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THE CHARLOTTE SAWDUST

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The Charlotte Woodworker's Association

www.charlottewoodworkers.org

Small Talk

Dwight Hartsell's demo, at the last meeting, on green wood turning inspired me back into turning on my lathe. I had never done much lathe work but looked forward to seeing if I could create anything worthwhile. After searching for and sharpening up my old tools and purchasing a spalted maple dry blank, I proceeded in impressing my wife with the rough bowl (although I did happen to notice a hairline check in the bottom). As I turned down the bowl to a nice thin and fairly consistent body, I decided it was time to turn up the speed to sand my masterpiece. Apparently, the crack was too large and got larger.

My wife came out to the workshop after hearing what she thought was an explosion, only to see me picking up the many pieces of spalted maple all over the shop. I only wish there were enough larger pieces to show at next meeting's mistakes demo.

By the way, Dwight has been recovering well from his surgery.

See you at next weeks meeting.

Sincerely.

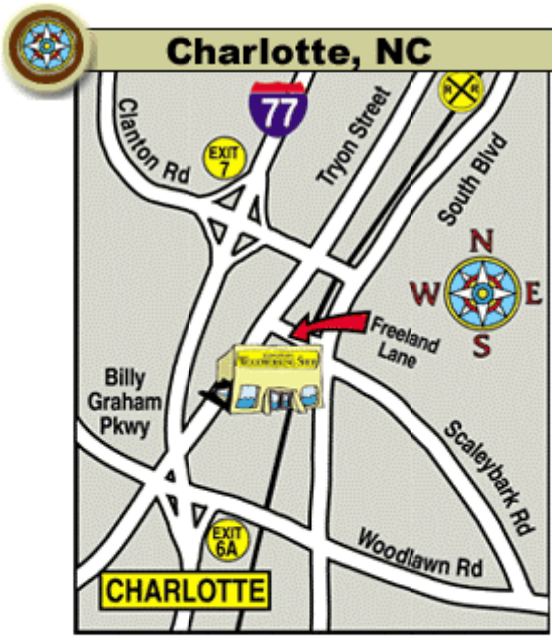
Mike Dyer
mdyer@adwarchitects.com
(704) 379-1919 days
(704) 814-9580 evenings

May Program

This month's program is going to be a "show and tell" from six members who are willing to show their "mistakes" and talk about what they should have done. Not that any of you or I have ever made any mistakes (see above). This should prove to be interesting. See you on Monday, May 17.
We have also been asked if a representative from IRWIN Industrial Tools (makers of Quick-Grip clamps) could take a few minutes to talk about their products and hand out some free samples. If there are not enough to go around, we will add them to our raffle.

Meeting Time

Meetings of the Charlotte Woodworker's Association are held the third Monday of each month, except for December. Meetings are typically held at THE WOODWORKING SHOP of Charlotte, 116M Freeland Lane, Charlotte, NC. Exceptions will be announced well in advance. If you need directions to the shop, visit their web site at http://www.woodworkingshop.com and click on the link to "Store Locations".



116 M Freeland Lane
(Queen Park Business Center)
Charlotte, NC 28217
(704) 521-8886

Get Directions:
MAPQUEST

Following a social and refreshment time that starts at 5:30pm, our meetings start at 6:00pm. Get to the meeting early and get to know your fellow woodworking enthusiasts. Please refrain from placing food, drinks and trash on worktables and shelves around The Woodworking Shop.

$$$ Save Money at the Woodworking Shop $$$

As a member of the Charlotte Woodworkers Association you can save 10% off all your purchases from The Woodworking Shop, excluding wood and power tools. Thanks to our hosts at the Woodworking Shop for allowing us to have our monthly meetings and extending 10% off to CWA members.

Email Option for SAWDUST – ***PLEASE HELP*** !!

If you don't already receive THE SAWDUST by email, please consider this option. By receiving the newsletter by email you 1) save the organization money, 2) receive color pictures, and finally 3) quicker delivery. Sign up today for the email option by sending an email to secretary@charlottewoodworkers.org and your delivery method will be changed immediately.

CWA Mentor Program

The following members have offered their help to anyone interested in learning skills or new techniques in their area of interest. Contact each person to arrange times to get together if interested.

Name	Area of Interest	Phone	Email
Wayne Cooper	***	704.409.1417	cooper@arconmfg.com
Bill Golden	Shopsmith & Accessories	704.525.9691	popstoyshop@juno.com
Dwight Hartsell	Woodturning	704.598.6029	woodwight@aol.com
Jeff Jacobs	any woodworking	704.309.1263	jacobj@meckco.com
Wayne Manahan	Sharpening	704.786.0768	wmanahan@vnet.net
Gil Milsaps	Windsor chairs	704.875.0758	gad32about@aol.com
Alvin Tench	any woodworking	704.824.7717	alvintench@netzero.com

*** Wayne Cooper has a fairly complete shop and would actually like an experienced woodworker to use it and teach him how to use it properly in exchange for use of the shop. If you are interested in helping Mr. Cooper please contact him directly to make appropriate arrangements.

Write an article for Sawdust (thanks for all the help from those that have)

Please consider writing an article for The Sawdust, this is your newsletter what do you want from it? What do you want to share with your fellow woodworkers? Everyone likes to share, share your successes, failures, mistakes, have fun with it and share with others at the same time!. Contact Mike Dyer @ secretary@charlottewoodworkers.org or call (704) 379-1919 days or (704) 814-9580 evenings.

Classified Section

$$ For Sale $$

14" Band Saw – Jet model #JWBS14CSW. White 40th anniversary unit with the motor in the enclosed base. Includes a fence. 5-6 years old. There are several blades included (1 unused 3/16" Timberwolf, 1 used 3/16" Timberwolf, 1 used ½" Wood Slicer resaw and 2 other ½" blades. Welcome to inspect it. Asking $400.00. Contact Dick Thomas at (704) 332-3418. Email: jeadic@carolina.rr.com.

Approximately 1000 board feet of 1 inch thick Oak – various widths from 6" to 10", the boards are about 12 feet long. Asking $1/bf with a 100 bf minimum, would like to sell all 1000 bf for $900. Contact Mike Patterson @ 1-704-435-5179.

8" Inca Tilt Table Saw ($295), Makita 9820-2 Electric Sharpener ($150) and a Makita 9045N ½ Sheet finish sander ($50) are available from George Fryling at 704-752-0121 or George@fryling.com.

Dogwood Logs - We have some wood from a large dogwood that died and was taken down this spring. We would be interested in trading the wood for a turned dogwood bowl. Pieces are large, probably about 18 inches high and 14-18 inches in diameter (3 pieces) and 3 smaller pieces, about 18-24 inches in length and 8-9 inches in diameter. If anyone is interested, we would be happy to send photos. Donna Durfee dddurfee@msn.com

Tools for Sale: I am not sure the exact age of the tools but I will do my best to give correct information. My husband bought all of these in or around 1986. The Bandsaw and the Unisaw, I believe, were purchased new. The Craftsman Radial arm Saw may have been bought new at a later date. My husband is unable to give us any

information as he is an invalid due to Alzheimer's.

Here is the list.
All of these tools run but all need to cleaned and maybe some maintenance.
All prices are Negotiable.

Rockwell Unisaw-serial # 83L04102 Cat. No.- 34-801
Purchased new in 1986? Very Good condition and runs very good. Price $500

Rockwell Drillpress- Series# 15-017 Serial #- 1614518 Drill bit- Jacobs USA
Purchased Used in 1986? This may even be 30 or more years old. Fair condition and stills operates.
Price- $125

Rockwell Model 14 Bandsaw-serial # KU7556 Model# 28-200
Purchased new in 1986? Good condition and runs good. Price $200

Delta Jointer-Model # HM84M910CEW 1HP 15/230 watts
Purchased Used in 1986? This also is at least 30 or more years old. Fair condition and the motor still operates. I have no knowledge of how to use this so I cannot validate whether it operates correctly. Price $75

Craftsman 10" Radial Saw
Purchased New in 1986? Very good condition and operates very well.
Price $300

Anyone interested can call me at 704-563-3313 and come and see the tools or email me at AHHHicantsee@aol.com.

Thank you,
Gail

Turning Injuries, Learning the Hard Way

Excerpts from a WoodCentral messageboard thread, April 2003

[Editor's note: W.C. Turner asked members of the Turning Forum to 'fess up about their "Turning Wounds". The response was remarkable. Hopefully, these tales of woe - some humorously related - will save a few of us from making at least some of the same mistakes. Three factors seem to predominate: failure to wear face shields, lack of attention (fatigue?), and doing something even when we know it's a bad move. The responses are presented in the order in which they were posted.
Jay Kilpatrick: I did get a good ol' fashion busted lip (including teeth print on inner lip cut) from 1) standing in the "line of fire" of a bowl I was finishing the outside of about a month ago; and 2) wearing only safety glasses. Luckily the bowl was small (4 in diam., 2 in deep). Now I wear a face shield unless wearing my passive respirator. I also try to correct myself when positioned in a dangerous location relative to the work.

Bill Smith: I went to the grinder to sharpen a scraper. The wheel looked a little clogged so I decided to first clean it up a little with a diamond dresser. This of course left a fine grit on the tool rest. Without turning off the grinder I took a swipe with my finger across the tool rest to wipe off the residue. The tip of my finger got caught between the wheel and the tool rest. It turns out that fingers grind down a lot faster than HSS. I am still short about 1/8 inch on the end of that finger.

Sean Murphy: I saw a turner's web site one day that showed bowls with a copper band around them (really nice stuff). It looked to me like a 12 gauge copper wire glued around the edge so I thought I would give it a try. Never again! I cut a groove around the outside of the bowl about a half an inch from the lip and glued in a piece of standard home depot copper wire using gorilla glue. I fired it up and thought a scraper should cut it down quick. The slightest touch and the wire ripped out of the groove and flew across the shop.
Whoops . . .
So being Mr. Smarty-Pants I thought epoxy would be the key, and I would try using a file instead. Glue it up, cure it, and spin baby, 1800 RPM. I was correct. The epoxy did hold better, and this time I thought I would able to put a flat on the top of the wire. However, the file soon caught an edge and ripped an 8" length of wire free from the bowl.
Now, I basically had an 1800 rpm copper bladed Weed-Eater on my hands which were both close enough because of the file to become weeds. When all was said and done, I counted 9 or 10 long gashes in my hands (this actually means I got my hands out in 1 third of a second, not bad for a big guy). Although both hands were mangled, I was lucky I didn't loose a finger or break anything. After some rough calculations here are the specs on my Weed Eater: 30 hits per second @ 535 miles per hour Ouch! Don't try this at home.

Angelo: I'm by no means a veteran but I managed to have my sleeve catch on the spur drive while parting off a spindle. Lathe was going at less then 1000 rpm but pulled my elbow in fast. Luckily, the belt started to slip when the sleeve got wound up all the way. Walked away with some good bruises and a 2" gash on my elbow.

John Kidner: I am by no means a veteran either, but I can claim a nice wound. I had just mounted a large piece of cherry (about 7-8 lbs) to my headstock using a glue block made of plywood. This was my first attempt at using a glue block, and it was also my last. I had forgotten to turn the speed of my lathe down, so when I turned it on, the chunk began to spin way too fast, and was obviously out of balance. The force ripped the plywood glue block apart. The chunk of cherry flew up and hit the ceiling, denting the dry wall. It then came down and hit me on top of the head (even though I was standing off to the side). After bouncing off my head, it flew up and broke a fluorescent light, showering me with glass. It finally came to a stop after spinning madly across the floor. Luckily I was wearing a facemask with a plastic head strap and my Shoptunes head set. Both were busted, but they took most o the blow. I ended up with 4 stitches and a headache.

Gary Hern: Almost all of my lathe damage - to myself - has been done because of the stupidity of putting my fingers in places they don't belong. Luckily, nothing serious other than removing a little skin or some fingernail. Only three weeks ago while turning the bottom of a reverse curve, I had a gouge slip off the end of the tool rest, causing a catch. I ended up with a small gash on the inside of my little finger, and a 3/4" gash on the outside right to the bone. It all happened so quickly, I'm not sure what my hand hit at the bottom, but the gouge hit the top. It must have been the base of my tool rest? I'm glad that the hand didn't land on the bone, because it would probably have crushed the first joint. A little pre-thought goes a long way at the lathe, especially with large pieces of wood!

Ellis Walentine: I've never been badly hurt, but I've had a couple painful experiences. One that still happens when I'm not careful (or skillful) enough is when a gouge or Ellsworth tool catches on the inside of a hollow vessel and flips up and over (while still inside the vessel). Invariably, the shank of the tool hammers my pinky finger into the tool rest. Ouch. I also advise wearing a face shield at all times. I've gotten smacked pretty hard in the schnoz by flying flaps of bark when roughing big natural-edge pieces.

Joe Fleming: No wounds, but a good lesson. Right after the Provo turning fest a few years ago, our club held an egg cup race like Provo. I volunteered to go first. As I started hollowing the piece with the spindle gouge, the came out of the chuck and whacked me straight in the face. I had a face shield on, so no injury. I quickly re-chucked and started again. Within a few more seconds, the block came loose again and again hit me square in the face. We hold our club meetings at the San Diego Woodturning Center (SDWTC), which sells products, classes, etc. There were two results of this demonstration. First, I had just purchased a Vicmarc VM90 chuck

(Tommy bar style) from the SDWTC. This was the chuck on the lathe I was using. I returned the chuck and exchanged it for the VM100 (key operated) because I perceived that the Tommy bar style didn't hold as well. Second, the SDWTC sold out of face shields that night. More than two dozen were sold, I believe. (I didn't win the egg cup race.)

Wally Dickerman: An experienced turning friend has a large PM 90 lathe. He has installed dial speed control. He hadn't turned for a while, but one day he mounted a large heavy burl, and flipped the switch. He woke up on the floor in a pool of his own blood. He ended up in a hospital ER, where he had over 100 stitches in and around his mouth. He lost some teeth, suffered a broken nose, and considered himself lucky that it wasn't worse. He had committed the cardinal sin of not checking the speed setting before turning on the lathe. He later remembered that the last time on the lathe, he had been spindle turning, and the speed was set at around 3000 RPM. A basic safety rule...always check the speed setting before hitting the switch.

John Trant: There was a post in the rec.woodturning group about a year ago that described some pretty brutal accidents. I still have that photo in my head of the turner that got bashed in the face with a broken vessel. I believe it was published in the AAW American Woodturner.

I am like most others with the occasional pinched finger, rub burn, or small cut. However, I have had a few close calls. The scariest one was when I was turning a 24" thin-walled, beech bowl. Because the wood was moving as I turned away the excess wood from the air-dried, rough turned bowl, I was only taking the walls to final thickness at about an inch at a time. Even though I was aware of the out-of-round nature of the bowl, I was about 85% done when I decided that I needed to lightly touch up an area within "no man's land". Although it was very loud, I never saw the bowl explode, nor did I have the opportunity to react. At one moment, I was stiffly holding my tool in front of a bowl and the next moment, I am standing in front of a spinning nub with shrapnel ricocheting off the walls and ceiling. Fortunately, all I needed was a short break to get my heartbeat regular again (and a change of underwear).

The only other incident of note was when I was hollowing out a wide but shallow vessel with my hand-held Sorby Multi-tip tool. While shear-scraping the interior at the widest point with the teardrop cutter, I had a major catch. Foolishly my face was down low just above the tool handle so that I could see inside the vessel. The tool handle came up and whacked me on the side of the head so fast I was not sure what happened. I had a full-face shield on so it blunted the impact somewhat, but it definitely dazed me for a few seconds. In fact, I don't remember feeling the tool hitting me, but I do remember the bright flash and the momentary darkness. After I gained my senses (what few I have), I went upstairs and nursed my headache for the rest of the day. Now-a-days, I don't look into a hollow form while cutting. I make a cut while standing erect, turn off the lathe, feel and visualize the interior, turn the lathe back on and make another cut. The only woodworking accident that I have had that required medical attention was in preparing a ring for lamination onto a segmented bowl. I was using a Safety Planer mounted in my DP to flatten out the bottom of the ring. Well it caught and pulled my hand into the spinning blade. When I first looked at my wound, I thought I had cut off my knuckle and broken my finger. Fortunately, it wasn't broken and only required 4 stitches, but I have no feeling in the area around the scar. By the way, I would not let the wife read my contribution.

Joe Fleming: I was once turning a large diameter burl cap into a Stuart Batty-like volcano bowl. When I had the wings less than 1/4" at about 20" from center, a piece of the burl fractured and sent a 4" piece zinging across the shop. Was this dangerous? Sure. But I was purposely standing out of the line of fire because of this hazard. My heart skipped a couple of beats, and I lost a very pretty burl, but I'm not missing any body parts. Moral of the story? For turning activities, especially when doing something that you haven't done before or often, stop and consider what can go wrong before it really does. Anticipate the disaster, and then take appropriate precautions before proceeding. To continue with an earlier posting, the reason many of us have scares but no wounds is that we generally follow basic safety rules that reduce the chances of injury when the unexpected

happens. I know there are many additional suggestions, but here are my turning "10 Commandments" (most of which concern safety):

- Don't stand in the line of fire,
- Don't turn too fast,
- Don't push the limits of your tools beyond safe boundaries,
- Don't work when you are tired, preoccupied, or in a hurry. What is the fun in that!
- Use personal safety gear,
- Keep all tools sharp and in good working order,
- I find it safer to turn alone but practice your craft as if you are teaching a newbie,
- Challenge yourself to expand your present skills (safely). Learn from your mistakes,
- Push the envelope artistically, creatively, but
- Expect the unexpected.

Terry Daniel: I have been reading the growing list of accidents and near misses. (A near miss is a hit isn't it?) Several common denominators come to mind:

- Fixed speed lathes or step pulley lathes. We all started on these but they are the most dangerous Standing in line with disintegrating vessels. If your lathe can be fitted with an outboard attachment for turning bowls, this is an excellent investment.
- Thin walled vessels. Why do we do this? I used to turn thin and thought that was a sign of quality work; another turner asked me one day why I turned so thin. He said he had started leaving things a little thicker and it had not affected his sales. I tried leaving mine slightly thicker and he was right, no decrease in sales. When I do turn thin I slow my lathe down.
- Direction of cut: When starting out most people move the tool in the wrong direction. The first day of a beginner's turning class should cover the direction of movement of the tool.
- Hang-ups. Almost all hang-ups are preventable. Study the physics behind every hang-up and see if direction of tool movement was a contributing factor. Also, try to cut with the lower half of any tool. Whenever you wish to cut with the top half, take light cuts and be aware that you are getting into hang-up territory.

Roger Turnbough: The only 2 shop accidents that I have ever had involved turning.

The first was when I was roughing out with a 1 1/4" roughing gouge. Had the lathe as slow as it would turn, but had a catch and was using an underhand grip on the business end of the tool. Caught, released, then caught again only this time with a sizable chunk of my index finger between the gouge and the rest. I now only use an overhand grip well back from the rest.

Second incident happened only 3 weeks ago. Had a 50 lb Cherry crotch piece chucked up with the tail stock still engaged. The outside was done, and I was taking some meat out of the inside with an Ellsworth grind 1/2" bowl gouge. Well, as near as I can figure, I had a catch at the transition point, the gouge spun with the piece, and it trapped my little finger in between the gouge and the tailstock. Cut to the bone in 2 places, luckily no tendon damage, but severe nerve damage. Surprisingly only took 6 stitches to close up both wounds. This was on a 2hp lathe with the belts set fairly tightly. So, no chance of it slipping to give me some slack, and it all happened so fast you wouldn't believe it.

Dominic Greco: Close call only, and that was enough. It was when I just started turning. I was roughing out a bowl from a piece of Maple on my newly acquired Jet 1236 lathe. I must not have chucked it in tight enough. When I was roughing out the blank, the entire thing came loose, with all its "borrowed" kinetic energy intact! I had positioned the lathe just inside my open garage doors. The rapidly spinning blank hit the floor and took off down the driveway like the Batmobile on Tubo thrust!

Down the 50-foot driveway it went until it hit something at the edge of the blacktop and took a sharp right turn down the street. All the while I was running after it, with wet wood shavings flying, and my legs pumping. My facemask flying in the wind, and my bandanna half off my head, I was cursing up a blue streak under my breath. I must have looked half crazy when my neighbors saw me running down the street after this wayward blank with a determined look in my eyes. You know,...they still give me funny looks now and again....

D.P. Campbell: I have not drawn blood, but have learned some hard lessons. When I first started turning and my 1236 was new, I was trying to turn an inside lip on the top of a bowl. I did not have any hollowing tools other than the termite ring tool (also very new to me at that time) so was trying to reach under the edge, face down close to the bowl to watch and the tool tip above center so the handle would miss the lathe bed. Yep, had a catch, handle flew up and I socked myself in the face with my right hand. I saw stars and retrieved my face shield off the floor. Tool position and not getting close to the spinning wood are pretty basic cautions

I am a fan of the Power Visor because I was making an "art" piece from redwood burl about 14" long and 6" x 6" that had a nice "flute" running up the wood. As I neared the final shape, a thin part let go and two pieces bounced off the face shield. It was over in an instant, one part hit the wall behind the lathe and the other exited the garage - did I mention that I had the speed up fairly high. Always wear a face shield....

The third lesson is hand sanding the inside of bowls. Look in the books and note the area marked stay clear. I have had a bad habit of sanding in that lower right side of the bowl and having my finger "catch" and get flipped over. I thought my loose joints would save me but it started to hurt worse each time I forgot and got whipped around a bowl. Now I have two fingers on my right hand that will hardly close because I abused those joints for just a couple of years. There are old turners and bold turners but no.....

Arch: And then there's the unkindness cut of all. When the sharp edge of a rim of your own turning strikes back at you. A rotating sharp edge makes a good slicer. And how about what I call 'the turner's tattoo', the wound that we recognize each other by, i.e. the scar behind the right elbow from punching a sharp tail center?

Donna Banfield: I have been fortunate that I have had no injuries while turning (and I am accident prone!), but want to share with you an incident that happened Wednesday night to a member of my woodturning club. Last week we harvested some beautiful cherry from the local wood yard that was dumped out back for scrap. We grabbed a large cherry log, cut it into 'liftable' lengths and threw it into the truck. The bottom of the trunk, when split in half and trimmed, gave me a roughed out bowl blank of 17" across 6" deep. The other half was for my fellow club member, who came up to my house the other night to turn his half. He had never turned a piece of wood that large, but has been turning for years (many more than me). While roughing out that beautiful piece of cherry (and his was the larger, deeper part of the trunk) he caught my Ellsworth signature gouge while pulling it out of the spinning wood. The tool grabbed the side wall, slammed his hand down onto the curved tool rest, and bounced it back into the wall of the piece. I was watching from a safe distance and saw this all happen in a flash. His turning was done for the night, and after the knuckle turned black/blue and two times its size, his turning is done for the next couple of weeks. The blank was only 2/3's finished, so we smothered it with end sealer until he can get back to it. The moral to this story, as with postings preceding this one is, years of experience turning are no guarantee an injury won't happen.

Bert Smith: Speaking of sharp edges, a friend of mine was sanding a large 26" tabletop using the outboard feature on his lathe. For some reason he decided to "rest his foot" on the lathe stand. The edge of the spinning tabletop sliced through his jeans and above his knee requiring 8 stitches.

David Propst: First, my wearing a face shield has avoided more than a few occurrences of what could have been a serious injury. Loose wood and hunks of bark tend to fly right towards me! I would probably not have a face left if I did not wear one. Wear a face shield whenever the lathe is on, no matter how small a piece you are working on. A pen blank that splits unexpectedly at 2000rpm can create quite a projectile. In fact, my worst

injury occurred while turning a pen. I had completed finishing one, and was taking it off the lathe when I noticed a little blemish. Thinking I could quickly fix it, I put some finish on a rag and turned the lathe back on. Unfortunately I had already backed off the tailstock. As soon as I touched the rag to the pen the MT mandrel flew out of the headstock and hit the inside of my right palm below the thumb. It hurt so incredibly bad that when I looked down and saw that my already swelling hand was still intact I kept saying "Oh God I'm Lucky" as I danced around the shop. Ibuprofen and a couple hours in an ice soak made it much better, but it was black and blue for a few days, thankfully not broken. I had huge catches early on which I was lucky did not cause an injury. A lesson with Bill Grumbine greatly reduced those incidents. I did break a tool rest on my first lathe with a catch, which seems to be somewhat of a scary initiation rite.

Bill Howatt: My wound was quite minor and was certainly under the "dumb thing to do" category. I wanted to get more horizontal clearance from the headstock to use my Beal buffing wheel on a large platter. I made an 11" long shaft out of about 1.5" dia. hardwood, epoxied a nut into the end of it and screwed on my buff. I mounted the shaft in a Oneway chuck with #1 spigot jaws, which happened to be the jaws in use at the time.

I turned on my General 26020VFD and was quite pleased about how my creation ran. Now the dumb part: I turned the speed control knob way up, and just as I realized this was dumb the buffing wheel and shaft flew out of the chuck, hit my adjustable lamp, broke the bulb and bounced into the headband of my face shield. I then made a second shaft to put between the hub and the tailstock so nothing can work out of the chuck and I keep the speed down low.

Chuck Holcomb: Gee, where to begin! Can't say how many times my face shield has saved me from broken bones or punctures, but it's definitely worth the bother of wearing it. Probably my worst injuries are sanding-related. A number of times I've had the "finger catch," from sanding in the lower-right quadrant of the inside of a bowl, and twice I've been sanding on the upper-right quadrant of the outside of bowls and driven quite sizeable splinters from the rim under my fingernail at 1200RPM. Probably the most painful one, though, wasn't really turning, it was tightening down my tailstock. I had just re-mounted it, not realizing that the tightening lever had loosened an extra turn. Holding the tailstock down with my left hand, I torqued down on the lever with my right, and mashed the end 1/4 of my left middle finger between the lever and the base of the tailstock. OUCH! I quickly went outside and buried the offending digit in the snow, but got a nice blood-spot under my fingernail, which took about 3 months to grow out. A long-lasting reminder to check the slack in the lever >before< I bear down on it!

\ . . . ...compiled by Garrett Lambert,
Editor, *Articles & Reviews*

How To Use A Router - Feed direction

Text and photos by Tom Hintz

Considering that the router is one of the most popular wood working tools, it is no surprise that questions regarding its use are common. Of nearly 300 email questions in my "hold" folder, 188 of them related to basic router use. What is especially interesting is that the majority of these questions involve feed direction and rates, both of which are crucial to safety and the quality of the cut.

Feed Direction and Danger

The good news about feed direction is that with very few exceptions, the stock always moves against the rotation of the bit. The bad news is that making a mistake with feed direction can easily initiate a very dangerous kick out with little or no warning.

Feeding the material against the rotation of the cutter affords control because the cutting action creates resistance to the force being applied by the operator to move the wood across the bit. This balance of forces makes controlling the wood much easier.

Take this warning about feed direction very seriously!


The pencil is aimed in the direction the bit turns, the arrow shows the feed direction. Seeing the cutting edge makes figuring this feed direction easy.


Turn the router bit-end-down and things change. The arrow shows bit direction in this mode. The stock, using the top edge of the bit, would have to be fed right to left.

If the wood is introduced in the same direction as the bit is rotating the cutting edges instantly become extraordinarily efficient high-speed power feeders that can suddenly eject the wood, leaving the operators empty hands dangerously close to the cutter. This situation is particularly dangerous because the force the operator was applying to the wood before it kicked out immediately causes the now empty hands to lurch toward the bit. Disaster can be the instantaneous result. Confusion ***Is Easy.***

It is apparent that the most frequent cause of feed direction errors is operator confusion regarding which side of the cutter, in relation to the operator, is turning which way. The router is the only commonly used wood working power tool that can be used with the cutter facing up in table-mounted situations, or down for hand-held operations. When router orientation is changed from bit up to bit down modes, the operator has to remember that feed directions change as well.

For clarity in this story, the "rear" of the bit is the cutting edge farthest from the operator and the "front" refers to the edge closest to you.

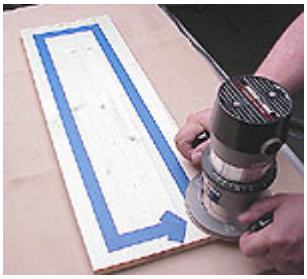
Consistent Practices
The easiest way to reduce feed direction errors is to develop standard operating procedures used each time a task is performed. Taking the time to double check the feed direction before each operation is a very good habit to get into.

Hand-Held Operations
I always start at the lower left corner of the piece when cutting the outside edge in the hand-held mode. The bit is spinning in a clockwise direction from my perspective so engaging the rear of the bit with the wood means the router always moves left to right and goes around the remaining sides of the piece in a counter clockwise direction.

When routing an inside edge, like when cutting the inside edge of a frame or opening, I start at the upper left corner so the rear of the bit again engages the wood and the router moves left to right. The only difference is that when cutting the inside edge, continuing the left to right motion takes the router around the opening in a clockwise direction.

Using the same starting point every time develops a habit that goes a long way towards preventing directional errors and the damage and danger that can create.

The exception to this would be when there are end grain sections that are to be routed. Generally, we route the end grain segments first, and then the rest of the piece so any chipping that occurs at the end grain is removed in the final passes. I usually do the end grain first, then start at my normal position and go all the way around the piece, including a second pass over the end grain segments, so I get nice clean transitions from one side to the other.


Starting in the same place every time makes going the right way easier to remember.

Router Table Operations
Safety Note: Whenever routing pieces on a router table be sure to use proper push stick, pads or other safety equipment that keep your hands a safe distance from the cutter.


Pay attention to feed direction, and use proper safety devices.
When the router is installed bit-end up in a router table, bit rotation from the operators perspective is counter-clockwise. When using a fence or miter guide, the edge of the cutter closest to the operator is used and the material is fed right to left.

An exception is when cutting a centered slot in a piece of wood. The first pass is made by holding the wood against the fence and then plunging it down over the bit at the start point and then feeding the stock into the

cutter from right to left. However, when the piece is reversed to make the second pass to center the slot, the rear edge of the bit is often doing the cutting. In this case, the piece has to be fed from left to right.

When making this type of cut, I have found it safest to make the first pass (right to left) and then shut off the router. I reverse the work piece and hold it in position above the router bit to make sure which edge of the bit will be doing the cutting. If the rear edge of the bit is doing the cutting, the work piece has to be fed across it from left to right.

It should be noted that cutting centered slots on a router table is always a difficult and somewhat dangerous operation. If you are at all unsure of your skills or safety equipment, make the slot by drilling holes at either end and then removing the material between them with a jig saw.

Occasionally router bits equipped with bearings are used in the router table without the fence. We have to remember that the router bit rotation is counter clockwise and adjust feed directions accordingly. When the front edge of the bit is used, the stock is fed right to left. If the rear of the bit is engaged, feed direction is left to right.

Remember to use the proper push sticks or pads to keep your hands far away from the bit. Without the fence, the bit will be totally exposed if the wood kicks out or breaks.

Climb Cutting
There are two situations when climb cutting, moving the router in the same direction as the bit rotation is acceptable. Climb cutting is always difficult and care must be taken to maintain control of the router.

The most common climb cut is on a dovetail jig with the router in the hand-held position. A small portion of the cutters edge is used to make a very light scoring cut, moving from right to left, to reduce tear out. Even though very little of the bit is engaged in the wood, care must be taken to maintain control of the router as it could want to accelerate down the wood.

The other situation when climb cutting is used is when using some laminate trimmers. Feeding the router against the bit rotation sometimes causes these materials to "chip" ahead of the cutter. In these cases, the laminate is trimmed as close to the base material as possible with other tools and then the router can be used to clean the edge, moving it in the same direction as the bit rotation.

Whenever climb cutting, whether on a dovetail jig or trimming laminates, keep the cuts very light and a firm grip on the router to avoid having it get away from you. Climb cutting without using proper procedures is very dangerous.

Feed Rates
Determining the proper feed rate for any bit is relatively easy, assuming the router speed is set correctly for the bit. If the bit burns the wood, the feed rate is too slow. If the wood chips or blows out ahead of the bit, the feed rate is too fast. Granted these are generalizations and there are other factors that could contribute to these problems, but they remain important clues about what you may be doing wrong.

Feed rates and bit performance are directly related to the depth of cut. Trying to remove too much material in a single pass can cause or increase burning and blow out ahead of the bit. It is always better to make multiple light cuts than fewer deeper cuts. Lighter cuts are far safer and produce much better results.

The Bottom Line
Routers extremely useful in the workshop, but they can also be very dangerous if used improperly, including the failure to employ adequate safety equipment, procedures and feed direction.

If you find yourself faced with a router-related task that you do not completely understand or do not have the proper safety equipment for, the only prudent course of action is to stop! Wait until you get the information and equipment to make the operation safe. The task will be there later. Your fingers may not.

As with all power tools, the major cause of accidents is operator error. Not taking the time to be certain of feed direction with a router is dangerous, and could lead to severe injury. There are many woodworkers who have learned to pursue this hobby with a disability caused by a moment of lost concentration. Take the time to make sure you do not join those ranks.

A Quicker Way to Apply Solid-Wood Edgebanding

A common way to cover the exposed edges of plywood in a woodworking project is with solid-wood edgebanding. The problem with this technique, however, is that it always requires some fussing around. You have to rip all the strips to a consistent thickness (which isn't as easy as it sounds). Then, you have to use a lot of clamps to glue the edgebanding in place properly. Even then, if the clamping pressure isn't distributed evenly, the edgebanding can end up with a slightly wavy surface.

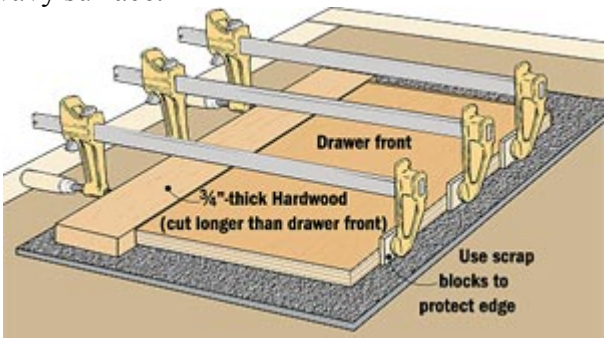


Fig. 1

To streamline things a bit, I began to take a different approach when applying edgebanding. The idea is to glue a wide piece of hardwood to the edge of the plywood (Fig. 1). Then rip the edgebanding to final width, as shown in Figs. 2 and 2a.

As for the cutoff, it's glued to the next piece that needs to be edgebanded and ripped to width as before. Simply repeat the process as many times as necessary.

One advantage of this technique is the wide boards acts as a caul that helps distribute clamping pressure evenly. As a result, you don't need as many clamps. Also, ripping the edgebanding to final thickness after it's glued on ensures a straight, flat surface.

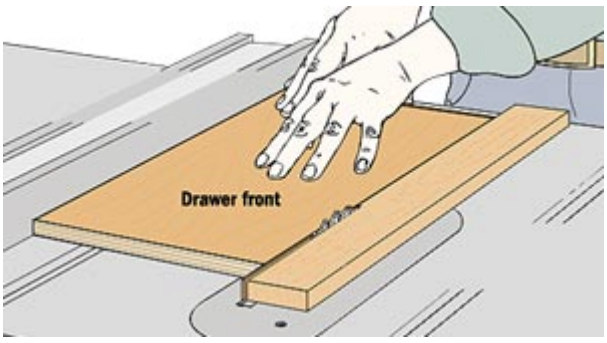


Fig. 2

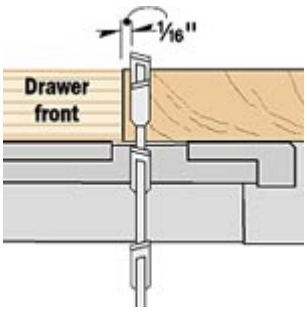


Fig. 2a

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At the Woodworking Shop