al saffron  April General Meeting
bruce wedlock  Turning Federal Reeded Legs
michael brown  Period Furniture—Lunette Banding
blanchard, brown, deAngelis, hansen  March Small Meetings

David Belser
Voice of a Beloved Tree
When most of us think of a guild, we think of medieval craftsmen planing shavings, carving or blacksmithing. Medieval guild’s were alliances that held enormous power and secrecy over their craft, skill and business. Prices were regulated and many guilds formed monopolies on their product. If the market demand increased, guild members would allow new craftsmen to start a business. The system was rigid and strictly controlled.

The Guild of New Hampshire Woodworkers, in contrast to the medieval guilds, is a vehicle for members and non-members to freely share skills, technique and information. The willingness of our members and guest demonstrators to give their knowledge as a gift is remarkable and rare.

Below is the guild mission written twenty-one years ago. It still rings true.

“The Guild of New Hampshire Woodworkers is an association of professionals and amateurs bound by a common interest in woodworking. Through regular meetings, lectures, demonstrations, a video library of those demonstrations, a newsletter and other activities, the Guild strives to bring together the diverse interests of the New Hampshire woodworking community.”

In a recent e-mail conversation with a long-term GNHW member, I was surprised to find that they were under the impression that to attend a subgroup meeting you must be a member of that subgroup. This is not true. Any Guild member or non-member is welcome to attend a subgroup meeting, general meeting or Steering Committee meeting. Most subgroup meetings have a limit on attendance due to space and many require registration for that reason. You can register through our website calendar (gnhw.cloverpad.org/calendar) and then click on any event. If you would like to attend a Steering Committee meeting, contact me. The SC has limited space as well.

I feel the openness of the Guild is a strong asset and separates us from clubs or restricted organizations. As the guild matures all of us will see our organization slowly change. We have all seen it in the past five years. I ask all of you to keep an open mind and try to be receptive to new ideas, changing directions of subgroups and changes in technology. Change will form the GNHW of the future.

When I think of positive experiences in my life, being a member of the Guild ranks high on my list. When I joined the Guild, I wanted to share my knowledge. What I have learned is to step back and listen to what is being presented. I have been involved in woodworking for the better part of my life. Still I continue to learn, be humbled and inspired by our members. I would like to encourage you to participate and share your knowledge. It is your Guild.

A Call for GNHW Officers Nominations — If you are interested in running for a Guild office please contact Bob LaCivita. The election is held at the Guild Annual meeting in September. Positions that are up for election. President, Vice President, Secretary and Treasurer.
The April General Meeting

The April general meeting was held April 16th at the Creek Farm estate in Portsmouth. The building was once a beautiful summer home on the Sagamore Creek inlet. The estate has a large space with a high ceiling called the Music Room that is well suited for meetings. Through Al Hansen’s somewhat special connection, the Guild has access to this location for our meetings.

We learned a little history of the 1888 building. It was designed by a notable Boston architectural firm, and was featured by the leading trade magazines of the time. The east wing, added about 1890, included the Music Room. The room is completely walled with bold Tudor style paneling and features a massive fireplace. There is a door in the paneling at one end that you must look very closely to find, and built-in music storage compartments behind panels that open if you know how.

In later years, when the property was little used and in disrepair, the Astor Carey family left the house to Cornell University. GNHW member Fred Chellis came to be involved with the Music Room through a public service restoration effort. He told of cleaning one hundred years of grime off the paneling and of repairing the leaded glass windows. Window technology of the time utilized weights to counterbalance the sashes; these were no different. Fred pointed out that these large leaded glass sashes are quite heavy and require heavy counterweights. Over time, as the rope cords aged, the weights broke the aging rope cords and fell, making repairs difficult.

Cornell, in partnership with the Forest Society which is responsible for the 30 acre reservation, is updating the property. Cornell is renovating the house to accommodate students and staff of the Shoals Marine Lab, which it runs off shore.

After the meeting took a break, Monica Raymond spoke
of the creation of the Right Brain Subgroup. Initially started by John Whiteside early in 2009, the group’s meetings have become more regular and well attended. She explained the group’s interests are in understanding woodworkers’ state of mind and developing the experience of woodworking. The group discusses a range of abstract topics such as motivations, design creativity, expectations, and work versus play. Listening to Monica, we realize there is more to growth in woodworking than just skills and tools.

After lunch, wood carver and sculptor Sumner Misenheimer set out some samples of his work and passed some others around. He carves wood sculptures of his favorite wetland creatures – otters, birds, and fish, as well as such woodland creatures as mice, bears, and eagles. Each captures the creature in motion, giving the sculpture real interest.

He uses “found” wood, well-aged and partially rotted downed trees, and particularly stumps, burls, and crotches. ‘Well-aged’ means dry throughout, with insect and creature damage that gives the wood character. Varying conditions of rot result in varying colors.

The piece of wood determines the finished sculpture. Starting with an idea of his subject, Sumner described how he starts cutting the rough shape by following the wood, and going with the flow of it. Wood in the condition he uses has splits, checks, and sometimes falls apart changing his original concept of the piece. As he gets further into the wood, he finds gaps, damage, sapwood, and grain changes. His art is reacting to the condition of his work piece, visualizing a more appropriate subject and sculpting out his creature with the finished pieces having no end grain.

Once he pointed it out, we could see his technique in carving feathers and fur. He doesn’t carve all of the feathers; he strategically carves shapes considering shadow and light for texture and figure.

And, for the carvers, Sumner did share some of his techniques. He uses super glue to stop checking; the thinner formulas soak in better. He also sands glues wet so it dries with the stock’s dust as solids. For his finish he uses twelve to fifteen coats of Watco Oil, sanding every few coats.
What is BIG?

The Beginner & Intermediate Group is all about learning regardless of where you are in the journey or where you hope to go. If you don’t know the difference between a block plane and a rabbit plane this group is for you. If you know what they are but don’t know how to tune them to get the results you are looking for, this group is for you.

BIG is a demonstration only group that meets the first Saturday of every even numbered month with the exception of August (Summer vacation you know).

The Guild year starts the month of September so the first BIG meeting of the year is the first Saturday of October. So regardless of how little or how much you know, there’s something for everyone at BIG.

Over the past two years Tom McLaughlin has been using the construction of a traditional chest of drawers as a demonstration project. Even if you weren’t planning to build this chest of drawers, the lessons and pro tricks learned along the way will help us with any project or case piece we will build in the future.

Our last session on the current project was June 4th at Tom’s shop in Canterbury. This final session covered finishing which would apply to almost any project. Since it was our final meeting of the season, we also got together afterwards for a cookout and tailgate tool swap.

Tom has agreed to continue hosting and demonstrating for BIG for the 2011-2012 season. If you are interested in learning more about the Beginner & Intermediate Group (BIG), then consider yourself invited when we start up again in the fall on a new project.

We have kicked around a few ideas one of which is a wall tool cabinet. Stay tuned for a Guild survey that will ask for your ideas and input towards this coming year’s project.

When coming to Tom’s, due to limited space, we ask you to make an effort to car pool as much as possible and to park your cars as efficiently as possible. Please stay off the grass and do not park on the main road. What to bring: This is a demonstration only event, so no tools are needed. You might want to bring a note pad and pencil. Please bring a folding chair. There are a few stools, but unless you choose to stand for the 3 hrs, you should bring a chair.

Also bring any tools you are interested in selling or swapping with other BIG members in attendance.

Beginner & Intermediate Group

by Bob Couch

The Guild Scholarship Committee

The committee recently awarded a Peter Bloch education grant for $1200 to Steve Shultz of Thetford Academy so that he can study woodturning while on a trip to Europe.

Steve has created and grown a shop program at Thetford Academy that is a huge success. There is great interest in turning among his students, and to further his skills he will take a weeklong course in Europe.

Steve has also been instrumental in the creation of a new chapter of the American Association of Woodturners in the Upper Valley. The Scholarship Committee has supported his program in past years to help him acquire lathes and tools, and we look forward to hearing more about the success of his students.
On March 26 The Period Furniture Group met in Rollinsford, NH at Piscataqua Design, the shop of Bruce Eaton and Matt Wajda. Matt and Bruce demonstrated the design and construction of Lunette Banding, a style of banding popularized by the Seymour’s federal period furniture. The dictionary definition of Lunette is “any of various objects or spaces of crescent like or semicircular outline or section” although I have heard definitions related to suns and moons. Matt and Bruce are excellent presenters and very knowledgeable; we all learned a lot about making this beautiful banding [Photo 1].

There are several different techniques for making this banding. The process we used starts with milling six pieces of light colored ‘core’ wood like maple or holly to a thickness of 9/16”. For the demonstration, Matt and Bruce milled maple to 2’ in length by about 2.5” in width, but you should make it as long as you need for your project. The width is dependent on the length of the plug cutters that are available. In this demonstration they used 2” plug cutters. Three sets, one for 5/8” plugs, one for 3/8” plugs and one for the core were made. Each set consists of two pieces that are glued together and separated by paper to make it easy to split them apart later in the process. It is important that the pieces are all the same thickness so you won’t have to move the fence adjustment on the drill press each time you process a set. The pieces are clamped tightly together [Photo 2].

Using a 5/8” plug cutter, a series of plugs are cut in set one. The objective is to cut the plugs exactly on the centerline. Drill the plugs freehand creating as many plugs as you can. Then using a 3/8” plug cutter follow the same process on set 2. At this point you will have two sets of plugs – 5/8” and 3/8” that look similar to Photo 3. The plugs are removed and popped apart at the glue line.

The plugs are then shaded in a pan filled with fine sand and heated to a point where the wood will toast over a period several minutes. The half plugs are placed in the sand with about 25% of the plug buried. You have to watch the plugs carefully during this process – you are looking for a shaded plug and you have to be careful that you do
not overheat them and end up with carbonized plugs. The darkness and depth of shading is an artistic decision and some experimentation would be useful. You are looking for consistency and a look similar to the banding in Photo 1 at the beginning of this article [Photo 4].

The core is then prepared by gluing together two pieces of wood in a manner identical to that discussed above. The glued and dried core is then taken to the drill press and 5/8” holes are drilled using an indexing jig that is centered on the glue line. The jig is simple, basically a 5/8” wood pin that, after you drill the first hole, is used to index the rest of the holes. The core is then split apart leaving two cores each having a series of half round slots that will receive the 5/8” toasted half plugs. The toasted 5/8” half plugs are then glued into the core making sure that they are all oriented the same way. The just glued cores are then placed in a screw press until the glue is dry. After toasting, the half plugs will have some distortion from the heat; the screw press will force the plugs into the half round slots eliminating any minor twist or distortion [Photo 5, 6].

Once the cores are removed from the press, they are planed flat, cleaned up, and then taken to the drill press where the two core halves are held together tightly and holes are drilled for the 3/8” plugs. The same indexing jig is used, but the index pin is changed to a 3/8” pin and the jig is repositioned so that the 3/8” hole, while still exactly on the centerline, will be offset on the horizontal
axis. Looking at Photo 1 you can see the 5/8” plug and the corresponding 3/8” plug that is on the centerline but off center horizontally. At this point the 3/8” plugs are glued into the half-round 3/8” slot in the cores and then put into the screw press until the glue is dry.

After planing the cores for flatness, they are then glued onto veneer so the “brick” has a core layer including the plugs and is sandwiched with a black and white veneer on either side. This “brick” is then placed in the press until the glue is dry.

Once the glue is dry the brick is taken from the press and cleaned up. The brick is then taken to the table saw and using a thin kerf blade (Matt and Bruce use a 1/16” carbide RIP blade) the veneer is sliced off of the brick. The brick has to be cut right away because it will warp. A piece of wood can be glued to the side of the brick that will allow you to saw slices off the brick with very little waste [Photo 7].

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Photo 6—Screw Press

Photo 7—Matt Wajda prepares to cut banding from finished cores using Diablo 1/16” kerf carbide RIP blade.
Small Meetings

Twice a year the GNHW holds a number of Small Meetings at various locations, mostly at member’s shops. The purpose of these meetings is to get a small group of members together at a member’s shop to learn a particular subject, interact with members having similar interests and have fun. These are “gather around the bench” meetings and a great opportunity to get up close to the action. Look for announcements about the next meetings on the Guild website.

This spring four meetings were held on Saturday March 18th. “Hand cut Dovetails” at Stuart Blanchard’s shop in Strafford, NH, “Setting Up and Tuning Shop Machinery” at Peter James’s shop in Grafton NH, “Segmented Turning” Claude DuPuis’s shop in Canterbury NH, and “Making a Pembroke Table Leg with Bellflower Inlay” at Matt Wajda’s shop at Salmon Falls Mill, Rollinsford, NH.

Tuning Up Woodworking Machines—Peter James

Ten members of the Guild were treated to many of Peter James’ secrets for cleaning and tuning up woodworking machines as well as some fine pastries provided by his lovely wife, Verna.

Peter provided a wonderful handout covering tuning techniques. Each member left with many new techniques for cleaning and tuning tools. Before addressing tuning techniques, Peter exposed us to his cleaning techniques for used and new machines. Here are some of Peter’s secrets:

- To remove rust but not paint, use “Evapo-Rust”.
- Denatured alcohol is a better solvent than lacquer thinner which leaves a film.
- Hydro Seal removes both grease and paint.
- CMT pitch remover is effective for built-up pitch removal.
- PB Blaster Penetrating Fluid loosens stuck parts.
- Use “Never-Dull” and “Semi-Chrome” to polish with a slight abrasive.
- Peter recommends AX-series belts for all machines because they have machine edges. He showed us that a good bearing should not spin freely as the lubricant in a “good” bearing should provide resistance to spinning freely.
- Peter recommended the Old Woodworking Machine (www.owwm.com) site for old manuals and for dating your machines.
- Peter always breaks all the table edges on his new tools using a file and sandpaper so material is not marred by the sharp edges.
- Next he explained in detail the tuning of a table saw, jointer, band saw, planer and drill press. For the table saw, he showed how to use a dial indicator to tune the arbor, blade and fence and recommended using paraffin to lubricate all gears as sawdust will not stick.
- Peter then removed the knives from his jointer and replaced them using a dial indicator to adjust all three in the same plane. Then he jointed a board and the jointed board appeared to have a sanded finish. Peter explained how to remove various components on a planer to expose the blades for tuning and demonstrated two techniques for aligning all three blades.
- For the band saw, he discussed tracking and the use of “cool blocks” as the safest alignment blocks. He recommended Timber Wolf blades for the band saw. Peter also gave us techniques for determining the run-out of our drill presses and checking for table perpendicularity to the chuck.

Thanks, Peter, for a great meeting and your hospitality.
Well-known furniture maker Matt Wajda hosted a Small Meeting at his shop in Rollinsford on March 19. Matt demonstrated his approach and technique for creating a Pembroke table leg with holly stringing and bellflower inlays.

Matt began the meeting by showing a drawing of a table designed by a student at North Bennet Street. The drawing included legs with stringing and bellflower inlay. The objective at this meeting was to implement a portion of this design in a mahogany leg that was prepared in advance specifically to demonstrate the techniques involved. In this design the largest bellflower was at the top and each successive bellflower was a little smaller. There were five bellflowers in all.

1. The process starts with constructing a cardboard template by using an awl to transfer the bellflower tips from the drawing to the cardboard. The petals are cut into the cardboard using the same gouges that will be used later to incise the leg and cut the holly veneer petals. [Photo 1]
2. The leg is marked with a centerline that is used to align the template to the leg. The template is held to the leg and the petal positions are marked using a sharp pencil.
3. The stringing locations are marked using dividers and a pencil to transfer the design from the drawing to the leg.
4. Small pieces of holly veneer are placed in hot sand so that about half of the holly will get toasted. The bellflower petals will be cut out of this holly so that the petals will have a shadow giving a sense of depth. [Photo 2]
5. Flower petals are cut from the sand toasted holly veneer using various size gouges. For this project,
Matt used 5/25, 5/20, 5/16, 5/12 and 5/8 gouges. These flower petals are very small and delicate. The petals are defined by the sweep and size of the gouges you use to punch them out, and the same tool is used to define the area to be removed on the leg.

6. Using the same gouges that were used to cut the petals from the veneer, areas on the leg the exact size of the petals were excised to a shallow depth (±1/40”) so that the petals could be inlaid perfectly. This is done petal by petal with three petals for each flower.

Photo 3—Scratch Stock used to scratch grooves for stringing.

Photo 4—Trammel used to cut curved grooves for stringing.

by Stewart Blanchard

Dovetails—Stewart Blanchard

Five woodworkers, each already having tried hand-cut dovetails, attended the hand-cut dovetails small meeting at Stewart Blanchard’s shop on May 18. Because of some prior experience, the meeting involved a good exchange of experiences, problems and solutions. Stuart Blanchard discussed stock preparation, including the importance of acclimating the wood, and demonstrated multiple methods of laying out dovetails along with the aesthetics of various spacing’s, pin sizes, and slopes, and commented on the inability of jigs to create the most visually desirable dovetails even though they are often useful for routine cabinetry.

We also discussed various ways of marking and transferring the layout lines, along with the pros and cons of each method. Short sets of sample dovetails were cut several different ways and the results were compared, including noting which procedures were most reliable or fast (not always the same!).

Recognizing that not all dovetails are created equal, there was also a good discussion and demonstration of various ways to fit or repair poorly fitting dovetails, either too tight or loose. There was a realization that even dovetails with problems can usually be successfully repaired, and as always, practice and experience will result in fewer instances of dovetails that need anything other than minimal repair to be truly first-class dovetails.

The Guild of New Hampshire Woodworkers
7. As each petal is cut, the corresponding leg material is removed and the petal is glued in using yellow glue.
8. Once all of the petals are glued in and dry, the surface is faired using a plane or scraper.
9. The stringing is cut from the holly veneer using a straight edge. It is important that the holly is straight grained. For cutting with the grain, use a veneer saw and, for cutting across the grain, use a sharp knife. The width of the stringing is matched to the width of the scratch stock tool that will cut the grooves.
10. Once the stringing is cut, it is time to cut the grooves in the leg. Matt uses a scratch stock made from a small piece of wood housing a cutting edge made from an old band saw blade. [Photo 3] The blade is carefully shaped to cut a groove to the required size. The tool includes an edge that rides along the side of the leg for a reference. The technique is basically the same as using any scratch stock except that the cutting edge is very small and delicate. Great care is necessary in order to not break it.
11. Once the grooves are cut, it is important to dry fit the stringing into the groove. It is also important that all debris, fuzz, etc. is removed.
12. At this point, the groove is filled with yellow glue and the stringing is pressed into the groove. The stringing is then faired using a plane, scraper or sandpaper.
13. This design also had a stringing detail that included two partial circles at the top of the leg. This was accomplished using a trammel that had a shaped nail cutting tip on one leg. Once the curved groove was cut, the remainder of the process was the same as the straight stringing installation. [Photo4]
On Saturday, March 19th nine of us met at Claude DuPuis’ shop in Canterbury. The topic of this Small Meeting was segmented turning, and Claude was the perfect presenter as he was in the process of being successfully juried into The League of NH Craftsmen!

Claude began the meeting by showing us several of his completed pieces and a work in progress. Segmented turning consists of gluing pieces of wood together into rings, gluing the rings then turning them on a lathe. Endless combinations of wood species, color, inlay and shapes are possible. The process demands precision. Claude showed us his many drawings, diagrams and the calculations required to find the angles needed to complete the rings. “Take your time and get it right,” he emphasized.

Next we watched Claude create a ring. Jigs are used to stabilize small pieces of wood for cutting on a chop saw. He then uses a sander to produce flat surfaces or make minute corrections for exact fitting of the segments. Tape holds the segments while glue is applied and holds them in a circle while hose clamps are tightened around the ring. Each step requires much patience and care which Claude seems to have in abundance.

After a question-and-answer session, we thanked Claude for a very interesting and informative meeting and adjourned. As a relatively new woodturner, I’ve been fascinated and somewhat intimidated by segmented turning. I’m now a little less intimidated.
I became aware of Vicki Jordan’s “Voice of a Beloved Tree” projects when pictures of pieces turned from the tree by well-known professional and amateur turners from all over the country and around the world began showing up in the online woodturning forums.

In May of 2010, a large sugar maple that had stood in the yard of Vicki’s family homestead had to be cut down. Vicki remembers the house as her great-grandparents’ house – a 205-year-old house that has been in the family for 7 generations. She and John moved in when they got married in 1977.

Vicki decided that she would share as much of the tree as possible with other turners so that its spirit would live on. Her husband John is a well-known and respected studio turner who has been turning for 25 years – needless to say the Jordan’s have a lot of woodturning friends.

I don’t know if Vicki anticipated the results, but in the end the Beloved Tree ended up in shipment to all corners of the U.S., Brazil, England, Germany, Japan, Australia, Canada, Denmark and New Zealand: almost 200 artists at last count!

Vicki says, “I have humorously thought of it as scattering the ashes of a loved one. The post office (and my credit card company) thought I had gone nuts, but I am really enjoying the energy that is being shared. Let it be known how much I love and appreciate John for sawing and packing the wood for each shipment.”

What a wonderful way to honor and remember a longtime friend! I’ve always liked the idea of “one-tree” projects. At the time, the work I was making (bamboo, sticks and veneer) didn’t require green wood or working from the round. I wanted to do something special but I didn’t ask for a piece of the tree because I was just a bit concerned that turning fresh green wood might not work well with the techniques that I typically use.

However, last November I finally met John at a show opening in Chicago. Somehow in five years and four national symposiums I’d never actually met him in person. We ended up discussing one of my basket weave vessels that was in the show. I commented that I like using wood with a strong visual element in it such as staining or spalting – the stain carries through the layers of veneer and illustrates that the layers where once a solid block of wood. To me this is a reference to the actual layered structure of wood, and I lamented that I had run out of the wood I’d been using and would have to go searching for suitable stock.

John mentioned Vicki’s tree and the fact that there was still some left and it was nicely spalted. Hooray! I finally had the “right” piece to contribute to the Beloved Tree project. Talk about timing — I was lucky to receive one
of the last pieces of wood from Vicki Jordan’s tree. Had I not been discussing my lack of suitable wood with John, I would have missed out entirely. Now because the wood had been sitting around for most of a year it was spalted and well suited for the type of work I was doing.

I eagerly opened the package when it arrived, but became slightly less enthusiastic and just a little concerned. The log was about 12” and 8” diameter (bark on), with a small branch jutting out and the ends were moldy and damp. My five basket works to date were each from a well-dried slab 6” thick. I would need at least 25 layers of veneer for this project to work, so I was going to have to use every bit of this log. I’d never tried to make veneer out of a damp log and in my mind I could already see the veneer curling back on itself. What had I gotten myself into? [Pict.1]

The log sat in my shop with the box slightly open for a month to let it dry a bit, before I found the courage to cut it open. The first problem is to determine the orientation of the veneer cuts. The log was slightly wider in the direction of the branch so it made sense to stack the layers along this axis to get more usable slices out of it. I used a handheld power planer to get the thickness down to slightly less than the 6” throat of my bandsaw, which revealed that this wood was indeed beautifully spalted.

After about an hour of sawing at the bandsaw I ended up with 33 sequenced rough-cut veneer layers. They were damp enough that I could feel it so I left them out on the table and turned them every few hours. The veneer is so thin that it dries out quite quickly but the side against the table traps the moisture and dries slower, causing the veneer to curl – hence the need to flip them periodically. Just like drying a bowl blank, the free water will evaporate in just a few hours, but the water trapped in cells takes longer.

Once they stopped feeling wet, I slowed the process by stacking them with a weight on top to keep them flat overnight. The next step was a drum sander to clean up the marks from the bandsaw and obtain a consistent thickness. I aim for a thickness of .050” but it’s not critical as long as it’s consistent. The heat generated by drum sanding is mild, but I believe it helped to dry the veneer. After sanding, a few of the sheets developed cracks. [Pict.2]
It was important to keep the sequence and alignment correct, so before I cut the veneer layers, I cut a birdsmouth or V in one end of the log using the bandsaw. The V-cut is less than 1/8” deep but it provides little notches in one end of the veneer layers that I use to line the stack up again later. I tape the aligned layers together and mark out a circle for the stack of disks that will become the blank. The goal is to end up with a stack of rings that will used to build a blank. In order to maintain the alignment of the veneer layers, I drill two holes completely through the carefully aligned and taped stack before any cutting. In the image shown, you can see one of the alignment holes being drilled and the layout of the top rim of the vessel. I’m planing on keeping some of the wormholes in the rim. [Pict.3]

Because I was working with a log, I had to split the stack in half and cut the blank out of each half stack, because the bandsaw would have destroyed the veneer as I tried to cut through the overhang. Image [Pict.4] shows the full blank, bottom side up, with nails in the alignment holes.

The construction of this style basket has eight ribs that run radially from the center. The ribs alternate on each layer (4 per layer) and the stack is compressed. This causes the woven look although it is more akin to corrugation. Because the ribs are radial, they would interfere at the center when the stack is compressed, so I cut the center out first with the added benefit of there being less to turn away later. Of course the bottom can’t have a hole in it, so some of the layers are reserved for the bottom. Notice that I use a scroll saw to remove the center plug and draw a bird’s-mouth on the plug as soon as it’s removed. [Pict.5]

Since I had to use the entire log to get enough layers, some intersected the pith. Woodturners generally avoid using the very center of a log, but I had no choice, as I needed as many layers of veneer as possible. Some of the rings split, and there were also a few splits from the first drying that intersected the rings, so at this point I contacted Vicki to ask if there were any more spalted logs left to work with. Much to my dismay, she informed me that I’d received one of the last pieces and that the rest had since gone, although there were some sticks left! Clearly the only way out was to charge ahead and hope for the best. [Pict.6]
On the positive side, the splits were just splits – there wasn’t any wood missing, and because of the thin veneer the split rings could be squeezed back together. Of course when you do this you end up with a ring that looks like a potato chip – a very graphical example of why bowls split and crack. I was able to repair all of the splits, but now I had a stack of potato chips. I decided that the best solution would be to steam them and flatten them, as this would also tell me if glue joints would survive being steamed later. Much to my relief it worked, and finally I was ready to start building. [Pict.7]

Building up the blank for turning involves stacking the layers of veneer and ribs on a “build board,” which is nothing more than a piece of plywood with strategically placed holes that hold dowels used for keeping everything lined up. The ribs are made by rough cutting strips from veneer, standing them on edge and running them through a drum sander.

The following images show everything ready to start stacking and stacking completed. [Pict.8][Pict.9]

The full stack is quite spongy, but I use this to my advantage by wrapping copper wire around four of the eight sets of ribs. When the stack is compressed, this holds the stack together and aligned. Using copper wire provides a way to fine tune the tension by simply pushing down a little and twisting the wire some more. Once this is done, the stack is quite solid and can be removed from the building frame to add the last few layers for what will be the bottom of the blank. The center opening is made smaller on each of these bottom layers and then a few solid layers are added to allow for the inside bottom. Because the wire does not hold these final ribs, they are glued on one edge to keep them in place during the steaming and compressing step. [Pict.10][Pict.11]

I then sandwiched the completed assembly between two boards and use threaded rods to draw the boards together. I tighten everything down just enough to get inside my eight-quart steaming chamber, which in my case is a pot on the stove with a small amount of water on the bottom. Steaming takes only about 15 minutes, and it is amazing how much the wood relaxes. I usually tighten the threaded rods after just 5 minutes. If you wait and do it all
at once you may find the stack so loose that the alignment gets messed up. [Pict.12]

The steaming is done when the stack can be compressed tightly and there are no gaps between the layers or the ribs. At that point I leave a small fan to blow air through the compressed assembly to improve drying. [Pict.13]

The stack of veneer and ribs is still mostly just a loose stack, and I find that the best way to glue it together is to use thin CA glue and let it run down the length of the ribs where the veneer layers bend together. Do this outside, if there is a breeze (Use caution when using CA this way, the vapors can be quite nasty & potentially dangerous.), and I do this in two passes because the glue tends to get absorbed by the soft wood the first time. Use a fan to move air through while the glue cures as this will eliminate the white haze that can occur with CA glues. I allow the glue to cure overnight and then soak the blank in thinned lacquer, which seals the wood.

The next step is the key to the process I’ve been developing: in order to be able to turn this delicate structure, it needs to be supported. I accomplish this by casting the blank in wax, which I melt away after turning the piece. Use a wax that is reasonably hard, though unfortunately the harder the wax, the more it shrinks when it cools. I use a paraffin wax such as Gulf wax and anticipate the shrinkage with steps to mitigate it. You can use Gulf wax from the store but it will get quite expensive if you decide to do a significant amount of this type of work. Better is a candle making supply store (search the internet). I currently use a wax called IGI 2243A, which is a medium hard paraffin wax. I buy it by the 60-lb. box for about $1/pound including shipping.

Keep safety in mind: melted wax is hot and flammable. If you see smoke, your wax is too hot.

The image below shows the assembled blank with a sacrificial mounting plug in the center, sitting in a small paint bucket that I’m using as a form. Once I’ve poured the wax, I’ll place it in an oven heated to 150 degrees. Over the course of the next few hours I’ll keep turning the oven down, and leave the oven off with the door closed overnight. This allows it to cool very slowly and evenly, concentrating wax shrinkage in the very center where we
don’t care, since the center has already been cut away and we are going to turn away whatever is left. The wood we want to support is on the outside and bottom. [Pict.14]

What I have learned during the course of exploring and developing this process is that similar to segmented turning, the bulk of the work leads up to the actual turning. The process itself is not that complicated, but the construction of a structure to turn is challenging and limited only by your imagination. The turning is relatively straightforward, although there are a few tricks that work to our advantage because of the wax.

I release the blank from the mold by using a heat gun on the bucket while it is turned upside down, moving the heat gun around to heat the bucket evenly until the blank drops out. I mount the blank on my lathe using the wooden plug that was inserted into the center prior to casting. [Pict.15]

The first step on the lathe is to true up the blank at a low speed. Turning pure wax is a joy and interestingly enough you can get a much better sense of what a good cut is and how it varies with tool presentation. When I started out, I saved all the shavings and attempted to recover the wax, but I’ve since learned that while you can extract the wax from the wood chips and dust by melting, it is not really worth the time and effort – particularly now that I’ve found a much less expensive source for wax. But I don’t like waste, so I usually recover most of the pure wax from truing the blank. [Pict.16][Pict.17]

Once you get down to the veneer layers, it is possible to see how true the blank is running. I will make minor adjustments to insure that the axis of the blank is correct. [Pict.18]

Next I use gouges and scrapers to turn the exterior shape. I’ve found that using a scraper with light cuts at a relatively high speed gives best results. The veneer is orientated like a typical bowl, alternating side and end grain, but the ribs are all end grain and the thinness makes everything very picky. There is also the density difference between the wax and wood, so riding the bevel of a gouge will dig in deeply on the wax and then pick a tiny bit of wood when it hits. Think of it as lots of intermittent cuts per revolution. [Pict.19]

Once the shaping is done, I sand the outside, and it turns out that the wax actually makes it easy: as long as you
generate enough heat at the surface to melt a little bit of
the wax, it works like wet sanding. Use higher speeds and a
fair amount of pressure. You can tell how you are doing by
feeling and watching: If you work hard enough the paper
gets comfortably warm and a molten mud of wood and
wax will ooze out from under the paper, the wax works
as a lubricant and carries the dust. If you don’t press hard
enough, the paper will load up with wax; too hard and the
surface warms up and bits of wax will fly out. I routinely
sand up to 400 or 600 grit, alternating rotation direction
between grits. [Pict.20][Pict.21]

The properties of wax also work to advantage when
reversing the work to hollow out the inside. I turn a mounting block with a shallow dish in it that is similar to the bottom of the work, then fill this dish with melted wax and allow the wax to skin over and start to harden. At the point when the skin is quite thick but there is still liquid wax underneath, gently heat the base of the work until it gets shiny-wet and press the block on. While the wax is still soft, spin the work and true up the block. You have a few minutes to get this right, but don’t move it too much or you will break the joint. Set the lathe at 100 rpm or less and let it spin for an hour or more while the wax cools. Finally, true up the mounting block before reversing and remounting in the chuck. [Pict.22][Pict.23]

Turn away the original mounting block and hollow out the inside. You can see the thickness of the vessel through the wax, and it is also possible to use a pin or a sliver of wood to drill a tiny hole through the wax to measure the thickness. Once you are happy with the shape and thickness, sand the inside in the same manner as the outside. [Pict.24][Pict.25][Pict.26]

The final step is almost magical – set the lathe to a slow speed and use the heat gun to melt the wax. Put a pan underneath to catch the wax and be sure to keep the heat gun moving as you heat both inside and out. I also rotate the work by hand to hit the spots with more wax, but be careful as it’s very easy to scorch the edges of the veneer. If you did a good job on the wax for the reversing step, you may find that the work doesn’t want to come loose, but be patient. If you grab and twist, you may end up leaving the bottom of your piece behind. Finally, heat the inside. An alternative that is much safer is to put the piece in the oven at about 180 degrees and let the wax melt away. [Pict.27][Pict.28][Pict.29]

There is always some wax left on the piece, and I’ve found the following de-waxing technique to work quite well. Set your oven at 180 — be sure to verify this as ovens can be quite inaccurate — and place the work on a tray with paper towels under it and crumpled inside. Periodically handle the piece with the towels and replace the towels. The wax will quickly wick out of the work and into the paper. Eventually you will reach a point where the paper towels don’t pick up any more wax, after which
any wax that remains can be driven out by heating to the
smoke temperature of the wax. I do this with a heat gun
outside or by slowly increasing the oven temperature until
the piece begins to smoke. Be very careful not to overheat
at this stage.

After most of the wax has been driven out, I will finish
the piece with a few coats of spray shellac followed by spray
lacquer. The shellac is only necessary if you haven’t done a
through job of removing the wax.

I’m quite happy with the way this piece turned out. The
spalting is more detailed with finer lines and color variation,
which is different from the wood I had been using and this
results in a more intense visual appearance, particularly
noticeable when you view the end-grain sides of the vessel.
The space between layers allow you to actually see the
inside of the wood – normally buried within the walls of
the vessel – and this is one of the reasons I leave the walls
thicker on this type of construction. I was also able to
include a few wormholes in the veneer layers.

Ask anyone who has been involved in woodturning for
more than a few years and they will tell you that one of
the most important changes to occur is the emergence of
a vibrant online community where famous, not-so-famous
and beginning woodturners interact on a daily basis. Ideas,
tips and techniques are shared freely and openly. If you
post a picture of your work on one of these sites, you will
get encouragement from all over the world. Ask a question
and you may get an answer from someone you just read
about in a woodturning magazine.

I doubt that “The Voice of a Beloved Tree” would have
been nearly as successful without the existence of this
virtual community. Visit the project web site and see the
wide range of artists and work that this project encompasses.
www.johnjordanwoodturning.com/John_Jordan_Woodturning/The_Voice_of_a_Beloved_TREE.html

If you are a woodturner with an Internet
connection and you aren’t participating
in the following sites, you are missing the
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Turning message board. This site is more
about Q&A and updates. Very friendly and
well -moderated, it is more casual than WOW
(below). You must register to post, but I
believe that you can read without signing up.
www.woodcentral.com/cgi-bin/turning.pl

World of Woodturners
This is the place to post your work for
comments and critiques, which is basically
continuous show-and- tell / critique session.
The site is only open to registered users and
you need an invite to join. This keeps out
spam and other junk postings, but there is
nothing exclusive about being a member.
You can ask for an invite on the WoodCentral
site or contact me and I’ll send you an invite.
www.myfamily.com
When the Guild’s Period Furniture Group was formed a couple of years ago, the members agreed to build Federal style tables to learn the decorative skills of inlay and stringing. Having built a couple of simpler tables, I decided now was the time to tackle a work table in the Federal style for my wife, who is an avid knitter and stitcher. Many of the originals sported turned, tapered, reeded legs, which would be a new challenge for me.

The method of forming the tapered reeds, popular with masters like Alan Breed and Phil Lowe, uses a simple scratch stock with the leg mounted in a lathe or jig. This method is described in Fine Woodworking No. 163, pp 62–65. Phil Lowe has a Fine Woodworking video showing a complete leg construction in detail at www.finewoodworking.com/subscription/sheraton-leg-video-series/. You will need to log in to your FWW account to view this.

There are two methods for cutting the reeds in a leg: using a router or a scratch stock in a jig. Both are described well in FWW. One router method is covered in No. 138, pp 56–57, and I showed this jig at the PFG meeting in September 2009. I was not happy with the results, so I set about finding a better method.

The May 2009 Woodshop News (p 39) also had an article on a jig for reeding tapered legs, but with little detail included. However, it did advance the concept of separating the bottom of the taper from the foot with a dowel joint, which greatly simplifies the transition from the longitudinal tapered reeds to the transverse bead on the foot. Why not do it at both ends of the tapered section, dividing the leg into three parts? An additional advantage is that if one part is not satisfactory, only that part needs to be redone; the whole leg doesn’t have to be scrapped.

Fortuitously for my table project, FWW published an article on this technique in September 2010, No. 214, pp 70–75. The reeding jig’s design was well described, so I set out to try this method. Along the way I found the need to explore the reed geometry and to make several gauges to accomplish the set-up accuracy required for perfect reeds – information was missing in the FWW article. We will discuss these techniques here.

Leg Parts—The three parts of the leg are shown above. The top (pilaster end) and foot are conventional turnings with a bored mortise on the mating end of each. The centered tapered section has turned tenons to mate with the top and foot. Note how cleanly the tapered reeds dive into the...
surface of the bead. This is a major time saver over hand scraping the reeds and carving the interface.

**Tapered Reed Geometry**—For a good result it is essential to understand the geometry of the reeded leg shown at the right. The detailed calculations are available by request at wedlock@alum.mit.edu. But for our purposes, we will just use the results. For twelve semicircular reeds of diameter $d$ close spaced around a circle, the overall diameter $D$ is given by $D = 4.74 \times d$. For example, if the reeds are $1/4"$ in diameter, then the outer diameter of the leg will be...

$$D = 4.74 \times 0.25" = 1.18"$$

...so a $1-1/4"$ upper diameter will work quite well. The factor 4.74 is for twelve reeds; this factor will be 3.41 for eight reeds, 4.08 for ten reeds and 6.03 for sixteen reeds.

The reeds will be routed with a point cutting round over bit. These are available with a radius from $1/16"$ to $1/2"$, but for tapered reeds $1/8"$ or $3/16"$ are most useful. The cutter radius $R$ should be chosen as close to but greater than the largest reed radius, $d/2$, that you plan to cut. When the reed radius is less than the cutter radius, there will be small flats on the top of each reed which are easily smoothed by scraping and sanding. If the reed radius is greater than the cutter radius, the resulting reed shape will be like a Gothic arch and less than the desired leg diameter when rounded over.

A sketch of the routed reed when the cutter radius and reed radius are equal is shown at the right. The black line shows the desired reed shape, and the red line shows the actual cut. The red shaded area is the material that needs to be removed by scraping and sanding. The reason the cutter and reed of equal radius do not match exactly is that the cutter geometry is designed to cut on a flat surface, while leg reeds are cut on a cylindrical surface. This causes the reeds to “tip” away from the cutter, resulting in the red area.

As a rule of thumb, use a bit with a diameter equal to or larger than the largest expected reed diameter. We have
already seen that a 1/4” reed results in a leg diameter of about 1-1/4”, so a 1/8” radius bit should be used for legs up to this size. For legs between 1-1/4” and 1-3/4”, a 3/16” radius bit should be employed.

As the reeds taper, their diameter is correspondingly reduced. While the router bit will not change diameter, we can control the depth of the cut into the leg. As a rule of thumb, the depth of cut should match the reed’s radius, decreasing as the leg diameter decreases. For example, if the leg’s maximum diameter is 1-1/2”, then the maximum reed radius $r$ would be…

$$r = \frac{1.5”}{(4.74 \times 2)} = \frac{1.5”}{9.58} = 0.158”$$

The number 9.58 relates the leg diameter to the reed radius. Since the 3/16” bit cuts a maximum depth of 3/16” or 0.187”, the initial bit depth at the top is set by raising it by the difference in these depths, $0.187” - 0.158” = 0.029”$. To woodworkers this may seem an impossible task. However, this is easily accomplished using the gauge system I describe below.

**Rough Turning the Leg**—Four legs will be installed and removed from the lathe several times during the reeding process in order to employ various setups. To guarantee they will be returned on the lathe axis exactly, file a notch in one blade of the live center so that the leg can be returned to the same location.

The top and foot of the leg are turned in the conventional manner. As a novice turner, I’ve never mastered small beads with the skew, and these legs have lots of them. I purchased an Ashley Isles 1/4” bead-forming tool from Craft Supplies USA which performed superbly. Forget the skew. I also obtained the Easy Wood Tools, which also greatly improved my lathe skills. The beads and coves were now duck soup.

When turning the top and foot, be sure to have the mortise ends facing the tailstock. When the turning is finished, bore the mortises with a brad point bit mounted
in the tailstock. The cutters on good bits can extend to near the tip of the center point, making it swim around in the center hole left by the tailstock dead center. If this is the case, then remove the turning from the lathe and trim the end back to leave just a small dimple to accurately center the drill bit. I used a 1/2” drill for the foot and a 5/8” drill for the top mortises.

For the reeded section you will need a rough leg blank at least 4” longer than the expected reeded length. This is to allow for the dowel tenons after the reeded portion is finished. The blank’s square should be at least 3/8” larger than the final maximum diameter to allow for roughing to the starting diameter. Rough-turn the leg to a straight cylinder.

Lay out the location of the top and bottom ends of the reeded section centered on the blank. You should have at least two inches extra for the dowel tenons on either end. Now use a parting tool to establish accurate cylinders equal to the finished leg diameter plus 1/32” at the top and bottom of the reeding. The extra 1/32” is to allow for stock removal during scratching and sanding. Now rough-turn the taper to about 1/8” greater than the cylinder diameter using these parting tool cuts as a guide. Putting a third diameter half-way down the reeded portion aids in turning the taper. This third diameter should be the average of the start and finish diameters. Continue the rough taper 1” past the starting and ending cylinder diameters.

Turn smaller diameters at each end for router bit clearance. They should be about 5/16” less than the finished top diameter and 1/4” less than the finished bottom diameter. These are all shown in the photo above. Unlike the picture, continue this dowel to the tailstock center to permit the use of a gauge to monitor the diameter of the routed leg later. Repeat for the remaining three legs.

The Reeding Jig—The reeding jig is shown below mounted on the lathe. A detailed sketch of the jig is found on p 80 of FWW 214. All construction steps must be very precise, more typical of a machinist than a woodworker, in order that the reeds will be accurately cut.

A U-shaped, 3/4” Baltic birch plywood box about 20”
long is centered on the lathe bed. Two vertically adjustable guide strips of 1/2” MDF are mounted on the inner surfaces for the router to ride on. Their position controls the taper. The jig sides must gently grip the router base permitting no sideways motion.

The bottom of the jig is shown at the right. The two centering blocks fastened to the jig’s bottom position the jig precisely between the lathe ways. The two remaining blocks provide clamping to the ways. The centering blocks are fastened to the jig base after it has been centered on the lathe axis.

Centering the position of the jig on the lathe by direct measurement is difficult to get accurate. Because there is no room for a rule inside the box we will accomplish the centering by using geometric symmetry. With the jig lightly clamped to the lathe ways and the guide strips removed (the router is centered on the jig walls), a wooden block is placed against the jig wall at one end and pressed into the lathe center to make a small dimple. The block’s reference edge (black stripe) is now positioned on the opposite jig wall and another dimple formed.

A resulting dimple pair is shown at the right. The reference edge is at the bottom. The dot pair at the right shows the difference in position of the jig walls from the lathe center. Move the jig’s end with a light tapping until the dimple pair are the same distance from the jig walls as shown by the left dot. Repeat the centering at the other end of the jig. With the jig now perfectly centered on the lathe axis, fasten the centering blocks to the jig’s bottom. Now when you reinstall the jig, it will be perfectly centered.

Replace the guide strips in preparation for routing the leg.

**Reeding Jig Setup**—Install the reeding jig on the lathe with a rough-turned leg between centers. The next step is to set the guide rails for the router, to match the taper of the leg. This is accomplished with the guide rail gauge shown at the right, roughly a 2” x 4” piece of quarter-inch hardwood.
The critical dimension is the width, which should provide a firm, friction fit between the walls of the router jig. The notches are 3/4” wide by about 5/16” high. The edge between the notches is planed to about a 1/16” width to rest on the cylinder turning.

To set the guide rails, first mark the jig’s top edges at the location of the top and bottom cylinders cut for the rough turning. Insert the gauge as shown at the right with the narrow edge resting on the top turned cylinder. Raise the guide rails to touch the notches in the gauge and tighten. Repeat the steps at the lower turned cylinder and set the rails. They are now parallel to the desired taper of the leg. Double check these adjustments.

**Router Setup**—The point cutting round-over bit must be centered over the lathe’s axis, using the same method employed in centering the jig on the lathe. Insert the point cutting bit in the router and place one edge that will ride against the jig touching a fixed strip of wood. Lower the router to make the first dot. Then repeat for the opposite edge. Adjust the router base so the dots coincide. The bit will now be centered over the lathe’s axis.

**Routing the Final Taper**—Install a 3/4” flat bottom dado bit in the router. Set the depth of the bit below the router base to equal the height of the notches cut in the guide rail gauge. The bit will now cut to the exact surface of the turned cylinders. Place the router with the bit over the bottom dowel clearance area. Start both the lathe and the router. You will need to run the lathe at a minimum of 2000 rpm to eliminate “screw threads” on your work. Run the router at top speed. Slowly and firmly push the router to the top of the leg’s dowel relief area keeping downward pressure on the guide rails. Replace the leg with another rough-turned one, and rout the remaining three legs to their final taper.
**Routing the Reeds**—For our 1-1/4” legs we will use a 1/8” radius bit. Install it in the router and adjust the bit depth so that the top of the cutter radius just matches the guide rail notch. Since the starting reed radius matches the cutter radius, no depth correction is necessary at the top of the leg. However, we do have to make a guide rail adjustment at the foot end, which is 7/8” in diameter, to compensate for the fact that the reed radius there is…

\[ r = \frac{0.875}{9.58} = 0.092" \]

…or about 3/32". The depth of the bit penetration for a perfect reed is the reed radius. We have set the penetration at the top of the leg to be 0.125” If no correction is made, this penetration will be constant along the whole taper. But for a reed radius of 0.092” at the bottom, the penetration should be reduced to the reed radius at that end or 0.092”. If we raise the guide rails at the foot end by the difference in penetrations, 0.125 – 0.092 = 0.033”, we will achieve the reduction in reed diameter resulting from the taper.

To raise the guide rails by 0.033” we will use the guide rail gauge and a feeler gauge set for 0.033”. Insert the guide rail gauge at the location of the foot end of the leg (marked on the jig) with the feeler gauge set for 0.033” between the leg and guide rail gauge, thereby raising it above the tapered leg. You can see the small amount the guide rail gauge is raised by the dark space between the gauge and the guide rail. Carefully move the guide rails up to touch the gauge, and the adjustment is complete.

To rout twelve reeds you will need to index your lathe in 30º increments. If your lathe is equipped with an index feature, great. Mine was not so I made an index wheel from an outboard faceplate installed in the reverse direction to permit me to fasten the plate to the headstock with a flat head screw. The faceplate already had six holes, so I carefully laid out and drilled six more. I also needed a setscrew to keep the faceplate fixed on the shaft. There is an alternate indexing jig shown in FWW 138, and the construction of a third shown in Lowe’s video referenced above.
Unplug your lathe for safety and set the index wheel for the first reed. With the router set over the bit relief section at the foot, route the first reed with a slow, firm motion of the router. Do not stop moving the router, or you will end up with burn marks on the reed. Reset the index and repeat until twelve reeds have been cut.

If all went well, you should have reeds ending at the top and bottom as shown below. These are straight off the router. After you rout the remaining legs, you can then remove the jig from the lathe.

You will now need to scrape and sand the reeds to obtain a pleasing shape. An old fashioned “church key” with a small circular shapes filed on either side of the point works very well. It is easy to hold to remove and round the flats. Finish with sandpaper folded sharply to insert into the grooves.
Turning the Tenons—The mortises were bored into the top and foot with brad-point drill bits. We now need to turn the tenons to their final diameter to fit the mortises. Using a caliper is not sufficiently accurate to insure a well-mating fit between the mortise and tenon. Instead, make a tenon gauge to monitor the turned diameters by clamping two pieces of 1/2” hardwood together, and using the same drills to bore holes centered on the clamped joint. These can then be used to check the final diameters of the tenons. Turn to obtain a snug fit with the gauge closed tight. With the tenons turned, use the scraper to scratch some longitudinal glue relief grooves.

We now need to determine the location of the ends of the top reeds. Make a diameter gauge by drilling a hole of the final top outer diameters in a piece of 1/8” plywood. Slip this over the tailstock end of the leg and slide it to the point where it just fits the reeds. Mark this as the location of the start of the top tenon. Carefully turn the top tenon, checking the diameter with your tenon gauge. You will find it helpful to undercut the area inside the reed ends for a tight fit against the mating bead.

Next measure the length of the reeded section and mark the location of the start of the bottom tenon. If you turn your tops and feet first, you can hold the pairs together and measure their total overall length. It is not uncommon for these lengths to vary by a sixteenth or a bit more. You can now correct for these variations in length by adjusting the precise length of the reeded section, resulting in four legs with the exact same overall length. This is another advantage of the three-part-leg system. Complete the turning of the bottom tenon. As before, repeat for the remaining legs.

Summary—The success of this method for turning tapered reeded legs accurately in the Federal style depends on using a variety of shop-made gauges for results. Once the jig and gauges are made, one can produce a reeded leg section from a rough turning in about a half-hour.

The leg taper need not be straight. By shaping the guide rails into a bow, you can make reeded legs that have a bow. And, by reducing the router bit depth, reeds with oval or flat surfaces can also be made.

The three-part-leg system provides a number of advantages. First, the need for a scraping jig with several cutters is eliminated, along with hand carving at the start and end of the reeded section. Second, the routed reeds are so close to the final shape that only a small amount of scraping and sanding is required. The three-section construction provides more flexibility in turning the leg, with less waste in case of a spoiled section. For making the carcass and adding inlays, the short, top-leg sections are far easier to work with than full-length legs. In all, it results in an excellent leg in a short amount of time.
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