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### JUNE MEETING HIGHLIGHTS

A fundraiser was held for long-time member Lee Frazier last month. Thank you each for your contribution to Lee's medical fund. The event held on Friday June 11, as of Tuesday, June 15 raised nearly \$13,000 due in no small part to your effort. Tom Spindler of the La. Department of Rehabilitation said that more would be received during the coming weeks. Several members contributed items for the auctions including Eltee Thibodeaux, Gary Rock, and Barry Humphus. Lee also contributed to his own fund by auctioning one of his great outdoor cypress benches. There may have been more, but we didn't see them.

In addition to the LCWW items, there were lots more, including a fine hand made wooden clock from James Burton's Clocks by James Burton and a very fine boxed set of fishing lures from Snider's Hand Crafted Wooden Lures. From the woodworking inhibited group, there were tool sets, electronics, gifts and other great items.

We had to leave early because of a prior commitment so we didn't get to participate in the auctions, but we saw several local celebrities including LC Mayer Randy Roach, Ann and Lynn Knapp, James Bridges and others. (Speaking of Bridges, he has been a great supporter of the LCWW's as he has had several members on his morning show from time to time to promote our efforts).

One more thing is that we have a new member, Mr. Pie Sonnier. Welcome to the Lake Charles Woodworkers.

Again thanks for your items, contributions and support of this worthy cause.

### SANDPAPER SENSE

There is nothing so boring as sanding wood. Well, maybe watching your grass grow is boring, and during the past several weeks, mine seems to grow several inches a day!

Of course, if you learn to use a scraper and keep it sharp, your sanding chores will be reduced but at least with most of our sanding, you can often

use a power tool. What could be more exciting than a numbing vibration coupled with a HEPPA dust mask, ear protection and an aching back and arms?

You can't sand with the cheap stuff and it's easy to go wrong with the best sand paper that is available. Using the wrong abraasive for the job can leave you both frustrated (and bored) and very dissatisfied with the finish you get.

The real key to choosing the right sandpaper is knowing how the many different sandpapers work. In general, it is more than just the grit that contributes to the paper's performance. If you know how all of the components in sandpaper do their job, you can choose sandpaper correctly and use it effectively. You'll end up doing a better finishing job and won't end up throwing it away.

Sandpaper works just like your tablesaw, chisel or plane. It has sharp points that cut the wood fibers and gullets that give the tiny shavings (called swarf) some place to go. Sandpaper designed for wood is so-called "open coat" where 40% to 70% of the surface is coated with cutting material. Closed coat paper is best for hard things such as steel. In addition, some sandpapers are advertised as non-loading or stearated. This means that they are coated with zinc stearate (a type of soap) which keeps the paper from loading up with swarf. Stearated paper is great for sanding wood that already has a finish or for high resin woods. Basically, the zinc stearate prevents the resin or finish from gumming up the paper. Stearated paper is more expensive and you could probably do a better job just using a cabinet scraper.

Sanding in preparation for a finish seems simple. Starting with say, 80 or 100 grit, you work up to finer grits without skipping one. What you are doing is erasing scratches you made previously with decreasingly smaller scratches until you can't see or feel them—at about 220 grit. Continues on Page 2.

Comming Up . . . Saturday, July 10, 9:00 a.m.

Shop of Jeff Cormier on cabinet and box jointery with Kyle Andrepoint and Jeff Cormier.

The reason you shouldn't skip a grit is time. You can double the time (and sandpaper used) spent sanding by skipping a grit, especially with hardwoods, such as maple. Skipping a grit or two on pine, however will likely save you some time.

How fine should you sand? In general, sanding finer than to 220 grit is probably a waste of time. This is in general. For special projects (e.g. a French polish, a bowl or especially when using water-based finishes), just keep going until your needs are met. However, I suggest that most of you can't tell the difference between 600 grit and 1,200 grit when sanding wood as the fine scratches in the wood will be filled with finish.

The other question is how should you sand? Almost everyone would say "with the grain." But what holds true with planing holds true with sanding. Both a plane and sandpaper will work faster when the direction of your cuts are between 40 and 60 degrees to the grain. So you should use a combination of semi-cross grain sanding with with-grain sanding to get the sanding done to a smooth finish in the fastest way. In fact, you should make your cross-grain passes to the left and to the right in a X pattern for belt and hand sanding. If you are using a random orbit sander, this doesn't matter as these sanders can't take advantage of fast cross-grain sanding.

There are four basic types of sandpaper for wood and these types all have to do with the type of abrasive used.

Aluminum oxide (i.e., emerald) is a common, general purpose abrasive. It fragments under the heat of sanding and is friable, meaning that the edges of the abrasive particles renew themselves as you sand. The particles are tough so the edges don't dull as quickly as some others. Note that there are a range of different aluminum oxides used for abrasives. The cheapest, used on the cheapest sandpaper are really designed for sand blasting. Pay a bit more and get a premium quality, name brand paper.

Silicon carbide does not vary in quality. It is either silicon carbide or it's not. Because it is even harder and sharper than aluminum oxide, it is a better choice for cutting hard materials such as finishes, paint, plastics and metal. It is often found on belts for floor sanding machines, metal surfaces and general finishing. While it is friable, it is so hard that aluminum oxide typically does a better job under most circumstances because it silicon carbide loads quickly and doesn't resharpen itself.

Ceramics are not friable and uncommon. It is the best choice for hogging off material quickly and the preferred sandpaper for floor sanders and large surface sanders, usually coming in course to very course grits.

Garnet (ruby) is the only natural material used in the sandpaper business and widely used for sanding wood. It is non-friable, not tough and dulls quickly. But this is not so bad. Because it cuts softer, while slow, it will produce the finest finish of all abrasives within a specific grit size. It will not leave pigtail scratches the way most other abrasives will when used with random orbit sanders. This makes it very suitable for final sanding of smooth surfaces especially for blotchy woods, such as maple. What happens is that it burnishes the wood and partially closes the pores, limiting stain penetration. This means that it is a very good choice for final finishing.

### 3-PHASE MACHINES

John English, *Woodezine*

If you've ever attended an auction where a cabinet shop or furniture factory was selling off machinery, you know how many professional machines run on three-phase power. Virtually every sizeable dust collector, jointer, table saw and molder requires 3-phase, and the sad fact is that most of us have our shops in residential areas: the local power company isn't set up to supply us with juice for these bigger, better, more accurate, more durable toys. 3-phase is the most reliable, least expensive way to run large machines. But if you want to turn large vessels or sand cabinet doors in your home workshop, you're stuck. Right? Or are you?

There are several manufacturers out there who make machines which will turn ordinary household current into 3-phase electricity. We contacted the biggest one we could find, Kay Industries in Indiana, and asked them how the converters work, what options are available, and how much a guy or gal would need to invest to be able to have an 18" jointer humming away in the workshop. The answers here are geared to the North American market. For you folks in the U.K., a visit to isoMatic UK might be a good idea, too.

The first thing we learned about phase converters is that there are a myriad options when it comes to size. If you only have a single machine to run - say a 12" table saw or a 60" lathe - you might only need the baby of the family, a static phase converter. Kay's Miniphase units (shown at right) are sized from 0.25 to 10 HP and operate on 208-240 volt single-phase at 50 or 60 Hz (which is what most of us have in our homes to run electric stoves, water heaters and air conditioners). They're also ideal if you have two machines and only run one at a time: talk to your electrician about installing switching which will allow you to do this. Note that these converters will not operate a 460 volt motor. For a detailed data sheet on these units, click here.

Static Phase Converters. According to the folks at Kay, Static 3-phase converters "do not produce true 3-phase power. In fact, static phase converters are little more than electric rope starters. Unlike a rotary phase converter, static phase converters cannot balance the load between the three legs after the motor has started. As a result, static 3-phase converters never allow your motor to develop full horsepower. Static phase converters are thus suited only for small-horsepower, single-motor applications. In addition, they cannot be used for heaters or rectifier loads." The bottom line is that you should only consider a static 3-phase converter if your application starts quickly. If your machine requires a long acceleration time, you'll need a rotary phase converter. It should also start infrequently (less than four times in an hour), and run at less than 70% of its nameplate horsepower. Full nameplate output for extended periods is only possible with a rotary phase converter.

So, what does a guy do when he picks up a 15HP dust collection system for a song, or an 18" wide thickness planer that requires more muscle than a static phase converter can supply? The answer is a Rotary 3-phase converter, which produce true 3-phase power to run any type of load, or combina-

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tion of motors. According to the company, Kay's line of Phasemaster rotary three phase converters are "the most reliable, least expensive way to run your 3-phase equipment. They will start and run any load--motors, rectifiers, heaters, and variable-frequency drives or any of these in combination. A Phasemaster rotary phase converter is engineered and built as a single, self-contained unit--not an erector set of capacitor panels, idler motors, and other components."

Despite the fact that the unit comes complete, the editors at woodezine believe that any three-phase workshop installation is best handled by a certified, licensed electrician who is familiar with your local power company requirements and the community's building and electrical codes. This is some pretty powerful juice we're talking about. One slip-up might be your last. If you feel you have the skills and experience needed to wire it in, that has to be your decision.

There's a very simple form you can fill out on the Kay site which will tell you what size converter you'll need. Start out with a trip to the shop, pencil in hand, and record whatever information you can from the plate on your woodworking machine(s)' motor housing. After you fill in the details, you e-mail the form to the company and they'll tell you what you need. Larry Katz at Kay says that he would like to emphasize the importance of sizing the converter properly, and speaking with a sales rep who understands woodworking equipment.

Before you order a unit, check out the factory's sales policy. Will you be paying shipping? From where? Is there a local or closer supplier? What's included? What isn't? What's the warranty period? What does it cover? Does the factory have a technical support team? Do they charge for helping you?

You might also ask a few of the following questions, too: How noisy is this unit (got neighbors?) How large is it? Will a 10HP converter start and run a 10HP motor? What can wear out? What needs adjusting?

You're probably looking at a Type MA converter for woodworking applications. Here's what Kay has to say about that: "Whether you need to power an air compressor, a woodworking shop, or a laser, you'll find the Phasemaster Type MA rotary three phase converter up to the task. This general-purpose rotary phase converter is a reliable source of true three-phase power. When connected to a 230 volt 1-phase line, the Type MA phase converter produces 3-phase power at its output terminals with each phase shifted 120°. You get a near replica of utility 3-phase power--more economically."

After the unit arrives, there are some safety rules to follow during installation - things you might want to discuss with your electrician before he/she gets started. For example, with the Kay units you have to use a fused switch on the unit - no circuit breakers. They don't want you to bolt the unit to the floor or wall, and you should only use ring terminals (no twist connectors). For a full list of installation guidelines, visit them online.

A phase converter is virtually always the most cost effective alternative to utility 3-phase. Once the loads are clearly identified, selecting and pricing the proper converter is very straightforward. The more motors that are run from a single converter, the more the converter cost per motor operated comes

down. A converter is normally sized for the largest single motor to be operated. It can also run a total of 2-3 times more than it can start. As an example, a 5HP converter costing about \$1000 could run several motors totaling 10-15HP. Many small shops are running 37" and 43" widebelt sanders on phase converters selling for well under \$3000.

The bottom line is that a small shop owner can access some dramatically more productive machinery, and the most economical way to run those big motors. If you're business is woodworking, this is an option that deserves a very serious look. And if you're a serious hobbyist who likes big toys, it's certainly a viable option. *From Woodezine.com and John English.*

#### SIGN UP FOR WOODEZINE

A few months ago, we were contacted by John English regarding signing up for his monthly Woodezine, an Internet based woodworkers magazine. After a couple of months we are convinced that this is a great woodworking ezine to get each month. Not only is the cost low (free), the information John provides each month is great. He is a very knowledgeable woodworker and he works very hard in providing the most current information on new woodworking products, general woodworking, turning and carving.

All you need to do is go to [www.woodezine.com](http://www.woodezine.com) and sign up with your email address. John will then email you each month to let you know that the newsletter is available. Just go to the web site and log in with your email address.

In fact, John and I have agreed to exchange information and articles, so sometimes you'll see an article on his ezine from the LC WW Newsletter and sometimes you'll see one from him in ours. For example, in his May edition, you'll see a report on turner Bill Berry that also appeared here.

#### WEB RESOURCES

Those of you who search the WWW are likely to find thousands of sites devoted to woodworking and associated products and tools. From time to time, we'll list some good ones you may not have found.

John Lea is a machinist turned woodturner and these days builds a variety of wonderful unique turning tools. For example, his "Toothpick" series (Texas, Arizona and Delaware) are cold rolled steel shafts with HSS cutting inserts. They come handled or not (so you can turn your own). He also has tools rests, deep hollowing tools and more. [woodworkingtools.net](http://woodworkingtools.net).

Oakwood Veneer Company is a flexible wood veneer supplier with more than 170 species of natural wood veneer in all lengths and sizes — in-stock and available for immediate delivery. [oakwoodveneer.com](http://oakwoodveneer.com).

Go back to school? Not at my age, but there are some great woodworking schools around the country. One of the finest I've seen is the Country Woodshops. Prices start at \$300. It is about half way between Johnson City, TN and Asheville, NC, just a little ways from the Appalachian Trail. In fact I hiked by this place a couple of years ago. It was beautiful and cool in the Summer. [countryworkshops.org](http://countryworkshops.org).

*Barry Humphus*