

WOODSHOP

Shaping the Successful Shop™

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October 2013

NEWS®

Coming of Age

Andrew Marques, only 24, buys Cove Woodworking

Making the move to a CNC shop

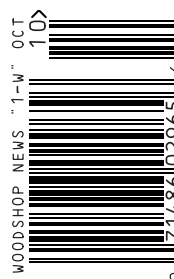
How much do woodworkers earn?

Repairing damage with epoxy sticks

NEW TOOLS

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- General router table
- Bostitch compressor
- SuperMax drum sander

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W1835 Track Saw

D4363 Accessory Pack **D4362** Guide Rails

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- Spindle capacity: 4¼", 4⅝", 5⅝"



W1827 5 HP Spindle Shaper

10" TABLE SAWS with Riving Knife

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- Camlock fence with HDPE face

Free 10" Carbide-Tipped Blade



W1819 10" Table Saw

W1820 10" Table Saw w/ Long Ext. Table

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U.S. Patent No. 7,140,813



W1833 Pocket Hole Machine

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1

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52/13

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173

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OF MEMBERS IN OUR ONLINE COMMUNITY

87

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Table of Contents



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*Precision Dynamic Spindles and
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Features

- 34 COMING OF AGE:** Andrew Marques is only 24 and his recent purchase Cove Woodworking in Gloucester, Mass., means he hopes to be in business for the long haul.
- 40 A CONNECTION TO THEIR CREATIONS:** Mark Richey Woodworking in Massachusetts prides itself not only on quality products, but also on training quality woodworkers.
- 45 TIME IS ON YOUR SIDE:**
An investment in CNC equipment can boost your bottom line and save dozens of man hours in the process..

News Desk

- | | |
|---|--|
| 9 Jet invests in Tennessee community shop. | 16 Wagering a guess on woodworker salaries. |
| 10 Irwin Tools focuses on trade contributions. | 28 WOOD MARKETS: Mighty oak a solid performer. |
| 12 Maine trade group honors family business. | |



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20



21

Tools & Techniques

- 19 Powermatic debuts new PM1000 table saw.
- 19 General offers router extension kit for table saws.
- 20 Bostitch selling new compressor in combo kits.
- 21 SuperMax Tools goes big with open-end drum sander.

Departments

- 6 Taking Stock
- 30 New Products
- 56 At the Galleries
- 58 Calendar
- 60 Classified
- 64 Out of the Woodwork

Columns

- 20 **FINISHING:** Epoxy sticks.
By Greg Williams
- 22 **PRO SHOP:** The art of reasoning.
By David Getts

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BLOGS



Over the Workbench

Talkin' shop with former editor A.J. Hamler



This Business about Woodworking

Share an opinion with David DeCristoforo but don't expect to be right

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TAKING STOCK

with TOD RIGGIO

Sifting through some journalistic sawdust

With the AWFS fair over and done, it's time to empty my reporter's notebook of a few recent news items:

The Cabinet Makers Association is offering an on-demand webinar that discusses new OSHA-required training for all employees. This session runs just over 11 minutes and will help keep business owners and managers in compliance with mandated health and safety training for employees.

"Everyone who has been in business long enough has heard the horror stories of huge OSHA fines levied on businesses. No one wants to knowingly put themselves in line to be on the receiving end of one of those levies," CMA executive director Dave Grulke says. "This recorded webinar contains data and provides additional information on resources available to keep employers in compliance with newly adopted OSHA regulations that mandate employee training on hazard communications by December 1, 2013."

There is no charge to attend or register for this webinar, but advance registration is required. This webinar is prerecorded and available on demand, meaning it can be viewed anytime from any Internet-connected device.

For information, visit www.cabinetmakers.org.

U.S. Forest Service chief Tom Tidwell announced on Aug. 6 that Michael T. Rains accepted the position as director of the Forest Products Laboratory in Madison, Wis., effective immediately.

Rains has served as the Forest Products Laboratory's acting director since March 2012. He is also the director of the Forest Service's Northern Research Station and will continue to lead both organizations.

"Michael's experience, leadership, and unflag-

ging passion for forestry and the wood products field make him the perfect candidate for running our Forest Products Lab," Tidwell said in a statement. "Four decades into his career, there's no one more qualified, committed or energetic about the issues."

Rains' 45-year career with the Forest Service began as a wildland firefighter for California. He has since served the agency in many capacities, including director of information resources management and deputy chief of state and private forestry.

The IWF and the International Surface Fabricators Association announced the formation of a partnership geared toward increasing the focus on the countertop industry for the 2014 IWF show.

The partnership includes an agreement in which ISFA will work with IWF to develop a full countertop educational track for the show and a "Countertop Pavilion" which will be co-sponsored by ISFA. The educational track will include six educational sessions geared toward the countertop industry, as well as continuing the full-day Countertop Symposium that ISFA has put on for the past two IWF fairs.

"With so many laminate and solid-surface fabricators already attending the IWF it makes sense to expand upon that and open the show up to fabricators of all countertop materials," IWF 2014 chairman Rick Hannigan said in a statement. "The new educational track will include sessions geared toward laminate, solid surface, quartz surfacing, natural stone, concrete and other countertop materials."

The next IWF will be held Aug. 20-23, 2014 at the Georgia World Congress Center in Atlanta.

For information, visit www.iwfatlanta.com.

Working with tools and wood is inherently dangerous. We try to give our readers tips that will enhance their understanding of woodworking. But our best advice is to make safety your first priority. Always read your owner's manuals, work with properly maintained equipment and use safety devices such as blade guards, push sticks and eye protection. Don't do things you're not sure you can do safely, including the techniques described in this publication or in others. Seek proper training if you have questions about woodworking techniques or the functions of power machinery.

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- Table tilt: 10° left, 45° right
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- Cutterhead diameter: 2 1/2"
- Cutterhead knives: 3
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- Max. cutter dia.: 5"
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8" x 76" JOINTERS

- Motor: 3 HP, 240V, single-phase, TEFC, 3450 RPM
- Maximum depth of cut: 1/8"
- Maximum rabbeting capacity: 1/2"
- Total table size: 8" x 76 3/8"
- Cutterhead diameter: 3 3/16" (G0490), 3 3/8" (G0490X)
- Cutterhead speed: 4800 RPM
- Approximate shipping weight: 560 lbs.

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- Precision-ground cast iron table with extension measures: 27" x 75 3/4" • Table height: 34 7/8"
- Arbor: 3/8" • Arbor speed: 4000 RPM • Max. dado width: 3/4" • Capacity @ 90°: 3 3/16", @ 45°: 2 3/16"
- Max. rip capacity: 52"
- Approx. shipping weight: 711 lbs.

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- Sanding belt: 25" x 60"
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- Minimum board dimensions: 14" L x 1/8" H
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NEWS DESK



Jet invests in Tennessee community shop

By Jennifer Hicks

Jet recently joined forces with the Fort Houston creative center of Nashville, Tenn., to provide Nashville artisans and enthusiasts with a full-service woodshop, complete with 24 woodworking machines and ongoing technical support. Jet is a manufacturer of woodworking and metalworking machinery, material handling equipment, vises, clamps and hand tools.

Fort Houston is a new resource for local artisans and students on the former site of a 100-year-old hosiery factory located at 500 Houston Street in the heart of Nashville's Wedgewood-Houston art district. The 10,000-sq.-ft. workspace is open to members who have access to the woodshop, mechanical

shop and print shop, as well as desk space and storage. Membership rates start at \$75 per month and include discounts on classes and other perks. Non-members also can take advantage of classes on such diverse subjects as 3-D modeling, printing, and a boot camp for creative entrepreneurs.

"We believe that reaching out to Fort Houston is a sound investment in the woodworking industry's future, as well as an opportunity for community betterment," Jet director of product management Joan Duvall says.

"Working directly with young, creative woodworkers, experienced artisans and enthusiasts also helps us maintain a fresh perspective on end-users' needs and preferences."

In addition, Jet will occasionally use Fort Houston's facilities and members' assistance for photo shoots and other marketing support.

Jet's partnership with Fort Houston is a hands-on endeavor, especially concerning woodshop safety and proper tool operation.

"Supervision is paramount to the safety and instruction of members and students," says Duvall. "Each potential woodworker must take a woodshop orientation course. Not only is general safety discussed, but the proper operational procedures for each tool are addressed as well. If needed, we also provide one-on-one assistance to woodworkers throughout the course of their projects."

Fort Houston offers several woodshop classes taught by staff and partnering instructors. These classes are designed to help students develop techniques and gain confidence in using various woodworking tools. Current offerings include introduction to rough milling, cutting boards, mortise-and-tenon joinery, butterfly keys, understanding the band saw and more.

In addition to partnering with Fort Houston, Jet participates in Habitat for Humanity programs in the Nashville area. The company actively recruits from local colleges, particularly Middle Tennessee State University, and regularly attends its job fairs. [W](#)

Contact: Fort Houston, 500 Houston St., Nashville, TN 37203. Tel: 615-730-8865. www.forthouston.com

Jet's support of the Fort Houston creative center is viewed as an investment in the woodworking industry's future and the Nashville community.



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NEWS DESK

Irwin Tools focuses on trade contributions

Company seeks to boost the profile of its annual National Tradesmen Day



By Jennifer Hicks

To acknowledge the contributions of trade professionals, Irwin Tools initiated National Tradesmen Day in 2011. This year, Irwin launched a multimillion-dollar campaign aimed at raising national awareness leading up to the Sept. 20 event.

National Tradesmen Day is an opportunity for Americans to consider the contributions skilled tradesmen make to others' lives, Irwin director of brand marketing Cheryl Mehrmann says.

"Some of the driving force behind launching this program is that it is part of the foundation of Irwin, which is working closely with end users to develop the unmet needs of trade professionals. This brings recognition to hands-on skilled trades, such as woodworking, that need to be highly recognized and regarded. That is not always the case in a world where most young people are getting pushed to obtain a four-year college education after high school," says Mehrmann.

She adds that this is the company's first national approach to recognizing the way tradesman of all aspects affect the lives of others.

"It's time we thank them for it. Irwin Tools wants America to say thanks to these hard-working men and women who rarely receive the recognition they deserve. Young people have noticed that manual labor is devalued in our culture and because of that stigma, in part, they no longer consider a career in the trades."

While new housing starts in April surged to a five-year high, according to the Commerce Department, she points out a troubling trend that only one skilled worker is entering the workforce for every three who are retiring or leaving these professions.

The campaign involved Irwin associates and its retail partners traveling around to various jobsites to thank tradesmen across the country. This included providing free product and other gifts from Irwin as a token of appreciation. One such event took place at One World Trade Center in New York City. www.irwin.com

For information, visit www.irwin.com and www.nationaltradesmenday.com.

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The Maine Wood Products Association recognized the innovation and growth of Maine Wood Concepts in August at an awards ceremony.

Maine trade group honors family business

Maine Wood Concepts received annual Pine Tree Award for the company's contributions to the local economy

By Jennifer Hicks

The Maine Wood Products Association presented its annual Pine Tree Award to Maine Wood Concepts of New Vineyard, Maine, a family owned-and-operated custom wood products company for its contributions to innovation in the local forest-based economy.

The Maine Wood Products Association seeks to improve the competitive position of its members and build quality employment in the state by sharing technical, marketing and business expertise, using this annual award as one of its incentives. Its members believe that the owners of the winning company, the Fletcher family, have guided the business since it started 40 years ago, right through their recent acquisition of a line of gourmet kitchen products.

"The Fletchers have used entrepreneurship, calculated risk-taking and perseverance to keep their company competitive," Maine Wood Products Association executive director Dan Crowley says. "They have secured local markets for Maine's high-quality hardwoods and created good jobs in Maine while facing down foreign competition."

Last fall, Maine Wood Concepts began negotiating a purchase agreement with the

Vic Firth Co. of Newport, Maine, for its line of wooden pepper mills, muddlers and rolling pins for the gourmet kitchen market. Vic Firth, a manufacturer of drumsticks and percussion accessories, was interested in seeing its line of gourmet kitchen products stay in Maine.

"When we started looking at Vic Firth's kitchen products business, we knew it would require a radical transformation of our approach," Maine Wood Concepts president Doug Fletcher says. "We're accustomed to producing many thousands of pieces per day, such as wooden nickels, tool handles, toy parts and other components from several specialized machines. Taking on this type of high-end product and dealing with a wholly different customer base was a steep learning curve for us."

The Fletchers responded to the challenge by expanding their facility and hiring and training more than 40 new employees, growing their workforce by more than 30 percent in nine months.

The company now operates the new gourmet kitchen products division under the name Fletcher's Mill, found online at www.fletchersmill.com. **W**

Contact: Maine Wood Products Association, P.O. Box 401, Belfast, ME 04915. Tel: 207-338-2883. www.mwpa.org

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Briefs

Construction spending hits four-year high in July

Total construction spending hit a four-year high in July as private residential and nonresidential activity increased while public spending declined, according to an analysis of new Census Bureau data by the Associated General Contractors of America.

"The patterns seen earlier this year reappeared in July, with strong year-over-year gains in single- and multifamily building, a range of results for private nonresidential categories, and deepening downturns in most public segments," said Ken Simonson, the association's chief economist. "These trends are likely to hold for the remainder of 2013."

Construction put in place in July, \$901 billion, was the highest mark since June 2009,

and an increase of 0.6 percent from the month before and 5.2 percent from July 2012. "Recent reports suggest the full year will continue to bring mixed news for construction," Simonson said. "Multifamily construction will keep expanding and single-family homebuilding should do well in most regions. Private nonresidential spending will be very uneven and public construction spending remains threatened."

IWF endorses StonExpo/Marmomacc Americas 2014

The International Woodworking Fair will partner with StonExpo/Marmomacc Americas 2014, held in conjunction with the floor covering Surfaces show June 28-30 at the Mandalay Bay Convention Center in Las Vegas.

An IWF woodworking-specific education program will be available to StonExpo/Marmomacc Americas attendees. The new education program will include design, business management, business development and material processing for the cabinetry and countertop sector as it relates to the kitchen and bath.

"We see this as an opportunity to extend the IWF brand beyond wood. It makes sense

to launch our new conference within an event such as StonExpo/Marmomacc Americas and Surfaces," Richard Hannigan, chairman of IWF 2014, said in a release.

For information, visit, www.stonexpo.com and www.surfaces.com.

Scm Group hosting open house on panel processing

Scm Group North America has scheduled a two-day open house event, focused on panel processing, Nov. 7-8 at its showroom in Duluth, Ga.

A product specialist will host interactive educational seminars exploring available solutions for panel processing, including cell manufacturing using CNC, rapid case construction through dowelling, improving edgebanding quality and more. In addition every guest will have the opportunity to interact one-on-one with a wide range of woodworking suppliers, including Cabinet Vision, Alphacam, Microvellum, Leitz, Doucet, Schmatz, Nederman, Rehau, and many others, according to the company.

To register for the event, visit www.scmgroupna.com and click on Technology Days.



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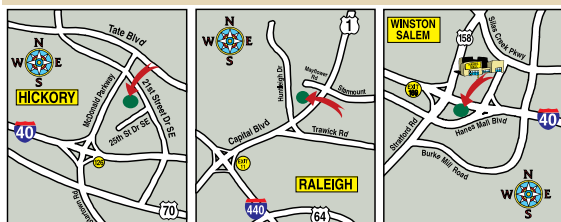
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- Carolina Mountain Woodturners will again be a featured club at our event with their TURNING LEARNING CENTER – don't miss your opportunity to bring your family members, both young and old, and try your hand at woodturning....be careful it is contagious.
- Ever thought about making a canoe? MICHAEL VERMOUTH from The Newfound Woodworks will be demonstrating several aspects of building a small canoe like the Voyager... Yes, plans will be here for purchase.
- MORRIS SCHLESINGER: Learn to turn Salt/Pepper Mills • Sharpening demos • Wet bowl sanding
- BEN HOBBS – Welcome Ben as he shows traditional woodworking methods on how to make Cabriole legs – www.hobbsfurniture.com
- Clubs like NCWOODWORKERS.NET, NORTH CAROLINA WOODTURNERS ASSOC., WESTERN PIEDMONT WOODCRAFTERS, MARQUETARIANS OF NC will be doing free hands on demos throughout show
- TIM TRUDGEON will be carving caricature faces on pumpkins again this year
- NICK COOK is going to be back – if you missed him last year or still have more to learn from one of the best, add this to your calendar immediately
- JERRY TALTON from Stella, NC. will be demonstrating Eastern North Carolina decoy carving techniques using hatchets, draw knives and spoke shaves to carve antique style duck decoys.
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Wagering a guess on woodworker salaries

Though it depends on experience, type of work and the region of the country, an accurate number can be found

By John English

How much do woodworkers earn? That's a very subjective question. A lot depends on your definition of a woodworker. Is it the guy who sits in an office and designs cabinets or the woman who runs the CNC router or the kid who loads pallets of plywood into racks in the back of the shop? Our trade covers everyone from framing and finish carpenters to custom furniture builders, journeymen cabinetmakers, turners, carvers and luthiers, to name a few.

Beyond the tasks one performs, the location is also a major consideration. A wood artist who is building displays for Macy's New York windows is going to make more than a furniture repair shop owner in a small town in rural Nebraska.

The best one can do is come up with some averages and then extrapolate from these by considering the type of work being done, the geographical location, the market, years of experience and other factors such as resources. For example, a cabinetmaker running an Altendorf F45 Elmo is probably going to produce a lot more work and of much higher quality than a competitor who is using a Craftsman contractor's saw.

GOVERNMENT SURVEY RESULTS

Back in May 2009, the U.S. Bureau of Labor Statistics conducted a survey of employment throughout the United States. It collected wage data from 743,760 carpenters/woodworkers and calculated that the average hourly rate for the occupation was \$20.98. This extrapolates to a monthly income of \$3,637 and an annual salary of \$43,640. Those numbers are very comparable to figures that were produced by private-sector PayScale.com, which in 2011 placed the average rate for the trade at between \$14.82 and \$24.23. (PayScale.com's numbers average \$19.52 per hour, or \$39,040 annually, which is within about 7 percent of the government estimate.)

During the recession, wages don't seem to have moved much: there were fewer paychecks, but they seem to have retained their value. The recovery might change that: if the housing recovery continues, woodshop employers will be competing more for quality employees.

That 2009 government study also reported that those in the top 10 percent of earners

received an average of \$34.01, while woodworkers in the lowest-earning 10 percent were paid \$11.83. During the course of its survey, the Bureau of Labor Statistics found that "the three industry sectors that employ the greatest number of carpenters are residential building construction, non-residential building construction and building finishing contractors." It listed the average hourly pay rates for these sectors as \$19.69, \$23.32 and \$22.05, respectively. Foundation, structure and building exterior contractors were listed at \$19.80 while carpenters working within the motion picture and video industries were likely to receive \$27.97 an hour.

Sounds like woodworkers should head for Hollywood.

What's interesting here is that all of those numbers add up to woodshop averages of \$43,373, which is very much in line with the overall study results and the private sector numbers.

WAGES FOR CABINETMAKERS

According to a 2013 article on eHow.com, "the average salary range for a cabinetmaker with five to nine years of experience is between \$18,313 and \$51,097. From years 10 to 19, he averages between \$39,663 and \$60,505 annually. And if he has worked in the field for 20 years or more he has the potential to

furniture designer/builder), upstate New York (\$62,000 in an architectural millwork shop), San Diego (\$51,000, self-employed building kitchen cabinets and small commercial jobs), Minneapolis (\$38,000 in a shop that mostly builds plastic laminate and melamine institutional furniture) and close to Des Moines (\$36,000, self-employed furniture and cabinet builder). The average for these six woodworkers was \$42,800.

To recap briefly before we get even more confused, the average salary for woodworkers so far has been estimated at \$43,640, \$39,040, \$43,373, \$48,267 and \$42,800. Average all of those and you get \$43,424.

The distinction between self-employed and wage-earning woodworkers is pretty elusive. The eHow.com article says that "self-employed cabinetmakers earn between \$18,000 and \$60,000 annually, while those who work for companies earn an average of between \$39,037 and \$72,000 per year. Cabinetmakers who work for companies with fewer than 10 employees earn the highest salaries, between \$23,583 and \$61,042 yearly."

No sources for these numbers were listed and, as the brackets are so wide it's challenging to draw any conclusion as to whether employed or self-employed woodworkers do better. It would seem to suggest that self-employed, one-man shops average \$39,000

If the housing recovery continues, woodshop employers will be competing more for quality employees.

earn a maximum salary of \$71,756." Add all of those together and they average out to \$48,267, which is about \$5,000 higher than the other estimates. But keep in mind that the final number, \$71,756, was qualified by the statement that it was potential earnings, rather than actual.

In a random, very unscientific phone survey of six long-term cabinetmakers taken in July, the most any of them had ever been paid was \$62,000 a year (numbers are rounded). Their shops are located in Florida (\$44,000, working in a large kitchen cabinet shop), Wyoming (\$26,000, self-employed

while payroll employees make \$55,518, but none of the government or other private sector data supports those conclusions. Beyond that, a self-employed woodworker has a number of deductions that can reduce his/her net taxable earnings significantly as the shop gains value in inventory and plant, so we're not comparing apples to apples.

PayScale.com is a company that, among other services, helps employers determine fair compensation for a specific market in which they operate. In 2011, PayScale researchers found that the average rate for a woodworker "with less than 12 months in

the field was between \$9.50 and \$13.50. With the accrual of one to four years experience, the rate rose to between \$11.80 and \$19.19. Five to nine years in the profession resulted in an hourly pay rate of between \$14.52 and \$21.49, while an individual with 10 to 19 years of experience behind them could expect to receive between \$15.51 and \$24.68. A veteran of 20 years or more was likely to get between \$17.24 and \$25.89."

Do the arithmetic on those numbers and the average woodworker is making \$34,664, assuming that experience is spread evenly across the years (that is, that there are the same number of woodworkers in each group). In a shop with a more experienced workforce, the number will slide a lot closer to the \$43,424 working average mentioned above.

FACTORING IN LOCATION

When we ran a random test on their site, the results indicated that a bench carpenter with 20 years on the job has a median salary of \$40,440 in Minneapolis and a cabinetmaker in that market would make \$34,774. That is, the average woodworker would make \$37,607 in the Twin Cities, which is a relatively conservative market halfway between the densely populated and thus slightly highly paid coastal zones. That makes sense.

To get the PayScale.com results, we had to input a lot of data (experience, location etc.), which they then compared to their database and, as our input was somewhat vague, the results are more random than empirical. An employer with specific data to input would get more precise results. The company also runs analyses for woodworkers who are considering relocating in response to job offers and provides data on comparable positions and salaries in other geographical regions.

Going back to the Bureau of Labor Statistics survey in 2009, one of the most striking aspects of the government study's results was that location has a huge impact on pay rates. At the state level, Hawaii, Alaska and Illinois came in at \$30.79, \$28.40 and \$27.44 respectively. At the other end of the scale, Montana was listed with an average rate of \$16.96. What's surprising here is that both Montana and Alaska are thinly populated and relatively remote geographically (that is, neither one sits on the doorstep of a major urban market), yet they are at each end of the scale. One explanation might be that everything is more expensive in Alaska because it has to be hauled there, so salaries are perhaps more commensurate with the cost of living.

In 2009, the best pay in the country for woodworkers was in King's County, Calif., which is home to Naval Air Station Lemoore, a U.S. Navy jet air station. There, the median hourly rate for woodworkers was \$36.45, followed by Fairbanks, Alaska, with \$31.87. The Punta Gorda region of Florida was listed at just \$14.56.

In 2012, the Bureau of Labor Statistics listed carpenter wages as \$19.25 (median) and \$21.51 (mean average). That translates to a range of \$40,030 to \$44,730 per annum, which is about 25 percent higher than most construction labor jobs.

If we average out the numbers for woodworkers across the country, based on both private sector and government studies, and include both scientific and anecdotal results and ignore regional variances, it seems that a woodworker halfway through his/her career should be making somewhere around \$21.50 an hour and \$43,000 annually. Take into account local markets, the type of work being done, years of experience, the amount of automation compared to handwork, whether one is self-employed or not and the average ranges from \$9.50 an hour (\$19,000 a year) to \$35.88 an hour (\$71,756 a year).

The bottom line is that, even when all the numbers are in, exactly how much a woodworker makes is still a very subjective question. **W**

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TOOLS & TECHNIQUES

Powermatic adds new table saw to lineup

By Jennifer Hicks

Powermatic has added the PM1000 table saw, offering many of the same features found on the company's PM2000 and PM3000 table saws, with the added benefit of operating off 115-volt service.

"We see the PM1000 as the bridge for woodworkers who want to move up to a cabinet saw," says product manager Joan Duvall. "It's loaded with features and meets the historic Powermatic gold standard in performance and value. It's the right choice for woodworkers wanting to upgrade their current saw without overtaxing their woodworking budgets."

The 10" PM1000 is available in two models with cast-iron tables and extensions. Model 1791000K offers a 30" rip capacity and model 1791001K has a 52" rip capacity.

Both models feature a blade guard assembly and riving knives to help reduce kickback. They also feature a 1-3/4-hp, single-phase induction motor and a Poly-V belt drive system for a smooth transfer of power and reduced vibration, according to the company.

Other features include an oversized push-button on/off switch below the table top, which has a removable magnetic key to avoid unauthorized use of the saw. The saw's cabinet base is fully enclosed with a 4" dust port at the rear and a hinged motor cover for easy access. Two 7" chrome-plated and cast-iron hand wheels allow the user to set the blade height and bevel, while a push-button arbor lock allows blade changes to be made with an included single wrench.

The saw's T-slot channels on either side of the blade support the supplied 60-degree miter gauge with preset detents at 0, 30 and 45 degrees. A pair of expander mechanisms in the gauge's guide bar helps eliminate side-to-side play in the T-slot, plus the guide bar has a disk that engages the channel to prevent it from lifting during a cut, according to the company.

The saw also comes with Powermatic's Accu-Fence. The face can be adjusted vertically to ride flush with the tabletop surface or rise just above it.

The 30" model sells for \$1,999.99, while the 52" version costs \$2,099.99. Both are covered by the Powermatic's five-year warranty.

Contact: Powermatic. Tel: 800-274-6848. www.powermatic.com



Powermatic's
PM1000 table
saw.

General offers cast-iron router extension kit

By Jennifer Hicks

General International's Excalibur brand introduced the model 40-070 EK cast-iron router extension table kit for table saws at the AWFS fair in July. The extension measures 16" x 27" with a standard 9-1/4" x 11-3/4" router opening and two adjustable-length steel support legs.

Product manager Patrick Magro says the product was designed for small shops with limited space.

"The highlight of this table kit is the precision and flatness of the cast-iron top and user-friendly features that are required in a router table with the ability to grow and add a lift system," says Magro.

The extension can be adapted to all table saws with 27" cast-iron tabletops, according to the company. The standard kit includes the 16" x 27" table, two adjustable-length steel support legs, 27" router fence and a phenolic router plate.

Optional accessories include a dust collection kit, a flip stop, a four-piece zero clearance insert ring set, 4-piece insert ring set and vertical and horizontal feather boards.

The kit sells for \$399.99

Contact: General International U.S.A. Tel: 888-949-1161. www.general.ca



General's new cast-iron router extension tabletop kit, which the company says can be adapted to all table saws with 27" cast-iron tops.



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Bostitch compressor is lightweight, yet powerful

By Jennifer Hicks

Bostitch has a new six-gallon, oil-free pancake compressor available in combo kits with the company's three new finish nailers.

Product manager Derek Brown says the compressor is lightweight enough to carry to various job sites and yet powerful enough for multitool use.

"With a long life target, professional woodworkers can be confident this compressor will get the job done. Each of the convenient one, two or three tool and compressor combo kits is ideal for finish and trim applications," says Brown.

The compressor delivers up to 2.6 standard cubic feet per minute at 90 psi, weighs 32 lbs. and operates at 80 dBA, according to the company.

"Thanks to its integrated control panel, it helps vital compressor components to be protected against tough jobsite conditions," says Brown. "The compressor is also designed with an oil-free free pump for ease of use. Equipped with a ball drain valve, the compressor tank can be easily drained."

The compressor sells separately for \$179.

It's also available in three combo kits with the company's new finish nailers.

The first combo kit, model BTFP72665, includes an 18-gauge brad nailer with airline and fittings, and sells for \$179.99.

The second kit, model BTFP12605, also includes a 16-gauge straight finish nailer and sells for \$259.99.

The third kit, model BTFP72646, has all three finish nailers — including the new 3/8" crown stapler — and sells for \$279.99.

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SuperMax Tools touts largest drum sander

By Jennifer Hicks

SuperMax Tools introduced the model 25-50 drum sander at the AWFS fair, which the company says is the largest open-end drum sander on the market. The sander will sand up to 25" in a single pass and 50" in a double pass.

Product manager Warren Weber says the company aimed to keep the new machine as affordable as possible, basing its design off of its award-winning 19-38 drum sander.

"A sander like this can be used for face frames, drawers, drawer fronts, cabinet doors, and more to make them smooth and uniform," says Weber. "Turners can use it making glue-ups, scrollers will use it after cutting out a pattern to get rid of tear-out from the blade and musical instrument makers can use it on guitar back and front work."

The drum sander accepts material up to 4" thick and as thin as 1/32". It has two motors — a main 1-1/4-hp motor that operates on 110 volts and a second DC motor that offers more than 40 inch pounds of torque, according to the company.

The drum sander also features Intellisand Technology to regulate the speed of the motor, a simple alignment lever, height adjustments and easy-to-access abrasives, according to the company.

The drum sander retails for \$1,999 and includes a closed mounting stand. Optional accessories include infeed/outfeed tables and a digital read-out. Boxes of pre-cut abrasives strips sell for \$24.

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PRO SHOP

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Some helpful tools you sometimes overlook

You can help clients sort through mounds of information and produce a better product with your experience and wisdom

Where do you think most people search for answers on unfamiliar topics? Most likely, they turn to Google or other Internet-based searches. But how much of the information on the Internet can you trust? Like any source, you have to wade through the mass quantity of data in order to pick out what makes sense. Like a cow that's learned to chew the cud and spit out the stubble, those who possess the skill

of acquiring information know that everything readily available is not always accurate. Intelligent consumers looking to make a large purchase compile information to help in their decision-making process. And when that purchase requires a custom woodworker, you can become part of their reliable sourcing.

One of the tenants of good scientific study is assembling large amounts of data before making a determination. Reliable statistics are

not based on simple and quick numbers, but rather the accumulation of extensive test studies. Likewise, good decisions are generally based on reliable data. When consumers plan for a purchase, they want reliable information on products and manufacturers. It's important they don't waste their hard-earned dollars on inferior products. But data collection from online sources such as blogs, forums and Wikipedia are not enough to make quality decisions, especially in custom work. Small purchases are one thing, but complex, big-dollar acquisitions require better information to make sound choices. This is where you, the expert, come in.

Nothing compares to acquiring data directly from the source. Consider how the media reports the news. Breaking stories carry much more validity if the source of information is from a firsthand account, not someone who knew a person who was an eyewitness to the event. There are mountains of information to climb when a consumer journeys into the electronic data stream. And when they come into your territory, you can be their guide or outfitter.

There are several ways to go about it, but we're going to discuss just a few: experience, psychology and diplomacy.

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- Hayden Hiatt of Huntington Industries



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experience to make money from your trade, regardless of how many years you've been doing it. Hopefully, more years means more experience, but sometimes people continue to make the same mistakes without ever learning and this is not the kind of experience you want to share.

Other forms of experience come in the form of confidence. When people have success in what they do, they develop self-assurance that can either be beneficial to a customer or have a negative effect. The simple acquisition of knowledge only makes you arrogant and that doesn't help anyone. It's the proper application of that knowledge that you want to develop. Using your knowledge correctly creates wisdom, which is the best form of advice to give a client. They can find knowledge on the Internet, their neighbor or almost anywhere for that matter. But since wisdom is the practical application of that knowledge, it represents the most useful form of information they seek.

PSYCHOLOGY

You don't have to be an expert in psychology to put good principles into action. Most of it is common sense, but a refresher in Social Psychology 101 might be helpful.

The Bystander Effect: This is the phenomenon that says when a greater number of people are present, the less likely it is for people to help someone in distress. With the presence of other people, there is a diffusion of responsibility. In other words, individuals don't feel as much pressure to take action when they're around other people. Another reason this happens is the ingrained need to behave in a correct and socially acceptable way. When other observers fail to react, individuals take this as a signal that a response is not needed or appropriate.

Because of the lack of knowledge, hiring a custom maker can be stressful for many people. Are you a bystander of information sharing or do you actively educate your clientele? Successful business practice goes on offense. As Apple founder Steve Jobs said, "People don't know what they want until you show it to them."

Conformity: Most people think they're non-conformist enough to stand up to a group when they know they're right, but conformist enough to blend in with their peers. Conformity refers to an individual's tendency to follow unspoken rules or behaviors of the social group.

During the 1950s, Solomon Asch conducted experiments to demonstrate the power of conformity in groups. In the experiment, students were told they were participating in a "vision test." Unbeknownst to the subject, the other participants in the experiment were all confederates of the experimenter. At first, the confederates answered the questions correctly, but eventually began providing incorrect answers.

Nearly 75 percent of the participants in the conformity experiments went along with the rest of the group at least one time. After combining the trials, the results indicated that participants conformed to the incorrect group answer approximately one-third of the time. In order to ensure that participants were able to accurately gauge the length of the lines (in the test), participants were asked to individually write down the correct match. According to these results, participants were very accurate in their line judgments, choosing the correct answer 98 percent of the time.

When you get pressed for answers or opinion, how do you respond? Do you maintain your expert status and stick to what you know is right or do you cede to ideas and opinions of others such as the client, the Internet, designer or other so-called experts that the client has assembled?

DIPLOMACY

Diplomacy is the art and practice of conducting negotiations between representatives of various groups or states. It also refers to the ability to handle affairs without arousing hostility. This is an important tool for the custom maker to have in their box. Diplomacy should always remain sharp. Tools that are used a lot will get dull, but if they make money, you'll keep them in good working order. Diplomacy is one of those tools. You

continued on page 55

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FINISHING

with GREG WILLIAMS

“Tootsie Roll” epoxy is good for damage repair

This resin and hardener has characteristics that resemble wood more than anything other than wood itself

Most people who repair minor damage to finished wood are familiar with resin burn-in sticks, polyester fillers such as Bondo and epoxies of various sorts. Far and away the most versatile filler, almost a perfect replacement for wood, is the epoxy stick generically called “Tootsie Roll” epoxy.

Epoxies have been used for years as fillers

for gouges, dents and other unwanted cavities — sometimes in the usual form of resin and hardener, often with a bulking material of some sort added.

For a respectable period of time, the most versatile type of epoxy used for filling comes in the form of a stick or cylinder about 7” long and 3/4” in diameter that contains a center core of hardener and an outer sheath of resin. Because



Slice off a section large enough to give you enough mass to fill the void.

of its shape and two-part construction, it’s commonly referred to as “Tootsie Roll” epoxy.

Mixed within both parts of the stick are micro-balloons — microscopic, hollow-glass spheres that add stiffness to the epoxy, allowing it to be formed or molded without sagging or flowing

PHOTO: GREG WILLIAMS

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and adding to its machinability. This form of epoxy has characteristics that resemble wood more than any repair material other than wood itself.

A FORMIDABLE TOOL

Epoxy in this form is remarkable stuff. It's strong enough to hold screws. It can be molded like clay and carved like basswood. It won't shrink, swell or gloss up under lacquer or heat, which means it can be molded or tooled right to its final shape. It can be applied before finishing and can be put through a drying oven without softening. It can also be machined, sanded and, because of the micro-balloons, will take stain reasonably well. It is strong enough to be used for structural repairs, has virtually no shrinkage and is dimensionally stable over a wide range of temperature and humidity.

In addition, the epoxy will bond to most clean surfaces, including metal, glass and, of course, wood. It won't stick to Mylar or polyethylene-type plastics, however, which makes these materials ideal for use as release paper (or cauls) when duplicating carvings and moldings.

If there's a downside, filling with epoxy sticks usually takes a little longer than filling with resin burn-in sticks because the epoxy takes longer to cure. Also, epoxy sticks aren't available in clears, which are very effective for filling dents where no additional color is needed.

There are other forms of epoxy, but stick epoxy is much easier: slice off a section, knead until it becomes a uniform color and apply to the damaged area. There's no messy mixing required.

Most epoxy sticks come in a neutral color, but some companies make them available in various wood tones, which can be intermixed to create an extensive palette. You can also make your own color to match a specific background by adding colorants that mix with lacquer. These include touch-up powders, universal colors, base concentrate or Huls (now



Epoxy stick can be shaped or smoothed with your finger or a tool moistened with water.

Chroma-Chem) 844. But keep in mind that adding too much colorant can affect the epoxy's curing properties. To make the color mixing with the powders go easier, wet the powders or the epoxy stick with water.

Wetting your fingers and tools will also help you shape and mold mixed epoxy and the heat from a hot burn-in knife will make the epoxy softer and easier to smooth. The heat also helps keep the epoxy from sticking to the blade.

ON THE JOB

The working life of epoxy sticks is measured from the time the epoxy reaches a single color during mixing to the time it can no longer be shaped easily by hand. For standard-cure sticks, this is 8 to 10 minutes; for fast-cure epoxy sticks, it's 3 to 5 minutes — both at 75 F.

Two key points to remember: Large masses of epoxy cure faster than

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FINISHING



The heat from a burn-in knife will make the epoxy softer and easier to smooth.

colored epoxy sticks, mix in the appropriate color during the kneading.

Apply the epoxy to the void, shaping and smoothing it with your fingers or a tool moistened with water. When the epoxy has hardened, shape and smooth with sandpaper, a chisel or a carving tool. Next, add graining and more color, if necessary, and apply a topcoat finish in the same way you would to a burn-in.

SHAPING WITH A HOT BURN-IN KNIFE

You can use a hot burn-in knife without a lubricant to shape an epoxy fill until it cures, but care must be used because while the hot knife softens the stick and makes it spread and smooth more easily, the heat also speeds up the curing and the epoxy can get too hard.

For a short time after the epoxy has become too hard to manipulate with the hot knife, it can still be sliced with a sharp tool like a chisel (or even the sharp edge of a burn-in knife of the type used with a burn-in oven) heated to 350 to 450 F. This technique is limited to unfinished wood, plastic laminates and other materials that aren't affected by the high heat.

smaller ones and heat speeds the curing process while cold retards it.

HAND-SHAPING AN EPOXY FILL

Select an epoxy stick to approximate the background color you want for the missing wood. Slice off a section large enough to give

you enough mass to fill the void. If the amount you need is less than a thin slice, divide the slice into halves or quarters. A color-mixing guide, available from most manufacturers, can help you create a more accurate color match.

Knead the epoxy thoroughly until it becomes a single color. If you don't have access to pre-

PHOTO: GREG WILLIAMS

COMING 2014



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CLEANING UP SAFELY

Some people can become sensitized to the chemicals in epoxy and should wear gloves when working with it.

For cleaning up uncured epoxy, isopropyl alcohol and lacquer thinner can be used. But these solvents should not be used to clean epoxy from your skin because they can carry the chemicals through the skin and into your body. You should use soap and water to clean your hands.

In addition to lacquer thinner and isopropyl (rubbing) alcohol, acetone acts as a mild solvent for uncured epoxy, with isopropyl alcohol having the least potential for damaging a finish.

LEVELING WITH A BURN-IN KNIFE

Leveling a fill on a flat surface using an epoxy stick and a burn-in knife is almost identical to the method used to level a burn-in stick. First, press the epoxy firmly into the void so it slightly overfills and apply burn-in balm, Vaseline or Wool-Lube (gel soap) over and around the fill. These products act as a release agent.

LEVELING USING A MYLAR STRIP

An epoxy fill can be leveled easily using a Mylar strip and a credit card instead of a burn-in knife. First, cut a strip of clear Mylar so that one end is shaped as closely as possible to three sides of the void and attach a piece of masking tape to the other end. Fasten the tape to the surface so the



Is it wood or epoxy? Only you will know.

shaped end of the Mylar just covers the void. Fold the Mylar back so it is out of the way and press mixed epoxy firmly into the void. Lay the Mylar back over the fill and squeegee out the excess using a credit card or similar object. Remove the excess with isopropyl alcohol before the epoxy hardens. **W**

Greg Williams, formerly senior touchup and finishing instructor for Mohawk Finishing Products, is now a freelance instructor and consultant for finishing and touchup. He can be reached at gregatwil@yahoo.com.

AWFS reports growth in attendance and exhibitor participation

AWFS Fair 2013 attendance expanded as the show hosted 9,150 registered attendees and nearly 13,500 total participants with 503 exhibiting companies occupying 11 percent more floor space than 2011, and drawing industry professionals from 58 countries around the world, according to the producer.

"This is the first time since 2005 that our trade show expanded in all categories including buyer and exhibitor attendance, total number of exhibiting companies, exhibit space sold, and seminar attendance. It is a very positive sign for our industry as early indications strongly suggest this trend will continue for our 2015 show," Angelo Gangone, AWFS executive vice president, said in a release.

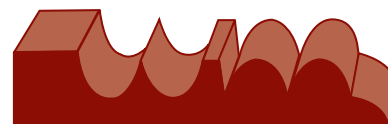
"AWFS is certainly the most important industry event for North America this year. We are very pleased with our results. After four straight quarters of steady growth in orders, the solidity of the North American market is no longer in doubt," said Federico Broccoli, president of Biesse America, in the same release.

"It was exciting to see both the quantity and quality of buyers at this year's AWFS Fair," added Dan Hershberger of Stiles Machinery, the 2013 trade show chair and an AWFS board member. "The results are a definite confirmation that the AWFS staff's commitment to provide a first class event, has paid off. From my personal experience, I felt that booth traffic was similar to what we saw during the peak years – very busy. I just want to say a great big thank you to the staff of AWFS for recognizing the needs of our industry and producing a show that addressed those needs in such a way that drew buyers to Las Vegas in order to attend the AWFS Fair. I am really looking forward to seeing what 2015 has in store."

The 2015 AWFS fair is scheduled for July 22-25, 2015 at the Las Vegas Convention Center.

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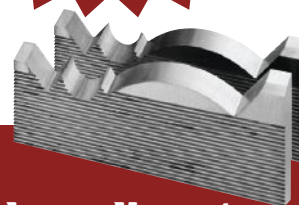


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Oak sales see growth in the marketplace

By Jennifer Hicks

Oak sales have increased during the last six months, according to lumber suppliers interviewed by Woodshop News. Most feel that it's only gaining demand at the same rate as other hardwoods they sell, primarily because of a rebounding economy. But that doesn't take away from the fact both red and white oak are targeted by designers and cabinetmakers for its unique grainy texture that puts a bit of flair into seemingly simple pieces.

There is some debate over which is more popular: red or white. Northern red oak

(*Quercus rubra*), also known as Eastern oak, grows in the eastern half of the United States and Canada. Trees are smaller than white oak (*Quercus alba*), reaching heights up to 70' with tree diameters around 3', depending on growing conditions.

Ramus Lardie of Rare Earth Hardwoods in Traverse, Mich., says that many customers come in initially seeking white oak, but end up purchasing red simply because it's lower in price.

"White oak has a marine quality, which makes it good for exterior uses such as boats and doorways. Lately we've been selling

some large slabs of quartersawn white oak for tabletops and other decorative projects. We also sell red oak, which is less expensive and has a pinker tone to it. In general, people that like oak like the grain of it. The red has a more figured look, but white oak has a higher quality," says Lardie.

Myles Gilmer, owner of Gilmer Wood Co. in Portland, Ore., sells only imported specialty variations, such as European white oak and English brown oak, also a white oak tree. He says these constitute only a small percentage of oak sales in the world, but they still have their share of buyers.

"Our oak sales are pretty slow. They haven't really picked up too much in the last six months. We still sell about a unit a month and English brown oak is kind of a niche wood that sells board by board, but these are huge boards about 4' wide by 17' long and up to 3" thick. They sell mainly to the specialty market, like the James Krenov-type students. It's a smaller percentage of my business, but I've stocked it for over 30 years so I might as well keep it going as long as I'm here," says Gilmer.

Bob Hakken of Wagner Wood Products, a wholesale distributor of Columbia Forest Products hardwood plywoods in Holland,

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Figured red oak (left) and quartered white oak.

Mich., has seen renewed interest in rift cut and quartersawn white oak in the last year, while plain sliced white oak has stayed the same.

"It seems like customers are gravitating to those because of the straight grain and clean look they offer. They aren't really looking for all that figuring," says Hakken.

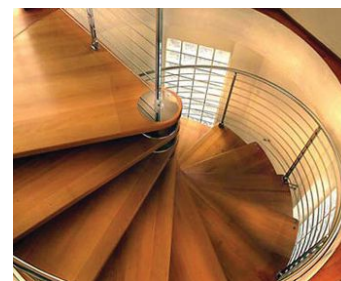
"I've also seen a greater interest in quartersawn white oak over the quartersawn red and I think that's primarily because the white oak rays aren't as pronounced as they are in the red. The rays can be very radical in the red and are much smaller in white oak. So when they do want red oak, they're generally looking for plain variations."

Prices for 4/4 FAS red oak start at \$3.25/bf, while 4/4 FAS white oak start at \$4.50/bf, according to an informal survey of national retailers. Wholesale prices for 3/4" 4' x 8' plywood were quoted at \$60-\$90 for red oak and \$90-\$100 for white oak, depending on grade and cut. **W**

For more information on wood properties and species information, visit the U.S. Forest Service Forest Products Laboratory's Web site: www.fpl.fs.fed.us.



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NEW PRODUCTS



◀ **KREG TOOL CO.** introduced the Kreg Jig K5, the latest generation of its pocket hole jig. Features include an all-new clamping mechanism that has a front-mounted handle and adjusts to different workpiece thicknesses without tools or adjusting nuts, a quick-release drill guide block, and a new setting block for the drill bit stop collar. In addition to the included standard three-hole drill guide block, the K5 is also fully compatible with the Kreg Micro Pocket Drill Guide and Kreg Jig HD, according to the company. The Kreg Jig K5 will be available in September at a retail price of \$139.99. For information, visit www.kregtool.com.

◀ **BOSCH POWER TOOLS** is heating up job sites this fall with the launch of the company's first 12-volt Max heated jacket and battery holster/controller USB power backup. The heated jacket, model PSJ120, is designed to keep outdoor contractors and mobile technicians warm and protected from the elements, while also offering a convenient built-in battery backup power source — the BHB120 — to keep USB-compatible cell phones and other important electronics charged and ready to go, according to the company. The jacket features three quick warming-core heat zones — two chest and one back — that provide up to six hours of heated runtime on low heat level with a 2.0 Ah battery. The PSJ120 is compatible with all Bosch 12V Max batteries (available separately), including the new 4.0 Ah BAT420. The jacket retails for \$179 to \$189, depending on the size. For information, visit

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◀◀ **DEWALT** offers a new compact worksite radio, model DCR018, which can be powered by any of the company's batteries through the multiport interface. The radio weighs only 6 lbs. without a battery and features a digital tuner, backlit LCD display with clock and five AM/FM presets. It also features a device storage box that helps to protect electronic devices from jobsite dust and debris and houses USB power and auxiliary ports. USB-compatible devices can be charged via the USB power port when the radio is plugged into a wall outlet and the auxiliary port allows for connection to CD, MP3, and other digital audio devices.

The radio is protected by a roll cage and is expected to retail for \$99 to \$129. For information, visit www.dewalt.com.

▶▶ **SENCO** is introducing two new 23-gauge pneumatic micro pinners, the FinishPRO 23SXP and 23LXP. Intended for intricate finish and trim work, the newly redesigned tools are a radical departure from their predecessors — the FinishPRO 10 and 11 — and incorporate several performance enhancing upgrades suggested by woodworking and carpentry professionals, according to the company. These include an expanded fastener range (1/2" up to 2" long, depending on the model), quick and easy loading, a more powerful motor, and an ergonomic angled pistol grip. The FinishPRO 23SXP and 23LXP will be available this fall. For information, visit www.senco.com.



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- Motor: 1 1/2 HP, 110V/220V, single-phase
- Precision-ground cast iron table with wings
- Table size: 25 1/4" x 40" • Arbor: 5/8"
- Arbor speed: 4000 RPM
- Capacity: 3 1/8" @ 90°, 2 1/4" @ 45°
- Rip capacity: 30" R, 12" L
- Approx. shipping weight: 221 lbs.

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- Max. depth of cut: 3" @ 90°, 2 1/4" @ 45°
- Approx. shipping weight: 546 lbs.

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- Motor: 2 HP, 110V/220V, single-phase, TEFC
- Precision-ground cast iron table size: 17" sq.
- Table tilt: 45° R, 10° L
- Cutting capacity/throat: 16 1/4"
- Max. cutting height: 12 1/2"
- Blade size: 131 1/2" L (1/2"-1" W)
- Blade speeds: 1700 & 3500 FPM
- Quick release blade tension lever
- Approx. shipping weight: 342 lbs.

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- Motor: 1 HP, 110V/220V, single-phase, TEFC
- Precision-ground cast iron table size: 14" sq.
- Table tilt: 45° R, 15° L
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade size: 92 1/2"-93 1/2" L (1/2"-3/4" W)
- Blade speeds: 1500 & 3200 FPM
- Approx. shipping weight: 196 lbs.



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- Motor: 1 HP, 110V/220V, single-phase, TEFC
- Precision-ground cast iron table size: 14" sq.
- Table tilt: 45° R, 15° L
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade size: 92 1/2"-93 1/2" L (1/2"-3/4" W)
- Blade speeds: 1500 & 3200 FPM
- Approx. shipping weight: 196 lbs.



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G0555P \$525⁰⁰ SALE \$495⁰⁰



30TH ANNIVERSARY 17" HEAVY-DUTY BANDSAW

- Motor: 2 HP, 110V/220V, single-phase, TEFC
- Amps: 20A at 110V, 10A at 220V
- RPM: 1725
- Precision-ground cast iron table size: 17" x 17" x 1 1/2" thick
- Table tilt: 10° left, 45° right
- Floor to table height: 37 1/2"
- Cutting capacity/throat: 16 1/4" left
- Blade size: 131 1/2" long
- Approx. shipping weight: 342 lbs.



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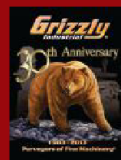
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- Max. width of cut: 12"
- Planer feed rate: 22 FPM
- Max. planer depth of cut: ½"
- Max. planer cutting height: 8"
- Planer table size: 12¼" x 23¼"
- Approx. shipping weight: 734 lbs.



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- Motor: 1½ HP, 110V/220V, single-phase, TEFC, 3450 RPM
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- Static pressure at rated CFM: 1.08"
- Intake port: 6" with included 5" optional port
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- Motor: 3 HP, 220V, single-phase, TEFC
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- Max. depth of cut: ½"
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- Cutterhead dia.: 3"
- Cutterhead speed: 4800 RPM
- Cuts per minute: 20,000 (G0656P), 21,400 (G0656PX)
- Approx. shipping weight: 500 lbs.



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G0656PX \$1225⁰⁰ SALE \$1175⁰⁰**

15" PLANERS



- Motor: 3 HP, 220V, single-phase
- Precision-ground cast iron table size: 15" x 20"
- Min. stock thickness: 3/16"
- Min. stock length: 8"
- Max. cutting depth: ½"
- Feed rate: 16 & 30 FPM
- Cutterhead speed: 4800 RPM
- Approx. shipping weight: 660 lbs.



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AND OUTFEED TABLES

- Motor: 5 HP, 240V, single-phase
- Max. cutting width: 20"
- Min. stock length: 8"
- Max. cutting depth: ½"
- Feed rate: 16 FPM & 20 FPM
- Cutterhead diameter: 3½"
- Number of knives: 4 HSS
- Cutterhead speed: 4800 RPM
- Table size: 20" x 25¾" (20" x 55½" with extension)
- Overall dimensions: 55½" L x 39½" W x 45½" H
- Approx. shipping weight: 920 lbs.



BUILT-IN
MOBILE BASE

G0454 \$1650⁰⁰ SALE \$1595⁰⁰

**WITH SPIRAL CUTTERHEAD
G0454Z \$2550⁰⁰ SALE \$2450⁰⁰**



18" OPEN END DRUM SANDER

- Sanding motor: 1½ HP, 110V, single-phase, 15A
- Drum surface speed: 4000 FPM
- Conveyor feed rate: Variable, 2-12 FPM
- Max. stock dimensions: 36" W x 4½" H
- Min. board length: 6"
- Min. board thickness: ½"
- Sanding drum size: 4"
- 2½" dust collection port
- Overall size: 35" W x 50" H x 24" D
- Approx. shipping weight: 328 lbs.



G0458 \$895⁰⁰ SALE \$850⁰⁰



15" DISC SANDER with Stand



- Motor: ¾ HP, 110V/220V, single-phase, 3450 RPM, 12A/6A
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- Dual voltage motor prewired for 110V
- Dust ports - 2" for belt, 2½" for disc
- 2300 SFPM belt speed
- Belt driven
- Approximate shipping weight: 122 lbs.



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- Air suction capacity: 2300 CFM
- Static pressure: 16.7"
- 7" inlet has removable "Y" fitting with three 4" openings
- Impeller: 12¾" cast aluminum
- Bag capacity: 11.4 cubic feet
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- Approximate shipping weight: 170 lbs.



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A man in a workshop, wearing a black polo shirt, blue jeans, yellow earplugs, and blue gloves, is operating a large industrial machine. He is holding a long piece of wood against the machine's bed. The machine has a vertical column and a horizontal arm. The background shows a brick wall and various workshop equipment.

Age

ANDREW MARQUES IS ONLY 24 AND HIS RECENT PURCHASE COVE WOODWORKING IN GLOUCESTER, MASS., MEANS HE HOPES TO BE IN BUSINESS FOR THE LONG HAUL

By Jennifer Hicks

PHOTO:

MICHAEL GORDON



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When Andrew Marques

purchased Cove Woodworking of Gloucester, Mass., in May, he made a bold decision to reestablish a failing business in a down economy. Hope and perseverance are the words he uses to express to his peers that he is committed to making the business succeed. The goal is to reconnect with former customers and exceed their expectations on new commissions. So far, things are moving in the right direction.



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About 80 percent of the shop's work is in the commercial sector, including conference tables for boardrooms.

The company serves the needs of commercial who seek quality custom cabinetry and furniture built in a timely manner. Products offered include custom tables, bars, casework, millwork and other specialty items. It currently has two full-time employees and would like to add a third cabinetmaker.

"Business has been steady and we've doing pretty well," says the 24-year-old Marques. "We just did all the tables and bars for a nearby country club and a yacht club. Things have been very difficult in this industry. At one point, the previous owner only called when he had work. We're looking to establish in a down economy and I'm young enough where, if for any reason it doesn't work, I can recover and find another job or get into another shop."

RIGHT PLACE, RIGHT TIME

Marques joined Cove Woodworking after graduating high school in 2007. He joined the Navy in 2009 and after his enlistment was up, found the business was for sale. The former owner had been looking to retire and sold all of his equipment to Marques, who has two silent partners.

"It just seemed like the right opportunity and I had the right money backing," says Marques. "We still work with all the same clients, both national and local."

"It wasn't a surprise to my family that I decided to purchase it. Since I was a little kid I was always in my grandfather's shop down in his basement. I loved doing woodworking, and did cabinetry and carpentry in high school. I just have a strong passion for it. I love making things that will last for many, many years and being able to say I built that."



Marques is the third owner of Cove Woodworker, founded by Dan Brummett about 30 years ago. Brummett was known for investing in craftsmanship rather than using expensive machines.

"Brummett, who's now in California, was really hands on and ran it like a communal, fun place to work. He'd take people that had no direction at all, that took interest in woodworking, and just taught them the basics," says Marques.

A MAN WITH A PLAN

Marques' main focus is getting a steady volume of work and gaining the trust of the shop's previous clientele.

"The focus is to get the business going,

Marques is a hands-on shop owner.



Head craftsman Scott Mulcahey, left, works on cabinet commission with Marques.



so here at the shop we are putting a lot of attention towards local clients," he says. "We are working with a few general contracting and architectural firms in Beverly and Cambridge, Mass. We were just contacted about a resort at Stowe Mountain in Vermont, which will be a really big job."

About 80 percent of the company's work is in the commercial sector, but Marques is hoping to have a better balance in the residential market.

"With the economy the way it is right now,

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we are seeing restaurants trying to spend more money while the independent homeowners are sitting on their money. But we are starting to see a change. We just got hired to do a large residential bar right here in town. We haven't seen that for four to five years. Our goal is to stick mainly with commercial jobs, but we aren't going to shy away from any project if asked.

"With the residential jobs, we try to stay around the North Shore area outside of Boston. A lot of the customers like to come to the shop to check out their projects."

The shop's commercial clients want contemporary and simplistic designs. Sapele and white oak are used most often, according to Marques. A typical job — such as 20 tables with chairs and bases for a restaurant — takes about six weeks to complete from order to delivery. The shop does its own finishing and submits numerous stain samples to clients to add more personal service.

BEATING THE DRUM

Keeping an eye on all aspects of the business has been Marques' biggest challenge



Mulcahey in the shop's DeVilbiss spray booth.

"The real challenge is reconnecting with the clientele. There's been four years of silence here because the previous owner let it fall by the wayside when he lost his motivation."

PHOTO: MICHAEL GORDON

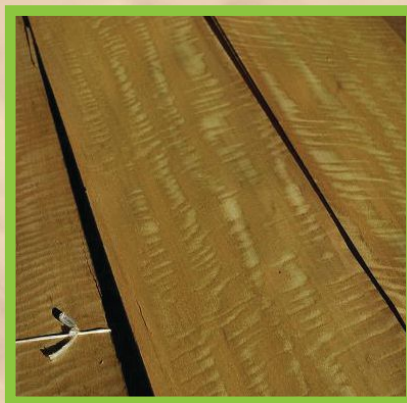
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space on the second floor.

"There is plenty of room here for us to work and add employees," says Marques. "Our goal is to have up to six full-time workers out on the shop floor. When this place was at its busiest years ago, there were 10 employees and we were still comfortable."

The shop features a Safety Speed Cut panel saw, SCM wide belt sander and DeVilbiss spray booth. Marques favors the Festool Domino joinery system and has plans to add a new dust collection system and a band saw in the near future.

"We're not seeing too much competition these days, since many of the other local shops have gone under," says Marques. "The real challenge is reconnecting with the clientele. There's been four years of silence here because the previous owner let it fall by the wayside when he lost his motivation. When potential customers see our name, they want to be reassured it's the same quality as in



The shop made these tables and chairs for a Marriott Hotel chain eatery, one of the many corporate establishments the company works for regularly.

thus far. He's been on the phone a lot, attempting to reconnect with former clients and arranging face-to-face meetings with those who respond favorably. He's also been busy sending flyers and postcards to local homeowners, establishing social media marketing efforts and experimenting with print advertising.

The shop resides in a light industrial section of Gloucester, a pleasant coastal town north of Boston. The shop is generous at 7,500-sq.-ft. and there's an additional 800-sq.-ft. of office

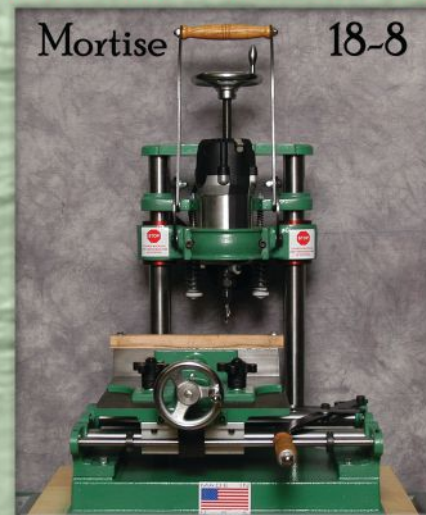
the past. That's a tough sell because you need the job to prove it. It's working, but many have moved on and found other means of getting their products.

"My best advice to anyone struggling right now is don't give up the fight. Use perseverance and motivation. If you put yourself into your business, it will give itself back. It might be tough, but keep going." **W**

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A Connection To Their Creations

Mark Richey Woodworking in Massachusetts prides itself not only on quality products, but also on training quality woodworkers.

By Lori Ferguson

The transition between external and internal environments is startling.

From the outside, the business looks like a factory — a 130,000 sq.-ft. industrial building in the shadow of a massive wind turbine just off a busy thoroughfare in Newburyport, Mass. But when you step through the front doors, the change in aesthetics and mood is immediate. As you walk toward the gracefully curved reception desk, you catch glimpses of dark wood paneling rolling away down a long corridor of open, airy offices. Step inside a conference room and your eye is immediately drawn to the richly patterned veneer of the conference table and the fit and finish of the cabinetry. Stand there for a few moments and you'll catch the vibe of the environment — warm and happy. This is a striking space, teeming with energy and creativity. This is Mark Richey Woodworking.

Founded in 1979 by Mark Richey and his wife, Teresa, in the basement of their Malden, Mass., apartment building, the company has since moved twice and morphed from a fine cabinetry business into a thriving \$23 million-a-year commercial enterprise that employs 80 and is nationally renowned for its architectural millwork. In the company's early days, it set new industry standards through the introduction of computerized cost accounting and other manufacturing innovations.

Today, it's raising the bar for businesses seeking to 'go green.' When the company relocated to Newburyport in 2005, they opted to rehab an existing derelict building in an energy-conscious way. They installed an Austrian-made biomass furnace that transforms sawdust and wood chips into a supply of clean energy that heat 80,000 sq. ft. of the facility and in 2009 set up an on-site 600 kW wind turbine generator that produces virtually all of the company's power. Underpinning



The shop's extensive portfolio includes work for the Kauffman Center for the Performing Arts in Kansas City, Mo.



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this commitment to identifying more efficient and environmentally friendly ways of doing business, however, is the company's relentless commitment to creating the best architectural woodworking possible.

"We're passionate woodworkers," founder Mark Richey says in the company's new promotional video. "We love the challenge of it and we love the innovative process of finding solutions to complex designs."

Puzzle solvers

Mark Richey Woodworking is deeply committed to maintaining the ideals of what woodworking should be, no matter the size of the project at hand, and to allowing woodworkers to translate their artistry into a viable corporate career, company COO Greg Porfido says.

"Commercial woodworking can be just as satisfying as a solo craft," Porfido says. "All the work we do is unique and every job represents a challenge. We're constantly solving puzzles, just as woodworkers do in their shops; the difference is that here at Mark Richey Woodworking, you work in a team with colleagues to solve problems and create projects on a grand scale."

Nowhere is the creative force of the team that Richey and Porfido have assembled more evident than in such undertakings as the Kauffman Center for the Performing Arts in Kansas City, Mo., a complex project executed by the firm during the course of three years and awarded the Architectural Woodwork Institute's Standard of Excellence award in 2012.

"From the moment we took on the assignment, we started innovating," Porfido says. "The job was originally drawn as a solid wood project, but we realized immediately that this concept would present big problems given the size of the facility. Movement in the wood would become an issue after a while; color would be all over the place; there would be an incredible waste of resources; and it would be hugely expensive. So we said, 'What if we did it in veneer instead?,' and then we came up with a process to do this that had never been used in



Mark Richey Woodworking has 80 employees working in a 130,000-sq.-ft. facility in Newburyport, Mass.

a commercial application before."

This type of problem solving is possible, Porfido says, because the entire company (with the exception of finance) is managed by woodworkers. Everyone comes to the table with a strong foundation in traditional woodworking skills, including the leadership team. Prior to starting the firm, Mark Richey studied architecture and design at the Boston Architectural Center, worked in furniture and woodworking shops around Boston and served a two-year apprenticeship building fine musical instruments; and Porfido trained at Boston's famed North Bennet Street School. This grounding in traditional woodworking informs every project decision the company makes and is also the

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bedrock of their in-house apprenticeship program.

Apprenticeship program

Although a handful of employees are graduates of North Bennet Street School and others are mature woodworkers who came to the company with well-established careers, most of Mark Richey's employees join the company as unskilled woodworkers. They are then put through an internal apprenticeship — a merit-based, self-directed program that

Woodworkers can be hard to find — they show up in the darndest places — but an apprenticeship program has helped Mark Richey Woodworking.



participants can complete at their own pace. As they go through their apprenticeship, employees are qualified on each skill, thereby allowing leadership to ensure that critical fundamental skills are in place and also enabling them to get to know the character and particular aptitudes of each employee.

"Lots of times, woodworkers are self-taught," Porfido says. "Our apprenticeship program allows us to remove any variability that may have been introduced early on in the education process. We want to make sure, for example, that everyone is reading the tape measure the same way."

Of course, the company has specialists in different areas, Porfido says, but they cross-train everyone. "Developing people and adding value to the experience is a fundamental tenet of Mark Richey Woodworking," Porfido says. "It's what we're all about." Mark Richey echoes this sentiment. "As a leader in the company, I've never lost sight of how important individuals are at Mark Richey Woodworking," he says.

Furniture maker Gary Armstrong is a perfect example of a Mark Richey Woodworking employee. A traditional craftsman with more than 25 years of experience, Armstrong has worked at Mark Richey Woodworking for nearly a decade. "As a traditional furniture maker, the idea of transitioning from chisels and hand planes to computer-controlled fabrication and high-tech machinery methods could not have been more daunting when I first began with Mark Richey Woodworking," Armstrong says. "But what I have come to discover in this highly specialist trade is that there is more than enough room to combine my traditional techniques with contemporary making methods. By using advanced technological innovations, there is much time, effort and cost to be saved without reducing quality or design features. As a woodshop craftsman, I found that my biggest initial challenge was to understand and appreciate the vast capabilities of complex CNC equipment — something I had never encountered before.

"Working in a highly innovative environment has certainly

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expanded my knowledge base and helped me to accomplish tasks in a way that I had not previously considered, enlightening me to new making techniques that have helped me in my own making practices," Armstrong adds. "Ultimately, it calls for a completely different way of thinking about the making process. The lean manufacturing concept pertains to each component part being completed in its entirety during a single production process, significantly reducing time and material waste."

A team approach

In addition to its rigorous internal education process, Mark Richey Woodworking also utilizes a team approach, both to encourage employees to invest themselves in each project and to enhance accountability. Most of the work the company does is unique and

It's a team approach at Mark Richey Woodworking, which prides itself on solving problems and creating projects on a grand scale.

teams are assembled for every job based on the needs and challenges of a given project. Working in teams provides context, which in turn reduces errors, Porfido says.

"Our intent is not to create a fall guy," he says, "but to create a better learning cycle as team members get direct, immediate feedback on what went well and what didn't."

"We're always looking for good people; we need them," Porfido adds. "The woodworkers we want at Mark Richey Woodworking are people who love to problem-solve, who are committed to the work and who really care about the product." Just because the business is housed in a large factory-sized building, Porfido says, people shouldn't assume the environment inside is dead and gray.

"What I especially like about working at Mark Richey Woodworking is the 'melting pot' of varied expertise and backgrounds, all of which combines to create a great learning culture," Armstrong says. "I find that I am still learning something new with every project, and when you've been in the trade as long as I have, it's nice to know that you're still able to advance your skill base, keeping your techniques current for 21st century demands."

"Our employees don't lose the individual connection to their creations just because they're working for a large business rather than as a solo practitioner," Porfido says. "They're not just a cog in the machine; we need everyone who's here to be present every day. A lot of places don't reward individual interest in the outcome of a given project. We do." **W**

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TIME IS ON YOUR SIDE

BY CHRISTOPHER HOFFMAN



Trade shows are a great opportunity to see CNC equipment in action.

An investment in CNC equipment can boost your bottom line and save dozens of man hours in the process

A few years ago, Stephen Kearns' employees would spend half a day setting up a shaper and then manually cutting and shaping a run of boards.

That's not the case anymore thanks to Kearns' big investment in CNC equipment, routers and other machinery that use sophisticated computer programs to automatically cut, shape and fashion wood.

One of his CNC machines rendered not only his two shapers obsolete, but seven other pieces of equipment as well, says Kearns, owner of Architectural Openings in Somerville, Mass., which specializes in high-end doors and windows. What once took hours now takes minutes.

Yes, the investment was huge — Kearns estimated about \$700,000 to \$750,000 for one machine with accompanying software and tooling — and the learning curve steep, but buying CNC equipment was well worth it, he says.

"I wish I had embraced some of the technology five or six years earlier," Kearns says. "It's just spectacular what it does."

CNC is not new. During the last decade, computer-driven machines that combine and automate the work of manual equipment have taken the tool-and-die, manufacturing and other industries by storm.

But the woodworking business has been slower to adopt CNC technology, says David Grulke, executive director of the Cabinet Makers Association. Facing a massive outlay for equipment, software and training, many of the smaller mom-and-pop shops that dominate the industry have been reluctant to take the CNC plunge, Grulke says.

THE NEXT LOGICAL STEP

CMA's recently released 2013 Cabinet Industry Benchmark Study confirms that. A majority of the 500-plus respondents — 51.6 percent — have no CNC capability.



John Proulx loads the SCM Routech CNC router at Architectural Openings in Somerville, Mass.

The survey, however, also showed that virtually all shops with CNC machinery like it. Plus, 84 percent said CNC made their businesses much more or a little more profitable. Even shops reporting problems adapting to CNC expressed no regret at buying the machinery, according to the survey.

None of this surprises Grulke, who said that the penetration of CNC into the woodworking industry is accelerating. Its long-term benefits are simply too large to ignore, he says. They include greater speed and

accuracy as well as lower labor costs through a smaller and often less skilled workforce, he says.

"All the guys who have bought machines are glad they did," Grulke says. "More are looking to switch. Over time, the efficiencies are going to exceed the costs."

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Shop owners suggest it takes at least a year to feel comfortable operating CNC equipment.

Grulke added that with most design work now done on computers, CNC is the next logical step.

"It only makes sense to make that next link and cut what you've designed," he says.

TECHNOLOGY TO THE RESCUE

Greg Sexton, owner of SNX Technologies of Sauk Rapids, Minn., which imports CNC woodworking equipment, sees fast growth ahead in the woodworking industry. He estimated that only about 20 percent of smaller shops, which make up about 75 percent of the industry, have CNC equipment. With prices falling to \$100,000 or less, CNC is increasingly affordable for those smaller businesses, he says.

"It's going to become bigger and bigger in my mind," Sexton says. "There's definitely room for growth. Coming out of five years of a terrible economy for these cabinet shops, what they are looking to add is technology, not people. It's easier to downsize technology than people."

The increase in productivity and accuracy makes CNC indispensable to stay competitive, Sexton says.

"The quality end of the product is far superior," he says. "There's a 30 percent savings in assembly because these cabinets are absolutely perfect."

You don't have to sell Anna Maria Vona, co-owner of Carmana Designs of Philadelphia, Pa., on the benefits of CNC. "A sea change" is how she describes the effect on their business of the CNC router that she and her husband Carmen Vona purchased in 2007.

"It's had a phenomenal impact," says Anna Maria Vona, whose company specializes in custom kitchen cabinetry and also does contract



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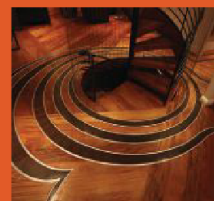
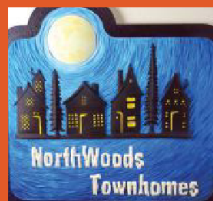
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work for several large retailers. "It's faster, more efficient and more precise. You hire less people. It was the right thing to do."

THE LEARNING CURVE

But the transition wasn't easy or cheap, she adds. First, there was the upwards of \$150,000 cost of the Techno CNC router, which the company is buying through a lease-purchase agreement, and followed by another \$30,000 for software, she says. Then there were soft costs ranging from having to crane the machine into their shop to training her husband to operate it, Vona says.

"It was five steps back to go 20 steps forward," she says. "It was a huge learning curve. But in the long run, it streamlines your business. It makes everything foolproof."

Kearns agreed that mastering the new technology takes time, patience and perseverance. He warned shop owners to beware of salespeople who make the transition sound easy. He advises buyers to do their homework when choosing a CNC and its accompanying software, being sure to choose a versatile and safe machine.

"It takes a year no matter what anyone tells you, come hell or high water, to learn to make it work," Kearns says. "The first year, you just fumble."

A key to making the investment pay off is using the machine as much as possible, Vona says. CNC also means less waste, she says.

"It's like making Christmas cookies and you're rolling out the dough," she says. "By the time you're done, you have little slivers of scrap."

Patrick Leet, owner of E Leet Woodworking, LLC in Plainwell, Mich., called his jump into CNC "a huge leap of faith." Like Kearns and Vona, he found the transition challenging. But eight or nine years after buying his first CNC machine, Leet is sure it was the right move.

"It's opened us up to a more diverse set of offerings," he says. "There's certain work that it's enabled us to do that we couldn't do previously. It made us much more diversified. It was definitely the right decision."

CNC's versatility helped Leet weather the tsunami that hit cabinetmakers like him after 2008 when the bottom fell out of the housing market. The technology allowed him to shift to other types of contract work and avoid layoffs at his eight-person shop, he says.

"I was able to bring in some of that work and it filled in the blanks," Leet says.

Leet agreed with Kearns that buying the right system is key to making CNC work. A bad purchase can sink a shop, he says.

"I know a lot of guys who bought machines and couldn't get it clicking," Leet says. "When you're talking about that kind of investment, it can be really rough for a company to get into."

INVESTING IN THE FUTURE

Leet and Kearns marveled at the accuracy and versatility of their CNC machines. They can cut other materials like Plexiglas and laminate. Unusual shapes and forms, curve work and multiple planes become a breeze. Drilling at odd angles is as easy as a keystroke. The machines are safer. And everything fits.

"Segmented product that has to be cut at 11 degrees and 31 seconds, you can cut exactly at 11 degrees and 31 seconds," Kearns says. "There's no eyeballing any more."

That accuracy and speed, however, have a downside: They multiply and magnify any error, Vona says. Her husband, who does the programming, always checks his work three or four times before turning on the machine.

"If you make a mistake, you're screwed," she says. "That's the only bad thing."

Finding qualified workers can also be a challenge, Leet says. Employees with the higher math and computer skills needed to program and operate CNC machines can be hard to find, he says.

"There's just less and less people that can do that caliber of work," Leet says. "It's a problem."

In spite of its challenges, Kearns urges woodshops to take the CNC route. The rest of the world is embracing more expensive technology and Americans must do the same, he says.

"We need to get more sophisticated here in our manufacturing in the United States," Kearns says. "I sympathize with those who say they don't have the money. But if we want to stay competitive, we need to invest in our infrastructure." **W**

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CNC'S LEARNING CURVE

BY JOHN ENGLISH

Once you take the first few steps, you're on your way to a more efficient way of woodworking

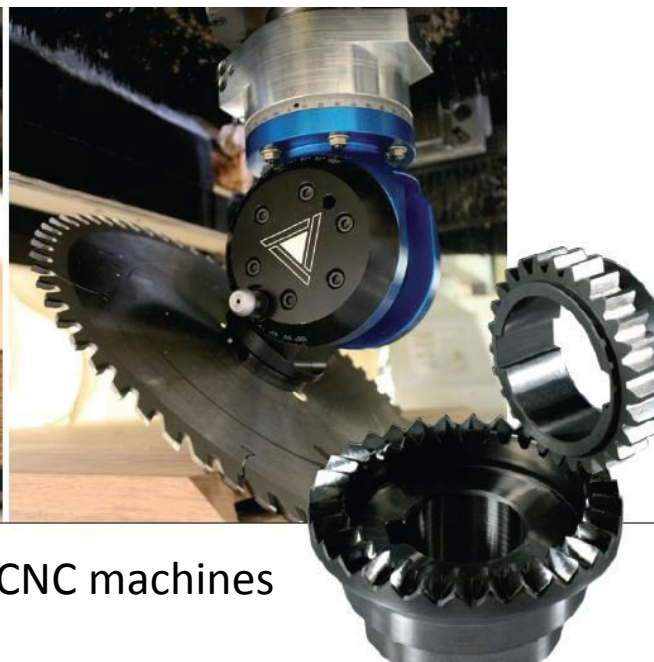
PHOTO: WILSON BAKER

Keeping up with technology is either a whole lot of fun or very intimidating. There just doesn't seem to be much middle ground. Either you're wired that way or you're not. Woodworkers come in both flavors — some are leading the high-tech charge and others avoid computers like the plague.

Unfortunately for the latter group, production work during the next

few decades is going to be more and more centered on programming. Even one-off custom work is being deeply affected by technology as drawing programs like Sketch-Up (sketchup.google.com) become even easier to use and generate more support in the form of how-to videos on YouTube.

The intersection of computers and cutters in the woodshop has



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Wesley Foxworth operates the Biesse CNC machine at Maple River Woodworks in Coward, S.C.

traditionally been CNC routing. That area has seen some major advances in recent years. Companies like Legacy Woodworking Machinery in Springville, Utah, are making it difficult for us dinosaurs to remain in denial. It offers several low-priced, yet high-quality, machines such as the cryptically-named Mini-Arty Personal CNC that reduces technology to the level that even the grumpiest old woodworker can handle with ease (yup, I'm one of them). That particular machine starts at under \$7,000, which is a pretty affordable way to enter the market. It also offers a lease option, which is increasingly more common among manufacturers of smaller CNC equipment. The Mini-Arty comes with lots of support, including an ArtCAM training DVD (4-1/2 hours), online CNC training classes and weekly online CNC training webinars, and a project library that includes drawing, CAD/CAM and read-to-run G Code Files. (According to Wikipedia, "G-code is a language in which people tell computerized machine tools what to make and how to make it".) Couldn't be simpler, right?

If the tech talk here is already wearing you down, be assured that there really isn't very much to it. Once you learn the basics, the rest just seems to fall into place. One nice thing is that there are lots of forums, discussion boards and blogs online, so if you don't understand something, just Google it and you'll soon run across a computer engineer who can actually speak a little English or at least somebody who can translate their strangely exclusive language.

A BRIEF HISTORY

CAD stands for computer-aided design and the idea here is that the part to be milled is first drawn in two or three dimensions by your

PHOTO: WILSON BAKER

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computer. Then that picture is sent to a machine with X-Y-Z axes and a router that can carve it in wood. The carving head's movement is controlled by a program that reduces your drawing to numbers, so that the motors driving the head along the axes can understand where to go. "CNC" stands for computer numerical control. (Another descriptive, CAM, stands for computer-aided machining and is a wider definition of the same concept.)

The first CAD/CAM programs were developed in the 1970s. Back

There are lots of forums, discussion boards and blogs online to help with the learning curve of operating CNC equipment.

then, mainframe computers were still using paper punch cards to tell the router where to go. Now, a third generation of personal computers is beginning to use something called "parametrics" to do the same job far more efficiently. In layman's terms, this newest twist on CNC essentially allows the designer (you) to customize very small parts of the



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program. McGraw-Hill defines parametrics as “a programming approach in which data are stored in external tables or files, rather than within the program itself, and accessed by the program when needed, so that the values of these data can be changed with relative ease.”

The bottom line here is that new science is now making it even easier for woodworkers to tweak their CNC operations and deliver more precise results. Taking that a little further, it looks like we’ll soon be making increasingly more

complex parts cheaper, while using more computers and fewer man hours or traditional woodshop practices.

If your shop is thinking of investing in CNC, here’s something to keep in mind: these machines don’t just work in wood. For example, Newsham’s Woodshop in Aldan, Pa., has been providing custom CNC work for more than a quarter of a century. It will quote work in solid wood, plywood and MDF, but also in high-density urethane, plastics such as Lexon and acrylic, high-density foam, Styrofoam, sign foam and even composites such as phenolic. That versatility suggests that a woodshop might be able to hook up with a sign maker or plastic



Blair Merrill at the controls of his Weeke BHP CNC router at Merrill Wood-working and Design in Rigby, Idaho.

components shop and keep the new machine busy enough to pay the lease or loan payments.

One other nice aspect of CNC technology is that, other than motors and cutters, there isn’t a whole lot of wear on these machines. They don’t deteriorate very quickly, so there’s a vibrant market in used setups. Woodshops often buy an entry-level machine that eventually leads to bigger jobs, so they upgrade and

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outgrow their original equipment. Sometimes, shops unfortunately don't pay their bills and the machines are repossessed. Either way, that means there are a whole lot of really good machines on the used market and this is an economical way for a shop to enter the realm of CNC. This is also the route many hobbyist woodworkers take to enter the professional arena. There are several reputable dealers online who buy and sell CNC equipment and many of the manufacturers have used machinery programs, too. The biggest issue with used equipment is support: how do you learn how to use it and whom do you go to for help. That's a big argument for buying from a manufacturer or at least updating the software on an older machine. (If a woodshop is selling you the equipment, perhaps you could ask them if they'll train you for a week in their shop before they pack it up and ship it.)

One can also build a CNC and there are both plans and kits available. This is a good route for a tinkerer who has plenty of downtime or a one-man shop that has a specific client in mind that needs lots of the same part made. For shops that have to get kitchens out the door to meet payroll, it's maybe not such a great idea.

Traditional woodworkers who are thinking of entering the CNC world also have another option. There are lots of shops around the country where a woodworker can rent time on the machines and several of these have CNC equipment. For example, in Portland, Ore., there is a 12,000-sq.-ft. facility on Southeast 11th St. called ADX (www.adxportland.com), where a woodworker can buy a membership. ADX has a KOMO 2.5D CNC router (www.komo.com) that handles projects up to 48" x 96". One might learn how to run it or even hire the shop for a while to make some parts.

A GAME CHANGER

One of the biggest benefits of introducing CNC technology in the small woodshop is repeatability. The shop can make the exact same part over and over again, with exactly the same dimensions, and this opens up a lot of marketing channels. Secondary manufacturers who consider hiring a woodshop to make parts are often adding other materials to those parts in their own shops later and they need the reliability of constant dimensions to be able to make those other processes happen without a hitch.

Hand-operated routers use bits, but CNC machines use heads. These can be quite complex and involve several different cutters and profiles, so there is less downtime changing over. The machine also works faster than a pair of hands (it doesn't have to walk around the job, blow away the dust or pick up an extension cord) and the operator can often be performing another shop task while the machine makes parts, so there are several levels of time savings involved.

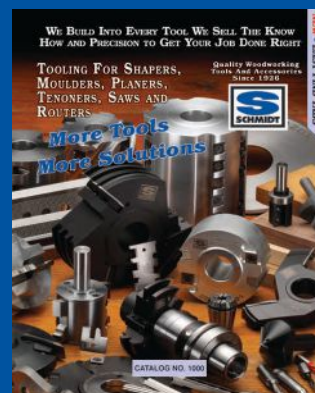
Machines come in different configurations. For example, a five-axis machine can perform a whole lot more carving tasks than a three-axis. The latter is often an ideal choice for flat work such as signage, while the former can create true 3-D sculpture.

CNCs are perfectly suited to template work. That is, an operator can create a template that allows the machine to do a certain task, then have it work on something else, and eventually come back to the original work. Having a template means that the second time around (and, of course, all subsequent times), setup is very quick.

As with all technology, there is a learning curve. For example, it takes a while to figure out how fast a machine can handle certain wood species or composites, depths of cut, different cutter dimensions and so on. It also takes a little time to learn how to operate the software. But therein, too, is an opportunity. A woodshop owner can stay behind a little later in the evening when the shop is quiet (and customer and employee interruptions have ceased) to get everything set up for an employee to start routing first thing the following morning. The boss could even come in a little late and thank his new CNC machine for the time it gave him to enjoy a decent cup of coffee on the drive. **W**

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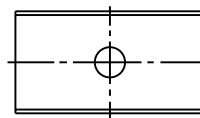
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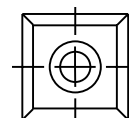
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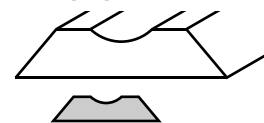


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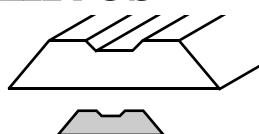
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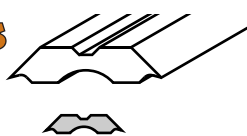
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should be applying it's principles on every job, for every client and when working with every employee.

I had a client a few years ago that canceled a job three weeks before we were scheduled to start. It was a 12-week job, had been rescheduled twice before at the client's request and required me to turn down equally profitable work in order to fit it into the new schedule. To the client's credit, they felt bad for pulling the plug and wanted to provide me with other work to begin four months later. Although I appreciated and accepted their offer, I also informed them that the deposit made on the canceled job was forfeited and would not be applied to the other work. Surprised that I was holding to the terms of the contract, they berated me for taking money I hadn't "earned." They refused to consider the three-month hole left in my schedule or the work I turned down to do their now-defunct job as reasons to uphold the agreed-upon terms. After a few weeks of negotiation, we came to an agreement that quite frankly neither one of us was happy with, but only because both parties had to make concessions.

Don't underestimate the power of diplomacy. It requires patience, industry savvy and an

ability to remain levelheaded. If it's within your power to diffuse a situation, do it. Be willing to work with people. Not at the expense of your business, but as a part of doing business.

The art of reasoning will always end in a win-win situation with those you do work for. As you voice your expert opinion in a diplomatic way, you will not only lessen disputes and better educate your clients, but you will develop a stronger client base as a result. People like doing business with those they trust. Trust is not something you gain because you're a likeable person, it's given because you're confident at what you do and you do what you say. Having the ability to articulate your knowledge in a way people understand will develop long-term relationships.

Good reasoning skills are not about telling people how much you know, but in educating them on how to put the knowledge and experience you possess into practical use for their benefit. After all, that is why they have asked you to be a part of their project. And not necessarily because you have tremendous knowledge on the subject, but because you know how to apply that knowledge to resolve their situation. **W**

David Getts is a certified kitchen designer and owner of David Getts Designer Builder Inc. in Seattle.

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FANUC CNC now offers a rechargeable battery unit kit that provides reliable long-term backup power for CNC machines and eliminates the use of disposable batteries, according to the company.

The unit allows one CNC system to be connected from a power source to the servo amplifiers, and it contains a rechargeable battery and charging circuit that supplies backup power to absolute pulse coders and separate type detector units.

The charging circuit monitors the voltage of the rechargeable battery, and it charges the battery when the voltage becomes low. Because the charging circuit works only when it is necessary, the rechargeable battery can be used for a long period of time. The average life span of the unit is more than 10 years, according to the company.

The kit includes all the necessary cables for one CNC system to be connected from a power source to the servo amplifiers and a connection manual. This kit is designed to be installed with Alpha, Alpha i or Beta i Servo amplifiers and separate type detectors.

For information, visit www.fanucfa.com.

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Exhibit touts furniture 'Made in Massachusetts'

By Jennifer Hicks

The Fuller Craft Museum will present "Made in Massachusetts: Studio Furniture of the Bay State" from Oct. 12 through Feb. 9, 2014, featuring 39 pieces derived from traditional prototypes as well as works that push the conceptual boundaries of furniture towards sculptural objects, according to the museum.

"In these exquisite pieces, furniture makers approach basic function with a contemporary flair, bringing to life a surprisingly broad range of furniture from chairs, tables and cabinets to pieces you don't encounter every day such as library steps, a human-sized candelabra, a music stand and a wall hung folding chair," the museum said in a statement.



The "Made in Massachusetts" exhibit will feature "The Aquarium" chest by Silas Kopf.

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List your Events in our Calendar

Woodshop News welcomes event notices.

Entries must be received by the 15th of the month, three months prior to the event.

Mail to: Calendar,
Woodshop News, 10 Bokum Road, Essex, CT 06426
Fax to: Calendar, 860-767-0642
E-mail: j.hicks@woodshopnews.com
Subject: Calendar Item

The events are also listed at no charge on the Internet: www.woodshopnews.com
Be sure to include: event name, date, location, sponsor, contact name and telephone number, and Web site URL if applicable.



"Since the mid-1950s, Massachusetts has experienced a growing interest in furniture made by individual studio artists. The exhibition makes important connections in this story of tradition



and innovation featuring works by studio furniture artists working not only in Boston, but also throughout Massachusetts. Their works represent rich and diverse contributions to the field of fine furniture making over the past 40 years."

Participating makers include Dale Broholm, Charles Crowley, Silas Kopf, Alex Krutsky, Kristina Madsen, Judy Kensley McKie, Jere Osgood, Tommy Simpson, Rosanne Somerson, Wendy Stayman and John Rais.

Other exhibit pieces include Charles Crowley's arc back chair and Wendy Stayman's end table.

The exhibition is a product of Four Centuries of Massachusetts Furniture, a collaborative project of the Fuller Craft Museum and 10 other institutions that features exhibitions, lectures, demonstrations, and publications to celebrate the Bay State's legacy of furniture making. For information, visit www.fourcenturies.org.

BINH PHO SHOW

Philadelphia's The Center for Art in Wood will feature the art of Binh Pho in an exhibition scheduled to run from Oct. 25 through Jan. 18, 2014.

"Shadow of the Turning" is a traveling exhibition of Pho's work in wood and glass, which blend the mythic worlds of fairy tale, fantasy, adventure and science fiction. His sculptures also tell the story of his journey from an idyllic childhood in Vietnam to his escape to the United States in 1979, according to the center. **W**

Fuller Craft Museum, 455 Oak St., Brockton, MA 02301. Tel: 508-588-6000. www.fullercraft.org

The Center for Art in Wood, 141 N. 3rd St., Philadelphia, PA 19106. Tel: 215-923-8000. www.centerforartinwood.org

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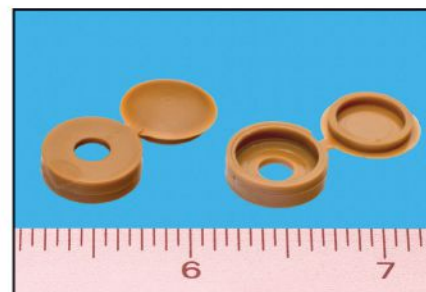


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CALENDAR

Organizations sponsoring meetings, classes or shows of interest to professional or hobbyist woodworkers are invited to submit items to: Calendar, Woodshop News, 10 Bokum Road, Essex, CT 06426; editorial@woodshopnews.com.

Include name, dates, location, description of event and a contact address or telephone number. Calendar items, which should be typed or printed clearly, must be received a minimum of 60 days before the event.

Please note that fees, as listed, might not include materials or shop fees. Check with a specific class for further details.

The complete national calendar of events is continuously updated at www.woodshopnews.com.

— Compiled by Jennifer Hicks

CALIFORNIA

Monthly—San Fernando Valley Woodworkers meetings are held on the third Thursday of each month at 7 p.m. at the Balboa Park Sports Complex, Gym Building, at 17015 Burbank Boulevard in Encino. www.woodshopnews.com.

sfw.org

Nov. 1-3 — The Woodworking Show, Southern California. Location: Orange County Fairgrounds in Costa Mesa. www.thewoodworkingshows.com

Nov. 8-10 — The Woodworking Show, Northern California. Location: Cal Expo in Sacramento. www.thewoodworkingshows.com

COLORADO

Nov. 22-24 — The Woodworking Show, Denver. Location: Denver Merchandise Mart. www.thewoodworkingshows.com

FLORIDA

Ongoing — The Dunedin Fine Art Center is offering six-week woodturning classes at its Cottage Campus taught by AAW professional member Tony Marsh for beginners and intermediate-level participants. Full day classes are held on Thursdays. Call 727-298-3322 or e-mail education@dfac.org for information.

Monthly — Woodcrafters Club of Tampa meets every third Thursday evening at 3809 W. Broad St. in Tampa. For information, visit www.tampawoodcrafters.org.

Oct. 9 — AWI Annual Convention. Location: Orlando. <http://awinet.org>

March 21-23, 2014 — The Woodworking

Show, Tampa. Location: Florida State Fair Entertainment Hall. www.thewoodworkingshows.com

GEORGIA

Aug. 20-23, 2014 — IWF, the largest showcase of machinery, materials, supplies, and services in the Western Hemisphere for woodworking and related industries. Location: Georgia World Congress Center in Atlanta. www.iwofatlanta.com

March 7-9, 2014 — The Woodworking Show, Atlanta. Location: TBD. www.thewoodworkingshows.com

MARYLAND

Jan. 3-5, 2014 — The Woodworking Show, Baltimore. Location: Maryland State Fairgrounds Cow Palace in Timonium. www.thewoodworkingshows.com

MASSACHUSETTS

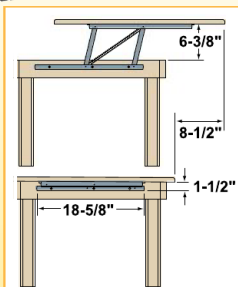
Oct. 6 — Marquetry: Does an Old European craft have any relevance for 21st century American furniture? Lecture by furniture maker Silas Kopf. Location: Fuller Craft Museum, Brockton. www.fullercraft.org

Nov. 3 — The Cabinetmaker and the Carver: Boston Furniture from Private Collections.

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Lecture by curator Gerald Ward of the Massachusetts Historical Society. Location: Fuller Craft Museum, Brockton. www.fullercraft.org

Nov. 20 — Bus tour to Mass Historical Society and Fort Point Cabinetmakers. Location: Fuller Craft Museum, Brockton. www.fullercraft.org

Dec. 1 — The Best Workman in the Shop: William Munroe and Concord Federal Furniture. Lecture by curator David Wood, Fuller Craft Museum. Location: Brockton. www.fullercraft.org

Dec. 1 — The Best Workman in the Shop: William Munroe and Concord Federal Furniture. Lecture by curator David Wood, Concord (Mass.) Museum. Location: Fuller Craft Museum, Brockton. www.fullercraft.org

Jan. 10-12, 2014 — The Woodworking Show, New England. Location: Eastern States Exposition in West Springfield. www.thewoodworkingshows.com

NEW JERSEY

Oct. 19-20 — 14th annual Fall Fine Art and Crafts at Brookdale Park in Montclair. www.rosesquared.com

Nov. 9-10 — Fourth annual Fine Art and Crafts at the Westfield Armory in Westfield. www.rosesquared.com

Feb. 21-23, 2014 — The Woodworking Show,

Somerset. Location: Garden State Exhibit Center Exhibit Hall. www.thewoodworkingshows.com

NEW YORK

Monthly — Sawdust and Woodchips Woodworking Association meetings are held on the first Thursday of each month at 6:30 p.m. at the Canton Woods Center in Baldwinsville. www.sawdustwoodchips.org

NORTH CAROLINA

Oct. 19-24 — Fall High Point Market. One of the largest furniture industry trade shows in the world, bringing more than 70,000 people to High Point every six months. The market includes 2,500 exhibitors spread out across 1.2 million sq. ft. of show space in 120 buildings. Location: High Point. www.highpointmarket.org

OHIO

Jan. 31-Feb. 2, 2014 — The Woodworking Show, Columbus. Location: Ohio Expo Center Voinovich Trade Center. www.thewoodworkingshows.com

OREGON

Nov. 15-17 — The Woodworking Show, Portland. Location: Portland Expo Center. www.thewoodworkingshows.com

RHODE ISLAND

Nov. 1-3 — Fine Furnishings Show for exhibitors handcrafted furniture and accessories. Location: Pawtucket Armory Arts Center. www.finefurnishingshows.com

SOUTH DAKOTA

Monthly — The South Dakota Woodworkers Guild meets the last Thursday of every month (except August) at various members' shops. The club has hand tool and woodturning groups. www.sdwoodworker.org

TEXAS

Oct. 25-27 — The Woodworking Show, Dallas/Fort Worth. Location: Big Town Exhibition Hall in Mesquite. www.thewoodworkingshows.com

March 28-30, 2014 — The Woodworking Show, Houston. Location: Montgomery County Fairgrounds in Conroe. www.thewoodworkingshows.com

WEST VIRGINIA

Oct. 4-6 — Fine Furnishings Show for exhibitors of handcrafted furniture and accessories. Location: The Garage at the Harley-Davidson Museum in Milwaukee. www.finefurnishingshows.com

Feb. 14-16, 2014 — The Woodworking Show, Milwaukee. Location: Wisconsin Expo Center Hall C in West Allis. www.thewoodworkingshows.com

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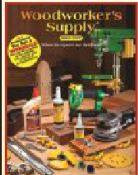
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Make Everything Shine!

New "Tiny" Spot LED Light

Tiny Spot 15



12V Spot
Material: Aluminum

- Ultra compact and extremely bright
- Fully connectable
- Emits virtually no heat
- Head swivels 360° and pivots 180° to direct light where it is needed
- On/off switch
- 39" connecting cable and screws included

LED-TS05S-CW

\$16.10 ea.
10+... \$13.52 ea.

Go to Web:
Catalog 42, Page 712

Infinity Light



120V Surface/Recessed
Material: All Metal Construction

- Connect up to 100 lights to 1 power supply
- Fully dimmable
- All metal construction
- Can be surface or recess mounted
- * Offered in cool white (140 lumens), pure white (120 lumens) and warm white (125 lumens)

LED-L1TW-*

Black & White		Matte Chrome	
Each:	10+:	Each:	10+:
\$18.00	\$16.00	\$24.00	\$21.00

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New Venus Ultra Bright LED Puck Light

Outshines a 20 watt Halogen Bulb... only 3 watts



24V Surface
Material: Aluminum with Clear PVC Lens

- Extremely bright 3-1/2" diameter produces a "Shower of Light"
- Installs easily with one screw
- Beautifully crafted all metal construction
- Ultra low profile, .25" thick
- * Available in Polished Chrome and Brushed Chrome
- * Available in Pure White and Warm White

LED-VEN-*

\$22.75 Ea. 10+ : \$19.10 Ea.

New Utopia Ultra Bright LED Puck Light



24V Surface
Material: Aluminum with PVC Lens

- All metal construction
- Surface or Recess mount
- Available in Matte Chrome
- * Available in Pure White and Warm White

LED-UTO-CHR-*

\$10.25 Ea.
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ADVERTISING INDEX

1-800-Bunkbed, L.L.C.	www.1800bunkbed.com	37
Amana Tool	www.amanatool.com	C4
ArtCAM by Delcam	www.artcam.com	54
XYZ Automation Inc.	www.AXYZ.com	29
Bainbridge Manufacturing	www.BainbridgeMfg.com	57
Beaver Tools	www.beavertools.com	31, 54
BENZ Incorporated	www.benz-inc.com	49
Berkshire Products	www.BerkProducts.com	57
Better Vacuum Cups, Inc.	www.GreenBVC.com	43
C.R. Onsrud, Inc.	www.cronsrud.com	8
cabinet vision / vero software	essential.cabinetvision.com	2
CAMaster	www.CAMaster.com	44
Castle, Inc.	www.castleusa.com	54
Charles GG Schmidt & Co.	www.cggsgschmidt.com	53
Connecticut Saw & Tool	www.ctsaw.com	58
DEWALT	www.DEWALT.com	4
Dispoz-A-Blade, L.L.C.	www.estausa.com	43
Elias Woodwork and Manufacturing	www.eliaswoodwork.com	10
Elmo Rietschle	www.vacuumpumps.com	52
EnRoute Software	www.enroutesoftware.com	47
Felder USA	www.felderusa.com	11
Festool USA	www.festoolusa.com	13
Grex Power Tool	www.grexusa.com	30
Grizzly Industrial, Inc.	www.grizzly.com	7, 32-33
Hearne Hardwoods	www.hearnehardwoods.com	55
Hendrick Manufacturing	www.hendrickmanufacturing.com	25
HOLZ-HER	www.holzher.com	26
INMES-USA	www.inmes-usa.com	51
JLT Clamps	www.JLTclamps.com	24
Klingspor's Woodworking Shop	www.woodworkingshop.com	15
Kreg Tool Company	www.kregtool.com	20

Laguna Tools Inc.	www.lagunatools.com	22
Lignomat USA, LTD	www.moisture-problems.com	28
MARTIN Woodworking Machines Corp.	www.martin-usa.com	35
Mozaik Software Inc.	www.mozaiksoftware.com	41
MultiCam, Inc.	www.MultiCam.com	12
Oliver Machinery Co.	www.olivermachinery.net	14
Oneida Air Systems Inc.	www.oneida-air.com	23
Osborne Wood Products, Inc.	www.osbornewood.com	5
Outwater Plastics Industries	www.outwater.com	63
Penn State Industries	www.pennstateind.com	50
PMK Family, L.L.C.	www.pmksystems.com	17
Precision Drive Systems	www.pdscolombo.com	3
RichLine Machines	www.RichLineMachines.com	39
RIKON Power Tools	www.rikontools.com	C3
Roberts Plywood, Inc.	www.getwood.com	38
SandMan Products	www.sandmanproducts.com	56
ShopBot Tools, Inc.	www.shopbottools.com	18, 19
Smith Woodworks & Design	www.niceknobs.com	56
States industries	www.statesind.com	46
Stiles Machinery	www.stilesmachinery.com	1
Techno, Inc.	www.technocnc.com	21
Thermwood Corp.	www.thermwood.com	36
T-Tool USA	www.t-toolusa.com	59
Vacuum Pressing Systems	www.vacupress.com	59
Vectric Ltd	www.vectric.com	42
W. Moore Profiles Ltd.	www.wmooreprofiles.com	27
Williams & Hussey Machine Co.	www.williamshussey.com	48
Witmer Wood Products LLC		51
Woodstock International	www.woodstockinternational.com	C2
Woodworker's Supply of New Mexico	www.woodworker.com	28, 44, 58



The master of turned hats

Award-winning Kentucky artisan Chris Ramsay produces one-of-a-kind turned wooden bowls and other sculptures, but is most known for his turned hats. He has made more than 6,000 of them since he started turning about 20 years ago.

In the early 1980s, Ramsay received a lathe as a gift from his twin brother and started turning as a hobby. After creating a rimmed plant holder for his wife, he noticed that it looked like an upside down pilgrim's hat without the belt buckle on it. He sensed a market and learned that the earliest wooden hats were made in the 18th century, and then spent \$1,000 on a three-day course in Vermont to discover a few techniques.

"I pretty much figured this out on my own. It took me about 100 hats to where I was making some decent-looking ones. To get them to bend, it was just trial and error," says Ramsay.

"I started to get a little bit of media coverage later on. There's something about a wooden hat. If you put one in a room of 1,000 people, all of them will want it. With a bowl, it might be just a few. But everyone is fascinated by the hats."

Ramsay sells his work through his website

(www.chriswramsey.com) and several high-end galleries. He has been featured in several documentaries and has made five hats for former President George W. Bush, who he met in the Oval Office to discuss the projects.

The total hat-making process only takes a few days. After starting with a square block, he spends about an hour turning the hat. It's then placed in an oval-shaped bending jig for about two days. The process is completed when he hand-sands the piece to get it smooth and

finishes it with a catalyzed lacquer. He prefers making the hats from cherry, walnut, maple and oak. His wooden hats are suitable for display or can be comfortably worn since they weigh only 7 to 9 ounces.

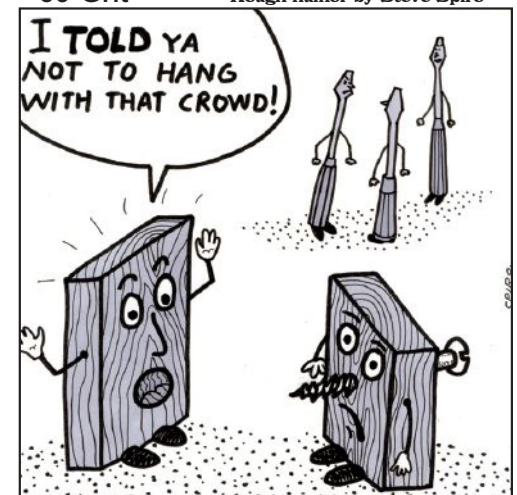
Ramsay's hat prices start at about \$700 and up depending on embellishments and logos.

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60 Grit

Rough humor by Steve Spiro



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