Lake Charles **Woodworkers Club, Inc.** Janurary 2001



## DECEMBER MEETING HIGHLIGHTS

Nemo and Mrs. Robinson were our hosts for the December meeting celebrating the end of the year, the holidays, the real millennium and Show and Tell at Nemo's shop. As always, the snacks were wonderful (we love the cheese balls!) and the coffee perfect.

Lots of toys were turned in over the past couple of months for the annual Christmas Toy Program as well as some during the meeting. Over 200 toys were delivered to the Women's Shelter on Monday, December 11th for distribution to needy children. Leo Parker won the door prize.

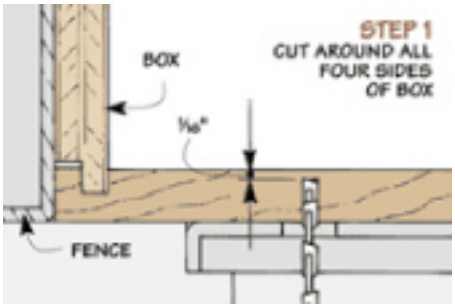
For Show and Tell, Barry Humphus brought a couple of his latest spalted maple bowels he turned as well as an example of the maple cutting boards made for holiday gifts this year. The cutting boards were made from some of the left-over scrap he got from Classic Doors. Chuck Middleton showed a cutting board, toast tong and spaghetti sizer set he is making for gifts. Eltee Thibodeaux brought a beautiful model air plane and example of his great fret work.

Horace Gradney had photos of a cassette tape holder he made for his church and photos of a lovely end-table he recently completed. C.H. Findley showed photos of several beautiful cabinet projects he's built using old cypress. Bubba Cheramie brought a child's chair — made of 9-ply Baltic birch plywood—he sells these for $35.00 (and worth it as Robin Richard bought one). The Baltic birch plywood and other furniture grade wood such as maple. oak, cherry and mahogany can now be purchased at Classic Doors in Iowa, Bubba said. Nemo Robinson showed a collection of wood he received from his sister-in-law that had belonged to his brother. His brother had gotten the wood (which we think is teak) during World War II while stationed Sappan. Nemo also mentioned that AMT is no longer in business and Gene Young pointed out that parts from Grizzly, Delta and Sears products can often be substituted as they are made by the same factory.

Bob Patin told us about how to use alpha-cyanoacrylate (Superglue) glue to harden difficult peices for turning. The glue seals cracks and splits very well and allows otherwise unusable stock to be turned. Jeff Cormier asked about wood drying kiln designs. The Louisiana State Agriculture office near the airport has pamplets on building these. Lee Frazier said that other kiln plans can be found in Fine Woodworking magazine (available at the Main Calcasieu Public Library in Lake Charles) and at Wood Online. Jeff and Chuck also mentioned that Harbor Freight now has stores in Lafayette, Shreveport and Beaumont and Chuck was headed to the one in Beaumont right after the meeting.

## CUTTING A LID FROM A BOX

Creating a perfect-fitting lid and box that has matching grain along the sides isn't a complicated task. You simply build an enclosed box to start with. Then you can use a table saw to cut the lid from the box. The problem is, cutting completely through the sides of the box can cause the kerf to pinch the blade on the final pass.




To avoid this, set the height of the saw blade so it's slightly less (1/16") than the thickness of the box, see Step 1. This leaves a thin membrane that holds the box together and keeps the kerf from pinching the saw blade.


Once the kerf is cut on all four sides, you can separate the lid from the box. Now you might be tempted to simply "snap" the two pieces apart. But this can cause parts of the edge to chip out. Instead, it's best to sever the membrane by making a series of light passes with a knife, see Step 2. The knife and a scrap block also make quick work of cleaning up the ridges left behind, see Step 3. Even so, you still may notice some saw marks left by the blade. To clean these up, attach some self-adhesive sandpaper to your table saw and sand the mating edges of both the lid and box smooth. From *Shop Notes*.

COMING UP.....

January 13, Saturday, 9:00 a.m. — Master Turner Bob Patin at George Kuffel's Shop

## CARE AND USE OF JAPANESE WATERSTONES

Man-made Japanese water stones provide consistent grit size, reliable freedom from impurities, and predictably superb performance. Using these stones is not much different from using oilstones or any others you might have used, at least in terms of how you hold and move a tool to be sharpened. What is remarkably different is the speed with which the job gets done and the quality of the cutting edge obtained.

The fast cutting action of these stones is due to the sharpness of the individual grains of abrasive and the relatively weak bond which holds the abrasive together. Every stroke of a tool across the surface of a waterstone breaks loose grains of abrasive, exposing sharp new grit and simultaneously building an abrasive slurry which greatly speeds sharpening. The water on waterstones keeps loose grit, clay matrix and tiny bits of abraded steel from jamming into the surface of the stone and limiting a tool's contact with the abrasive. It's important to keep your stones wet while you work—but without adding so much water that you wash away the slurry that speeds up the work. If you accidentally glaze a stone, the flattening procedures below will quickly restore them to good working condition.

Man-made waterstones should be thoroughly saturated before you start work. Soaking time varies with the size and kind of stone. A 200-grit stone is so porous that five minutes immersion should be plenty. The medium stones (700 to 1200 grit) will take about ten to fifteen minutes. 6000 and 8000 grit finishing stones are so dense that it might take fifteen or twenty minutes for them to become completely saturated. You can be sure that medium and fine stones are ready to work when water remains standing on the surface rather than soaking in right away.

If you use the stones every day, they may be stored in water so they're ready for use at a moment's notice. Plastic food-storage boxes with snap-on lids make good stone containers. If your stones begin to stink from bacteria build-up, just wash them off and put them back in fresh water laced with a couple of drops (not more) of chlorine bleach. There's no permanent harm done, and the odor is really far more bark than bite. If you don't use your stones every day, or whenever you'll be out of the shop for a while, the stones may be rinsed and allowed to dry out between uses. However, frequent repeated soaking and drying can mineral salts to accumulate on the stones, interfering with their sharpening action. Freezing a wet stone will reduce it to a pile of rubble.

To get started sharpening, all you need are a surface that won't be damaged by water and mud and on which the stone won't slide around, and an apron suited for getting dirty. If you sharpen on your bench, a simple adjustable plywood stone holder secured with your vise can do nicely or a piece of cardboard or a clean rag will do the same. Wipe most of the standing water from a stone's surface before you begin sharpening, as this will reduce the time required to build a good slurry of the proper muddy consistency. As you start to work, you'll see a dark paste of stone and steel waste building quickly on the surface. Keep working, using the entire surface of the stone, until this slurry becomes a fairly thick mud, and then as needed fling on just a few drops of water to keep the slurry from going dry. Keep working until the characteristic appearance given by that particular stone has reached all the way across the tool's bevel and all the way to the cutting edge, then move on to the next finer stone in your collection by applying less and less pressure, by and letting the slurry get closer to dry. The tool will end up floating on the slurry, polishing the edge a good bit finer than the stone itself could do and easing the transition up to the next stone. You don't need to bear down hard to get the job done fast; let the stones do the work for you. Only course stones turns up much of a perceptible wire edge. By the time you've sharpened to 1000 or 1200 grit you won't be able to see any burr, and you won't be able to detect any burr at all after sharpening on 6000 and 8000 grit stones. Let the mirror quality of the shine at the cutting edge tell you how close you are to optimum sharpness. As you feel you're getting close to completion, apply less and less pressure with every stroke and finally give the tool two or three light strokes flat on its back, then a couple more on the bevel to finish up.

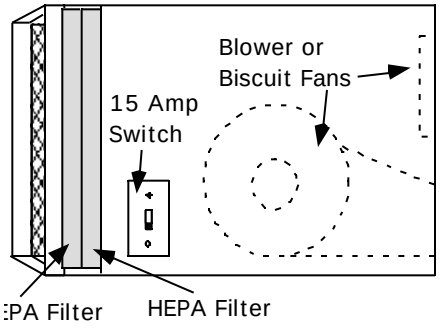
Waterstones are made to wear away relatively quickly. Thus they'll require flattening often, but it won't take much work to get the job done. Ideally, flatten your stones every time you use them, so they're always ready to use and never need more than a few seconds' lapping work. The best way to flatten them is to lap it on a slurry of coarse silicon carbide abrasive grit. Sprinkle a generous pinch of grit on a piece of 1/4" glass (6" or 8" by 18" or so, or whatever you can get your hands on), bring on the saturated stone and grind away, rinsing and checking frequently so you can stop as soon as you're done without wasting the stone. Flatten all four surfaces (edges are good for chisels and carving tools, while the wide faces can be used for plane irons and other wide edges). Use the muddy slurry left on the glass to flatten your medium stones, and be sure to rinse them thoroughly before replacing them in their containers. Medium stones can also be flattened on a piece of 150 or 220 grit wet-or-dry sandpaper wetted down and slapped on a piece of glass. Stones of neighboring grits can be touched up by rubbing them face to face to flatten both. When flattening has left a stone with crisp, sharp edges, take it to the concrete floor or grab a wad of coarse sandpaper and lightly chamfer all twelve edges, removing sharp, brittle corners which are easily fractured during use. Though finishing stones of 6000 and 8000 grit might need to be lapped on glass every now and then, routine maintenance is best done before and during every use with a Nagura stone, a small fine block used to lap the stone with a small circular scrubbing motion up and down the length of the surface. If a straight cutting edge shows you a high or low spot on the stone as you begin honing, you can use a Nagura stone to scrub out the offending area at once, incidentally making a good start at raising a slurry while you're at it. Please note that Nagura stones are for lapping finishing stones only; they'll accomplish nothing at all on medium or coarse stones. Man-made Nagura stones should be soaked along with your sharpening stones so they're always ready for use. From *Highland Hardware.*

## LOW-COST AIR FILTER

This simple, low-cost project will result in you having a cleaner, safer and more pleasent place to do your woodworking. An air filter is a very good addition to a shop dust collection system. In my small shop, space is always a consideration. As the shop has a low ceiling, it is difficult to suspend equipment, such as a commercial air filter. So I built my own air filter to fit the space I have.

The air filter consists of a blower mounted in a box, a frame that I can insert a couple of 12"x12"x1" HEPA filters, plus a switch to turn it off and on. See the drawing below. Use two filters (one filter to catch the larger particles and one to do the real air cleaning). The filters are inexpensive — $4.00 to $8.00 depending on size. The filters you use are very important. A single or double furnace filter is NOT adequate to filter wood or other dust. The key here is the HEPA filter. You need to use a filter that gets 99% of 5 micron particles and 80% of 1 micron particles. The HEPA does this.

Another consideration is the amount of air flow and the size of your shop. Most standard commercial air filtering systems pull 600 to 800 cubic feet per minute (CFM) —enough for a 20' x 30' shop. A small squirrel cage blower handles this easily. If you use biscuit fans, a 20 x 30 square foot shop will need at least three 225 CFM fans to do the job. If your shop is large, use a blower —such as a take-out from a central HACV system. What you want to think about is the number of times per hour that your filtering system circulates the air — 8 to 10 times per hour is about the minimum. My combination of small shop and large blower circulates the air at up to 20 times per hour under ideal conditions (door and windows closed).

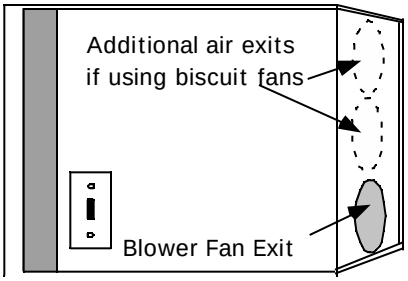



To calculate your shop's requirement, take the total cubic feet of your shop (length x width x height) and divide this by the CFM of the blower (or combination of fans) rating. Divide this result into 60. For example: 20' x 30' x 8' = 4,800; total of the CFM for the fans is 675 CFM, so 4,800 / 675 = 7.1 and 60 / 7.1 = 8.45 times per hour. If the result is at least 8, you are in business.

The box was built from 1/4" plywood with some scrap 1"x1" blocks on the inside as bracing. Thicker plywood can be used but the 1/4" works well and holds down weight. For the blower, I used a squirrel cage blower rescued from an old Jen-Air range top. You can also use biscuit fans, however, they make much more noise than a squirle cage blower —that's why blowers are used in HACV systems — they are quiet.

While the height and width of the box are determined by the size of the filters, the length can vary. The bigger your shop, the bigger the filters need to be to move sufficient air. The blower I used is about 18" long and 11" high, so I used a 24" length to give me adequate room for the blower, switch and slot frame for the filters.

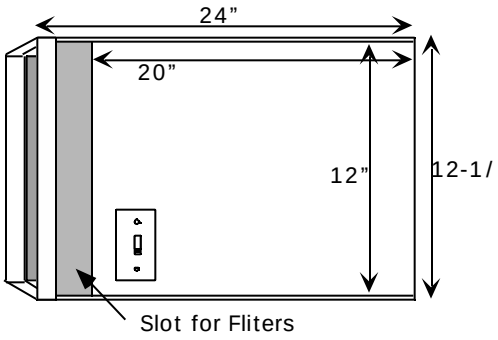
I cut two 12-1/2" x 24" lengths of 1/4" plywood for the top and bottom and one 12" x 20" for the front and a 12" x 24" piece for the back. The difference is so you can slide the filters into a slot in the box. I put guides on the inside of the box to secure the filters when installed and get a good tight fit. Internal bracing for the box consisted of some scrap 1" x 1" blocks tacked and glued to the inside where the sides of the box come together. I also used some blocks across the bottom and top to give the box rigidity. You also need to cut a piece for the rear to provide an exit for the air.




The seams of the box were sealed with carpenter's adhesive. The fasteners I used on the box were a combination of adhensive and finish nails.

Where the air exits the box, cut a hole in the plywood large enough in diameter to accommodate your fans or blower. If you use biscuit fans, surface mount them on the inside of the rear piece over the exit holes. See the drawing above. A blower needs to be mounted such that it's venturi tube exits to an appropriately sized hole.

Finally, I mounted a plastic electrical box and standard light switch into the box. These were wired to the blower. For electrical power, I used a molded business machine cord, cut off the female end and wired this to my switch. Any good electrical cord will work. But to be safe, always use a grounded three wire cord and plug. A variation here is a fan motor reostat. This allows you to vary the speed of the blower or fan motors to suit your needs. Use a standard reostat switch made for ceiling fans (available at Lowes and Home Depot) or a two to three speed pull switch. Additional filters won't hurt either. You can use charcoal filters that remove smoke, fumes and finishing oders or even washable and reusable electrostatic filters as well to add to the stack.




Position the air filter such that it provides a circulation of the shop. In other words, at one side of the shop. Mine is on a high shelf to one side and angled slightly into the room.

If I had used new purchased fans, the total cost would be about $45-$50 to build. As I already had the blower, my cost was about $15 for the plywood, switch and electrical cord with plug and filters. Commercially built dust filters cost $250-$500 depending on capacity. *Barry Humphus*