

10 PROJECTS

PLANS

TIPS

JIGS

TOOLS

Canadian

Woodworking

FEBRUARY/MARCH 2003

Vol.6, No. 1

Exotic Hollow Vessels

Curio Cabinet
Display Your Treasures

Half Moon Table
Fits Anywhere

Disappearing Dime
Puzzle
Impress Your Friends!

PLUS:
Tool Reviews, Pro Tips
& Dust Collection

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A close-up of a woman's hand with a large diamond ring on the ring finger, held up in the foreground. The background is a warm, well-lit kitchen with custom wooden cabinets, a granite countertop, and a stainless steel refrigerator. The lighting is soft and focused on the hand and the kitchen's details.

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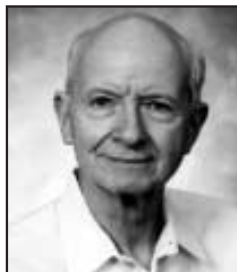
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10" x 40T (1/8" or 3/32" K)	\$121
10" x 30T (1/8" or 3/32" K)	\$101
8 1/4" x 40T (3/32" K)*	\$101
8" x 40T (3/32" K)	\$101
7 1/4" x 30T (3/32" K)	\$ 71
5 3/8"x40Tx10mm (5/64" K)**	\$ 83

Also available: 14"x40Tx1" • 14"x30Tx1" • 12"x30Tx1" • 16"x40T • 9"x40T • 16"x30T • 9"x30T • 8"x30T (3/32" K) • 6"x40T (3/32" K). Call for prices.

*For Sears & Makita **For DeWalt Cordless Portables

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Also available: 14"x100Tx1" • 14"x80Tx1" • 16"x100Tx1" • 8" • 7 1/4" and others. Call for prices.

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Specially designed for sliding compound miter, miter-chop, and radial saws.

Size	Price
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Designed for radial arm or tablesaws—fine crosscut.

Size	Price
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12" x 60T	\$141

Also available: 9" x 60T • 14" x 60T • 16" x 60T. Call for prices.

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editorsletters

LINDA FULCHER

Red Green is fond of saying that “if the women don’t find you handsome they should at least find you handy.”

I have always found Paul really handsome.

However, he *has* had his handy moments. Like the time he came home from a garage sale with an old beat up dresser and announced, “I’m going to refinish it and I’ll have a great dresser.” Although he didn’t have a dresser at the time and this was a good idea, I wondered how he would follow through, seeing as he had no refinishing experience, whatsoever. I could only compare it to my notion of taking up sewing. One of my first attempts (sewing a button on) gave me a lot of satisfaction. That is, until I held the shirt up to examine my work and discovered that I had sewn the button to the shirt and to the slacks I was wearing.

Paul, however, did an excellent job of stripping and refinishing the dresser. He has been using this solid little dresser now for 17 years. I am still in awe.

I am inspired by how he was able to make something old, into something new and useful again. I enjoy watching scenes in movies where there is a transformation: an old house is renovated, or a room completely redone. Partly, I think it is because someone else is doing the work, and partly because they have sped up the time exposure on the filming to make it happen at light speed. However, the fact remains that this process of restoring is inspirational to me.

One of our woodforum members shared such a restoration story. Apparently he has many good-as-new-again tools. Paul contacted him and we were thrilled to get the follow-up story and the photos detailing the steps he took to restore a 50-year-old lathe. Check it out. It may inspire you to uncover your own diamond-in-the-rough, be it a great old tool, piece of equipment or furniture.

I myself, have come to love the very old sewing machine that was my grandmother’s. All I have to do is keep it oiled and rrah, rrah, rrah – it goes just my speed; very slowly. It’s easier to keep up with undoing my mistakes that way.



PAUL FULCHER

Tool restoration. It links the past and the future. Old becomes new. Yet, somehow the two incarnations exist simultaneously. Is it a new tool, or an old tool? Both are apparent. Yet one has transformed into the other. It’s almost as if the tool has passed through time.

Recently, I’ve met a number of woodworkers who are into restoring old tools – bringing them from the past into the future. They somehow look at old, unused tools (which others may not have even noticed) and they see finely tuned, practical heirlooms.

As many woodworkers rush by in an effort to incorporate newer technologies into their woodworking, there are some who choose to hone their woodworking skills with tools of an earlier time.

David Eisan is one of these woodworkers. He has developed a special skill of reaching into the past and pulling out a brand new tool. In fact, David has agreed to show us some of the wonderful tools that he has brought from the past.

In this issue he shows a Delta lathe he pulled from 1948. It’s a beautiful specimen and is quite a machine, both then and now.

In future issues, David will show other woodworking treasures he has brought from the past. In fact, he will even help you to develop the ability, so that you can reach into the past and pull out a new tool, yourself.

You’ve all seen them before. Old tools at flea markets, old tools at garage sales, even old tools in trash bins. Tools of another time.

Next time you see an old tool, look a little harder. Perhaps you will see a new tool from a past time. Perhaps you will be able to bring it back. Perhaps you will even be able to pass it on to the future.



Correction:

From Dec/Jan03 Firewood Box pg. 14

The measurements for the top, back bottom front panels should be a full 24”.

The drawer face and the lid should be 23 7/8” (1/8” less than the other above).

dear editors

Hello

I’m a Canadian entrepreneur who is interested in starting my own online woodworking business. But first, I must conduct a feasibility study. I need your help in contacting woodworkers to do my survey ... Can you help?

Colette Theriault

Dear Colette

We have had quite a few requests from people and companies that want to “put their finger on the pulse of the woodworking industry”. Like you, they have contacted me to ask how they can contact Canadian

woodworkers. I will tell you what I have told them, (because everyone I’ve told so far has been very happy with the results). Please feel free to access our WOODWORKER’S FORUM at www.canadianwoodworking.com. Our most recent statistics show that an average of 2,403 Canadian woodworkers visit the site each and every day. If you want to know what Canadian woodworkers are thinking and doing, that’s the place to go. Advertising campaigns, TV shows, college courses and new businesses have all had their start by tapping into the woodworking community on the WOODWORKER’S FORUM. I am

sure that if you approach the woodworkers there you will get all the help you need.

Good luck.

Paul

Dear Paul

Thanks Paul for letting me use the WOODWORKER’S FORUM for my business study ... I’m impressed with the response rate ... I received well over 100 completed surveys ... if all goes well, I will start my business this spring ...

Colette Theriault

■ continued on page 39

Half Moon Table



This little half moon table is something that fits well into virtually any living room. It can be used as a decorative piece where a larger table won't fit or as a snack table that can be moved to any chair side as needed.

I searched high and low for the right styling for this table and found that it just cannot be found in furniture stores. The inspiration for the design came from an antique which lets it fit into any decor.

The table can be built from pine, cherry, oak, or whatever stock you may have around. Ideally, the legs should be 1" thick and the two surfaces should be 1/2" thick. 3/4" stock works just as well, used

throughout if you prefer. My prototype was built from solid walnut tongue and groove wall paneling, 1/2" thick, glued to double thickness for the legs and cross members. I was most fortunate in finding a good quantity of this paneling at a give-away price in a used building materials store.

STEP 1

Prepare your stock by edge-gluing to required widths. My stock was 1/2" thick so the photo shows some parts being glued to double thickness.

STEP 2

Using the grid diagram, transfer the profiles to your stock or to stiff cardboard.

Cardboard templates are an additional step that will pay off if you ever want to build the project again. When others see this little table, you are bound to get requests for more!

Trace the templates onto the stock and cut the shapes using a band saw or jig saw. A band saw greatly simplifies this project. Cut the tenons to the shapes on the templates. The tenons should be 1/2" wide. Turn each crossbar 90 degrees and cut the tenons to 1/2" thickness. The tenons should look like 1/2" cubes when done.

The top can be built as a half-moon or as a pie-crust shape. Choose your contour from the grid diagram. Draw the center line on your stock. Place your template along the line and trace it on one side. Flip the

MATERIALS LIST

- 3 21 1/2"L x 2 7/8"W x 1"T**
(1) Legs
- 1 14 7/8"L x 1 3/8"W x 1"T**
(2) Full Stringer
- 1 7 1/4"L x 1 3/8"W x 1"T**
(3) Half Stringer
- 1 14 7/8"L x 1"W x 1"T**
(4) Full Cleat
- 1 7 1/4"L x 1"W x 1"T**
(5) Half Cleat
- 1 20"L x 10"W x 1/2"T**
(6) Top (choose #6 or #6A)
- 1 22 1/2"L x 10"W x 1/2"T**
(6A) Pie Crust Top
- 1 13"L x 6 1/2"W x 1/2"T**

HARDWARE and SUPPLIES

- 7' of 1"x3" hardwood**
(dressed dimensions)
- 5 1/2' of 1/2"x5 1/4" hardwood**
(dressed dimensions)
- 6 1 1/4" #8 woodscrews**
- Note: 3/4" stock thickness can be substituted.**

template along the mirror line and trace the opposite half.

Note also, that the pie-crust table top is 2" longer than the half moon. Cut your stock to the correct dimension for your chosen contour.

STEP 3

Sand the parts. The tight curves on the legs and the crossbars are best sanded using drum sanders in a drill press but they can also be hand sanded. Sand the tops smooth and even up the curved edges with a belt sander. The concave sides of the legs must be done using the end roller of a belt sander.

STEP 4

On the full length stringer (#2) and the full length cleat (#4), mark the center point of the side. Using a 1/2" Forstner bit, drill a hole 1/2" deep in the center of each part.

Using a sharp chisel, square the corners of the holes. Test fit the tenons of the half stringer (#3) and the half cleat (#5) into these mortises, adjusting with the chisel as required. Don't worry if the fit is a little sloppy.

On each leg, cut two more mortises in the same manner. The locations of the mortises are marked on the grid diagram. When drilling the lower mortise, make sure to prop up the part as required to drill the mortise parallel to the top & bottom of the leg. Square up the mortises with a chisel and test fit the parts.

STEP 5

Using a 1/2" or 3/8" radius router bit, round over the outer edges of the legs. A router table greatly simplifies this process. Leave the ends and the inner edges square.

STEP 6

On the full length stringer and cleat (#2 & #4), apply glue to the tenons and insert them into their mortises. Gently pull the joints together with pipe or bar clamps. If excess glue was used, allow the glue to be gently squeezed out of the joint. If excessive force is used, the parts may split from hydraulic pressure. Make sure the assembly is flat. Check that the assembly is square by comparing diagonal measurements, adjusting as necessary.

Note:

Yellow cabinetmaker's glue is recommended due to its gap-filling qualities. This is especially important if your joints are a little loose fitting.

Wipe up squeezed out glue thoroughly with a wet rag.

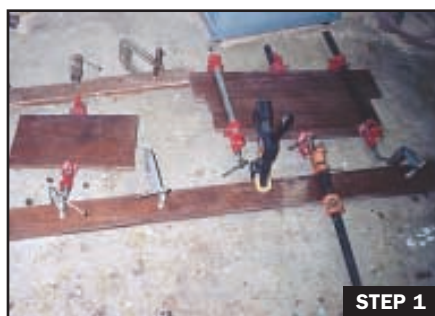
STEP 7

When the glue has set for at least 30 minutes, clamp the remaining leg, the half-stringer (#3) and the half-cleat (#5) together, as shown. A piece of scrap lumber can be used vertically as shown to allow the use of a single clamp. Stand the assembly on a flat surface and check that it is square using a carpenter's square.

STEP 8

Using a profiled router bit of your choice, contour the upper edges of the top (#6) and the lower surface (#7). Complete the final sanding of all parts, paying particular attention to areas where glue was washed away.

Install the top and the lower surface using glue and screws. The screws should be counter sunk and the length should be



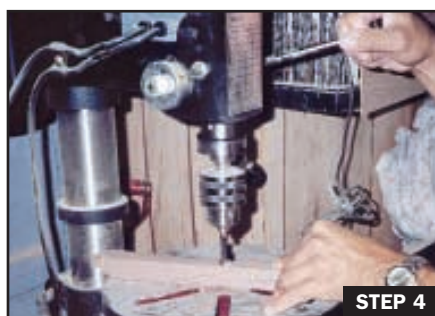
STEP 1



STEP 2



STEP 3



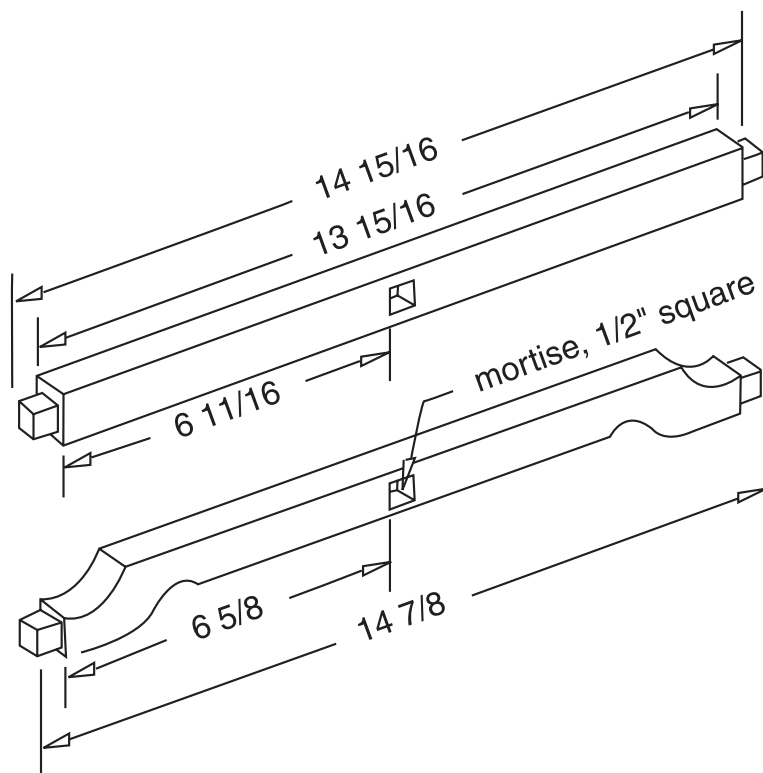
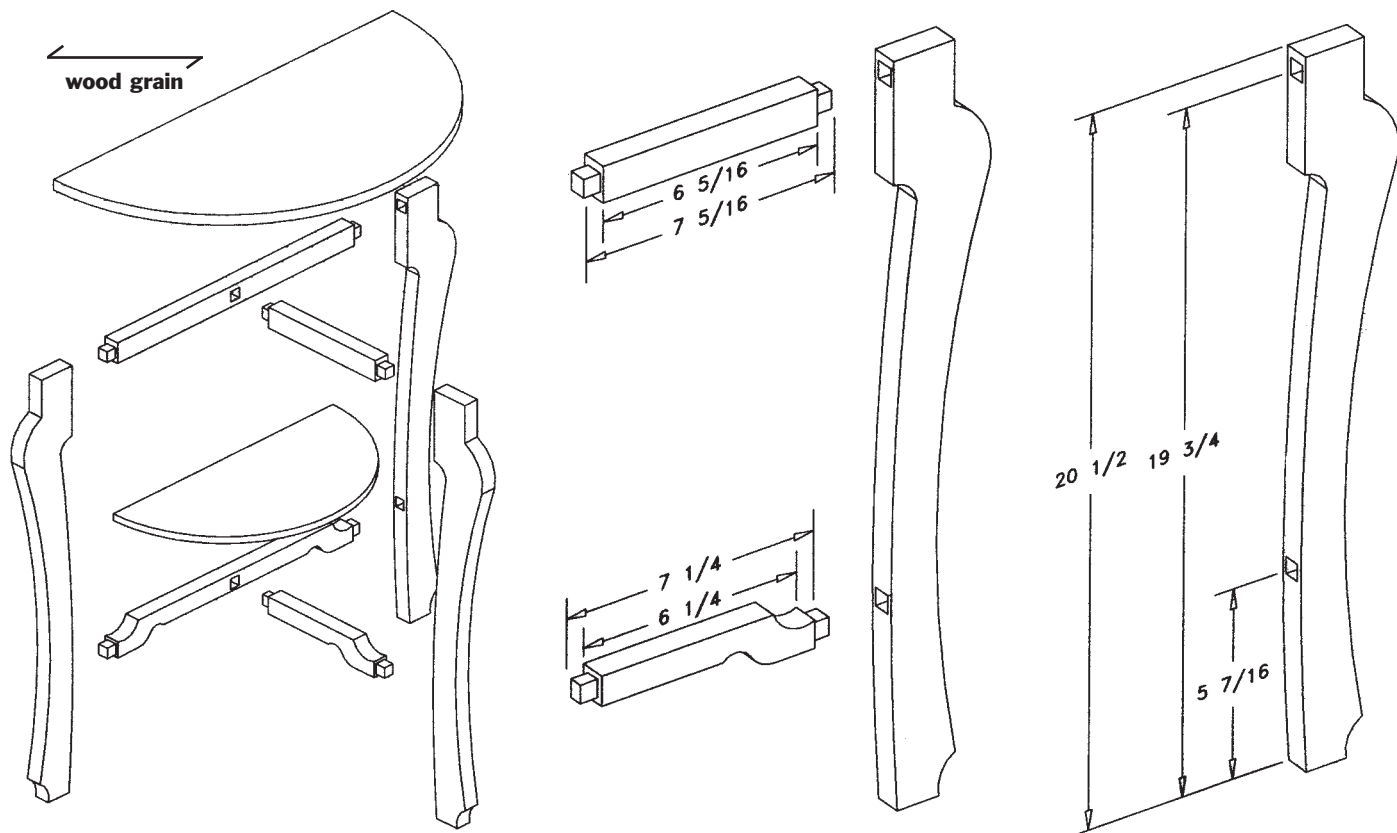
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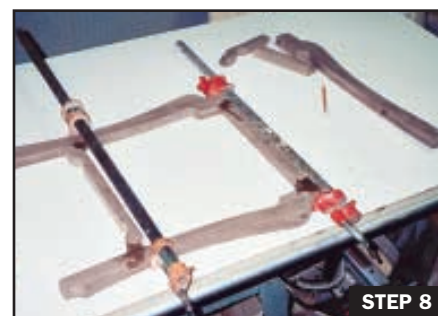
STEP 5



STEP 6



STEP 7



STEP 8



STEP 9

carefully chosen to provide a good bite without penetrating the surface.

Your table is now ready to apply a finish of your choice. My walnut version was finished with three coats of low-lustre polyurethane. This is my favourite finish which I apply to virtually everything I

build. It is a tough, water-resistant surface which is easy to wipe clean. No coasters are necessary.

DENIS ROY is a power engineer and furniture designer from Winnipeg, Manitoba. His designs can be viewed at www.ideasinwood.com

Ryobi Six Pack

Limited for space? Travel with your tools? Check out the Ryobi “Six Pack”. It is the ultimate in combination tools. Six 18-volt cordless tools in a roll-around storage case and work station.

This Six Pack takes the freedom of cordless tools to an all-time high. Imagine, a cordless compound mitre saw, a cordless speed saw, a cordless reciprocating saw, a cordless circular saw, a cordless drill/driver and a flashlight all placed neatly in compartments in this roll-around tool center. In addition to all six 18-volt cordless tools there is a one-hour diagnostic charger with three battery packs.

The new Ryobi Speed Saw is a cordless cut-out saw that runs at 26,000 RPMs and has power to spare. It’s the ideal tool for cutting openings in drywall for outlets and switches.

Ryobi earns our full points for the innovative ★★★★★ Six Pack.



RouterRaizer

Up until recently, router manufacturers have been reluctant to address the fact that routers are used upside-down and installed in router tables. I say they are reluctant to address this fact because no routers, that I know of, are router-table friendly. All are

designed to be adjusted in the right-side-up position. This is especially true of plunge routers.

This situation has created a market niche for entrepreneurs like the people that designed and built the **RouterRaizer**.

The RouterRaizer is an ingenious way of raising and lowering your router bits from the top of the table. No more getting on hands and knees with a flashlight to set that panel-raising bit by 1/16th of an inch.

The kit is supplied with all of the necessary components for your particular router model and a detailed instruction booklet. Installing the kit should take no more than a half hour or so and I can tell you up front that you will be pleasantly surprised with the results. The kit we got for testing is for the Freud plunge router that happens to be one of the easiest

under-the-table routers to adjust, the RouterRaizer now makes it a cinch.

A small hole is drilled into the router plate and after all of the parts are installed, you simply drop in the crank handle from the top of the table and turn to raise or lower the bit. It’s just that simple.

If you only have one router in your shop, no problem. Just remove the router from under the table and use the same crank handle for adjusting the depth of the bit. The simplicity of the RouterRaizer gives it our ★★★★★ rating.



TOOL TEST RATING SYSTEM

- ★below average quality
- ★★average quality
- ★★★very good quality/value
- ★★★★excellent quality/value
- ★★★★★ ..top of the line

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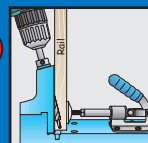
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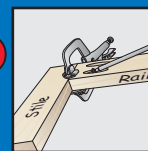


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Curio Cabinet

Display and Protect Your Treasures

This project is one of the most popular display cabinets built by woodworkers. If you have valuable items to display, this is the cabinet of choice.

One of the design challenges with a delicate project like this curio cabinet is how to make it sturdy while maximizing the display area. There is a great deal of glass involved and it must be properly supported.

I decided to start with two solid 2x2 pieces of hardwood for the front corner posts. But, square posts would not be very appealing and would look bulky. I believe I've solved the "big and bulky look" by creating a concave face on each post. It looks complicated but, in reality, making the curved posts is a simple woodworking procedure.

The next issue I faced was finding a safe design to support large glass panels. The solution was to use a "cope-and-stick"

style panel – two would be fixed and the third would become a door by installing hinges. This is a common method used to create frames for glass doors and proved to be just as suitable as a fixed panel frame. If you haven't yet purchased a cope-and-stick bit set, this project is a good reason to buy them.

I'll discuss the many style options available to trim your curio cabinet. Subtle style changes in the trim can give the cabinet a totally different look. Investigate the style of your existing furniture to determine the final look of your curio cabinet project. If the furniture in your house is old world traditional or sleek and modern, look closely at the decorative wood details so you can duplicate them on your cabinet.



Photo by: Michael Bowie, Lux Photography, Ottawa, Ontario
Souvenir Collection: Janice & Michael Bowie

MATERIALS LIST

All the material is 3/4" thick oak hardwood unless otherwise noted.

- 2 1 5/8" square x 67"H
angle cut and grooved
as detailed
(A) Front Corner Posts
- 2 1 1/2"W x 67"H
(B) Back Frame Stiles
- 2 1 1/2"H x 23"W
(C) Back Frame Rails
- 1 1/4"T x 22 1/2"W x 65 1/2"H
veneer ply G1S (good one side)
(D) Back Panel
- 2 14"D x 24"W
angled corner cuts as detailed
(E) Tops and Bottoms
- 2 1 1/2"H x 11 1/2"D
(F) Support Cross Rails
- 1 1 1/2" square x 60"L
cut into sections as detailed
(G) Base Nose Trim
- 1 1 1/2" square x 50"L
cut into sections as detailed
(H) Base Support Frame
- 1 3 1/2"H x 21"W
angle cut on both ends
(J) Front Baseboard
- 2 3 1/2"H x 12 3/4"D
angle cut on both ends
(K) Side Baseboards
- 2 3 1/2"H x 2"W
angle cut on both ends
(L) Angle Baseboards
- 1 3 1/2"H x 22"W
angle cut on both ends
(M) Top Skirt
- 2 3 1/2"H x 13"D
angle cut on one end
(N) Side Top Skirts
- 2 3 1/2"H x 2 1/2"W
angle cut on both ends
(P) Angle Top Skirts
- 1 60"L long angle cut to
match top skirt boards
(Q) Top Trim Molding
- 1 20 3/4"W x 67"H
(R) Front Glass Panel Frame
- 2 11 1/2"D x 67"H one will
be cut to provide door gap
(S) Side Glass Panel Frames
- 6 1/8" to the size req'd
(T) Frame & Door Panel Glass Sheets
- 6 1/4" tempered with
polished edges
(U) Glass Shelves

BUILDING THE CABINET

STEP 1

The two front corner posts are made with 2x2 stock from the lumberyard. In most areas, the dressed size will be 1 5/8" square. If your supplier doesn't dress to this size, order posts with the correct dimension. Cut one corner, along the full length of each post, at 45 degrees on the table saw. Be sure the cut is 3/4" in from the corner being removed.

STEP 2

The angled face of each post is passed over the saw blade against a guide set at 30 degrees. This guide bar is clamped in place and correctly position with the mitre slide set at 30 degrees.

The post must be centred on the saw blade for the final cut to produce the correct cove cut. Follow the alignment procedures because some saw blades travel in an arc, as opposed to straight up and down, as the blade is raised.

First, set the blade 1/4" above the table and draw a reference line at the blade's centre. Find the centre of the angled face on each post and draw a line. Lower the blade and hold the post centre line to the blade centre line while positioning and locking the guide bar in place. Any error in positioning will be corrected during the final pass.

Raise the blade 1/16" and make the first pass on each post. Repeat this procedure by raising the blade slightly and making slow passes across the blade.

The cut is at the correct depth when the remaining edges of the angled faces are 3/8" wide. Check both edges after each pass and, when one edge is at 3/8", reverse the direction of feed. In other words, run the opposite side of each post against the guide bar during the last cut. This will ensure that each arc is centred on the angled faces of the posts. Finally, sand both posts to remove any saw marks.

STEP 3

The back frame is made with 3/4" thick stock and each of the four pieces has a 1/4" wide by 3/4" deep groove centred on the inside edge. These stiles and rails are 1 1/2" wide and the rails require tenons centred on each end to join the frame. Cut the grooves and tenons on a router table or table saw.

STEP 4

Cut the back panel (D) and assemble the frame. The panel rests in the grooves and the frame is glued and clamped until the adhesive sets up.

I used G1S (good one side) veneer for my panel. However, if you plan on installing a mirror, use a less expensive 1/4" thick back panel.

STEP 5

Prepare the bottom and top boards (E) by cutting them to the size shown in the materials list. Place your posts on the front corners to determine the angle and dimension of the corner cuts. My cut dimensions are shown in the drawing but you should verify the distances with your posts. Make the corner cuts on both top and bottom boards.

STEP 6

Attach the upper and lower boards to the back frame using glue and 2" screws. Drive the screws through the top and bottom boards into the frame making sure its back edge is flush with the back edge of both bottom and top boards.

STEP 7

The front posts can now be attached. Using glue and 2" long screws drive through the top and bottom boards to secure the posts.

Match the small straight edges on each post arc to the edges of the top and bottom boards.

STEP 8

The side openings have two support cross rails (F) installed to strengthen the frame. Position the rails so their inside faces are flush with the inside edges of the back panel stiles. Remember that the front posts are 1 5/8" wide so set the cross rail 1/8" back from each post's inside edge. The top edges of the rails are 32 3/4" below the top edge of the front posts and back frame stiles.

Fasten the rear end of each cross rail with a 2" screw. Don't use glue in case you decide to install a mirror on the back frame at a later date. The cross support's rear screw can be removed so the mirror will slide by the rail. The rear end of the cross support on the fixed panel side can be glued in addition to the screw.

The front ends of these cross supports are secured to the front posts with dowels and glue. Again, verify the cross support lengths before cutting in case your cabinet is slightly different than mine.

STEP 9

The base nose trim (G) is a 1 1/2" wide piece of wood that has been rounded over on the front edge. Use a 3/8" radius round over bit in your router to ease the front upper and lower edge of this trim before

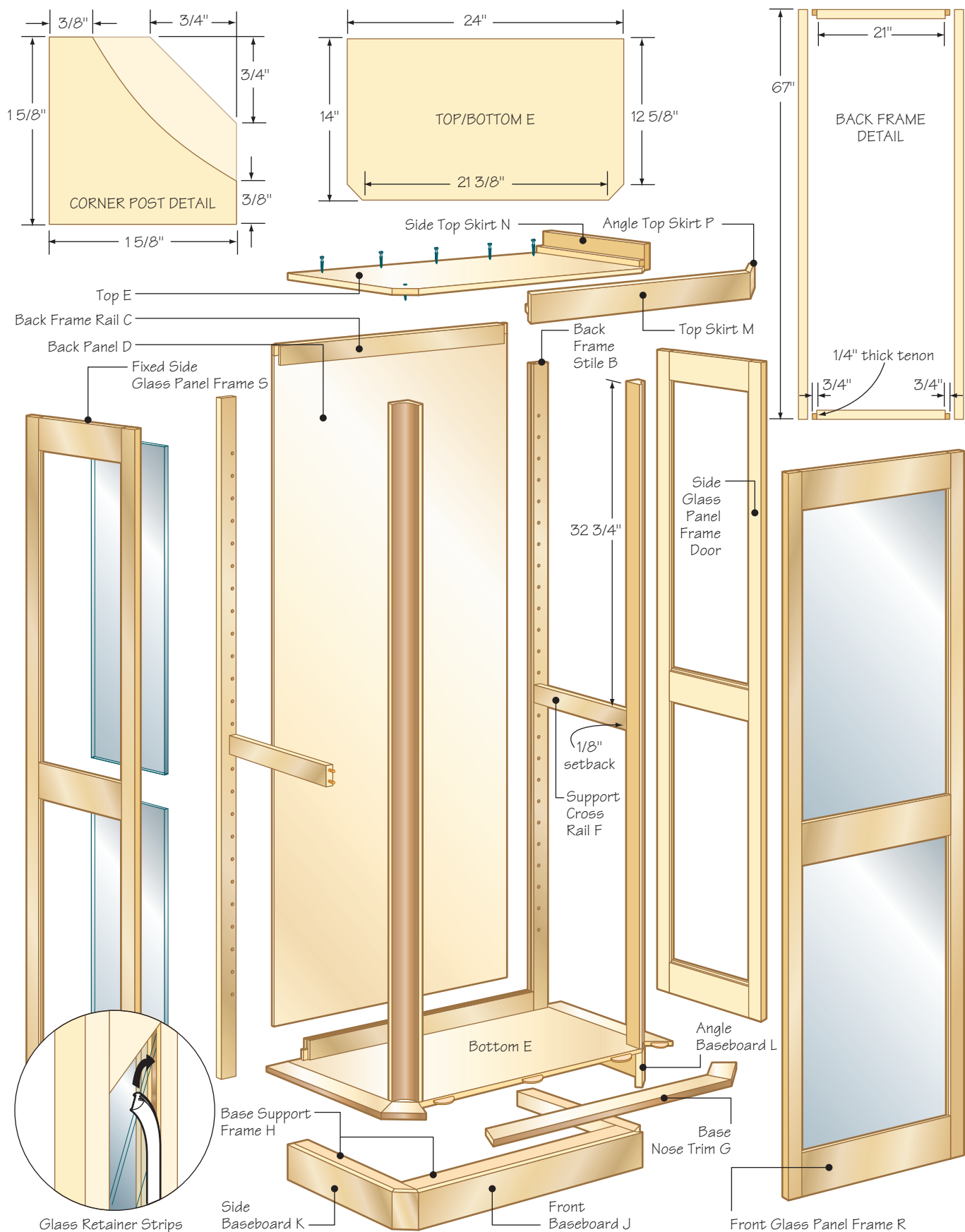


Illustration by Len Churchill

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CANADIAN WOODWORKING 11

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cutting to length. You'll need about 60" of material.

The joints are mitred at 22 1/2 degrees. The two side and front pieces are secured with glue and biscuits. The top edge of this trim is set flush with the top face of the bottom board. The two small angled pieces are secured with glue and clamps.

STEP 10

The baseboard support frame is made with 1 1/2" square lumber. Set the frame back 2 1/4" from the front edge of the nose trim. Cut the angles on the support frame boards at 22 1/2 degrees following the nose trim line. Secure the boards with glue and 2" screws.

STEP 11

Secure the baseboards (J), (K), and (L), using glue and screws through the backside of the base support frame. Glue and face nail the two small angled baseboards (L) in place.

My baseboards are plain but you can cut any design into these boards with your router. Once again, the measurements I've given in the materials list may differ slightly from yours so verify all dimensions before cutting the angles.

STEP 12

The top skirt (M) will be made with 3 1/2" high boards and applied molding. You'll need about 60" of skirt board. Before cutting to length, attach a 3/4" thick by 1" wide cleat to the back side of the skirt board using glue and nails. This cleat is positioned 13/16" above the bottom edge. It will be used to secure the skirt boards to

the top of the cabinet and will position the skirt 1/16" below the bottom face of the top board.

STEP 13

Attach the top skirt boards (N) and (P) using glue and brad nails. The joints are mitred at 22 1/2-degrees to follow the outside edge of the top board.

STEP 14

Sand the skirt boards smooth and round over the bottom edge. Use a 1/4" radius round over bit in your router to cut the edge.

STEP 15

The top trim molding (Q) is a decorative element. Its design should be based on your taste and existing furniture. I used a flat molding with a nose detail to match the bottom nose edge. This is a commercially available design, which can be purchased at many lumber stores.

Attach the trim with glue and nails or screws. My trim is thick so I can drive 1 1/4" long screws from the backside of the skirt boards. You'll need about 60" of molding.

STEP 16

The door and two fixed glass frame panels (R) and (S) are made with a cope-and-stick router bit set. The front will be a fixed glass panel frame as will the left side. The right side will be a door which is built in the same style and using the same methods.

The 67" panels and door require a centre

rail for support. This rail needs a cope cut on each end as well as a stick cut on both edges.

Measure your openings and make the panels slightly oversized so they can be sized with a plane for a snug fit.

The cope-and-stick bit set I use can be changed to cut a rabbet to receive the glass panel.

Cut all the pieces required to build the three panels. Use the offsets for your cutter set to build the panels with the final dimensions shown in the materials list.

There are two important steps before you begin making the panels. First, take accurate measurements of the openings on your cabinet. Secondly, make the stiles 1 1/4" wide and the rails 3" wide. These dimensions will maximize the viewing area.

STEP 17

The next step before assembling the panels is to cut a groove for the rubber glass-retaining gasket I am using. Use a table saw to make the cuts.

The groove is 1/8" wide and 1/8" from the inside corner of the rabbet cut. This type of retainer gasket is a press fit and does an excellent job of holding the glass in place. The glass retainer gasket is available at woodworking and hardware stores that carry door making bits and supplies.

STEP 18

Assemble the panels and door frames using glue and clamps.

The middle rail on each assembly should be located at the centre of each frame. The



STEP 1



STEP 2



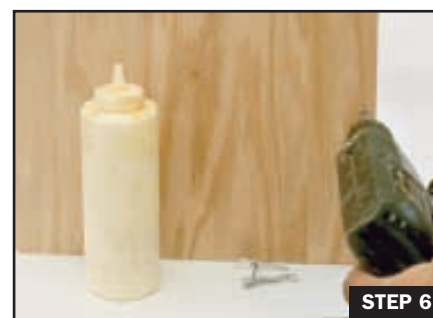
STEP 3



STEP 4



STEP 5



STEP 6

centre rail location will cover the support cross rails.

STEP 19

Install the fixed front and left side frames using glue and clamps. The face of the frames should be flush with the front edges of each corner post. The left side panel is flush with the outside edge of the back frame as well as the edge of the front post.

The frames are difficult to clamp tightly because of the arc in the front corner posts. One way to avoid having to clamp the frames tightly is to make them fit as snug as possible. Size them carefully with your plane or sander to achieve that tight fit. Once the glue is applied and the frames are positioned correctly, clamp them lightly until the adhesive cures.

STEP 20

The door frame should be about 1/8" less in width and height than the opening. The gap should be as small as possible without binding.

Mortise three hinges into the door or use the non-mortise style of hinge that I am using. The hinges are attached 7" from the

top and bottom and the middle hinge must be offset to clear the cross support rail as detailed in the next step.

STEP 21

The centre hinge must be mounted above the door centre line to clear the support cross rails. Determine the position by holding the door in place. Drill pilot holes for the screws and mount the hinge.

Check the door gap and plane or sand as required to equalize the gap on all four edges.

The door can be held closed by installing small magnetic latches that can be installed after the finish has been applied. Choose a door handle to match the style of hinges.

STEP 22

Make an adjustable shelf hole jig that's 3/4" wide by 1/2" thick. Drill equally spaced holes in the jig about 1 1/4" apart with a drill bit that matches the diameter of shelf pins you plan on using.

Then use the jig to drill eight columns of holes; four in the upper and lower back frame stiles and four on the backside of the front posts.

Use a dowel rod on the drill bit to limit the hole depth. Be sure to clamp the jig at the same position on each stile and post.

STEP 23

Measure and order 1/8" (3 mm) thick glass panels for the fixed frames and door. You'll also need 1/4" (6 mm) thick glass shelves with polished edges. Order as many shelves as required to suit your collection.

CONSTRUCTION NOTES

I finished my cabinet with three coats of semi-gloss polyurethane. This finish matches other furniture in my house, however, the cabinet can be stained to match any décor.

There are a number of options for the door and fixed panels. A cope-and-stick bit set, along with the rubber gasket, is one of the best options because both sides of the frames are visible. However, you can make a simple frame joined with biscuits or mortise and tenons if you don't have a cope-and-stick bit set. The back edges will



STEP 7



STEP 8



STEP 9



STEP 10



STEP 11



STEP 12



STEP 13



STEP 14



STEP 15

require a rabbet for the glass and it can be secured with clips.

The cabinet width and depth suit my requirements but your needs may be different. Change the cabinet dimensions

as required and follow the step-by-step construction.

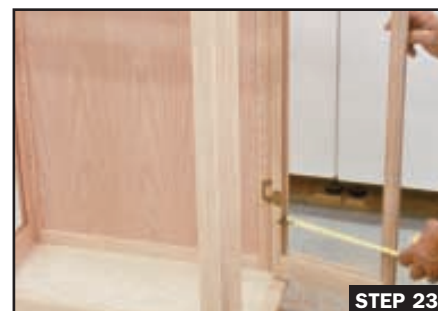
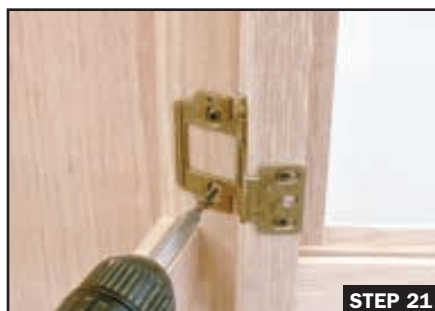
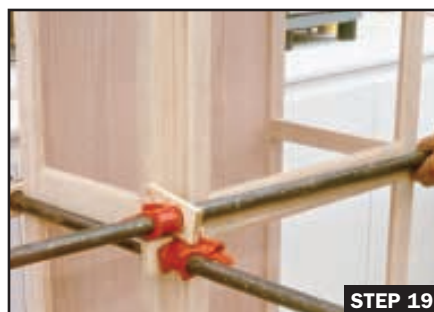
When I completed the finishing I installed an 18" dual halogen lamp assembly behind the upper frame rail.

Lighting is the final accent touch to this beautiful cabinet and, because of the glass shelving, floods the interior to highlight your collection.

The cross support rails provide support to the cabinet. However, they also can be used to support one of the glass shelves so take this into account when calculating the number and spacing of shelves.

Finally, install the handle and magnetic latches, shelf pins and glass shelves. All you need now is an interesting collection to complete the project.

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The Router

SAFETY TIP:

The router is an incredible machine that opens up new horizons on your wood-working. Many amateurs only use their router to add decorative profiles to table tops and other project parts. But a router can do so much more, including making dadoes and rabbets, cutting circles, copying templates, trimming boards to a pencil line and jointing edges. You can even use a slot cutter to turn your router into a basic biscuit jointer.

On the flip side, the router deserves a lot of respect and care. Like the table saw and radial arm saw, routers and shapers (the router's cousin) cause a lot of injuries. The router can be overly aggressive at times, causing unexpected safety risks. Fortunately, most of these risks are predictable and can be greatly reduced through careful safety practices.

If there was only one safety tip I could give you, it would concern where you put your hands when using a router table. Beginning woodworkers can be too complacent when using a router table. They assume that it must be far safer than using the router hand-held. But when using it by hand, its weight limits the violent nature of kickback. When in a table, though, the router can throw a relatively light piece of wood with ease.

The most important advice I can give you is: do not place your hands at, or near, the front of the board being routed on the table. Keep your hands at least 6 inches from the front end of the board whenever possible. If a board is kicked back, it will be thrown backwards and to the right (it won't go to the right if you're using a fence). This can result in serious injuries if your hands are near the front and are pulled into the spinning bit.

Limit the risk by taking multiple light passes instead of one heavy pass, especially in hardwoods. Also, use a fence whenever possible, as it limits what can happen in a kickback situation. Even though you don't "technically" need to use a fence when using a bearing-guided router bit, you should still use a fence whenever possible.

PRECISION TIP:

My precision tip also relates to a problem caused by the router table. I am not against router tables, as I use one regularly and it's an important piece of equipment. But putting imperfect lumber on a perfectly flat router table leads to precision problems.

For example, if your lumber has even a slightly concave surface resting on the router table, the board cannot touch the table at its centre. A featherboard might work to press the board tightly to the table, but it depends on the amount of bow in the board and how thick (and stiff) it is. Too much downward pressure will also make the board very difficult to push forward, which presents new safety risks. But if the board doesn't touch the table in the middle and you're routing a profile on the edge of the board, the profile will not transfer properly.

For this problem, I suggest using your router by hand. The router has a small base, compared to the large size of the router table top. So the router will follow along any slight curvature of the workpiece and rout the profile properly.

Using the router by hand on narrow stock can be difficult, as it is easy for the router to tip sideways. To avoid this, you can clamp another board of the same thickness beside the one you are routing for more stability. In such cases your hand-held router can sometimes do more accurate work than it can in the router table, for the simple reason that your lumber is not likely to be perfectly flat.

QUALITY TIP:

In my safety tips, I already mentioned taking several light passes instead of one heavy one. This gives higher quality results as well, as heavy cuts lead to greater vibration and sometimes slower bit speed if your underpowered router starts to bog down under load.

My single most important tip to increase the quality of your routing is to use the correct cutting speed. And this applies both to bit speed and the speed with which you move the router (or move the workpiece across the router table).

I'll start with bit speed. As I mentioned in my article on the drill press (Dec/Jan03), the speed at the outer rim of the bit (hence the name "rim speed") increases with larger diameter bits. Therefore, use slower bit speeds with larger bits. It's as simple as that. The number one feature I recommend for a router is variable speed.

Not only should you lower the speed with larger bits, you should also decrease your speed as you plunge more deeply for subsequent passes (especially if the bit becomes larger as you plunge). I will often start the profile on speed 3 (out of 6), decrease my speed to 2 1/2 on the second pass and then use speed 2 on the third pass.

Bit speed is also directly related to the speed with which you move the router. Moving the router quickly can compensate for an overly fast bit speed. Conversely, you can compensate for an overly slow bit speed by moving the router more slowly. It is always safer and more accurate to move the router fairly slowly. That's why it's important to use a variable speed router: so that you can control the bit speed to suit the situation.

How do you know what the correct bit speed is? It depends on a lot of factors, such as depth of cut, sharpness of the bit and hardness of the wood. I recommend that you run the bit as fast as possible without burning the wood. The higher the bit speed, the better the quality of cut, but be careful, burning means the speed is too fast. If you have a one-speed router and you're burning the wood no matter how quickly you move the router, you can only overcome this by taking very light passes. However, sometimes the only practical solution is to purchase a good quality variable speed router so that you can control the bit speed. There are also electronic units available that can slow down the bit speed of a fixed speed router, but buying a better router is probably the best solution in the long run.

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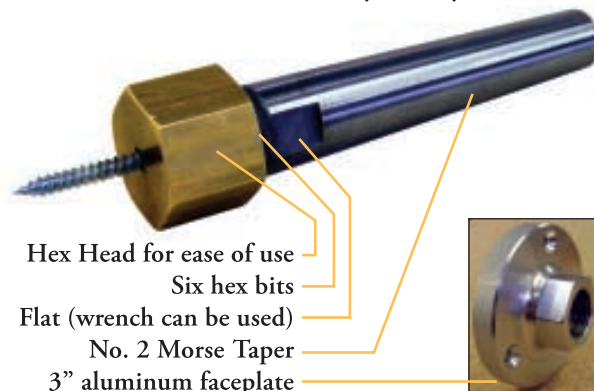
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Spanish Olive Hollow Vessel



The body of this piece is turned from one piece of Spanish Olive. The foot is made of African Blackwood. The caps consist of Blackwood with numerous other exotic woods, such as Cocobolo.

The entire project is divided into three sections: the body, the foot and the cap. Each section is turned individually and then assembled. I chose to use highly figured and relatively costly woods, so I wanted to get the most out of each piece. Therefore, I used waste blocks on each section to hold with the chuck. That way, I can turn the entire piece of exotic wood without any waste.

The first photo shows you the three sections: the foot on a waste block, the cap of African Blackwood on a waste block, and the body with a waste block on both sides.



The Foot

Begin with the body. Mount it between centres on the waste blocks so you can get one true centre. Use a 3/8" beading parting tool to true the waste blocks on either side of the body (photo 2). Both the headstock/tailstock and each waste block are centred when you put them into the chuck.

With the body still in between centres, true up the Spanish Olive with an outside cut, using a bowl gouge (photo 3). Now put the body in a chuck and, with the tail stock in place for support, shape the bottom using a bowl gouge (photo 4). The tail stock is still in the way at this point, so you have to pull the gouge with the handle towards you, from the centre out. This is somewhat of a shearing cut. When the bottom has been shaped to how you want it, a bit of light scraping cleans the ridges or any tool marks. I did this with a fairly heavy scraper, a 1 1/4" x 3/8" round nose (photo 5). I always watch the back side to see the profile of the piece.

Flip the body onto the other waste block in the chuck and, with the top exposed, take a facing cut across the face to clean the surface flat. Do this with a bowl gouge,

flute facing the direction of the cut, and from outside into the centre. The next step is to drill a "pilot" hole (photo 6). There are a couple of reasons for this hole: 1) to define the approximate bottom of the piece inside, and 2) to give the hollowing tools (used to hollow the inside) a void in which to fall. At this point, transfer the size of the cap onto the body. Use a pair of dividers set for the diameter of the recess on the cap (photo 7).

Next use a gouge to scrape and shape the top half of the body. At this point, I've sanded the body starting with 120 grit and worked my way up.

Now hollow out the inside of the body. There are many hollowing devices available for this process. They all perform well in their own way. Based on the size of this piece, I used one of the smaller sizes of "McNaughton Hollower" which come in four different sizes and in sets of three. They're basically scrapers with slightly different curvatures. You can see the different shapes of the cutters in the set that I used (photo 8).

To use these tools, it's a simple matter of scraping the interior of the body (photo 9). Remember, these are scrapers, so make



sure that the top of the scraper is on centre, with the tool in the downward incline. When first starting out using these tools, always start from the top of the piece and push the tool down to the bottom, in a sweeping motion, finishing in the hole. It is important to wait until you have some experience before you come back up with the tool because it has a tendency to grab when doing this. Remember to pivot on one spot of the rest, so as not to disturb the path of the tool. Always work the mass to the bottom so you don't remove a lot in the bottom, making the bottom thin and leaving the top thick.

The Cap

Mount a small piece of Cocobolo in



between centres and turn it into a cylinder creating a tendon on one end (which will be glued into the African Blackwood part of the cap). Now, place the African Blackwood section of the finial in the chuck, and take an outside cut and a facing cut in order to true up the piece.

Transfer the diameter of the tendon of the Cocobolo section onto the Blackwood section. Make the hole on the top part of the lid to accept the finial (photo 10). Scrape the shoulder flat where the finial sits so that you have a good joint with no gaps (photo 11). Assemble the cap and finial so that they are ready to be turned (photo 12). Use the small spindle gouge to shape this, always going downhill with the direction of the gouge (photo 13).

Note: leave the tail stock in place for support. Shape to the desired profile. Remove the tail stock and then shear off the last little "pip" using the toe (or long point) of the skew (photo 14).

Now to finish the cap, turn the bottom. One method is to take the jaws off your chuck and put on rubber bungs from a



"jumbo jaw" set. Then grab the finial with the rubber bungs (photo 15).

The Foot

Grab the foot in a chuck and shape it. Shape the body side of the foot to the contour of the body. Make a small hole in the middle of the foot to accept the tendon that you turned on the body when the waste block was removed (photo 16).

Now you can either centre the body on a vacuum chuck or insert it over a jam chuck. Turn the waste block off and a small section of the body is left like a tendon to be glued into the foot.

Sand each section to conclusion and then finish. I buffed both the foot and cap using Triple E, White Diamond and Carnauba Wax. I spray lacquered the Spanish Olive body.

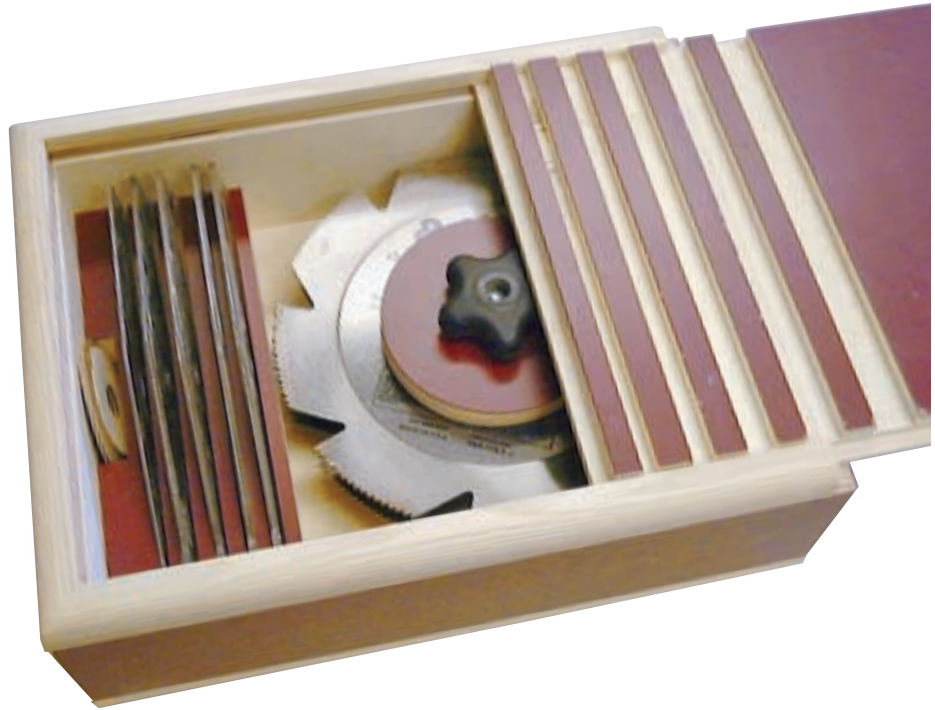
Although this project requires a little more skill than others that I have presented, give it a little thought and have a little patience and you will have no problem turning these fine hollow vessels.

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Dado Storage Box

Get Organized



When I purchased my dado-blade set it came in a flimsy clear plastic package that did nothing to protect the components from damage in the workshop. The first order of business was to build a sturdy storage box to keep the blades, chippers and shims organized and safe from harm. It's a better solution than the traditional nail in the wall and it will provide the perfect opportunity to put the dado-blade to work.

My design features slots to hold the chippers and an area to stack the circular blades. The blades are separated by wood spacers to prevent contact that can result in damage to the teeth. The lid that slides into place to protect the contents of the box also provides a convenient place to record sample dados. Each time I use a new arrangement of chippers and shims I make a sample cut on the lid and mark down the blade combination in the groove. To identify the components for this purpose I have prenumbered my chippers and shims with a permanent marker. Now when a project calls for a dado I find a sample that fits, then set up the blade according to the predetermined recipe. This system is a real time saver because it avoids much of the usual trial and error setup process.

I built my box to fit a standard 8" dado blade with 5 chippers. If your set is configured differently adjust the plans accordingly.

I used Baltic birch plywood covered with plastic laminate for most of this project. The laminate looks great and provides good protection against the rigors of life in the shop. Baltic birch plywood is a little more expensive and harder to find than standard grades, but there are fewer voids between the layers, which makes it an excellent choice for this application. I trimmed the top and bottom edges of the box with solid oak to resist wear and provide an attractive contrast to the laminate.

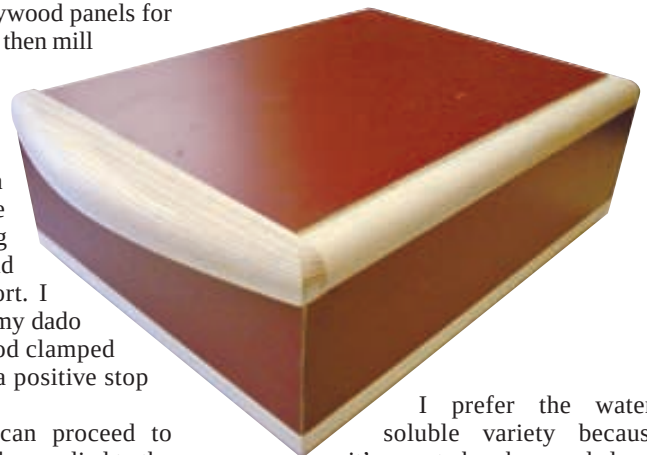
Start With the Box

Begin by cutting out plywood panels for the sides, lid, and bottom, then mill $\frac{3}{8}$ " deep x $\frac{3}{4}$ " wide rabbets on the ends of the long sides to make the connection at the corners. Rabbets are stronger than basic butt joints because they increase the bonding surface for glue and provide structural support. I formed the rabbets with my dado blade and a block of wood clamped to the fence to serve as a positive stop (photo A).

With this done you can proceed to assemble the sides with glue applied to the joints (photo B). Verify that the box is square before you set it aside to dry.

Plastic laminate is bonded to the outside of the box and the top surface of the lid.

Usually when I work with laminate I glue oversized pieces to a wood substrate, then trim the edges flush with a router and a bearing guided straight bit. However, the pieces for this project are relatively small which makes working with the laminate more manageable. This allows me to cut the pieces to the exact size required saving me the job of trimming the edges flush. To cut the laminate I used my tablesaw with a long board clamped to the fence to prevent the thin material from slipping underneath (photo C). The laminate is bonded to the plywood using contact cement (photo D).



I prefer the water-soluble variety because it's easy to brush on and cleans up with soap and water.

Next, rip enough solid oak strips to complete the trim on the top and bottom of the box. I milled a $\frac{1}{4}$ " wide x $\frac{1}{2}$ " deep

MATERIALS LIST

Material used is Baltic Birch Plywood unless otherwise noted

- 2 3/4" x 3" x 13"**
Long Sides
- 2 3/4" x 3" x 9 1/4"**
Short Sides
- 1 1/2" x 9" x 12"**
Bottom
- 1 3/4" x 9" x 12"**
Lid
- 2 3/4" x 3 1/4" x 8 1/2"**
Chipper Block Blanks
- 3 1/2" x 4" x 4"**
Blade Spacer Blanks
- 1 3/4" x 3/4" x (90" total)**
Trim - Oak
- 1 3/4" x 1 1/2" x 10"**
Handle - Oak

Plastic Laminate 1 sheet (24" x 48")

Bolt 1/4" x 2 1/4"

Project Knob 1/4" threads

rabbet along the edge of the lower trim strips to receive the plywood bottom and a 1/4" wide x 1/4" deep rabbet on the top strips for the lid. I completed the rabbets using the dado blade and a sacrificial board clamped to the fence. The board allows the blade to come in contact with the temporary fence without damaging the teeth. A feather board is important to safely keep the thin material firmly against the fence while you work.

Mark the strips, then cut them to length with 45-degree mitres on the ends. The long strips on top that guide the lid are left square on the open end and are a 1/2" shorter than the total length of the box. With the bottom panel in place, install the edging with glue and clamps (photo E). No nails are used here because they will interfere when you round over the outside edges with a 3/4" radius bearing guided router bit after the glue dries (photo F).

Now you can mill 1/4" wide x 1/2" deep rabbets on three sides of the lid to form tongues that will fit the slots on top of the box (photo G). Adjust the fit until the lid slides freely in the grooves. A little candle wax rubbed on the tongues will help prevent binding. At this point one end of the lid remains flat to receive an oak handle. To make the handle cut out a blank from solid material, then flex a straight edge to layout the curved profile (photo H). A scale pattern is provided in the plans. Cut the arc using the bandsaw, then sand the edge smooth. Before installing the

handle, plunge slots for a single biscuit in the centre for added strength (photo I). After the glue dries round over the top edge with the same 3/4" radius bit used earlier.

Accessorize

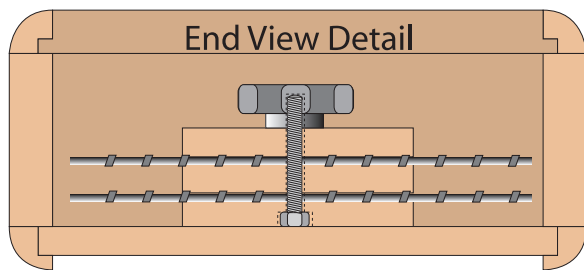
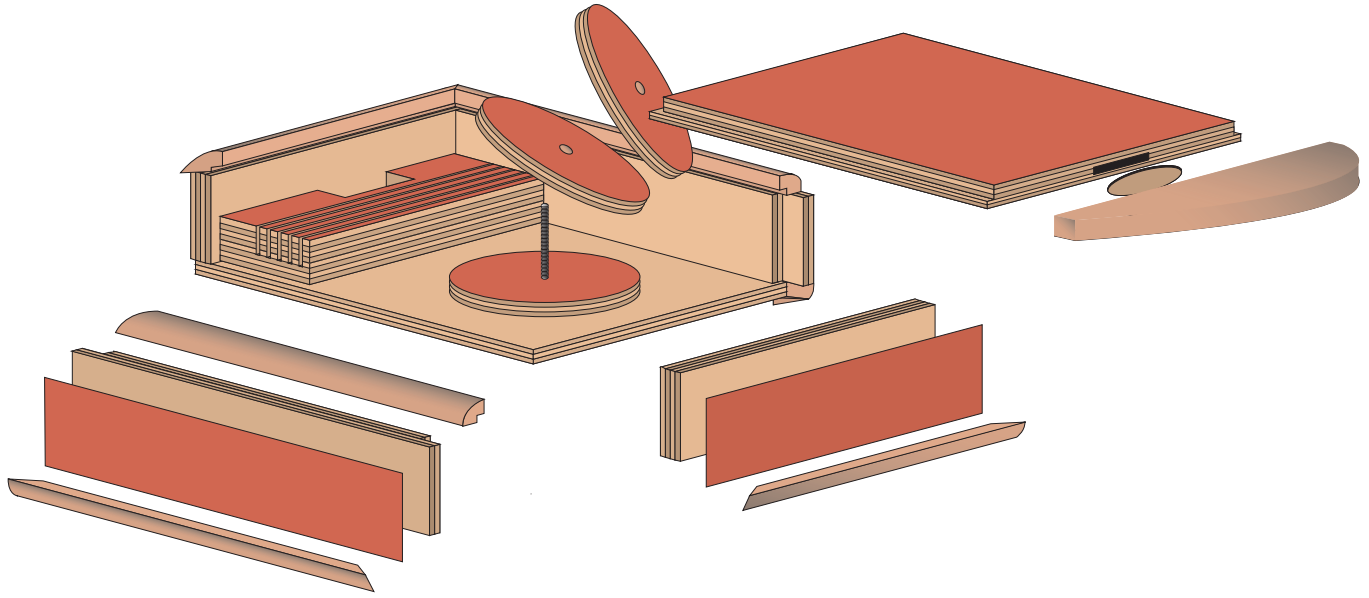
Now we turn our attention to fixtures inside the box that will secure the blade components.

Start with the holder for the chippers and shims by laminating two layers of 3/4" plywood together to form a block. Apply a piece of plastic laminate to the top face using contact cement as before, then cut a series of evenly spaced 1"-deep slots (photo J). You also need create an opening on one edge to form a pocket for the blade shims. I did this by nibbling the material away with repeated passes over the saw blade (photo K). Now you can glue to the block in place on the bottom panel.

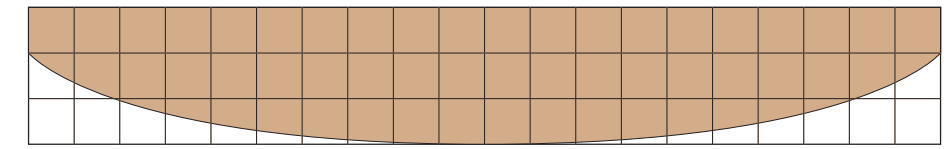
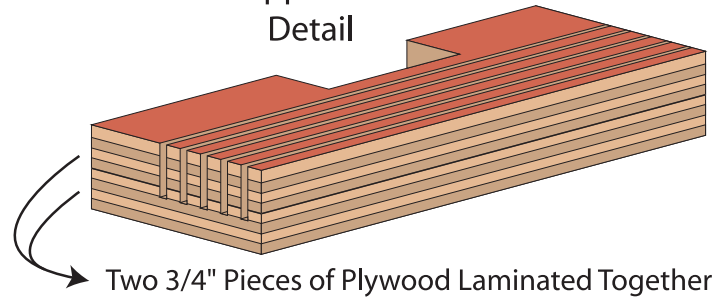
The plans show how the circular blades are stacked on a post with spacers in between to provide the separation necessary to protect the teeth. A 2 1/2" long x 1/4" diameter bolt serves as the post and a knob is threaded onto the end to secure the arrangement in place. The head of the bolt is recessed into the spacer that is attached permanently to the bottom of the box. Begin by cutting out 4" square blanks for the spacers from 1/2" plywood. Plastic laminate is applied to both sides of the two removable spacer blanks and the top face of the spacer that will be affixed to the bottom panel.



The Ultimate Dado Blade Box



Chipper Block Detail



Use a compass layout a 4"-diameter circle on each blank, then cutout the spacers freehand with the bandsaw or a scroll saw. Sand to remove the saw marks from the edges before drilling holes to receive the bolts. Start with a 1/2"-diameter Forstner bit to create the 1/4" deep recess in the bottom spacer for the bolt head, then switch to a

1/4"-diameter bit to make the holes for the shaft (photo I).

Install the bolt in the bottom spacer and fill the recess with two-part epoxy to prevent the shaft from turning when pressure is applied. Use carpenter's glue and a clamp to secure the spacer to the bottom panel.

Home Sweet Home

When the glue dries your storage box is ready for use. Line up the chippers in the slots, store the shims in the side pocket and stack the blades with the spacers in position. Now, each time you use your dado-blade you will be comforted by the fact that your investment is well protected.



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Candle Stand

Accent Your Favourite Candle



When it comes to special days, we all know that February 14, Valentine's Day, ranks right up there next to birthdays, anniversaries and Christmas. Traditionally (if we know what's good for us) it means giving something thoughtful to that special someone.

Unfortunately for me, I'm one of those people that prefer to give functional gifts. Trust me, vacuum cleaners, new pots and

pans, and lawn mowers do not make good gifts unless you are looking for a reason to live in the dog house!

So here's my problem. What do I give someone who already has too many "functional" gifts? First of all, it has to be small. That's good! Secondly, it has to look expensive. A little more challenging! What to make – I know – Cathy (my wife) likes candles. I'll make a candle stand where she can display one of those big candles she found at the candle factory here in Embro! In fact, if I use a design that looks like fire, I can use one of those corny lines on the accompanying card that goes something like "my hearts on fire for you". That's it! Let's get to work!

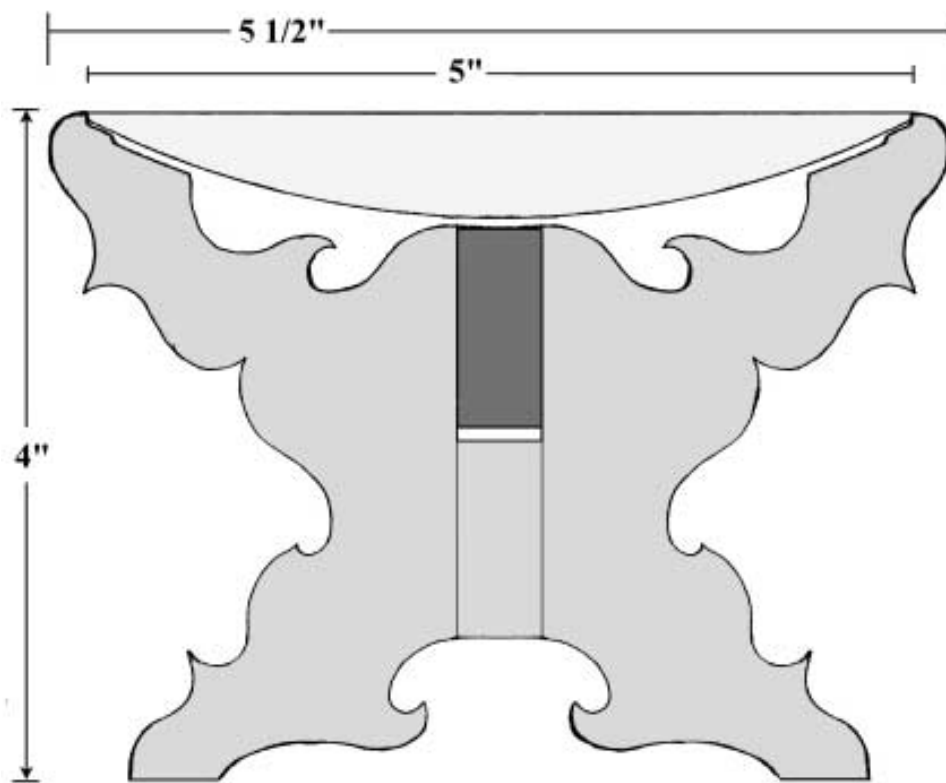
To begin I needed one of those metal candle dishes they use on the stands in the gift stores. They're 5" in diameter and 5/8" deep. With one of these in hand, I came up with the design you see here. You'll need

two pieces of the nicest wood you have. I used Purple Heart and I chose to orient the grain vertically. Look at the material you have and make your choice depending on the grain patterns.

Size the pattern to 5" as shown and trace onto the two pieces of material. Note that the 1/2" lines in the middle represent the two different cuts that you have to make for the two pieces to join in the middle. The easiest way to describe this is that they join just like you would interlock the fingers on your two hands if they were making a "V" shape. Point your hands at each other

MATERIALS LIST

- | | | |
|---|--------------------------|-----------------------|
| 1 | 5" dia x 5/8" deep | Metal Disc |
| 2 | 6" x 4 1/2" x 1/2" thick | Wood
(your choice) |



Pattern reduced to 85%

Illustration by Steve Siddall

and slide the two "Vs" into each other. To accomplish this, you need to cut the top centre out of one piece and the bottom centre out of the other piece. I prefer to do this after I have cut the main outline of both pieces.

Trial fit the two pieces and trim as necessary for a snug fit. Place the metal base into the stand and trim the stand as necessary to get it to rest evenly on the wood and the wood on a flat surface. If all fits well, disassemble and sand all surfaces prior to permanent assembly. Sparingly wipe glue onto the mating surfaces and re-assemble for gluing. Don't forget to scribe the year on it somewhere. It's nice to know 10 or 20 years from now when you made it.

Do your final sanding and finishing. Don't forget to put a finish on the steel candle dish. They are provided as bare steel and would rust under normal usage. A quick spray finish of the colour of your choice (I chose black) will provide the necessary protection.

Pack it in a box, wrap, attach a mushy card and there you are out of the dog house for another day!

STEVE SIDDALL is the president of Workshop Supply Inc., based in Embro, Ontario.
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Making Beautiful Boomerangs

Part 1

This is the first part of a two-part article on making laminated boomerangs

Making boomerangs is a fascinating hobby. It combines the construction of geometric configurations and the strip lamination process to make an object that flies away from the thrower, for up to 150 yards, in a wide sweeping circle returning to thrower's feet, like a well-trained falcon.

Making boomerangs through steaming and strip laminating is a rewarding and satisfying endeavour. By your own hands, you create a finely tuned instrument that will perform for you beyond your wildest expectations. In addition, the process of construction can be peaceful, serene and satisfying.

Boomerangs are truly unique and with modest, easy-to-do inlay using exotic woods, they become exquisite pieces of woodworking art for your home, office or for sale.

Your hobby can become a second income in addition to being an enjoyable learning experience. Because you can use virtually any and all woodworking techniques, this type of project never becomes boring – it

actually invites one to learn more about wood and woodworking in a pleasant and enjoyable way.

Boomerangs are like fingerprints – there are probably no two alike. And, like mathematical equations, there is no end to the number of shapes and sizes of boomerangs. The largest boomerang I have made was 152 cm (about five feet) which produces a massive sweeping flight pattern. Unfortunately it would take an entire day's energy just to throw it one or two times – nonetheless it is impressive.

The smallest I ever made was 7.5 cm (about three inches), which flew and returned. The smaller one was not very impressive because it was really difficult to see from any distance when I was throwing it myself and I'm sure people watching may have thought I was swatting mosquitoes or had some other problem.

Although boomerang construction is really not difficult, it does involve all facets of woodworking, from the forest to the finished product.

Selecting the Proper Trees and/or Lumber

Making beautiful strip laminated boomerangs begins by selecting the proper woods with the best steam bending

qualities. Strength and appearance are also important. I have found the best domestic woods to use are walnut, white oak, ash, most of the hickories (shagbark, red and shellbark hickories), black locust and honey locust, plum, some species of Hawthorne, apple and both white and red elm and cherry – although to a lesser degree.

For optimum results, freshly cut wood is the very best. Generally, anything between 22%-38% is great for steaming and bending. If fresh cut wood is not available with high moisture content, then it is important that the wood is air dried instead of kiln dried, since kiln-dried wood will not bend well.

When selecting freshly cut lumber from the sawmill or when selecting a log, it is important to try and select a trunk that has as few knots or twists as possible (photo 1). I purchase a log and have it custom cut to acquire the desired grain pattern for steaming. I also have the log custom cut because most mills cut their logs flat-sawn and these boomerangs need quarter-sawn lumber (Fig 1).

If you are buying wood from a lumber store, getting wood that has been quarter sawn may be difficult, since it is too expensive for lumberyards to deal with



quarter-sawn material. But don't discount the possibility – rummage around at the lumber yard and you can sometimes find the odd quarter-sawn piece. The custom-cut or lumber-yard search is worth it though, because the quarter-sawn material, air-dried and freshly cut, is necessary for optimum steam bending results.

Cutting Your Wood Strips

Once you have a suitable board (approximately 2" thick) the 1/4" strips of lumber to be steamed are cut from the quarter (or radia) sawn board. The 1/4" thick strips of lumber have the growth

rings running from top to bottom and the face grain is shown on the side (Fig 2). I use one of two methods to cut the 1/4" thick strips, either on the table saw or on the bandsaw using a proper fence guide and a four-tooth-per-inch blade.

Making the Boomerang Plywood Mold

One of the fun parts of making boomerangs is making a mold to bend and clamp your hardwood strips into after steaming. I use 3/4" fir plywood to construct my mold (photo 2). I currently have about 180 molds representing a



The author examines the timber for radial cutting. Normally, many sawmills will not radial or quarter cut logs because of the waste material created.



The boomerang mold is used first to shape the steamed wood strips and then to glue the strips together.



A custom-made dryer shortens the time it takes to properly dry the molded strips before gluing them together.



The author prepares wood strips for the steamer.

Steambending

When we steam wood with a high percentage of natural moisture we are actually boiling the moisture in the wood to increase the pliability of the wood for easy bending.

Generally, when wood dries below 22% it becomes increasingly difficult to effectively steam bend. Once wood has dried to an even lower moisture content, all the steaming in the world won't put back the original quality and quantity of natural moisture. Only to a degree can moisture be permeated back into the wood fabric. This is why green lumber is best with the second option being to use air-dried stock.

I use a custom-made steamer that has safety features installed (photo 11) and (Fig. 6). It consists of a 10-gallon steel drum with a 220-volt, 3000-watt heater element (screw in base type) fitted at the bottom of the steel drum. It takes just a short time to bring the water to a boil, producing all kinds of steam necessary for good steam bending.

The top of the drum is fitted with two copper spouts that allow me to connect two lengths of radiator hose. Also on the top I have fitted a filler hole with a screw on cap. The grey box on the top is a timer and automatic shut off. In the event the water boils below the heating element the timer shuts off and turns off the power source. If the heating element continued heating without being submerged it would burn out quickly.

Also, in the event I leave my shop and forget to turn the steamer off, it will automatically turn off once the water boils down to a certain level. Once again safety is so important with woodworking. Lastly, at the very bottom of the drum I have a small drain to let the water out when finished my steaming. If water is allowed to remain in the drum, the drum will soon rust.

In steaming various lengths of wood strips from 20 inches to five feet I have

made various size tin tanks as featured with the steamer. It is important that the steam is given every opportunity to permeate evenly inside the tin steam box. The sketch illustrates how the copper tubing from the radiator hoses is designed to allow the steam to be distributed to the total length of the steam box.

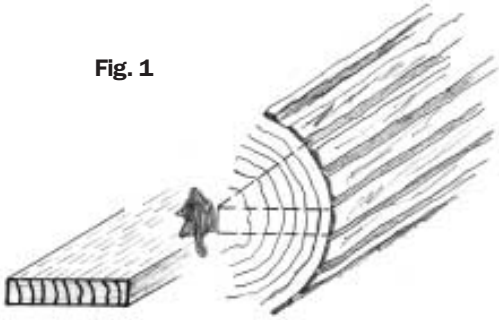
It is also important to allow the steam to draw similar to a chimney. I always allow the steam box lid to remain partially opened. This creates a good change of steam and allows the hot air (which always rises) to better circulate around the wood strips than out the top it goes. At the bottom of the tank and at one end I have incorporated a small drain to allow the water collected inside the tank to drain. It is important to angle the tank slightly so the water will direct itself to the small drain.

Although timetables exist for how long wood should remain in steam for best results, you will find the more you steam the more your intuition will be your guide. Intuition is a better guide. Wood density is always inconsistent to varying degrees, even from the same tree and, because of this, the steam penetration time will change.

In general, when your strips are placed in the steam box with the steam in full motion, usually 15 to 20 minutes is sufficient for our 1/4" thick material. It is important not to over steam. You can actually achieve a point where you "boil your wood dry". Bending then becomes difficult.

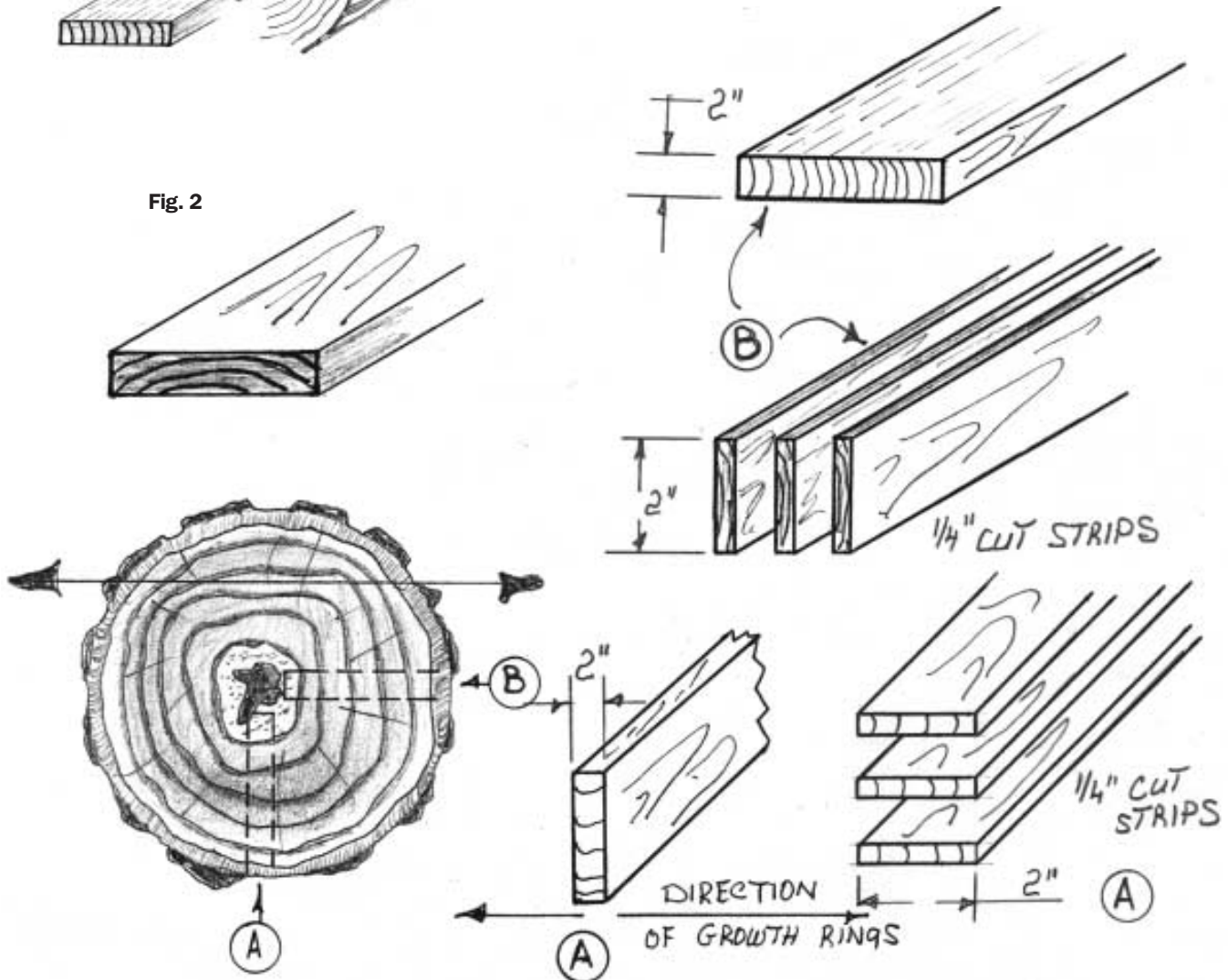
Be sure when placing and removing the strips from the steam box you wear quality-insulated gloves for hand protection. It also makes it easier to hand bend the strips – usually 7 or 8 to be bent together – and place in the mold for clamping to shape. The width of your boomerang wing will determine the number of 1/4" strips required.

Fig. 1



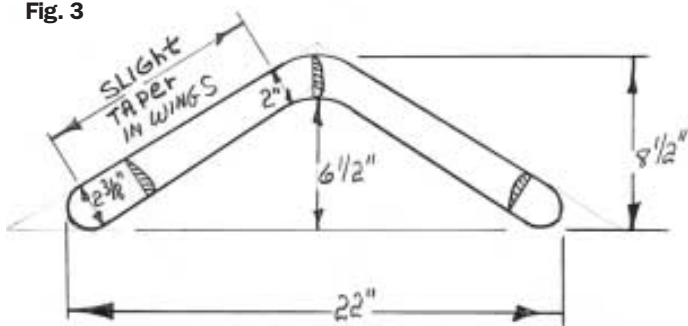
This diagram shows the direction of the grain and growth rings in quarter-sawn boards, as well as the location it is cut from the log. Notice how the growth rings run from side to side of the piece of lumber, as shown on the end of the board, and that the face grain is well displayed on both sides.

Fig. 2



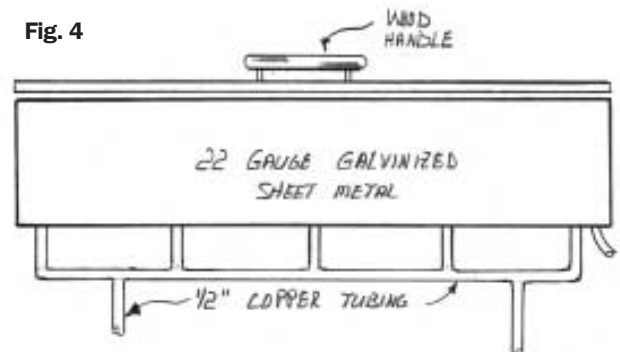
The 1/4"-thick strips are cut from the quarter-sawn board as shown.

Fig. 3



A straight forward boomerang pattern that is easy to make as your first boomerang.

Fig. 4



The author's homemade steam box.

variety of boomerang shapes and sizes.

Since the hardwood strips used are generally 1 3/4" to 2" high by 1/4" thick, the height of the plywood mold clamping wall needs to be 1 3/4" or 2". Depending on the height of your strips you can build your mold from three layers of 3/4" plywood. To know the size and shape of your mold you'll have to determine the size and shape of the boomerang(s) you're going to make.

Note the boomerang sketch (Fig. 3) showing a traditional shape that does not require any tuning (steam twisting of the wings). It is an impressive 22" (or 56cm) from tip to tip and produces a beautiful 50-yard (45 metre) circular flight.

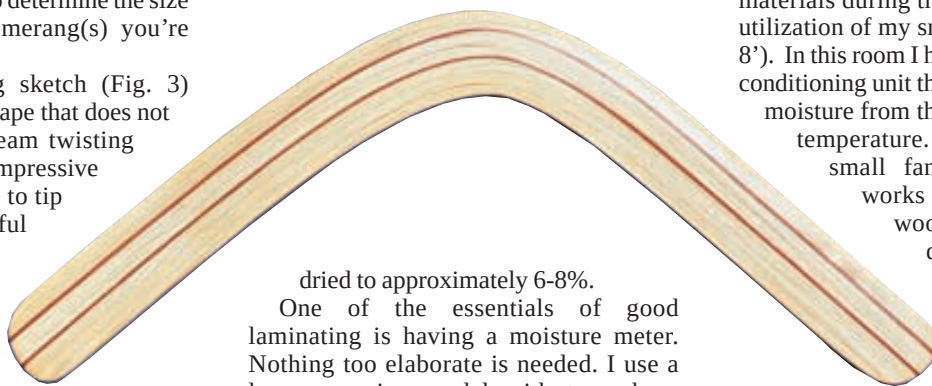
Trace the shape and size of your boomerang onto your plywood, allowing about 2 1/2" in width for each plywood layer. These will represent the back or wall portion of your mold.

You have the option to glue and screw each layer of plywood or just screw each layer together to build your mold wall. Once your three layers of plywood are fastened together, use a vertical drum sander to create a smooth, squared surface on the inside of your mold.

When your three plywood pieces are fastened, sanded smooth and squared, you can attach your mold wall to a plywood base. Since most adhesives have a degree of "creep" (sliding between pieces of wood when clamped together) the 3/4" plywood mold base will stop the wood strips being clamped into the mold from being glued unevenly. It will also stop them from protruding beyond the bottom of the plywood mold.

Molding the Boomerang Strips

Once your hardwood strips have been taken from the steamer (see sidebar), bent and clamped to shape in your mold, you wait. You need to wait overnight for most of the drying to take place. For best lamination results your wood should be



dried to approximately 6-8%.

One of the essentials of good laminating is having a moisture meter. Nothing too elaborate is needed. I use a less expensive model with two sharp prongs that penetrate the wood just enough to get a sufficiently accurate reading. Moisture meters are simple to use and quickly pay for themselves by saving time and preventing laminating problems that would arise out of trying to bond wood that is too wet.

Sometimes in an area with high humidity it isn't always possible to achieve the ideal moisture content. In that case, I use a couple of methods to finish drying the strips (after they have dried sufficiently to hold their shape). One method is my custom made portable drier (photo 3) consisting of a furnace fan, duct work with take off on top (to hook to my hot air duct) and a wood grate fitted on top to support the hardwood strips. Although somewhat crude, this system works very well during the months with low humidity and dries my strips within 45 minutes. That allows

me to finish my work the same day I started it. Unfortunately it will not work that well during the high humidity days, because all you end up doing is blowing moist air over the strips. However, operating this device in a small humidity controlled room will work well.

A second method I use for drying materials during the humid months is the utilization of my small storage room (6' x 8'). In this room I have installed a small air conditioning unit that not only removes the moisture from the air but also drops the temperature. This, coupled with a small fan for air circulation, works well for getting my wood strips dried to the desired moisture content. It usually takes only one night to remove enough moisture from the air, and subsequently from the wood, for best gluing.

In the event you try this method and it is still a bit slow drying, you can add a dehumidifier to your drying room.

In the next issue we will continue the article on making boomerangs and you will learn how to glue-up your steam-bent strips in the mould, cut out the boomerang blank, shape it's profile, apply a finish and learn how to throw it like an expert.

JOHN CRYDERMAN is a boomerang maker, wood-worker and woodshow promoter from Chatham ON, www.boomerangs.com
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1948 Delta Lathe Restoration



Newly restored 1948 Delta lathe (model 1460).

A few months back, there was an auction here in London that listed “woodworking tools and machinery”. I thought I would go and check it out to see if there were any opportunities to buy an old hand plane or two.

I didn’t go with the intention of buying a lathe, but when I saw the “Made in Milwaukee” 1948 Delta (Model 1460) lathe, with original cast iron legs, I fell in love with it.

It was in sad shape, but all the important parts were there (pulleys, tool rest base, tailstock, cast legs, etc.). Although it was a rare find, I decided that I wasn’t going to buy it. After all, I didn’t really need it, or for that matter, even have the space for it.

However, when the bidding stopped at \$90 and I heard “going once, going twice...”, I did what any reasonable woodworker would do. I raised my hand and bid \$100. My opening bid went unopposed and, gulp, I bought a lathe.

I contacted Delta and they were kind enough to send me a manual and parts breakdown for my lathe.

Within two days I had the lathe stripped down to it’s last nut, bolt and ball bearing, all bagged and tagged. I cleaned the machined cast iron surfaces with a wonderful “Walter” product from General. That, in combination with light rubbing with a Scotchbrite pad, makes rust go away without removing any base material! (For anyone wondering how to clean rust off your machines, check this product out.)

Once the castings were clean, I sent them to a local body shop to have the paint sand blasted off and the castings repainted.

With the castings back from the paint shop I started the rebuild.

There were many small parts that needed to be cleaned and installed.

The pine stretchers that went between the cast iron leg set were pretty messed up, so I replaced them with nice 10” wide 8/4 hard maple ones. I chemically dyed the maple with lye (it makes the hard maple look 50 years old instantly). I applied three coats of my favourite finish, a 2:2:1:1 blend of turpentine,



What I bought at the auction: a 1948 Delta 12"x36" Lathe (Model 1460).



The lathe stand, all torn down.



The parts stripped down.



The original paint is revealed.

polyurethane, boiled linseed oil and tung oil.

A little wiring and the lathe was ready to try out. I turned off the breaker to one of the outlets in the garage and plugged the lathe in. I turned the breaker back on and

that breaker didn't blow, so far so good. I walked over to the lathe and pressed the start button. It worked! (I still can't get over how quiet and smooth the lathe runs).

I turned the lathe off and found a piece of wood to chuck up. I then grabbed a few

lathe chisels I bought at the auction, and I started turning.

Since the moment I turned it on, I have been very happy with my new 54-year-old Delta lathe. In fact, I hope to be putting it to good use for another 54 years.

As I stated at the beginning of this article, I didn't really need the lathe, but I fell in love with it the moment I saw it. And, when I had the opportunity to buy it for \$100, I just couldn't pass it up.

Although I don't think I will get into turning in a big way (famous last words), I will use it to further my furniture making. Since I work in odd woods, I have had friends turn knobs out of unusual woods that cannot be bought off the shelf. I will now be able to do that myself. I have also wanted to make spindle turnings for legs, beds etc., and now I can.

In summary, I put about \$550 into the restoration of this lathe. And, even though it appeared rather unattractive on the auction block, all it really needed was new bearings. I could have had the machine working for less than \$100 over the original cost, but I wanted to do it right and do it only once.

That's not bad when you consider that in 2050 I will still be using this lathe.

DAVID EISAN is a woodworker from London, Ontario
dfeisan@rogers.com



Bagged and tagged, ready to be cleaned.

This is not David's first machine restoration. His cabinet saw, a Unisaw, is a Canadian-made 1960's model that he restored last winter. He is also in the middle of fixing up a 30-year-old 20" bandsaw.



Original cast iron legs with new hard maple board for the new stretchers.



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Humpbacked Whales



When I started out, I made my intarsia pieces just like everyone else. That is, I glued the finished pieces to a plywood backing. The more intarsia I did, the more I questioned the need for a backing.

Then, one day, a customer made me stop and think. He asked: “What are you hiding?” That did it. I realized the backing didn’t make it any stronger and it sure didn’t make it look any better. Since then, I have been doing what I call 3D intarsia – without a backing – so it can be viewed and enjoyed from all sides.

A great advantage of 3D intarsia is that your piece isn’t limited to a wall mounting. It can be displayed on an easel, in its own stand or even hung in a window.

Introduction

All the woods indicated here are suggestions only. You can use whatever is available to you. I chose bird’s eye maple for the throat of the adult to give it a

textured look, then each segment was sawed, shaped, and glued back together to mimic the “throat grooves.”

To eliminate some cutting and shaping you can do the adult throat the same way that the baby’s was done – using only the grain of the wood to represent the grooves.

Make the pieces

Transfer the pattern onto tracing paper, making sure you include the grain direction and the lines on the “throat grooves,” tracing paper will allow you to see the wood grain when laying out the pieces. Select the piece for the adult whale’s body.

Note: if you don’t have a piece of walnut wide enough, glue up two pieces to attain the necessary width.

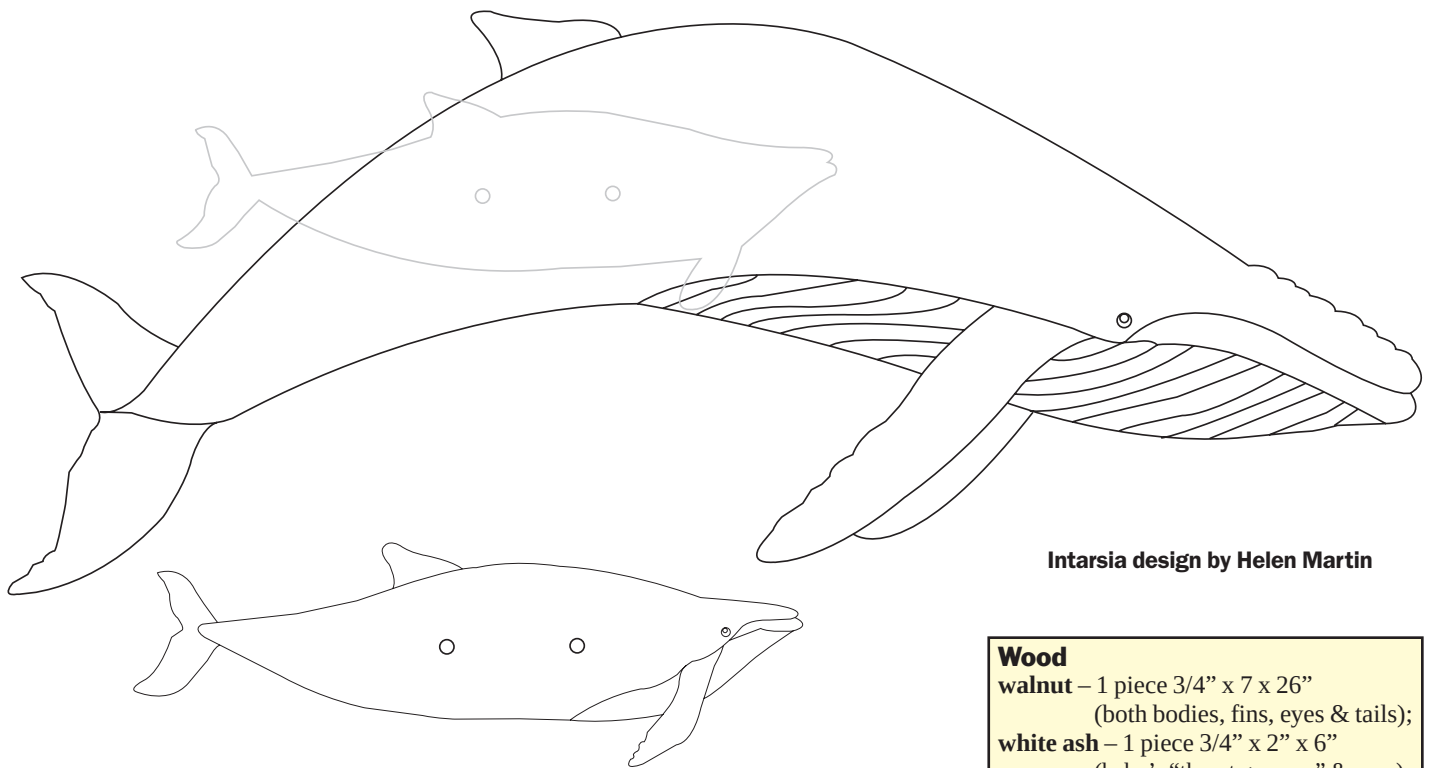
Using the traced pattern and transfer paper, mark and cut the piece to shape. Sand the edges with an oscillating spindle sander or drum sander in a drill press, to ensure the edges are square.

Always remove the burr from the back of each piece as they are cut, this allows each

piece to sit flat and square, a bow sander works great for this.

Tools and Supplies:

- Scroll saw with assorted blades (including #5)
- Band saw (optional)
- Drill with drum sander and bits (including 1/16” dia., 1/8” dia. and 1/4” dia.)
- Oscillating spindle sander
- Bow sander (see review Dec/Jan 03)
- Two 1/4” dowel centers
- Tracing paper
- Transfer paper
- Draftsman’s pencil
- Sandpaper, assorted grits
- Accordion glue bottle with 2002 GF glue
- Duct tape
- 1/4” dia. light colored doweling
- 1/8” dia. dark colored doweling
- Finish of choice
- Hanger of choice



Intarsia design by Helen Martin

Wood

walnut – 1 piece 3/4" x 7 x 26"
(both bodies, fins, eyes & tails);
white ash – 1 piece 3/4" x 2" x 6"
(baby's "throat grooves" & eyes);
bird's eye maple – 1 piece 3/4" x 4" x 8"
(adult's "throat grooves")

Select the wood for the next piece, slide transfer paper under the pattern and place the first piece in position. Mark the piece using the pattern and the edge of the first piece as a guide (Fig. 1). Cut and fit.

When you are happy with the fit, then tape the piece in position with duct tape (Fig. 2). Continue marking, cutting, fitting and taping until all the parts are done.

The eye

Remove all duct tape and drill a 1/4" diameter hole in the adult whale body for the eye. Glue and insert a light colored dowel (Fig. 3), trim it flush, then drill a 1/8" diameter in the center of it. Glue and insert a dark colored dowel (Fig. 4). Repeat for the baby.

The "throat ridges"

Cut the segments on the throat ridges using a #5 (or smaller) blade. Cut to within 1/8" of the edge (Fig. 5).

Note: not sawing the pieces completely apart allows you to shape the throat grooves as a unit.

Finishing up

Contour and shape the rest of the whale and finish sawing the "throat grooves." Shape each piece of the throat. (Of course, I use my trusty bow sander (Fig. 6)). After shaping, glue them back together, using the whale's body as a guide (Fig. 7).

After the glue has cured on both the adult and baby whale, complete the finish

sanding, including rounding the back edges (Fig. 8).

Apply finish of choice. If you intend to display the whales individually, install hangers, and you're done.

Mounting

To mount them together you must mark and drill a dowel hole on the adult whale, insert dowel centres, place the baby whale in position (Fig. 9), drill holes in the rear of the baby, cut dowels to length and glue together (Fig. 10).

Install hanger and enjoy!

FRED MARTIN is an intarsia artist from
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www.intarsiabyfred.com



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No-Hardware Drawer Pull



Have you ever wished that you could build a cabinet, cupboard or drawer, without using pull knobs, handles or other hardware that might not match your project, or even worse, be a detriment to your design?

In this issue I will be taking you through the steps of making a simple, yet attractive, routed drawer pull, using only a pattern, a brass guide bushing and a couple of router bits.

The pull starts with a design for a pattern. I will be using an oval for this article, made from 1/4" UHMW, but 1/4" plywood would work also. Experiment with many different shapes and designs (like hearts, circles or squares) and choose the one that best suits you or your project. The design of the Drawer Pull bit requires 3/4" stock for this application.

Decide where on your project you would like the pull placed. Mark a cross on the project and another on the pattern so that you can align the two (photo 1). Using double sided tape, stick the pattern to the project making sure to align the two cross marks.

On your router install a 1" guide bushing and the ring nut to lock it down. Chuck up a 3/8" solid carbide, up shear spiral bit (photo 2). I prefer this bit for this application because I want to hog out the meat of the pattern with the spiral bit first before I cut the decorative pull. The spiral bit carves out the material and draws the chips out of the hole, making for a cleaner cut.

Set your router on the pattern with the guide in the oval hole (photo 3). To set your depth, bottom out your bit by plunging

your router down until the bit touches the stock inside of the pattern and lock it there. This is now zero on your plunge stop. Set your depth of cut to 1/2". I'm using a 1/2" solid brass set up bar for this (photo 4). I find it easier to set up this way rather than trying to read the ticks on the ruler of the router.

Release your plunge lock and allow your router bit to lift from the pattern. Turn your router on and lower the cutter into the stock.

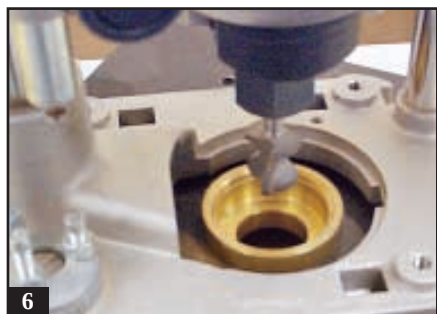
This router is 2hp and with the spiral bit I have no problem cutting the entire 1/2" depth in one pass but you will find that a lot of debris will fill in the cavity that you create so you may want to make shallower passes and vacuum out the hole between cuts.



Once you have cut all the way down to the bottom out point of your router and have cleaned out all of the waste you are ready to move onto the pull cut (photo 5).

Chuck up the drawer pull bit (photo 6). This is a 3/4" diameter cutter and will fit through the 1" guide hole so there is no need to change guides.

We have to reset the depth now for the new cutter. Release your depth stop lock and move your stop shaft up to its highest



position. This will ensure that you are setting the correct depth for the new bit now not hitting the stop turret from the last set up.

Bottom out your bit to the bottom of the 1/2" deep hole that you have just created. Now set your depth to 1/8" (photo 7). This setting will cut an additional 1/8" into your stock and will leave 1/8" of stock on the bottom of the pull. Don't cut too deep or your cutter will cut through the back of your piece and ruin the effect.

Release your plunge lock and lift the bit from the pattern and stock. Look through the 1" guide hole to see that you are centred in your pattern (photo 8). This cutter creates an under cut profile, so if you start cutting against the edge of the pattern you will cut through what would be the pull.

Turn on your router and plunge down the 1/8" in the centre of your pattern. Move your router to the left and begin cutting



around your pattern in a clockwise direction.

When you have gone around the outside edge start cutting the centre. Make sure that you cut with the direction of the grain of your stock. This will cut down or eliminate scratch marks that you may get while cutting across the grain.

Once you have made your first pass you will have to vacuum out the debris and cut again. Turn your router off but leave the cutter inside of the cut and slide it back and forth with the grain until the bit comes to a complete stop. Because of the under cut we don't want to release the plunge lock until we are sure that we will not hit the side of our stock. When the router has come to a complete stop, release the lock and slowly lift the bit from the cut.

Make sure that the cutter doesn't knick the side of your pull as you lift it out. This will cut down on any extra sanding.

Vacuum the cut out and make sure that your pattern and guide are clean of any sawdust that may keep you away from the edge of your pattern.

Reset to the centre of your pattern and again re-cut the areas of your pull that you may have missed on your first pass. (Remember: start in the centre and finish in the centre.)

This cut has to be done all the way to your 1/8". The design of the cutter doesn't allow for a shallower cut or multiple passes. The under cut will be lost as you lower your bit.

You have now completed your first all wood, no hardware, grain aligning, pattern blending pull, that you can reproduce anytime, on any project that you like.

Expand your thinking with this concept and start putting no-hardware pulls in raised panel stiles, drawer fronts or maybe even a handle for a wooden briefcase or blanket chest.

MARK EATON is founder of The National Router Academy
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Dust Collector Switch

For years I did the “dust walk” a couple of dozen times each day: walk over to the dust collector, turn it on, walk back to the table saw, make a few cuts, walk back to the dust collector, turn it off, walk back to the ... you get the picture. Now, thanks to Mark Schwartz at Penn State Industries, I let my fingers do the walking.

The **Long Ranger III™** is as easy to use remote control for your dust collector. It consists of a “receiver module” that you plug into an AC outlet (both 110V and 220V systems are available). Then plug your dust collector into the receiver module. That’s it! Now take the “transmitter module”, and clip it onto your belt or work apron. Whenever you want to turn your dust collector on, from anywhere in your shop, simply press the transmitter’s “on” button.

I’ve been using the Long Ranger III™ daily for a little over three months, and it works wonderfully. You don’t even have to



point the transmitter at the receiver module. I leave mine on my belt and just reach down to quickly turn it on or off. It will even work through concrete walls. The Long Ranger III uses a RF (radio frequency) signal that doesn’t interfere with any transformers or other electrical or electronic equipment in your shop.

The transmitter body and the receiver are made of a hard, durable plastic material. The receiver module has a circuit breaker reset button on the bottom, and a programming button on the side. There is a 9-volt battery in the transmitter that is easily changed. The Long Ranger III™ is



not recommended for use with a shop vac, or any other tool that runs on a “universal motor”. It will operate, however, with a universal motor if certain constraints are made in the initial set-up. Best of all, if there are several people working in the same shop, you can purchase additional transmitters that will run the same receiver.

The Long Ranger III™ is a valuable shop accessory, and certainly saves a lot of time.

The 110-volt system is \$59.95 US (approx \$93 CDN) while the 220-volt system is \$69.95 US (approx \$108 CDN). An additional hand piece transmitter is \$20 US (approx \$31. CDN). You can purchase the Long Ranger III™ online at www.pennstateind.com/longrang.html or by fax at 215-676-7603.

(CDN amounts calculated at US x 1.55)

Marking Gauge

There are all manner of marking and cutting gauges on the market and many have been around for ages – Noah probably used one while building the ark. They are essential hand tools, practically indispensable for laying out mortises and tenons.

For years I’ve used a Sheffield-made rosewood mortise and marking gauge (double pins on one side, single pin on the other). That is until recently. Over the past several months I have been using the **Tite-Mark** extensively, and I am extremely pleased with its performance.

Made entirely of brass and steel, the Tite-Mark is both solid and well-balanced. At 7 1/4” long and with a 1 5/8” wide round fence, it fits neatly into an apron or back pocket. A 9”-model, the Tite-Mark Long, is also available. With the blade fully retracted into the head of the fence, you can stand the Tite-Mark on your workbench for easy access. Left on its side, the thumbscrews will keep the gauge from rolling around on your workbench.

The rod is made of stainless steel. A “V” slot runs the length of the rod, and keeps the fence and tail from moving during adjustment and provides a secure purchase for the locking thumbscrews. As a nice

touch the “V” slot stops short of the end of the rod to keep the fence from sliding off.

The “business end” of the gauge is made of brass. It consists of the fence head (with a stainless steel thumbscrew to lock it in place), a knurled “micro adjuster” (which allows you to move the fence head forward or backward very precisely) and a tail end (with a steel thumbscrew to lock the fence securely on the rod). There is a small nylon set screw under the fence head that allows you to regulate the resistance level in moving the head and micro adjuster.

The micro adjuster is what really separates this gauge from others on the market. I found that I could easily make fine adjustments with one hand. Even though you don’t have to exert much pressure when setting the thumbscrews, once set, the fence head won’t loosen.

While most marking gauges use pins that scratch a line across stock, the Tite-Mark has a circular cutting blade that scores a clean cut across (or with) the grain, without any tear out. The blade is beveled on the inside, and doesn’t turn as it cuts. This helps to force the fence head up against your stock, resulting in smooth cuts



without you having to force down on the gauge. It’s worked extremely well for me on a range of hard and soft woods. The replaceable blade is hardened to Rc 60, and can be rotated to expose a fresh cutting surface. Even with heavy use the blade should last for years. Two optional 5/8” diameter blades are available, a scoring blade for making deep cuts or slicing veneers, and a mortise blade, which floats on the rod until secured in the slot with a set screw. You can mount multiple mortise blades on the rod, as well as use them in combination with a scoring blade to lay out mortise and tenons.

At \$79 US (approx \$125 CDN) for the 7” gauge or \$89 US (approx \$140 CDN) for the 9” model, the Tite-Mark is an exceptional tool, one that you can purchase with the confidence. It will give you consistent excellent performance, be enjoyable to use and display, and last a lifetime. The marking blade is \$6 US (\$10 CDN), scoring blade is \$9 US (\$15 CDN) and the mortise blade is \$12 US (\$20 CDN). Available at www.glen-drake.com or 707-961-1569.

CARL DUGUAY is a writer and woodworker from Sidney, British Columbia. 250-888-5067
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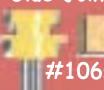
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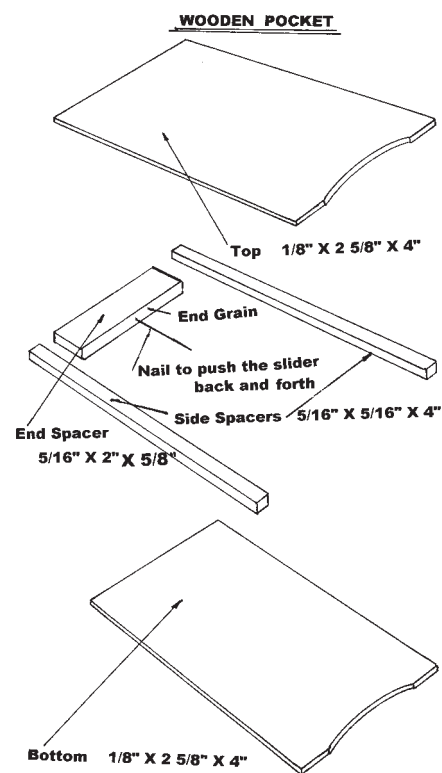
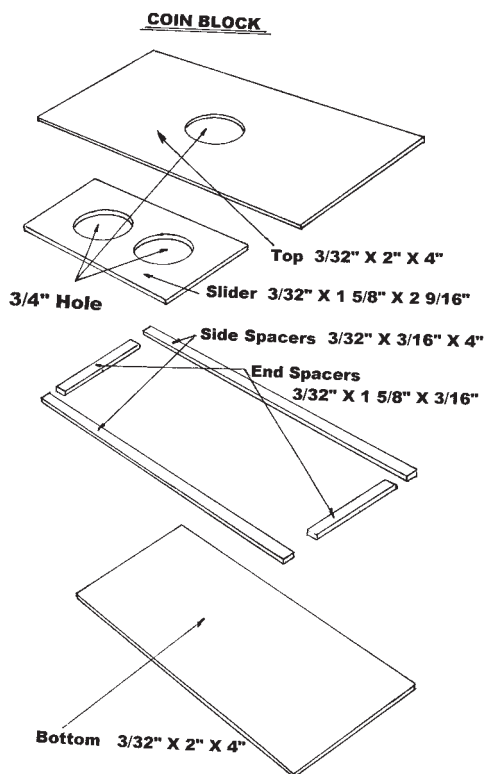
Place a dime in the hole of the coin block. When you push the coin block into the wooden pocket, the dime disappears. Or, a variation on this trick is to have a penny turn into a dime. With a little practice, you'll soon be turning pennies into dimes and dimes into thin air!

Coin Block & Wooden Pocket

- Make up all the pieces as shown.
- Glue the side and end spacers to the top.
- Adjust the slider so that the two holes match up exactly with the hole in the top, as it moves back and forth.
- Sand the slider so that it moves freely when the bottom is glued into place. Be careful when gluing so that the slider remains free.
- Drill a hole through the centre of both end spacers so that the nail in the wooden pocket can push the slider back and forth.
- Before gluing up the pocket, put a nail (with the head removed) in the centre of the end space. Let the nail protrude $1\frac{3}{8}$ ".

(Magician's note: make sure you hold your hands, and the slider, in such a way that your audience doesn't see the holes in the ends of the slider.)

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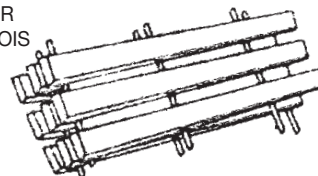
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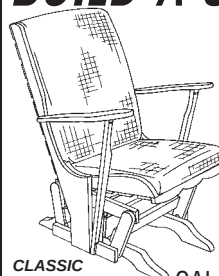
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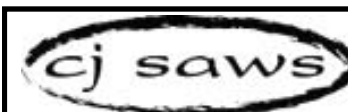
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Paul

I appreciate the media release you did on my new woodworking tool, the bow sander (see Dec/Jan03). It's only Dec 3rd and I've already made sales!

Fred Martin
intarsiabyfred.com

fulcher@canadianwoodworking.com

I am a beginner at woodworking, but have loved playing around with a variety of house and outdoor projects. I also like to create my own new designs, so any helpful hints would be appreciated.

R. Kostyniuk

Dear R. Kostyniuk

Your timing on starting a new subscription is excellent. Our next issue (April/May03) features a new series by Hendrik Varju entitled: *The Science of Wood and the Art of Design*. I am sure that it will be a valuable resource for your future projects.

Paul

Dear Sir

We picked up your magazine at the Kamloops Woodworking Show. My husband has taken up woodworking as a hobby in his retirement years and appreciated the helpful information in your magazine.

Margaret Sharrock

Dear Margaret

Thanks for your letter. I'm glad that your husband is making such good use of his retirement years. Woodworking is a great hobby for people of any age, and remember, it's not just for men. There are a lot of women and couples that enjoy (and excel) in woodworking. I hope that you too get involved in this very creative and rewarding endeavour ... and make these years together the best yet!

fulcher@canadianwoodworking.com

Your magazine has changed the way I work my wood.

Heather Cole

Dear Heather

That's what we're here for. Thanks for letting us know it worked!

fulcher@canadianwoodworking.com

Would like to see more info on your Web site about tool buying, as I am presently shopping for a table saw.

Mike Dwyer

Dear Mike

Thanks for your suggestion. I am working on just that. Until I can get

something up, please drop by our WOODWORKER'S FORUM and search the archives for "TABLE SAW". There has been a lot of discussion on what to look for in a table saw, and which brands offer

what features. There is a lot of helpful information there that will definitely help in your table saw purchase.

Good luck.

Paul

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Fat Truck



I have a habit of doodling in my spare time. Whether I'm on the phone, or just passing time, I often doodle. Sometimes a doodle gets a little extra work, and becomes something that I can make into a pattern for an intarsia piece.

Try it yourself sometime. Go through some of your drawings or photos and see if you can come up with something that you can transfer over to a pattern.

This truck is one of those doodles that I decided to transfer over to intarsia. It's kind of funky. It's definitely not something that you're likely to see driving down the road anytime soon, but I enjoyed making it.

Try doing something similar yourself. It doesn't have to be photo-realistic. Many pieces of art (intarsia as well as other art forms) aren't necessarily exact replicas. Although many artists strive for exact

representations, it is fun and creative to express yourself and produce a piece of art that is totally original.

I used all Western Red Cedar, except the tires (which are black walnut).

The door handle is cut, shaped and glued onto the surface of the door with a 1.8-inch dowel.

This is a basic project with nothing too fancy. The fitting is fairly simple and involves only some raising and lowering

Choose your wood:

Choose the various colors and shades of wood you want to use (or as the pattern suggests). This is a very creative step so pay close attention to grain and color to achieve an attractive project.

Transfer the pattern to the wood:

Transfer the pattern to the wood with whichever technique you prefer: carbon

paper, template or photocopy and glue onto the wood.

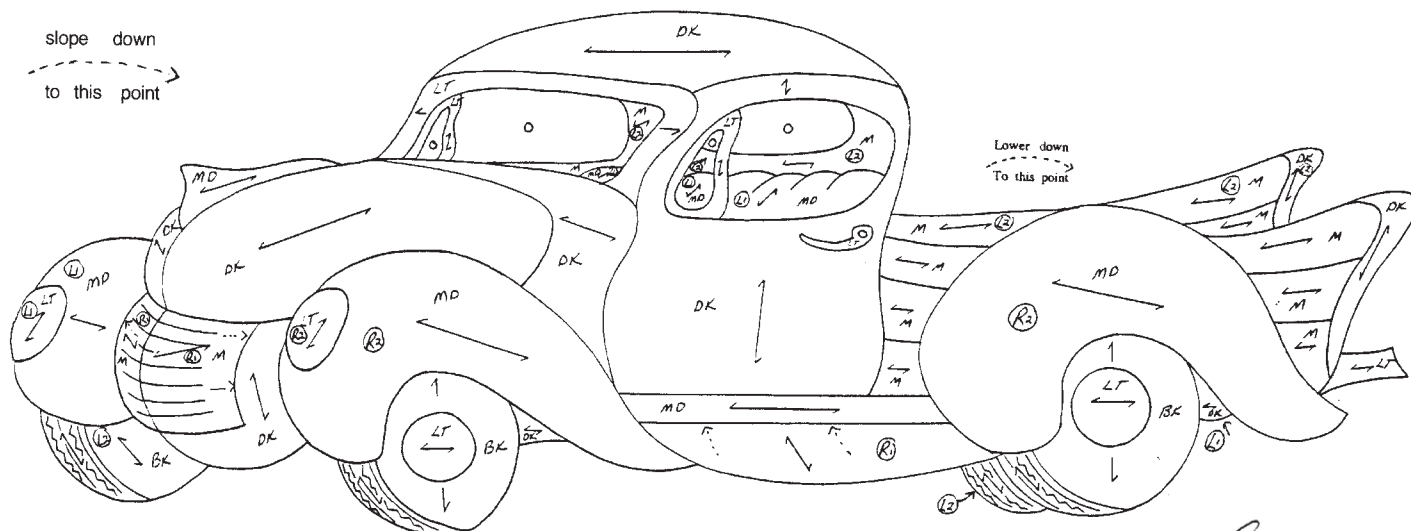
Cut out the pieces:

Cut out the pieces very carefully. This is the most important step as far as the fitting is concerned. If you cut carefully, right on the line, the pieces should fit fairly well off the saw. I like to use a scroll saw with a #5 or #7 P/S blade. New scrollers might find a #5 or #7 DT/R an easier blade to follow a line with.

Assemble the pieces:

Assemble the pieces and check for fit. Fitting is the fussiest part of the process. There are a number of techniques. I often use the "Curse and Pitch" method: if a piece won't fit, I curse and pitch it into the wood stove. Adjust pieces until they fit. I don't get too fussy. If I am within a saw kerf or 1/16 inch I am happy. You just don't want to be able to lose your pencil between the pieces.

Pattern reduced to 35%.
Can be sized to preference.



Garnet Hall
copyright 2002
Garnet Hall

- (R) - raise 1/8"
- (R1) - raise 1/4"
- (R2) - raise 3/8"
- (L) - lower 1/8"
- (L1) - lower 1/4"
- (L2) - lower 3/8"

DK - dark western red cedar
MD - medium dark western red cedar
M - medium western red cedar
LT - light western red cedar
BK - black walnut
O - open

Raise and/or Lower the Pieces:

Once the pieces are fitted to your satisfaction, raise and lower any pieces the pattern suggests. I raise with scrap plywood and lower by resawing on my band saw. Some pieces can be sawn lower with a scroll saw or just sanded thinner.

Reassemble and draw reference lines to help with the shaping.

Dust Protection:

Make sure you have some dust protection for the next two steps. It's a good idea to have all your tools hooked up to a dust collection system. Have an air filtration devise and wear a good mask. These three steps should protect you from the harms of dust. Shape the pieces to achieve a smooth transition from one level to the next. This too is a creative step. The more shaping you apply to the project the better it will look. Almost any sanding tool will work for this step. I like using a hand-held pneumatic sander. I like the control it gives me over the shaping.

Sand the pieces:

Use either good old elbow grease and sand paper or a flap sander. Flap sanders

have saved me hours and hours of sanding. I no longer sand past 220 grit. It's my philosophy and practice not to create any more dust then I have to.

Glue the pieces onto a backing:

The best backing material is 1/4-inch Baltic Birch, but any good quality backing material will work. 1/8 inch for under 1 foot square, 1/4 inch for 2 foot square and 3/8 inch for 1/2 inch for larger projects. Assemble the project on the backing material and trace around it. Remove pieces and cut out the back. Re-assemble the pieces onto the cut out back and glue up. Any white carpenters glue will work.

Finishing:

Any finish made for wood will work. You can brush, spray, wipe, dip or throw it on – whichever works for you. The finish can also be applied before glue up. Apply three coats on the front and one on the back.

That's about all there is to it. A few basic wood working skills, a lot of patience and anyone can create an original piece of intarsia art.

So have fun following this pattern, or try

your hand at coming up with an original pattern of your own. Your next intarsia project could only be a doodle away.

Actual size 8 inches x 21 1/2 inches, 48 pieces.

There is no hard and fast rule for what is dark and what is light. The different shades are simply different shades relative to each other.

MATERIALS LIST

- 1 piece 6" x 12" - DK
- 1 piece 6" x 12" - MD
- 1 piece 6" x 8" - M
- 1 piece 6" x 6" - LT
- 1 piece 6" x 6" - BK
- Backing material -
- 1 piece 1/4" plywood, 9"x21"

GARNET HALL is an intarsia artist living in
Stoughton, SK. 1-800-729-2473 www.sawbird.com

Adria Dovetail Saw

This is the first in a series of tool reviews, that feature woodworking tools “Made in Canada”

There is a renaissance in woodworking hand tool production in North America. Highly skilled, dedicated woodworking enthusiasts and professionals are turning a wide range of exceptional products in small cottage industries.

Over the past few years I have had the opportunity to try out quite a few of these tools and feel that, in many cases, they are superior to the products available from mainstream manufacturers. You can, of course, expect to pay a premium for these quality tools. But what you get is a tool that is a pleasure to own and use, and one that will likely hold its value over time. These are the heirloom tools of the future.

I recently tested a very fine dovetail handsaw from Eddie Sirotich of Vancouver, the owner of Adria Toolworks. Eddie has been making handsaws since 1997. In the early 1990s Eddie found that there were few quality handsaws on the market. His passion for woodworking and a desire to produce an elegant and precise handsaw of his own led to the development of the Adria line of handsaws.

Until recently he was making all the saw parts from scratch. However, because of the growing demand for his saws, he now sub-contracts the manufacturing of some parts. He does, however, continue to assemble and test each saw himself.

The Adria saw is similar in appearance to the Sheffield-made saws that were popular in the mid-1800s. As you can see in the



photo, the Adria saw has a classic open handled pistol grip that is a natural and comfortable fit in your hand. Handles can be had in either Padauk or Bubinga.

The saw has an overall length of just over 13". The high quality spring steel blade, hardened to Rc 54, is 8" long, 2" high and .020" thick. The blade has a rip tooth cut with 15 ppi (points per inch) set very narrow (about .003" each side), and produces a kerf of about .026". The brass back is a substantial 1/4" by 3/4", resulting in a very rigid blade. The handle is 7/8" thick and is attached to the blade with two brass split nut screws.

Although most of the mass-produced saws on the market have their teeth cut crosscut, a dovetail saw works best with rip cut teeth (because you're cutting with the grain, not across it). Having an adequate number of teeth with a narrow set gives an optimal cut: the blade moves quickly through stock, it expels the sawdust rather than clogging the gullets, makes it easier to cut along your scribed line, gives a smooth finish and a narrow kerf. Everything you need to cut the perfect dovetail!

Put to the test, the Adria was a pleasure to use, and produced cuts that would be hard to beat with any other saw. I cut dovetails

in a range of soft and hard woods with excellent results. The saw is very well balanced and has a wonderful feel in the hand. The workmanship is superb.

Adria saws come with the best warranty that I've ever seen: a one-year unconditional money-back guarantee. Now, that's a testament to Eddie's commitment to produce a top quality saw.

Along with the dovetail, saw Eddie makes matched sets (rip and crosscut) of small and large tenon saws. His next venture will be a frame saw. Given the quality of the dovetail saw, I'll bet the frame saw will be a knock out!

By the way, if you're curious about the name "Adria", it comes from the Adriatic Sea, the coast of which Eddie grew up on. Eddie contends that it is the best part of the Mediterranean and, like his saws, both rare and beautiful.

The **Adria** dovetail saw is priced at \$172.50 CDN. For more information, or to order a saw, contact Eddie Sirotich at 604-710-5748 or esirotic@adriatools.com or visit his Web site at www.adriatools.com.

Watch for more "Made in Canada" woodworking tool reviews in upcoming issues!

CARL DUGUAY is a writer and woodworker from
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Finishing Magic



While Bill Russel's book focuses on woodgraining furniture, his techniques can be readily applied to any home improvement or decorating project around the house.

As a pre-cursor to the actual woodgraining techniques, Russel first reviews the real thing, showing various types of woodgrain in full colour photographs and explaining the reasons and factors which make the wood appear like it does. This includes ordinary sawn lumber as well as specialty grains such as crotch and burl.

Next, there is a detailed discussion on the materials used for woodgraining. He discusses paints and glazes and how they are used to create the woodgraining

effects. This includes important details, such as the reasons why the base coating should be oil based paint. Further discussion of glazing paints is followed up with discussions about other materials and their uses in woodgraining.

The tools of the trade are discussed in detail, including specialty brushes and graining tools. The advantages and disadvantages of various bristle types is also covered. Miscellaneous tools such as

tape, palette knives, sandpaper, strippers and tack clothes are also discussed.

The next section covers techniques. Each element is discussed, from preparing the surface to glaze recipes, then actual techniques on how to apply the glaze for different grain effects are covered, introducing both the techniques and the tools to do the job right.

Following the general technique section is a look at how to create specific species of wood. This includes light oak, macassar ebony, bird's eye maple, satinwood, crotch mahogany, elm burl, walnut, amboyna burl, weathered pine, heart-grain mahogany and zebrawood.

The balance of the book covers six specific projects in detail, including how to create the look of normal construction such as glued-up boards, edging on table tops and veneered designs. This section does not cover the actual construction of the projects, however the techniques can be readily applied to your own projects.

BOOK TYPE	Technique
LEVEL	Intermediate to Expert
AUTHOR	Bill Russell
PUBLISHER	Popular Woodworking Books
SOFTCOVER, 8.5" x 11", 125 PAGES, \$38.99 CDN	

CONTENTS:	
How It's Done	* Crotch Mahogany Chest of Drawers
* Woodgraining: An Overview	* Country-Grained Jelly Cabinet
* Materials and Tools	* Weathered Pine Blanket Chest
* Woodgraining Techniques	* Bird's Eye Corner Unit
Step-By-Step Projects	Gallery
* Mahogany Writing Table	Troubleshooting
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MICHEL THERIAULT is a Canadian writer and woodworker living in Guelph, Ontario
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Reduce Dust From Your Bandsaw

These days, most of the bandsaws produced by the major manufacturers have some sort of hook-up for dust collection. However, most of them are set up for vacuum cleaner hook-ups and are usually not of sufficient size to hook up an effective dust collector.

After-market plastic adapter ports are available from woodworking stores, but they too are for hooking up to the vacuum cleaner. Of the manufacturers who have provided 4" dust collection ports, they have either placed them on the lower access door or positioned them on the rear of the machine. I have only seen a couple of units that have the most important element of effective dust collection: a large port positioned directly off the blade guide area under the table. One manufacturer came close, but failed to fully open up the port into the machine, thereby greatly restricting its effectiveness.

If you look at a typical 14-inch bandsaw

with its lower access door removed, you will see for yourself the reasons for wanting to hook up a dust collection system.

In photo 1, notice the pile of saw dust trapped in the bottom of the machine and the bits of dust on the tire. Not only do you not want to be breathing the dust generated by your bandsaw, you also don't want it to be accumulating on the lower tire (or it will eventually effect the saw's performance). As with all applications of dust collection, it most effective when the port is nearest the dust being generated.

This is the area (photo 2) in which you want to place the dust port. The port needs to be positioned as close as possible to the underside of the table – right where the blade enters the blade guide assembly. Remember, you will need access to the lower blade guide assembly for adjustments, and if you use the tilt feature of your table, you will want to ensure that the position of the dust port will not obstruct its use. This is best accomplished by tilting the table and placing the port temporarily in position to ensure unrestricted use. I did this by using a magnet. You'll also want to be sure that whatever you put into place can be easily removed for blade changes.

It is important to use the right materials for making the dust port. Effective dust collection requires a 4-inch diameter hose with 350 CFM and 3,800 FPM at the saw. I always like to look for something that will work and is cheap. The diameter for this is important and 3-inch auto exhaust pipe tucks nicely into this area.

The pipe on the left in photo 3 is cut off at 45 degrees while the pipe on the right

shows how I have re-worked the pipe to give a longer opening with flat sides. I flattened the pipe opening to give it a taller and narrower profile. The flattened side of the oval is lined up with the rear edge of the lower door side panel. The flattened side also provides the necessary clearance for blade guide adjustments when the port is in place.

Photo 4 shows the inside of the door and gives a better idea of the positioning of the port. I have installed a deflector shield on the top front of the port. Note that I use a wire feed welder to attach the port to the door. If you don't have this tool in your shop you can cut the pipe and leave tabs to bend over, so that you can pop rivet the port in place. You could also use silicone to seal the openings where the port meets the door.

Photo 5 shows the door with port mounted in place. Now it needs only the flex hose to be connected to make it functional.

The position of this particular port is functional for this model of bandsaw and is presented to you only as one possible solution to dust collection.

Adapt this installation according to how your saw varies in size and construction. This example leads you through a basic installation and will help you to determine where and how to perform dust collection on a bandsaw. The construction of your particular saw will determine the design of your home-made dust port.

CHESTER VAN NESS is a Dust Removal Consultant in Scotland, Ontario. (519) 484-2284



Band saw with lower door removed.



Under table area for best pick-up of fine dust and across-blade airflow.



3" exhaust pipe. Left, cut at 45 degrees. Right, cut at 45 degrees and flattened to oval.



Inside of lower door with pipe and enclosure shield pieces in place.



Dust chute in place and ready to be hooked up.



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questionsanswers

By JIM KOUDYS

Q I am new to woodworking and am taking a course at the local college. In the first class the teacher handed out our materials list. The first item to on the list is 1 1/16th inch thick wood. I have looked and looked and I can't find it in any lumber store. Is there such a thickness?

A The teacher is giving you a measurement for rough lumber which came from a time

when cutting and measuring techniques were not as precise as they are today.

What is important to determine is: "What measurement of rough lumber will give you enough lumber to end up with the finished measurement needed for your project?"

With today's computerized saws, there is much less loss of lumber which means that the rough measurement is a more accurate reflection of the amount of lumber you get than it use to be. In other words, you get more wood from the rough lumber than when mills were only using circular saws and needing to allow for a greater loss in lumber because of the kerf.

The system of measurement used by mills when cutting lumber is known as the quarter scale. This system provides allowances for the species used and the shrinkage that occurs in each species. The scale goes 4/4/ 5/4 6/4 8/4 and so on and it represents 1 inch, 1 1/4 inch, 1 1/2, 1 3/4 and 2 inch, respectively. The mill must account for the loss of wood

due to the thickness of the bandsaw or circular saw blade plus the shrinkage that will occur (and then some) to insure that the final thickness meets specs. Usually this loss is about 1 1/16 inches for 4/4. It can be greater depending on the species, the sharpness of the mill's blade and their quarter scale when cutting from hardwood to softwood (since each shrinks differently).

Although your materials list says 1 1/16 inch, the material that you are searching for is better known as 4/4 thickness (rough) which represents 1 inch. Your project most likely requires a finished thickness of 3/4 of an inch.

Now that you know that today's rough lumber measurements are more accurate you can save money. For example, if the project calls for 1 1/4 inch rough and the project requires a 1 inch finished thickness you may be able to garnish this from the 4/4 material.

JIM KOUDYS is the owner/operator of Kootur Lumber in Smithville, ON. (905) 957-4217 www.kooturlumber.com

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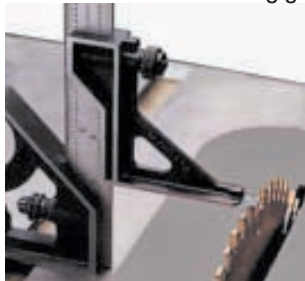


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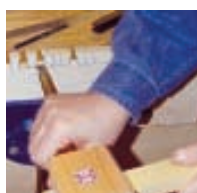
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Among other specialties, their selection of woodworking machinery, power tools and accessories is one of the largest available in Ontario. Today, their Woodbine Ave. location is over 10,000 sq. ft. of warehouse and showroom whose a staff has over 80 years of combined experience.

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