Lake Charles Woodworkers Club, Inc. December 2005

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NOVEMBER MEETING HIGHLIGHTS

Aaron Andrepoint was our host this month at his new shop. It is thoughtfully laid out with plenty of room for what Aaron likes to do the most — scrollwork.

Members told breifly of their experiences during Rita and how their homes and shops faired. The worst was Lee Frazier who lost his roof and is now living in a 19 foot camper on his property. A couple of others got trees or large limbs through their roof (Robin Richard and John Marcon) while many had essentially little or no damage.

There was also discussion of roof types that resist strong winds. The consensus is that a metal roof is about the best followed by the use of 'Architectural' (so-called 30 year) asphalt shingles. However, Lee Frazier's metal roof came off due to improper installation. The key is to be certain that your installer knows how to correctly install roof systems.

There was a lively discussion regarding home construction, roof types, insulation and HVAC systems and geothermal systems. Robin Richard's engineering expertise helped with the pluses amd minuses of several technologies. Aaron also discussed the failure of some very expensive epoxy/latex paint that he had applied to his shop floor. The failure occured apparently because of improper curing of the concrete. Fortunately, he got his money back on the paint and installed a plastic, snap-together flooring material that will likely be easier on his feet and back over time.

Theresa Wilfret told about an experimental house project being built by the LSU Ag Center. It is a show case for smart home design with the idea of building homes along the Gulf Coast that meet the unique requirements of this region. The facility has an open house each Friday for public tours. For more information, visit www.louisianahouse.org

Dick Hopes brought a guest, Ed Sylvester. Theresa Wilfret brought Joe and John Liprie as her guests this month.

Show and Tell broght several items this month despite everyone's focus on Rita. Host Aaron Andrepoint showed us some scrollwork trivets and a bananna stand plus a chest in progress made of red oak. Eltee Thibideaux turned a cedar bowl named Rita. Pie Sonnier brought one of his automobile series — a Duesenberg Roadster made of walnut, ebony, lemonwood. Pie also contributed several toys for our toy program. No bowls from Gary Rock this month, but he did show off a wind chime. The tubes were of steel with a bowl-like structure from which they were hung. Chuck Middleton had built one in the past using 1-1/4" aluminum conduit. Inspired by Gary and Chuck, I designed my own with the plan shown later in this Newsletter. Jim Anderson brought some natural mesquite coasters. Kyle Andrepont showed off his heavy duty (300 lb.) workbench. Jeff Cormier brought photos of his new armoire as well as a pie safe. You can see these items and much more at our web site: www.lcwoodworkers.com

Another interesting item was an antique miter saw box brought by Pie Sonnier. The only marking was "U.S. Pat. 1-2-12." Pie thought this might be the patent number but it looked more like a date. So I went to the US Patent database on the Internet and searched for miter boxes that had been designed around that date. The actual patent number is 976,296 designed by A. Robbins and filed on September 7, 1909. The patent was approved on the date molded into the metal surface of the miter saw box. The parts that are missing were what made the product unique enough to be granted a patent. It was originally designed to cut cornice molding and included special supports for this purpose. There was no indication of who manufactured the unit or where it was sold. It looked like it would still cut accurate flat stock at both preset and other angles.

Coming Up . . .Saturday 10 December, 9:00 a.m. at the shop of Gail & Mickey Hart for our annual Chrismas meeting. Door Prizes galore!

SOUND OF THE WIND

Seeing the wind chime built by Gary Rock last month and inspired by Chuck Middleton's ideas on building one of these wonderful items, I decided to design and construct my own wind chimes. The idea is to produce low cost Holiday presents for family and freinds.

The way Gary determined the length of the bells was simple: he measured the length of an existing wind chime and used these measurements. If you have an existing chimes that sounds good to you (or can make an accurate measure of someone else's), that is the easiest way to produce the lengths of tube bells you need and what I recommend. Measure from the top of the tube to the hole for the string, the distance from the support to the hole for the support string and the length of the tube. By doing a little conversion, you can get accurate suspension and tube lengths.

You can also calculate the appropriate lengths to produce very accurate tones. For example, go to http://www1.iwvisp.com/cllsj/windchimes/length.htm. These may be too long a tube, too low a frequency and too complex for your application.

There exists frequcny tables for aluminum and steel tubes that you can use to determine the tube lengths for different frequencies. For example, go to http://www1.iwvisp.com/cllsj/windchimes/conduit.htm where you will find the best lengths for the ideal octave, various tube diameters and materials. This is a lot easier than doing the math. But feel free to contact one of the resident math gurus if you want to understand the mathematics for the best frequencies. Just tell them that it is the Euler Equation for Beam Vibration in combination with the Timoshenko Theory (but don't tell them I told you so!).

Chuck suggested 1-1/4 aluminum conduit but I choose 3/4 inch. Half inch is also available. You also need to consider the suspension lengths to get this correct. This is the suspension from the disk or bowl. Everything is in inches on the web-based chart above the suspension length is from the suspension point to the holes that you drill in the tubes. What you will get from these lengths are variations of A C D E G and A (if you do a six chime set). This seems to be the most popular and what I did. To make a four note chime, just skip the C and the second A lengths.

Note that you can tune the bells to many different frequcies. For example, I found a tuning length set on the Internet for Westminster Abby chime sounds. Of course, you would need to sit there a long time to hear the exact Westminster sound progress from your wind chimes.

Once you have cut the tubes — a plumber's tube cutter, hack saw, reciprocating saw (metal blade) or a band saw (metal blade) will do — you need to drill through them so you can attach the string that holds them. If you you are looking for a nice set of tones without the trouble of tuning, use the measurments (converted as needed) you did for a commercial chime. Be sure to clamp the tube so the bit won't wander and use a punch to make a divot in the tube into which you drill. If possible, burnish the holes or insert a hollow rivet to prevent chaffing of the string.

The string you use doesn't really matter, but the best to use is thin dacron (50 lb. test—find it at your local tackle shop or in your tackle box). Nylon or monofiliment will work about as well and none of these will rot outdoors.

Gary Rock used an inverted bowl he turned to make the support for his chime, but a flat disk that you turn or cut out with a bandsaw, scrowl saw or router will work as well. The disk should be about 4-6 inches in diameter and about 1/4 to 1/2 inch thick. If you chose to use plywood, be sure to seal and paint so it won't come apart over time. I used bowls—ones that I would have tossed into the fireplace this winter.

You will need to construct both a flapper that catches the wind and a striker disk that bangs into the tubes you've made to produce the sound. The striker disk should be a little less than 1/2 the diameter of the top diameter. I've seen them as metal disks as well. For example, if the top disk is 6 inches, the striker disk should be about 3 to 2-7/8 inch. The flapper should be thin, flat and just about any shape that will catch the wind and about half width of the top disk. The striker disk should be about half to three-quarters the way down the tube set from their tops.

The flapper should hang about four to six inches below the bottom of the longest tube to get a good breeze.

Next, drill holes in the top disk. If you use a four tube bell set, the holes would be 90º from each other. A six tube unit would be 60º, etc. You also drill a hole in the center of the top disk and at the top of the striker disk for support.

As I used aluminum, I beveled the cuts on my disk sander and then used a polishing wheel with course material (black) on my bench grinder to make them really shine. This works with steel tubing as well.

Drill holes (3/16 inch is good) equidistant around the top disk (4, 6 or 8) through which the strings will fall and one that goes through the center of the top disk to attach to the striker disk and the flapper below. Attach the tubes with a string that goes through the tubes and up to a center point (a stainless key ring — Steins works well). You could also apply a little 'super' glue to each knot to be sure it stays in place. Have fun and make beautiful noise. *Barry Humphus.*

Turn in any toys you've made at the holiday party so Barry can take them to the Women's Shelter.

EXTENSION CORDS & SURGE PROTECTORS

After Hurricane Rita, I needed to get my generattor running and power certain appliances: lights, TV, fans, etc. I ran extension cords from the generator outside to a heavy duty surge protector and with other cords, powered the appliances I needed to run.

Just because the first extension cord you find in the garage has the length to reach the outlet across the room, it doesn't mean it's the proper one to use for the task at hand. If an appliance (or power tool) is drawing more current than an extension cord can carry, it may cause the cord and tool to overheat and create a fire. Before using any extension cord to help power an electrical tool or appliance, Underwriters Laboratories Inc. (UL) encourages consumers to ask themselves three important questions:

Will you'll use the cord indoors or outdoors?

What is the total wattage rating of the appliances you'll use with the cord?

How far is the nearest outlet from where you'll work?

Extension cords are labeled with valuable information as to the use, size and wattage rating of the cord. Cords are offered in many lengths and are marked with a size or "gauge." The gauge is based on the American Wire Gauge (AWG) System, in which the larger the wire, the smaller the AWG number. For example, a 12 gauge wire would be larger, and can power larger wattage appliances, than a 14 gauge wire.

Before deciding which extension cord to use, read the manufacturer's instructions for the power tools you will be using. These booklets contain important information about your tools and will provide instructions on their use. The booklets will also indicate whether the tools are suitable for use outdoors. Likewise, the first step in determining which extension cord you will need is to decide whether you will be using the appliance indoors or outdoors. Extension cords that can be used outdoors will be clearly marked "Suitable for Use with Outdoor Appliances." Never use an indoor extension cord outdoors; it could result in an electric shock or fire hazard.

To determine what size — or gauge — cord you will need, you will also have to determine how long you need the cord to be. A cord, based on its gauge, can power an appliance of a certain wattage only at specific distances. As the cord gets longer, the current carrying capacity of the cord gets lower. For example, a 16 gauge extension cord less than 50 feet in length can power a 1625 watt appliance at best. A 16 gauge cord that is longer than 50 feet in length can only power an appliance up to 1250W.

All appliances indicate how much wattage is consumed when operated; that rating can be found on the appliance itself and often within the use and care booklet that accompanies the product. Some tools will indicate power usage in amps, rather than watts. Quick tip: if your appliance indicates that it uses 5 amps at 125 volts, then its wattage rating is 625W (5x125). However, this is a very rough estimate.

If you are going to use the extension cord with two or more appliances, you must add together the wattage rating for all appliances used on the cord. The total of those wattage ratings will help you determine which gauge size you will need. Follow these additional tips when using extension cords with any electrical appliance.

Look for the UL Mark on extension cords you purchase. If it doesn't have the UL label, don't buy it.

Store all cords indoors when not in use.

Never keep an extension cord plugged in when not in use. The cord will still conduct electricity until it is unplugged from the outlet.

Most newer, indoor cords with more than one outlet have covers for the unused openings — use them. Children and pets face serious injury if they chew on unused outlets.

Never use extension cords that are cut or damaged. Touching even a single exposed strand of wire can give you an electric shock or burn.

Never file or cut the plug blades or grounding pin of an extension cord or appliance to plug it into an old outlet, use an adapter if needed.

As a safety feature, extension cords and most appliances have polarized plugs (one blade wider than the other). These special plugs are designed to prevent electric shock by properly aligning circuit conductors. If a plug does not fit, have a qualified electrician install a new outlet.

To extend power cords you can use a surge protector. These devices come in many different capacities and cost. Choosing the correct one for your application is very important.

The main job of a surge protector system is to protect electronic and other devices from "surges." So if you're wondering what a surge protector does, the first question is, "What are surges?" And then, "Why do electronics need to be protected from them?"

A power surge, or transient voltage, is an increase in voltage significantly above the designated level in a flow of electricity. In normal wiring in the U. S., the standard voltage is 120 volts. If the voltage rises above 120 volts, there is a problem. A surge protector helps to prevent that problem from destroying your device, be it a computer, TV, stereo or even a refridgerator.

To understand the problem, it is helpful to understand something about voltage. Voltage is a measure of a difference in electric potential energy. Electric current travels from point to point because there is a greater electric potential energy on one end of the wire than there is on the other. If the surge or spike is high enough, it can inflict some heavy damage on a machine. The effect is very similar to applying too much water pressure to a hose. If there is too much water pressure, a hose will burst. Approximately the same thing happens when too much electrical pressure runs through a wire — the wire "bursts." Actually, it heats up like the filament in a light bulb and burns, but it's the same idea. Even if increased voltage doesn't immediately break your machine, it may put extra strain on the components, wearing them down over time.

Purchase only UL rated surge protectors (not spike protectors). My recommendation is the Trip-Lite brand as they provide you with an insurance policy against device damage. *From www.ul.com and Barry Humphus.*