AUGUST 2015 DEMONSTRATION
PROCESSING & TURNING GREEN WOOD WITH CHARLIE, CHAD, MEL & BRUCE

Four different ways to dry or directly use green hardwoods in turning were presented at the August meeting by ***Charlie LaPrease*** and ***Chad Dawson***, with support from ***Mel Taber*** and ***Bruce Meissner***. Many varied approaches are possible to use green wood and those presented are based on experience and success. The time to achieve a dry piece varies from days to months with the goal being a stable and attractive final turned platter or bowl. Drying spindles was not discussed as spindle orientation wood can present other problems and may need different approaches to prevent checking.

All approaches require some means to check for moisture content using either a moisture meter or by carefully weighing and recording the weight of the piece. Moisture meters are available from woodworking stores or lumber yards; for example, a digital moisture meter with a probe is available from Lowe's for $30-40. Scales to weigh wood requires the ability to measure some small changes such as in grams or tenths of pounds; for example, digital postal or kitchen scales are available from Amazon for $20-60 depending on the maximum weight it can measure.

After a bowl blank is dry, it can be reset into a chuck like it was originally or a vacuum chuck can be used to hold the bowl to re-turn the foot for further use on a chuck. Alternately, the bowl can be held over a chuck body with a foam or paper support inside the bowl and the tailstock pushed up to the piece to hold it in place while a foot is trimmed or re-turned for further use in a chuck.

THICK WOOD DRYING

The first approach explained by Chad was to turn any species of green hardwood into a thick platter or bowl blank and then passively dry it over 12 to 24 months. To accomplish this, mount the block of wood on your lathe and turn it down until the inside and outside have the general shape of the final piece and are uniform in thickness with rim edges slightly rounded. The thickness of the piece should be about 10% of the platter or bowl diameter. Thus, a 10" bowl blank would have a uniform thickness of 1" throughout sides and bottom. The piece is then taken off the lathe and the end grain is coated in liquid wax (Anchorseal or similar products) both on the inside and outside of the bowl. The piece is then put into a paper bag (not plastic) to allow the piece to dry more slowly and evenly. Mark the bag with the species of wood, date, and moisture percentage (use a moisture meter) or the weight of the piece. Store the closed bag on the floor of a basement or similar cool location for 12-24 months in a heated building to let it dry slowly. Recheck the moisture content periodically with a meter or reweigh and record progress until moisture is below 10% or weight no longer declines.

The second approach was the same as above except instead of a paper bag and a long wait time Bruce shared information about a home-built drying cabinet. The heated and ventilated box was made from 2" thick rigid foam insulation (approximately one sheet of rigid foam). The box measures 20" deep by 24" wide by 36" high. Heat source is a 100 Watt light bulb that is controlled by a programmable thermostat. Air movement is done with a 40 CFM axial fan controlled by a ceiling fan type speed control. A small 2" x 2" hole in the upper side opposite of

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the fan is the vent. There are two shelves inside the box and those are made from ½" PVC tubing to allow air to move all around the bowl while drying.

Bruce noted that it is important not to dry the wood too fast. He found that a temperature of 80 degrees Fahrenheit and an air flow of about 20 CFM worked best for his set up. He starts bowls on the top shelf for a few weeks so they are not directly in the air stream and when the majority of the water has evaporated from the bowl it was moved to the center shelf. The center shelf is nearer to the lamp and fan so only near the end of the drying cycle is it safe to locate the bowl there without fear of cracking. Bruce uses a digital postal scale to weigh the bowls once a week. Keeping a written log weight helps keep track of the water loss so that when the bowl weight stops changing the wood is dry. The following chart shows a soft maple bowl that was green in September was dry by the end of November.

date	gram weight	loss
9/21/14	2118	
9/27/14	2055	63
10/4/14	1928	127
10/11/14	1885	43
10/18/14	1807	78
10/25/14	1752	55
11/1/14	1729	23
11/8/14	1713	16
11/15/14	1701	12
11/22/14	1688	13
11/30/14	1682	6
12/6/14	1676	6
12/13/14	1670	6

Thin Wood Turning and Drying

Charlie presented the third approach which was turning directly from green wood into the desired final platter or bowl and then letting it dry before final sanding and finishing. The final turned wall thickness needs to be consistently 3/16" to ¼" so that the piece will not crack. The bottom of the piece should be close to ¼" or it will cause the piece to crack; leave a tenon on the base to help with rechucking the piece for sanding or other finish work. With this approach, the bowl or platter will no longer be round when it dries as it will take on a more oval shape do to differential drying in the various wood orientations (cross grain shrinks more than down the grain). The piece can be dried in a normal room temperature and maybe dry enough to finish within a few days or a week. Because the piece will no longer be exactly round, the best uses of this technique are on shapes and designs that work well with more irregular shapes. For example, natural edge bowls are enhanced by this approach.

The fourth approach presented by Mel involves drying a rough turned green wood piece in a heavy open plastic bag using multiple heating times in a microwave. This approach requires weighing the bowl carefully and continuing microwave heating in one minute intervals with cooling time after each heating, until no additional weight loss is recorded. At that time, the piece can be final turned and it will retain its normal round shape. It is strongly suggested that you acquire a used microwave as there may be a residual bad smell created in the microwave by this wood drying process. Since the power of each microwave is different, it is important to experiment with some bowls to get the amount of time for each treatment (around one minute), the power level of the machine (usually normal power), and the number of times that it needs to be treated (15 to 20 times is normal for Mel). After each microwave heating, the piece needs to be examined for any fiber charring (burning) and the piece must be allowed to cool. Mel does his turning and heating in batches so he can be turning while some pieces are microwaved and others are cooling – this is the best use of his time to make multiple similar pieces from the same species of wood.

Submitted by ***Chad Dawson***
Photos by ***Bruce Meissner*** and ***Andy LoConte***

NOTE: Because members of the club were demonstrating at the New York State Fair from August 27th thru September 7th, there was no workshop in August. The next workshop will be on September 19th. See page 8 for more details about that workshop.