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OCTOBER MEETING HIGHLIGHTS

We had two meetings this month. One for knowledge and one for great food.

Gary Rock hosted the regular October meeting at his shop. He described in more detail his experience at the Wood Supply turning training he went to last month in Provo, UT. Gary learned a lot on his trip and described some of the ticks and tips from professional turners at the sessions. For example, he was told that you should not use the pith (center) of a log due to the common splitting as it dries.

Aaron Andrepont mentioned that Joe's Electric in Sulphur (808 E. Carlton, 527-3020) is a service center for several popular tool brands including DeWalt, Porter-Cable, Bosch, Skill and others. They can repair and get parts for your power tools from the manufacturers. Aaron also mentioned that the prices for many tools are going up due to the increase in the price of steel. He said that the increased cost of oil has also raised the cost of plastic items which now comprise some portion of the construction of power tools.

Bubba Cheramie described how he had dried some wood (magnolia) recently — in his microwave oven. To do this, you need to be certain of several things. First, be absolutely certain that there is absolutely no metal in the wood. Even a small nail can ruin the Magnetron tube in your microwave oven (and your spouse will not be pleased with the result). The key to drying wood in a microwave oven is to do it very slowly, at very low power and in short bursts. Your editor has found some good (safe) info on drying

wood in a microwave oven (see the Microwave Wood Drying article later in this issue). Bubba had mixed results and found that the wood he dried in his microwave split and cracked. Using a slower process, Bubba had better results.

One of the cool things Gary does is to do inlays in the bowls he turns. He often uses brass as the inlay and uses key filings as the material. Key filings are easily obtained from most any firm that cuts keys (i.e., house keys). The trick is that after you obtain some of the material,

you extract all of the ferrous metal from the pile. You do this by using a magnet to pull out iron and steel, which will be attracted by any magnet. Just place the key tailings on a piece of paper and pass a good magnet over and through it. This will pull out the iron and steel and clean up the material, leaving only the brass.

To do the inlay, cut a very narrow groove in the bowl (edge or side), trying to achieve a small pocket into which you can insert a mixture of adhesive and brass filings. This should be done while the turning is still on the lathe, but unfinished.

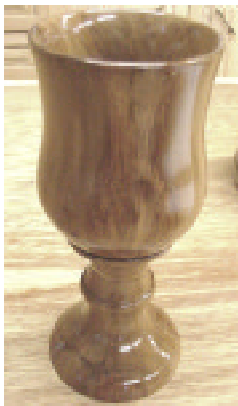
Mix the brass with an adhesive (epoxy is a very good choice as is a gel type "Superglue") and force the mixture into the groove you have made. Let it dry at least over night. Then continue the turning with normal tools to scrape off the excess. You may have to put an additional coat of the glue/filings into the groove you have made and re-turn or scrape to result.

Gary has also been turning some small bud vases. He gets the glass tube inserts at Hobby Lobby, although a lower cost alternative is to use a standard large test tube (available at the McNeese Bookstore) or even a glass cigar tube (send the cigars to Barry).

There were lots of Show and Tell at the last meeting and at the BBQ. Bubba Cheramie did a large natural edge bowl, Eltee Thibodeaux did a wonderful (Cal-Cam Fair award winner) scrollwork, Gary Rock showed off a platter (ambrosia wood), some pine bowls and his flower bud vases. These items and much more will be up on our web site soon.

The BBQ was attended by about 30 people and the food was outstanding. Hollier's Restaurant in Sulphur provided the food (which Leonard Fontenot arranged — thanks Leonard). Everyone missed Brent, who has been struggling with a knee operation. We all look forward to next year when Brent can do his special ribs again.

Coming Up . . . Shop of Dick Trouth, Saturday, November 13, 9:00 a.m. Will he fix us breakfast? Probably not, but Dick always has great ideas and a wonderful shop.



WOOD DRYING WITH A MICROWAVE

Of course you will need a microwave oven. It is not really important whether it is a turntable model or not, and the power level isn't that important either. You will be using very low power levels, (defrost) so that sort of limits itself. The only other factor is the physical size, and that's sort of self explanatory really. If the piece is too big it won't go through the door.

You will also need a good scale to weigh the article you are drying. This bit is difficult because you need a scale that allows you to measure accurately to small amounts (a few ounces or so). I have a digital scale that weights in 0.1 gram or ounce steps, and it performs well. What I have is a battery powered postal scale (Wal-Mart—\$19.95 plus the 9 volt battery). If you are drying any wood by other methods, you will probably have scales anyway.

The only other things you need is time, patience and something to microwave.

First, you need to prepare the piece. Remove ALL metal from the wood. A small nail can ruin a microwave oven in a heart beat. Rough turn the piece until the wall thickness is about 10% of the total diameter. This allows you to remount it and finish it off when dry, with the benefit of enough meat in the walls to allow for any oval distortion that may occur. If the oval distortion is not important, turn it to the finish you want.

This is your call. What I'm doing is explaining the technique.

Speed here is really important, as some woods are prone to crack if left to air dry, so you need to keep moving. If you need to leave the piece on the lath for any time, either cover it with a wet cloth, or place it in or wrap it in a sealed plastic bag. Weigh the piece carefully and record the weight (ounces or grams — up to you). Write this down in your log book.

Place the piece centrally in the oven, set the power level to what ever you use for defrost (about three on mine, but some call it called defrost—clever that).

The following times give some indication depending on the size of the piece.

Up to 8 inches 1 minute

8 inches to 12 inches2 minutes

Over 12 inches 3 minutes

After setting the oven as described (defrost setting and time), start it. At the end of the cycle, remove it from the oven and allow it to cool

Leave until cool, or at least 1/2 hour. Replace the blank in the oven and repeat the cycle. At the end of the 4th cycle, weigh the piece and record the weight.

These 4 cycles are one drying program.

If you are using a non-turntable oven, turn the piece upside down and rotated 90 degrees between cycles. This allows for even spread of warming. At the end of the program, allow it to stand for an additional 1/2 hour, and then repeat the program.

Keep repeating programs until the weight remains the same between two programs. At this time it is as dry as you will get and the piece can be finished.

A few points to watch out for:

Don't try and rush things. The temptation is to crank up the heat or the time. You will be very disappointed with the results if you do. The idea is to do this slowly and deliberately. Just like too much heat when sanding will cause heat cracks to appear, so will too much heat when cooking. Take it slow.

Check your settings before starting the microwave. It is easy to set the oven on the default power setting (usually high) without realizing. Weight the peice first, then start cooking. The results are again, too much heat will ruin the work.

Check out what your are doing with the master of the kitchen first. If you follow the instructions outlined here, you are barely warming the wood, so the possibility of damage to the microwave is no more than cooking your oats for breakfast.

Crank up the power or lengthen the time, and you may well cause all sorts of problems (especially with the master of the kitchen). For example, gum pockets in the wood will boil and explode, and they are very hard to get off. As well, you can cause tainting of the wood if the heat is too great.

Microwave ovens work by using radio waves from a magnetron tube to vibrate the molecules within a material and this movement creates heat. The microwaves penetrate deep within most organic material such as wood. That is, they will penetrate almost anything that is not metallic.

The molecules in a liquid (water and sap) are easier to vibrate than those in a solid (wood). This works even better with liquids that contain simple sugars (e.g., fructose), such as the natural ones found within wet wood.

As you gently "defrost" the article, you vibrate and warm those liquids, which expand, forcing their way along the cellular structure of the wood. Upon exiting the cells at the outside surface, they evaporate.

You now have a two-fold process underway, heating/expansion moving the liquid out from the center of the article, and the sponge effect of the dry outer surface drawing the moisture out from the center.

This is why it is important to remove it from the oven and let it cool completely between cycles.

You can also see that by really giving it a good cook, you will boil the liquid within the wood, and like any cooking, you will soften the fibre and damage the wood. This can manifest itself in many ways, including increase tear out on the end grain, articles that are difficult to sand to an acceptable finish, as articles that won't take finishes (especially oils or waxes) well.

By following the method outlined, you are merely helping the natural process with a little modern technology, and instead of taking about one year per inch of board thickness, you can achieve the same results in a couple of days.

So what is the best microwave oven to use? A used one. My 23 year-old microwave oven with the wood-grain vinyl and black front was replaced with one that actually went with the decor in my kitchen. It has a simple dial timer and slide adjuster for level. You can also find a good used working microwave oven at a re-sale shop or garage sale.

Barry Humphus.

FLASHLIGHT HEAVEN

While this newsletter is mostly devoted to woodworking, occasionally, I find a product or service that you just need to have for general home use. One of my very best friends is Lee Norris. Lee is a mechanical engineer (Stanford University PhD, several patents in his name, even special mathematical equations named after him) and he loves gadgets. One of the gadgets he loves are flashlights. This past weekend, he showed me a few new ones.

The lowly flashlight has come a long way over the past 100 years. From incandescent bulbs and dry-cell batteries to more modern alkaline batteries and halogen bulbs, the flashlight has become a necessity for inside and out and especially those hard to see reaches of your shop equipment.

The problem with some of the newer flashlights is that halogen bulbs take a lot more amps than incandescent bulbs but produce a much better (whiter) light. This means that the batteries don't last as long under heavy use.

Most of us have had the annoying experience of the bulb failing in our flashlight, usually at a less than opportune moment. Even when there's a spare handy, changing it can be a challenge in the dark. How appealing would you find a flashlight with a bulb that never burns out, or at least not for tens of thousands of hours?

Then there's battery life, or lack thereof. If the bulb isn't failing, the batteries are petering out. The light dims and is extinguished just about the time you need it the most. Changing batteries in the dark, even when you have them, is usually a trial. How appealing would you find a flashlight whose batteries last tens of hours, or even hundreds of hours?

The most modern flashlight systems now use Light Emitting Diodes. The LED has been around since the 1950's. Their problem has been that they are expensive and until recently, white light LEDs were either not available or so expensive that using them in a flashlight, was prohibitive. Fortunately, in high production numbers, they have become cost-effective for lighting.

You've possibly seen the use of white LEDs lights for garden and outdoor lighting applications. These are a rechargeable battery and circuit that absorb light during the day and give off a low-

level but pleasing light for outdoor lighting systems. You can put them just about anywhere in the yard (or even in a planting pot) where there is sufficient sunlight during the day and expect several hours of low-level lighting during the evening hours.

The real advantage for LED lighting is that they last a very long time in terms of bulb life (10 years or so) and they use a very low amount of amps to power (typically less than 3 volts at a few milliamps).

When applied to a flashlight, LEDs can be dramatic.

What you get with a modern LED flashlight is a battery life of 6 to 12 hours of continuous use (4 to 10 times that of halogen bulb units) and a pure white light. In the early 1990s Shuji Nakamura of Nichia Chemical (now Nichia America) developed the first viable white LED. Actually, the term "white LED" is not technically correct. The LED itself generates blue light, but a micro-thin coating fluoresces when struck by the blue light, generating a white light.

There are many cheap single LED lights on the market. Most are limited to keychain lights. These are adequate in a keychain situation. They are not serious flashlights.

What you really need are multi-LED flashlights with an on-off switch and which will last a long time. In the affordable (\$40) category of multi-LED flashlights, the seven-LED *Tektite 300 / C*. *Crane CC Expedition* provides generally better than adequate light levels for most general purpose uses, the C-cells are easy to find and cheap, it has excellent battery life for the light output, and a rugged, well designed body. The combination results in a solid performer and a reasonable value. This light will suffice for almost any flashlight chores, except the long-range stuff, a perfectly adequate replacement for the typical two D-Cell flashlight.

If you already own a Maglite brand of light, there is an LED replacement package that is affordable. Just unscrew the head of the Maglite and replace the bulb and reflector with a TerraLUX LED Light Engine. They are available starting at \$19.95 for AA, C and D size Maglites. Go to the web at www.teeraluxcorp.com. *Barry Humphus*.

