

Gary Rock, President
Dick Hopes, Sec. / Treasurer

Officers and Directors

Barry Humphus, Editor, Bubba Cheramie
George Kuffel, John Marcon, Chuck Middleton

JUNE MEETING HIGHLIGHTS

George Kuffel was our host this month at his newly expanded shop. The expansion was due to Rita – he needed to repair a hole in the roof and went ahead to enclose a covered area behind the building.

Gary Rock was elected president of the LCWW by unanimous vote of the members present. He takes over from Bubba Cheramie who has served well for the past three years.

Show & Tell this month brought several canes recently made by Jimmy Everett. While most of his canes are from corkscrew willow, a couple he brought were from walnut. Jimmy had also recently purchased a small power carver by Dremmel and said he found the tool really useful in carving the cane heads. Apparently it does a great job.

Eltee Thibodeaux brought some of his recent scrollwork including a cat piece with a clock – he's done this design before and this one was made for a friend. He also made a very nice frame for his recent LCWW award for best scrollwork. Of course, it was a scrollwork frame. Bubba Cheramie showed photos of a pool deck he recently constructed to accompany his free-standing pool.

Pie Sonnier showed a neat picture frame made like a fence with a gate. Gary Rock brought a couple of bowls: one of white oak, another of sweet gum and a turned box of white oak. J.W. Anderson likes to collect old tools and he brought a small hatchet, very old screw driver, a bow saw and a strange brace that one member identified as a corner brace designed to bore a hole in an otherwise impossible place.

Gene Barnett was our presenter this month. Besides being an electrician, programmer, former newspaper man and motor cycle builder, he is a luthier – a maker of stringed musical instruments. Gene specializes in violins.

There were many precursors to the violin. Several instruments appeared before 1500, one of which, the *viola da gamba* (held on or between the knees) is still sometimes played today. Another was a bowed instrument called the *lire da braccio*. The third is called the *viola da braccio*, which is the direct predecessor of the modern violin.

The *viola da braccio* originally had three or four strings. Eventually it became a four-stringed instrument all the time. It adopted other modern characteristics, such as the pegbox and tuning in fifths. This method of tuning allows the instrumentalist to use four fingers, which is ideal for small arm instruments. The shape of the sound holes also changed from

crescents to the f shape of today, and became known as f-holes.

Gene builds his violins in the tradition of the 17th and 18th century's. A luthier needs to combine the skills of an engineer, woodworker, joint maker, carver, mechanic, tool and jig maker and finisher. Besides standard carving tools, Gene uses specially made jigs and tools for rough carving and bending the thin side woods into their final shape.

Spruce or willow is typically used internally for blocks and linings as well as the front of the instrument.. The bass bar and sound post are often spruce. The fittings, including pegs, tailpiece, end button and back are made of any dense hardwood, most commonly ebony, rosewood or boxwood. Oregon mountain mahogany is also an excellent and dense hardwood as well as maple. The modern fingerboard is usually solid ebony. Gene purchases these as guitar parts and cuts and carves them to size. For fingerboards and tailpieces, the early Italians used maple or other lighter hardwoods like poplar covered with maple and/or ebony or dyed wood veneer.

Gene showed a couple of the stages of the construction of the violin, from the carved neck with peg holes to an unfinished piece, a finished one without the hardware or strings and an old piece that he will likely repair at some future time.

The front of a violin is made of a soft wood such as spruce while the back of the violin is made of hardwood such as ebony, maple or mahogany. The vibration of the strings are transmitted through the bridge into the front and via an internal post to the back which actually acts as the sounding board for the instrument. In all, the engineering and construction of a violin is more complex than I thought. However, there are plans from books and the Internet. The book Gene uses as his primary reference is "Violins" by Robin Stowell. Some Internet sites include: www.gussetviolins.com and the best by far: www.luth.org. Luth.org is the site of the Guild of American Luthiers and well worth seeing. You can also find instructions at the Calcasieu Public Library such as "Violin making : a guide for the amateur" by Bruce Ossman.

Gene got lots of questions regarding assembly, glue-up and general construction, especially from Gwen Auld (a pianist) and Jeff Cormier (a guitarist). Gene said that he has made one guitar but prefers the violin. He also said that the only real difference between a violin and fiddle is the stringing with the fiddle having two or more steel strings vs. wrapped steel strings to provide a brighter sound. Gwen also said that Gene really knows the physics of sound (which is a whole study by itself) and she was very impressed.

How does he finish them? That's a whole story itself that we'll take up in a later issue.

Coming Up . . . Saturday, July 8 at 9:00 a.m. Shop of George Kuffel. No that's not a mis-print. It's just too hot to go to Gary Rock's shop!



THE LONG AND SHORT OF VARNISHES

All varnishes have one thing in common: The backbone of the finish molecule is vegetable oil. Varnishes are made by chemically combining a modifying resin with a vegetable oil to produce a finish molecule that is liquid when applied to the wood surface but solid after it cures to a film in a short period of time. Linseed oil and soybean oil are the most common vegetable oils used in the manufacture of furniture-grade varnish resins. Tung oil is also used, but because it is relatively expensive, you find it only in wipe-on varnish mixes and traditional exterior varnishes. The type of oil used in a varnish resin has little effect on the finish properties but the amount of oil does.

The ratio of oil to modifying resin – known as oil length – determines the flexibility of the dried film, curing or drying time and application method. Varnish resins containing 75% or more oil are called very long-oil varnishes, and they're typically used for wipe-on finishes such as the so-called Danish oil finishes (Watco Oil). Very long-oil varnishes dry slowly, have great wood penetration and are extremely flexible when cured; but the dried finish film is very soft, has poor abrasion resistance and damages easily. But because they are wipe-on and have great penetration, a damaged surface is very easy to repair – just wipe on a bit more over the abraded area and let dry. These varnishes perform adequately, provided that no detectable finish film is left on the surface of the wood.

Long-oil varnishes are 60% to 75% oil and are primarily used in the manufacture of oil-based paint but recently have been introduced to the wood-finishing arena as fast-dry wipe-on finishes. Long-oil varnishes do dry faster than traditional Danish oil finishes. However, they share many of the same problems that plague their very long-oil brethren.

Medium-oil varnishes contain 45% to 60% oil and form the basis of all brush-on varnishes used in wood finishing. They have reasonably short drying times, good abrasion and stain resistance, penetrate the wood to accentuate its beauty and form a hard but flexible protective surface film. Best of all, medium-oil varnishes can be applied by the three most commonly used methods: wiping, spraying or brushing. These are the most common polyurethane finish products on the market.

Short-oil varnishes are less than 45% oil and typically require heat to cure, so they are not used for finishing wood. Short-oil varnish resins are used to make the paint for refrigerators, stoves and metal office furniture.

Modifying resins vary in strength. The modifying resin used in a varnish will determine how well the dried finish film holds up when it is exposed to moisture, ultraviolet (UV) light and general wear and tear. Alkyd varnishes, a term coined in the 1930s to describe an important class of polyesters, traditionally use phthalic anhydride as the modifying resin. Typical alkyd varnishes have good flexibility, very good abrasion resistance, great adhesion, moderate moisture resistance but take a relatively long time to dry and cure (8 to 10 hours to dry to the touch and 16 to 20 hours to re-coat). Alkyd varnishes targeted for furniture making are difficult to find these days, but they remain a mainstay of hardwood floor finishing. That is the main reason it takes so long for a flooring finisher to leave.

Replacing some or all of the phthalic anhydride with toluene diisocyanate yields standard polyurethane varnish which we all have something of a love-hate relationship. This modification makes polyurethane decrease the drying and curing times to more tolerable levels and increases the moisture resistance of the finish film, but also sacrifices its UV resistance.

Fast-dry varnish, also called VT varnish, uses styrene or vinyl toluene as the modifying resin to produce a product with remarkably fast drying times. Properly formulated VT varnishes will dry and cure almost as quickly as nitrocellulose lacquer – dry to the touch in 30 minutes and cure to re-coat in less than two hours. However, fast-dry varnishes have slightly less protective properties than standard alkyd varnishes. Still, they are suitable for most production furniture applications. But you should not use them for heavily used kitchen or dining-room tabletops as they are not durable for this application and difficult to apply.

You can create your own fast-dry varnish using standard polyurethane. Mix equal parts of polyurethane, paint thinner (or turpentine) and boiled linseed oil. The trick is to add a few drops of a metallic dryer such as Japan Dryer. The other trick is to use two or more coats. As it dries quickly (2-3 hours), this is easy to do and you'll have a great hard finish. If you want an even faster drying finish, use naphtha instead of pint thinner or turpentine. If you use naphtha, remember that the finish will have a very short open time – so move fast. And of course, work in a well ventilated area. This is a finish George Kuffel and I used on a dining room table three years ago for our beach house in hot, humid Galveston. It is still perfect.

Phenolic resins combined with tung oil produce a varnish with superior water resistance, good hardness, exceptional flexibility and good alkali, grease and UV resistance. It's called spar varnish. Unfortunately, the drying times are excruciatingly long, and spar varnish has a yellow color that only gets deeper as it ages. Still, spar varnish is the best choice for projects, such as outdoor furniture, that will be exposed to the elements. Again, you can create your own by using the above formula but substituting tung oil for boiled linseed oil with extra Japan dryer. But with this mixture, always do a test strip and note hard drying times before your final finish.

The extended drying time under humid conditions is the biggest problem I've experienced with oil-based varnishes. High humidity drastically prolongs the drying time of most varnishes. Anybody that has varnished during a summer in South "wet" Louisiana knows just what I'm talking about. Avoid varnishing on those dripping-wet days, if possible; if not, use a dehumidifier (or air conditioner) run in your shop for several hours beforehand. If you can do neither of these, try the three part mix above with twice as much Japan drier per quart.

Also, old varnish dries more slowly than fresh varnish. This too has to do with the metallic driers that gradually lose their catalytic powers as the varnish ages. The best way to avoid the problem is to make sure you always use only fresh varnish. You should not use varnish that is more than one year old. You may waste a few dollars, but you'll save a mint in frustration. *From Fine Woodworking by Chris Minick, edited by Barry Humphus.*

LATHE-BASED DISK SANDER

If you don't have a dedicated disk sander but do have a lathe, you've already got most of what you need to build a jig that will work very well as a first class disk sander. (Those of you who own a ShopSmith Mark IV or V already know how this works).

My solution to getting a disk sander without occupying more space in my small shop was to build a jig that allows me to use my lathe as a disk sander. The first order of business is to get a disk. While there are many sources, the most convenient is the Sears (part # 00929841000) 8 inch lathe faceplate that works well and is only \$26.00. Be certain to get one that uses the same screw size as your head stock (most common is 1x8 TPI). While you're at Sears, get a can of spray-on adhesive and a variety pack of 8 inch sanding disks.

The alternative is to simply turn a disk of any size you want. You should use a dense material such as MDF. Solid wood and plywood tend to come apart under pressure from sanding and so they are unsafe for this application. In the center outside of the turned disk, cut a mortise wide enough to snugly fit a 1 x 8 nut and about 1/4" deep. Glue the nut into the mortise using epoxy — you need epoxy for its holding power in this application. Remove the disk from the lathe and screw the nut onto the drive screw of the lathe. Then re-round the disk to make certain that the nut is at the true center of the disk.

By the way, when turning MDF, always wear dust protection as the particles from MDF are very fine and the resin that holds it together is an irritant.

The jig consists of a flat surface (aluminum or steel will work but MDF is cheap, flat and easy to work — use 3/4" inch at least but 1 inch if you have it), a piece of 1 inch (OD) x 3-1/2 inch threaded water pipe, a floor flange to fit the pipe and some machine screws (plus nuts) adequately long enough to go through the MDF and flange and attach the flange.

Cut a piece of MDF 8 inches by 12 inches. On the bottom side, center the floor flange and mark holes through the flange mount then drill appropriate holes for your screws. Counter-sink the holes on the top side to accommodate the heads of the screws. As an added feature, you could route two crossing channels on the top side of the MDF to accommodate guides for your work.

Assemble the water pipe into the floor flange then center and screw the flange to the bottom of the MDF. Plop the water pipe into your tool rest support. Spray a generous coat of adhesive on to the disk and the sand paper and center the sand paper to the disk. Mount the disk and you have a variable speed disk sander.

I use this setup to square pen blanks and other items common to disk sander use. The lathe has a 3/4HP motor — more than enough and considerably higher than a standard disk

sander. It was not only low cost and easy to construct but saves considerable space over a dedicated disk sander unit. *Barry Humphus.*

QUARTERLY BOARD MEETING

The LCWW Board met on June 15 at the home of Gary Rock. Present were: Gary Rock, George Kuffel, Dick Trouth, Dick Hopes and Barry Humphus. John Marcon and Bubba Ceramic could not attend because of prior commitments.

The first order of business was to discuss how to raise additional funds for our operations. We have held the current annual fee to \$20 for several years and would like to maintain that level as long as possible. Other sources include advertising both in our Newsletter and website. Advertising on the website and in the Newsletter was approved in 2001 by the Board and we did have an advert on the website for one year.

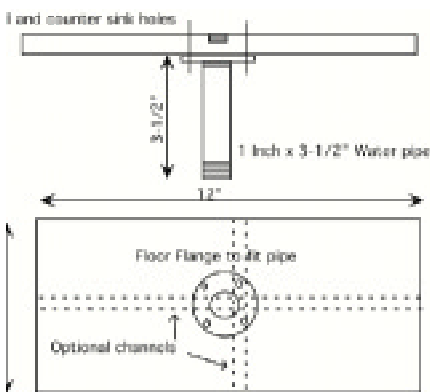
It was recommended that we solicit area suppliers for both advertising space and donations for door prizes. For example Stines, Lowes and Home Depot offer gift cards. We could possible get one or more to donate \$10 gift cards that would be used as door prizes at meetings and in exchange, place a business card size advert in the Newsletter and on the website. Other suppliers such as Diamond Lumber, Builder's Sav-Mor, various hardware stores, etc. would be encouraged to purchase a direct advert that would appear in both places. The donors would receive a copy of the monthly Newsletter that they could post in their stores. We will need to set advert rates and details for this program.

Some organizations now offer emailed Newsletters. We can do this in lieu of mailing a paper newsletter to those that prefer this method of receiving it each month. It would be emailed the day that the newsletter is mailed. The current cost of printing and mailing amounts to about \$1.00 each. Emailing the letter to about 1/3 of the membership instead of mailing could save about \$200 per year in operational cost.

The Gulf Coast Woodturners club in Houston has a very interesting program that we could adopt. It is the Bring-Back Item program. The way it works is that one or more members brings an item that he or she built. We would give it away in a random drawing at a meeting. The winner has to replace it with an item he or she makes at two meetings hence or brings it back to be given away again. Participation would be optional. We would need to work out the details of this before it would be implemented.

From time to time we build and donate items to charitable organizations in our area, such as the Women's Shelter. They always are greatly appreciative of the efforts we have done in the past. We would like to organize a special meeting at Dick Trouth's shop to build many toys for the donation. This would probably occur in the August-September-October time-frame. Dick has several lathes, a bandsaw, power sanders, and spray paint equipment that can be used in the process.

Safety, Safety, Safety. We don't think about shop safety nearly enough and it was recommended that at least one or two meetings per year be dedicated to shop safety issues. We all make mistakes and it takes only a fraction of a second for those mistakes in a shop situation to become a serious matter.



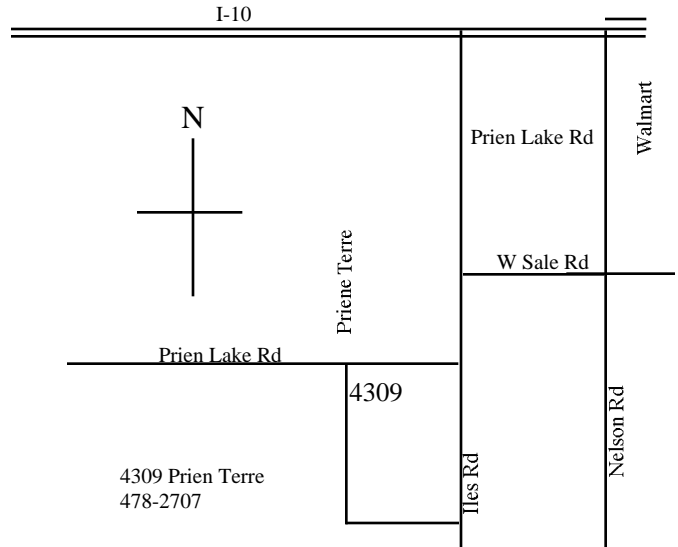
JULY MEETING

George Kuffel will be our host at his newly expanded shop.

The meeting this month will focus on shop safety. We all make mistakes and the little ones can add up to a disaster in a shop. Join us and suggest your own ideas on shop safety.

To get there, follow Prien Lake Rd past the Iles Rd intersection and turn left onto Prien Terre. George's driveway is the first on the left. See the map for details or give George a call at 478-2707 for further information.

Please let us know what you think about the sample adverts below. They are a sample of what we would do for adverts on our Website and Newsletter.



July 2006