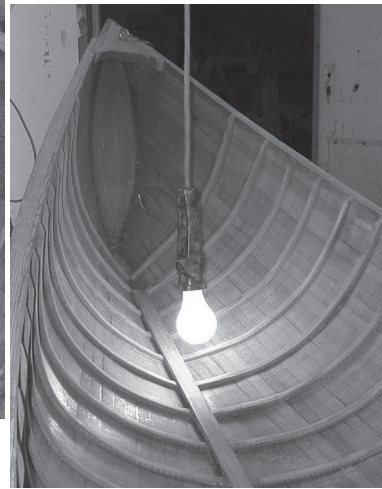
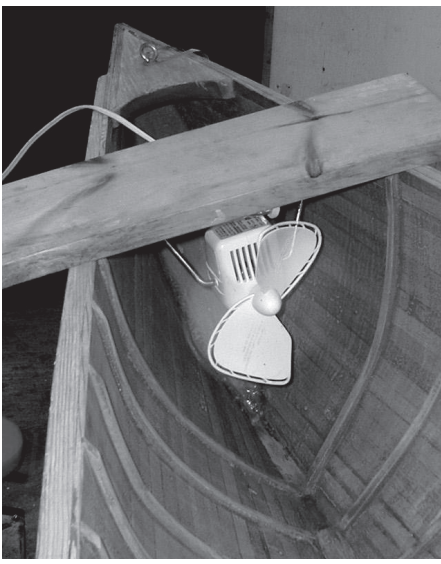
full load of varnish since it is a long way all the way down to the bottom. It also seems there is more chance of having drips way up under the inwale.

I do the first rib and then move on to the next rib and apply varnish there. Then I go back and do the planking between these two ribs. This way, I pick up the varnish from the sides of both those ribs on either side as I work along that stretch of planking. I find that it works best if I don't dip my brush quite as deeply when I do the planking because the brush gains varnish from the ribs on either side. Using too much when first applying the varnish will lead to puddles in the bottom later on. Then I repeat the process, skipping over the planking to the next rib, varnishing it, and then going back to the planking between.

### *Tipping*

I do a set of four or five of the ribs/planking sequence, and then go back and “tip” them. Tipping is the secret to getting a nice even application of varnish with no runs or sags. Essentially, tipping is spreading and evening out the varnish.





*The heavy solvents in varnish make it slow to set, which can cause puddling in the bottom, since varnish continues to flow until it is set. A small fan helps speed the process, but even the heat from a light bulb (above, right) hung inside the interior will work.*

I start right up at the top under the inwale and with just the tip of the brush, make a nice even stroke to the bottom, doing rib, then planking, then rib. You will be able to “feel” the varnish under the brush. If you have applied too much varnish, it will feel slippery. Too little and it will drag. You want to spread the varnish out so that it feels the same, right from top to bottom. Then I go around to the other side of the canoe and varnish and tip that set of ribs and planking. Make sure that when you tip that you brush right through the center line and overlap. Raise the brush gently at the end, while you are still moving, to leave the varnish as smooth as possible. I have heard one builder compare tipping to an airplane landing and taking off. Every time I walk from side to side, around the end of the canoe, I am looking at my newly varnished interior, bending my head to catch the light just right so that I can pick up any misses or “holidays” in the varnish. If I see any, I go back and tip again to spread the varnish. Once I have varnished the whole canoe, I will check carefully and look for any sags, stray bristles, or other fuzz or dirt, or puddles and correct them.

Varnish on an interior is very slow to set, so I have the luxury of fixing things right to the end. But this slow setting, caused by the solvents being heavy and gathering inside the canoe, can also cause problems, most notably puddling in the bottom. Puddling occurs because the varnish will continue to flow down until it “kicks,” or sets. I have tried turning the canoe over once I was done, but found that the varnish that was flowing down had turned around and started flowing in the other direction causing sags midway. I was even told to varnish the canoe upside down. I did try it with the canoe suspended from the ceiling, but that was hard on both arm and neck, and I had to have lights at floor level. Finally, I came up with a good solution. I put a small fan in the one

end to blow the solvents out. This works as long as I am not varnishing gunwales at the same time because I rest the fan on the rails. If I am pressed for time and do the gunwales, too, I will hang a light bulb about an inch or two off the floor of the canoe. This is enough to set up a convection current and move enough solvent out to get the varnish to kick.

I wait at least until the next day and move the canoe back to the shop to sand again. I use 220 sandpaper on the ribs and the purple pad lightly on the planking. This isn’t a hard sanding, but a quick one—just enough to roughen the surface to give the next coat something to grab on to. Allow an hour to sand, vacuum, and blow out the dust. I have tried Epifanes’ no-sanding varnish, and while it does save you some sanding time, I find it more difficult to see what I am doing while varnishing. When putting a shiny new coat

of varnish over the previous coat of shiny varnish, it can be tricky to not miss whole areas.

I am fussier before my final coat of varnish—the fourth on a new canoe. I sand more carefully, making sure that I sand out any dust specks caught in the previous coats. At this point, I use 220 on the ribs and 320 on the planking. Purple pads are too flexible and won’t do a good job flattening the surface and getting rid of dust blobs. This is definitely the time to tape fingertips; I often spend a good two and a half hours at this sanding. I try to have the canoe up as high on horses as I can and still reach over to be as kind to my back as possible. Before the final coat, I again do a good vacuuming and blow out with the compressor, and then move into the paint room. I wet the floor thoroughly to keep down the dust and then leave the canoe for a half a day or so before varnishing. My favorite time for a final coat is in the evening after dinner when there are no interruptions in the shop. It is also helpful to have a shower right before and to wear a clean shirt in order to keep the final varnish as clean as possible. I then use a tack rag, a sticky bit of cheesecloth that you can buy at your hardware store, to carefully wipe out the last of the dust before my final varnish.

Many fanatical varnish finishers have all sorts of rituals they go through to get that perfect finish, but those stories are best told over a pint or two out in front of Dan and Lynn Miller’s Dragonfly Canoes tent on the lawn at the annual Assembly! Maybe I’ll see you there and we can trade stories. ♪

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*WCHA Board Member Pam Wedd owns Bearwood Canoe Company in Parry Sound, Ontario. Her article on using the proper brush for painting appeared in Wooden Canoe, issue 132 (December 2005).*