July 1990

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Minnesota Woodturners Association

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MN Woodturners Association
667 Harriet Avenue
St. Paul, MN 55126

Past meeting minutes

April 18, 1990. Del Stubbs

45 people packed into the "Woodcraft" store to see an interesting and thought provoking presentation and demonstration by Del Stubbs. I have rarely met a friendlier person, and Del seemed as happy to be with us as we were to be with him. All evening Del stressed think, think, think. Think about why the tool is working, think about the shape of what is being made, think about what is happening to the stresses within the wood, think about ways that the task could be accomplished differently, think about how it was done in the past, think about every aspect of woodturning! It was quite evident that Del has thought a lot about woodturning, and has spent a lot of time finding out how others have thought about it.

Del also stressed the value of repetition, of making 100 or 1000, of a type of object. In addition to the value of repetition for perfecting skills, Del feels that it also gives that time to THINK and perfect the form of the object.

Del demonstrated turning a translucent, paper thin bowl out of green wild cherry wood. He rough turned the blank between centers using a tailstock cup center in the headstock to drive the piece (not a spur center), and a live center in the tailstock. All of his cuts went from the small base of the bowl to the large outside rim.- Just to show us that a variety of tools could be used for this, he did use several, including the first tool he ever made, a sharpened piece of pipe! He then secured the piece in a spigot chuck (supplied by Bill Allshouse, thanks Bill). With the tail center also supporting the piece, the returned the outside, and then removed most of the wood from the inside, leaving 1/2 inch thick walls and a small "cone" still supported by the tailcenter. He removed the tailcenter and just snapped off the cone. Using several different shear scraping tools he cut the walls of the bowl down to their final, paper thin, thickness. Some important notes on this, is that, the scrapers have to be very sharp, the cuts have to be very light, and a wet hand has to support the cut on the outside of the wood. The finished bowl was so thin and flexible that Del used a scissors to touch up the outside rim.

An interesting note is that although Del is well known for bowl turning, this was the first bowl that he had turned in six months! He had mostly been doing architectural spindle turning.

Some additional comments by Del: The Delta lathe was very quiet, which is how he thought lathes should be. The lathe, like all lathes, was to low, and should be up on blocks about a foot higher. Lathes don't have to be fancy; he does most of his work on a 35 year old Rockwell. When wet sanding, hands should be very clean, and should not touch metal before touching wood or black spotty stains can result. For fine cuts, a clutch is very helpful to slow the lathe down and to reduce the force driving the wood.

Del's tool workshop:

I attended the Thursday workshop at Mary Redig's shop. Mary has repeatedly been so generous in offering the use of her shop and equipment, we really appreciate it Mary!

Overall, I think that I learned more at this workshop than at any that I have ever attended. At the end of the day I had the knowledge and experience of sharpening my tools razor sharp, of making a hooked tool, of cutting with the hooked tool, and of how to harden and temper tools. It was Del's desire to limit the size of these workshops to about 10 people so that the people attending could all get a chance to do what he was showing, rather than just watch it. He also felt that in a small group there would be more participation among attendees, and more questions asked. Overall, he hoped that those attending would learn more! I think that the idea of small groups was really good, and I feel that I learned much more than if the group had been larger.

Some of what we learned:

- Most store bought tool handles offer very poor gripping shapes. You may want to discard the handles and turn new ones with rounded gripping surfaces where they will be gripped.

- Many tools have steel surfaces that are sharp or angled where your fingers may be. Just grind off those angles.

- Many heavier tools have thinner shafts which protrude from the tool handle. This makes them weaker and more flexible. These shafts should be sunk all the way into the handle.

- Grindstones go out of round often. Del trues up his grindstone with a " star" or diamond wheel dressing tool after every three minutes of grinding. During the day I found that the star dressing tools are very easy to use, and that round grindstones make a big difference in getting sharp tools.

- Del prefers to use 60 grit, J hardness, friable, white aluminum oxide, grinding stones, running at slow speeds. Woodcraft carries these kinds of stones.

- Move slowly and delicately when grinding tools. The tool shouldn't overheat if the grinding is done gently. It may help to look at the tool from the side while grinding, to see how the wheel is contacting the tool.

- High speed steel produces sparks in little balls when grinding. High carbon steel (tool steel) produces longer sparks in a spray.

- Sears sells some very inexpensive high speed steel tools which Del regrinds to other shapes.

- Skews used with softwoods should have verysharp, knife like edges. Skews used with hardwoods may need more blunt edges.

- Small diameter grindstones work best for small tools; large diameter grindstones work best for large tools.

- With gouges, the heel of a bevel should be rounded, so as not to dig into the work piece when the bevel is rubbing.

- Making a tool polishing wheel: A polishing wheel can be made by turning a block of hard wood to be roughly 8 inches in diameter and 2 to 3 inches wide. The end should be made flat. Del used a block of Baltic birch plywood that Hal Malmlov provided. A stick of polishing compound is Pressed against the end and side of the spinning disk. This compound usually costs a few dollars a stick. Tool edges can be polished sharp on this wheel in seconds.

Making a hooked tool, and how to harden and temper tools.

- We started with a 3/8 inch, oil hardening, tool steel rod (also known as drill rod).

- We ground the end 1 1/2 inch of the rod to a wedge 1/8 inch wide at the top, and 1/32 inch wide at the bottom.

- We ground very flat, and then polished, the side of the wedge that was to become the inside of the hooked tool.

- Using a propane torch we heated the ground portion of the rod until it was glowing orange. To do this, we first heated the rod just in back of the ground portion, where it was the full thickness of the rod, until it was red, and then moved the ground portion into the flame. This prevents the heat from getting sucked out of the ground portion, into the larger, cold, rod.

- While heating the ground portion of the rod, we heated the ends of needle nose players that we used to bend the metal. Heating the players prevents the metal in the players from sucking the heat out of the ground portion of the rod.

- With the ground portion of the rod glowing orange, we gripped the very end of it with the heated players, and bent the end into the desired, hooked shape.

- The heated end of the rod was immediately plunged into the oil and stirred around for a couple of minutes. We used special quenching oil, but non detergent motor oil could also be used. Non detergent oil is rare these days though. Plunging the metal into the oil hardens it.

- In this condition the end of the tool is hard and brittle. The end would break off if it were to be used this way. The tool must therefore be tempered to retain the hardness, but remove the brittleness.

- Tempering can be done in two ways. One way is to place the hardened steel in an oven at 400 degrees for 1/2 hour, then let it slowly cool. The other way is to first sand the tool to expose fairly clean steel. Then heat the tool, (under low heat), starting before the ground portion, then moving to the wider end of the ground portion, until the steel turns a light yellow brown

color. As soon as the tool turns yellow brown, dunk it in water to cool. This is a delicate operation, in that, if the tool is heated just a few moments longer, the cutting edge of the hook will turn blue, and it will have lost its hardness. If the tool edge loses its hardness, it will need to be rehardened, before it can be tempered.

Hooked tools were used extensively *in* woodturning many years ago, but have all but disappeared today. They work wonderful for cutting end grain in the bottom of bowls or vases. One reason tool makers may have stopped making them is that if used incorrectly, they can be very grabby. However, with instruction from Del, everyone in the workshop was able to use them well. I know that mine will see a lot of use.

Del's Saturday woodturning workshop:

I attended Del's Saturday workshop, also at Mary's shop, along with 10 other energetic Woodturners. Stan Ross had the distinction of coming the farthest, from Bemidji! Although Rus Hurt also came quite a ways, from northern Wisconsin! We also had a surprise visitor, Rude Osolnik, who stayed for a couple of hours before leaving to catch a plane home. Another welcome guest was the weather, 70 degrees and blue skies, the nicest day of the year, so far. All in all, great company, having a great time.

My notes are somewhat limited because much of what: we learned was hands on cutting techniques. Some general notes:

- Del blunts the point of his pointed tail center to about 1/32 inch. This reduces the tendency of the point to drift off center as it is being driven into the wood.

- To turn long slender pieces, Del again used the round "dead" center to drive the piece. The dead center usually provides a more even force against the wood than a spur center. If a spur center was used, and one corner dug in more than the others, there would be an increased tendency for the wood to bow out, and whip while spinning.

- A very efficient "steady rest" to use, to limit the whip and chatter in long, slender pieces, is simply the palm of your hand, pressing down on the piece, right *in* back of the tool. If using a skew, the thumb of the hand pressing down on the wood can also hold the skew in place. If the work piece flexes downward when pressing down on it, that is good, it limits chatter. Never have wet hands when pressing against dry spinning wood! The dry wood can grab the skin and tear it right off. A small block of wood can also be as a hand held steady rest if a small notch is cut in it.

- Use of a screw chuck: Del has used a screw chuck to turn thousands of turnings. He used it to turn a long slender "flower" at the workshop. It is very important for the screw to go into the wood at a perfect right angle (90 degrees) to the base of the piece. To assure this, Del puts a drill, slightly smaller than the screw, into the headstock of the lathe. With the other end of the piece up against the tailstock he drills a hole into the piece, the depth of how far the screw will penetrate. After drilling the hole he turns the piece of wood around so that the hole is centered on the tail center, and a drive center is centered on the point left in the wood from where the tail center had been. With the lathe running, he then turns the end of the piece, (with the drilled hole), flat and slightly concave, in toward the hole. He then replaces the drive center with the screw center, turns the piece of wood around, and screws the end of the wood, with the hole, onto the screw center. The piece is ready to turn, is held tight against the screw center, and hasn't bent the screw off center.

- Del said that the screw center that he uses most often is short, but wide, about 1/2 inch in diameter and 1/2 to 3/4 inch long.

- The "flower" that Del turned had a stem about 3/16 inch in diameter and 6 inches long. This long delicate stem would have whipped out of round, and broken if it had not been held in place the entire time the lathe was on. Del used two fingers to steady it during the entire process. He also held it about 1/4 inches downward, off center during the process. He said that he did that so that the thin shaft would resist the forces which tend to pull the wood upwards when it is being cut.

- For cutting straight into end grain, on the end of a spindle, Del used a shear scraper that he had ground somewhat like a skew, but coming to a point on the side of the tool, rather than in the center. Del said that he has 2 of these tools, one with the bevel ground to the left, and one with the bevel ground to the right. He chooses which one to use, depending on if he is cutting in on the right or left end of a piece. The tools were high speed steel scrapers, bought from Sears for $9.00 that he reground to his desired shape.

- To "drill" a hole into end grain, Del used a shallow 3/8 inch gouge. He first turned a small cone shaped depression into the center of the piece, making sure to eliminate any small nub in the center. With the gouge on its side, he pushes it straight into the piece, rocking it slightly as it is going in.

- For most gouge cuts the bevel must be rubbing, however pressing too hard on the bevel may cause damage to the wood. On finish cuts, the damage may not be visible until a finish is put on, and lighter colored wood appears.

May 11, 1990, John Jordan

John, an extremely friendly and talented professional turner from Tennessee, gave us an interesting and informative day of turning demonstration at the Woodcraft store. John brought with him a number of his hollow vases, very light weight, with very small openings in their necks (3/8 inch). When looking at the vases beforehand, many of us simply said "how does he do that"! It seemed impossible that they could be hollowed out through such a small opening. Lucky for us, John demonstrated just how to create such works of art.

Some of what we learned:

- John used a diamond point to true up the grinding wheel. His was actually a Rockwell hardness tested, and is available from industrial supply houses.

- John prefers for the grinder to be fairly slow, around 1000 rpm.

- He feels that cheap grinders are fine, provided that you throw away the wheels and get good quality ones. He prefers 60 grit, and feels that finer grit wheels generate more heat, and can burn the tool easier.

- John sharpens his tools often, sometimes every few minutes. The importance of sharp tools has been stressed by so many accomplished turners that it has made quite an impression on me. This seems to be a subject that we can't know too much about.

- John works almost exclusively with green wood, and starts 99% of his pieces between centers (using a spur center). With the spur center, he rounds the piece, roughly shapes it, and flattens the bottom to accept a face plate. He noted that with green wood worked between centers, that it is important to frequently check the tightness of the tail center.

- John drills extra holes near the outer edge of his face plates, and prefer-s to use shorter screws, rather than fewer, longer ones.

- John also prefers face plates to not be flat, but to have a raised outer rim.

- For natural edge bowls, the outer edge should be cut to final thickness before the inner portion. Once the entire bowl is cut, the outer edge is usually out of round and cannot be reworked.

- John hand sands the edges of natural edge bowls. If they are sanded with the lathe running they tend to get rounded.

- He uses 3M Scotchbrite for fine sanding.

- For finishing he quite often first applies a thin coat of lacquer sanding sealer, and then uses oil. For oil he likes Minwax antique oil or tung oil. He doesn’t care for Danish oils because he has found that they may bleed back out of the wood. He has tried some water based lacquers, but has found that they can't be applied on green wood.

- To dry logs, he leaves them as long as possible and saws them down the middle to remove the pith. He also strongly advises that they be kept out of the sun. He noted that the sapwood of walnut starts to discolor as soon as it is cut and starts to dry. The November 1990 "Fine Woodworking” will have an article on John's hollow vases.

I will include a summary in the next newsletter on John's method for turning hollow vases. I was going to include it in this newsletter, but I am now, unexpectedly facing eye surgery today, and will not be able to get to it for a while.

For me, the condition of my eyes in the future is an unknown, consequently also unknown is my future ability to partake in this favorite hobby of - mine, woodturning. Though my eye problem is unrelated to an accident or woodturning, it certainly brings to mind the hazards of woodturning to our eyes. Our club has always stressed the importance of eye protection, yet we have all seen turners turning, with no eye protection. Knowing that at least one member of our club has a permanent facial scar, due to a 1 second “freak " turning accident brings the matter still closer to home. I hope that we all can learn from this, and wear facial protection when turning.

This newsletter is being cut short, so some things that I promised to some people aren't in it.

July Meeting: Sat. July 7, 1990, 1:00 p.m. Combination picnic and totem pole turning at Rick Stoffel’s house, 1434 West Minnehaha, S Paul. Bring your own meat, and a side dish to share. Everyone planning to come should call Mary Redig in advance to make arrangements.

Ron Krietemeyer is looking for a tail stock for a Powermatic 90, if anyone has one to sell, give him a call.

The Association will be doing a bulk super glue order in the fall from Tower Hobbies.

Mary Redig still has a few things from the demonstrations - please call and claim them.