

WOODCRAFT[®]

Projects, People and Products

magazine

SPECIAL TABLE ISSUE!

Trestle Coffee Table

A mortise-and-tenon tutorial

Tabletop Glue-Ups

Pull together large panels with this shop-made jig

Traveling Game Table

Clever construction for portable play

Also in this issue:

■ PART TWO OF OUR
INLAID TABLE ■ 18
GREAT PRODUCTS
■ A DOCTOR IN THE
SHOP ■ HIDE GLUE
HOLDS ITS OWN ■
CARVING A SPOON



Think **Small**
Win **BIG**



A clock contest
for woodworkers
of all ages

PROJECTS 36-40

016 829600
074470022220

\$5.99



WOODCRAFT MAGAZINE

CMT ORANGE TOOLS™

Made In Italy

CMT is making massive capital investments in high technology in our factories in order to offer you superior quality products at an affordable price.

Our trademark **ORANGE** color ensures CMT industrial quality



Manufactured for Industry, utilized by the woodworker



Available through the extensive CMT distribution network and now available in all Woodcraft locations!



WOODCRAFT®
Helping You Make Wood Work®



**Where the contractor,
woodworker and cabinetmaker meet.™**

A STRONG CASE FOR AMERICAN CRAFTSMANSHIP



Basic 7 pc.
Router Bit Set #401

Tested #1 by Fine Woodworking Magazine in a head to head router bit test of 17 different brands.

- Made from solid alloy steel
- Precision ground for proper balance at high rpms
- Uses the highest quality American made micrograin carbide
- High hook and relief angles make for better chip ejection
- Made with thick carbide for extra sharpenings
- Superior edge quality compared to other manufacturers
- Made with only high quality American made grinding wheels
- Even the storage cases are made in the U.S.A.!

Whiteside Machine Co.

Claremont, North Carolina



800-225-3982

whitesiderouterbits.com

"American Made for the American Woodworker"

RIKON

Woodfast Series

New!

12" x 16" Mini Lathe

- ✓ 6 Speeds / Easy Access
- ✓ Self-Ejecting Tailstock
- ✓ 8" Tool Rest

**2-YEAR
WARRANTY**



Tools Designed By Woodworkers.

Model: 70-100

The RIKON *Woodfast Series* Mini Lathe offers more benefits and capacity, featuring a 12" swing and 16" distance between centers. The increased height offers an industry leading 9-1/2" swing over the tool rest base. A versatile 12 position indexing head/spindle lock allows the users to mark their work in increments for many jobs such as fluting, and gives the ability to remove the face plate with just one wrench. The powerful 1/2 HP motor is protected by a chip deflector, keeping the motor shielded from harmful dust. A quick flip belt cover allows easy access to change the six speeds from 430 to 3,900 RPM.

Features:



**12 Position
Indexed Head**



**Convenient
Tool Holder**

Introducing...

schepach

TiGer 2000

Wet/Grinding Sharpening System

New!

*Sharpen.
Grind.
Hone.*



Shown with
Universal Jig # TG70

**2-YEAR
WARRANTY**

- ✓ 1/6 Hp Motor
- ✓ 1 Amp, 60 Hz
- ✓ 120 RPM's
- ✓ 1-9/16" x 7-7/8" Grinding Wheel
- ✓ 1-3/16" x 7-7/8" Honing Wheel
- ✓ Powder Coated Steel Body
- ✓ 30 lbs.

Professional Grinding Results Made Simple.

Model: TiGer2000

The TiGer 2000 is ideal for customers who wish to get professional sharpening results. Whether you are sharpening lathe tools, planer, jointer knives or chisels, the slow speed grinding wheel gives an edge that will last long without losing the tool's temper. Using the TiGer 2000 jigs to correctly grind your tools removes the challenge of holding your tools at the correct angle, providing you with a professional edge every time. Save time, frustration and money by grinding your tools correctly.

Whether sharpening an axe, scissors, straight blade or woodworking tools the TiGer 2000 is the system for the home hobbyist or small shop.

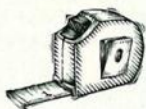
Included Accessories:



**Angle Guide
TG200**



**Universal Jig
TG70**



MARCH 2006

CONTENTS

WOODCRAFT MAGAZINE ♦ PROJECTS, PEOPLE AND PRODUCTS



15



29



35

Projects

15 Inlaid Hall Table, Part 2
Just the right piece for displaying treasured knickknacks and heirlooms, this project will challenge you.

BY ALAN YOUNG

22 Perfect Tabletops
Our author devised a simple, elegant solution for gluing and clamping large, flat panels.

BY JON T. HUTCHINSON

29 Power-carved Spoons
Not a table, but a close kitchen relative. For decoration or use, a wooden spoon is a classic, and we've given it a fun twist.

BY MIKE SCHWING

35 Coffee Table
This table could look right at home anywhere, and that's just one of its practicalities.

BY THOMAS SKAGGS

43 Traveling Game Table
Meet your challengers with this cleverly designed table for chess or checkers.

BY RALPH BAGNALL

ON THE COVER
A coffee table to show off that special stash of wood you've been saving. Cover photo by Thomas Skaggs.

CONTENTS

People

59 Amy Devers – Los Angeles, Calif.

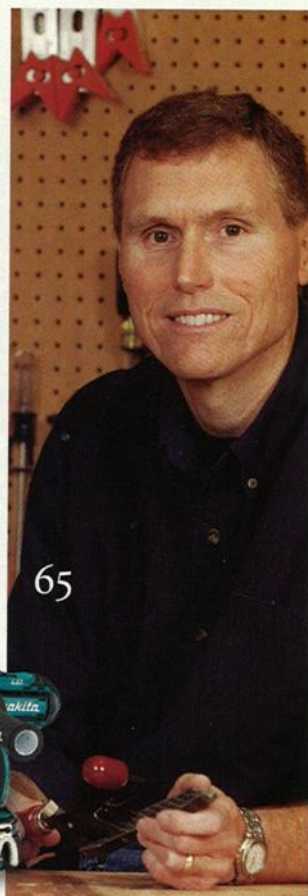
This host of two DIY Network shows is an accomplished furniture designer and builder. Her unique mixed-media approach and impressive résumé, along with boundless energy and enthusiasm, earned her a show of her own called "Freeform Furniture."

BY JOHN ENGLISH

65 Dr. Dave Klocke – Rochester, Minn.

Is there a woodworker in the house? An enthusiastic builder since childhood, this successful emergency room doctor is finding that his passions lie in creating fine furniture. He also built an amazing wooden kayak.

BY D WOOD



81



Products

81 Makita LXT 400 Lithium-Ion Combo Kit

A new Lithium-Ion battery and charging system means you get almost three times more lifetime work from your cordless kit.

85 Hitachi CJ110MV Jigsaw

Style is just one of the things that will attract your attention to this workhorse.

88 The Woodcraft Toolbox

A roundup of the latest tools

88 New & Notable: 12 new products

Departments

- 06 Cutting In
- 08 Benchmarks
- 12 Ask the Experts
- 50 Show Off
- 56 Tips & Tricks

70 The Practical Shop: Hide Glue

It's not as messy or smelly as you think! Our author gives a host of good reasons why hide glue is still around.

BY TOM IOVINO

73 Woodsense

Before you drop a bundle on hardwood lumber, read our primer.

BY UDO SCHMIDT

78 Back to School

Country Workshops is a bucolic retreat with a fascinating history and a multitude of class offerings in traditional woodworking arts.

BY BROOKS TOWNES

90 Woodworkers' Library

92 Calendar

94 Coming Up

96 Offcuts

A look into a woodworker's heart.



CUTTING IN

A gamble, a wash and a sure thing.

I'm not really in the business of offering investment advice, but I have developed a theory. It's not about the investment of money, but of a resource far more precious: time. If you're like me, there never seems to be enough of it. And sometimes you look back at several hours spent in the shop, or planning a project, and realize it wasn't the best investment.

Loosely speaking, any activity you choose to spend your time on falls into one of three categories: a gamble, a wash or a sure thing. By way of definition, let's start with examples we can all relate to.

One: cherry tomatoes. Yep, cherry tomatoes are always a gamble. I don't care where you go to eat, or where you buy them, you absolutely can't count on them being good. Popping one in your mouth and biting down – that's a gamble.

Two: relatives. Relatives are a wash, because for every good one, there's another one who annoys the living crap out of you. You can't always count on them – but you can't count them out, either. And there's nothing you can do about it at any rate, since you can't choose your relatives. Clearly a wash.

Finally, the sure thing ... and that's a little more personal. It's your favorite jeans, the comic strip that always makes you chuckle, your best friend, or if you're fortunate, your spouse. For many of you, woodworking has become a sure thing – or a sound investment of time – no matter what.

We like to think that *Woodcraft Magazine* is a sure thing – and a sound investment. We can offer you the collected talents and sensibilities of a group of professionals dedicated to presenting you with information about woodworking projects, people and products that is useful, enjoyable, and worthy of your time.

For example, Ralph Bagnall has invested tons of time in research and construction planning of a traveling game table that takes its cues from a centuries-old design for collapsible furniture. You get the benefit of his techniques, plans and secrets for a small investment in this magazine.

Paul Patterson, a Woodcraft Supply store owner in Greenville, S.C., brought to our attention the Intarsia Jungle project by Don Rose (page 55). We've printed it full-page so you could get some tips from his "investment."

One of our favorite problem solvers, Jon Hutchinson (he came up with the clever collet for safely holding the bottle stoppers of Issue 5), brings you his solution for easily and accurately gluing up boards into flat panels.

Our "Think Small, Win Big" clock contest (page 11) lets you compete for valuable prizes by turning a simple, elegant timepiece into a wooden work of art. We'll help out with the cost of the materials, so entering is no gamble.

And finally, Jack LaRoque, a regular contributor to Tips & Tricks, was so anxious to pass on his "best tip yet" (page 57) that he wasn't even concerned about getting paid for it. (Note: another sure thing is, we always pay for tips!)

At *Woodcraft Magazine*, our own investment strategy is to make you glad you invested in us. Research shows that if you come away from reading this magazine with just one project, tip, review, or other bit of information you're happy with, there's a good chance you'll look forward to reading the next issue. And that would make us happy – and would be a great return on our investment.

Time is precious, so invest wisely. And be sure to let us know how we're doing. Your valuable advice is a sure thing we couldn't do without.

Ken Brady
Publication Manager

WOODCRAFT[®] magazine

March 2006 Volume 2, Issue 9

Publisher

Ken Kupsche

Publication Manager

Ken Brady

Associate Editor

Sharon Hambrick

Contributing Editors

John English, Aimé Ontario Fraser,
Tim Rinehart, Udo Schmidt

Illustrators

Kevin Pierce
Shane Wiersma

Circulation Manager

Debbie West

Special Projects Manager

Lori Mossor

Administrative Assistant

Linda Rowe

National Sales Director

Tony Sarantakis

(847) 934-9515

Tony_Sarantakis@WoodcraftMagazine.com

Subscriptions

U.S. and Canada, \$19.97 for one year

Single copy, \$5.99

Subscribe@WoodcraftMagazine.com

Contact Us

Woodcraft Magazine

1101 Rosemar Road

P.O. Box 7020

Parkersburg, WV 26102-7020

(304) 485-2647

Fax: (304) 420-9840

Editor@WoodcraftMagazine.com

online: WoodcraftMagazine.com

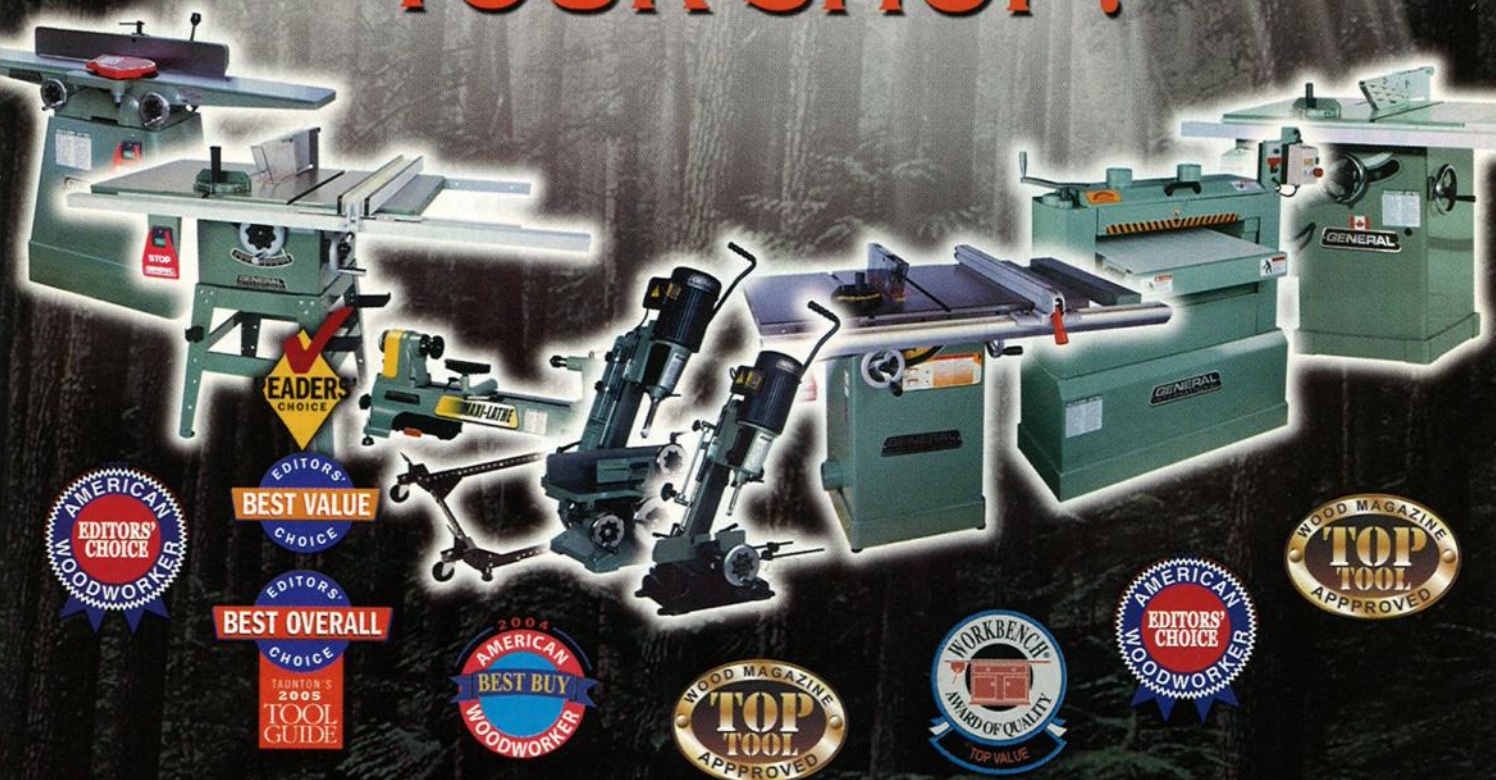
Woodcraft Magazine (ISSN:1153-2461), published seven times a year, has applied to mail at Periodicals Postage Rates, which is pending at Parkersburg, W.Va., and additional mailing offices. Published and printed in the United States by Dovetail Media Inc., P.O. Box 7020, Parkersburg, WV 26102-7020. Tel: (304) 485-2647. Copyright 2006 by Dovetail Media Inc. All rights reserved. Postmaster: Send address changes to Woodcraft Magazine, 1101 Rosemar Road, P.O. Box 7020, Parkersburg, WV 26102-7020.

Printed in the USA

Safety First! Working wood can be dangerous. Always make shop safety your first priority by reading and following the recommendations of your owner's manuals, using appropriate guards and safety devices, and maintaining all your tools properly. Use adequate sight and hearing protection. Please note that for purposes of illustrative clarity, guards and other safety devices may be removed from tools shown in photographs and illustrations in this publication and others.



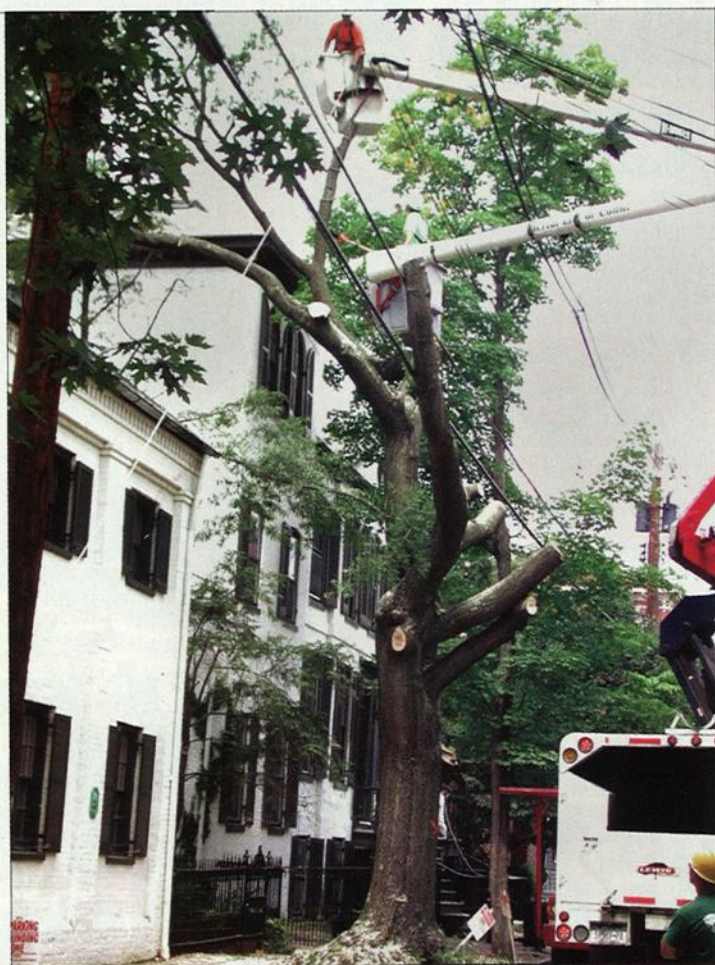
WHAT'S IN YOUR SHOP?



WWW.GENERAL.CA

BENCHMARKS

Historic tree lives on, Willie Nelson in wood, and an auction helps woodturners **By Sharon Hambrick**



Turners ensure willow oak's place in history

A DECADES-OLD WILLOW OAK THAT ONCE SHADED A SIDEWALK in downtown Annapolis, Md., lost a battle with its urban environment last year. But thanks to some local woodturners, it is now a permanent part of the city's history.

Trees are important in Annapolis, a city founded in 1649, especially in the historic section where this tree once thrived along Prince George Street.

"A majority of the trees in the historic district have grown to a very large size to where they are right next to the curb," city environmentalist Marisa Wittlinger said, explaining that this proximity to the street results in car doors and bumpers continually banging the trees. "People don't realize that unfortunately it is hurting the trees."

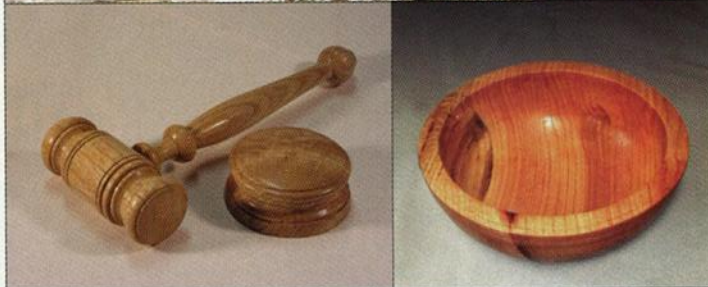
Wittlinger monitors trees for damage from cars, as well as weather and disease. The willow oak was among a dozen trees singled out for testing, to determine the size of the damaged hollow area, early last year. Five were found to be unsafe.

The next step was removal of the five trees, which brought Mayor Ellen Moyer into the picture. "When I told her I had to take those trees down, she was just devastated. She said, 'We have to do something. We can't just throw this wood away.' So I did a lot of research, and I ended up talking to Allen Alexopoulos."

Wittlinger's research led her to Allen Alexopoulos, president of the Chesapeake Woodturners. She invited the group to harvest the wood of the willow oak that city officials believe dates back to the early 1900s. In return, they agreed to craft some pieces for display at city hall.

"The willow oak just happened to be a sentimental favorite of the mayor, so both Marisa and the mayor were understandably elated that we were able to turn some of it into artwork," Alexopoulos said.

Harvesting wood is not new to the Chesapeake



Top: This venerable willow oak shaded Prince George Street in an Annapolis, Md., historic district until vehicular damage mandated its removal by the city. **Bottom:** Allen Alexopoulos crafted this gavel and sounding board and Cliff Poodry turned this bowl from the same tree; the turners presented them as gifts to the city.

BENCHMARKS

Woodturners. Members are always on the hunt for sources of quality turning timbers, and at least once each year they hold a “wood harvest” day. “The willow oak project was a rare opportunity to form a joint venture with a government agency that has access to many desirable trees that would otherwise be tossed into a landfill,” Alexopulos said.

But before the willow oak – in its “second life” – made its way to city hall, the group spent several months harvesting and turning.

“The harvesting process took a great deal of time and effort as the logs were well over 3' in diameter and very heavy,” Alexopulos said. After harvesting, each piece was examined for usage, cut into appropriate shapes, sealed with a wax-based sealer and stored.

Over the next several months Alexopulos and his colleagues turned the wood into historic mementoes for city hall. Alexopulos crafted a gavel and sounding board while Jeff Bridges, Cliff Poodry, John Noffsinger, Bill Kost and George De La Grange turned bowls and pens. At the group's October meeting, members presented the finished pieces to Mayor Moyer.

Wittlinger said the gavel and sounding board are sitting next to Mayor Moyer's chair in council chambers, and the pens will be presented to visiting dignitaries. Wittlinger is still exploring the best way to display the bowls and ensure their protection for the years to come. Although Wittlinger said mayors have traditionally not used a gavel, Alexopulos observed, “I have a sneaking suspicion that Mayor Moyer is going to use the gavel in at least one of her meetings!”

Other trees facing the same fate as the willow oak are being “nursed along,” Wittlinger said, in an attempt to delay the inevitable. When the time comes, the Chesapeake Woodturners will be called. “Any trees we take in the historic district, they have first dibs,” she said.



Auction benefits turners hit by Katrina

THIRTY-NINE WOOD PIECES DONATED by renowned woodturning artists, including Binh Pho's “Nola, Jazz with me once more” pictured above, raised \$54,439 in a December auction to benefit fellow turners affected by Hurricane Katrina.

Using a piece of a sycamore tree destroyed by the hurricane, Pho turned, pierced, carved, stained, and airbrushed this colorful piece. His title reflects memories of New Orleans — jazz and the French Quarter — and the hope that New Orleans will jazz again soon.

The auction was organized by Pho, a Chicago woodturner and Vietnam native, who asked 37 of his friends to donate pieces to be auctioned on eBay with proceeds going to the American Association of Woodturners (AAW) Emergency Relief Fund.

John Hill, treasurer for the AAW, said “The Spirit of New Orleans,” a piece donated by Frank Sudol, brought in the highest individual total: \$6,601. Prior to the auction, AAW members and chapters had already donated \$8,000 to the fund, established to help members and chapters affected by disasters. According to information on the AAW Web site, Hurricane Katrina severely affected many AAW members whose homes and businesses were total losses.

Woodcraft Magazine wants to receive information on news and events of interest to woodworkers. Send your news items and print-resolution photographs to:

Benchmarks
Woodcraft Magazine
1101 Rosemar Rd.
P.O. Box 7020
Parkersburg, WV
26102-7020
Editor@WoodcraftMagazine.com

Log on to WoodcraftMagazine.com today for complete access to even more great projects, product reviews and people profiles!

SUBSCRIBERS – Use your mailing label to sign in.
NEWSSTAND BUYERS – Use the Access Code: **DETAILS**

Carver meets his country music idol

FAIRFIELD, OHIO, WOODWORKER

NORBERT HARTMANN had no idea when he carved a bust of Willie Nelson that his country music idol would not only see his likeness but also autograph it.

Hartmann's wife Mary Ellen shared the story which she said began when her husband enrolled in a seminar at an International Woodcarving Show. The instructor told students to select someone they admired as a model for their carving and to consider the subject's life experiences as well as his face when deciding how to present the person. Following these guidelines, Hartmann turned a 64-lb. piece of wood into a nearly life-sized bust of Nelson featuring carvings about his life on all four sides.

"Norb has always admired Willie," Mrs. Hartmann said. "He added all of the things that make Willie who he is." The front view shows Nelson wearing a bandana around his head (his name upside down and backwards) and holding his famous guitar (signed later by the real-life Willie Nelson). The lyrics to "To All the Girls I've Loved Before" are carved into the right side, and an American flag is draped over his shoulder. Wil-



lie's Honeysuckle Rose tour bus and the song title "On the Road Again" cover the left side. On the back, a farm scene reflects the country music star's active support for Farm Aid.

Once he had committed Nelson's features and interests to wood, Mrs. Hartmann said the next step was to show the bust to Nelson in hopes he would sign it. When Nelson gave a concert at Belle Terra in VeeVay, Ind., the Hartmanns purchased tickets and arrived early. "We spoke with several band members about the possibility

of getting Willie to sign our statue," Mrs. Hartmann said. Eventually they were directed to Nelson's daughter Lana, who helped them reach her father.

It took three hours, Mrs. Hartmann said, but the carved Willie Nelson finally met the real-life one, who posed for a photograph and autographed his likeness.

The wooden bust now sits on the buffet in the Hartmann house and occasionally spends time on display at the local Woodcraft store.

Design in Wood contest open for entries

THE DESIGN IN WOOD EXHIBITION, the largest woodworking competition and exhibit of its kind, is accepting entries for the 2006 event to be held during the San Diego County Fair, June 10-July 4, at Del Mar, Calif.

The San Diego Fine Woodworkers Association will again co-sponsor the exhibition which is expected to attract 350 entries in 21 categories for the 25th anniversary "Ride the Tide to Fun" show that will feature a new theme-based award. More than \$18,500 will be awarded to winners, including \$1,000 for the Best of Show selection. Tom Christenson won Best of Show in 2005 with his hall table, shown here.

Entry forms are available by writing Design in Wood, San Diego County Fair, 2260 Jimmy Durante Boulevard, Del Mar, CA 92014. Include a stamped, self-addressed #10 envelope. Entry forms are also available online at: sdfair.com or sdfwa.org. Entry deadline is April 28.



Call for entries for the

WOODCRAFT[®]
magazine

Think **Small** Win **BIG** Mini Clock Contest

Woodworkers of all ages and skill levels are invited to submit their designs for the best use of a small quartz movement.

IT'S EASY, FUN & INEXPENSIVE. Just drill a hole and stuff a clock in it. We'll even provide the clock. See details below.



WHO CAN ENTER

THERE ARE TWO DIVISIONS IN THIS CONTEST.

- **General Contest** – open to woodworkers of all skill levels over the age of 16, as of April 1, 2006.
- **Junior Division** – open to woodworkers age 16 and under, as of April 1, 2006.

HOW TO ENTER

FIRST: Send a non-refundable \$5 entry fee, payable to *Woodcraft Magazine*, with your name, address, e-mail address (if available) and phone number to: *Woodcraft Magazine*, Mini Clock Contest, P.O. Box 7020, Parkersburg, WV 26102-7020. You will be sent a mini quartz clock movement (\$8.99 retail value) for use in your project entry. Requests and entry fees must be received by March 15, 2006.

NEXT: When your project is complete, submit photos via e-mail to Contests@WoodcraftMagazine.com by April 1, 2006.

- Finished size of project must be smaller than 3" x 3" x 7".
- Entry should include your name, age as of April 1, 2006, address, contact information (including e-mail, if available) and a description of the project (overall dimensions, materials used, theory, etc.).
- Entry should also include up to 5 digital or scanned photos, with descriptions. Include hidden attributes or special features that may not be visible from photos. Jpeg format is preferred, but gif, tiff and bmp are also acceptable.

RULES

- One entry per person, and must be the original and sole work of the entrant, and new construction done for this contest.
- Wood must be the primary medium for construction.
- Entry must contain one mini quartz clock movement, available from Woodcraft with your \$5 entry fee. **See below to get your clock movement.**
- Finished size of project must be smaller than 3" x 3" x 7" (would fit in a box 3" x 3" x 7").
- Employees, directors and franchisees of Woodcraft Supply Corp., Woodcraft Franchise Corp., Dovetail Media, Inc., or SBR, Inc., and all of its subsidiary companies and the immediate family members or members of the same households of such employees, directors and franchisees and co-sponsors are not eligible to enter.
- Contest offered only in the United States and its territories to legal United States residents. Void where prohibited by law.
- Contest promoters are not responsible for late, incomplete or misdirected entries.

JUDGING

Entries will be judged based on design, craftsmanship, and degree of difficulty. Design considerations include function, appearance, originality, materials selection and engineering. Craftsmanship considerations include surface preparation, appropriate and well-executed finish, and overall construction. Top 20 finalists will be contacted to send their projects to *Woodcraft Magazine* for final judging and possible use in an upcoming *Woodcraft Magazine* feature. All judges decisions are final.

PRIZES

1st Place – MAKITA LXT 400 LITHIUM COMBO KIT
2nd Place, 3rd Place and Honorable Mention prizes will also be awarded.

YOUTH PRIZES:

1st Place – X-BOX 360[™]
2nd Place, 3rd Place and Honorable Mention prizes will also be awarded.

ENTRY FORM AND CLOCK REQUEST

Please enter my name in the *Woodcraft Magazine* "Think Small, Win Big" Clock Contest and send me my choice of clock movement as checked below (choose one). My \$5 entry fee is enclosed, payable to *Woodcraft Magazine*.

Name _____

Address _____

City _____ State _____ Zip _____

e-mail _____ phone _____

I have read, understood and agreed to the contest requirements.

Signature _____ Age _____

Send completed form to:
Woodcraft Magazine
Mini Clock Contest
P.O. Box 7020
Parkersburg, WV
26102-7020

A. ☐



B. ☐



C. ☐



D. ☐





ASK THE EXPERTS

Getting Rid of Dust Nibs

Q: No matter how hard I try, I can't get the air clean enough to totally avoid dust nibs in my finish when it dries. Do you know of an easy method to remove these nibs short of sanding them off with sandpaper, and then having to go through all the work of rubbing the surface with various grits of abrasive compound to achieve an even sheen?

Bob Flexner responds:

It may surprise you to learn that a brown paper bag (the type found at a supermarket) can do wonders for solving your problem. Simply tear off a part of the bag, or fold it to create a flat surface, and rub the paper over the dry and hardened finish. As long as the nibs aren't really large, the paper will effectively cut them off so they can no longer be felt.

Not feeling the nibs is the key. When clients, friends or relatives admire your work, they almost always touch it. If it feels smooth, they are pleased. (They may even tell you how much they love the feel of wood!) They almost never inspect the surface in a reflected light trying to find the tiny dust-nib flaws, which may still be visible.

The "brown paper bag" trick works well on any finish, but obviously the finish must be allowed to harden well or you may create visible scratches. If you're not sure a finish is hard enough yet, rub a non-critical surface such as a leg before rubbing the top of a table. Alternatively, apply the finish to scrap wood simultaneously with your project and rub first on the scrap.

Unfortunately, this trick is good only for tiny dust nibs. It won't remove brush marks, orange peel or runs.

— Bob Flexner is the author of "Understanding Wood Finishing," now in its second, fully revised edition.



Rub out troublesome dust nibs with a piece of brown paper bag.

Avoiding Chisel Damage During Sharpening

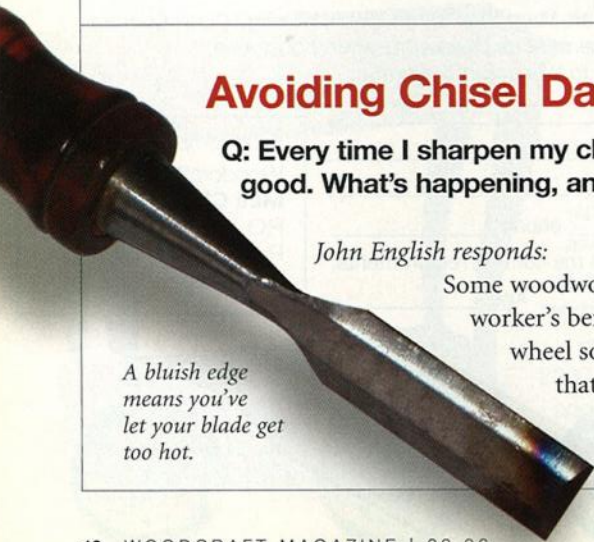
Q: Every time I sharpen my chisels, they go blue along the cutting edge. I know this isn't good. What's happening, and how much of a problem is it?

John English responds:

Some woodworkers still grind a primary bevel on a chisel using a standard metal-worker's bench grinder. That's a problem because the machine rotates the grinding wheel so darn fast. When high velocity is combined with the coarse-grit wheels that come with most grinders, a whole lot of heat is created.

Back at the factory where your chisels were made, engineers hardened or "tempered" the steel they used by subjecting it to extreme

A bluish edge means you've let your blade get too hot.



temperatures. This allowed them to control the balance between hardness and brittleness.

When your chisel tips turn blue, you are heating up the edge along the bevel to a point where you are actually drawing out the temper, or hardness, of the steel. This leaves it too soft to keep an edge, and that's a problem. If you want to stay with your bench grinder, you'll have to invest in a much finer wheel, hold the tool against the abrasives for only a second or two at a time, and keep dipping the tip into a basin of water to keep it cool. A far better solution is to go with a slow, wet grinder designed to sharpen chisels, plane blades, etc.

Those chisels you've been sharpening will have to have all of the blued steel and perhaps another 1/8" or so beyond that removed, before you get to steel that will take and hold an edge properly. Depending on how aggressive you've been, you may even have to go further. In a few cases, especially when the steel is quite thin, the entire chisel may be ruined. The only way to know is to sharpen it properly and see how it holds up in use.

— *John English is a contributing editor to Woodcraft Magazine.*

If you have a question about a woodworking technique or problem, let our experts give you a hand. Send your question, pertinent details and a photo (if necessary), to:

Ask the Experts
Woodcraft Magazine
1101 Rosemar Rd.
P.O. Box 7020
Parkersburg, WV 26102-7020
Editor@WoodcraftMagazine.com

Sealing Hand-Woven Seats

Q: I am replacing the fabric caning on two oak chairs. How do I seal or finish the fabric after it is in place?

Kerry Pierce responds:

I seat my chairs with two different kinds of material: Shaker tape (the fabric I think you're talking about) and rattan splint. Each material requires some consideration in order to preserve an appealing look for as long as possible.

In the case of rattan splint, the process is pretty simple. I just apply to the woven seat whatever finish I've put on the chair's wood frame, in most cases Waterlox. This tung oil dries to a durable finish and is easily washed with a detergent/water mix. Tung oil also helps the splint retain flexibility, an important consideration when you're working with a seating material that can become brittle if untreated.

Preserving Shaker tape is more problematic. I Scotchgard Shaker-tape seats after they're woven, and I do think that offers some useful protection from the kinds of spills dining chairs are apt to experience. However, nothing I know offers any permanent protection from the worst enemy of Shaker tape: fading.

Many years ago, I sold a pair of rockers with Shaker tape seats and backs to a local furniture store. The owner of the store placed the chairs in a window display that received the full afternoon sun, and I was dismayed to see, when driving past just a few months later, that the lovely violet color of the tape had faded to a most unattractive blotchy pink.

I have two suggestions for people who want to preserve the color of their Shaker-tape chair seats. First, choose subdued colors: white, cream or tan, for example. These seem less likely to appreciably fade. Next, protect the chairs from strong light.

It is possible to keep this material looking fresh for quite some time. In our living room, we have a chair seated with a checkerboard of blue and white, and it looks almost as good today as it did four years ago when I seated it. This is a result of two things: I applied Scotchgard to the seat after I finished weaving it, and we placed the chair in an area with relatively subdued light.

You might also try something I have done several times: weave the seat from splint, then prime it, and apply a couple of coats of latex enamel in a color of your choice. You'll be amazed at how well the paint will hold up.

— *Kerry Pierce is a regular contributor to Woodcraft Magazine.*



The hand-woven seats of your chairs will stay bright and beautiful longer if kept out of direct sunlight.

PROJECT NUMBER 36

PROJECT**PLUS** part 2



DISPLAY YOUR FINEST ON THIS ELEGANT HALL TABLE

BY ALAN YOUNG

With its graceful, curved brackets supporting an inlaid top of contrasting woods, this table is perfect for displaying treasured knickknacks and heirlooms. The advanced techniques used in this project challenge you to be creative and precise.

Woodcraft Magazine started this project in the previous issue by tackling the hardest part: the inlaid top. Now we will move on to the circular base, which actually requires similar techniques. Then we will make the three feet and three center support posts, and assemble the entire piece.

The table base

Begin by cutting two pieces of MDF to 9¼" square. Find the center of one piece and draw a circle with a radius that brings you as close to the four sides as possible. After the circle is drawn, center a protractor across one of your diagonal lines and make marks every 30° (Fig. 1). Now draw lines connecting the center point to the marks you made around the circle. This will leave you with a 12-piece "pie." Glue and clamp this to the second piece of MDF and let it dry. Set your

miter saw to 30° and cut the 12 tangent lines (Fig. 2). You could also complete this operation using a table saw and a miter gauge set at 30°. If you do, it would be helpful to add a sacrificial auxiliary fence to span the opening of the manufacturer's fence.

Run a ¼" dado down a long piece of the hardwood border stock, and run a corresponding dado in each of the 12 sides of the MDF disk. Drill a counterbored ⅜" pilot hole in the outside surface of each hardwood border piece. These holes are for screws that will be used as temporary clamps. Go ½" deep with a ⅜" Forstner bit, then finish with a ⅜" twist bit. The holes will later get plugged with contrasting dowels. Cut the border pieces, trimming them to fit as you move around the outside of the disk. Glue them in place with a spline between each of them and the MDF,

as shown on the tabletop on page 19. (Editor's note: The splines for the base are not included in the illustration because of space constraints. In Part 1, the splines were inadvertently omitted from the tabletop as well, but the illustration has been corrected.) Secure them with 2" drywall screws and clamps (Fig. 3).

After the glue has dried, remove the screws. The next step is to cut a groove in each seam where the hardwood pieces are joined, creating a gap for a spline in a contrasting wood. This serves as a decorative element as well as a device for hiding imperfections in the joints. I used a crosscut sled on my table saw (Fig. 4). Clamp the workpiece down for each cut. Rip stock for the splines, making it just thick enough that, in a dry fit, the material slides in and out of the groove with just a slight bit of friction. Work your way around the 12 sides, applying glue

to the splines and gaps, and tapping the splines in place (**Fig. 5**). After the glue dries, fill the screw holes with dowels of contrasting wood. Then turn the 12-sided piece into a circle, following the same sequence that was used earlier for the tabletop.

A triangular post

This project is assembled around a short triangular post which will stick through the round base, with a few inches above the base and a few below

it. The post will slide through a triangular hole. The three feet and the three tabletop brackets will all eventually be attached to this post.

Begin making the post by sizing stock to $1\frac{1}{8}$ " square and about 2' long. Then set your table saw to 30° , raise the blade height to 1", and lock the fence at 1". Test your setup with scrap. Then rip the piece of hardwood stock; you'll trim it to length later on (**Fig. 6**). Turn the piece end-for-end and rip the other side; this delivers a triangular molding.

Splined joints connect the post to the curved brackets and the feet, so mill a $\frac{1}{4}$ " dado in each face of the center post to accept a spline (**Fig. 7**). There's no need to clean up the faces of the molding, as they will be hidden. Use the triangular post to mark the opening in the base. Drill a $\frac{1}{2}$ " hole in the center of the base and cut the hole with a jig-saw (**Fig. 8**). File the opening until the post slides smoothly, but with just a bit of friction.

Lay out the veneer pattern for the base and proceed as you did with the top. Apply glue, and then clamp the veneer down with a caul that covers the entire surface. (Don't forget your plastic bag!) Once the cauls and clamps are removed, re-establish the triangular hole in the center by gently breaking through the veneer with a file. Smooth the edges of the hole and the outer circumference of the disk. Then run a $\frac{1}{4}$ " cove bit around both faces of the disk.

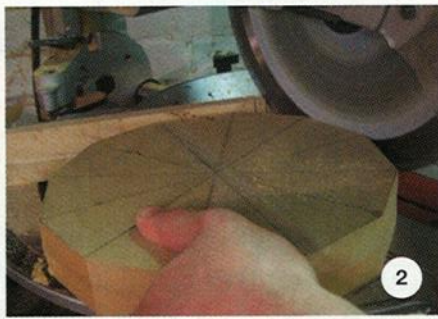
Make the feet

Each of the three sculpted feet is joined to the center post with a short stretcher, as shown in **Fig. 9**. This is attached to the center post via a spline joint, and to the foot with a bridle joint.

Begin making the feet by transferring the pattern from page 18 onto $1\frac{1}{2}$ "-thick stock, then bandsaw them to shape. Refine the cuts with a spindle sander, rasps and files. Using a tenoning jig and a dado head in the table saw, cut a 1"-wide opening across the top of each foot (**Fig. 10**). This creates the bridle for the stretcher. Then plow a $\frac{1}{4}$ " groove in one end of each stretcher. Glue the stretchers into the feet. Rout a profile on both sides of each foot using a $\frac{1}{4}$ " cove bit (**Fig. 11**), and you're ready to move on to the brackets.

Make the curved brackets

Three curved brackets run up from the bottom disk to the underside of the top disk (see pattern on page 19). The angles on their tops and bottoms, where they meet the disks, must be identical. I made a jig that allows me to do this and also create a flat spot

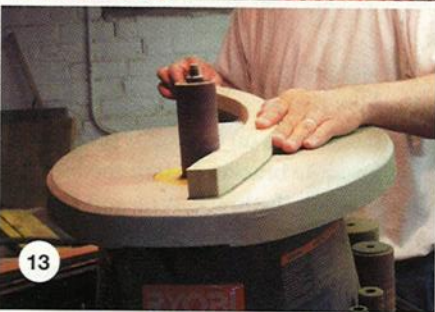


where each bracket is attached to the triangular post. Before we get to the jig, transfer the bracket pattern to your stock and cut out all three brackets on the bandsaw. I used an old rocking chair leg for the original pattern (**Fig. 12**). The one you'll use makes the brackets about 3" longer in each direction. Refine each curve with an oscillating spindle sander (**Fig. 13**), spokeshaves, files and any other tool that gets a nice consistent curve to the pattern.

Now on to the jig. You'll need two toggle clamps and a piece of $\frac{3}{4}$ " MDF. Place a bracket on the MDF so that one end of it exits at the upper right while the other exits at the bottom left. Mount two scrap blocks of wood or MDF against the backside of the curved piece, to establish this position and act as stops. Screw a toggle clamp onto each block, to clamp the curved piece in place. Now you are ready to make three cuts on each bracket.

For the first cut, turn the jig 90° and place it against the miter gauge on your table saw (**Fig. 14**). Adjust so the MDF is just short of the blade. In this position, make the first cut to trim the top end of the support. You might need to attach an extended auxiliary fence to the miter gauge, to support the jig. For the second cut, turn the jig 90° and place it against the rip fence, which is locked 13½" from the blade (**Fig. 15**). This will trim the jig and the curved piece, leaving a straight section of approximately 4" at the bottom of the bracket (where it will later be joined to the triangular post). For the last cut, return to the miter gauge and trim the other end of the bracket. This cut must be made last because the second cut creates a straight edge along the jig that can ride along the miter gauge. Cut all three brackets in this sequence.

After each bracket is cut in the jig, the next step is to run a $\frac{1}{4}$ " groove in the center of the straight section of each one (**Fig. 16**). This will allow for a splined joint where the three posts join the center triangular post at the top side



of the lower disk. Chuck a $\frac{1}{4}$ " straight bit in the router table at $\frac{1}{4}$ " deep, add a tall auxiliary fence to the regular one and adjust it so that the groove is milled in the center of the workpiece. In addition to the splined joints, I used some 1½" drywall screws to fasten the brackets to the centerpiece. Pre-drill and counterbore these holes (**Fig. 17**), as they will be plugged with a contrasting wood dowel.

Rip some spline stock to $\frac{1}{4}$ " thickness and just less than $\frac{1}{2}$ " wide. Cut the stock to the length of the straight

section on the base of the brackets. Dry fit all the parts and, when you're satisfied with the fit, apply glue. Clamp the center post, the splines and the brackets together (**Fig. 18**). Drive the screws through their predrilled holes. Make sure the triangular post doesn't protrude past the straight sections of the three posts.

With the base assembly upside down, apply glue to the top of the feet, stretchers, splines and the protruding center post. While clamping the feet in place, screw them to the base



(Fig. 19). When you have all three feet glued and fastened, turn the assembly over and drill and countersink three holes through the top of the base at the center points over each foot. Screw the base and foot together as shown in Fig. 20, and plug the holes with contrasting dowels.

Wrapping up

Position the leg set upside down so that the fleur-de-lis on the top is centered between the brackets. Mark the locations where the brackets lie and find each center. Use a brad-point bit to drill a $\frac{3}{8}$ " hole about $\frac{1}{2}$ " deep at each location. Drill a matching $\frac{3}{8}$ " hole in the end of each bracket. Glue a $\frac{3}{8}$ " dowel into each hole in the back side of

the top, apply some glue to the mating surfaces on the brackets, then place the base assembly upside down on the back of the top. Gently tap the sections together, wipe away any glue and let it set.

I used a tung oil varnish, followed by a gloss oil-urethane top coat on the two tables I built, but most any clear coat will make this table stand out. 🌲

TOOLS USED IN THIS PROJECT

Bandsaw, fixed-base router in router table, plunge router, laminate trimmer, table saw, planer, jointer, sliding compound miter saw or radial arm saw, spindle sander, random orbit sander, veneer saw, utility knife, "J" roller or veneer hammer, household iron, clamps, scraper, chisel, toggle clamps

MATERIALS, PART 2

Variety of sandpaper through 220-grit
Masking tape
Veneer tape
Veneer glue
Plastic sheet (trash bag)
Mineral spirits
Fine steel wool
Wood screws (6) 1-5/8" x #8
Drywall screws (12) 2"
Drywall screws (12) 1-5/8"
3/8" hardwood dowel, about 18"

CUT LIST, PART 2

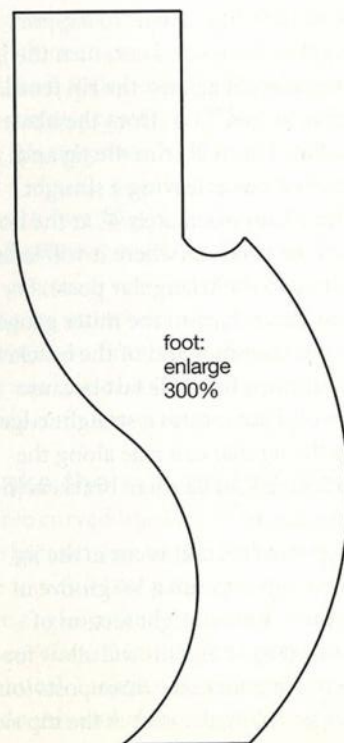
Substrate (2), MDF	3/4" x 9 1/4" x 9 1/4"
Border	1 3/4" x 1 3/4" x 46"
Splines between border and substrate	3/8" x 1/2" x 36"
Splines between border pieces	1/8" x 1 3/4" x 1 3/4"
Center post	1 1/8" x 1 1/8" x 24"
Center post splines	1/4" x 1/2" x 16"
Starburst wedges (12), veneer	1/32" x 7" cut at 45°
Feet (3)	1 1/2" x 5 1/4" x 11 1/2"
Feet stretchers (3)	1" x 1" x 4 5/16"
Curved brackets (3)	1 1/2" x 6 3/4" x 25 1/2"
Jig base, MDF	3/4" x 13 3/4" x 25"
Jig blocks, pine	3/4" x 4" x 6"

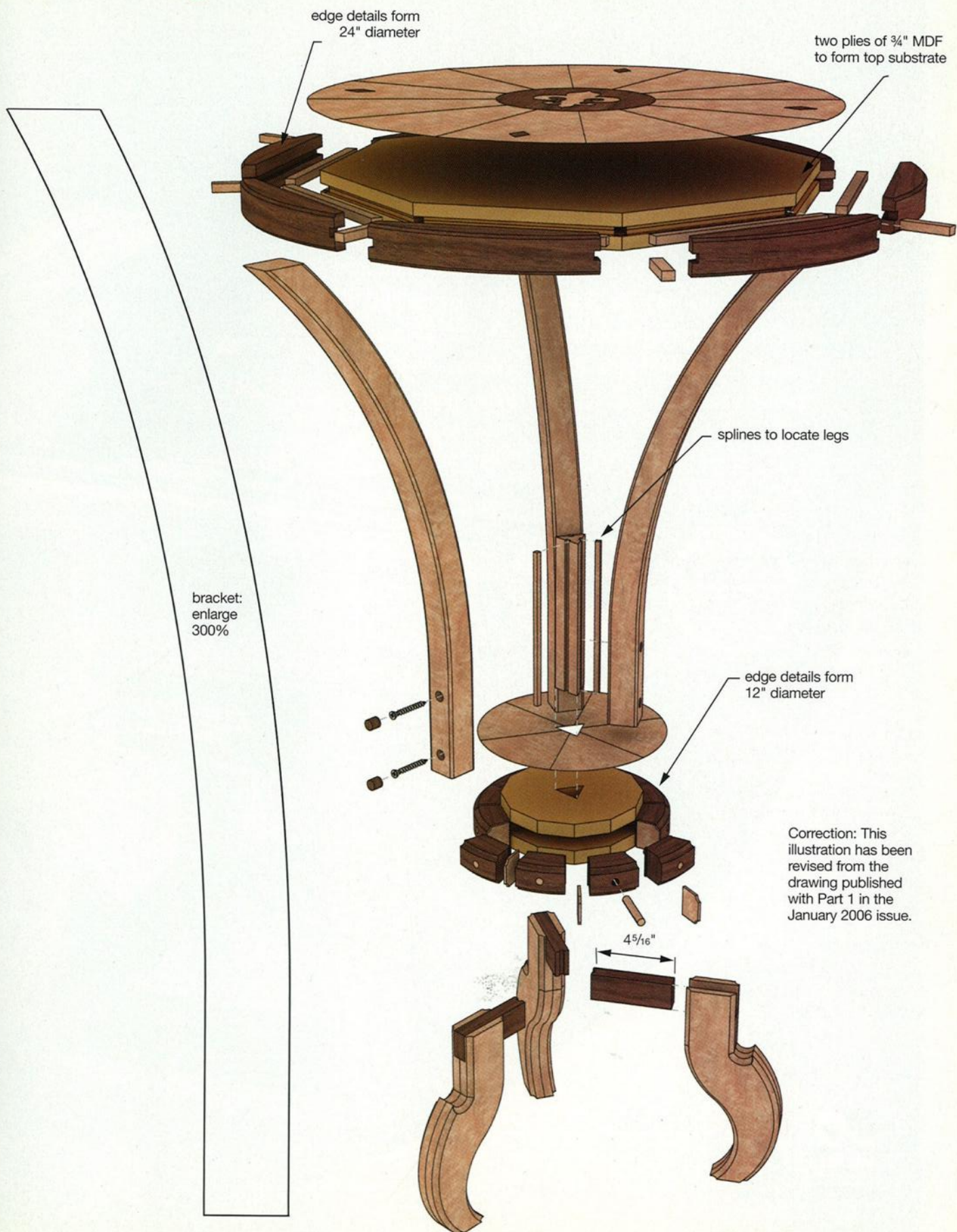
(Note: Except where noted, use hardwood species of contrasting color. Maple and walnut work well.)

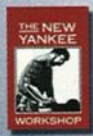


Alan Young

Alan Young is an engineering technician at the University of Michigan at Ann Arbor. From his home shop in Ypsilanti, Mich., he's rapidly making the leap from woodworking hobbyist to professional. See more of his work at woodwardwoodworks.com.



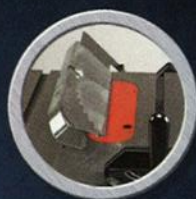




THE LEFT-TILT CONTRACTOR'S SAW. PERFECTED.

It should come as no surprise that DELTA® took the time to introduce left-tilt Contractor's Saws® the right way. After all, DELTA invented the Contractor's Saw category. And once you try a Delta there's no going back.

Besides a left-tilt blade and powerful 1-1/2 HP motor, you also have a choice of three fence systems including a Biesemeyer® or DELTA® UNIFENCE®. You even get maximum mobility with a newly designed base. Plus, its new collection tray captures 80-90% of the dust. So find perfection. Visit deltamachinery.com/contractor for more details, or to join our DELTA Owners Group.



LEFT-TILT BLADE



INTEGRATED
MOBILE BASE

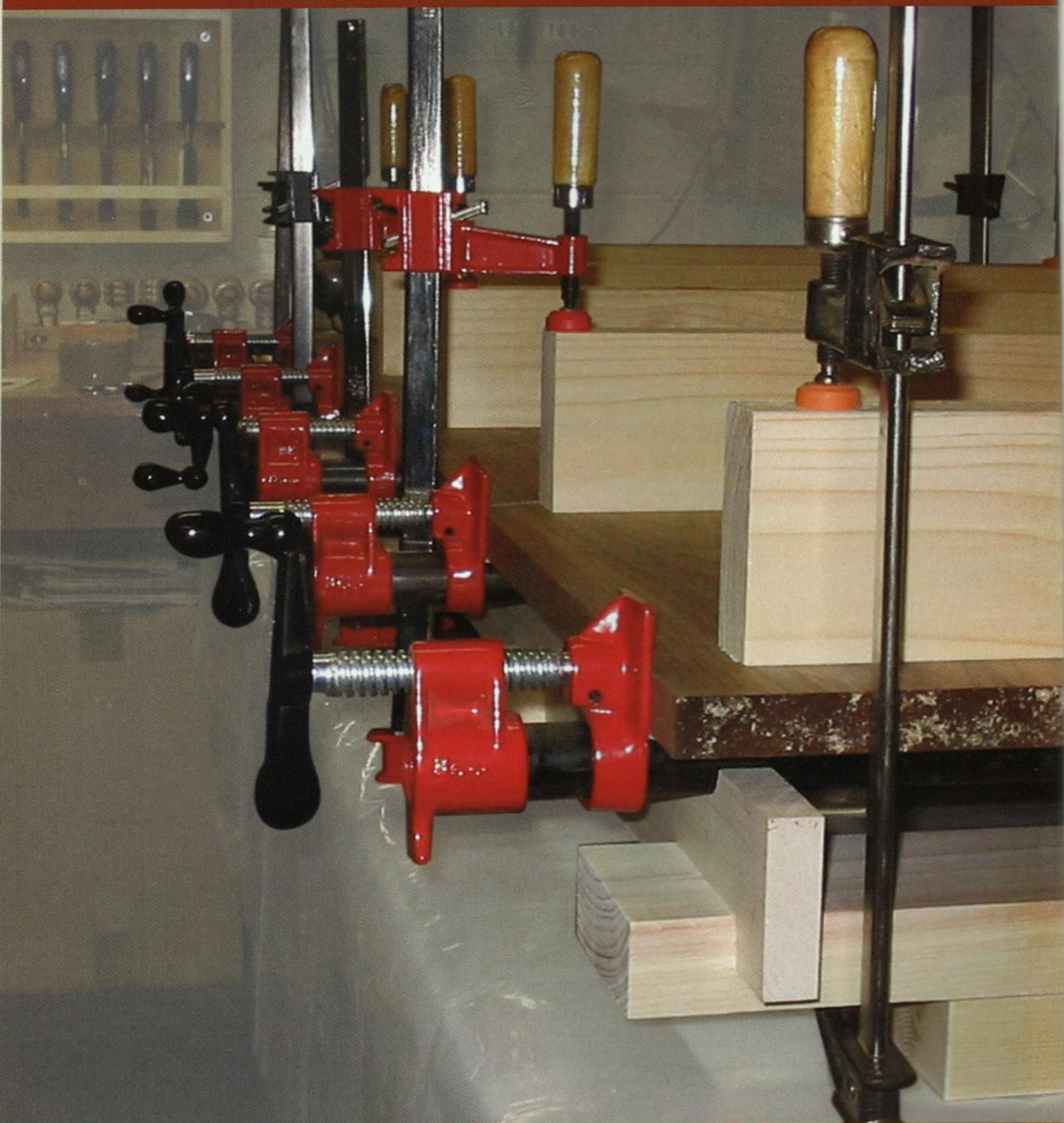


DUST PORT



 **DELTA®**
YOUR ACHIEVEMENT. OUR TOOLS.

PROJECT NUMBER 37



A FLAT-OUT SIMPLE SOLUTION FOR TRUE BLUE GLUE-UPS

Few woodworking tasks are more frustrating than gluing up and clamping a large, flat panel. For hassle-free tabletops the rest of your woodworking life, invest a few hours in building this nifty jig.

BY JON T. HUTCHINSON

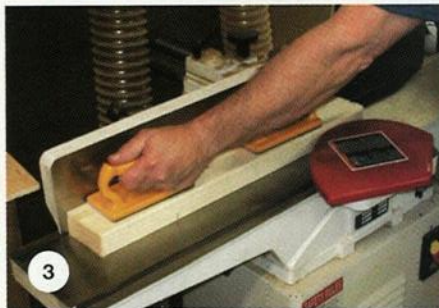
When my wife announced recently that she wanted a new coffee table, I began thinking about the best way to glue up a really flat panel for the top. This can be a harrowing experience. Positioning clamps under and over the boards simultaneously while trying to tighten them before the glue begins to set ... well, it just makes your heart pump! I've read many solutions for this, and even tried a few. It seems, though, that

I always end up running a hand plane across the surface of my panels, then a belt sander and finally a random orbit sander, just to get the surface flat. Then, of course, I have to flip the panel and go through the same procedure on the other side. In the end, I get a great workout — and a nice panel that's always a bit thinner than planned.

So, I went through my collection of woodworking magazines, searching for the one method that might deliver

reliable results — a panel that is flat enough not to require a whole lot of sanding and planing.

I use $\frac{3}{4}$ " pipe clamps in the shop. They're not exceptionally stable when sitting on a bench, tending to slide around and tip over. And they're never all the same height, because I've collected them over the years so they represent several manufacturers and models. I decided to build a jig that would cradle the pipe clamps, holding them



steady and keeping them all in the same horizontal plane. The jig would allow access under and over the panel, so I can use cauls (more on these later). The final result resembles a ladder and has very few major parts: a couple of 1x6 cradles to hold the pipe clamps and provide equal distance between them, and five 2x4 braces to hold the cradles on edge. Under the braces, I added some 2x4 risers, to separate the jig from my workbench, and some spacers to help line up the clamps. The $\frac{3}{4}$ " pipes, rather than the clamp heads or tails, are the only things that touch the jig, so now my clamps are always in the same horizontal plane.

Milling the parts

You could build all of the jig in high-end hardwood, but I decided to spend around \$20 at the local home improvement center on good quality 2x4 lumber for the braces and risers, and a

piece of $\frac{3}{4}$ " poplar for the cradles. You just need to make sure that your lumber is machined straight and square. The jig is made for a flat panel that starts life at 24" wide and 60" long. It will work for panels as short as 16" long and less than 24" wide, and you can modify the dimensions to build a jig for almost any size panel.

From one 2x4, cut three pieces that are 26" long (Fig. 1). I used a stop clamped to the table saw fence and my miter gauge to do this (Fig. 2). Cut two 26" pieces and a 23" piece from another 2x4. Then cut four 23" lengths from the third 2x4. The 26"-long boards will be the braces, while the 23" boards will become cauls later on. Save the two cutoffs from the first two boards. These will become the risers and test-cut pieces.

Joint one edge and one face on each piece (Fig. 3). Then plane them all to a consistent thickness and width (Fig. 4). (You could trim them to width on a table saw, but it's just as easy to run them through the planer.) Crosscut the ends square and trim them to their final lengths.

Now you're ready for the long 1x6 board that will become the two cradles. Joint one edge and a face, then clean the other face by running

the board through your planer. Cut two lengths of 63" and save the short cutoff. This will be used later to make some short spacers.

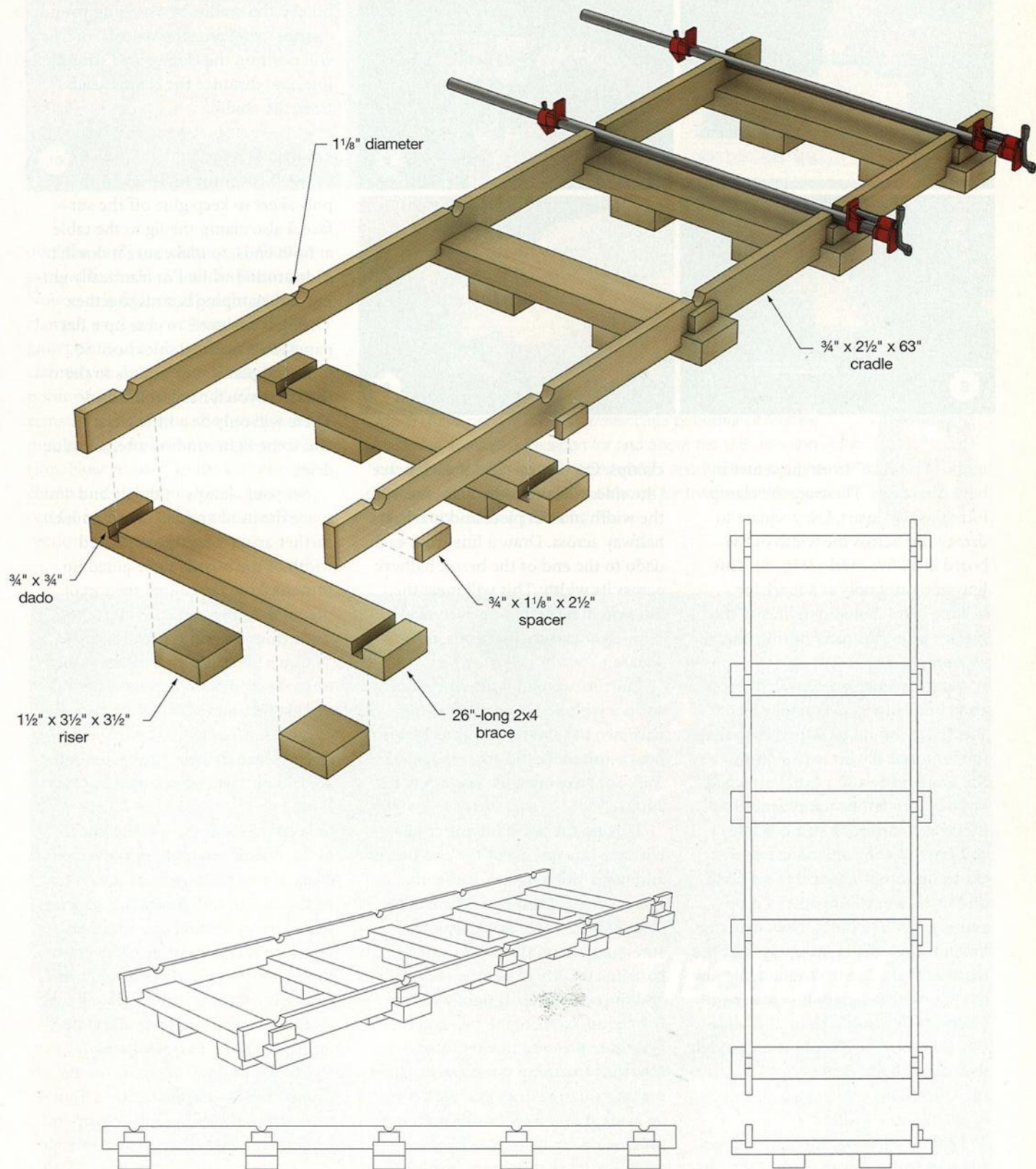
It's time to cut some dados. Each brace needs to have a dado cut near each end, into which the cradles are inserted. Here, my choice of weapon was the table saw, and I opted to use a dado head because the width of cut is infinitely variable. This allowed me to make extremely accurate cuts so the cradles were actually a friction fit; no glue was necessary to hold the jig together. A friction fit also makes it easy to disassemble the jig after use; it takes up a lot of storage space when assembled. If you intend to use the jig often, it's best to use a little glue and a couple of brads on each base brace to keep the jig aligned.

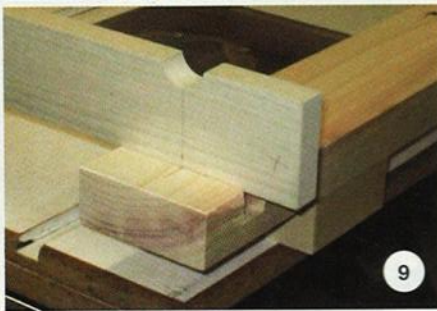
To cut the dados, I attached a long sacrificial scrap wood fence to my miter gauge and clamped a $\frac{3}{4}$ " stop to my fence. The dados should be cut $1\frac{1}{2}$ " in from each end. Adjust your blade to the thickness of the 1x6 that you planed, set it to make a $\frac{3}{4}$ "-deep cut, and mill all 10 dados. Stay with the table saw and switch back to a crosscut blade. From one of the leftover pieces of 2x4 (that were also jointed and planed), cut 10 pieces 3" long. These are the risers that will be glued to the bottom of each brace.

Assemble the jig

On the bottom side of each base brace, mark a line $4\frac{1}{2}$ " from each end and attach the risers (Fig. 5). The inset is designed to leave room for a bar clamp head to fit under each end of the braces (more on this in a bit). Hot melt glue works great for attaching the riser blocks. All the pressure on this jig is downward, so there should be no movement in the risers. But, if this is a jig you intend to use over and over, wood glue and clamps make a more permanent bond.

It's time to turn your attention back to the cradles now. The 1x6 is already jointed and flat. Find and mark the center of the board (at $31\frac{1}{2}$ "). Now





mark 14" and 28" from the center in both directions. These are the clamp locations, 14" apart. Use a square to draw a line across the width of the board at all five marks (Fig. 6). This line serves not only as a mark for drilling holes, but also to line up the cradles with the braces during final assembly.

Set up a fence on your drill press and chuck in a 1 $\frac{1}{8}$ " Forstner bit. The fence should be adjusted so that the center of the bit is 2 $\frac{1}{2}$ " from the jointed edge of a 1x6. I attached hold-down clamps to my fence to keep the board rock steady while drilling (Fig. 7), and added a $\frac{3}{4}$ " board on top of my drill press table under the workpiece, since I'd be drilling through holes. Now drill one hole through the board at each of the five locations. Return to the table saw to split the 1x6 lengthwise into two pieces, each just less than 2 $\frac{1}{2}$ " wide (Fig. 8). Run the offcut piece through the saw with the drilled side toward the fence. This creates two boards exactly the same width.

From the leftover piece of 1x6, rip a couple of lengths that are 1 $\frac{1}{8}$ " wide. Then cut 2 $\frac{1}{4}$ " long pieces from these lengths. These are spacers that will be glued to the jig, to help align the pipe

clamps. On the top side of each brace (the side with the dado cuts), measure the width of each piece and mark it halfway across. Draw a line from each dado to the end of the brace, halfway across its width. This will meet the line you drew earlier on each cradle (Fig. 9), to ensure that your jig is square.

Lay the two end braces on a flat surface with access on all four sides. (I have two benches; one is littered with bench-top tools, the other is against a wall. So, I use my table saw as my flat surface!)

Line up the mark on one cradle with the line on one of the end braces and begin pressing the cradle into the dado cut. Then press the cradle into the other end brace, making sure the lines on the cradle and the base line up. My fit between the dado and the cradle was so tight I had to use clamps to force the two together. Continue pressing the first cradle into the remaining three braces, again making sure the lines line up. Then go around to the other side and press the second cradle into each brace, making sure that they are lined up properly. Add the spacers along one side of the jig. Hot melt glue again works well here (Fig. 10). The spacers

are 1 $\frac{1}{8}$ " tall which will position their tops about $\frac{1}{16}$ " beneath each half hole in the cradle. In use, snug your clamps up against the spacers; they will position the clamps in a straight line, and distance the clamp heads from the cradle.

Using the jig

In use, I cover my table saw with a poly sheet to keep glue off the surface. I also clamp the jig to the table at both ends, to make sure it doesn't slide around while I'm frantically gluing and clamping boards together. The jig is designed to glue up a flat panel in its finished thickness. So, joint and plane your boards to the thickness you'll need in the end. There will only be a little cleanup and some light sanding after the glue dries.

Set your clamps in the jig and space the head and tail about an inch further apart than the combined width of the boards to be glued up. Run masking tape along the top of the pipes to prevent any transfer of color from the pipes to the boards.

Cauls are just pieces of wood that force the middle of the panel flat against the clamp bars. As the edges of the panel components are being forced together after gluing, the cauls are laid on top and clamped in place (Fig. 11). There are a few solutions to keep the cauls from being glued to the boards; one is to put several coats of polyurethane on them (very time-consuming). Another is to wrap waxed paper around one edge and tape it to each face of the cauls (also time-consuming). My personal preference is to run 2"-wide packing tape along one edge, and then fold it up onto each face (quick and easy!).

Place the boards in order on the clamps and start applying glue. Run the head of the center pipe clamp in until there's just resistance and a little glue starts to squeeze out. Place a caul (with its taped side down) across the boards, right above the pipe clamp. Put a clamp under the brace and



10



11

over the caul, and tighten it. Then go around to the back and do the same. Now gently tighten all of the pipe clamps, working out from the center. Don't put too much pressure on the clamps yet; just tighten them to the point of a little resistance. Place the remaining cauls over the other four pipe clamps and clamp each in position. Now go back to the center pipe clamp and tighten it. Work your way out from the center clamp in each direction, tightening as you go.

After the glue dries, remove the panel and scrape off the squeeze-out. Run a random orbit sander over both

sides. And now you've got a large panel that you don't need to run through an industrial-sized planer or a wide belt sander. Your panel is flat and ready to be trimmed to size. 🌞

TOOLS USED IN THIS PROJECT

Table saw, jointer, planer, drill press, hot glue gun, clamps

CUT LIST

Cradles (2), poplar	¾" x 2½" x 63"
Braces (5), pine	1½" x 3½" x 26"
Risers (10), pine	1½" x 3½" x 3½"
Cauls (5), pine	1½" x 3½" x 23"
Spacers (5), poplar	¾" x 1⅞" x 2¼"

Jon T. Hutchinson

Jon T. Hutchinson is the editor/associate publisher of *Markee Magazine*, a trade publication for and about the U.S. film and video industry. He's been an avid woodworker and furniture designer for 30 years, at times for profit, but always for the love of the craft. He and his wife live in Deland, Fla.



Titebond®
Wood Glues

The Woodworker's
Choice for Generations.

titebond.com 1-800-347-GLUE

TOOLS: Bandsaw, hot glue gun, inflatable sanding drum, flexible-shaft power carver, various burs and bits

TIME: A few hours

MATERIALS: 3" x 3" x 14" hardwood blank, sandpaper in various grits up to 500, oil finish

POWER SPOONS

By the time you perfect the art of carving wooden spoons, you might not want to use them for stirring soup. For use or display, our power-carved version is a fun project.

By Mike Schwing

I'm willing to bet you have at least one wooden spoon in your kitchen already. It is probably well worn and utilitarian, with a straight, round handle; it probably looks like just about every other wooden spoon.

But there's more to the wooden spoon than meets the eye. A hand-carved spoon can be a beautiful gift that is a pleasure to give or receive. Whether for use or display – your design and finish will dictate that – a wooden spoon is an object full of possibility.

Creating a spoon is not difficult; we will be using only a few basic power carving tools. One thing that makes the wooden spoon a good project choice for beginners is that it requires no difficult corners or detailed areas. But experienced carvers also love to make spoons, and find themselves incorporating interesting and challenging designs.

We will be using a rotary flexible-shaft carver — a Foreman in this case. You can use any other type of rotary carver, including a handheld Dremel, but you may wish to create a smaller spoon if going that route. I find that handheld rotary tools lack the torque



1. Draw the top view on your blank, transfer several points to an adjacent side, and draw the side view.

to spin large bits and burs.

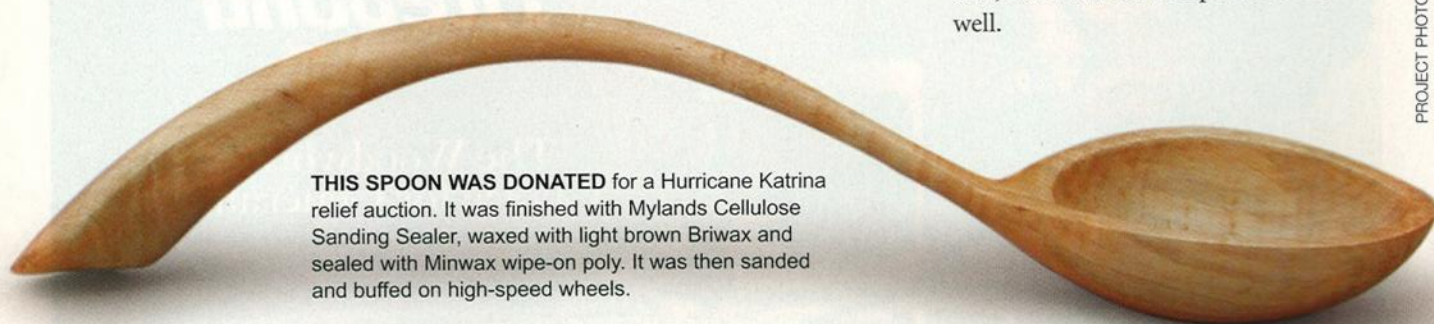
Bit and burr selection is pretty easy. I prefer round burs for spoon carving. It is helpful to have both coarse and fine grit burs. My flex-shaft carver will spin 1" ball bits with no duress, and I suggest that size for this project, if your tool can handle them. The 1" bit may be too big for hollowing out smaller spoons, so a 3/4" or 1/2" ball-shaped bit makes a good choice as well.

My typical spoon begins with a 3" x 3" x 14" blank and usually winds up about 13" long. Now is the time to decide how you want your spoon

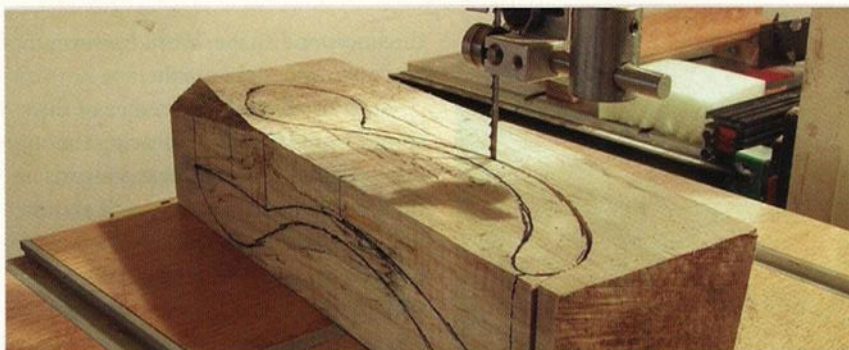
to look. Will it be artistic, useful, or both? I hope that seeing some of my spoons will give you some ideas. Give your spoon some flair and dimension by adding a graceful curve or an unexpected dip.

Imagine looking at your spoon from the top down, and draw an outline of it on one side of the blank. Then transfer some of the major points on your design straight over to an adjacent side. The points I use are: both ends, the halfway mark, the point where the bowl of the spoon meets the handle, and the high point in the handle.

Now picture the spoon from the side, and draw the side profile on as well.



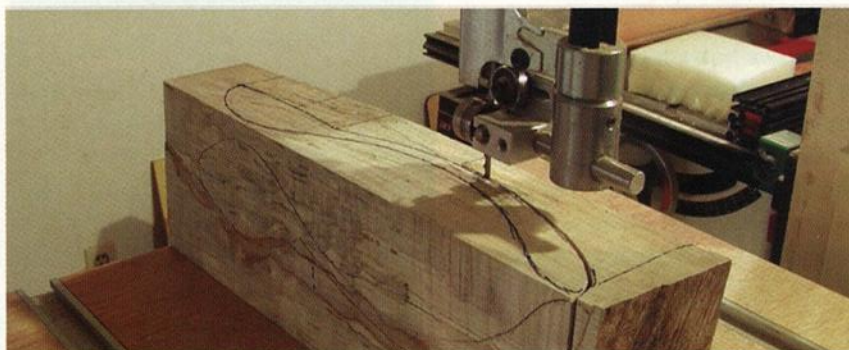
THIS SPOON WAS DONATED for a Hurricane Katrina relief auction. It was finished with Mylands Cellulose Sanding Sealer, waxed with light brown Briwax and sealed with Minwax wipe-on poly. It was then sanded and buffed on high-speed wheels.



2. Bandsaw the profile from the top, cutting just outside the line. Try to end up with only three pieces: two offcuts and the spoon.



3. Using a hot glue gun or double-sided tape, reassemble the pieces.



4. Cut the side profile.



5. Voilà! Disassemble and find a nicely shaped spoon blank.

A LADLE with the handle drilled for a leather strap for hanging — made from silver maple, and left with a natural finish.

Follow steps 2-5 on this page to create your spoon blank. The procedure is simple, and it's always a thrill to pull apart the pieces after the second series of cuts.

When you get more comfortable with this procedure, a slightly taller blank will yield two spoons with identical top-down profiles. You'll have to draw both side profiles individually.



6. Shape the bottom of the spoon's bowl with a coarse round burr.

We will work the bowl of the spoon first as opposed to the handle, because the handle can become delicate as it is shaped and thinned. Be sure to wear a dust mask and safety glasses (an apron is nice, too — carving is dusty work). Make sure you are working carefully, in a distraction-free environment, while your power carver is running.

To ensure the bottom of your spoon will have a nice round shape, draw a line down the vertical center and carve in the same direction, from the outer edge to the centerline.

You will probably notice that cutting from some angles is easier than others, because of differences in grain direction. Sometimes the difference is quite dramatic. When you sense a change in cutting effort or quality, try turning the workpiece around.

If you notice the wood burning, the speed of your tool might be too high, your strokes might be too slow, or perhaps both. Make adjustments until you are cutting comfortably, without burning the wood.

Carve one side of the bottom of the bowl, then try to duplicate that shape on the other side, carving up to but retaining that line you drew down the middle. You will be carving across, rather than with, the centerline you drew earlier. Move from the rim toward the pencil line, up, over, and back down to the other side. Don't worry about making the profile perfect;



7. Refine the bottom of the bowl by carving over and across the grain.

you'll have plenty of time to refine it. Frequently examine the spoon from the front as you carve, checking for symmetry.



8. Turn the spoon over and start to hollow it out.

Now we'll start on the inside of the bowl, using the same coarse bit. I prefer to work by holding the spoon in my left palm rather than in a soft-grip vise — I am better able to judge wall

thickness and shape. Work however you are most comfortable.

Start by working the center of the spoon front to back, increasing the depth with each pass but staying in the same track, until you reach about half the depth of the bit. Then start to work on the sides of the hollow, widening it as you increase depth. As soon as I started hollowing the spoon pictured here, I decided the bowl was too big for the handle, so I reshaped it to a smaller size.

As the hollow gets deeper, you will create exposed areas of end grain at the front and back. These areas are likely to give you trouble. When you notice this, work on the side profile some more, leaving it just a bit thicker than final thickness. Then rotate the spoon and work the end-grain spots from side to side, versus head-on into the end grain.



9. Switch to a smaller burr if yours becomes difficult to control. Take light, continuous final passes on the bowl's interior.

After making your final light cuts from front to back, you'll wind up with a pleasing shape with few ridges and depressions. Make sure to leave the bowl of your spoon thicker than you think it should be, as sanding will remove quite a bit more material.

Now we will begin by carving to final shape (but not thickness) the handle where it joins the spoon. Use the large ball-shaped burr again. First knock off the corners and then create whatever profile you find pleasing. I

sometimes go with round, sometimes oval, and sometimes I retain a hard corner or two. This is another opportunity to be creative. Whatever you choose, leave the shape thicker than you think it should be because sanding will reduce its diameter.

If your handle gets a little too thin and you are concerned about it breaking, coating it with thin CA glue will help quite a bit, but will affect your finishing options by preventing the absorption of anything oil-based.

Continue shaping toward the end of the handle, rounding the edges and creating a profile that flows gracefully. The end of the handle should be thick and substantial.

If you wish for your spoon to stand on its own, carving a flat spot on the end of the handle end will usually be necessary, but you can disguise it by carefully rounding the corners. Sometimes I drill a hole in the end and thread a piece of leather through so it can be displayed by hanging.



10. Switch to a fine-grit burr and lightly sand the entire piece, taking care not to alter the shape.

Now you have a couple of options. If you have an inflatable sanding drum, you can skip any remaining carving. If not, you will benefit from switching burrs to the fine-grit ball or a fine-grit flame and removing the scratches left by the coarse burr.



11. Or, remove all traces of the rough burr's cutting action with an inflatable sanding drum mounted in your lathe. Keep the air pressure low.

It helps to set the rotation so that you must pull the spoon toward you as you sand; this has the added benefit of moving the dust away from you. The drum can be used very successfully to give final shape to the spoon's exterior. Still, no matter how you try to round them, the drum will leave ridges on the handle that will need removal by hand.

When you are through with the drum (or fine-grit burr), start with some rough sandpaper mounted on a flexible, cushioned support. There really is nothing like hand sanding to achieve and maintain nice smooth curved surfaces. I typically sand with

the following grits: 80, 120, 180, 220, 280, 320, 400, 500. That might sound like overkill, but your work is only as good as you are willing to make it.

After 320 grit, wipe down the surface with a wet cloth. This will cause the grain to raise now, rather than allowing the finish to raise it later. When it has dried, sand again with 320 and continue your regimen.

Sanding the interior of the spoon can be difficult. I find it easiest to cut a strip of paper about $\frac{3}{4}$ " wide and about 2" long and wrap it around the tip of my index finger. Works great!

Your finish options are nearly endless, but much will depend on your intended use. Will this be a decorative spoon or a utility spoon? For decorative purposes, you may wish to color the wood. If so, you have a variety of options, including colored wax, one of my favorites. Briwax is a great choice for this. However, when the wax has dried and hardened, it should be top-coated with something like shellac or wipe-on poly to keep the colored wax from rubbing off. This would be a poor choice of finish for a utility piece, as the built-up finish will wear off and then expose the colored wax, which will also rub off – on your food, hands, etc. You could of course choose to varnish, shellac, lacquer, or leave your piece natural. If for display purposes, make it shine!





All you need to carve a beautiful spoon will fit on top of a small workbench.

For utility use I prefer one of these four finishes: 1. Nothing. Salad, human, and food oils will eventually penetrate the surface, giving the piece a marvelous aged quality. 2. A penetrating finish that will harden in the wood. Watco Danish Natural oil is a great choice for this, and is easy to maintain and repair. A few coats will more than suffice. 3. Walnut oil – the only oil that hardens as it dries. This is a great natural option but walnut oil is very yellow in color and may not please you when applied to your spoon. 4. Briwax clear or any other food-safe wax.

The spoon we have created for this project is protected with nothing at all, but was buffed on high-speed wheels.

Finally, there is no shortage of inspiration for designing your spoon. There are a few extremely talented folks out there making all sorts of interesting spoons. Barry Gordon (barrygordon.com) and Norm Sartorius (normsartorius.com) are true artists; I recommend you see their work for yourself. If you decide to make a spoon, I would love to see a photo of it. You may contact me at mschwing@hotmail.com. 🌞

Mike Schwing

Mike is a 40-year-old Baltimore native who lists woodworking and Ironman triathlons as his main hobbies. Mike spends most of his shop time turning wood, but devotes plenty of time to carving fancy spoons, knives and forks in his basement woodshop.



Woodcraft Store Locations:

Alabama Mobile: 251-634-8484 Birmingham/ Pelham: 205-988-3600	Indiana (cont'd.) Indianapolis: 317-578-3400 Merrillville: 219-769-6540 Kansas Kansas City/ Lenexa: 913-599-2800	Oregon (cont'd.) Portland/Tigard: 503-684-1428 Pennsylvania Allentown: 610-351-2966 Harrisburg: 717-939-6770 Philadelphia/ Downtown: 610-873-5660
Arizona Phoenix/Chandler: 480-539-9663 Tucson: 520-742-9663	Kentucky Louisville: 502-671-0900	Rhode Island Providence/ East Greenwich: 401-886-1175
California Orange County/ Stanton: 714-899-1422 Sacramento: 916-362-9664 San Francisco Bay Area: Dublin: 925-875-9988	Maryland Baltimore/Towson: 410-828-7426 Rockville: Woodworker's Club 301-984-9033	South Carolina Charleston: 843-573-8700 Greenville: 864-627-8760
Massachusetts Boston/Woburn: 781-935-6414 San Carlos: 650-631-9663 Santa Rosa: 707-573-8157	Michigan Detroit Area: Canton: 734-981-6808 Sterling Heights: 586-268-1919 Grand Rapids: 616-957-9663	Tennessee Johnson City: 423-282-9973 Knoxville: 865-539-9330 Nashville: 615-599-9638
Colorado Colorado Springs: 719-266-9889 Denver: 303-290-0007	Connecticut Hartford/ Manchester: 860-647-0303 Norwalk: Woodworker's Club 203-847-9663 New Haven/ Orange: 203-799-7865	Texas Austin: 512-407-8787 Dallas/Addison: 972-241-0701 Fort Worth: 817-569-0777 Houston: 713-690-8508 San Antonio: 210-545-5885
Delaware Wilmington/ New Castle: 302-323-0400	Minnesota Minneapolis/ Bloomington: 952-884-3634 Missouri St. Louis/ Maryland Heights: 314-993-0413	Utah Salt Lake City/ Sandusky: 801-566-5652
Florida Jacksonville: 904-721-9796 Miami/ Pompano Beach: Toll Free 888-398-6657 Orlando/ Casselberry: 407-260-5002 Tampa/Clearwater: 727-532-6888	New Hampshire Portsmouth/ Newington: 603-433-6116 New Mexico Albuquerque: 505-342-9663	Virginia Leesburg: 703-737-7880 Norfolk: 757-466-1166 Richmond: 804-355-3945 Roanoke: 540-366-7144 Springfield: Woodworker's Club 703-912-6727
Georgia Atlanta/Roswell: 770-587-3372	New York Albany/Latham: 518-783-3192 Rochester: 585-292-9690 North Carolina Charlotte/ Matthews: 704-847-8300 Greensboro: 336-235-0900 Raleigh: 919-781-1911	Washington Seattle: 206-767-6394 Spokane: 509-892-9663
Hawaii Honolulu: 808-841-9876	Ohio Cincinnati/ Fairfield: 513-874-6181 Cleveland/ Bedford: 440-232-7979 Columbus/ Hilliard: 614-527-7594 Dayton: 937-438-1282	West Virginia Parkersburg: 304-485-4050
Idaho Boise: 208-388-1190	Illinois Chicago Area: Palatine: 847-776-1184 Woodridge: 630-435-9663 Peoria: 309-688-9663	Wisconsin Appleton/ Fox Cities: 920-730-9663 Madison: Toll Free 877-239-WOOD Milwaukee/ West Allis: 414-607-6164
Indiana Evansville: 812-479-9663 Fort Wayne: 260-373-0161	Oklahoma Oklahoma City: 405-748-8844 Tulsa: 918-384-0100 Oregon Eugene: 541-685-0677	



WOODCRAFT[®]

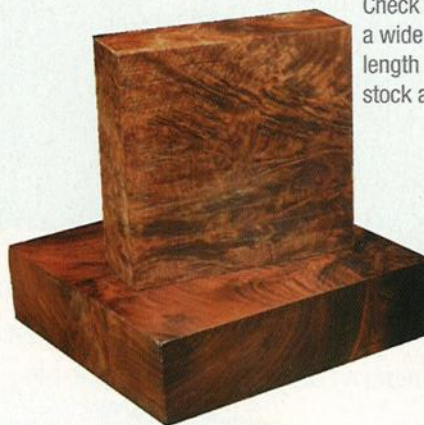
Helping You Make Wood Work[®]

For A Free Catalog Or To Find Your Local Woodcraft Store, Visit www.woodcraft.com Or Call 800-542-9115.

When woodworking is your passion, quality woodworking tools, supplies and advice from Woodcraft can help take your project to the next level.

Exotic Hardwoods And Lumber

Check your local Woodcraft store for a wide selection of random width and length hardwoods, specialty turning stock and much more.



RIKON Mini Lathe Model 70-100

Distributed exclusively by Woodcraft, this Mini Lathe features a 1/2 HP motor, 12" Swing with 16" between centers, 12 position indexed head and 6 speeds: 430, 810, 1230, 1810, 2670, 3900. Test drive one at your local Woodcraft store today!

Dept: 06WD03P3

QUALITY WOODWORKING TOOLS • SUPPLIES • ADVICE[™]

PROJECT NUMBER 39



SERVE UP AN EYE-OPENING COFFEE TABLE

BY THOMAS SKAGGS

A fun lesson in mortise-and-tenon joinery, this coffee table's versatile design shows off "cool wood" accents while offering a practical storage shelf and foot-traffic-friendly trestles.

Recently I built a coffee table that needed to look good in a rather eclectic setting. Flavors of Arts and Crafts, contemporary and even traditional styles can be found in this table, a piece of furniture that makes its own statement and yet feels at home in many interior settings.

In addition to versatility, the adapted trestle design allows for the functionality of shelf storage, removes the typical four legs that sometimes pose as "knee knockers" and rounds the edges on the base components to provide a more comfortable feel to shoeless feet.

I wanted this table to be sturdy and practical. In contrast with most other pieces I have built, this project calls for thicker stock in many of its compo-

nents. I believe the trestle design offsets the mass and allows the table to appear lighter and more open. The height is established at 19", a hair taller than most coffee tables, to allow room for a shelf below the top. The shelf is a great place to stash reading materials, remote controls and the like, keeping its handsome wood surface free and clear.

This design will provide good practice for a variety of mortise-and-tenon joinery. In addition to the more traditional enclosed mortise-and-tenon joints, I also added pinned and exposed tenons in the breadboard ends, and even some through tenons on the trestle legs. I highly recommend keeping your cutoffs and scraps handy for test cuts and test-fitting the joinery. I find that "rehearsal" cuts are a great

way to assure a good fit before cutting actual components, and can often save you from unpleasant surprises.

Getting started

While not mandatory, this design does offer some places where "really cool wood" can be used as accents, adding interest to the finished piece. If you're like me, you probably have a few small pieces of fantastic wood stashed away, just waiting for a project that needs only a couple pieces here or there.

On my table, I used some flame cherry in the breadboard ends, and some wonderfully figured bird's-eye maple in the decorative panels between the trestle legs. Any number of figured woods might lend themselves well to this application, so if you have



something special, dig it out and give it a shot.

Before cutting any wood, lay out a series of candidate boards for the tabletop side-by-side. Compare the boards and select those that have similar color and figure for use in the panel. This design has heftier components in the base, so for a cohesive appearance I made the top $\frac{7}{8}$ " thick. As with all panels, flatten one side of each board on the jointer and then plane to thickness. There is no rule about how many boards to use for the panel, but with the 25" width of the top I chose to use five 5"-wide boards for symmetry.

Since it is important for the breadboard ends to be the exact same thickness as the panel, choose and plane your boards for them at the same time.

Leave your panel stock slightly longer than needed, but rip and joint it to the finished width. Arrange the boards side-by-side and compare them for the flow of the figure from one board to another, then mark each board for its position in order (**Fig. 1**). You can also strike lines across all the boards approximately where they will be cut to length to indicate their position lengthwise.

Cut the panel stock to its 44" length, saving the offcuts for test cuts when making the tenons later. For gluing up

the panel I used simple butt joints with yellow glue. With five boards, I find it easier to glue two boards together by themselves, and the other three together separately. When those two partial panel sets are dry, glue and clamp them together to create the full panel (**Fig. 2**). I am a believer in allowing the glue squeeze-out to dry and scraping it off later. Once you remove the panel from the clamps, carefully level the surfaces with a belt sander or hand plane.

Breadboard ends

With this design, I chose to use open mortise-and-tenon joinery to attach the breadboard ends to the top panel. The open joinery complements the through-tenon joinery on the trestle leg assembly. The maker and recipient of this table must understand that the tenons on each end of the panel will move as the panel expands and contracts. Therefore the tenons will, at times, be either slightly recessed into the mortise or slightly proud. That is a natural occurrence of that joint.

If that effect is undesirable, then a closed version of the joint can be used without great compromise to the overall design. Keep in mind, however, that the top panel will still shrink and expand, so the breadboard ends will

rarely be flush with the sides of the top panel. Again, that's perfectly normal for construction involving breadboard ends.

Start the breadboard ends by cutting two pieces of your planed stock to 25" x $3\frac{1}{2}$ ". Select which long side will be joined to the top panel and pass it through the jointer to get a straight edge.

Set up the table saw with a $\frac{3}{8}$ " dado set, raised so it makes a $\frac{1}{2}$ "-deep cut. (That's only half the final depth required, but a full 1" cut may be too aggressive for safe results.) Set the fence to $\frac{1}{4}$ ", using feather boards to hold the work tightly to the fence, and run each breadboard blank through (**Fig. 3**).

Turn the blank around and repeat the pass to ensure that the mortise will be centered. Reset the blade to a full 1" depth and repeat the cuts as before.

As an alternative, the mortise dados can be cut on a router table. Again, take multiple passes to achieve the full 1" depth.

To cut the tenons on the tabletop I chose to use my table saw with a dado blade, since I have a 52" fence with an extension table which allows me to cut a panel of that size. However, if you don't have a large enough extension on your saw, the same results can be achieved with a handheld router fitted with a straight bit and a straightedge guide clamped to the panel.

The tenons should be 1" long to match the depth of the mortises previously cut. My dado set can't cut a full 1", so I adjusted the blades to $\frac{5}{8}$ " width and cut the tenons in two passes with the blade set to cut $\frac{1}{4}$ " deep.

Before making the actual cut in the ends of your tabletop, take some of those scraps you saved and make some test tenons for exact fit. Cut one side of the scrap, then the other and test fit it to the mortise. Adjust your dado blade until you have a good fit, and only then cut the panel. Please note that it's better to err on the shallow side with the cuts, leaving the tenon snug. You can always shave off a little thickness later if you need to.

Set the fence to cut the shoulders of the tenons first (**Fig. 4**). Cut both ends, flip the panel over and repeat the cuts. Move the fence to cut the remaining portion of the 1" tenons and repeat the series of cuts. If the tenons are too snug they can be shaved to fit with a rabbeting plane or shoulder plane (**Fig. 5**).

Once the breadboard end joinery is cut, you'll need to drill holes for the pegs that secure the ends to the tenons.

Dry-fit the ends onto the panels, tapping them into place with a mallet and securing them tightly with bar clamps. Lay out and mark the centers for each peg. As I used five boards for the top I used five pegs, one centered on each board. The center for each peg should be $\frac{1}{2}$ " from the edge of the joint, placing each at the center of the tenon's length. Use an awl to create a pilot point for a $\frac{1}{4}$ " drill bit.

With the end still clamped in place — and with a piece of scrap clamped on the underside of the breadboard to avoid tearout — drill all the way through for each peg, keeping the bit perpendicular to the panel. Drill all the peg holes on both ends of the top. Unclamp, and remove the breadboard ends.

To allow for seasonal movement of the top panel, insert the drill bit into each of the four outside holes in the panel tenon and elongate them as in **Fig. 6** by working the drill sideways across the grain. (Since no movement occurs in the center, there's no need to elongate that hole.) For a good, tight-fitting joint, don't widen the holes in the tenon with the direction of the grain. This will keep the breadboard snug against the shoulder of the panel tenons, but still allow for lateral movement.

Cut 10 1" lengths of $\frac{1}{4}$ " walnut dowel. These will be the pegs that hold the breadboard in place.

Keeping seasonal movement in mind, glue should be applied only to the very center of the mortise-and-tenon joint and to the pegs so as to



not restrict the panel.

Start on one end of the panel and apply glue to a 2"-wide area on both sides of the tenon around the center peg, but nowhere else. Fit the breadboard back in place, making sure the peg holes are aligned, and clamp it into place. Partially tap each peg into a hole. Apply glue to the last $\frac{1}{4}$ " of each peg and continue to tap them in (**Fig. 7**), leaving them slightly proud of the surface on both top and bottom. Repeat this process on the opposite end. Once the glue has dried, remove the clamps and trim the pegs flush.

Make a template to help lay out and cut the curves on the breadboard ends. You can use cardboard or even thin plywood, but I've found that cheap resin paper works best. It's a great heavyweight paper that's easy to cut and has served me well for layout templates.

Draw a straight line 25" long on the

paper, and draw the $1\frac{1}{2}$ " ends of the breadboard at each end of the straight line. Draw a centerline 90 degrees from the center of the straight line and mark it at $3\frac{1}{2}$ ". To form the curve, take a thin strip of hardwood — a $\frac{1}{8}$ "-thick strip of scrap works fine — and hold the strip at the center mark, bending it to meet one of the side marks. Flex the strip to create a gentle curve, hold the strip to the marks, and then use a pencil or pen to scribe half of the curve (**Fig. 8**). This procedure will require an assistant or a simple jig to capture one end of the strip, allowing a free hand for scribing the curve. I just clamped a small block to my workbench and tucked the end of the hardwood strip against it.

Cut the half-curve portion of the template (**Fig. 9**), fold it over at the center and trace the other side of the curve to ensure a symmetrical arc (**Fig. 10**), then finish cutting out the template.



Tape the template onto the breadboard ends and trace the curve onto the stock (**Fig. 11**). Remove the template and use a jigsaw to carefully cut the curves (**Fig. 12**). Give them a good sanding to smooth them out and remove saw marks.

A solid base

Begin building the base by cutting and dimensioning all of the components, using the drawing on page 39 and the cut list on page 41 as guides. I usually mark the mortises before cutting the curves on the trestle arms and feet,

taking advantage of the square stock for layout references. Then, as with the breadboard ends, cut out paper templates for laying out the curves on the trestle feet and arms. Trace the curves onto the stock and cut them on the bandsaw (**Fig. 13**). Sand the curves smooth, then ease the edges of the rounded sides on the router table with a $\frac{1}{8}$ " roundover bit.

Take the four vertical trestle supports and cut the $1\frac{1}{2}$ " tenons on a table saw equipped with a dado blade, or on a router table. As with the panel top, these tenons are longer than the dado set or router bit is wide, so you'll need to take multiple passes. Start with the shoulder cuts first, setting the dado to $\frac{1}{4}$ " deep. Use your miter gauge to keep the work at 90° to the blade or bit, and make a pass on all four sides, then repeat on the other end. Make the final passes to finish the ends of the tenons (**Fig. 14**).

A bench-top mortiser can make short work of the necessary mortises in the trestle arms and legs. Lacking one, you can use a Forstner bit in the drill press to remove most of the waste material from the mortise (**Fig. 15**), then bench chisels to cut the corners and clean up the sides of each mortise (**Fig. 16**). Take your time, test fitting the tenons as you go.

Cut the tenons in the lower shelf supports using the same process as you did on the trestle end supports. This is also a good time to drill and countersink the screw holes for attaching the lower shelf.

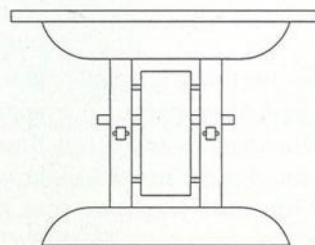
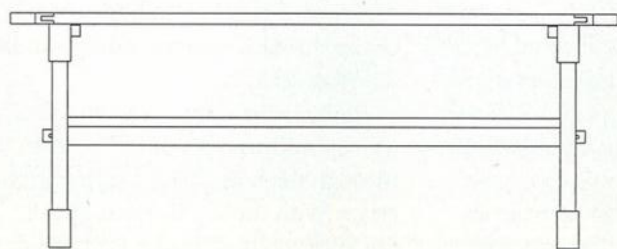
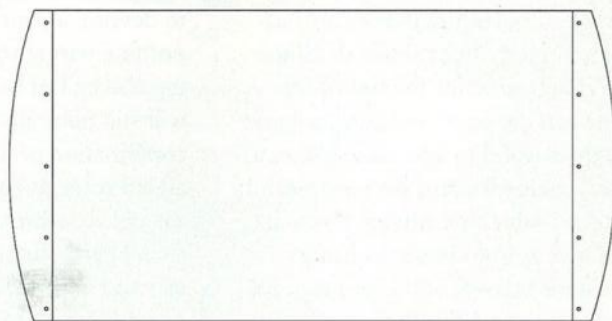
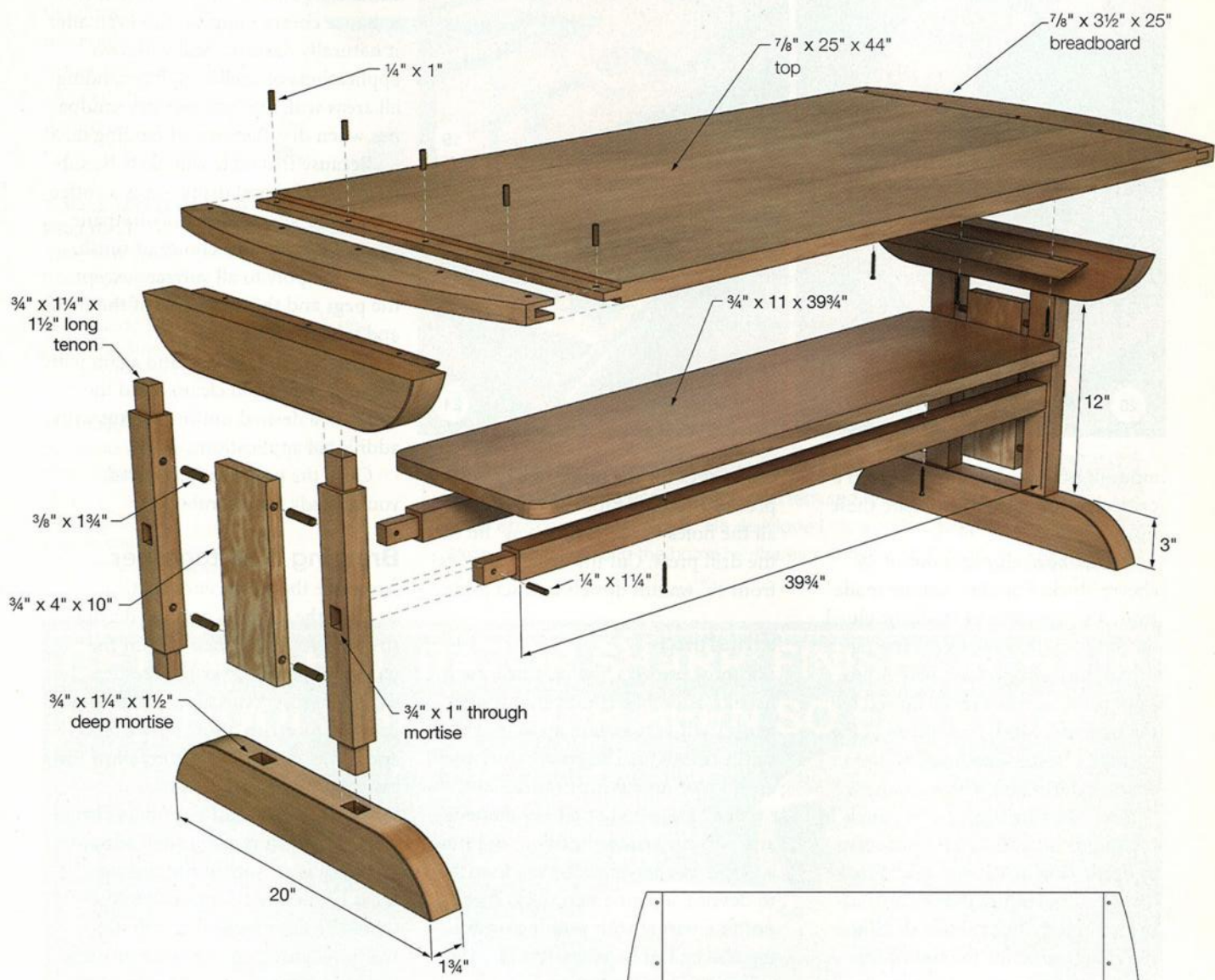
Lay out and mark the through mortises in the centers of the vertical trestle end supports. Again, lacking a mortiser, you can remove most of the waste material on the drill press, backing your work with scrap to control tearout as the bit exits the stock. Square up and clean the sides of the mortises with chisels as before, test-fitting the tenons as you go. Since this is an exposed through tenon, you'll want a clean fit. Use a $\frac{1}{8}$ " roundover bit on the router table to ease the lower edges of each support.

Mark and drill the holes for the pegs that help secure the through tenons. Use a trestle support to mark the near side of each peg hole flush with the face of the support (**Fig. 17**), centering the holes vertically on each tenon. Drill $\frac{1}{4}$ " holes through the tenons, backing your work to control tearout. Cut four $1\frac{1}{4}$ " pegs from a $\frac{1}{4}$ " walnut dowel and put them aside.

Cut and bevel the cleats used to secure the top, drilling and countersinking three evenly spaced screw holes in each cleat. With the drill bit, elongate the two outer holes in each cleat to allow for movement of the top panel. Glue the cleats to the top edge of the two arms of the trestle end, and clamp until dry.

This is also a good time to drill and countersink a pair of holes through the shelf supports, locating the holes about 10" from the ends of each support. Because the shelf is only 11" wide, the

PROJECT NUMBER 39





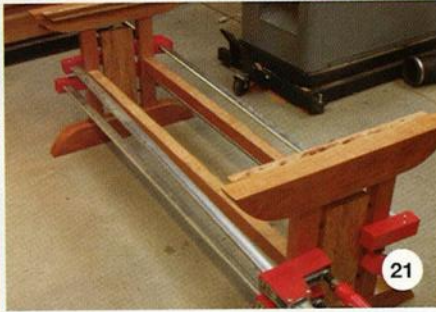
18



19



20



21

amount of seasonal movement isn't critical, so no need to elongate these holes.

Make the shelf panel out of $\frac{3}{4}$ " cherry stock. The shelf can be made from a single piece of stock, or glued up out of narrower pieces. The figure in the stock you use here is less important, as it is overshadowed by the tabletop. Mark 2" radiuses at the corners and cut with a jigsaw, then smooth the curves with a sander.

The "floating" decorative panels in the middle of each trestle end serve as decoration and interest, and make a good opportunity to use contrasting and nicely figured woods. Since the cherry used for the rest of the table will darken with time, I suggest a lighter wood to add some contrast. I had some nice bird's-eye maple, but you can substitute whatever you like.

Once you've cut your decorative panels, lay out their position on the two vertical trestle supports by sandwiching each panel with its corresponding supports and clamping them together.

Measure and lay out the locations for the pegs that connect the panel to the supports with a square, and strike centerlines for the pegs across both supports and the panel (**Fig. 18**). Turn the panel, reclamp and mark the

centerlines for the other side to ensure precise alignment for the pegs. Drill all the holes $\frac{1}{2}$ " deep with a $\frac{3}{8}$ " bit on the drill press. Cut the eight $1\frac{1}{4}$ " pegs from $\frac{3}{8}$ " walnut dowels and set aside.

Finishing

For most projects, the next process is usually assembly. However, this one lends itself very well to applying the finish before final assembly since there are a lot of nooks and crannies.

The heartwood of cherry darkens and becomes richer in color over time, so I like to allow projects made with it to develop a patina naturally. There is nothing wrong with staining or dyeing cherry, but be aware that the wood will still naturally darken and the combination of natural darkening and added color might eventually make the piece darker than intended.

All parts should be sanded to 220-grit and wiped clean of dust. Apply a coat of Danish oil to all sides of the parts, including the shelf and tabletop. Be sure not to apply finish to the tenons or in the mortises; it could hinder glue adhesion later. The exception is applying finish to the portions of the through tenons on the sides that will be seen.

Allow the oil to dry and wipe all parts clean, then seal the parts with

shellac. While I usually don't stain or color cherry, I do like to use dark garnet shellac. The garnet color of the shellac adds a warm tone that will enhance cherry's appearance even after it naturally darkens. Seal with two applications of shellac, lightly sanding all areas with 600-grit wet/dry sandpaper when dry. Remove all sanding dust.

Because this table will likely be subjected to food and drink – it is a coffee table, after all – a satin polyurethane varnish is a durable choice of finish. Apply the poly to all surfaces except the pegs and the underside of the shelf and tabletop (**Fig. 19**).

After the poly dries, sand again with 600-grit paper and clean. Build the finish to a desired uniform result with additional applications.

Once the poly has fully cured, you're ready for assembly.

Bringing it all together

Assemble the trestle ends first.

Glue the $\frac{3}{8}$ " pegs into the decorative accent panels, then mount the panel between the vertical trestle supports. Insert the support's tenons into the mortises of the trestle feet and upper arms. Clamp and allow the assembly to dry (**Fig. 20**).

Unclamp the end assemblies when dry and attach the two shelf supports, applying glue only to the contact areas of the shelf support tenons. Once the tenons are through, tap the $\frac{1}{4}$ " walnut pegs partway through the holes. Apply a small bit of glue to each peg just near the hole and continue to tap into place, centered on the through tenons. Wipe off any excess glue. You'll notice that because the surfaces are already finished, wiping up excess glue is quite easy.

Check that the shelf supports are square to the end assemblies and clamp the base with bar clamps until dry (**Fig. 21**).

Remove the clamps and attach the top next using #6 x $1\frac{1}{2}$ " screws through the holes drilled earlier in the cleats. With the top in place, attach the lower shelf with #6 x $1\frac{1}{4}$ " screws

through the holes in the shelf supports.

As with most projects, feel free to alter the dimensions and materials to suit your needs and tastes. We've enjoyed this particular design in our home for many years, as have our guests. 🌿



TOOLS USED IN THIS PROJECT

Table saw, planer, jointer, clamps, belt sander, random orbit sander, hand plane, dado set, router, jigsaw, drill, drill press, Forstner bit, hammer or mallet, bandsaw, miter gauge, square, chisels.

MATERIALS

Sandpaper in variety of grits to 600
Resin paper
Glue
Danish oil
Garnet shellac
Satin polyurethane varnish

CUT LIST

Top (1)	7/8" x 25" x 44"
Breadboard ends (2)	7/8" x 3 1/2" x 25"
Walnut dowels (10)	1/4" x 1"
Walnut dowels (4)	1/4" x 1 1/4"
Walnut dowels (8)	3/8" x 1 3/4"
Trestle feet (2)	1 3/4" x 3" x 20"
Trestle arms (2)	1 3/4" x 3" x 20"
Trestle vertical supports (4)	1 1/4" x 1 3/4" x 15"
Cleats	3/4" x 7/8" x 18"
Figured decorative panels (2)	3/4" x 4" x 10"
Shelf	3/4" x 11" x 39 3/4"
Shelf supports (2)	1 1/4" x 1 1/2" x 43 3/4"

(Note: Dimensions are listed before mortise-and-tenon joinery is cut. All components are of regular cherry except where noted.)

Thomas Skaggs

An architect and planner for the University of Illinois at Champaign, Skaggs is a furniture designer who was featured in the very first issue of *Woodcraft Magazine*. He developed his woodworking skills while renovating the home he shares with his wife, Donna.



GETTING THAT 'RAZOR SHARP' FINISH ON YOUR HANDTOOLS HAS NEVER BEEN SO EASY!



Fed up with spending hours trying to achieve a decent edge the old way with large oil or diamond stones and fiddly guides? Now you can get that 'Razor Sharp' finish every time with the M-POWER Precision Sharpening System!

"The biggest innovation in hand sharpening for years!"
Doc Jackson, Tennessee.



Insert your Chisel or Plane Iron, hold it still, select your angle and slide the top to and fro for the ultimate edge.



Perfect flat ground finish.



Diamond stones
Guaranteed for 2 years



NEW

www.m-powertools.com

ORDER YOURS TODAY

Call: 1-800-225-1153

Visit: www.woodcraft.com

Product Code: 146411

Email enquiries: info@m-powertools.com

- Includes 3 x Diamond Stones - Preparation, Finishing and Fine Finishing.
- Create micro secondary angles with ease for that ultimate edge.
- Unique lateral honing stroke guides the diamond across the face of the blade.
- Guaranteed sharpening angles 25° and 30°.
- Accepts chisels and plane blades from 1/8th" to 2 1/2".

NO TRAINING REQUIRED!

Ad Ref. PSS102

PROJECT NUMBER 40



MEET YOUR CHALLENGERS WITH A TRAVEL MATE

BY RALPH BAGNALL

Dating back to the British Empire, this clever traveling game table for chess (or checkers) folds into a trumpet-sized case — ideal for trips to the jungle or anywhere.

I've always enjoyed those safari scenes in old Tarzan movies — porters pitching tents to the beat of distant drums, parrots squawking in the trees overhead, while servants set out furniture on the edge of the sun-baked veldt. That last part really intrigued me ... until I came across "British Campaign Furniture: Elegance Under Canvas 1740-1914," by Nicholas A. Brawler. This fascinating book documents the history of knock-down furniture in use by the British army and Crown colonists around the world at the apex of the empire. Included are such celebrated artisans as Chippendale, Hepplewhite and Sheraton.

In among the folding chairs, sofa beds and campaign desks, I found a gem of a project — a traveling game

table for chess (or checkers) that folds into a trumpet-sized case for jungle jaunts. This clever little table offers some interesting challenges for the woodworker and a chance to try out new techniques such as a multifaceted column, some pivoting feet, lots of hardware and even a little brasswork. The table breaks into three sections for storage, which happen to be logical subassemblies for construction, too. The tabletop and apron fold in half to become the case, the pedestal leg telescopes into itself, and the feet unscrew from the pedestal and fold away.

Start at the top

The tabletop features a hardwood game board and border that are laminated to a 1/4" substrate and then edge-

banded. The simplest substrate is 1/4" mahogany plywood. One side will be seen when the box is opened, so that should be the best-quality face. Trim the substrate to the dimensions shown in the cut list on Page 48. [Note: The top will finish at 13" wide, but it needs to be cut in half later on, so an extra 1/8" in this dimension is for the saw kerf.]

To make the squares on the game board, rip four 1 1/2"-wide strips of maple and four more of mahogany, and edge glue them in alternating colors like a cutting board (**Fig. 1**). Actually, any contrasting species will work here. After the glue dries, crosscut the panel into 1 1/2" strips. Then reverse every other strip to form the checkered squares of the game board and glue up the panel (**Fig. 2**). Note that I used clamping cauls (strips of scrap wood

and spring clamps) on the ends, to keep the subassembly flat while it dried.

Next, sand one face of the game board and glue that to the substrate, centering it on the plywood. A vacuum press works best, but I had excellent results using a couple of 30-lb. sandbags to provide clamping pressure (**Fig. 3**). Once the glue is dry, the border can be added. The cut list dimensions for the border pieces are a bit wide, so that they can overhang the

edges of the substrate; this is because they'll be trimmed later. Make sure there's no excess glue where the grid meets the substrate, then glue and clamp the borders in place. When the glue is dry, use a bearing-guided flush trimming bit chucked in your router table to clean up the edges (**Fig. 4**).

The assembled top can now be sanded smooth and flat to a uniform $\frac{1}{2}$ " thickness. Check the edges every inch or so with calipers, make pencil marks on the top where a little excess

needs to be removed, and proceed around the entire edge in this manner. Don't sand the bottom face of the plywood as this will be seen, and you don't want to sand through its veneer.

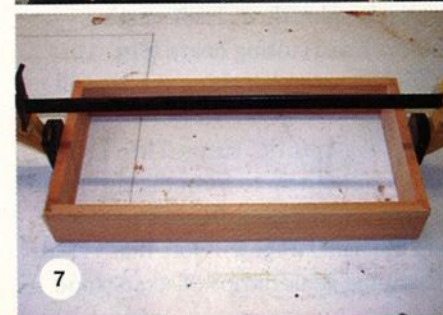
Now you can rip the top into two halves (**Fig. 5**). Note that the wider borders are the ones being cut, while the narrow ones ride against the fence. To avoid any tearout on the bottom face, apply a strip of masking tape along the cut line. Use a fine plywood blade and take your time.

There are visible seams along the edges of the game board halves, between the borders and the substrate. Rip some mahogany to create banding, and round over one edge with a $\frac{1}{4}$ " beading bit. Dry fit the banding to the three outer edges of each half, with the square edge flush with the bottom of the substrate, and miter the corners to length. What you are creating is a $\frac{1}{8}$ " rounded lip on the top of the table to keep chess pieces from rolling off. This is a traveling table, after all, and the ground on safari may not always be level. I positioned the banding by using painter's tape (**Fig. 6**), then applied glue and clamped it while the glue dried.

A couple of box frames

The two halves of the game board are housed on a pair of hinged frames. Begin construction of these frames by ripping stock for their short and long sides. The dimensions given are for mitered corners. I actually used a drawer lock bit for the joinery on my table (**Fig. 7**). I like the solid, glue-only joint and no-slip clamping that is created by this bit. If you go my route, you'll have to trim the short frame sides; how much will depend on the bit you use, but the outside length of each short side should be $6\frac{1}{2}$ ".

The game board halves sit on top of the frames and are secured to them with small brass clips, which you'll make in a few minutes. Slots for these swiveling clips (**Fig. 8**) can be milled after the frame is glued up, using a slot-cutting bit chucked in the router. However, if you don't have access to a slot-cutting bit, you can mill a



continuous $\frac{1}{4}$ "-deep slot in the inside face of each frame piece using the table saw. In that case, you'll need to mill the slots now, prior to assembly.

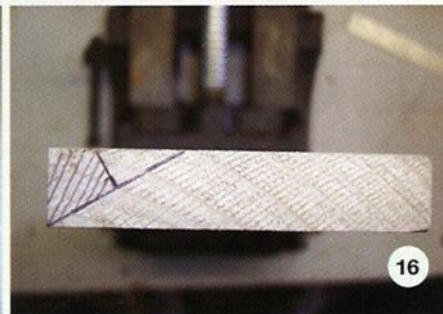
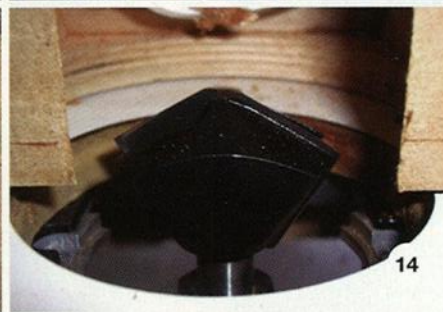
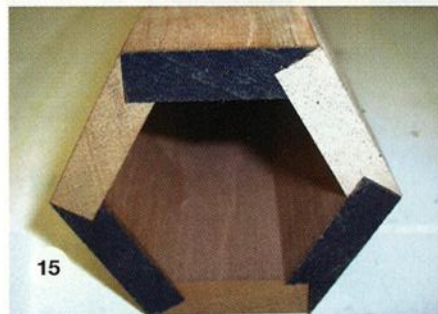
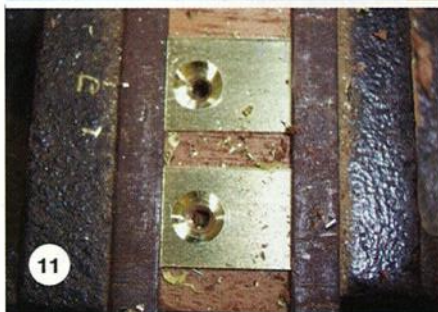
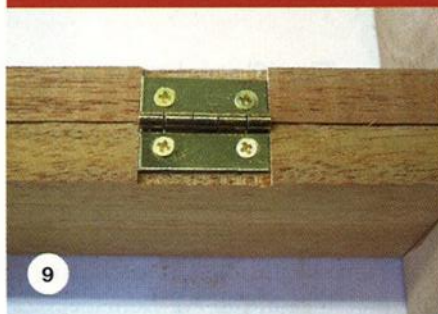
Apply glue to the corners and clamp each frame together, checking that they're square and flat. After the glue dries, place the frames side-by-side in the "open" position and mark the locations of the hinges. To form the hinge mortises (**Fig. 9**), chuck a straight bit in your router and plow two grooves in each frame. Clamp a straightedge in place if your freehand skills are rusty.

The apron clips are made from $\frac{1}{2}$ "-wide brass stock. For safety, I attached the strips to a wood scrap with two-sided tape (carpet tape works well), and crosscut them on the table saw (**Fig. 10**). While they're still attached to the scrap wood, drill and countersink a hole in each clip for a brass screw (**Fig. 11**). Bend each clip to shape (a simple Z, as shown in **Fig. 12**) so that it fits perfectly into one of the slots in the frame, and screw the clips in place to secure the game board halves to the frames. Note that no glue is used or required; the clips allow the wood to move slightly and respond to changes in the ambient humidity and temperature. I've used this mechanical connection to stay true to the original design, which actually used solid hardwood, instead of plywood, as the substrate. If you want to keep it simple, you could glue your plywood top directly to the sides and skip this step.

Complete the construction of the box by adding some hardware. Pre-drill for the hinge screws and attach the hinges. A small brass hasp keeps the two halves secure, and a stock metal handle makes the whole project portable. Attach both with the screws that come with them (**Fig. 13**), pre-drilling the holes to avoid splitting the wood.

Pedestal

Constructing the telescoping pedestal for this table is a fun challenge. It is a six-sided tube with a six-sided pole fitting snugly inside. Let's start with the tube.



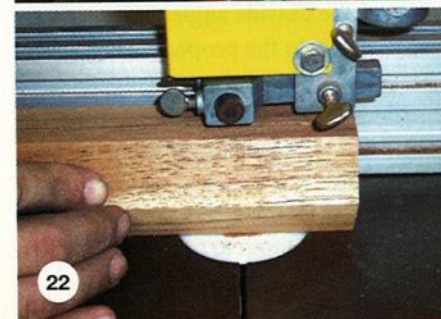
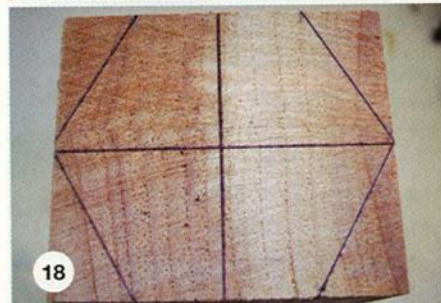
Cut the six staves that make up the tube to size, and then chuck a 30°/60° bird's mouth bit (**Fig. 14**) in your router table. Test the bit height and the fence location on scraps cut to the same size as the tube staves and, when everything is just right, mill one edge of each stave to form the angles (**Fig. 15**). I found that marking the end of my scrap piece with a 30° angle and a perpendicular pencil line $\frac{1}{2}$ " along that line (**Fig. 16**) really helped during setup. The tube staves must be the right thickness and width. Cut them wide and the

tube becomes oversized; cut them too narrow and the tube will be small.

To assemble the tube, lay out the staves edge-to-edge and face down, and use masking tape as a hinge to line up the outside angles before it's all folded into the proper tube shape and glued. The parts are made up somewhat long so the tube can be trimmed to size after the glue sets (**Fig. 17**).

While the tube is drying, the post can be made. Rip it to the dimensions shown in the cut list, then lay out

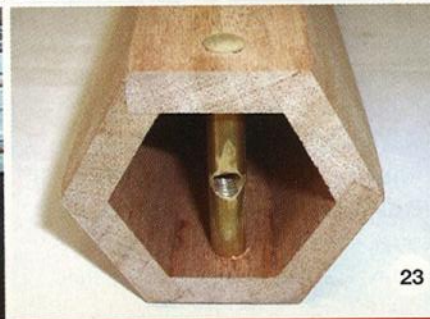
the 30° angles on one end (**Fig. 18**). Start by marking the two centerlines horizontally and vertically as shown. This divides the surface into four rectangles. Now measure $\frac{7}{16}$ " on each side of the centerline along the two wider faces (that is, the top and bottom edges of the stock in the photo). Connect these marks with two pairs of lines that meet the horizontal centerline, as shown. You now have a six-sided layout. It is vital that the post blank is accurately sized or the angles will be off. Set up the table saw to cut just outside



the lines (**Fig. 19**) and clean up the saw cuts with a very light pass on the jointer (**Fig. 20**). Test fit the post in the tube as you go; it should fit snugly and yet slide smoothly inside the tube.

After trimming the post and tube to their final length, insert the post into the tube. Measure up $7\frac{1}{2}$ " from the bottom and center a $\frac{5}{16}$ " hole in one of the staves. Drill all the way through both parts (**Fig. 21**), and then remove the post. This hole will accommodate a brass rod, which will be embedded across the tube in a few minutes. When the table is being used, this rod stops the post from sliding all the way into the tube. When it's being stored, the tube is turned 60° and a slot lets it slide past the post. Re-drill the hole in the post to $\frac{3}{8}$ ", lay out the slot and cut it on your bandsaw (**Fig. 22**).

Cut the brass rod to length and tap it in place in the tube. Ideally, it should



fit snugly, but it can be epoxied in place. Brass is soft enough to sand smooth as you sand the faces of the tube, so leave it a touch long and clean it up later.

Insert a second brass rod on center $\frac{1}{2}$ " up from the bottom of the tube (**Fig. 23**). Drill the two holes in the tube for this now. (See the exploded view on page 49 for their locations.) Prior to installation, this rod must become a nut to secure the foot subassembly to the pedestal. That means it must be drilled and tapped for a $\frac{1}{4}$ "-20 bolt at its midpoint. If you don't have access to a tap and die set, any auto repair shop or metalworker will drill and thread the hole for you. Secure the rod in the tube with the threaded hole centered.

A friction-fit lock

A fairly sizeable wooden block is attached to the top of the pedestal post, and this is notched to fit over a wooden lock that's attached to the underside of the table. Let's start with the lock. Any close-grained hardwood will work here. The lock is $\frac{1}{4}$ " thick at the base, and a long tongue is cut into it to provide a spring fit (**Fig. 24**). The pattern for it is on page 49.

The block slips over this lock and receives a two-step notch in its top face (see page 49 for dimensions and locations). The deep part of the notch clamps the two frames of the tabletop together, so that they stay open during use. The shallow part of the notch slides over the lock, securing the pedestal to the top (**Fig. 25**). Cut the stepped notch on your bandsaw, making sure that it fits snugly over the two box sides. Determine the lock's location by clamping it in place and sliding the block over it until it locks in place. With the block centered, mark the location for the lock. Remove the block and glue and screw the lock in place. Attach the block to the top end of the pedestal post with glue and two countersunk screws.

Tripod in the tropics

The table has three feet that fold out from the pedestal to steady the table on uneven ground. The feet are fairly small, and all sides need to be milled,

so I decided to make a couple of sleds for the router table to handle this. Sleds help ensure accuracy and safety when routing small parts. Two sleds are used here, each cutting half of the foot profile.

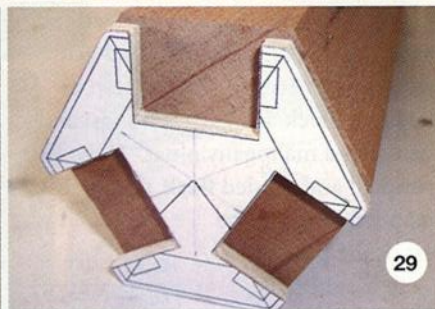
The first step is to transfer the foot pattern to some template stock. I used $\frac{1}{4}$ " hardboard for this. Cut the template to shape on the bandsaw and clean up the edges with a drum sander and files or rasps. Locate and drill the pivot hole shown on the pattern. This hole will be used to locate and hold each foot on the sleds. Use the template to transfer the pattern to the stock for all three feet and cut them to shape on the bandsaw, staying just outside the pencil lines. Drill the three pivot holes.

The template lets you transfer the profile of the leg to the first sled. Use it to mark out the back (inside) edge of the foot profile along the edge of the wider sled (on the left in **Fig. 26**). Be sure to include a flat space for the bit to start and end the cut. Rough cut the profile on the edge of the sled using your bandsaw. Drill the pin location into the sled and glue a dowel into the hole. This dowel, a pair of toggle clamps, and two scrap wood blocks will align each foot blank and hold it in place on the sled. Lock the template to the sled and clean up the edge with a bearing-guided flush trim bit.

Now you can use the sled to mill the first half of each foot blank. If your bit isn't long enough, mill the bottom half of each foot, and then adjust the cutter height to complete the milling with a second pass (**Fig. 27**). Remember, you're essentially just cleaning up here, as the feet are already bandsawn to shape.

With the back profiles milled, the second sled can be made in the same manner as the first. Here, the blocks behind the blank must be more closely cut to support the cleaned edge of each part. Use this sled to clean up the front edge of each foot.

Now you can switch bits and ease the edges of the three feet with a bearing-guided $\frac{3}{8}$ " roundover bit. A starter pin is essential here for safe milling (**Fig. 28**).



And care must be paid to the changing grain directions during all of this routing, to prevent tearout.

The pivot block

This is the final machined part in your table. The three feet are hinged to this block, and it in turn is attached to the pedestal. Although it looks like a complicated part, it is really just a hexagon with dadoes and holes in it.

Although the final part is only $1\frac{1}{2}$ " tall, for safety I started with a 12" long blank. After laying out the profile (see page 49), cut it to shape on the table saw in the same manner as the pedestal post. Sand the cut faces and then lay out a dado in each of three alternating faces (**Fig. 29**). Mill the dadoes, being very careful to center each cut on its face. Crosscut the resulting molding to length ($1\frac{1}{2}$ "), and you're ready to drill the block for rods that hold the feet.

These holes need to be centered across the dadoes. This means drilling into an angled face. To ease the process, I made a quick holding fixture for the drill press (**Fig. 30**). A 1"-thick piece of scrap mounted on a riser block keeps the part at the proper angle. And I added a stop block to keep all the sides the same.

Next cut the pivot rods and test fit the feet. You will likely need to sand the curve below the pivot hole as I did, to allow the feet to fold properly. Be very careful not to sand the flat face. This face keeps the feet properly oriented in use. Once you are satisfied with the fit of the feet in the block, remove the pins and feet.

To attach the block (and, of course, the feet) to the pedestal post, a $\frac{1}{4}$ "-20 hanger bolt needs to be screwed into the center of the pivot block. This is a piece of hardware with a threaded bolt on one end and a threaded screw on the other.



Be sure to drill an adequate pilot hole to prevent splitting the block (Fig. 31).

Finishing and hardware

Remove any hardware and sand all of the parts. I used brass hardware, but a leather handle would be nice, too. I applied several coats of a clear water-based poly finish to the feet first, sanding between coats with 400-grit paper. When dry, I replaced them in the pivot block, installed the rods, and then added mahogany plugs. These I trimmed and sanded flush, and then I applied finish to the rest of the project.

To use the table, unlatch and open the box. Remove the feet and pedestal. Slide the pedestal post block over the center of the apron and onto the lock. Screw the pedestal tube onto the opened feet. Finally, slide the pedestal post back into the tube, ensuring that it does not slide past the brass rod, and set the table on its feet. 🌲

TOOLS USED IN THIS PROJECT

Table saw, drill press, bandsaw, jointer, router table and bits, sander, clamps, glue, sandpaper, painter's tape
Multi-Side bit #3506, whitesiderouterbits.com

MATERIALS

1" butt hinges and screws (2)
Brass handle (1)
Brass hasp (1)
1/2" wide brass stock, about 12"
Screws (14) 1/2" x #6
Screws (2) 1 1/4" x #8
5/16" brass rod, about 12"
Hanger bolt (1) 1/4"-20
Wood plugs (6)

CUT LIST

Game board substrate (1)	1/4"	x	13 1/8"	x	15"
Game board strips (8)	9/32"	x	1 1/2"	x	12"
Game board short borders (2)	9/32"	x	3/4"	x	12"
Game board long borders (2)	9/32"	x	1 5/8"	x	13 1/8"
Game board edgebanding	1/4"	x	5/8"	x	60"
Box frame short sides (4)	3/8"	x	2"	x	6 1/2"
Box frame long sides (4)	3/8"	x	2"	x	15"
*Box clips (12)	1/16"	x	1/2"	x	1"
Pedestal tube staves (6)	3/8"	x	13 3/8"	x	11"
Pedestal post (1)	1 3/4"	x	1 1/2"	x	11"
*Pedestal stop & foot nut (2)	5/16"	x	2 1/4"		
Pedestal lock (1)	1/4"	x	1"	x	3 1/2"
Pedestal block (1)	3 1/2"	x	2 3/4"	x	1 3/4"
Feet (3)	cut to pattern from 1" stock				
Pivot block (1)	2 5/8"	x	2 9/32"	x	12"
*Pivot block rods (3)	5/16"	x	1 1/4"		

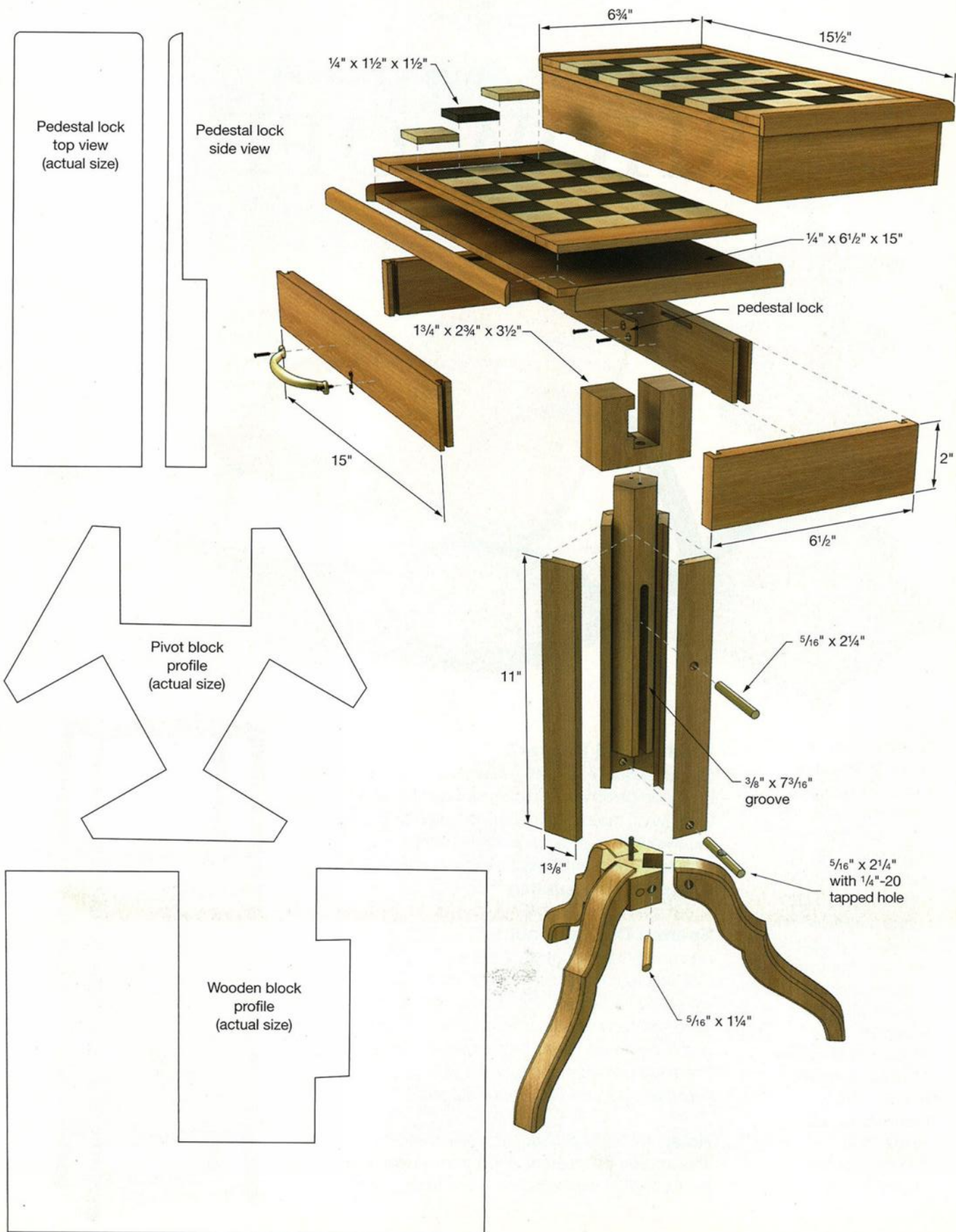
* Brass parts. Note: The author used mahogany as the primary wood and maple for the contrasting tabletop material.

Ralph Bagnall

A professional woodworker for 20 years, Ralph Bagnall builds reproduction furniture in his home shop, and has been teaching and writing for the past several years. He recently moved from New Hampshire to the island of St. Croix, Virgin Islands, to pursue his woodworking in tropical sunshine.



Foot pattern
(enlarge to 133%)





PROJECTS *from* OUR READERS

SHOW OFF



Be recognized for your work! Send us a photo of your best woodworking project. All photos must be high-quality slides, transparencies or prints. High-resolution digital photos are fine as long as they are at least 300 dpi. Sorry, but computer printouts can't be used for publication.

Show Off
Woodcraft Magazine
1101 Rosemar Rd.
P.O. Box 7020
Parkersburg, WV
26102-7020
Editor@WoodcraftMagazine.com

"Whitewood Rocker"

Dan Swanson, Prior Lake, Minn.

Swanson designed this rocker for comfort and to show off the beauty of the whitewood. All the Swedish-style rocker's curved pieces are laminated for strength and design, and the finish is Swanson's own creation.

Spalted Display Cabinet

Desmond Nault, Seaside, Calif.

Constructed of spalted western maple panels with kwila framework, this display case features veneered case panels doweled to frame elements which in turn are joined by mortise and tenons. The finish is shellac and wax. Nault is a second-year College of the Redwoods student.

Note: Our Show Off department is pleased to showcase a selection of works from students of the College of the Redwoods, Fort Bragg, Calif.





Coffee Table

Evan Erickson, Fort Bragg, Calif.

Erickson, a two-year graduate of the College of the Redwoods, selected machiche and koa to craft this coffee table that features veneered surfaces, tenoned stand, and bridle joints in the table-top supports. The finish on this commissioned piece is varnish.

Pagoda in Wood

Brian N. McEvoy, Edmonton, Alberta, Canada

This striking Oriental pagoda is actually a piece of Alaskan yellow cedar that McEvoy hand turned into 12 segments, with the rooms turned to $\frac{1}{16}$ ". Next, he added handcarved Japanese style art designs and the phrase "Patience, Determination, Faith and Friendship" in Japanese script in the top room. After 170 hours of delicate turning, carving and sanding, McEvoy finished the pagoda with copper and gold leaf. It stands 43 inches tall, with a 22" x 22" base, and weighs 11 lbs.



"Firewood Cabinet"

Annette Koehnen,

Amsterdam, Holland

Koehnen chose madrone as the primary wood for this whimsical box that has a pear wood interior and a walnut stand. The veneered case features dowel joinery, and the finish is oil and wax. Koehnen is a two-year graduate of the College of the Redwoods.

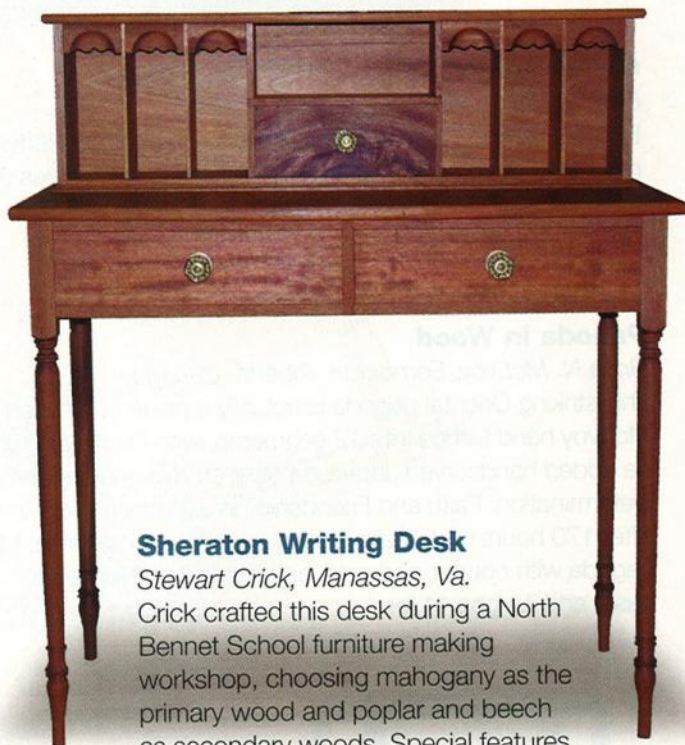




Melding of Designs

Jason Tuinstra, Hanford, Calif.

Tuinstra borrowed ideas for this chair design from the work of Brian Boggs and the designs of Thomas Moser. He used 8/4 cherry for the chair which features 1/8" square walnut pegs for the joints, floating tenons in the seat frame and black on black 1" Shaker tape.



Sheraton Writing Desk

Stewart Crick, Manassas, Va.

Crick crafted this desk during a North Bennet School furniture making workshop, choosing mahogany as the primary wood and poplar and beech as secondary woods. Special features include individually turned legs, hand-cut joinery and a varnish finish.



"The Barnette Variation"

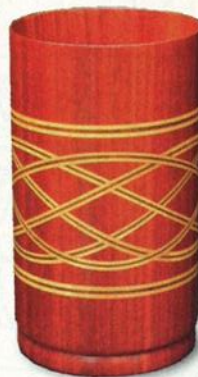
Jonathan Gay, Seattle, Wash.

Gay crafted this bowfront cabinet from doussie using spruce for the interior. The 36" x 26" x 14" piece features a veneered carcass and an oil/varnish blend finish. Gay is a one-year graduate of the College of the Redwoods.

Tumbler

Glen O. Bohusch, Medina, Ohio

Bohusch crafted this striking, glued-up tumbler from bloodwood with maple and walnut and finished it with polyurethane. A 35-hour project, this tumbler stands 5 ⁵/₁₆" tall and has 3" lip diameter.



"Omaha Beach War Wagon"

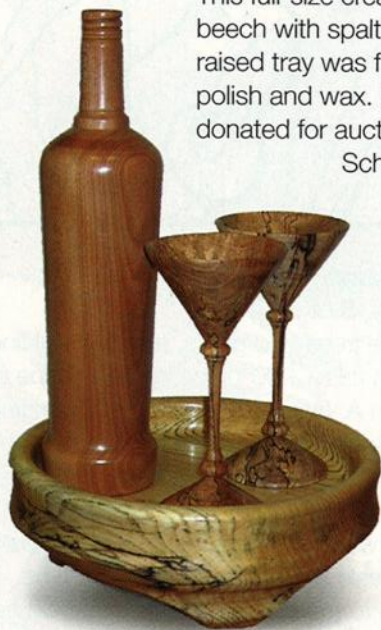
Rick Froehlich, Sr., Omaha, Neb.

Froehlich designed and constructed this 1944 U.S. half-track armored vehicle from rock maple and cherry. The 300-piece model features rotating tracks and several movable parts – quad-mounted .50 caliber machine guns, doors and front wheels – and is finished with French oil.

"An Elevated Sense of Martini"

Temple Blackwood, Davidsonville, Md.

This full-size creation featuring a vodka bottle in beech with spalted maple glasses and an ash raised tray was finished with friction and French polish and wax. Part of a set, this piece was donated for auction to benefit the Queen Anne School in Upper Marlboro, Md.



"Safe"

Wheeler Munroe, Ashe County, N.C.

Munroe built this box of drawers from ash and white oak. The piece features a veneered and doweled case, tenoned solid wood cage, and solid wood dovetailed drawers with a shellac and wax finish. Munroe is a second-year student at the College of the Redwoods.

SHOW OFF *continued*



- | | |
|----------------------|-----------------------|
| 1. Lion | 16. Mongoose |
| 2. Roan Antelope | 17. Ostrich |
| 3. Royal Python | 18. Beetle |
| 4. Lizard | 19. Cheetah Cub |
| 5. Black Rhino | 20. Snail |
| 6. Jackal | 21. Zebra |
| 7. Mandrill | 22. Tree Frog |
| 8. Lemur | 23. Carmine Bee-eater |
| 9. Parrot | 24. Elephant |
| 10. A "Whatisit" | 25. Giraffe |
| 11. Mountain Gorilla | |
| 12. Grasshopper | |
| 13. Panther | |
| 14. Crocodile | |
| 15. Hippopotamus | |

Intarsia Jungle Scene

Don Rose, Simpsonville, S.C.

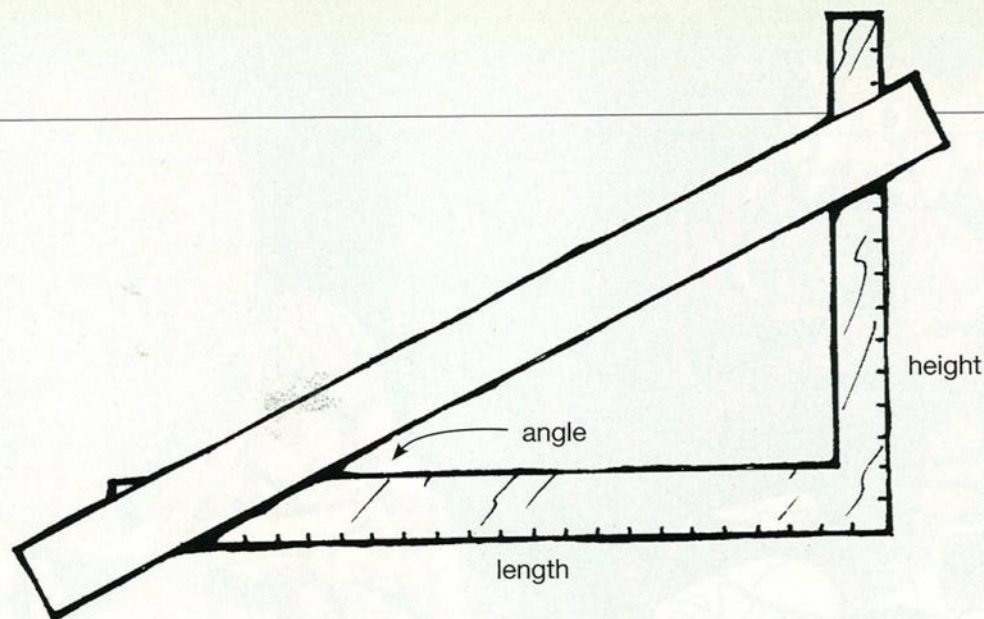
Look closely among the trees and grass, and you will find 25 different creatures in this 1,000-piece intarsia scene out of Africa crafted by Don A. Rose and based on an original pattern by Judy Gale Roberts. With Roberts' permission, Rose rearranged her pattern, adding and deleting some of the animals and several other objects. The Rose version is 36" x 48" and features western cedar in various shades plus a mix of aspen, black walnut, poplar, padauk and pine.

How long did it take to make this piece? Rose said he did not keep track of his hours, but it took longer to complete the pattern than it did to make the actual piece. And it definitely was not a weekend project.

A lifelong woodworker, Rose is best known for his intarsia works – over 400 projects plus 1,600 small Christmas ornaments, many made from patterns he created.

A member of the Piedmont Woodcarvers, Carolina Mountain Woodturners and the American Association of Woodturners, Rose teaches intarsia and other woodworking classes at the Greenville, S.C., Woodcraft Store.





Angle Calculator

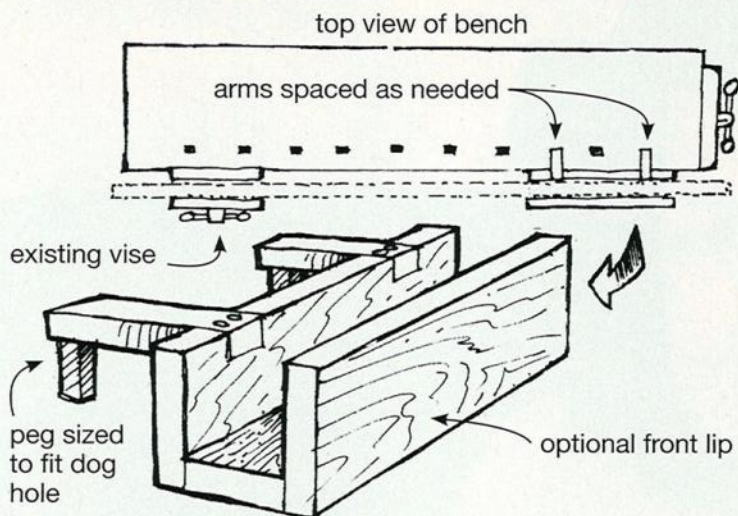
HERE IS A LIST OF ANGLES that can be easily formed with a straight board across a carpenter's square. For the desired angle, set the board at the length and height marks listed and clamp into place. All the angles shown in the table are accurate within $\frac{1}{4}$ of a degree. For angles larger than 45° , just exchange the height and length. For example, a 30° angle would be formed when setting your board at 19" long and 11" high, so 60° would be measured at 11" long and 19" high.

— Dave Van Ess,
Arlington, Wash.

Angle	Length	Height	Angle	Length	Height
3°	19"	1"	23°	19"	8"
4°	14"	1"	24°	9"	4"
5°	23"	2"	25°	15"	7"
6°	19"	2"	28°	15"	8"
7°	8"	1"	29°	9"	5"
8°	7"	1"	30°	19"	11"
9°	19"	3"	31°	5"	3"
10°	17"	3"	32°	8"	5"
11°	21"	4"	33°	20"	13"
12°	14"	3"	35°	10"	7"
13°	13"	3"	36°	11"	8"
14°	4"	1"	37°	4"	3"
15°	15"	4"	38°	9"	7"
16°	7"	2"	39°	16"	13"
17°	23"	7"	40°	19"	16"
19°	23"	8"	41°	15"	13"
20°	11"	4"	42°	10"	9"
21°	13"	5"	43°	15"	14"
22°	5"	2"	45°	1"	1"
22.5°	17"	7"			

Tool Tips in Easy Reach

TIRED OF PAGING THROUGH MY BOOKS looking for tips or tricks about using a table saw or any other tool in my shop, I decided to organize myself. My friend and I share magazines. I photocopy every trick and put them in books according to which tool they apply to – table saw, router, etc. Each book is stored with its corresponding tool. So now if I'm looking for a tip or trick about routing, I open my router book, and there are all my tips (easy). I love it; it works wonderfully. — Fred Mandel, Dinsmore, Saskatchewan



Support While Planing

UNLESS YOUR BENCH HAS A BOARD JACK, planing long boards requires some kind of makeshift support. Using a piece of scrap I had on hand and a little time, I created a neat alternative.

The contraption is simply a tray arrangement with arms. These arms have pegs (round or square, depending on your bench) that slip into the dog holes along the front. I made my tray with a front lip, enabling me to shim boards for a tighter fit, but the lip may be omitted if you prefer.

— R.B. Himes, Vienna, Ohio

We would like to congratulate Dave Van Ess for sending in our favorite tip of the issue, his method for calculating angles. For submitting the best tip, he'll receive a \$100 Woodcraft gift certificate.

Woodcraft Magazine pays \$100 for every submission used in Tips & Tricks. The submitter of the best tip of the issue also receives a \$100 Woodcraft gift certificate. If needed, your tip should include a photo or drawing to help explain your idea. Send your tips, tricks and jig ideas, along with your contact info, to:

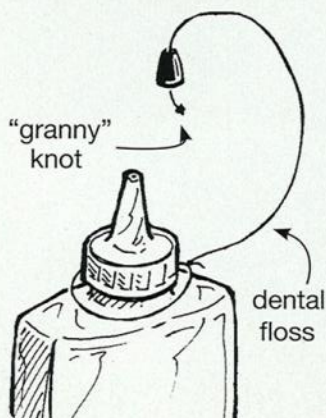
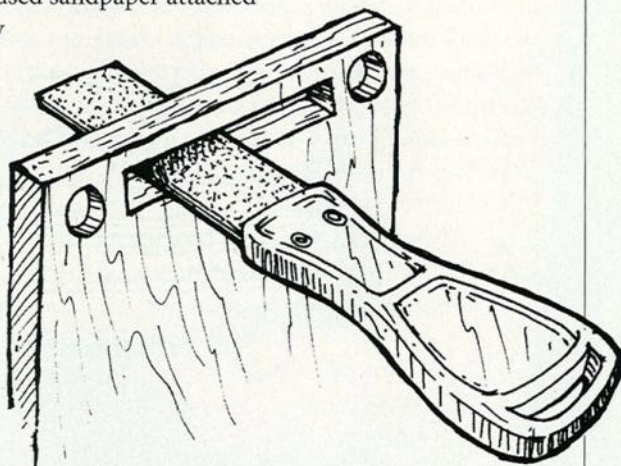
Tips & Tricks
Woodcraft Magazine
1101 Rosemar Rd.
P.O. Box 7020
Parkersburg, WV 26102-7020
Editor@WoodcraftMagazine.com

Sanding in Tight Spots

WHILE BUILDING THE CANDLE LANTERN featured in *Woodcraft Magazine* ("Illuminating History," March 2005), I needed a way to sand the inside of the hand-cut slot in the front of the top plate; it's only ¼" wide.

To solve the problem, I used sandpaper attached to a putty knife. You simply cut the sandpaper slightly oversize for a 1½" x 3" blade and attach it with spray adhesive, then trim to fit. I keep two versions handy: one with 80-grit on one side and 120-grit on the other side, and the second equipped with 150- and 180-grit.

— John S. Wilson,
Redwood City, Calif.



Corral That Bottle Cap

DO YOU SPEND A LOT OF TIME SEARCHING for the top to your glue bottle? Here's my answer to this pesky problem.

Cut a piece of dental floss 6" long. Take the cap off the glue bottle and pierce a small hole in the top of the cap. Push the dental floss through from the top. Tie a bulky knot in one end, and pull it up into the cap to make sure the knot is big enough. Tie a noose in the other end and place it around the top portion of the glue bottle. Now you can rest assured you will always be able to find the cap after you use your glue.

I tried other materials such as fishing line, but I found dental floss worked better because of its strength and flexibility for tying.

— Frank LaRoque, The Dalles, Ore.



FAST FORWARD

BY JOHN ENGLISH

If Amy Devers came up against a glass ceiling, she'd just reach for a hammer.

There's a line in armed services ads about getting more done by 9 a.m. than most people do all day. They could be talking about Amy Devers.

In less than a decade, this accomplished furniture designer has earned a master's degree in fine arts, hosts two DIY Network television shows ("Freeform Furniture" and "DIY to the Rescue"), exhibits her work in select galleries from Michigan to Milan, builds modern furniture, and runs a successful design/fabrication studio. Somewhere in there, she was a teaching assistant and then an instructor at the Rhode Island School of Design. The amazing thing is not that she accomplishes so much, but that she does so many things at once and still excels at all of them.

Her energy level isn't something new. The minute she got done with high school, Amy headed straight for the biggest buzz on planet Earth.

Early days

"I grew up in Ypsilanti, Mich. My dad taught at EMU (Eastern Michigan University), but I had wanderlust and headed to New York right after high school. The city was an incredibly eye-opening and exhilarating experience. I didn't know a soul, so it was a little terrifying, too. We packed everything in our station wagon, and my parents drove me to college and dropped me off."

Amy was on her way to earning an Associate of Applied Arts degree from the Fashion Institute of Technology, on the campus of the State University of New York.



FURNITURE SPRINGS TO LIFE on screen as Amy Devers hosts “Freeform Furniture” on the DIY Network. She also co-hosts “DIY to the Rescue.”

“I studied the business end of fashion in New York, [but] I was much more interested in the projects and assignments of my friends who were in design classes. They were doing fashion design, but they were also working on toys and merchandising displays for stores. I would always get much more involved in their assignments than my own. That was when I figured out that I wanted to pursue something creative — I wanted a three-dimensional palette.”

“Even now I doodle, draw and sketch. I have to do that as part of my work. I would say, though, that I use drawing more to share ideas than as a design tool.”

In search of those ideas, she left New York in the mid-’90s to earn a bachelor’s in applied design (with an emphasis on furniture) from San Diego State University. The program she entered was run by celebrated studio furniture artist Wendy Maruyama, a Furniture Society board member.

Her ticket to San Diego was round-trip. After graduation, she returned to the East Coast and enrolled in the Master of Fine Arts program at the Rhode Island School of Design. Once again, her degree was in furniture design.

“The MFA program was the most

intense, enriching experience of my life. It was really hard, and I’m really glad it’s over! I learned a lot about myself, and I learned a lot technically and artistically.

“I was still in learning mode even a year after graduate school. The program really helped me home in on what it was I wanted to do ... and also what I didn’t want to do. I’m a perpetual learner and I threw myself into it with such vigor, I swear I aged 10 years. But I could see doing it again, maybe in 10 years, with a view to teaching.

“Teaching is immensely rewarding. I loved it [in Rhode Island], and it’s what I really love about both shows. No, you

don’t have that personal interaction with viewers, so you don’t feel that immediate reward when the lightbulbs go off, but I love furniture and I love communicating that to people. If the show is informative for a large audience, that’s a huge reward for me.

“Live television still gets me nervous. But doing a taped episode of either show no longer does, so that’s progress. Those episodes are somewhat scripted, so that the producers can be sure they cover all the content. They have to condense building an entire piece of furniture into 20 minutes, and they have to set up the problem [introduce the topic], and then recap several times so that anybody just tuning in isn’t completely lost. All of that has to be built into the script, so they set up timing for me — so many minutes for edge-banding, this long for surfacing the wood. I adhere to those parameters, and the rest of it is pretty much off the top of my head.

“Doing each episode is still such a new thing for me. I’m not a seasoned television personality by any means. I’ve only been doing it for a few years, and I’m still improving. It’s bizarre to me that there’s a TV show out there and I’m on it, and I’m amazed when anybody watches it. I’m intensely interested in what is appealing to people about these shows.

“When you see a piece coming together on ‘Freeform Furniture,’ you’re



MUSEUM DISPLAY SHELVING:
a mixture of cement and walnut.

"The shop where we shoot the furniture show is the shop I go to every day to work. It's a hybrid of both my own shop and a studio set."

actually seeing that piece being built four, five, maybe seven times in various stages. That's a lot of extra labor.

"Of course, I have a lot of help. I have three fantastic designers and builders who work with me full-time to help get all the pieces built and ready for the show. Each is phenomenally skilled in her own right and has a beautiful portfolio, and they all were educated in pretty much the same institutions I was. Their names are Emilie Douglas, Jennifer Anderson and Tanya Aguiniga."

Women woodworkers

One interesting aspect of the show is that the members of the creative team are all female. Women in test audiences were initially a little intimidated by the tools — they may have been expecting more of a design/makeover show. But at the end of the test episode, nine out of 10 women said they would watch the show again because they were fascinated by the techniques.

"I still don't think our society really supports women going into the furniture design/build field. It's a bold choice for somebody to go to school for it, and to commit to doing it for the rest of her life.

"The first time I turned on a table saw, I was about 22 or 23 and it was at San Diego University. They had a great facility there, and they still do. I remember that many of the women in the program had already had some introduction to woodworking, perhaps through their fathers. I was a little shy initially, but only for a heartbeat or two, and then I fell in love with it. The

program focused a lot on technique because their philosophy was that you would be a better designer if you understood the labor that went into making things."

One gets the sense that, if Amy Devers ever came up against a glass ceiling, she'd just reach for a hammer.

"The problems I've experienced being female in a male world have actually been quite minor," she says. "The issue has not

been a major deterrent. The head of the department in my undergraduate education was a very skilled female. The same was true in graduate school, where the program was headed up by Rosanne Somerson [2002 recipient of the James Renwick Alliance of Distinguished Craft Educators award]. These women and others paved the way for me and created academic situations that were essentially free of sexism, even if the numbers were a little skewed ... heavy on the male side. So, within the confines of academia, I had no problems. In the real world, there have been lots of little things. At the hardware store, I run into clerks who don't believe I know what I'm talking about. Or they overlook you



BENT WOOD IS AT THE HEART of this nested table set. Its more transparent counterparts are of heat-bent acrylic.

at the lumberyard because they think you're with the guy in front of you. Comments like, 'What's your husband going to do with all this wood, Honey?'"

She laughs.

"Well, he's going to watch me turn it into an entertainment center."

Amy's workshop

"After graduating," she laughs, "I was able to load all the tools I owned in the back of a truck, and I managed to pay my bills as a finish carpenter. I worked with a couple of general contractors and then did some things on my own while I was getting a studio together. That's when I started the freelance furniture design-and-build operation

here in Los Angeles.

"The shop where we shoot the furniture show is the shop I go to every day to work. It's a hybrid of both my own shop and a studio set. My shop, when we started doing 'Freeform Furniture,' was not very camera-friendly. The producers moved me into a different space, and they made it more like a set, but we have all the tools and machinery in there. That's where we design and build and work every day. And of course, that's where we shoot the show, right on the same table saw where we built the prototype. We shot 21 episodes this year (2005) and we'll shoot five more before Christmas.

"I'm dying to have some free time in the shop, to just build something completely for myself!"

Amy's studio pieces are different from what she builds on her shows. She transforms everyday objects into works that make us think about how we live. "Shower Lamp" uses tile, wallpaper, a light sconce, a plumbing faucet and a beautiful sense of humor to startle us into reassessing the roles of familiar fixtures. "Tribute to my Mother in

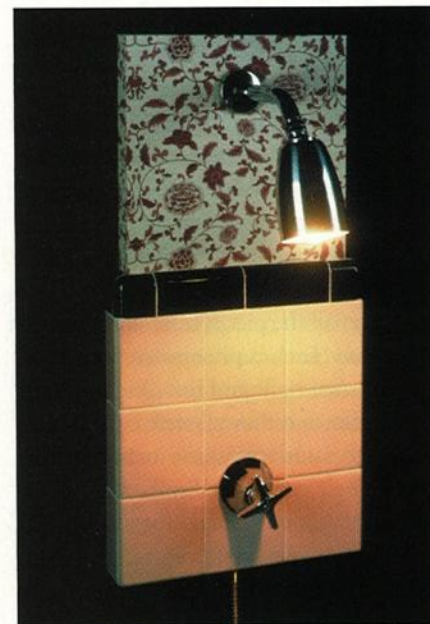
her Cat Glasses" is a wood, laminate and glass cabinet on three legs. The only humor here is in the name; this is a serious and complex work that evokes Krenov, Osgood, Euclid and ... well, the '50s. "Amputated," a clever conglomeration of wood, chrome and reupholstered automobile seats, says as much about her Michigan roots as it does her experimental nature.

Amy's work has been exhibited in venues such as the Sol Koffler Gallery, Flor Y Canto, Gallery Naga, the RISD Museum, the Market House Gallery in Providence, University Art Gallery in Mount Pleasant, Mich., and the Society of Arts & Crafts in Boston.

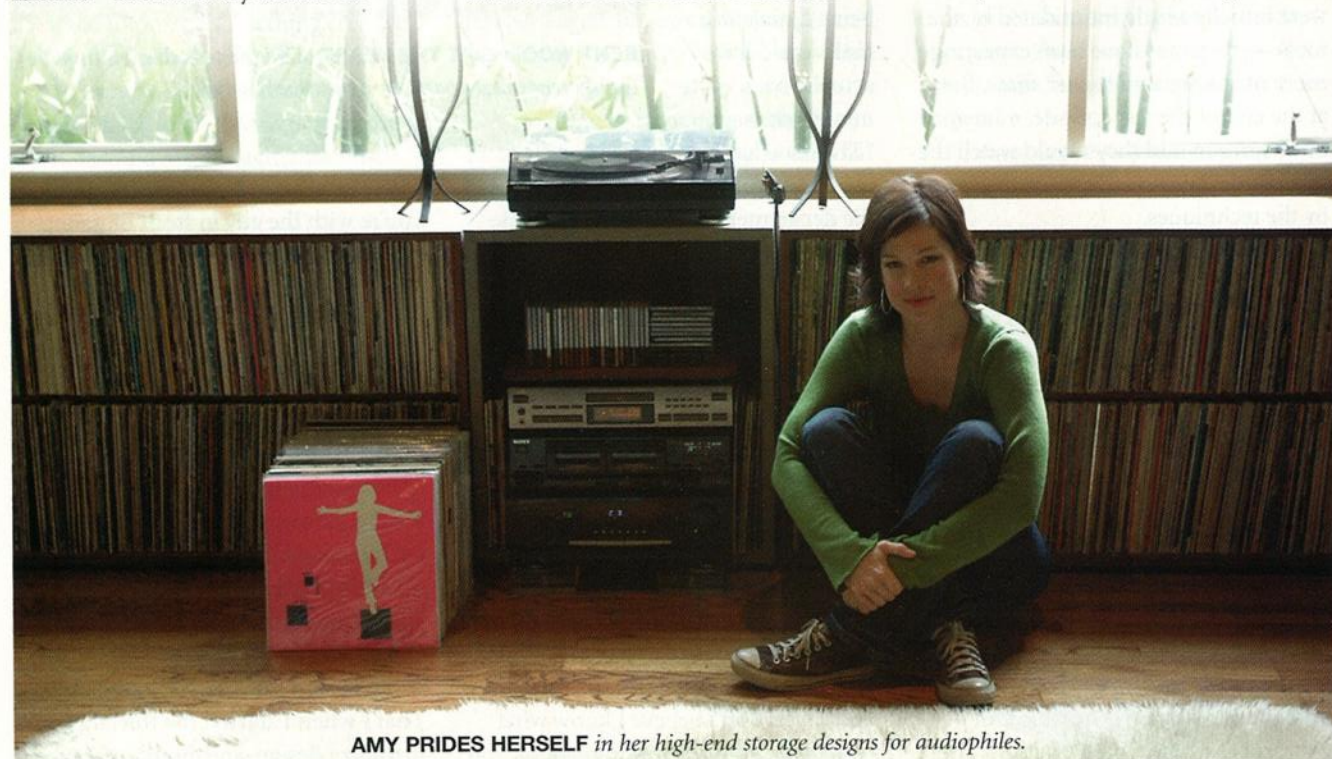
"In the museum and gallery setting," she says, "I exhibit my more sculptural, conceptual furniture. They come from exploring with materials that everybody is familiar with already, like wallpaper, tile, medicine cabinets, building materials that are so ingrained in our lifestyle that we don't think twice about them. And I started incorporating them in pieces of furniture that are primarily wall-hung or mounted in some way that allows them to become architectural

outgrowths."

Not everything she does is conceptual to that degree. Many of her pieces flirt with staidness. A gray, upholstered, Ultrasuede and polychromed hard maple chair called "Scotch and Soda" would be at home in



"SHOWER LAMP" is a wall hanging that shows familiar objects in a new light.



AMY PRIDES HERSELF in her high-end storage designs for audiophiles.

almost any living room.

"That's purely a formal furniture piece," she says. "I called it that because it's just a nice club chair that seems like the perfect place for conversation."

Early on, she was fortunate enough to land a few municipal clients for her design/build studio, which allowed her to create intimate spaces in a public domain.

"I did some large projects for clients like the Pasadena Museum of California Art, but things weren't so secure that I didn't keep my options open. The experience I gained in finish carpentry, combined with living in Los Angeles, led me to audition for 'DIY to the Rescue.'"

Modern design

Amy is intensely interested in the physical properties of materials, and how they go together. That, she says, is a common bond among craftspeople. She acknowledges that many traditional woodworkers might take a little while to get used to a television show that, to a large degree, centers on modern design.

"The show might initially feel a little like trying to listen to your teenage son's music," she laughs. "We use a lot of materials other than wood. I think that, when you see somebody using the same equipment you're familiar with, and using it in a different way and on different materials, it's just bound to spark ideas. The projects we cover are a good mix. Many are not as advanced as, for example, some pieces by David Marks. Others are not even wood-specific. If you don't have a fancy woodshop, you can still complete a lot of our projects. If you are lucky enough to have a well-equipped shop, some of our projects are pretty advanced. And it's not just woodworking. We try to mix media. If you don't have a welder, for example, we'll at least cover the basics so you're comfortable when you go to a local welding shop and have something subbed out."

Even though Amy's new show, "Freeform Furniture," places more

demands on her schedule, she seems quite relaxed about it. She travels frequently on location with "DIY To The Rescue," and says that the production company is very understanding and considerate of her home life with husband, Kristian.

"If they're going to do a shoot in, for example, Houston, they'll plan on doing four shows there all in that same block of time. The network will space them out in terms of how they air. They really work with us to keep things a little less manic. I'm newly married and we don't have children, so now is the best time to travel."

Four shows in a week is a demanding target, especially when one has to be fresh and creative in each episode.

"Being creative has definitely helped



"TRIBUTE TO MY MOTHER IN HER CAT GLASSES" evokes the 1950s in wood, laminate and glass.



A THREE-MEDIUM PILEUP resulted in "Amputated," a studio piece that seats two.

me, but I don't know if it has necessarily made me more of a marketable commodity. There are two sides to that coin. Some people really appreciate it, while others feel that I spend too much time designing and not enough honing my craft. There is an assumption that I'm a television personality first and a woodworker/designer second. Credibility is not a given."

That led to a question about others in the field whose work she enjoys.

"I like Norm, even if he sometimes uses a brad nailer where I wouldn't," she laughs. "I love David Marks, too. I'm a big fan of the work of Andy Buck and Russell Baldon. Russell is currently on faculty at CCA in Oakland, Calif., and Andy Buck has been teaching at RIT in New York for years. I've studied with Jere Osgood, and he's just phenomenal. I'm a big fan of Sam Maloof's finishes and his books. He's inspiring. I hope I can have that much energy. He's driven."

And Amy Devers knows all about that.

Nowadays, she's the one in the driver's seat.

John English

John English has been building furniture and cabinetry for 25 years. He has written or co-authored four woodworking and how-to books, and published hundreds of shop articles. He publishes *Woodezine*, an online woodworking magazine.





{ meet David Klocke }

WOODSHOP DOC

BY D WOOD

He has devoted a lifetime to healing the wounded and ailing, but Dr. Dave Klocke's other passion is crafting pieces of fine wood furniture destined to enrich the homes and lives of their owners.



Annabelle Ramford sat on a soggy piece of carpet, in a patch of goldenrod on the southernmost shore of Lake Superior, a huge butterball moon rising to the east. A bottle of New York pinot noir was wedged securely between her thighs. She was warm, comfortable, at peace, and a little drunk, bathed in the odors of dead fish and diesel exhaust, ragweed, and the rancid sweat of her unwashed cotton shirt.

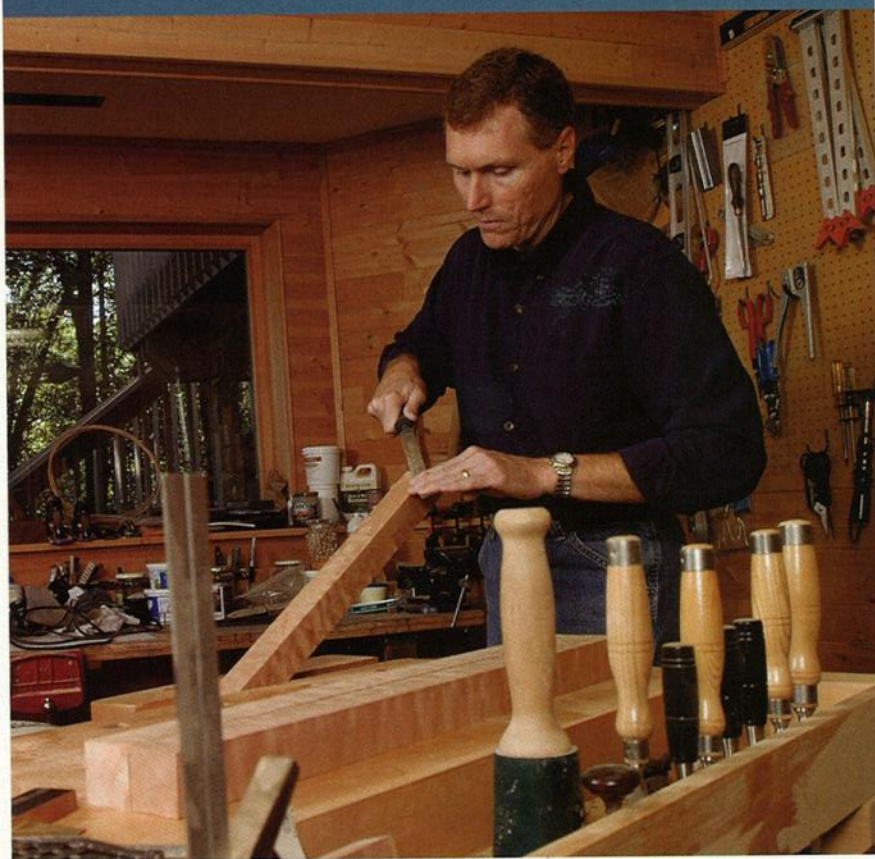
That opening paragraph of John Sandford's "Hidden Prey" (G.P. Putnam's Sons, 2004) introduces an exotic and erotic character. As a

reader, one could get involved in the life of Annabelle and be transported into a world of crime and mystery, totally oblivious to how the character was brought into this world. But one woodworker has certain knowledge of where, at least, she was created. He made the table at which John Camp (aka John Sandford) writes his popular novels.

"I was commissioned to build a large Mission-style library table for a client I didn't know, except by e-mail," explains Dr. Dave Klocke. "When I delivered the table, I discovered he

was a Pulitzer Prize-winning journalist turned bestselling novelist. It was satisfying to find out how the table would be used. He presented me with a signed copy of his latest book. Since then I have seen him featured in magazine articles, and he is pictured sitting at 'my' table. Imagining him sitting at this table and writing his next best-seller gratifies me and illustrates my belief in the intimate role furniture plays in our lives."

The secret thrill of knowing his work is being used effectively is now incorporated in Klocke's artist's



OBSSESSED WITH WOODWORKING since childhood, Dr. Dave Klocke has amassed an impressive portfolio of fine furniture, built here in his home shop.

statement: "It is an honor to create objects that become integral parts of the style and fabric of a home and the lives therein." Klocke sees the purpose of his furniture building as enriching the environments and lifestyles of others. Yet his woodworking avocation has become such an essential aspect of his own well-being that it has surpassed the importance of his far-from-insignificant day job. Despite success as an emergency-room physician, woodworking is an undeniable passion for Klocke.

Unintended destinations

The stories of how people got to where they are today are always intriguing. Sometimes they show a predilection for a particular activity in childhood, but life sends them in a direction that distances them from what they really cared about or were good at. Often, too, life brings them back to these

passions, allowing them to revisit and indulge the joy of their early satisfactions. Klocke's biography epitomizes this evolution.

"Lincoln Logs were my favorite early toys and they could keep me occupied for hours," says Klocke in recounting his formative years. As a youngster in California, in addition to building countless Lincoln-Log buildings, he remembers wild rides on a wooden go-kart that his father and brothers built. In the third grade he found plans in *Popular Mechanics* to build a flat-bottomed boat and convinced his brothers to help him scavenge discarded construction plywood from a vacant lot to make it. The boys were in the midst of hauling the heavy materials home when the owner intercepted them and insisted that they carry the plywood back to where they'd found it. Not only was Klocke unpopular with his siblings, but it

would be many years before he would attempt another boat.

When the family moved to Fargo, N.D., Klocke didn't abandon his yen for building or his admiration for offcasts. He prowled alleys, seeking potential joists, floorboards, walls, windows and roofing for a tree house. The arboreal architecture connected four large elm trees. "Every floorboard was hand-cut with my saw — my other tool was a hammer — and carefully fitted between the joists."

In the seventh grade he was exposed to formal woodworking, and his eyes were opened to its potential. "I learned basic drafting techniques, the proper use of hand tools and built my first projects, one of which was a lamp of mahogany and maple with a coin tray hollowed out of the base."

He studied metalworking the following year, but in 1971 returned to the woodshop in the ninth grade to build a walnut-and-maple chessboard — which he has to this day — and a stereo cabinet. While he didn't know it at the time, this would be his last formal woodworking education until 2004.

Because there were no shop classes offered when he entered high school, and with no mentors to advise him that woodworking could be a career, it didn't arise as an option. His ability in the sciences, however, prompted teachers to press him to attend college and, later, medical school. He set woodworking aside except to build several tables to furnish his apartment; he describes them as looking as good as 2x4s could look, given the limited equipment he owned. After a residency in internal medicine, Klocke chose to practice emergency medicine because he could control his hours and, as he puts it, "You get to fix things." He has dedicated himself to fixing damaged and ailing human bodies for over 20 years. The people of Rochester, Minn., are the recipients of his care.

Klocke's attitude toward his vocation is pragmatic.

"To my surprise, quite a number of people found my Web site and asked if I could build this or that piece of furniture. Despite reluctance due to my lack of formal training, I went ahead."

"My medical career affords me the income to acquire tools. I have gradually purchased hand and machine tools and replaced some of them with better models. I devour hundreds of wood-working books and magazines and have a nice collection. While I built many items from plans in my earlier years, I now try to design my own."

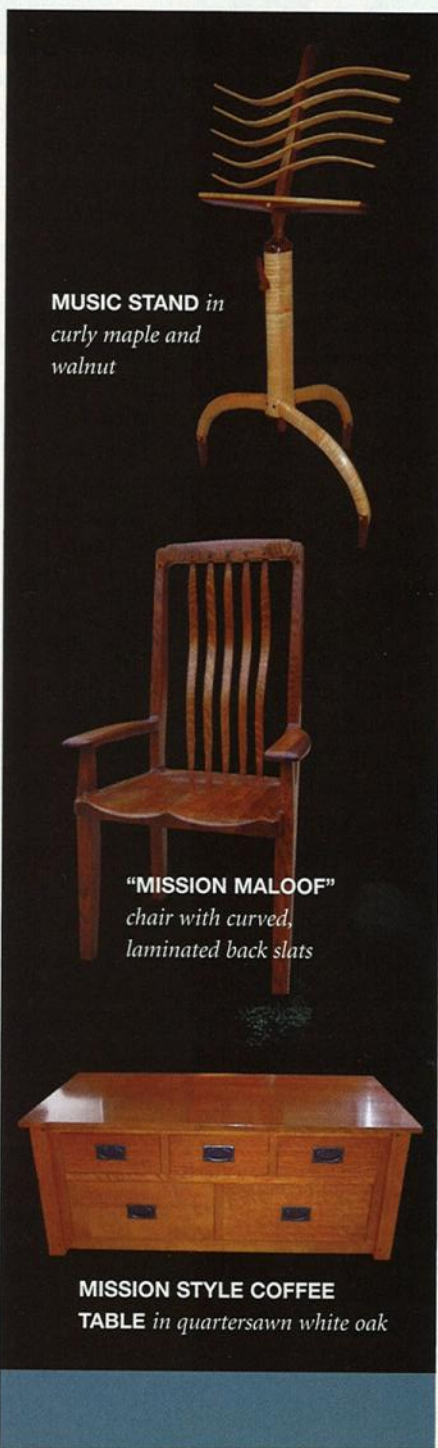
A return to the shop

The books and magazines were the source for technical advancement as Klocke indulged what was, at that stage, only a hobby practiced in the garages and basements where he and his family lived. The acquisition of knowledge was sometimes at the expense of injury (Doctor, heal thyself!) and wasted financial outlay, but he persisted in honing his skills.

Klocke credits the Internet with the next stage of his woodworking.

"About eight years ago I built a Web site in order to show my work to family and friends," he says. "I thought that, if they asked, I might consider building an occasional item. They did ask, and I earned enough money to buy a few more tools but still wasn't sure if I was good enough to take my woodworking further. To my surprise, quite a number of people found my Web site and asked if I could build this or that piece of furniture. Despite reluctance due to my lack of formal training, I went ahead."

Klocke's Web site, *rustyplanewood works.com*, in addition to showing a range of completed commissions, one-of-a-kind pieces for sale and work



MUSIC STAND in curly maple and walnut

"MISSION MALOOF" chair with curved, laminated back slats

MISSION STYLE COFFEE TABLE in quartersawn white oak

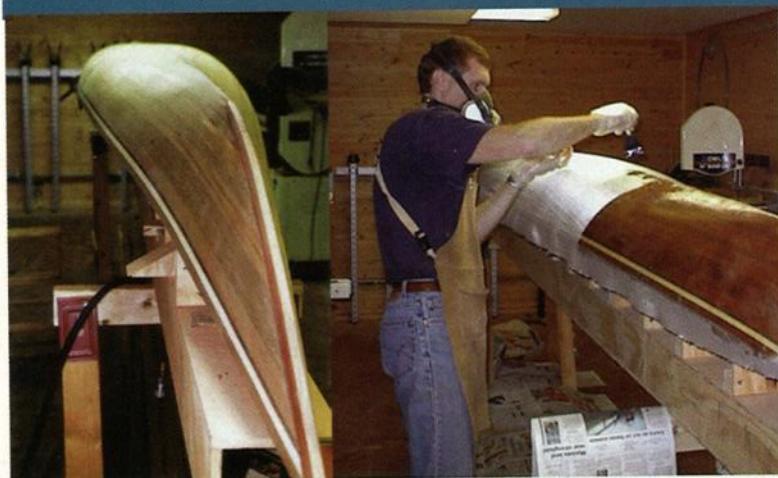
in progress, has a modest collection of accolades that are testaments to his design and execution. After going public with his hobby, Klocke's receipt of positive feedback had an impact.

"I started to believe in myself more with each completed project, especially when some of my clients contacted me to make a second or third piece." Overcoming his fears of inadequacy brought rewards Klocke could not have imagined.

Developing a style

In the beginning, Arts and Crafts, Mission and Shaker were the primary style influences on Klocke's work, and his Web site declares that he specializes in reproductions. Cabinets, chests and tables have simple classical styling with details reminiscent of Gustav Stickley, the Roycrofters and California Mission. Faithful imitations such as "Steamer Trunk" are fascinating in their meticulousness. "Dining Table" looks very familiar, yet the repeated floral inlay in the top gives this piece a unique Mackintosh touch.

Most of the work is traditional, with a few exceptions. One is a modern kidney-shaped desk for an engineer; its minimal elements speak of no-nonsense utility. Another exception is his curly maple "Music Stand." Though definitely Arts and Crafts in its detailing, the fluidity of the musical staff motif is contemporary and alludes to the work of one of Klocke's heroes. Although this early work doesn't demonstrate a serious deficit with respect to design, a desire



A CROWDED SHOP was the price Dave paid for fulfilling his longtime dream of building a wooden boat. The 17-foot cedar strip sea kayak with white oak and mahogany cockpit was featured in *WoodenBoat Magazine*.

to jump-start his creativity and an opportunity to meet a woodworking icon took Klocke to Anderson Ranch in Snowmass, Colo., in August of 2004.

"Sam Maloof was my wood-working idol," he says. "I had read every word about him in the books I owned – two

or three times – and browsed through photos of his work every time I needed inspiration. When I saw the chance to take a five-day class with Larry White, his longtime shop assistant, and a two-day class with Sam Maloof, back-to-back, I signed up."

It was during the critique at the conclusion of White's class that I met Dave Klocke and heard his synopsis of the evolution of a project of his he calls, simply, "River Box." White had asked students to come to Colorado with research for a box to house a treasure or

memento; the focus for the box was to be on aesthetics, not technique. Klocke told his classmates that he had traveled to Anderson Ranch with a nice piece of quilted maple and the intention of making a box for an Orvis fly rod. Though he would normally have begun such a project with a precisely drafted plan, he had no idea what form the box would take and resolved to let the piece evolve through the process of making it. The outcome was unlike anything he had done before. You can see it on the opening page of this article.

Changing the process

The form of "River Box" is sculptural and looks like an object, seen through water, lying on a riverbed. The top of the box simulates that bed, inlaid with rocks gathered from a stream near the ranch. Klocke's adeptness at accomplishing this feat impressed White. During the late-night sessions to complete the box in four days, Klocke realized that a metal hinge, one of the staples in his Minnesota shop, would be inappropriate, so he crafted a wooden one. And while the fly rod was inspirational to the design, its insertion into the box became almost incidental. Klocke was amazed by the outcome that resulted from following his instincts. He declared that this approach would change forever how he proceeded.

DAVE LOVES BOATS and has spent many hours paddling around northern Minnesota.

"While I built many items from plans in my earlier years, I now try to design my own."

He also acknowledged his classmates' input in his transformation.

Personal involvement in the theme of "River Box" undoubtedly had an influence on its outcome as well.

"I love boats and using boats as much as I love furniture," he says. "Since college I have spent many summer days paddling canoes through the Boundary Waters Canoe Area of northern Minnesota."

Klocke admired the handmade wooden canoes he saw on his expeditions but eventually built a kayak because of its beautiful lines, deck and cockpit. During 2002, his small shop was crowded with the 17' cedar-strip vessel in addition to furniture-in-progress, yet the standards for each weren't compromised. After viewing photos, the suppliers of the kayak plans suggested that he submit them to *WoodenBoat Magazine*; the kayak was published in the late summer/fall issue of 2003.

For Klocke, the kayak is only a beginning. "So far the kayak is the only boat I've built, but I have dreams of a double kayak, a traditional mahogany runabout, an Adirondack guide boat, a sailboat, and even a canoe, if I ever have a shop big enough to build boats without slowing down my furniture!"

Sailing on

Klocke's curtailment of his medical career will increasingly allow him to concentrate on fulfilling dreams and the hopes for his future as a professional woodworker.

"The experience [at Anderson Ranch] was an epiphany of sorts, and I learned a lot more than just woodworking techniques," he says. "I learned how much fun it is to work with other

woodworking enthusiasts, acquire new techniques from experts and share with artists in metal, printmaking, painting."

As a maker unused to the cross-pollination that can benefit artists, Klocke now wonders if he should go back to school full-time. It would be a big step, but he's thinking about it.

Recent additions to the Rusty Plane Web site (the name was inspired by an antique wooden-bodied smoothing plane that Klocke purchased from the Internet when he inaugurated his site) include two Maloof-style chairs. Klocke says, "I am happy with the results even if they aren't nearly as good as Sam's."

Perhaps it's important that they're not as good as Sam's – they're different, and they're Dave's. He has relied on someone else's design, yet the chairs, along with the music stand, imply new territory and fertile ground. He is now emulating a contemporary studio furniture craftsman, and it will be only a matter of time before his own signature designs predominate. With his exceptional skills, Klocke can master the challenge of design and open a new chapter in his woodworking career.

I recently contacted John Camp's son to be sure that Dave Klocke's table was still playing a vital role in his father's novels. The reply indicated that the books are written on a computer kept elsewhere, but the critical line-editing takes place on the table. Camp has said he is like a carpenter with respect to constructing a novel: It's critical to be good at the craft before indulging in the art. The metaphor may have been inspired by the desk or its maker, but the wisdom of the words applies to both craftsmen.

Writer and woodworker definitely are on the same page. 🌿



D Wood

D Wood has an MFA in furniture design from the Rhode Island School of Design. She is a freelance writer for a variety of international craft and art publications. When not writing, she teaches design at Tucson Design College and explores the Arizona desert.





HIDE GLUE

One of the oldest adhesives known to man, hide glue is still widely available – for plenty of good reasons.

By Tom Iovino

MY NEIGHBOR IS AN INTERESTING GUY.

He has kept a lot of stuff from when he was growing up in the years before World War II, such as a side table he built in his high school shop class. Of course, being a woodworker, I had to get on my knees and take a look underneath it to see how it was built. During my inspection, I was



surprised to find evidence of something I had never seen before - hide glue. In today's age of ready-to-use yellow glue and ultra-strong epoxy and polyurethane glues, I started to wonder – is there a good reason why hide glue is still around?

You bet there is, and this old-fashioned glue still has plenty of applications in today's shop.

WHAT IS THIS STUFF?

Hide glue is one of the oldest adhesives known to man. Evidence of hide glue can be found on furniture retrieved from the Egyptian pyramids, and very early hunters discovered that it was good for binding spear points and arrowheads to shafts for the hunt.

Hide glue is, in effect, very strong gelatin which is cooked out of animal hides and hooves. Since my second-favorite hobby is cooking, the process is easy for me to understand. To make a really good pot of chicken stock, all you have to do is simmer chicken bones in water for most of a day. After straining and cooling, the cold stock has a jellylike consistency.

What causes that? When animal bones or hides are cooked for a long time on low heat in a moist environment, the protein collagen found in the bones and connective tissue is converted into gelatin during the cooking process. It's this gelatin that gives a rich feel to a bowl of chicken soup, or, if it's really concentrated, can be used as glue.

Of course, ease of use is the hallmark of modern adhesives, and the knock on hide glue is that it is fussy to use. Nothing could be further from the truth.

LET'S WHIP UP A BATCH

It will take some time, some heat and a little bit of know-how before you can use hide glue. First, get yourself a supply of granular or pearl hide glue, which comes in the form of hard little pellets. This is the dried form of the glue, and the first thing you'll have to do is soak it. Your best bet is to find a jar that can be used for canning; they can take the heat, and they have screw-on lids for storing your melted glue. A dozen of these can be yours for less than \$10 at most grocery stores, or you can find old ones at yard sales.

Place an equal amount of hide glue pellets and cold water in the jar. Screw on the lid and let the mix sit overnight. When you come to the shop the next morning, you'll be greeted by a sticky, gloppy mess. That's good. It means that the glue has rehydrated, soaking up all the water you put in with the pellets. Now, to the heat.

TAKING THE HEAT

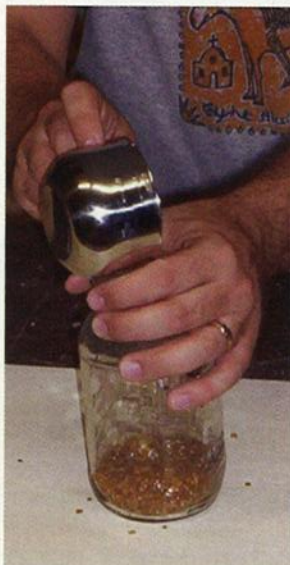
You'll have to have some way to get the glue temperature up to about 140°. There are electric glue pots for sale that can keep glue at the proper working temperature all day long, but they can be a pricey investment up front – especially if you are just starting out.

For me, a hot plate and a pot of water act as a double boiler, providing even heating for my jar of glue. I carefully monitor the water temperature using an instant-read thermometer to ensure it doesn't exceed 150°. Too much heat can break down the protein in the glue, making it useless. You can tell whether this has happened by rubbing a small amount between your index finger and thumb. Properly prepared glue will stick tenaciously after a few seconds of rubbing, and when you pull your fingers apart, you will see many protein "threads" form. However, you won't feel the same tack from overcooked glue, and those threads will be a lot less impressive.

A few minutes on the heat and a few stirs, and the sticky mess becomes a thin syrup-like consistency that runs off your stirrer. Now it is ready to use right out of the jar to glue up your projects. If you can't use your glue right away, you can keep it on the heat all day, or you can pour it off into a resealable plastic container and refrigerate it. If you do, the glue will stiffen up into a rubbery mass. From there, you can simply slice a piece off and melt it again in your double boiler.

The traditional way to apply hide glue is to brush it onto a surface. But if you want even more convenience, transfer it to a plastic squeeze bottle with a nozzle.

The first use I found for hide glue in my shop was applying a biscuit-joined drop molding onto some shelves. The water in the glue swelled the biscuits quickly, making the joint very tight before the clamps went on. The glue easily allowed a five-minute open time. And, had the glue gelled up, it wouldn't have been a problem at all. Unlike yellow



THE PRACTICAL SHOP

glues, you can simply apply more hot glue to reactivate the old stuff.

After an hour, the glue was cured enough to allow me to take the shelves out of the clamps – about the same amount of time yellow glue would need.

WHAT'S HIDE GLUE GOOD FOR?

Well, besides general joinery, chair makers swear by the stuff. If a round stretcher glue joint fails, all that's needed is a hot, damp towel, a few mallet whacks, and an application of new hot glue to reactivate the old stuff. If the chair was glued with any other type of adhesive, it would require a lot of sanding and scraping to remove the old residue before a repair could be attempted.

Hide glue also sands off projects very quickly. I've been known to accidentally touch a gluey hand to part of a project I am assembling, only discovering my misstep during finishing. Yellow glue is very hard to remove, while hide glue sands away without any residue. Once you stain or apply any type of finish, you'll be pleasantly surprised just how easy it is to deal with glue squeeze-out.

When you apply hide glue, try rubbing the two pieces of wood together, and you will be surprised how quickly the glue will fix them to each other. This can be a great help if you are gluing together small parts. In fact, you can pretty much work without clamps on small glue-ups, unlike the clamping pressure you need to keep a slippery yellow-glue joint in place. This gripping quality is perfect for veneering, and, unlike some other more noxious glues such as contact cement, hide glue is non-toxic and doesn't require ventilation and respirators.

Hide glue isn't subject to creep. If you have ever peeled some dried yellow glue off the nozzle of a bottle, you'll notice it can be bent and flexed. This plastic state is what allows more springback on cold bent laminations. Dried hide glue, on the other hand, is very brittle, making it better for freezing a bent project in place.

Of course, hide glue isn't a miracle adhesive. It does have its drawbacks. Don't use hide glue anywhere there will be moisture, as water can weaken the glue joint.

Like food, hide glue can go bad relatively quickly. If you just leave the glue out on the counter in the shop, it will begin to grow mold, which will lessen its adhesive qualities. You can get a few weeks if you refrigerate your batch, and maybe squeeze a few months out of it if you freeze. Be sure to reheat only small batches at a time instead of your entire pot. Excessive reheating can also reduce the strength of the glue.

Also, the stuff has a certain aroma. No, unlike the horror stories you might have heard about hide glue, it won't stink you out of your shop. Think more along the lines of dirty socks than a skunk. Contact cements and some epoxies have much more pungent odors.

Now, will I throw away my yellow glue? No. But hide glue is something every woodworker should try at least once. Besides being a useful adhesive, it's another way to hearken back to the techniques used by woodworkers who came before us.

— Tom Iovino is a woodworker from Largo, Fla.

DMT® We sharpen
every tool on the bench!

DuoSharp® plus

New! Continuous zone for small and pointed tools.

MADE IN USA

DMT® THE LEADER IN DIAMOND SHARPENING
DIAMOND MACHINING TECHNOLOGY
85 Hayes Memorial Drive Marlborough, MA 01752 USA

800.666.4DMT
www.dmtsharp.com



WOODSENSE

Before plunking down your hard-earned cash on hardwood lumber, read this primer on what to look for, what to ask for — and what to avoid.

By Udo Schmidt



HARDWOOD LUMBER: A BUYER'S GUIDE

Buying hardwood lumber is not as straightforward as buying a finishing product or hardware. That's because wood is a natural product; no two trees are alike and no two boards are alike, even when they come from the same tree. Each woodworker also has a different idea what the lumber for his or her project should look like; the woodturner will want different wood than the cabinetmaker. From forest to woodshop, here are some factors to consider.

Sources

There are many sources for quality lumber and each of the following has its pros and cons. **SAWMILL:** a good choice for buying lumber and most likely the cheapest place. Lumber at the sawmill is green. That means it is freshly cut or air-dried at best. Before use in most projects, it will have to dry to the proper moisture content.

Sawmill lumber is probably not sorted by grades. As the log is sawn, the lumber is piled into a stack wherein the quality is not uniform. The quality of the log determines the proportions of good and poor lumber in a given stack, so it is advisable to look at every board before purchasing a pile of log-run lumber.

WHOLESALE YARD: a good place to purchase large amounts of lumber. Unless you are in the market for a truckload (roughly 12,000 board feet of kiln-dried oak), the wholesale yard is out of your league.

DISTRIBUTION YARD: where most of the lumber used in woodshops is purchased. Some companies will sell from 100 board feet to multiple truckloads. They carry a wide selection of species and grades,

sometimes including exotic woods. The larger yards maintain a fleet of trucks and can deliver the lumber to your place. Distribution yards also offer planing and straight-line ripping services. Unless you are looking for a special wood, the distribution yard is probably your best source for lumber.

RETAIL YARD OR STORE: where you can find a wide variety of woods in smaller amounts. Unlike distribution yards, retail stores let you select the boards you want. Therefore, expect to pay a lot more money for the lumber you buy there.

There are many other sources of lumber, including companies that sell salvaged or recycled lumber. You can also luck into the occasional purchase of good lumber from an individual. But in most cases, the distribution yard and the retail store are the best bets.

Measurement

Most lumber sold at sawmills and lumberyards is measured by volume in board feet (sometimes abbreviated bf or bdft). A piece of wood 1' wide, 1' long and 1" thick would measure exactly 1 board foot. Of course, lumber does not normally come in these dimensions, so we have to apply a formula: (width in inches x length in feet) / (12 x thickness in inches). For example, take a board 6" wide, 10' long and 1½" thick and apply the formula: $6 \times 10 / 12 \times 1.5 = 7.5$ board feet.

On the other hand, some specialty items and milled stock are sold in linear feet, a pricing system based only on the length of the board. Our example board at \$1/linear foot would cost \$10.

Lumber thickness is sometimes expressed in quarters. Lumber that

is 1" thick is called 4/4 (four-quarter), 1½" is 6/4 (six-quarter) and 2"-thick stock is 8/4 (eight-quarter). Remembering this can help you determine the total volume in board feet.

Hardwood lumber is customarily measured and graded before kiln drying. The price for a board foot of lumber is based on a green measurement. That means that a 6" board might only be 5¾" wide. The amount of shrinkage during kiln drying depends on the species and the final moisture content.

Grading

Lumber quality is a wide-open topic, and many experts have different opinions on what is acceptable and what is not. Often, what is a defect to one woodworker is "authentic" or "artistic" to another.

The grading of most lumber sold in the U.S. is based on the rules published by the National Hardwood Lumber Association, which was founded in 1898 to standardize the inspection of hardwood lumber. Unfortunately, the rules are written for volume shipments of lumber (usually truckloads), and the grades they establish were never intended to be used for retail sales. Widely established in the wood industry, the rules and resultant grades might be confusing to the layman.

Lumber grades are based on a clear face cutting of a board. According to the rules, the minimum size of pieces that can be cut from a board depends on its grade. The larger a board is, the greater its surface measure (SM) and the more cuttings can be taken from it according to the grading rules.

For instance, in the best grade, FAS (firsts and seconds), the maximum number of cuttings allowed

is SM/4. In a given board 8" wide and 12' long, the surface measure is 8 and therefore two cuttings (or graded pieces) are allowed. Also, the FAS grade requires a minimum cutting size not less than 4" x 5' or 3" x 7' for each piece, and a yield of at least 83⅓% clear cuttings. In other words, the 8" x 12' board can be cut (crosscut or ripped) into two pieces to obtain 83⅓% clear wood from the entire board. The FAS board minimum size is 8" wide and 8' long.

Of course, the higher the grade, the stricter the requirements. The lowest grades can be cut an unlimited number of times and might only require a yield of 25%.

There are a number of other rules for grading, but these basics can help you begin to picture how the grading process works.

Kiln drying

Lumber grades are a good way to start assessing quality, but they only tell the buyer how much usable lumber he can expect from a certain grade, not the overall quality of wood. For instance, lumber is measured and graded when it is green, so any kiln-drying defects are handed down to the buyer. The woodworker should be more concerned about these defects than whether a board meets grading requirements.

When lumber dries, it shrinks. Actually, it starts at a moisture content around 30%, which is called the fiber saturation point (FSP), and dries from the outside in. That means that part of a drying board — the shell — goes below the FSP and begins to shrink while the inside — the core — is still saturated. The different moisture contents and shrinking portions

of a board produce tension and compression between shell and core that can cause many drying defects, like splits and checks.

Another kind of drying defect is caused by the different shrinking properties of wood – tangential, radial and longitudinal – which are all present in a given board. Unfortunately, due to this natural drying process, some defects like light cupping, short end splits and small twists should be accepted on hard-to-dry species. Good lumber stacking and kiln drying can keep these defects to a minimum.

Lumber companies, like any other business, are geared for maximum production. Increased production (accelerated kiln dry-

ing) also increases drying defects. It might take some time and patience to find a supplier who delivers a consistent quality of kiln-dried lumber. Another problem is that kiln-drying defects are not covered by NHLA rules, which primarily deal with the measurement and grading of lumber before kiln drying.

Services

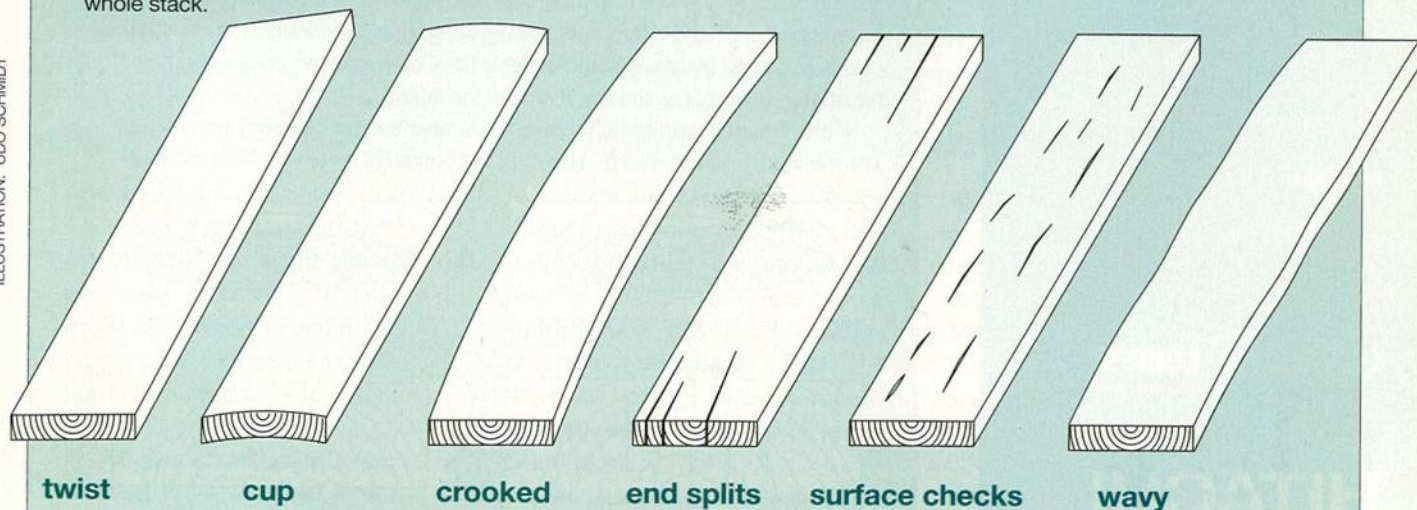
Many lumber companies offer additional services like planing and straight line ripping. The extra charges for this service are minimal compared to the work saved by the woodworker who has no heavy machinery. A few points, however,

should be considered before the purchasing the services.

The term used in lumberyards for planing is S2S, which means “surfaced on two sides.” Buying lumber already surfaced is a tremendous time-saver for the woodworker with just a small planer. The extra charges range from 5 to 10 cents per board foot. It is advisable not to have the lumber planed to the final thickness. The planers used for surfacing are very fast and not intended for a smooth finish; they merely bring the lumber to a uniform thickness. The woodworker can take the resurfaced lumber to the smooth finish and final thickness by just taking $\frac{1}{32}$ ” off each side of the board. That means surfaced

Common Lumber Defects

- **Twist**, also called wind, is a common natural drying defect occurring mostly in lumber where the grain direction changes. It can cause problems such as tearout.
- **Cupped** boards usually have two planes (radial and tangential) in their cross sections and continue to cup during the seasonal swelling and shrinking periods, even after they are jointed flat.
- Boards that are heavily **crooked** are a good indication of reaction wood and should be avoided if possible in any solid wood projects.
- **End splits** are the result of kiln drying the wood too quickly or leaving the ends of the lumber stack unprotected during air drying. In any case, it is better to rip the board into smaller strips-- next to the split-- instead of crosscutting close to the end split. Some splits continue further into the wood than is visible, and can open up during seasonal swelling and shrinking.
- Boards with clearly visible **surface checks** usually indicate other defects or problems such as severe casehardening, honeycomb or wet wood. Any board with surface checks should be closely inspected.
- **Wavy** boards are the result of poorly handled lumber and bad lumber stacks. They do not affect a single board, but the whole stack.

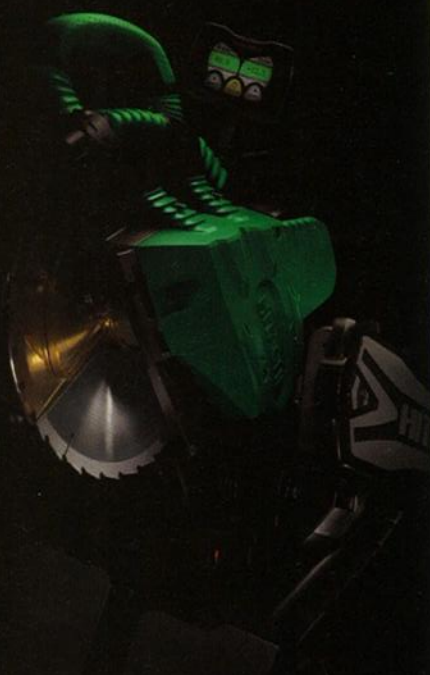


Bells and whistles?

How about

liquid crystals

and lasers?



**C12LSH | Meet our new 12"
Sliding Compound Miter Saw**

Revolutionary New Slide System

Top Mounted LCD

Fully Adjustable Laser Marker

Micro Miter & Bevel Adjustment

Yep, it's fully loaded.

Available Nationwide at



HITACHI

www.hitachipowertools.com

lumber should be about $\frac{1}{16}$ " thicker than the final thickness required for the project.

E1S means "edged on one side." In other words, the boards are ripped on one side with a straight line rip saw, which gives the customer one straight side on each board. Here again, this can be a time-saver for some woodworkers for the extra charge of 5 to 10 cents per BDFT. Straight line ripping, however, can cost a lot of wood. The average loss ranges from 5 to 10 percent. Unless the woodworker requires long stock, which is difficult to square up on small jointer, it is cheaper not to have the lumber ripped straight.

The journey

Many people may ask: Why do I have to pay \$3 or \$4 a BDFT for wood that grows in my backyard? The following example shows a typical journey from tree to usable lumber. (Prices in this example are

not meant to reflect market conditions.)

The process begins with loggers, who buy standing timber from private landowners or bid on forest service tracts for logging. The logs, of various species and grades, are sorted and sold to veneer mills, processing plants (for particle board), and paper mills. Good quality sawlogs are sold to the sawmill. Prime red oak logs are sold for \$600 per 1,000 board feet.

The sawmill yields 50 percent FAS, 30 percent No. 1 Common and 20 percent No. 2 Common and less. The FAS is sold to wholesale lumberyards for \$900 per 1,000 board feet, and the No. 1 Common for \$600 per 1,000 board feet. The No. 2 Common lumber is sold to flooring plants, and the lower grades to pallet manufacturers.

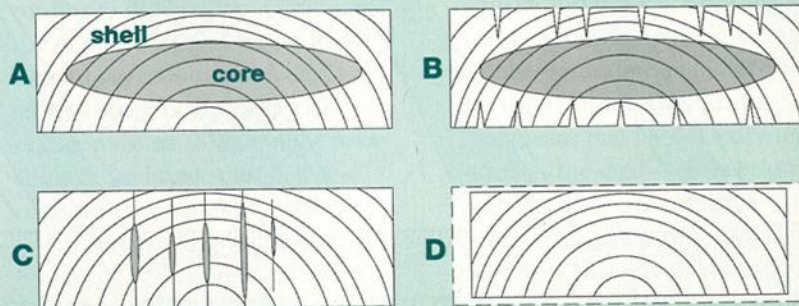
At the wholesale lumberyard, the FAS and No. 1 Common are separated and kiln dried. The distribution yard buys one truckload of FAS red oak lumber kiln dried for \$1,450

Drying Stress in Lumber

Green lumber has two moisture zones, the outer shell and the inner core (A).

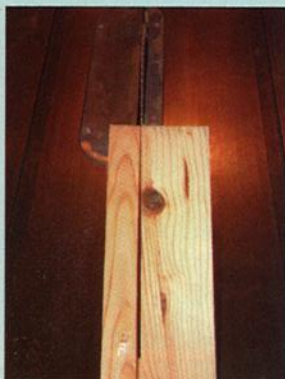
As the lumber dries, the outer shell dries below the fiber saturation point and wants to shrink; since the inner core is still above fiber saturation point, the surface cannot shrink, and surface checks develop (B). When the surface checks are too deep, they will remain after the shell and core shrink evenly together. (C) These inner checks are also called honeycomb. Properly dried lumber will shrink evenly across all planes with few defects (D). There remains, however, a small moisture gradient between the shell and the core.

If the moisture gradient is too big, the lumber cannot be used immediately. The moisture content will equalize over the course of weeks or even months.



Fatal Lumber Defects

There are three kinds of lumber defects which need to be discussed in detail and should not be accepted by any woodworker because they render lumber useless and make it dangerous to machine.



Casehardening is a difference in moisture content in a given board between the shell and the core. As lumber dries from the outside in, the shell and the core will go through tension and compression stages. If a certain moisture gradient between shell and core is maintained during the drying phase, the lumber will dry to its final moisture content without problems. However, if the moisture content between the shell and the core is too great, the lumber is casehardened. That means there is a tension from the core to the shell of a board. Commercial kiln operations are very familiar with this problem and try to compensate by steaming the kiln load at the end of a drying cycle.

If the casehardening is too severe, the steaming or conditioning of the lumber will not relieve the stress in the board. This will cause serious problems for the woodworker.

Unfortunately, most lumber companies do not consider stress in lumber a defect.

Another problem with this defect is that it is not detected until the lumber is processed.

A good indication of stress is when a board is ripped. If the two ends coming out of the saw pull to each other to the point where they bind the saw blade then the board is severely casehardened. If the board is cut, the two halves will never stay straight. Even with careful jointing and ripping, it is almost impossible to get straight stock out of severely casehardened lumber.



Ring shake or ring failure occurs in a living tree. The rings actually separate, causing severe splits. This problem is hard to detect in green lumber when it's measured and graded. The kiln drying will separate the fibers or rings, and the shake sometimes becomes clearly visible – and sometimes not.

When the kiln-dried lumber is not re-inspected, shaky boards are left in a lumber stack and shipped to the customer. Ring-shake boards are extremely dangerous to machine, especially on rotary cutters such as shapers, routers and lathes.



Honeycomb is another defect associated with kiln drying. Like casehardening, honeycomb can develop during air drying under certain conditions but it is rather rare.

Basically two conditions cause honeycomb. First, when surface checks are very deep the surface or shell will close when conditioning, and the interior checks remain. Secondly, if the moisture gradient between shell and core becomes too great (like in casehardening) during drying, the tension and compression stage between the shell and core will tear the wood fiber apart, leaving honeycomb.

Severely honeycombed stock is considered cull and should not be used in any project.

Honeycomb is acknowledged as a major kiln drying defect, and the woodworker should have no problems returning the damaged lumber to the lumber company in exchange for defect-free stock.

per 1,000 board feet.

At the distribution yard, the woodworker can buy the required minimum for \$1,850 per 1,000 board feet. It will cost about 15 cents per board foot to have the lumber surfaced and edged, for a total of \$2 per board foot.

Wholesalers and distribution yards sell the FAS red oak lumber

to retailers. Some retail stores sort through the lumber and surface it on all four sides. This makes the lumber uniform in thickness and width. Here is where the woodworker can buy, for example, a 1" x 6' x 8' red oak board. The price jumped to \$1.80 per linear foot (\$3.60 per board foot).

This example shows five middle-

men handling the lumber, between a tree and the woodworker. Needless to say, each of these five middlemen has to support his business and wants to make a profit. From logging to sawing, to kiln drying to sorting and planing, it is easy to see why the price of quality lumber is high.

— Udo Schmidt is a contributing editor to Woodcraft Magazine.



BACK TO SCHOOL

Country Workshops

By Brooks Townes



LIKE ARTISANS OF YORE, students in a Country Workshops ladder-back chair-making class sit at shaving horses to shape chair parts with drawknives.

The Simple Life

A FEW YEARS AGO, a photo of a neat little lapstrake, gaff-rigged sailing skiff caught my eye in the pages of *WoodenBoat* magazine. It was newly built with a dark blue hull, red sails, oak trim and spruce spars nicely varnished.

The magazine said it was built by Drew Langsner at Country Workshops in Madison County, N.C. Madison is a beautiful, sparsely populated county north of the arts-and-crafts city of Asheville, 2,500 feet in elevation and hours from the nearest ocean.

“Say what?” I said to my dog. “Who way out in them-thar hills knows what a salty gaff sloop is, let alone how to build one!?”

A leisurely pilgrimage

I wanted to meet this boat builder, so after a deadline one day, I took a drive. At the Madison County Sheriff’s Office, a kindly deputy gave me directions — a 30-mile drive over a twisty sun-spattered, two-lane road bordered by kudzu, past southern mountain cabins and red barns, some with “See Rock City” still faintly visible on their roofs.

Way back in those hills still known to harbor moonshiners, I crossed a fast-water creek over a little wooden bridge with no railings and continued up a long driveway, tunneling through stands of leafy hardwoods. An occasional small, carved “CW” sign nailed to a tree pointed the way. Around a bend, the sky reappeared above a mountain pasture, a pond and a large, lush garden. Beyond that stood an old, three-story tobacco barn with lots of windows, and a large cabin of broadaxed logs, built in the Scandinavian style.

My unexpected arrival brought Langsner out of the barn and shop where students were drawknifing chair parts. I introduced myself, and he told me he and a pal had built the pretty blue boat I’d seen in the magazine as a personal project, inspired by a boat-building class at the school. “We were curious about lapstrake boat construction ... also, we wanted a boat.”

To many woodworkers, Country Workshops is famous; to some it’s a Mecca — a quiet, healthy, peaceful place to learn hand-tool woodworking from a variety of masters. It’s like a monastery where one can live for a week, immersed in learn-



FORMERLY A TOBACCO BARN, the structure at left is now home to shop and classroom areas at Country Workshops. At right, a log guest cabin offers privacy and rustic charm. Lodging and meals are included in class tuition prices.

ing. The food is fantastic, the views astound, and the cool mountain nights are silent — except for katydids, tree frogs, an owl or two, and on some early mornings, a pileated woodpecker tapping in the woods above the cabins.

Country Workshops has been teaching hand-tool woodcrafts since 1978 through classes and tutorials, plus yearly Langsner-led overseas study tours. Students learn about traditional woodworking and living country-simple, with elegance, much the way our forebears did (but without the discomforts).

Importing knowledge

It's interesting how Drew Langsner and his wife, Louise, got here. In the '70s, they left their home in California and traveled the Old World, researching traditional craftsmanship across the globe. Their resulting book, "Handmade," was well received upon its publication in 1974. They'd spent months traveling, studying and working with artisans such as woodworkers, coopers, weavers and bakers in Greece, Turkey and the Swiss Alps.

The Langsners, drawn to the

simple self-sufficiency of these craftsmen, returned to the United States determined to carve out a similar living. They explored the states, considering Oregon and Maine and elsewhere. They decided that more people still lived simple, self-sufficient farming lives in the Blue Ridge Mountains than anywhere else in the nation. Plus, the hills there were still blanketed with hardwood forests.

With little money but lots of energy, the Langsners acquired their 100 acres with its barn and a drafty old box-built settler's cabin. After a couple of winters in that cabin, they decided they needed a real house — and that was the beginning of Country Workshops.

"The well-known log house builder, Peter Gott, lived just five miles away. We had the idea of having him teach a class here, and I could be part of the class and learn some of his log-building techniques," Langsner said. "We had also recently enjoyed a visit from a Swedish woodworking teacher we admired, Willie Sundqvist. We wrote a letter to Willie asking if he could teach also, carving bowls and

spoons. He agreed. The following summer we held two, one-week classes in carving bowls and spoons and one five-day class in log building. That was in 1978."

The classes were a success, which led Langsner to invite a friend, expert ladder-back chairmaker John Alexander, to teach post-and-rung chairmaking the following summer.



A SWISS ALPINE COOPERAGE STUDENT works on staves that he will join together to form a cylindrical cask.



A RUSTIC BOWL EMERGES from a split section of log in a “Carving Bowls and Spoons” class. Here, Lisa Myatt measures its depth.

By then the old tobacco barn had been turned into a shop, “and we’ve had that chair class every year since,” Langsner said.

Decisions, decisions

As Langsner’s interests in wood-working widened, so did Country Workshops’ class offerings. Now classes are offered in American Windsor chairmaking, ladder-back chairmaking, rustic Windsor chairmaking, carving bowls and spoons, making a post-and-rung rocking chair, Japanese woodworking, Swiss cooperage, making a classic shaving horse for spokeshave and drawknife work and willow basketry (taught by Louise). There’s also a class called “Woodworking for Women.”

After all these years, the programs are well organized. On my subsequent visits students have commented on the positive, encouraging learning environment, especially those just discovering how much can be done with hand tools.

It’s an education just to watch how Drew and visiting instructors accommodate all learning levels with lots of individual attention.

Without fanfare, they take up slower students’ projects to use for demonstrating a technique in order to keep the students moving along together. There’s plenty of camaraderie among students, with the more advanced aiding the less experienced, and all end up with a nicely completed project to take home.

Months after that drive to find the man who built that boat, I returned to Country Workshops for a ladder-back chair class. I had to admire Langsner’s calm and skill, and his organization — also the artful, bucolic retreat both Langsners have created.

If you decide to take a class, you’ll use the school’s top-quality tools, sleep well, and eat delicious meals three times a day from Louise’s garden, augmented by meat and cheeses from Asheville’s better markets. The school also sells a fine array of hard-to-find traditional tools, books and woodworking videos. Each fall, Drew Langsner conducts a study tour of respected craftsmen’s shops in Europe or Japan.

Classes are kept small, so every student gets plenty of individual

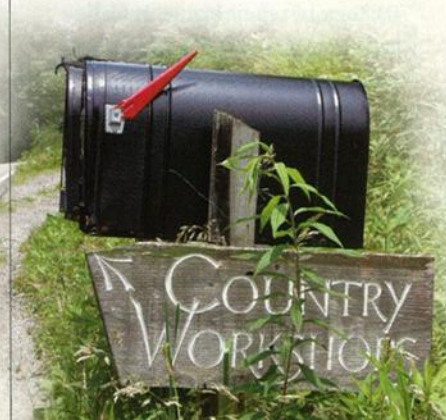
instruction. Summer classes last five days, include six to eight students and range in price according to the complexity of the projects. Bowl and spoon carving classes last summer cost \$625 for everything — all materials, use of excellent tools, a comfortable room in a rustic cabin shared with one or two others, and three fabulous meals each day. A five-day rustic Windsor chair class costs \$775, again with everything included but transportation to and from Country Workshops.

Winter tutorials are shorter and more intense, and limited to four students each. All include meals and a private, heated room. They range from \$400 for a weekend course making a classic shaving horse to \$950 for a four-day, intensive ladder-back chairmaking tutorial.

More involved projects — making a rustic Windsor settee or hearth chair, for instance — are open only to accomplished woodworkers, run five days and cost \$1,000.

For more information, go to countryworkshops.org or give the Langsners a call at 828-656-2280.

Brooks Townes of Weaverville, N.C., has been a daily newspaper reporter, ocean sailor, and for 30 years a maritime writer. He has built furniture and several wooden boats, restored a couple more boats and he made his bed.



WOODCRAFT
magazine

WOODCRAFT[®]
magazine

SAVE 52% OFF THE COVER PRICE!

To order, call **800-542-9125** or go to **woodcraftmagazine.com** or visit your local **Woodcraft Store**.

☐ Yes, I would also like to subscribe to *Woodcraft Magazine's* **free** ePreview.

06B08N

GIVE A GIFT!

WOODCRAFT[®]
magazine

SAVE 52% OFF THE COVER PRICE!

To order, call **800-542-9125** or go to **woodcraftmagazine.com** or visit your local **Woodcraft Store**.

06B08N

SUBSCRIBE & SAVE!

WOODCRAFT[®]
magazine

SAVE 52% OFF THE COVER PRICE!

To order, call **800-542-9125** or go to **woodcraftmagazine.com** or visit your local **Woodcraft Store**.

☐ Yes, I would also like to subscribe to *Woodcraft Magazine's* **free** ePreview.

06B08N

make  **your mark**

Use this to mark your place
and make your shopping list.

pg.

FREE Trial Issue

With Woodcraft Magazine you'll receive:

- ✓ More than 30 projects
- ✓ Shop Tips & Tricks
- ✓ Advice from Experts
- ✓ Practical Shop Ideas



SUBSCRIBE & SAVE!

*Only \$19.97 for seven great issues -
that's 52% off the cover price!*

Subscribe to Woodcraft Magazine today and get the perfect gift
for your woodworker or subscribe for yourself!



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 750 PARKERSBURG, WV

POSTAGE WILL BE PAID BY ADDRESSEE

WOODCRAFT
magazine

PO Box 7020
Parkersburg, WV 26102-9904



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 750 PARKERSBURG, WV

POSTAGE WILL BE PAID BY ADDRESSEE

WOODCRAFT
magazine

PO Box 7020
Parkersburg, WV 26102-9904



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 750 PARKERSBURG, WV

POSTAGE WILL BE PAID BY ADDRESSEE

WOODCRAFT
magazine

PO Box 7020
Parkersburg, WV 26102-9904



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



{ PRODUCT REVIEW }

MAKITA LXT 400 LITHIUM-ION COMBO KIT

A close look at all the powerful components of an impressive new offering.

BY TIM RINEHART

TOOL REVIEWS, NO MATTER HOW SUBJECTIVE

or scientific you try to be, will always be affected by the tester's personal likes, dislikes and prejudices. All the tool tests and articles I have been involved with at some point boil down simply to whether or not I like the tool.

I realize specifications such as amperage, voltage, rpm and torque are important. But think about it. When you call a buddy to ask how he likes his new circular saw, you don't ask "Hey Bob, what was the amp draw reading at $\frac{3}{4}$ blade depth cross grain in white oak?" You ask how he likes it, and why.

I'll throw in a few specs I think are important, but this is a user's review. Years of carpentry and construction work taught me just about every way to abuse a tool, although I have faith that young construction workers are inventing new ways to stress their new tools every day.

Up front

These were the first lithium-ion battery tools I ever had the opportunity to use, and I was eager to see if the batteries lived up to all the marketing hype I'd read. When they first arrived I was disappointed that they were 18-volt. I'm a big fan of 12-volt tools; all the 18-volt tools I have used in the past were heavy and awkward to me. I prefer exactly 12 volts and two batteries — how's that for one of those personal prejudices I was talking about? To my surprise, the tools are actually lighter than their 12-volt



Makita LXT 400 Combo Kit

NiCad equivalents. For example, the lithium-ion impact driver weighed 1.7 oz. less than my 12-volt NiCad version.

Makita furnished their 18-volt, 3-Ah Lithium-Ion Combo Kit for evaluation. The set contains a hammer drill, impact driver, circular saw, flashlight, charger, two batteries and carry bag. When I first unpacked the kit and saw the soft-sided carrying case, the old contractor in me thought, "Well, at least all the pieces will be in one place." Another one of those prejudices: I like hard cases. I have a tendency after a hard day to load tools in the back of my truck not-too-gently and in the order I pick them up. A set of saw horses and a half-sheet of three-quarter plywood may well end up piled on top. I have to admit it withstood being dropped, thrown, and buried under metal tool cases with no damage to the tools.

The case features sewn-in holster pockets with Velcro restraining straps for the drill and impact driver; large pockets on each end hold the light and charger. The outside of the case has two small and two large pockets with Velcro flaps, and two small zippered pockets. These seemed to fill up instantly with pencils, tapes, screws and a couple of Twinkies, and I really liked having a place for bits, drivers, and all the small things you forget to grab when running over to a friend's house to help with a project.

The two carrying handles Velcro together for convenience, and Makita also furnishes a shoulder strap. Good, I guess, for when you try to make one trip from the truck to the job carrying everything you need, even though you know that's impossible since you always forget something. The only gripe I ended up with is this: there is no provision for securing the circular saw in the case. If you have only the furnished tools in the bag, the saw tends to bounce around like a rock in a tin can. I had so many other tools stuffed inside the roomy bag it wasn't a problem, but I still would like to see some kind of restraint for the saw. Now for the good stuff: the tools themselves.

Making an impact

If you read the impact driver review in the last issue of *Woodcraft Magazine*, you know that the Makita 12-volt was my personal favorite. With the 18-volt lithium-ion they improved some already-good features of the 12-volt version, but changed one of my favorites.

The Model BTD140 weighs in at 3.3 lbs., providing 0-2300 rpm and 0-3200 impacts per minute. Features include a steel ball-bearing motor, built-in LED light, removable belt clip, and a short 5 $\frac{3}{4}$ " head length for getting into tight places. The driver has a smooth trigger, making starting screws easy, but the initial rpm seems to be slightly faster than the 12-volt version. The LED now

lights up prior to the motor engaging, allowing you to find and engage a fastener before the bit spins, and stays on after the trigger is released — great new features.

Even though the grip is not soft, the rubberlike material extends around the front and I found the handle not only comfortable during long use, but also easy to grip with sweaty hands, helping prevent those ugly unplanned drop tests.

The belt clip is well positioned, wide enough to fit a tool belt but not too loose on a regular belt. The clip is removable, but is held on with a small Phillips screw that



BTD140

will mysteriously disappear as soon as you remove it. I would prefer a release mechanism that does not require you to remove a screw when you are 20' up a ladder.

On this model, Makita has lowered the angle of the head to the handle. It is still slightly angled, but not nearly as much as the Model 6980FD 12-volt, which was one of the features I really liked. Still, the BTD140 handled well and did not tire my wrists even after several hours of driving deck screws.

If you are looking to add an impact driver to your tool arsenal, the BTD140 would be one of the first I'd check out. It drove deck screws all day without a whimper, and placidly withstood being dropped, thrown, stepped on in the mud, and generally misused. It still runs smooth and quiet.

Drilling Down

Makita chose their Model BHP451 hammer drill-driver for this combo kit, and I think it was a great choice. This feature-loaded model has three modes: hammer, drill and driver. Each mode can be used in one of three speeds, 0-



BHP451

300 rpm, 0-600 rpm, and 0-1700 rpm. Additionally, there are 16 torque settings in the driver mode. Power from the steel ball-bearing motor is delivered through an all-metal transmission to the 1/2" keyless chuck.

Two LEDs provide plenty of light, and like the impact driver, they light prior to the motor engaging and stay on after the trigger is released. It shares the same good belt clip as the impact driver, with the same screw retaining system that definitely makes it a pain to quickly remove if necessary. Makita also includes a quick-detach side handle which can be positioned at almost any angle. The side handle is a real arm and wrist saver when using large bits or drilling concrete.

I own two cordless hammer drills, and used a 14-volt Ni-Cad model side-by-side with the Makita to drill holes in a block wall to anchor a wood rack. The Makita was faster, and delivered a much harder hammer strike. In fact, the Makita hammered its way through as fast as my corded hammer drill. The drill features the same good ergonomics and grip as the impact driver, but is a little nose-heavy. Not enough to be uncomfortable, but it is noticeable. A small price for all the features contained in that nose.

Cutting through it

After using the impact driver and drill, I was a little disappointed in the Model BSS610 6 1/4" circular saw.

First the good points: It has a cutting depth of 1 9/16" at 45°, and 2 1/4" at 90°. The trigger safety lock is easy to engage no matter how you are holding the saw, the best of any cordless saw I have used. The 6 1/4" blade makes cuts my cordless 4" trim saw can't. The built-in LED let my old eyes see the line, and the dust blower kept the line clean to see.

I could see the saw had good ergonomics and a blade guard that never hung up even when filled with dirt and dust. It has a heavy cast base plate and a decent carbide-tipped blade, and weighs only 7 lbs. With all these features, how could I be disappointed?

The answer is power, or lack of it. The saw just doesn't seem to have enough motor for the blade size. You can rip a two-by with it, just don't be in a hurry. I stalled it regularly, in all kinds of material. I may be expecting too much from a cordless circular saw, but like I said earlier, I use tools hard, and have high expectations for my money.

We did use the saw a lot, for cuts that probably should have been made with a corded 7 1/4" saw. But a cordless is so much easier to grab when you need to rip a short piece of 2x6 in half and the nearest power cord is in the truck.



BSS610

If you're willing to be a little patient and let the saw cut at its own pace, you won't be let down by this rugged little saw. Just don't expect to shove it along the line. That said, it's still a much better and more versatile job site cordless saw than any 4" version.

Shedding some light

Come on, how do you review a flashlight? I have never had a flashlight that used one of my batteries from a cordless tool. It didn't seem like a necessary purchase since I have an array of flashlights already, some of which actually work.

The very first time I took this combo kit to a job I used the flashlight. I was helping a friend run new TV cable through his house and it seemed every place I needed to measure or drill was in the back corner of a closet or some other dark hole. One of the batteries stayed in the light all day, and the light was probably the most-used tool. It sits steady on its base, the head is articulated to put light where you need it, it throws a wide light pattern, and it has a convenient push button on/off switch positioned so you can hit it with your thumb while holding the light.

My only complaint was a dark spot right in the middle of the light beam, but this is really nitpicking to find a negative. I don't know what kind of bulb Makita used, but it will still work after several drop tests from floor joists to a concrete basement floor, and one trip down a set of stairs. I may have to give this light to one of the young carpenters to try and break; the old guy didn't manage to hurt it.

Taking charge

I am now a believer in Makita's 18-volt lithium-ion batteries. Just like a certain bunny, they seem to just keep on running. With only a few exceptions, it took about 15 minutes to completely recharge a battery. This means I was not fully discharging the batteries when using the tools, and we used them several times for extended jobs.

No problem on recharging partially discharged batteries; the Lithium-Ion batteries can be recharged anytime without any memory effect. The Makita charger collects data from the battery's data memory chip for optimal battery charging, and the charger has a built-in fan that automatically turns on for battery cooling during charging to prevent overheating.

Individually these are all good tools, and with a good case that has plenty of room for extra hand tools this is a great combination. It quickly became the first thing I threw in the truck when heading out for quick job. Now if I just had an 18-volt lithium-ion recip saw....

— Tim Rinehart is a contributing editor to Woodcraft Magazine.

TENRYU GOLD MEDAL BLADES

"An unexpected surprise is the ease of feed with your blade. I can not tell when the blade contacts the wood and I can tell no difference in pushing pressure when the stick clears the table."

Hal Taylor, Museum Quality Works of Art, Hartwood, VA
(www.haltaylor.com)

Hal's comment is typical of the many we receive from craftsmen who have tried our Gold Medal Blades. Each blade features:

- Expertly tensioned, fully hardened tool steel plates for true run
- Extra-fine honing of the carbide edge for clean, smooth and easy cuts
- Resin bond-filled expansion slots for extremely quiet and cleaner cuts
- High-grade, wear-resistant carbide tips for long life

Now available at Woodcraft stores



WOODCRAFT
Helping You Make Wood Work

Or call us toll-free at:

800-951-7297

Making quality saw blades since 1910

TENRYU

TENRYU AMERICA INC.

7964 Kentucky Dr., Suite 12 • Florence, KY 41042

www.tenryu.com

FOR YOUR SAFETY:
Follow machine
and manual safety
instructions.

HITACHI CJ110MV JIGSAW

Like the proverbial hot knife through butter, this hefty tool slices through all kinds of material with ease.

BY DAVE EAMES-HARLAN



THE FIRST THING I NOTICED

about it when I pulled The Hitachi CJ110MV jigsaw from its box is that it is a substantial saw. With its beefy 5.8-amp motor, it weighs in at just under 5 lbs. Hitachi markets the saw as the lightest in its class and for a saw as powerful as this one, it does handle very well. The controls fall to hand naturally, even for a lefty like me. And the green and black casing is an elastomer compound that is soft enough to give a bit of cushion from the normal vibration of a jigsaw.

In action, the saw has some key features to make it useful in almost any situation. First, it has a surprisingly powerful LED light that shines down just in front of the blade. When combined with an extremely effective blower that keeps dust from accumulating in front of the blade, you'll never have to worry about being able to see your cut line with the CJ110MV.

So the next question is, how does it cut? The simple answer is remarkably well. The more complex answer is remarkably well on almost any job you'd ever want to use a jigsaw for. With the right blade and the proper settings for the variable speed and four-position orbital action, the CJ110MV will cut 2"-thick maple, $\frac{3}{4}$ " MDF, $\frac{1}{4}$ " hardwood plywood, sheet metal and

almost anything in between.

Before I put the saw to work, I skimmed the manual to make sure I understood the controls and knew how to install the blade. (One blade is included in the box, the only accessory included with the saw.) The manual is typical for a modern tool and provided adequate information.

To begin

Blade installation is simple. The black, curved lower front part of the case is actually a lever that releases the blade holder. The blade slips into the holder and is locked in when you release the spring-loaded lever. The first time I installed the blade, it didn't seat properly. But the problem was obvious since the blade was angled oddly and once I pulled the lever open again and jiggled the blade, it sat snugly in its place.

With the blade installed, I plugged the saw in and gave the trigger a quick pull. The saw's power was immediately obvious. The motor starts smoothly and quickly winds up to speed. I set the motor on maximum speed (3000 SPM)



BLADE CHANGES ARE EASY with this jigsaw's built-in, spring-loaded locking lever

and maximum orbital action and made some test cuts in $\frac{3}{4}$ " plywood. The saw cut through this material like the proverbial hot knife through butter. It tracked on a straight

line quite easily. The blower and LED made sure the line was always visible. Curved cuts too were no problem, with the saw being easy to handle and control.

The one problem I did notice with these settings was



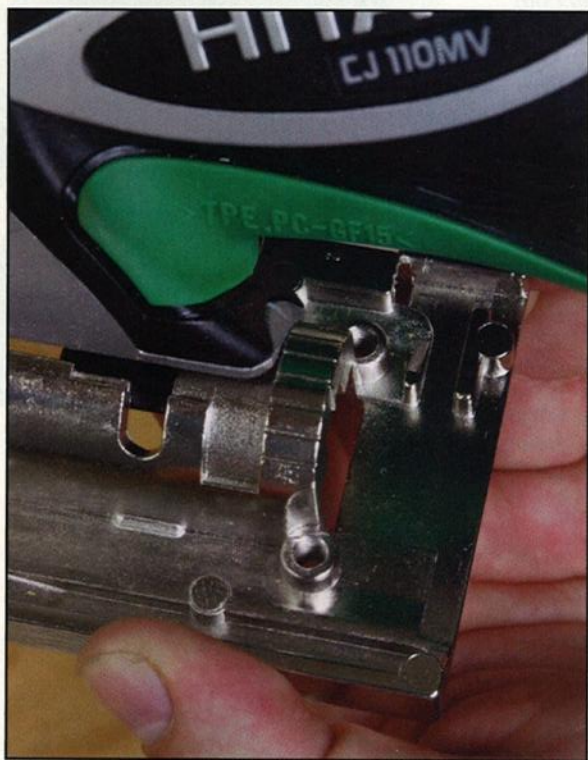
BUILT-IN BLOWER AND BRIGHT LED light the way and keep your cut line clear.

noticeable tearout on both sides of the cut. I decided to turn the orbital action down and then off to see what the effect would be. With no orbital action, the cut required noticeably more forward pressure on the saw, but the quality of the resulting cut was remarkable. It was as smooth as I've ever seen from a jigsaw. There was no splintering or tearout on either side of the board. And even on a long cut with an aggressive feed rate, the saw never faltered. The electronic speed control maintained blade speed and the motor produced little noticeable heat. I stepped up to $\frac{3}{4}$ " hard maple, just to confirm the saw's power. With the orbital action set at maximum, the saw cut through the maple like it wasn't even there. The CJ110MV can clearly handle your most demanding jigsaw tasks.

The base tilts up to 45° in either direction for angled cuts. When I began looking at the adjustment of the base, I noticed that the 90° stop has a few degrees of slop in it — the first time I checked the angle, it was about 3° off square. I used a small engineer's square to correct this. Precision of the 90° angle is usually not a huge deal

PRODUCT REVIEW: HITACHI JIGSAW

with jigsaw operations, but it's something to be aware of. Adjustment is made by loosening an allen bolt in a recess in the base, moving the base forward (to clear the 90° stop), selecting an angle and then re-tightening the bolt.



THE BASE IS ADJUSTABLE to 45° in either direction.

There is an etched scale for the angle of the base, but it is difficult to see so you'll probably need to check the angle by other means. Hitachi provides an allen key with the saw and even designed a convenient place on the base for storage so it's always available when you need it.

One of the few accessories available for the CJ110MV is a dust collection attachment. It looks like a miniature corner attachment for a shop vac and it attaches through the base. The front opening ends up fairly close to the blade and the back projects far enough out to conveniently hook up a dust collection hose of the proper size. The hose for my sander attached easily. The hose didn't impact the balance and usability of the saw too badly. However, without another accessory — the chip cover for the front of the saw — the dust collection appears to do nothing at all. The manual does advise using the chip cover for maximum effectiveness.

I also tested a splinter guard — a small plastic piece intended to help reduce splintering on the top side of a cut. I noticed no difference with it installed. Finally, I attached the accessory resin sub-base. This attaches

easily and provides protection for softer materials from damage by the metal base.

Let me finish by admitting that I lied to you when I said the first thing I noticed about this saw was its substantial feel. In reality, the first thing I noticed was its color scheme. Yes, as you can see in the picture, like other new Hitachi tools, the CJ110MV sports a bright green and black patchwork pattern on its case. And in my personal opinion, it is ugly. (The word my wife used when she saw it was "icky.") The design, while different and bold, just doesn't appeal to me. Fortunately that seems to be the only bad thing about the saw. (And I have to admit that it seems to be growing on me as I get used to the capabilities of this tool.)



VARIABLE SPEED AND FOUR-POSITION ORBITAL action let you dial-in optimum cutting performance on everything from rough lumber to venerated plywood.

At \$99, the CJ110MV is a real bargain. Saws with comparable capabilities range from \$110 to \$160 street price. The CJ110MV doesn't come with a case or a dust collection attachment, but if you can live without those, this capable tool will seemingly do anything you need it to do without breaking the bank.

— Dave Eames-Harlan is a freelance writer and woodworker hailing from Moscow, Idaho.

New & Notable

(prices are approximate)

Enhance Your Colors

Mixol Multipurpose Tinting Paste

Available in 24 colors (10 oxide-based for exterior projects), these tints are compatible with most paint and coating materials and resist heat and frost damage. \$5/bottle woodcraft.com



Conquer Casements

Bench Dog Trim-Loc

Measure, mark and install casement trim accurately and quickly with this handy tool that can also tackle many other tasks. \$20 benchdog.com



Shed Some Light

Milwaukee Orbital Jigsaw With LED Light

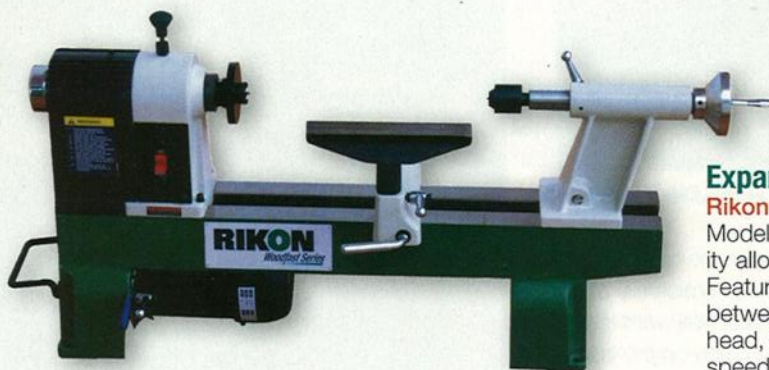
Designed to cut wood, metal and laminates, this saw features an LED light, a 6.5-amp, variable-speed motor, a 1" stroke, four-position orbital cutting action and a precision roller blade guide system. \$159-\$175 milwaukeetool.com



Expand Your Options

Rikon Mini Lathe

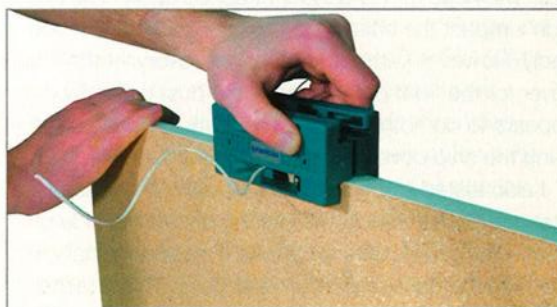
Model 70-100's increased capacity allows it to do more in less space. Features include a 12" swing with 16" between centers, 12-position indexed head, self-ejecting tailstock and six speeds. \$250 rikontools.com



Trim Edgebanding Easily

Fastedge Trimmer

Trims both sides of an edge up to 1" wide in one pass; or can be taken apart to trim individual edges of any width. Works for all types of edgebanding. \$12 woodcraft.com



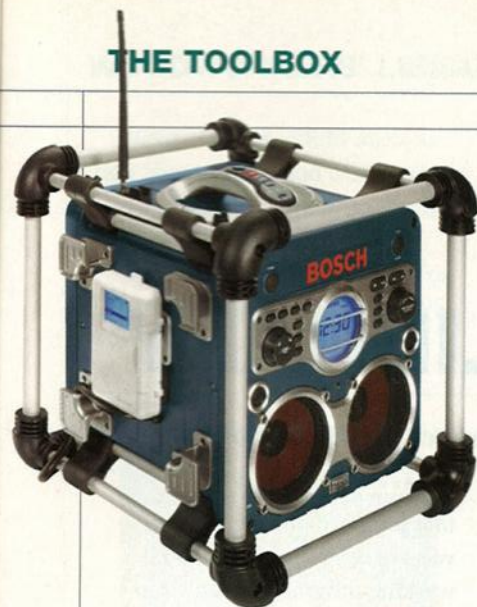
Know When to Fold 'Em

Metro Products Hitch-N-Horse

This 33" tall thermo-plastic sawhorse holds 800 lbs. of material and features adjustable width plus a hole for cutting pipe and tubing. \$40 metro-products.com



THE TOOLBOX

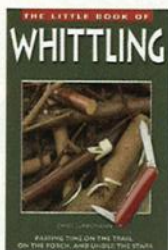


Entertain Anywhere Bosch Power Box Advanced

Radio/CD player with improved sound and reception, a new multi-function key chain remote control, four-way GFC1 power outlet and battery charger plus auxiliary jack for MP3 players and the new iPod dock. \$179 (iPod dock is \$50) boschtools.com

Prepare to Whittle Whittling Kit

Includes a two-blade carving knife, two thumb guards and a copy of "The Little Book of Whittling" by Chris Lubkemann. \$32 woodcraft.com



Add Laser Power Irwin Laser Guide

Turn your miter saw into a laser-guided power tool with this easy-to-install accessory that projects a laser guideline for accurate cuts and features automatic on/off with saw blade rotation. (Will not fit Bosch, Ridgid or ProTech saws.) \$35 irwin.com



Drill With Power DeWalt Heavy-Duty Right Angle Drill

This upgraded 3/8" VSR right angle drill has more power, variable speed settings, and other features that increase versatility and durability. \$149 www.dewalt.com

Tackle Tough Tasks

Milwaukee Ultimate Demolition Kit

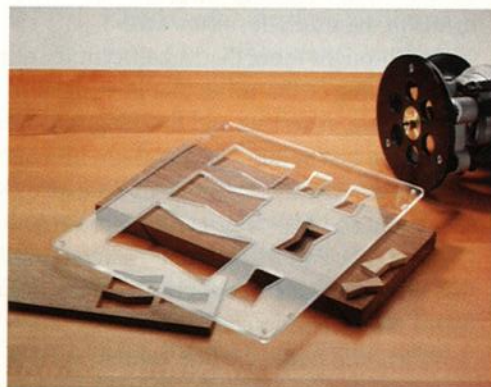
Designed for tough projects, this 12-blade kit with canvas pouch contains Sawzall demolition blades for cutting everything from nail-embedded wood to heavy metal. \$19-\$29 milwaukeeetool.com



Make Perfect Butterflies

Butterfly Inlay Template

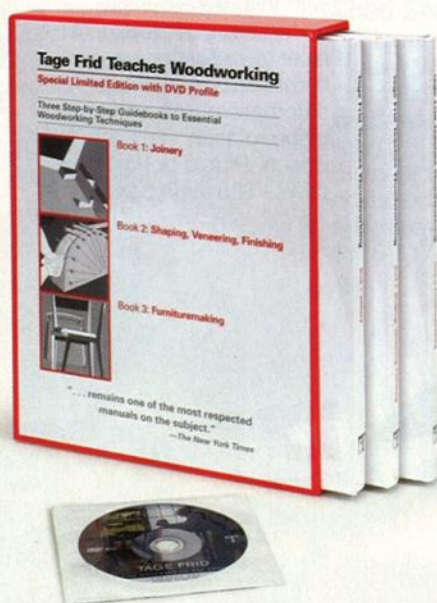
Made of tough, thick acrylic for longevity and perfect-fitting inlays, this template is designed for easy removal and comes in seven different sizes: from 1" x 1 1/16" to 2 7/16" x 3 3/4". \$25 woodcraft.com





WOODWORKERS' LIBRARY

New offerings cover cabinetry, woodworking basics, outdoor projects, game calls. **By Sharon Hambrick**



Commemorative Tage Frid Slipcase Set

Taunton Press is offering the classic "Tage Frid Teaches Woodworking" three-volume series in hardcover with a slipcase. The set includes a bonus DVD showing the master woodworker and furniture designer in his shop.

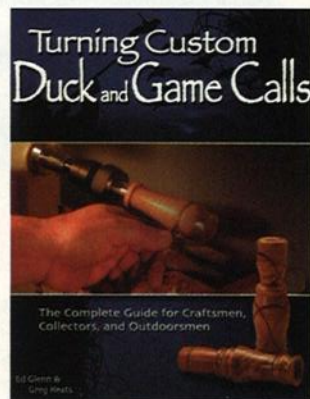
When he died in 2004 at age 88, Frid was described in the media as a "pioneer in the American studio furniture movement whose charismatic teaching and philosophy of design influenced several generations of craftspeople." In 2001 The Furniture Society gave him the Award of Distinction for his achievements in the studio furniture arts.

Frid brought more than a half-century of practical woodworking experience to the writing of this series that gives detailed instruction in three areas: joinery; shaping, veneering and finishing; and furniture making. Frid's introduction to the first volume offers insight into his approach to writing the book, his training as a master craftsmen in his native Denmark, his views on vocational education, and his "design around construction" approach to woodworking. On the DVD, Frid demonstrates several woodworking basics such as cutting half-blind dovetails and discusses his use of time-honored woodworking methods to create new designs.

When Frid wrote the first volume in 1979, he was a professor in the furniture-making program at the Rhode Island School of Design. He had founded

that program in 1962, after 14 years of teaching in the woodworking program he had established for the School for American Craftsmen in 1948.

This three-volume set (including the DVD) sells for \$89.95. taunton.com



Turning Custom Duck and Game Calls

BY ED GLENN & GREG KEATS

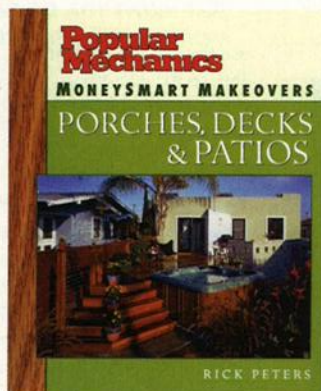
In writing this comprehensive volume, the authors hope to perpetuate the art and science of game call making and help readers appreciate the skill and craftsmanship such work requires.

The 120-page book opens by helping the reader understand how game calls work and progresses to the tools, materials, plans, patterns and finishing needed to turn a call that is not only attractive, but also accurately reproduces the sound of the duck or game being hunted.

WOODWORKERS' LIBRARY

Readers will also find information about turkey and other calls and a gallery of work by the world's best game call makers.

The softcover volume from Fox Chapel Publishing sells for \$19.95. foxchapelpublishing.com



Porches, Decks and Patios

BY RICK PETERS In this fourth volume of the Popular Mechanics "MoneySmart Makeovers" series, do-it-yourself expert Peters shows readers how to expand or improve outdoor living areas with projects for different budgets.

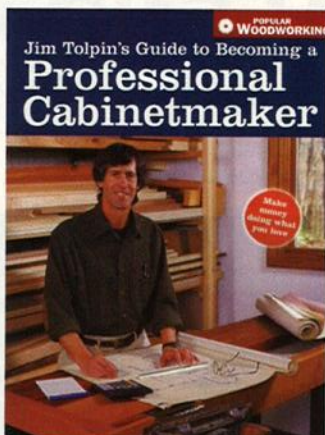
In a chapter on planning your outdoor project, Peters gives detailed guidance in design, selecting materials, and systems to show what makes outdoor spaces work – or not work.

The second chapter presents a patio, a porch and a deck that receive "triple makeovers" to show what can be achieved at three budget levels. Before-and-after photos are included with detailed descriptions and costs.

Chapter Three focuses on "Creating Your New Look" through a host of remodeling projects for decks, porches, patios, floors, exterior doors, and finishing touches such as railing planters, lighting and handrails.

This 192-page hardcover volume

from Hearst Books, a division of Sterling Publishing, sells for \$19.95. sterlingpub.com

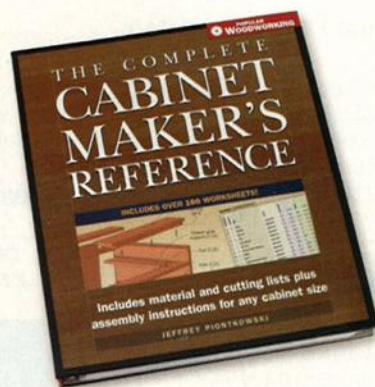


Jim Tolpin's Guide to Becoming a Professional Cabinetmaker

After 10 years of working wood in a one-man shop and barely earning a living, Jim Tolpin took time out to assess what was wrong. Learn in this 128-page book how he changed his operation completely to become a successful custom cabinetmaker.

Tolpin writes that his search for what was wrong soon produced three answers: He really did not know how to build a cabinet; his methods and tooling were primitive and counterproductive; and he was a poor businessman. In the book's first section, Tolpin tells readers how to set up a shop that has enough space, and he lists all the tools and jigs needed to produce cabinets efficiently. Next he shows how to organize cabinetmaking tasks so each project moves efficiently from design through assembly. He includes lots of flowcharts, photos and illustrations. The final section offers advice about setting up a business and pricing your products to attract new customers.

This softcover book from *Popular Woodworking* sells for \$24.99. popularwoodworking.com



The Complete Cabinetmaker's Reference

BY JEFFREY PIONTKOWSKI This 256-page guide shows how to build any of 23 cabinet styles in five easy steps.

A cabinetmaker for 30 years, Piontkowski has developed 160 worksheets that simplify the case-construction process for standard sized cabinets. Each worksheet provides an illustration labeling the parts of each cabinet and how it is assembled, a cutting and materials list with comments about particular machining operations that need to be completed for some parts, a hardware list and type of finish required. After selecting the style and size cabinet to build, you can use the worksheet to cut the pieces to size, cut dados and grooves using the exploded 3-D drawing and then assemble the cabinet using Piontkowski's step-by-step instructions. The author also shares how to adapt the projects to build custom pieces.

The author also provides tips and techniques for basic cabinetry construction to ensure your cabinet endures for a lifetime.

Spiral binding makes photocopying pages easy. The hardcover book from *Popular Woodworking* sells for \$29.99. popularwoodworking.com



CALENDAR

Spend a relaxing day at a craft show or woodworking class near you.

Alaska

WOODTURNING SYMPOSIUM

March 11-12

Alaska Wood Moulding, Anchorage

Eli Avisera, Jimmy Clewes and Stuart Batty are demonstrators for this event hosted by the Alaska Woodturners Association. Admission: \$50 each day. (907) 346-2468 akwoodturners.org

California

CALIFORNIA OPEN WILDLIFE ART FESTIVAL

Feb. 18-19

Balboa Park Club, San Diego

Features the work of more than 200 artists and carvers plus painting and carving demonstrations, a wildlife fine arts competition and a carving contest. Admission: \$5. (760) 945-8442 www.pswa.net

BUILDING A MORTISE-AND-TENON MIRROR

Feb. 24, 6-9 p.m.;

Feb. 25-26 & March 4-5, 9 a.m.-5 p.m.

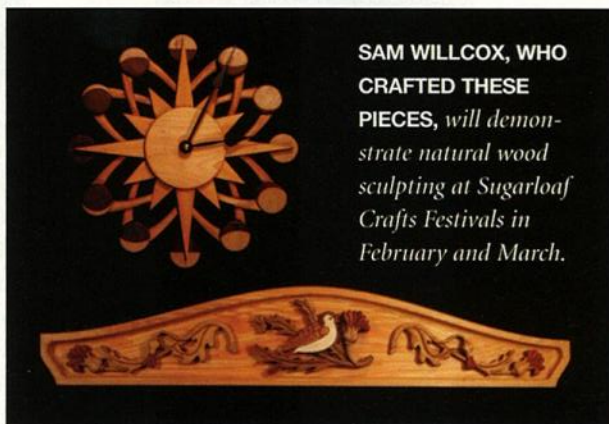
Woodcraft of San Carlos

John P. McCormack will introduce students to hand tools while helping them build a small mortise-and-tenon wall mirror. Tuition: \$395. (650) 631-9663

Connecticut

BUILD A SHAKER CANDLE STAND TABLE

March 11-12 & 18-19, 9:30 a.m.-5 p.m.



SAM WILLCOX, WHO CRAFTED THESE

PIECES, will demonstrate natural wood sculpting at Sugarloaf Crafts Festivals in February and March.

Connecticut Valley School of Woodworking, Manchester

Students will make a traditional Shaker table emphasizing extensive handwork using planes, chisels and scrapers. Tuition: \$295 plus materials. (860) 647-0303 schoolofwoodworking.com

SUGARLOAF CRAFTS FESTIVAL

March 24-26

Connecticut Expo Center, Hartford

Natural wood sculptor Sam Willcox demonstrates. Visitors can also view wood, silk, jewelry, fine arts and metal works by 250 artisans. Admission: \$7 for three days. sugarloafcrafs.com

Florida

THE WOODWORKING SHOWS/ORLANDO

March 10-12

Osceola Heritage Park, Kissimmee

Seminars, product demos and a large marketplace for woodworking enthusiasts,

do-it-yourselfers and professionals, at this event held in several cities. Admission: \$9. (321) 697-3333 thewoodworkingshows.com

Illinois

THE WOODWORKING SHOWS/ST. LOUIS

Feb. 10-12

Gateway Center, Collinsville

618-345-8998

SETTING UP YOUR OWN SHOP

March 7, 6 p.m.

Woodcraft of Palatine

Don Washow will teach students to create a functional, efficient woodworking environment regardless of available space during this accelerated series. Tuition: \$55. (847) 776-1184 stores.woodcraft.com/palatine

MASTERING THE TABLE SAW

March 8, 6-9 p.m.

Woodcraft of Woodridge

Learn to set up, adjust and

use the table saw. Tuition: \$60. (630) 435-9663 stores.woodcraft.com/woodridge

Indiana

WOODTURNING WITH ALAN LACER

April 3-7

Marc Adams School of Woodworking, Franklin

Students will learn the basics of woodturning, including faceplate work and hollowing end-grain pieces. Tuition: \$675. Materials: \$40. (317) 535-4013 marcadams.com

Kansas

THE WOODWORKING SHOWS/KANSAS CITY

Feb. 3-5

Overland Park International Trade Center, Overland Park

(913) 451-6124

Kentucky

MAKE A WINDSOR CHAIR

March 10-12

Woodcraft of Louisville

Michael Herrel of the Colonial Chair Company will instruct students in the construction of a Windsor chair. Tuition: \$695 plus \$25 for shipping parts. (614) 258-1546

Massachusetts

STEAM BENDING BASICS

April 5-7, 8:30 a.m.-4:30 p.m.

North Bennet Street School, Boston

Instructor Dan Faia will teach students the basic methods of steam bending

CALENDAR

wood to be used in furniture projects such as rockers and table legs. Tuition: \$250. (617) 227-0155 nbss.org

Michigan

NATURE TRANSFORMED: WOOD ART FROM THE BOHLEN COLLECTION

Through April 30

Saginaw Valley State University, University Center

Organized and circulated by the University of Michigan Museum of Art, this exhibit from the Bohlen Collection presents works by 71 North American, European and Australian artists. Admission: free. (989) 964-7125 svsu.edu/mfsm

New Jersey

SUGARLOAF CRAFTS FESTIVAL

March 10-12

Garden State Exhibit Center, Somerset
sugarloafcrafs.com

New York

FREEHAND SHARPENING

March 4

Woodcraft of the New York Capital Region, Latham
Instructor Harrelson Stanley will teach students the techniques of freehand sharpening. Each student will have a full set of Shapton water stones to use in class. Tuition: \$75. (518) 783-3192

North Carolina

WOODTURNING TOOLS, TECHNIQUES & PROJECTS

Feb. 13-17

Woodcraft of Raleigh

Master woodturner and instructor Alan Leland will teach students woodturning basics using a manual he co-authored plus demonstrations and hands-on

projects. Tuition: \$295. (919) 781-1911

THE WOODWORKING SHOWS/CHARLOTTE

Feb. 17-19

Merchandise Mart
(704) 333-7709

Ohio

SUGARLOAF CRAFTS FESTIVAL

Feb. 3-5

Ohio Expo Center Bricker Building, Columbus
sugarloafcrafs.com

BUILD AN 18TH-CENTURY WALNUT KEEPSAKE BOX

Feb. 4-5, 9 a.m.-5 p.m.

Woodcraft of Columbus
Brooke Smith will teach students the layout and cutting of through dovetails as part of a box-making project. Tuition: \$200. (614) 527-7594

Oregon

DRAWER BUILDING WITH GARY ROGOWSKI

Wednesdays,

Feb. 15-March 15, 5-8 p.m.

The Northwest Woodworking Studio, Portland

Students will learn joinery, layout and fitting techniques. Tuition: \$175 plus materials. (503) 284-1644 northwestwoodworking.com

Pennsylvania

THE WOODWORKING SHOWS/HARRISBURG

March 17-19

Farm Show Complex
thewoodworkingshows.com

SUGARLOAF CRAFTS FESTIVAL

March 17-19

Fort Washington Expo Center, Fort Washington
Natural wood sculptor Sam Willcox is among demonstrators. sugarloafcrafs.com

South Carolina

INTRODUCTION TO CLASSIC CARVING WITH MARY MAY

Thursdays, Feb. 16-April 20, 6-8 p.m.

Woodcraft of Charleston
Custom woodcarver Mary May will instruct students in sharpening tools, basic relief carving and advanced designs like acanthus carving. Tuition: \$200 plus cost of tools. (888) 227-8998

Tennessee

CARVING A BEAR & CUBS

March 10-12

Woodcraft of Johnson City
Desiree Hajny will instruct students in carving a bear with cubs in this intermediate level class. Tuition: \$215. (877) 282-9973

WOODTURNING: LIDDED VESSELS & CONTAINERS

March 12-18

Arrowmont School of Arts & Crafts, Gatlinburg
Cindy Drozda will help intermediate and advanced woodturners create small boxes and lidded vessels. Tuition: \$415. (865) 436-5860 arrowmont.org

Texas

THE WOODWORKING SHOWS/HOUSTON

March 31-April 2

Reliant Park, Houston
(832) 667-1400

Virginia

THE WOODWORKING SHOWS/CHANTILLY

March 24-26

Dulles Expo Center
(703) 378-0910

Wisconsin

THE WOODWORKING SHOWS/MILWAUKEE

Feb. 24-26

Wisconsin Exposition Center, West Allis
(414) 727-8840



WORLD CHAMPION CARVER GLENN MCMURDO of Canada, who crafted this "Wood Duck Drake," is one of six judges for the 2006 California Open Wildlife Art Festival scheduled for Feb. 18-19 at Balboa Park in San Diego, Calif.

Woodcraft Magazine is happy to help publicize shows, classes and events of interest to woodworkers. Please send complete information on your event 60 days in advance to:
Events Calendar
Woodcraft Magazine
1101 Rosemar Rd.
P.O. Box 7020
Parkersburg, WV
26102-7020
Editor@WoodcraftMagazine.com

COMING UP

What's ahead in Woodcraft Magazine:

PROJECTS

FOLDING MITER SAW TABLE

Get carried away making this collapsible support for the increasingly popular miter saw. You'll be impressed with the thoroughness of Sonny Varisco's plans for this easy-to-make and extra useful project. You'll wonder how you got along without it.



NAPKIN CORRAL

Build this clever napkin holder in one evening. While it isn't an antique, the plans that were used to build it are. Find out how we discovered this unique project.

PEOPLE

SCOTT PHILLIPS

Meet a fellow woodworker connected by hand and heart to the NASA space program. Follow his fascinating tale from his workshop to Mars and beyond.



PRODUCTS

CORDED POWER BUT WITHOUT THE CORD



We can't even show you the picture yet, but the new 36V power platform from DeWalt promises to be a beast. We'll tell you more in the next issue.



FOUND WOOD

Some of the best wood you could ever use is right under your nose, or should we say feet. Steven Staples takes you through the steps he uses to successfully find and use reclaimed wood and furniture.

Look for the May issue on April 4!

JesseEm
Tool Company

THE NEW

Mite-R-Excel™

The New Benchmark

- 24" Fence Extends to 36"
- Positive Stops Every 1/2"
- Adjustable Scale and Flip Stop
- Perfect Fit Adjustable Bar
- Heavy Gauge Aluminum



The New Mite-R-Excel™ represents a bold new class of Precision Miter Gauges. Designed for accuracy and built with heavy-weight CNC machined aluminum components. Featuring 1/2 degree incremental positioning with our innovative **Dual-Indexing Angle Location System.** This fine precision instrument is sure to become your most prized table saw accessory.



Visit us at
www.jessem.com
call: 866-272-7492
Barrie, Ontario Canada

Introducing the
K3 Kreg Jig **NEW**



Innovative NEW features...

- Interchangeable Drill Guide Block
- Front Side Clamping
- Dust Collection
- Unlimited Material Thickness Settings
- Material Support Stop

Kreg Jig® Master System
ITEM# K3MS

US Suggested Retail
\$149.00



Visit us online at www.kregtool.com
for an interactive tour of the K3 Kreg Jig®

800-447-8638 • www.kregtool.com
The Blue Mark of Quality.

Sign up now for

WOODCRAFT
ePreview magazine

Sneak a peek at what's happening in the next issue of Woodcraft Magazine! Subscribe **FREE** to our online *ePreview* newsletter, and see what's coming up before the next issue hits the streets.



Sign up **FREE** today at
woodcraftmagazine.com





Whispering Pines

by Larry Brown

The dock floats in a small cove off Douglas Lake in eastern Tennessee. The banks are steep and covered with trees; birdsong fills the air. An occasional breeze brings the trees to life, and they whisper to each other with rustling leaves.

I'd been fishing for a couple of hours when I realized that the dock was just the perfect height for dangling tired feet in cool water. The fish weren't hungry, and by then I wasn't really interested in feeding them any more of my bait. Off came the shoes, into the water went the feet, and gone was any intent to catch dinner.

I started looking around, taking in the beautiful shades of green and brown that surrounded the cove. Most woodworkers at my level buy their stock in home improvement centers. With the wood already milled and planed, all we have to do is cut to size, assemble, then sand or plane the mill marks out of it and apply our finish of choice. But before the wood is stacked in the aisle of our favorite store, it is felled, dragged, de-branched, dragged some more, loaded onto a truck, maybe floated down a river, de-barked, cut, sliced, sometimes peeled, planed, loaded on a truck or rail car, hauled again, and finally unloaded at the dock in the back of the store.

How many people, I wondered, have touched or worked on any particular board before it reaches my shop?

Early in my attempts at woodworking, I avoided hand tools. I simply thought using them would be too hard, and that power tools could do just as well with much less effort. I was wrong on both counts.

Early last year I attended a class taught by Lonnie Bird in Tennessee. Lonnie's approach to woodworking combines power and hand tools, using the strengths of each to complement the other. Under Lonnie's guidance in the six-day course, I started down the long road to learning the proper use of hand tools. That's when wood started "speaking" to me.

With a table saw or router running, my total attention is focused on cutting or shaping the wood safely. But with hand tools, I've found time to pause and let the

wood I'm working tell me its story. True, the story flows from my imagination, but I like to look at the wood and picture the forest it came from – the trees standing tall and proud, the birds singing from its branches. This forest of my dreams is full of mist and secrets, and the only sound of man to be heard among the chorus of the woods is my breathing and my footsteps. Occasionally a strong breeze flows from nowhere, and the trees seem to join the birds with a song voice uniquely beautiful.

And now, I'll also take time to think of the men and women who have taken this gift of the earth, and brought it to me so I can attempt to make something beautiful and lasting. Many calloused hands and aching backs worked this piece of wood from log to board, and many miles of pavement or rail passed under the watchful eyes of truck drivers and railroad workers to bring this board to market. I suspect many of them were underpaid, and I regard them with silent gratitude as I plane a shaving from this board.

We woodworkers tend to be tool junkies. Our magazines reflect this. Many of the articles focus on tool reviews, jigs for working with tools, step-by-step projects listing the tools to use, ways to improve and tune our tools, how to sharpen our tools, and on and on. How many of us, given the choice of reading about a great woodworker or checking out the latest reviews on a table saw in a new magazine turn to the tool review first?

But woodworking is so much more than that. When you can, turn off the power tools. Pick up a hand tool. Pause to listen and reflect; let the wood speak! This hobby has lots of connections the wood would speak of, such as to the many workers who have touched the wood on its way to the lumberyard and the forest, with its cool breezes, deep misty shade, leaves falling from branches high above us, and trees whispering to each other.

And to us.

— Larry Brown is a network administrator for an Ohio utility company. His favorite hobby is reading woodworking magazines and dreaming about all of the great stuff he will one day make in his shop. He lives in Trenton, Ohio.



WOODCRAFT[®]

Helping You Make Wood Work[®]



To Find Your Local Woodcraft Store, Or For A Free Catalog, Visit www.woodcraft.com Or Call 800-542-9115



CMT
ORANGE
TOOLS[™]

CMT has been manufacturing supreme quality router bits for the world industrial woodworking market since 1964. Woodcraft is proud to offer CMT industrial quality to the United States woodworking market. When you make your next move in router bits, think Woodcraft and CMT! Woodcraft – helping you...

keep your game sharp!

Dept: 06WD03P

QUALITY WOODWORKING TOOLS • SUPPLIES • ADVICE[™]

POWER IS NOW ON REBATE



LOOK FOR THE
"POWER DOLLARS"
TAG AND SAVE BIG!

The Gold-Standard Since 1921.®

POWERMATIC

powermatic.com

SELECT POWERMATIC PRODUCTS ON REBATE. See participating stores for details.
Rebates effective through April 30, 2006