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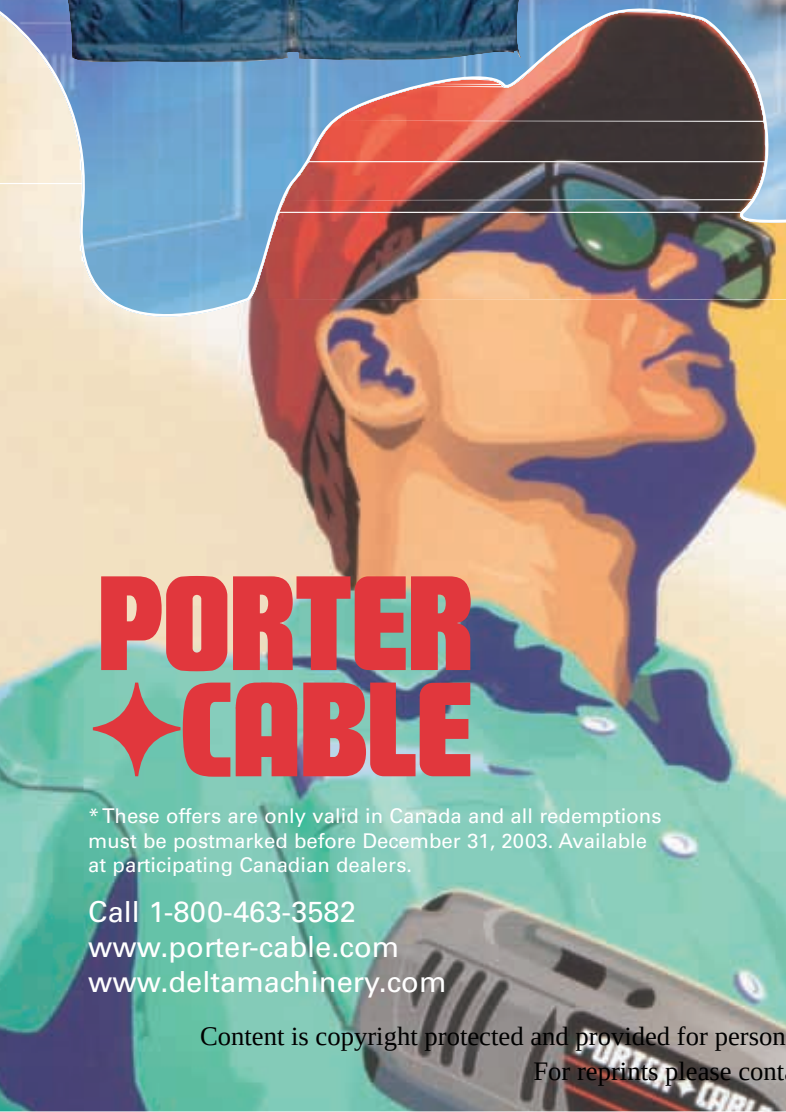

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DEPARTMENTS

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editorsletters

Linda & Paul

Linda Fulcher

Belonging to the woodworking community in Canada creates unique and interesting opportunities. There is diversity in geography, that makes woodworking varied, depending on something so simple as the type of wood you are using, and where and when the tree was grown. The more connected the community becomes, the greater the opportunity to share this diversity.

In this issue we are presenting the activity of a woodworkers' guild, who come together to salvage wood in the city of Victoria, BC. I also recently spoke to a woodworker who has discovered some pine boards, in a prairie house from the 1920's, which he plans to make available to woodworkers from other parts of the country, who may not have access to such fine, straight, prairie wood. The element of surprise is a wonderful component of searching for and discovering new and unusual sources of wood.

Paul has been focused lately on lending a helping hand to woodworkers who want to salvage wood and I will tell you his excitement is infectious. Now if you know Paul, like I do, you are taking my meaning "helping hand" to be virtual. He is a virtual kind of guy. This means that he has introduced a new component to the web site to connect woodworkers who have made interesting finds when it comes to wood. If you would like to get involved, check out our site.

You may also find leads on interesting wood at your local lumberyard, from sawyers, woodworking guilds and in our woodpages at the back of the magazine.

Do you have a source of wood to share, or are you looking for new wood to work with? Do you make your connections virtually, or in person? Whichever it is, you are bound to make some great connections, discover some interesting wood (and woodworkers), and make some great deals along the way!

Paul Fulcher

The 2003 Canadian Woodworking Competition has been judged, and the first place pieces in each category appear on page 41. Visit our website to see all of the winning pieces. You'll also see what each person won. Thanks to Delta; Porter-Cable; Lee Valley; Robert Sorby and Wizard, for their generous support. Because of their sponsorship of the competition, Canadian woodworkers won almost $15,000 in prizes.

We have already started to plan our Canadian Woodworking Competition for 2004. It's a fun competition to enter, because you don't have to go anywhere, or ship your piece across the country. You just take photos of your piece and mail, or email them in. Watch for details. You can enter as many pieces as you like, so start taking pictures now.

.....

A few weeks ago I got an email from a woman who didn't want to see a fallen tree end up in the fireplace. She wanted to make better use of such valuable wood, so she contacted Canadian Woodworking (I have reprinted her email below, in Dear Editors).

It was a pleasure to be part of the process that rescued that wood from the fireplace, and redirected it to a productive use.

Coincidentally, as Nicole was looking for someone who could make better use of her fallen basswood (and as Paul Rappatini was on the look out for wood for his club), I was working with Garrett Lambeth on a very similar story. Garrett wrote me about his woodworking guild's involvement in recovery wood (see page 20-21).

It seems that Canadians everywhere are recognizing the importantance of recovering and utilizing valuable wood.

deareditors

Good morning,
Last month the winds brought down a 60' basswood on our property. It's down to a 40' log, about 12" in diameter. It was going to be cut up for firewood, but I thought that would be a waste of carving wood. My husband is willing to cut it into 3'-4' logs. I am going to Oakville on Wednesday and I could bring a few logs down with me. Is there a shop or a club that you would know that would be interested?
Thank-you
Nicole
Kagawong, ON

Dear Nicole
Thanks for your thoughtful offer. We have received a number of similar requests and, as a result, we have set up a section on our website to connect woodworkers to trees (and vice versa). Check it out at: www.canadianwoodworking.com (click on: WOOD RECOVERY).
Paul

EDITOR'S NOTE: Nicole's posting was responded to by Paul Rappatini of the Golden Horseshoe Woodturning Guild. He picked up 3 logs. Each one was 12" in diameter and weighed about 75Lbs. They were used in a raffle to generate funds for the guild. As you will see in this issue (see "Wood Recovery", page 20-21) a lot of good wood can be rescued from trees that would otherwise end up in landfills or fireplaces. If you know of (or are looking for) such trees, please go to our website and let everyone know. Let's all do our part in making the best use of this valuable resource!

Hi Paul
I'd like to thank and congratulate you for the great job you've done with both the magazine and the woodworking forum (on your

■ continued on page 40

toolproject By Warren Biro

Cabinet Scraper Alternative

Original discarded high speed hack saw blade

Blade with teeth taken off and surface ground

Finished tool

Sooner or later, most woodworkers have the pleasure of using a traditional cabinet scraper. Then comes the filing and the burnishing, to resharpen the tool. After the initial thrill of using such a time honoured tool wears off, a fellow can get a little tired of the constant effort to keep the tool sharp and cutting correctly, especially when working with hard or abrasive woods.

There is no doubt that cabinet scrapers give a very fine finish. I have found that a scraped finish shows the grain and beauty of the wood better than if it is simply sanded. I have also found the sharpening and maintaining of a scraper's edge, to be time consuming and tedious.

For a lot of years I used cabinet scrapers, all the while wanting more use and less maintenance. As a result, I have developed an alternative to cabinet scrapers. This cabinet scraper alternative is made out of high speed steel hack saw blades. I find that they not only work better than the old cabinet scrapers I was using, but they are also much easier to sharpen.

In the early eighties I was refinishing a lot of antiques. Many of them were heavily covered with numerous coats of paint. I discovered that if I took an old file and ground down the tip, I could chip huge amounts of this paint off the wood simply by using it as a dry scraper. If the original finish was still largely intact, the newer layers of paint would come off fairly easily. Seeing this, I then had someone surface grind the flat areas of the file to give a smoother edge. When I ground it on my 6" grinder, the working end of the tool assumed the shape of my grinding wheel. In other words, it became coved. Grind any piece of steel on your grinder and you'll see what I mean.

What I ended up with is a piece of a high speed steel hacksaw blade with the teeth taken off and then surface ground.

The blades are about 18" long and some as much as 2 1/4" high. They are about 1/16" or 0.062mm thick. Some have been ground down much more. Thinner is better.

Experiment a little, and you'll find that these scrapers can be used for more than just scraping wood. They make excellent scratch beaders, when ground to shape and held in a makeshift holder. Mine is made out of a block of hardwood and a piece of split dowel. Grind them to the shape of a moulding and you can remove paint from the original. Not only that, you can use it to form (and then replace) missing parts of moulding. Use your new scraper to remove a dried glue line, remove burn marks, or level a seam that's slightly askew. They also make excellent carving and whittling knives.

An 18" blade can be broken into three or four parts, depending on the requirement. To break high speed steel, grind a mark across the blank with your grinder, wrap it in cloth to avoid flying pieces,and whack it with a hammer. The steel will break on the grind mark. To grind, use a 6" aluminum oxide wheel on your grinder. I generally run them through pretty fast so that I don't heat the tool too much and ruin the temper.

Keep water handy so that if you see a colour change you can dunk it quickly. It doesn't take much to put a new edge on the tool. Lay them flat on the tool rest and always on the same face. Keep the one face marked, so it's always the same. Otherwise, you'll have to re-form the edge every time you sharpen it. This method actually gives two different edges on the scraper, one finer than the other.

These scrapers work well on hard maple. They are particularly handy when shaving down figured wood, as it can be held at an angle to the grain pattern to flatten the board. By doing this, you don't end up with waves on your stock at the hard and soft areas.

I work with some extremely large pieces of cherry burl. Many would flatten them with a stroke sander or other machine, but I prefer my scrapers. It is much more work, but the finish I end up with is better than if it were sanded. In fact, I often use them on sanded surfaces to remove the sanding marks.

Access to a surface grinder is handy but not totally necessary. Working in, or having a friend who works in, a machine shop that uses a metal cutting saw can be an asset, because often when their saws get dull they simply throw them away. If not, then you might have to go out and buy a new unused saw blade. What you are looking for is a metal cutting, straight saw that cuts about a one-sixteenth inch kerf. You might find them thicker but they don't work as well. The best I've ever used were around thirty thousands of an inch thick after surface grinding.

In conclusion: If you have ever turned away from using a cabinet scraper because of the amount of work it takes to keep it sharp, I hope that this alternative will help you appreciate and accentuate the beauty of wood in your projects.

WARREN BIRO operates Four Poster Woodworking in Princeton, ON.
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 By Gord Graff

Bookstand

Many cooks and students share a common problem: they both work from books, and are often cramped for space. Too often there is not enough space on their work surface to work from an open book. This bookstand will solve that problem. It frees up valuable space on the student's desk (or the chef's counter) and it places the book in a position that is easy to work from.

As with most projects, the choice of material is a personal one. I chose Canarywood for this project because I had a single board that was ample for the entire project. The angle of the book support is the most important aspect in the construction of this project. The angle used (37º) works well whether you are sitting at a desk or standing at a kitchen counter.

1

Glue Up The Panels

Glue up enough material to make both the base and the support shelf (Photo 1). Set it aside to dry. Strive to achieve an invisible glue line, so that it looks like a single width board.

Cut Uprights To Length

Set the miter gauge of the table saw to 37º (Photo 2) and cut the uprights to length. Take care to ensure that both uprights are the same length. Cut both pieces at the same time to ensure they are cut perfectly to length.

Measure and Mark

Measure the length of the angled cut in the uprights and place a mark in the center (Photo 3). Next, use a biscuit joiner at the centre mark you made and cut a slot for a #20 biscuit. That is going to form the joinery to hold the uprights to the book support shelf. The bottom of these uprights requires the same procedure.

Cut Biscuit Slots

Cut slots in both the base and the support shelf (Photo 4 and diagram for measurements). Be sure to align the biscuit slots to ensure a good fit. To ensure that the biscuit slots line up when assembled, I've oriented the parts in their finished location and drawn a straight line across both the base and book support shelf.

Round Over Dry Fit

The book ledge (a 13" X 1 3/4" X 1/2" thick piece of stock) can now be machined. Cut the appropriate biscuit slots in both the ledge and the book support (Photo 5). The biscuit slots are cut into the book support 1" from the bottom edge and centered on the thickness of the book ledge. Use a 3/8" round over bit to round over the base, book ledge, and book support. That will minimize the sharp edges of the project and give it a pleasing look. Once all the machining is completed the project is ready for a dry fit. Dry fitting is a vital step in any project. It is where mistakes can be rectified without too much effort. If you glue a project together, without dry fitting it first, you could be adding unnecessarily to your scrap bin.

Sand and Glue Up

When you are assured that all is well after the dry fit, it's time to sand the entire project and glue it together. Once the glue dries take the bookstand out of the clamps and sand to a final grit of 220, in preparation for the final finish.

To finish, I used three coats of oil-based poly to top coat (with a light sanding between each coat).

Now, the student (or chef) in your family will be able to do their work with a little more space.

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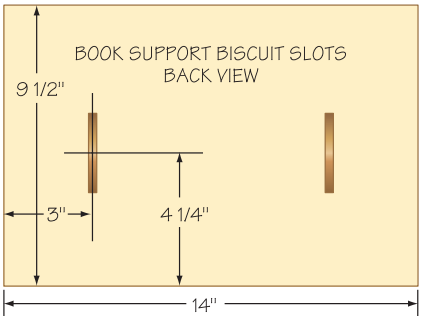

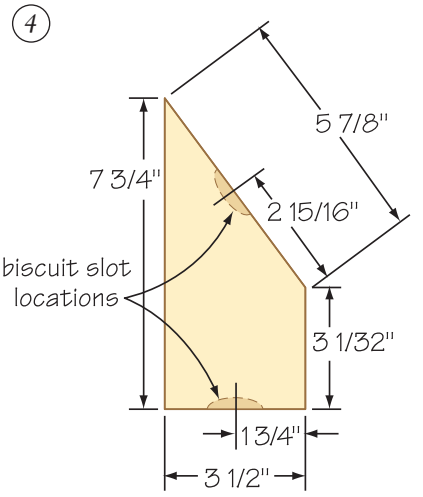

SUPPORTS DETAILS

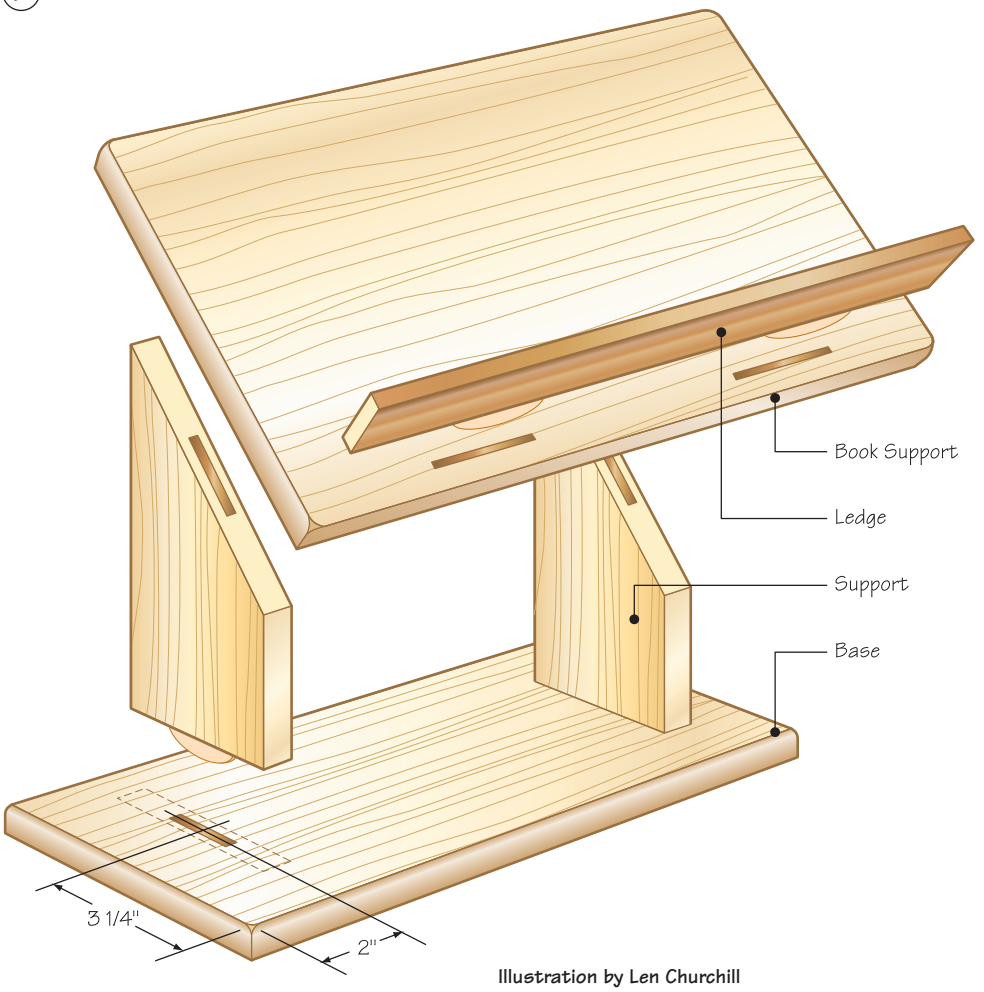

Illustration by Len Churchill

MATERIALS LIST

1	**3/4" x 6 1/2" x 12"** Base
1	**3/4" x 9 1/2" x 14"** Book Support
2	**3/4" x 3 1/2" x 7 3/4"** Supports
1	**1/2" x 1 1/2" x 13"** Ledge
6	**#20 Biscuits**

GORD GRAFF is a fine furniture maker & designer, woodworking instructor and writer living in Newmarket, Ontario.
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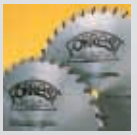

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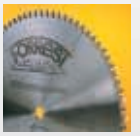

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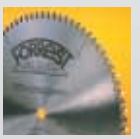

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By Danny Proulx

Cabinet Installation

Part V

This is the final installment in the series of articles on Kitchen and Bathroom Cabinets.

In previous issues I've discussed building kitchen cabinets; building upper and base cabinets; special cabinets; corner and pantry cabinets; and countertops.

Now, after all of your construction work is complete, your cabinets need to be properly installed.

Cabinet installation is not a difficult job, but there are specific steps that should be followed to ensure that your cabinets are safely anchored and that they look good. Remember, you'll have to look at them every day for many years to come!

Photos courtesy Canac Kitchens

Existing Cabinet Tear-Out

Unless you're building cabinets for a new home, you'll be faced with tearing out the existing kitchen cabinets. And, unless they are reasonably modern cabinets you'll most likely find that they were built in place. (Photo 1)

Carpenter, or "stick built in place" cabinets, depend heavily on the structural support of existing walls. Therefore, finding fastening devices such as screws and nails can sometimes be quite a challenge. I've seen every fastening device under the sun when tearing out existing cabinets.

Be careful and take your time tearing out old cabinets. Electrical wiring is often hidden, plumbing is sometimes routed through cabinets, and heating ducts may have been directed under the existing base cabinets.

In the interest of safety, turn off the water supply and electrical service to the kitchen area as well as other nearby rooms. This

safety measure will help to avoid accidents or damage should you inadvertently break a water line or cut a power cable.

Support the upper cabinets with blocks or a strong wooden box prior to removing screws or nails (Photo 2). The sudden weight shift downward when the last fastener is removed can be surprising. Always, if possible, enlist the help of someone to stabilize the cabinet as you remove the fasteners. Again, with respect to upper cabinets, remove all loose assemblies such as shelves and doors to lighten them. You'll also avoid the danger of having shelving fall on you should the cabinet suddenly tip.

Removing base cabinets can be hazardous even though they appear to be sitting on the floor. Rotten floor support systems, or poorly connected toe kick platforms may cause the base cabinet to fall forward when the last screw is removed. Again, enlist the aid of another person to support the unit when removing fastening devices.

I've had a cabinet fall because I thought four screws secured the unit when only two were actually anchored into the wall studs. It can be quite a shock and potentially dangerous, so be very careful.

Site Preparation

Site preparation prior to new cabinet installation is a very important process. Verify that water and waste supply lines are in the correct location and electrical service is sufficient and correctly positioned. If you plan on moving the sink location, now is an excellent time to reroute supply lines. The full thickness cabinet back style that I use incorporates a back board on both upper and lower units. Wall sheathing can be removed to allow changes in supply line positioning.

The same is true with electrical service lines. Verify that outlets are in the correct location and at the correct height. Base cabinet height is 915mm (36"), but you must also account for the height of the countertop backsplash, which can often add an additional 100mm (4") to the overall base height. And, if additional electrical service is required, now is an ideal time to have an electrician install new wiring.

Use a long level or straight edge to check the wall condition. You'll never find a perfect wall, but a wall stud that has badly bowed out over time can cause problems during new cabinet installation. If you find a bad bulge in any of the walls, remove the sheeting and correct the problem.

New Cabinet Installation

Cabinet installation methods vary depending on the installer. The primary difference is whether to begin by installing the uppers or the bases. Each method has its merits, however, there is no absolute correct way of installing cabinets. Find a process that you are comfortable with to achieve the end result: properly installed cabinets.

There are some considerations you should be aware of before proceeding. Often a room is out of square and walls are not plumb. This can cause a number of problems during cabinet installation. Plan on installing cabinets from a point where you won't get "boxed in" by badly built walls. It's best to test fit cabinets prior to anchoring them permanently in place.

In kitchens where the cabinet runs are closed (i.e. cabinets are installed wall to wall) present a few problems for the installer. In this situation I would start at the center cabinet and work out to both sides, checking my remaining distances to avoid any serious problems. It can be frustrating if you have to remove installed cabinets because you've run out of space. This is probably the best reason to accurately measure the room dimensions during the initial planning stage.

Floor Slope Draw Level Line Around Room

The first step in cabinet installation is to determine the level or slope of the floor to see how much the walls are out of plumb. In thirty years of renovation work I have not seen a room with perfectly level floors and plumb walls. Fortunately, the adjustable cabinet legs allow for easier installation as compared to the constructed base support assembly system.

Draw a level line around the room, using

a long level, at a reference height of 895mm (35 1/4") from a point in the room (Photo 3). Then, measure from the floor at various positions around the room. Determine the highest point in the room. It will be the smallest distance from that level reference line to the floor. Start your base cabinet installation from that high point, aligning the cabinet's top edge at 895mm (35 1/4"). That height, plus the thickness of the countertop material, will set the countertop surface at the required 915mm (36") above the floor.

All floors have a slope, some greater than others. Therefore it is important that the high point be determined. If you start installing cabinets in an area other than the high point, you may not have sufficient adjustment range on the cabinet legs.

Locating Wall Studs

Use a wall stud finder to locate the first and second stud (Photo 4).

Use a wall stud finder to locate the first and second stud.

Drive a small finishing nail into the mark and locate the outer limits of the studs. Mark the centres of both studs (Photo 5).

Measure the distance between studs and mark the locations around the room (Photo 6). You may want to check the

locations with your stud finder to satisfy yourself that the stud center-to-center distances are staying constant.

Use a long level to extend the stud lines below the upper cabinet position and above the base cabinet tops (Photo 7).

Install a base cabinet at the highest point in the room. If you cannot start at the highest point, be aware of the adjustment limits with the cabinet legs. Level that base cabinet and anchor it to the wall with 75mm (3") screws into the studs. Four screws per cabinet are more than enough to firmly secure the base units (Photo 8).

After the first cabinet has been installed, continue in either direction levelling and securing the cabinets. However, the procedure changes slightly with the second cabinet. Join the front edge of the second cabinet flush with the first cabinet's front edge and secure with screws through the cabinet sides for frameless cabinetry. Now, anchor the back of the cabinet to the wall.

All cabinets, particularly the first upper and base must be plumb. Use a long level to read the position and shim the cabinet into plumb if necessary (Photo 9). A small fraction out of plumb will cause a great deal of trouble, particularly on long runs of cabinets.

A level cabinet is equally important. Use a good level to properly position the cabinet before it's permanently anchored to the wall (Photo 10).


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You may be required to add a filler strip if the cabinet isn't tight against the wall. Check the fit after levelling the cabinet and use a compass, adjusted to the widest part of the gap, between the wall and cabinet side, as your reference (Photo 11). Holding the point of the compass against the wall, draw a pencil line on the filler face. Use a sharp plane and remove wood up to the pencil line until you get a tight fit. If the filler is melamine or veneer PB, you may find that a belt sander does the job when you have many contours in the wall.

The same process holds true for countertop fitting. A countertop usually requires scribing and fitting as most walls are not perfectly flat. Draw the line and use a belt sander to remove material.

Install the countertop, scribing and removing material if necessary, so that it fits tightly against the wall (Photo 12).

Attach the upper cabinets to the wall with four 75mm (3") wood screws through the back board into the wall studs. The first cabinet must be level and plumb, as it's the reference point for all the upper cabinets. Verify the remaining space after installing each cabinet.

Install the remaining upper cabinets being sure they are well supported while the screws are installed. Level the cabinets, screw the adjoining sides to each other, and anchor the cabinets to the wall. The cabinet bottoms must be even on all standard height uppers. Reduced height cabinets should be installed with the cabinet tops in line with top edges of the other upper cabinets.

Cut to size and install any trim molding on top of the upper cabinets. Trim molding style is dependant on individual taste. I've installed everything from 25mm (1") bead to 100mm (4") crown molding to achieve different finished appearances. Purchase short lengths of a number of molding styles and experiment until you find a pleasing style (Photo 13).


7

Cut the toe kick boards to length, install the plinth clips, and secure the boards to the cabinet legs. Use butt joints where the toe kick boards intersect at right angles. If the floor is out of level, you may have to scribe and sand the bottom of the toe kick board to get a tight fit. Alternatively, you can use quarter round molding, which is flexible, to fill the gaps between the floor and the toe board. Simply nail quarter round to the toe board while holding it tightly against the floor.

Install the cabinet doors, adjusting for plumb and equal spacing between doors on double door cabinets. There are normally three adjustment screws on good quality European hinges. You should be able to adjust the door gap as close as 2mm (1/16") on two door cabinets and that gap must be equal from top to bottom. Humidity variations can cause the door gap to change depending on the door material used and they may require occasional adjustments. The climate in your area, as well as the control of humidity in the home, will have an impact on how much change you'll experience.

Install the drawers and check their operation. Drawers can sometimes go out


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of alignment if the base cabinet was twisted during installation. Proper drawer operation is critical as this hardware is constantly in use. There's nothing more frustrating than improperly operating cabinet drawers, so buy the best quality drawer slides that you can afford.

Install the cabinet shelves and verify the alignment. They should rest on all the shelf pins unless they've been thrown out of alignment because the cabinet has been racked or twisted during installation. If severely twisted, the cabinet may have to be loosened from the wall and aligned. This twisting can be avoided by making sure the cabinet is level and plumb when it's installed.

Remember that it's important to avoid racking (twisting) the cabinet during installation. Most walls are not straight; many have irregular surfaces and are not plumb. When anchoring cabinets to the wall, verify that the cabinet back is touching the wall, if there is a gap use a shim to fill the space. I find cedar shims work very well because they are tapered. Always check the level, front to back and side to side, as well as the plumb of the cabinet before and after you anchor it securely.

Racked cabinets will seriously effect the operation of drawers, and the proper position of shelves on shelf pins. It may also cause doors to be off level affecting the operation and visual appearance.

All bottom boards on adjoining cabinets should be flush with each other. If there is an error because sides were not cut to the same length during construction, leave the error on top of the cabinet. Tops of cabinet sides on the base cabinets are hidden by the countertop overhang and sometimes by the applied trim on the upper cabinets.

There are situations that will arise during cabinet installation and most cannot be

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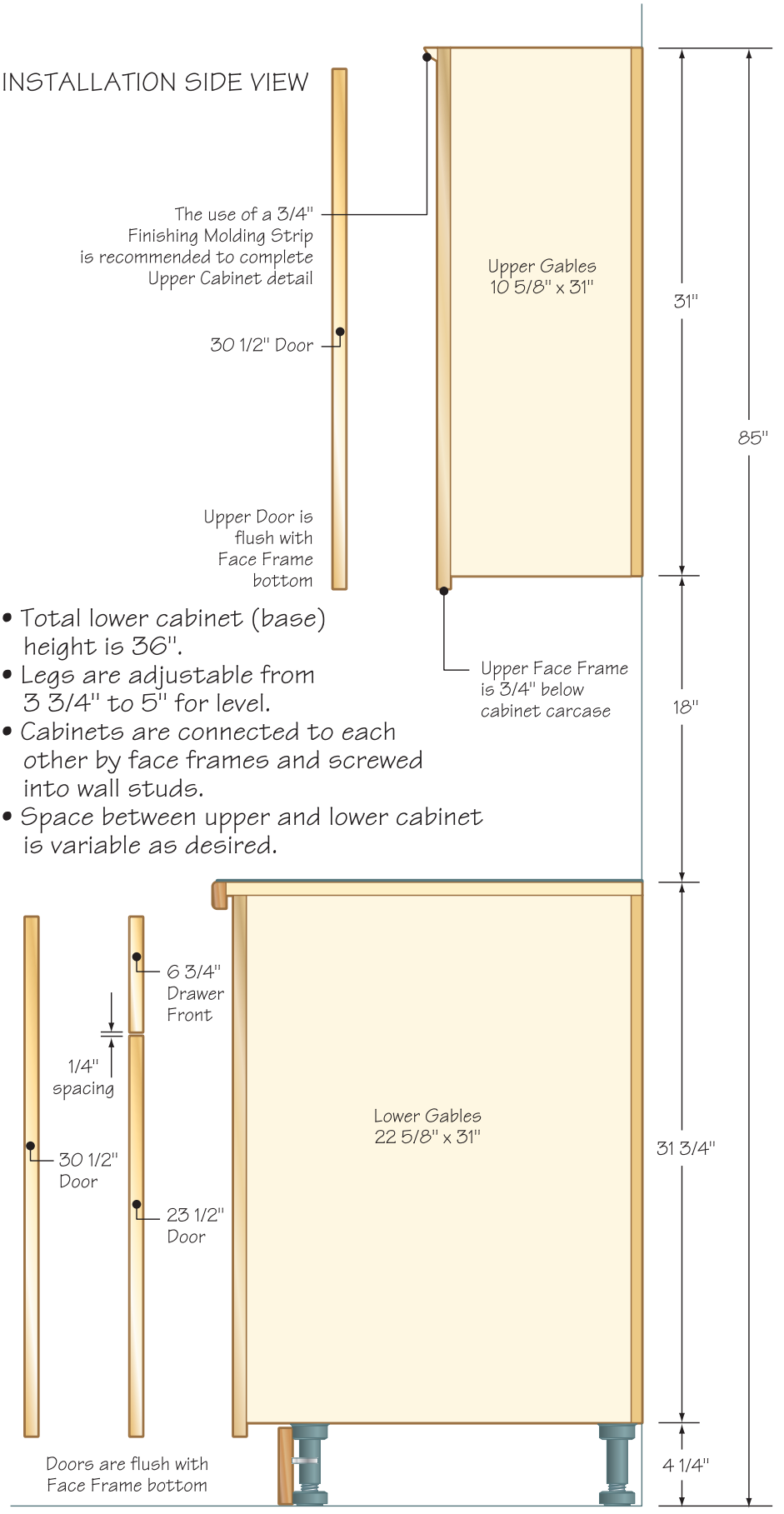

Illustrations by Len Churchill

anticipated. However, you can minimize the "surprises" by taking accurate measurements during the planning stage. Measure wall-to-wall distances at the top, middle, and bottom. Use a long level on the floor and against the walls to determine the level and plumb of these surfaces. Review the installation process in your mind before you build the cabinets, checking for electrical wiring needs and problems, sink, water drain, and water supply situations. And, most importantly, verify that door openings will allow you to bring cabinets into the kitchen area.

Installing appliances is always challenging, particularly as there sometimes appears to be a lack of standards with respect to appliance dimensions. In reality, there are a few set standards that manufacturers follow.

Most refrigerators require 787mm to 838mm (31" to 33") of space for proper installation. Ranges need about 768mm (30 1/4") and the majority of dishwashers require a 615mm (24 1/4") wide opening. However, don't assume these dimensions are cast in stone. Verify your appliance dimensions before beginning the kitchen design process. One common point of frustration, in the kitchen cabinet making industry, is with ranges. Many cabinetmakers leave 787mm (31") of space between lower cabinets for range placement. This allowance provides 10mm (3/8") countertop overhang on each cabinet side and 6mm (1/4") clearance between the countertop sides and the range for easy removal and replacement during cleaning. However, range hoods, which are installed above the range, are exactly 762mm (30") wide and look properly installed when there isn't any space on either side.

The simplest way I've found to overcome the problem, and to have the upper and lower cabinets align, is to add a 13mm (1/2") filler to each upper cabinet side on either side of the over-the-stove cabinet. The upper stove cabinet, being 787mm (31") wide, will allow installation of the range hood with a 13mm (1/2") space on each side.

Countertop ranges, built-in wall ovens, and microwaves don't seem to follow any set dimensional standards. It's best to refer to the installation instructions when designing your kitchen so you're aware of the requirements. If you're re-installing existing appliances in a new kitchen, check their measurements.

When all is said and done, a successful installation means the room was properly "read" (Photo 14). An installer must know the floor slope and wave, how much the walls are "rocking and rolling", and the ceiling slope before starting the installation. If you begin by properly reading the room, your cabinet installation will go much more smoothly.

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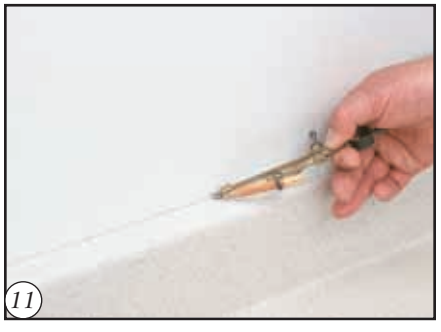
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Frame and Panel Design

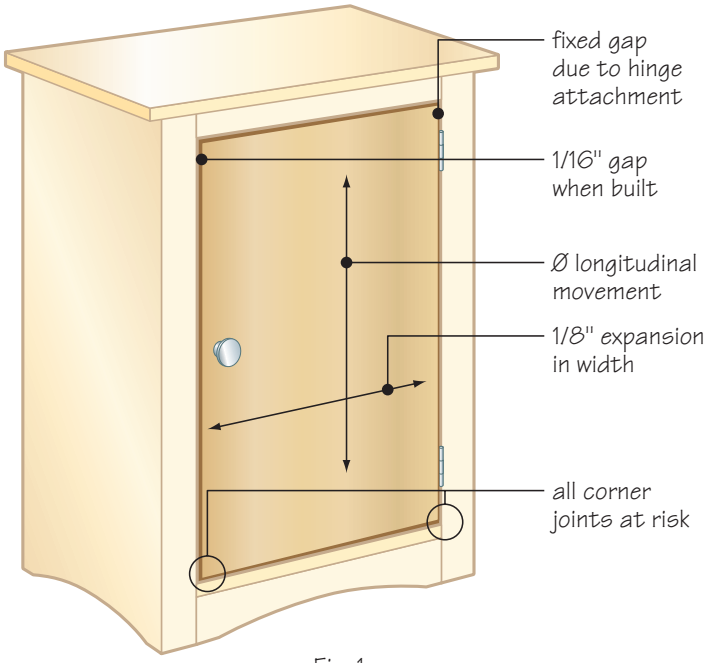

Fig. 1
SOLID SLAB DOOR DESIGN

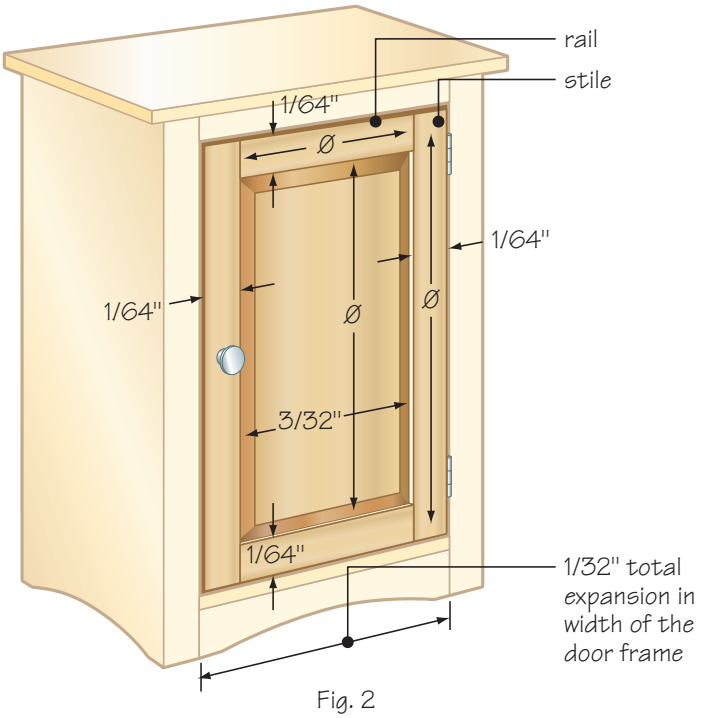

Fig. 2
FRAME and PANEL DOOR DESIGN

In my last article, I showed how wood science is considered when designing a table. In this article, I will cover how wood science effects doors, specifically the frame-and-panel design.

It's Not Just For Looks

The frame-and-panel design (f & p design) serves an important purpose. Although it is attractive, it is not just for looks. A metal door with a f & p look, is strictly aesthetic, but that is not the case when the door is made of wood.

To show how wood movement effects solid doors, look at the simple night table in (Fig. 1). If this night table were built during a period of low relative humidity, the door would be at its smallest dimension. A gap of 1/16" around the entire door may look good aesthetically, but the door could expand by 1/8" across its width as humidity increases later in the year. The hinge side can't offer any room for movement, because the door is permanently fixed in one position by the hinges.

At best, the door will become so tightly wedged in its opening that it would not be able to open during high humidity seasons. At worst, the door could exert so much pressure inside the opening that it would force joinery apart. The joints where the top and bottom panels meet the side panels are the ones at risk.

Notice that longitudinal movement is zero for the door, so it won't become wedged in at the top and bottom, only at the left side (the non-hinge side).

The opening itself doesn't change in size, because the opening is defined completely by longitudinal movement of the top, bottom, and side panels. Actually, the opening size will change very slightly, based on the radial movement of those carcase panels. This is the movement in thickness, assuming flat-sawn lumber. But the actual thickness change of 3/4" to 1" thick material will be extremely small.

Fig. 2, shows the same example again, but this time with a f & p door. The frame itself will expand by only 1/64" in width. The solid wood panel in the middle will expand by 3/32" in width, with no movement in height. Hence, the total door expansion in width is 1/8", just as in Fig. 1. But 3/32" (or 3/4 of the total expansion) is accounted for within the panel itself. The outer proportions of the door only expand by 1/32" in width. So the 1/16" gap on the left side of the door is twice as large as needed. This is a door that will swing freely from season to season, without risking damaged joints.

The Door Panel Must Move Freely

All of this begs the question of how the panel is free to move, even though the frame itself is barely moving at all. The answer is known as a 'floating panel'. That is, the panel itself cannot be permanently glued or otherwise attached to the frame. If it is, the panel's expansion will break the frame apart at the corner joints, or the panel will crack when it tries

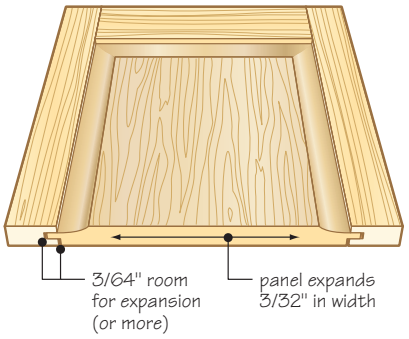

Fig. 3
CUT-AWAY VIEW
SHOWING PANEL DETAIL

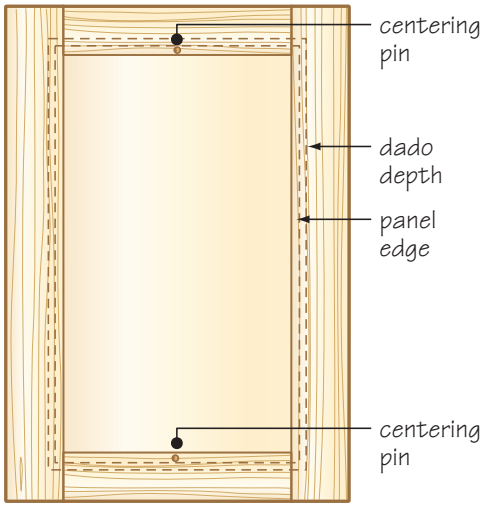

Fig. 4
BACK OF
FRAME and PANEL DOOR

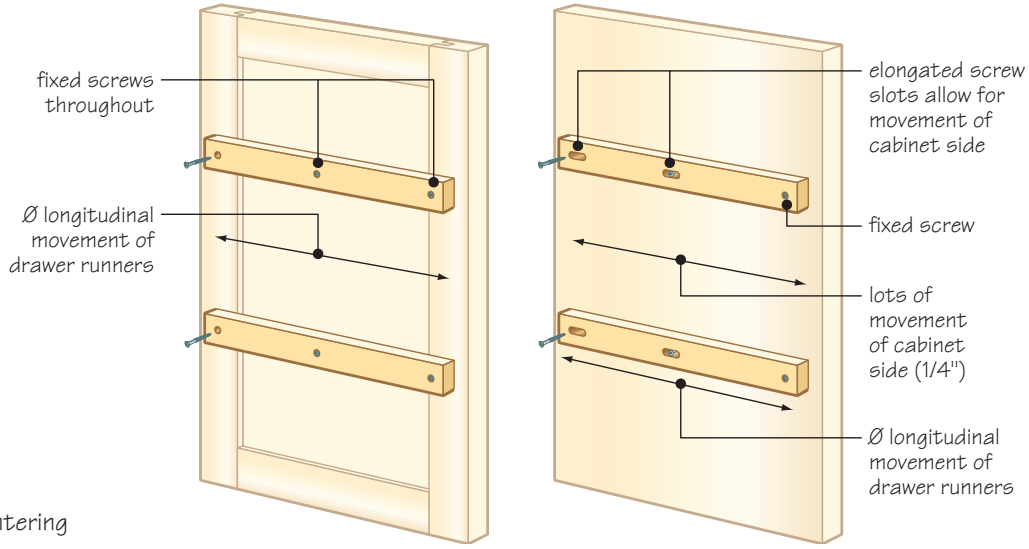

Fig. 5

to contract but is not allowed to. (This is similar to the example of the table top and base in the last article.)

The trick is to cut or rout dados in the frame's inside edges to accept the outer edges of the panel. There must be enough extra depth of the dados to accommodate the maximum expansion expected from the panel. Also, the panel must go far enough into the dados that it never contracts so much (during low relative humidity periods) as to fall out of the frame altogether. Fig. 3 shows the concept in the case of a raised f & p door.

Note that you technically don't need any extra dado depth on the door rails, because the panel's longitudinal movement is zero. In practice, though, you would normally leave some space to ensure that the panel fits into the frame easily at glue-up. A bit of room is also a good idea to accommodate some width-wise movement of the rails themselves, although it is minimal. Some woodworkers prefer to make all of the dados the same depth, just to simplify machinery set-up time.(Fig. 4.)

Pinning The Panel

You'll recall from my last article, that I like to secure the middle of a table top to its base to guarantee that the top is always centred. I do the same thing with an f & p door.

In Fig. 4, you'll see a centering pin in the middle of the panel at top and bottom. After gluing the door together, I will nudge the panel into the centred position with a rubber mallet struck on an angle. It helps to put a small pencil mark at the centre of the panel and rails before glue-up. After unclamping, I'll drill a tiny hole through the back of the door rails, which goes through the end of the panel too. It can even go partially into the other side of the rail, but make sure it doesn't go right through.

Then I'll insert a tiny wooden dowel or an antique nail. A 1/8" diameter dowel works fine for large doors. But for smaller doors where there isn't enough room for a wooden dowel, I'll use a black square-headed reproduction nail. A 1/16" diam. hole usually works well and the tiny square head in the round hole is a nice touch. Don't skip the step of pre-drilling for the nail, as you're likely to split the panel.

It's Not Just For Doors

We always think of doors when we think of f & p design. But the same approach is used in all kinds of furniture parts, such as whole cabinet sides. In Fig. 5, for example, we see a cabinet side built in the f & p style. Notice that the wooden drawer runners can be screwed directly to the stiles, and also to the centre of the panel. Even though the longitudinal movement of the runners is zero, the frame of the cabinet side hardly moves in width at all. And the screw in the centre of the panel merely helps to keep it centred.

The second diagram in Fig. 5 shows the same set-up, but with a solid panel side. In that case, the solid panel will expand and contract significantly in width, particularly if made of flat-sawn lumber. On the other hand, the drawer runners have zero longitudinal movement, which brings a cross-grain construction issue to the fore-front. The solution is to fix one end of the runners only, while the centre and other end are fixed with elongated screw slots. The fixing screw could be at either end or even in the middle, but only one can be fixed, while the others are elongated slots.

Conclusion

The frame-and-panel design was developed to solve wood movement issues, not because of looks. However, the added benefit of good looks can be exploited to the fullest, with a variety of possible panel and frame styles. Never lose sight of the real purpose of this design method, which is to ensure that wood movement doesn't wreak havoc with your furniture. We want things to work as well in 100 years as they do now.

In my next article, I'll look at the problem of breadboard ends, and similar cross-grain issues.

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By Garnet Hall

Dandy Daisy

This is a very attractive and popular project that can be made easily within one day. It is also a project that has proven to be a good craft seller. Although I made this entire piece out of Western Red Cedar, you can also use various exotic woods. Or, if you prefer, you can just use pine or spruce, and stain it.

This relatively basic intarsia project becomes extraordinary by putting extra effort into the shaping. The center is lowered 1/8" and rounded, so that the outside edge is 1/4" lower than the center of the center, creating a dome shape.

The petals are rounded, from the center of the petals out, in both directions. The inside ends are sloped down to match the center of the flower. The outside ends are sloped down 1/2".

The leaves also need a lot of shaping. They are sloped both ways from the center to 1/4".

Select Your Wood

Follow the pattern suggestions or go wild and use your imagination. This is a very creative step and the woods you choose will have a huge impact on how your project looks.

Transfer The Pattern

Get the pattern onto the wood with whichever method you prefer:

- Trace it on with tracing paper
- Make a template of the pattern and trace it onto the wood using the template pieces
- Photocopy and cut and paste

Cut The Pieces

Cut as carefully as you can. The better the cuts are, the better the project will go together. Lately I have been using a #3 Hook Tooth blade; because of the aggressive tooth design, they cut almost as fast as a Precision ground blade and leave a smaller kerf, resulting in a bit better fit. I would go to a #5 on hard woods, but use whichever blade you are more comfortable with.

Fit The Pieces

Don't be overly concerned about fit. As long as you are within a saw kerf or 1/16", you should be good to go.

Lower The Centres

There are only two pieces to lower. Lower the centres 1/8" by sanding or cutting them thinner.

Draw Reference Lines And Shape

Fit the project together and draw reference lines. These lines will help with the shaping by giving you something to shape to, so the shaping gives a smooth transfer from one level to the next.

Shaping, like wood selection, is a very important and creative part of intarsia. Try to give it the depth of a real daisy.

Make sure you are protected from the dust, by remembering to practice safe woodworking. Have your tools hooked up to a dust collector, have an air filtration device, and wear a good dust mask.

Sand

Sand the pieces smooth, to 220 grit. Finer sanding just creates more dust and is unnecessary.

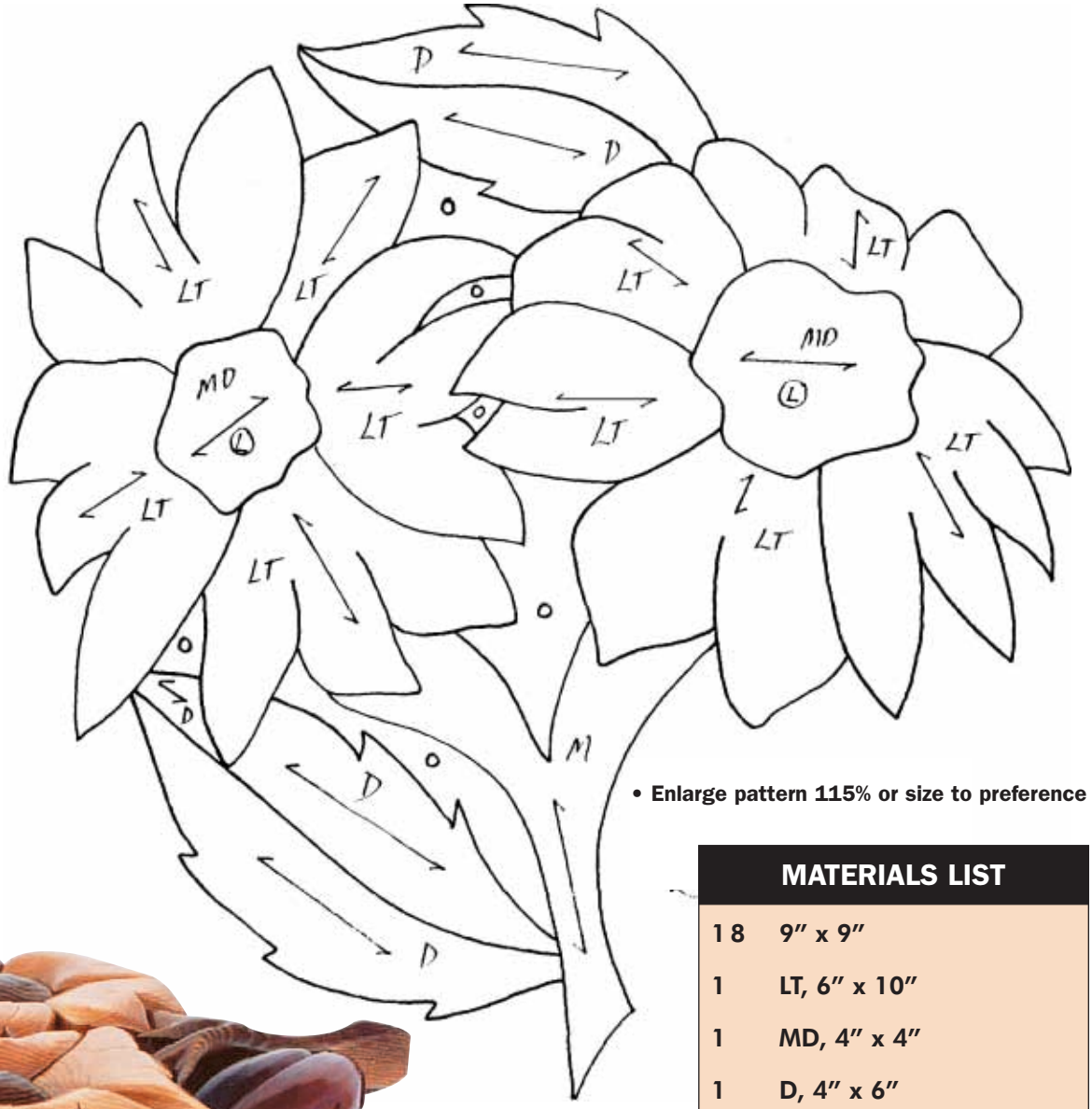
Assemble And Glue

Assemble the project on some backing material. 1/8" Baltic Birch will do, but 1/4" works just as well. Trace around the project and cut out the back. Reassemble the project on the cut out back and start the glue up. Ordinary carpenters glue is all you need. Apply glue to the bottom of the pieces, never the sides, as glue can squeeze to the surface and create finishing problems.

Finish

Apply the finish of choice. I use Old Masters spray satin, 3 coats.

Enjoy this project and experiment. Although it is a basic project, use it to practice your shaping. See how that extra attention to shaping can turn a flat object into something that is outstanding!



• **Enlarge pattern 115% or size to preference**

MATERIALS LIST

18	9″ x 9″
1	LT, 6″ x 10″
1	MD, 4″ x 4″
1	D, 4″ x 6″
1	M, 4″ x 6″
1	1/8″ or 1/4″ Baltic Birch 12″ x 12″

1

2

3

WOOD SELECTION

LT- Light Western Red Cedar (WRC) or try Pau Amarillo

MD-Medium Dark WRC or try Black Walnut

M -Medium WRC or try Mahogany

D -Dark WRC or try Green Caste Poplar or Sumac

O -Open

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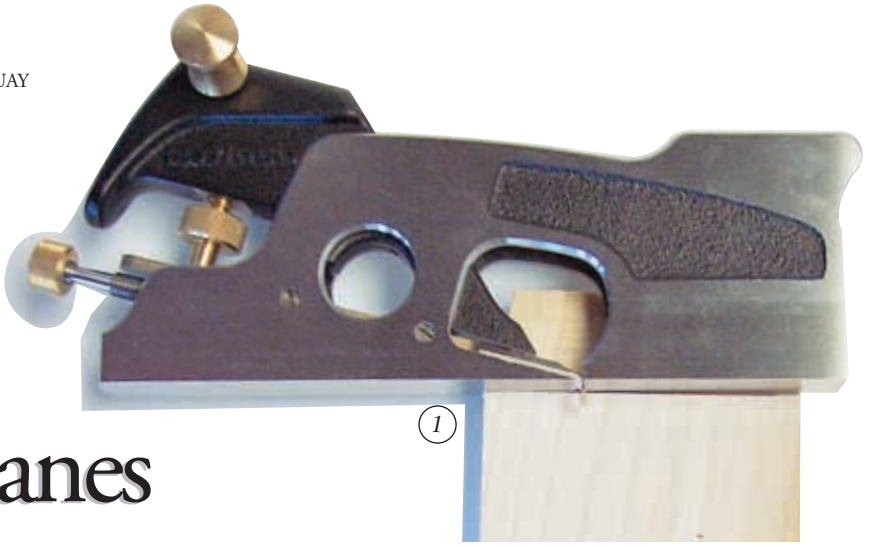


Veritas: Lord of the Planes

Over the past year or so Veritas Tools (aka Lee Valley Tools) has brought a fine range of bench planes to market, from the classy Standard Block Plane (see Canadian Woodworking Aug/Sept 2003, Vol. 6 No. 4) to the imposing #6 Fore Plane. These planes are proving to be a real hit with the woodworking community. No great mystery here: you get an exceptionally well-machined product at a very reasonable price. Quintessentially Canadian, eh! It wouldn't surprise me if over the coming decade the Veritas line of hand planes become the tool-of-choice within the woodworking community.

Now Veritas has introduced two new products that are getting a lot of woodworker's attention: the Veritas Medium Shoulder Plane and the Veritas Scraping Plane.

Shoulder Plane

The Shoulder Plane is a precision tool typically used for trimming and fitting the shoulders of tenons or sizing the tenon (Photo 1). It also does an excellent job of smoothing the bottom of dadoes cut on the table saw (Photo 2), or fine tuning rabbets (Photo 3). To work efficiently the shoulder plane needs to meet three criteria: sides ground flat and square to the sole, a very narrow mouth, and an exceptionally flat sole.

The Veritas Shoulder Plane meets these three criteria, and then some. At just over 2 lbs, 7" long, and a hair's breath under 3/4" (.700") this could be considered a mid-sized shoulder plane. The body, cap, adjustment knob, and blade are very well machined. The parts are smooth, accurately ground, and precisely milled. No sloppy tooling here (Photo 4). There are obvious similarities among the Veritas, Clifton, Lie-Nelson, and defunct but much sought after Record 073 shoulder planes. They share fine adjustment knobs that allow you to minutely advance or retract the blade and an adjustable toe so that you can close up the throat for very fine cuts. They also share a common cutting angle of 40°.

Unique to the Veritas plane however, is a pivoting knob on the top of the lever cap and a finger hole through the plane body, which enhance the balance and control of the plane. Additionally there are two set screws on each side of the body that enable you to precisely align the blade to the plane sole. This is a very nice feature, since to get a full cut across the edge of the blade it needs to be precisely parallel to the sole.

I have tried a larger shoulder plane (a four pounder with a 1/1/4" blade), and found it somewhat awkward to use, particularly when trimming smaller tenons and narrow rabbets. The Veritas Shoulder Plane, on the other hand, is very comfortable, easy to control, no chatter on the blade whatsoever, quick to adjust the blade, and the right size for a wide range of work. The perfect accompaniment to this plane would be a matching 3/8" rabbet plane.

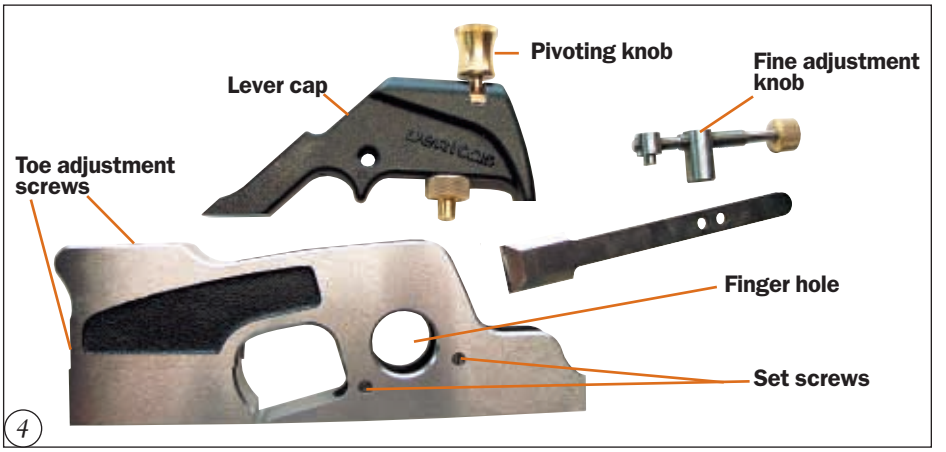
If you need any other inducement to get this plane, consider the price. At $179, it's at least 40% less than imported models.

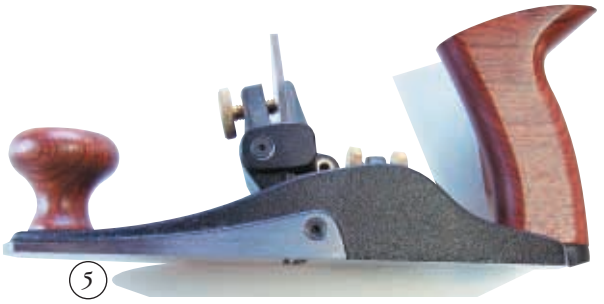
The scraping plane is a cousin to the hand scraper and the cabinet scraper. It's designed for final levelling of large surfaces, and is particularly effective on figured wood or when you're dealing with grain structure where tearout may occur.

Veritas ScrapingPlane

The Veritas Scraping Plane (Photo 5) is based on the venerable Stanley #112 (a highly sought after hand tool).

The features that make the Veritas Scraping Plan so practical are it's large size (3 3/4" wide by 10" long with a 3"





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blade) and weight (4 pounds): sole milled flat and true, easy blade angle adjustment mechanism, and ample handles that provide good control and comfort. As with the Veritas Shoulder Plane there are set screws to help you align the blade level to the sole.

A scraping plane is easier to use than you might think, and much more effective on large surfaces than a hand or cabinet scraper. Additionally, a hand planed surface has a different feel and look than a sanded surface. Three factors contribute to success in using this plane: a properly configured blade, the correct angle of blade presentation, and adequate projection of the blade below the sole of the plane. The brochure that comes with the Veritas Scraping Plane does a good job at explaining these three topics.

The blade that comes with the Veritas plane is 1/16" thick; an optional 1/8" blade is available. On both, the bevel angle of the blade is ground to 45°. The thinner blade can be slightly bowed by means of a thumbscrew (Photo 6). This helps prevent the corners of the blade from digging into the work surface, and altering the cutting dynamics of the blade, increasing cutting action towards the center of the blade. I prefer the thicker blade; no chattering of the blade, and if you round its corners, no digging in. Either blade will need some 'conditioning'. You should lap and polish the back of the blade and then hone and burnish the bevel. This is the same technique that you use for hand scrapers. If you are unfamiliar with burnishing, it involves creating a burr or hook along the cutting edge of the blade.

With a bit of practice you'll find the right blade depth for you. Because the surface of my workbench is a bit worse for wear and tear, I do my adjustments on a piece of melamine. I adjust the pitch (angle of the blade) first, by means of the blade adjustment wheels (Photo 6). Hold a bevel gauge against the blade to approximate the angle you want. Veritas recommends an angle of about 5°. I prefer a steeper angle (10°). Obviously a steeper angle deepens the cut; a shallow angle takes a lighter cut. Next, I set the blade by placing a sheet of paper under the sole (ahead of the throat), then lowering the blade till it touches the melamine. The set screws on the side of the plane make it pretty easy to ensure that the blade is (and stays) parallel to the sole. Depending upon the job you did conditioning your blade, you may have to adjust the blade pitch or depth to get some decent cutting action. Photo 7 shows the surface of a piece of figured hard maple after five or six passes with the scraping plane.

At $169 the Veritas Scraping Plane is excellent value. All I can say is: Get it!
Lee Valley order line 800-267-8767.
Website: www.leevalley.com.

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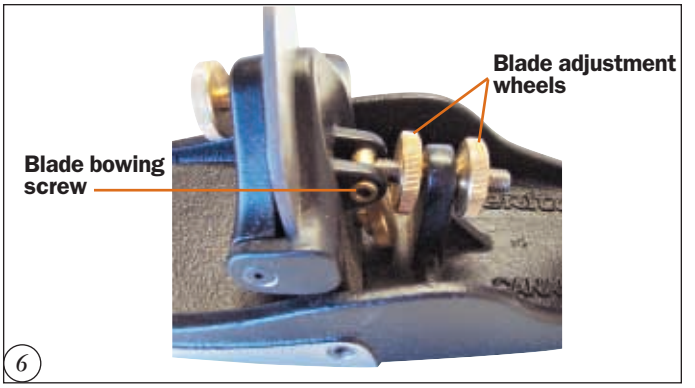

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Peavey


Garry Oak

Wood Recovery

The Victoria Woodworking Guild, which has more than 100 members, organized what we call the "Wood Recovery Team".

Of all our club activities, this is one of the most interesting, and beneficial. Several years ago our director, Doug Rhodes, established relationships with the arborists who control the community's cutting permits, the municipal workers, and the private companies that do the takedowns. As a result, the Guild is now alerted when trees worth milling are about to be removed in our local municipalities and we salvage furniture-quality wood from the trees. Without our intervention, the wood would end up in fireplaces or landfills.

Much of the timber is comprised of indigenous species such as oak, arbutus (madrona), big leaf maple, yew, and all the softwoods. The early settlers in this region also planted a lot of imported varieties, so add to that mature English walnut, cherry, beech, birch, and others.

My first experience with the Wood Recovery Team occurred last November after a developer purchased one of the few remaining holly farms within the city limits. Before clearing the property, he offered the Guild all the wood we could remove. The necessary arrangements were made, and on a Saturday morning, after a commercial crew had cut down the hundreds of trees (the largest useable logs were about 6-8 feet long and 8-10" in diameter) about 20 of us went in to salvage them. By mid-afternoon, we had loaded about 400 pieces. They were then driven to an empty garage and stacked until a sale could be organized.

A huge Douglas fir also had to be taken down, and was ours for the taking. The log was about 30 feet long and 4 feet in diameter at the base. As a transplanted easterner, I couldn't imagine how we might take such a weighty tree away. The team, however, had no difficulty. After a brief conversation, two 14 foot sections were cut out of the log. Each was still large, awkward, and heavy, but soon one of the men returned from his truck with several odd looking tools called Peaveys. **Peaveys** are heavy ash poles ending in sharp steel tips. Poised above the tip is a hinged steel hook at the end of a curved tine - much like half of an old ice tong.

Two of the men stuck Peavey tips into one of the logs, pushed the hooks into the bark, and pulled on the handles to set them. With a couple of people pushing each of the Peaveys in opposite directions, the leverage and grip enabled them to roll and turn the log, and then roll it to one of the heavy duty trailers. A come-along was then hauled out. A ramp was built, the cable hooked around the log, and one of our crew started to work the come-along. With a bit of pushing and shoving (to keep the log straight) it was drawn up and secured on the trailer. The second piece soon followed, and they were taken to a property about 30 minutes away for later milling.


10 foot log

The following weekend, wood recovery volunteers showed up at the holly storage site for first pick of the pile. On the weekend after that, other members of the Guild were able to purchase what they wanted. There was more than enough for all, at a price of "a Looney a lump".


the Rig


Blade


Nails

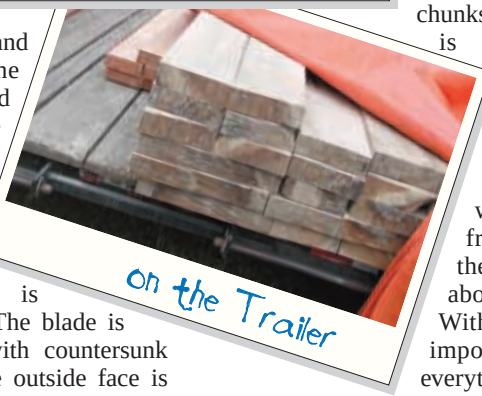
A couple of months later, the team reconvened at the home of one of the members who had constructed a 1,200 board foot drying kiln under his back porch. It was time to remove a huge stash of arbutus and beech. With considerable care to avoid contaminating the surfaces with any grit, that could damage planer and jointer knives, the wood was stacked and a couple of graders measured and marked both the board footage and the quality. The kiln was then reloaded with another 1,200 feet of beech and arbutus. With the dried wood ready for sale, the volunteers again got first pick. The other Guild members were able to purchase what remained. Pricing is based on recovering the cost of milling and kiln-drying (plus a small premium which is donated by the Guild to local charities).

The Guild's most sophisticated wood recovery operation to date was when we had volunteer crews operating in two different locations simultaneously.

Team One was at the suburban home of the sawyer, where the smaller logs had been delivered earlier. The diameters of the oaks there ranged from about 2' to 4'. This

Garry Oak was about 30". The objective was to produce quarter sawn furniture quality wood using a nifty circular saw mill. With chains around the ends of the **10' logs**, a front-end loader was used to lift, carry, and place them between the saw's rails. Muscle and wedges put them in the proper horizontal and vertical planes and kept them there.


Swept clean


On the Trailer

Here you see one of the small fir logs being sawn. **The rig** is simple, but impressive. The blade is attached to the arbor with countersunk screws, ensuring that the outside face is dead flat. When the horizontal pass is complete, the saw rotates 90º and positions itself exactly 8" in from the previous edge. With this set-up any size lumber up to 16"x16" can be produced by sawing in from both sides.

The carbide tipped **blade** is water cooled and driven by a gasoline engine.

A major challenge associated with city wood is nails, and other assorted bits of metal. At least with the oaks, the tannin reacts with iron and produces a black stain to provide a clue to their presence.

In this log, the **nails** had obviously been driven in about 30 years ago. We later determined that they were originally used to secure rungs to a treehouse (or something similar) as they were at regular intervals all the way up. These nails ruined my saw chain, but the carbide headsaw cut through them with relative ease. Also, because it only has 6 teeth (unlike a bandsaw mill) it isn't prohibitively expensive to repair even if teeth are damaged.

The sawing process is actually low tech and, as the cut is completed, the volunteers manually remove the plank to a pair of sawhorses where it is **swept clean**. After that it is stacked **on the trailer** for transport to a temporary storage area until the sale. (Note: Garry Oak is a fairly rare species, unique to the west coast, that tends to crack if put in a kiln, so the buyers will air-dry it themselves.) Here's some of the early morning production of beautiful 3"x8" material which will be re-sawn by purchasers. The tarp protects it from drying out too quickly in the direct sun.

Team Two was at an old industrial site in the city where the really big oaks had been taken. They were 5+ feet in diameter and it was hoped that they would yield figure. Because the bandsaw miller had to leave early, the team decided to use an Alaskan chainsaw mill to produce large cants for later re-sawing. **Moving** multi-ton chunks of wood around is much easier when you have the right equipment.

We had a bit of misfortune when one of the frame pieces on the mill cracked about mid-day. Without it, it was impossible to finish everything, although some very large slabs were produced for later re-sawing. Note the metal detector lying on the pile of **crotch slabs**. Some of the **cants** were quite large.

One piece will yield some lovely **figure**.

During that one day, I'd guess that Team One produced more than 1,000 board feet of finished quarter-sawn oak in 3"x8" and a few pieces of 3"x16" (plus about 200 board feet(BF) of furniture grade fir in 3"x8"). About 15 oak turning blanks also came out of the pile. Team Two, despite bad luck with the mill, produced a couple of hundred BF of crotch figured oak, about 1,200 BF of cants to be re-sawn, and a residual pile of smaller pieces with potential for veneer and turning. Some of this lumber will be donated to the local Community College woodworking program (who provide space for our guild to meet). Because no cost was incurred for a kiln, the price to members was about a buck a board foot. Not bad for premium quarter-sawn oak.


moving


Crotch slabs

The key to a successful wood recovery program is having the right leader. It's a tall order, because they need the inclination, time, and personality to build and maintain relationships with local tree cutters. They also have to organize the equipment and people to do the work. As the text and photos show, it is a considerable challenge, requiring access to an extensive range of resources. Any organization that decides to take on such a task, should start with modest expectations, build slowly, never take on more than can be achieved without fail, and grow into the larger projects. When a tree is to be taken down in a city, the logs must be picked up to meet the cutters' schedule and removed to a location where they can remain until it is feasible to saw them. Failure to pick up logs on time will quickly put an end to your clubs credibility and your wood recovery program.


cants


Figure

On the other hand, in addition to being ecologically friendly, logging the urban forest offers tangible rewards. Not only access to cheap furniture-quality hardwoods, but pleasure. Team members work hard, but always have a great day. The best indication of that is that there are always more volunteers than necessary.

If your group can marshal the necessary equipment, it's an all-too-rare "win-win-win" arrangement.

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We're working on connecting trees to woodworkers so we can make full use of such a valuable resource.

GARRETT LAMBERT lives in Victoria, BC and is a member of the Vancouver Island Woodworkers Guild and the Vancouver Island Turners Guild.

By David Bruce Johnson

Getting Started

1

Ever toy with the idea of carving? I don't mean entering competitive challenges across the country. I'm just talking carving: something to do with your time that results in pleasure, accomplishment, pride or satisfaction. Carving can be any or all of these things. And it is a lot easier to start than you may imagine.

First off, there are a lot of different tools that are needed. Sometimes that in itself can be enough to discourage someone from starting.

Gouges come in different lengths. Knives are a myriad of shapes. There are "series" of tools. Lots are straight. Many are bent. Some are 'fishtail'. They have different shaped handles. The variations go on and on (Photo 1).

There are so many tools available, it's hard to even know what tools you need to start carving, or what tools are most useful. Despite the popular saying, "You can't have too many tools!" I think it's a good idea to start small and work your way toward a larger collection. As you gain experience, you'll discover that you actually "need" another tool for a particular reason or effect. Once you start carving (and I'm sure the 'old-hands' would all agree) you will find you use a small number of tools the majority of the time.

Here's my suggestion for a starter set of tools: five D-series chisels (2/10, 5/12, 7/12, 9/12, and 12/8), plus a knife. Does that help? Probably not much.

My recommendation was written in "chisel-code". Let me explain: The D-series is a set of chisels that are approximately 8" long. I think of them as the Goldilock series: neither too big nor too small; but just right for a beginner (and very useful for experts). The first four in the list are straight gouges.(Photo 2) The first number describes the amount of curvature - the lower the number meaning a flatter gouge. The second number describes the width of the chisel - the higher the number meaning a wider gouge. If you're just starting, the most important thing is the variety in curvature. The difference between a 10 mm or 12 mm gouge is not really significant (Photo 2). These gouges are used for carving curved surfaces whether concave or convex.

Unfortunately, like the English language, there are exceptions to every rule. The last gouge (12/8) is a Parting tool (or Vee-gouge). Even these come in different forms - the angle between the two sides can be 30, 45, 60 or 90º. So, the 12 doesn't mean curvature like the other

2

gouges; however, the 8 does refer to width. A Parting tool is used to carve the joint between two surfaces or outlining a feature.

Whether you're new to carving or have been at it forever, you need to keep the cutting edge of your carving tools in good shape. It can be frustrating if you are working with a tool that is dulled or chipped by mishap.

I'll bet it's safe to say that most of us have used the 'grab and scatter' approach when we're carving. As you work, you grab whatever tool you want then lay it on your workbench and grab the next one. Soon, you have most of your tools cluttered with the wood chips on your workbench. Then you have to search through the tools repeatedly to find the one you want. In the process, the tools bang against each other and, probably too often, sometimes get knocked onto the floor. Then, when you do find the tool you want, it has a chip in its edge.

To prevent damage resulting from rolling off the work bench, some companies offer carving tools featuring handles with flat surfaces. They usually stay put if you lay them down. Of course, there are also many excellent brands that have round handles. Regardless of the type of handle that you may have, you need to do your best to prevent damaging the cutting edge (Photo 3).

3

Here's a little item you can make to help protect your favorite chisels. I made this beauty from a scrap piece of basswood, but any piece of wood will do. The holes are 3/4" diameter and drilled deep enough so that the handles of the gouges contact the top of the hole before the cutting edge reaches the bottom. Make something like this holder to avoid having your carving tools spread all over your workbench. It's a simple little project that will both protect and store your gouges. Here is another picture of the tool holder showing its dimensions (Photo 4 - includes dimensions).

4

In my list of suggested tools, I included a knife. Like many people, my first carving knife wasn't very special. In fact, I completed my first carving with a small pen knife. I have progressed a lot since then but still love to use a knife. Like gouges, most carvers inevitably will collect a number of knives.

I think a knife is the most all-round useful tool that you can have. There are many knives available for carvers, and each carver has their own favourite. When you are selecting a knife it should have a robust cutting edge, be a little flexible, and fit your hand. (Editor's note: watch for details about this fitting process in a future article).


5

I happen to like this ugly knife (Photo 5). Like my gouges, its handle has flat surfaces so it stays put when I lay it down. The metal in the blade is exceptional and it can flex a little. I use a cork from a wine bottle to protect its blade.

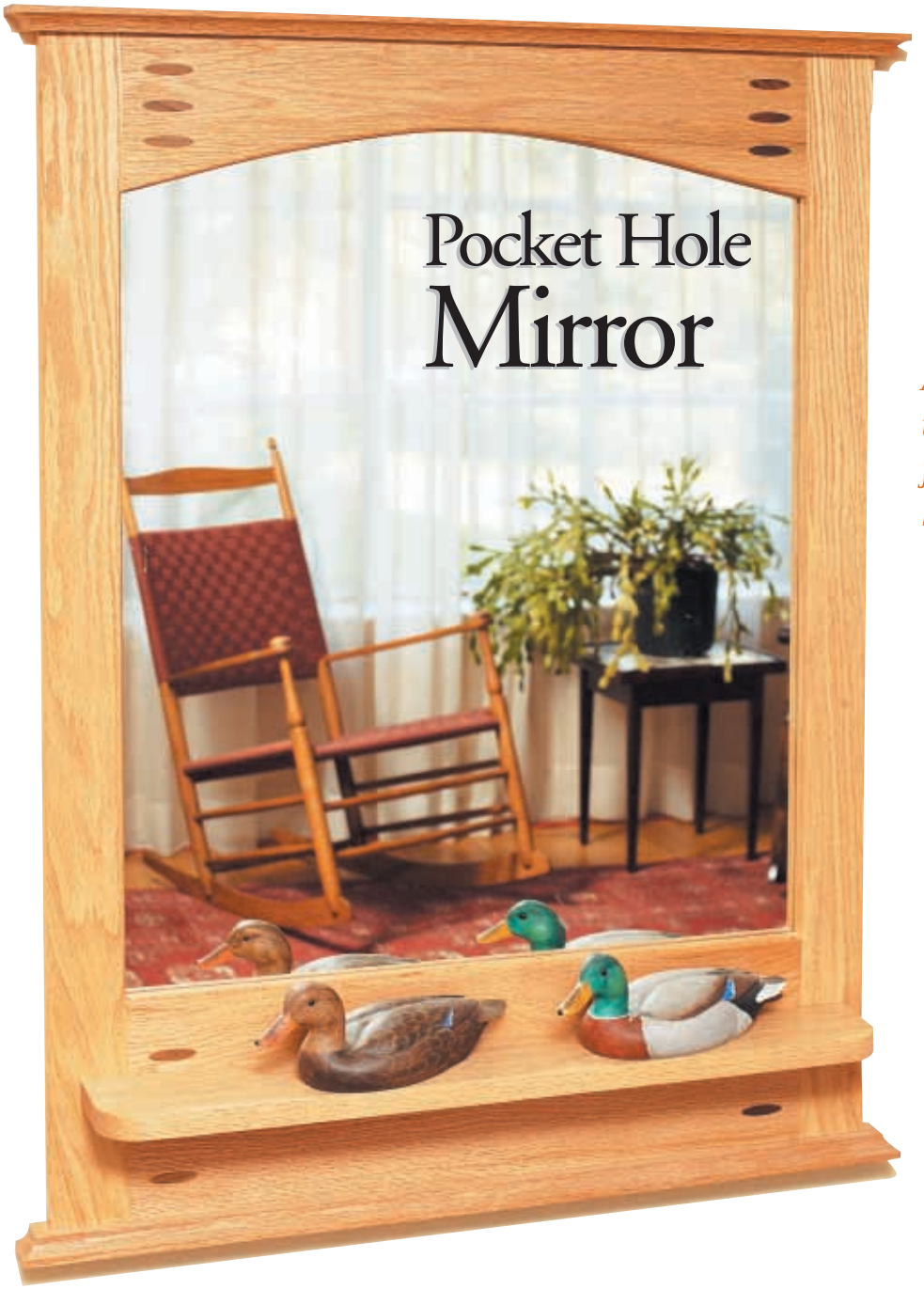
With the small selection of tools I have suggested, a person can have a wonderful time carving just about anything they want.

Readers: if you have been toying with the idea of carving, this is the time to get started. Dust off your carving tools, or pick up what's listed above. This is the first in a series on getting started in carving. Follow along and learn as the series continues.

In the next issue, David will show you how to handle your tools safely and effectively.

DAVID BRUCE JOHNSON is an artist living in Hawkestone, Ontario who prefers wood as a medium for sculpture. You can view his work at http://www.magma.ca/~davidbj.

Pocket Hole Mirror



A wise old cabinetmaker once told me something regarding joinery. He said, "If you can't hide it, celebrate it!"

I designed this framed mirror project for a couple of reasons. First, I needed a hall mirror for my own home, and secondly, I wanted to use pocket hole filler plugs as a decorative element on a large frame.

A wise old cabinetmaker once told me something regarding joinery. He said, "If you can't hide it, celebrate it!" And that's just the case with these pocket holes. I could have put them on the backside of the frame, but decided to show them off - and they look great!

This elegant mirror is simple to build and will be a useful addition for the hall, or any room in your home. It can be used in the bathroom as a vanity mirror, in a bedroom as a dresser mirror, or as an accent piece in any small room that needs to look larger. A mirror has a way of enlarging a space, so it would also be perfect in a small dining room.

One of the advantages of being a woodworker is the ability to custom design and build projects for a specific purpose or space. There are many framed mirrors available in the marketplace, but you'd have to settle for a standard size. A woodworker, on the other hand, can build to any size, and that's a big plus with this project.

I used an illusion with this project to make the top edge of the mirror appear curved. In reality, it is a straight cut plate mirror which is much less expensive than a curved cut mirror. It is the arched top rail of the frame that creates this illusion.

Cut the Frame

Cut the four frame parts (A), (B) and (C), as indicated in the materials list. Draw an arc on the top rail (B), following the dimensions shown in the illustration. Use a thin strip of wood, bent around finishing nails along the arc, to mark the pattern (Photo 1). Then, use a jigsaw or scroll saw to cut the arc.

Dril Pocket Holes

Drill three equally spaced pocket holes on the ends of each rail (B) and (C) (Photo 2). Set your drill bit stop collar so the pocket hole will be about 1/8" deeper than normal. These pocket holes will be filled with wood plugs so you want to make sure they are seated deep in the hole without being limited by the screw head.

DESIGN NOTE

I drilled pocket holes on the front face of the frame members. Or, you can skip the wood plug step, and hide the pocket holes on the backside of the mirror frame.

Join Rails and Stiles

Join both rails to the stiles using glue and 1 1/4" long fine thread pocket hole screws (Photo 3).The outside edges of the rails are set flush with the ends of each stile.

Insert Plugs

Fill the pocket holes with wood plugs. I used walnut plugs on an oak frame (as a decorative element). You can choose any combination, or even use the same wood species plug. Use glue in the pocket holes, insert the plugs and, when the adhesive has cured, sand the plugs flat to the frame surface (Photo 4).

Router Frame Profile

Ease the inside frame profile using a 3/8" radius router bit. Then, complete the final sanding of the frame front face (Photo 5).

Router Rabbet

Use a rabbeting router bit to cut a 3/16" deep rabbet on the inside back profile of the frame. This will provide a place for the mirror plate to rest (Photo 6).

Each rabbeting bit cuts a little different because of the bit style and diameter of the guide bearing. The width is not critical; as the mirror will be ordered to fit the cut you've created.

Square Rabbet

You can order the mirror plate cut with a curved top but that would be more expensive. Instead, use a plain square cut mirror and square the rabbet on the curved top rail (Photo 7).

Use a straight cutting bit in your router, guided by a board, to clean out most of the wood. Remove the remaining material, and square the corners, using a sharp chisel.

Cove Cut Egdes

The upper and lower trim caps (D) are formed with a cove router bit. The cove is cut leaving a 1/4" high lip on the edge. Cove cut the front edge and ends of both pieces (Photo 8).

The cove faces the frame on both bottom and top caps and is centered on the frame. Use glue and 1 1/2" long screws to secure the trim caps. The back edges of (D) are flush with the back face of the frame.


1


2


3


4


5


6


7


8


9

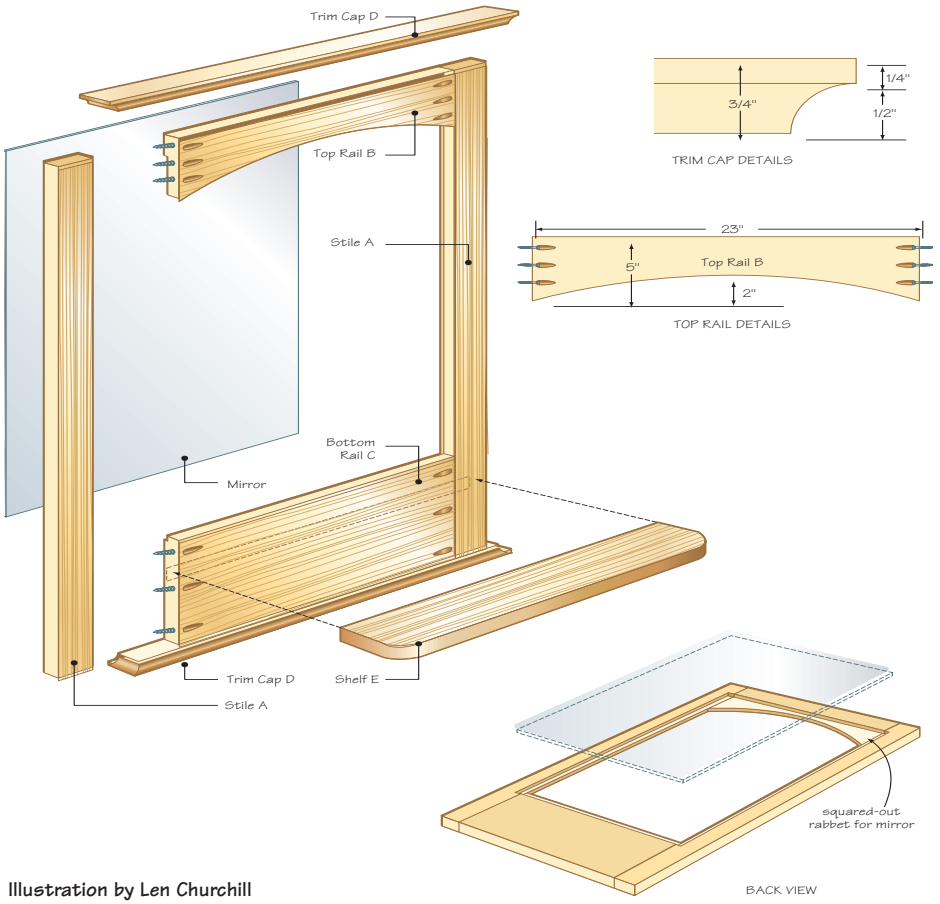


Illustration by Len Churchill

MATERIALS LIST

2 **3/4" x 2 1/2" x 38"**
(A) Hardwood, Stiles

1 **3/4" x 5" x 23"**
(B) Hardwood, Top Rail

1 **3/4" x 7 1/4" x 23**
(C) Hardwood, Bottom Rail

2 **3/4" x 1 5/8" x 30"**
(D) Hardwood, Trim Caps

1 **3/4" x 3 1/2" x 26"**
(E) Hardwood, Shelf

1 **23 5/8" x 28 7/8"**
3/16" cut to the size required
(F) Mirror Plate

This project is from Danny Proulx's new book, "The Pocket Hole Drilling Jig Project Book". Release date: April 2004. For more info, go to:
http://www.cabinetmaking.com"

HARDWARE & SUPPLIES

Pocket Hole Screws

Glue

Wood Screws

Pocket Hole Plugs

Mirror Clips

Mirror Hangers

Attach Shelf

Shelf board (E) is attached with glue and 1 1/2" long screws driven through the back face of the frame. Round over the two outside corners of this shelf to minimize injury in case someone bumps into the mirror. Set your shelf board 2 1/2" below the bottom rail's top edge and centered on the frame's width (Photo 9).

Router Edges of Frame Stiles

Use a 1/4" radius round over bit to ease the outside edges of the frame stiles. The router base plate will strike the upper and lower trim cap limiting its travel. That's OK though, because that's the effect you want to achieve on those edges. Prior to installing the mirror, apply a finish to your frame (Photo 10).

Install Clips To Hold Mirror

Use metal clips to hold the mirror in place on the frame. Install the bent clips in 1/8" deep grooves that you've cut into the frame edge with a straight router bit. The clips are held in place with 1/2" long wood screws. Install heavy-duty hanger clips on the frame for mounting on screws driven into the wall. Attach the hanger clips to the stiles, so the upper rail doesn't support the mirror weight (Photo 11).

Construction Notes

This mirror can be any size. Different applications demand special sizing, so change the dimensions to suit your needs.

Any wood type can be used and the pocket holes can just as easily be filled with matching or contrasting plugs. I applied three coats of polyurethane to the frame, but an applied stain, to match existing furniture color, is a nice touch.

Be careful installing the mirror clips, as too much pressure can crack the glass. Order the mirror 1/8" less than the overall width and height to accommodate any seasonal wood movement. My mirror supplier uses a standard 5mm (3/16") thick plate, but check with your supplier before cutting the rabbets on your frame.

The curved upper rail is a nice design element and adds a lot of interest to the mirror. However, it's not always suitable for some furniture styles. If your furniture has straight lines (i.e. Shaker) you may want to eliminate the upper rail curve. Also, the coved caps may not suit the furniture style in your home. Really, they can be almost any design (including straight line with cuts, bullnose, or a simple round over) so change them to match your style.

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By Michel Theriault

Butterfly Earrings

One of the best gifts a woodworker can give is something hand-crafted out of wood. These earrings fit the bill, providing not only an easy to make gift idea but also serving as an ideal way to display the beauty of wood.

All you need to make these earrings are some inexpensive earring accessories available from most craft stores, and a few scraps of your best wood - wood that you would no doubt have thrown out, or burned, anyway.

These earrings are made from a single thin piece of wood. All you need to do is cut a thin slice with your bandsaw or tablesaw and sand both sides. The version shown is a dangling earring, but you can use the same process for a stud earring or even a clip-on.

The pattern provided is for a Butterfly, however you can use almost anything you want, even the initials of the person who will be receiving the earrings.

The first step is to draw the pattern. You can draw it on freehand, trace it with carbon paper, or use a paper pattern that has been lightly coated with a spray adhesive. If you are making a number of earrings with the same pattern, you can stack the slices. Hold them together with some small brads, double sided tape or by wrapping masking tape around the ends.

- Set up your scrollsaw with a fine blade and cut out the pattern, being careful to maintain a smooth and even edge.
- Sand the edges of the earring with a folded piece of sandpaper, going through the grits from #80 to #150. Leave the edges sharp and crisp or round them over slightly, depending on your taste.
- Drill a 1/16” hole in the earring to attach the earring loop.
- Apply at least one thin coat of polyurethane, depending on the look you want. A polymerized Tung oil or Danish oil can also be used. Remember to tell the eventual owner of the earrings that they will have to re-apply the oil periodically to maintain their appearance.

Once the finish is dry, attach the earring loop to the earring.

For those women who want to attract a bit more attention, cut out larger butterflies!

MICHEL THERIAULT is a writer and woodworker living in Guelph, Ontario.
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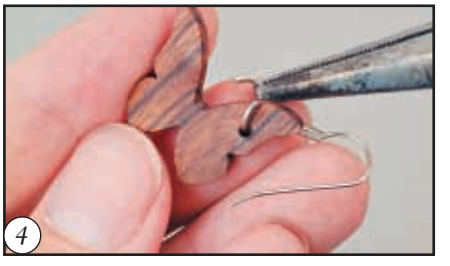
Size Pattern as desired.



By Rea Gibson

Sandwich Puzzle

The object of the sandwich puzzle is to assemble the 6 inside pieces so that they fit neatly between the 2 outside pieces.

This is an opportunity to use up some small pieces of scrap wood to make an interesting puzzle.

To make this puzzle it is best to use wood with contrasting colours.

- Cut out the sides and inside pieces.
- Lay out the hole and dowel centres (Fig.1 - see next page for figures).
- Drill 5/8" holes through the nine centres of the outside pieces. Drill the 5/8" holes through the inside pieces (Fig. 2).
- Drill 1/2" holes half way through the inside pieces to fit the 1/2" dowels. A Forstener bit makes a nice job of these holes because it makes a hole with a flat bottom.
- Cut out the dowels and glue them into place (Fig. 3).
- Cut out the puzzle stand.
- Glue the dowels (Fig. 4).

A varnish and wax finish will give you a puzzle that will be fun to have for many years.

Watch for the solution for this puzzle in the next issue!

MATERIALS LIST

2	1/2" x 3 1/2" x 3 1/2" Outside Pieces
6	1/2" x 1 1/8" x 3 1/2" Inside Pieces
13	1/2", 5/8 long Dowels
2	1/2" x 3" x 6" Puzzle Stand Sides
2	2 9/16" long Puzzle Stand Dowels

Solution

From last issue's **Tower of Brahma P**

1) Number the pegs 1 t

2) Label the discs: A, B, C, D, E and F

3) Start with the discs piled on peg #1

4) When you move disc A to peg 2 it will rea

A2, B3, A3, C2, A1, A3, D1, A1, B2, A2,

FIGURE 1

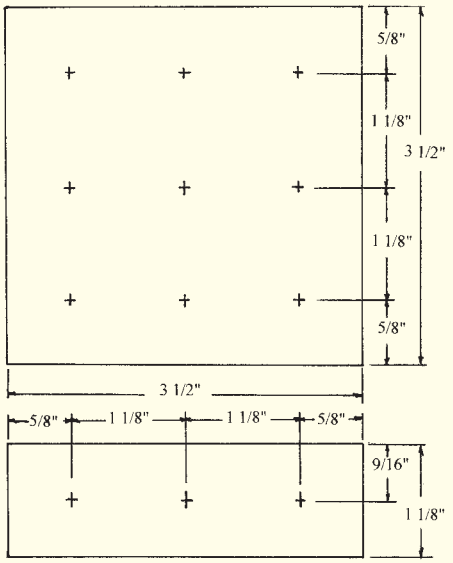


FIGURE 2

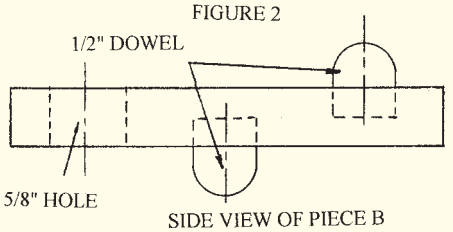
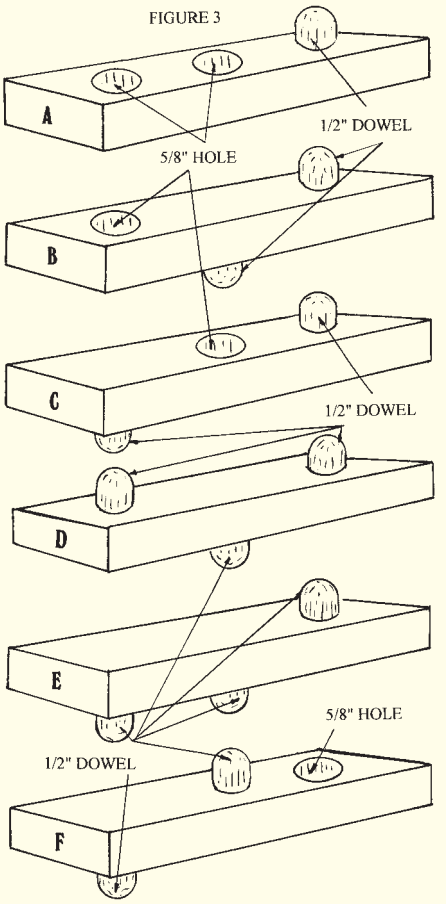


FIGURE 3



Sandwich Puzzle Illustrations

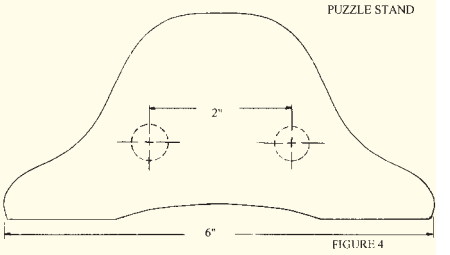
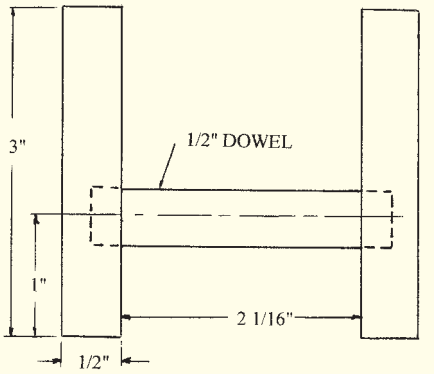


FIGURE 4



REA GIBSON owns and operates Forest Hill Studio and is the author of The Wooden Puzzle Book. He lives in Mount Forest, Ontario email:egibson@golden.net

COMING EVENTS

HAMILTON WOODSHOW
January 23, 24, 25
Canadian Warplane Museum Hamilton, ON
905-779-0422
www.ontario-woodshows.com

CHATHAM/KENT WOODSHOW
February 6, 7, 8
Kinsmen Auditorium Chatham, ON
519-351-8344
www.woodworkingshows.com

LONDON WOODWORKING SHOW
February 13, 14, 15
Western Fairgrounds London, ON
519-455-5888
www.londonshowproductions.com

K-W WOODSHOW
March 12, 13, 14
Bingeman's Kitchener, ON
519-657-8646
www.woodshows.com

NIAGARA WOODCARVERS SHOW
March 27, 28
Optimist Park Niagara Falls, ON
905-354-8854
www.niagarawoodcarvers.ca

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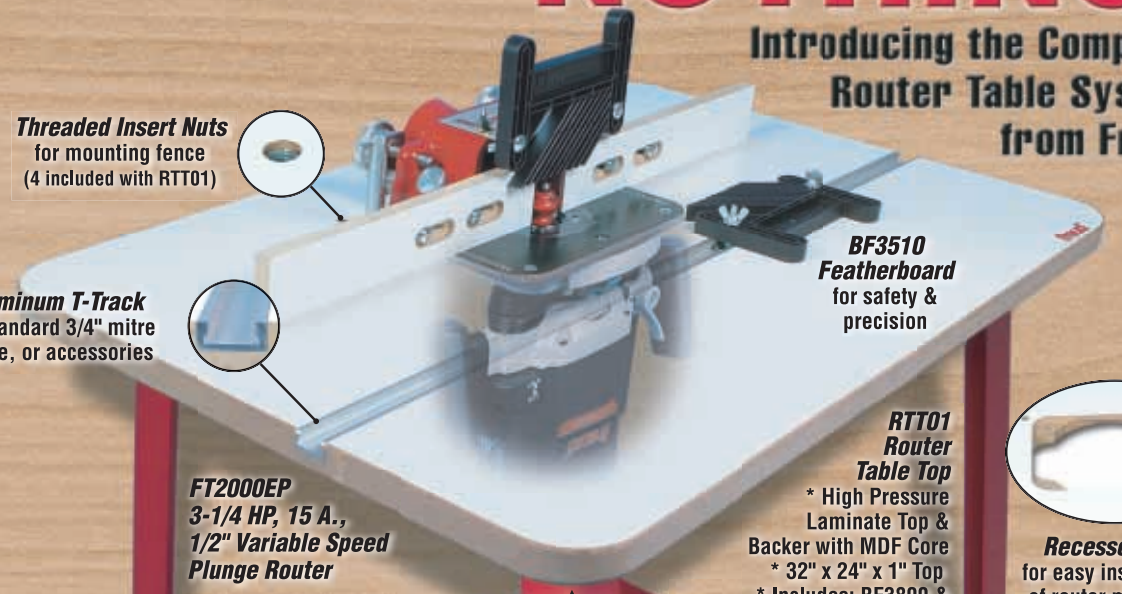

Threaded Insert Nuts
for mounting fence
(4 included with RTT01)

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for standard 3/4" mitre gauge, or accessories

BF3510 Featherboard
for safety & precision

FT2000EP
3-1/4 HP, 15 A., 1/2" Variable Speed Plunge Router

RTT01 Router Table Top
* High Pressure Laminate Top & Backer with MDF Core
* 32" x 24" x 1" Top
* Includes: BF3800 & 32" T-Track

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NEW!

FWS35 Steel Stand
* 35-1/2" Height for comfortable routing
* 16 gauge steel for strength & stability
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* Welded Foot with Hole - accepts adjustable foot (not included)

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for starting free-hand work

SH-5 Premium Router Table Fence
* Micro-Adjustable Split Fence System - requires no shims for jointing

Snap-Down Rings
for 1-3/4" & 1-3/8" Template Guides

BF3800 Router Mounting Plate
* pre-drilled for Freud FT2000EP (others can be accomodated)
* Snap-Down Rings & Guide Pin are included with BF3800

(included with RTT01, also sold separately)

RTT01B1 Start-Up Base
MDF Base mounts readily to standard work stands (sold separately)

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By Carl Duguay

Oil Finishes

Before we proceed, two words of caution are in order: spontaneous combustion. A pile of oily rags tossed into a wastebasket will generate heat as the oil dries - enough heat to burst into flame. When using oil products, a little caution is called for. You can put used rags into an approved oil-waste container, a bucket of water, or hang the rags out to dry. Then you can safely discard them. While on the subject of safety, remember to wear protective gloves and a respirator when applying finishes.

There are a lot of things to consider when selecting a wood finish. How resistant is it to abrasion, water, water vapour, heat, alcohol, and other liquids? Is it easy to apply? Is it easy to repair? How does it affect the texture (the feel) of the wood? Will it change the colour of the wood? What level of sheen (i.e. gloss, semi-gloss, satin) does it give? Is it toxic?

Just to reassure you, there is no 'perfect' finish. All finishes have their own merits and limitations. So now, lets have a look at what oil finishes have to offer.

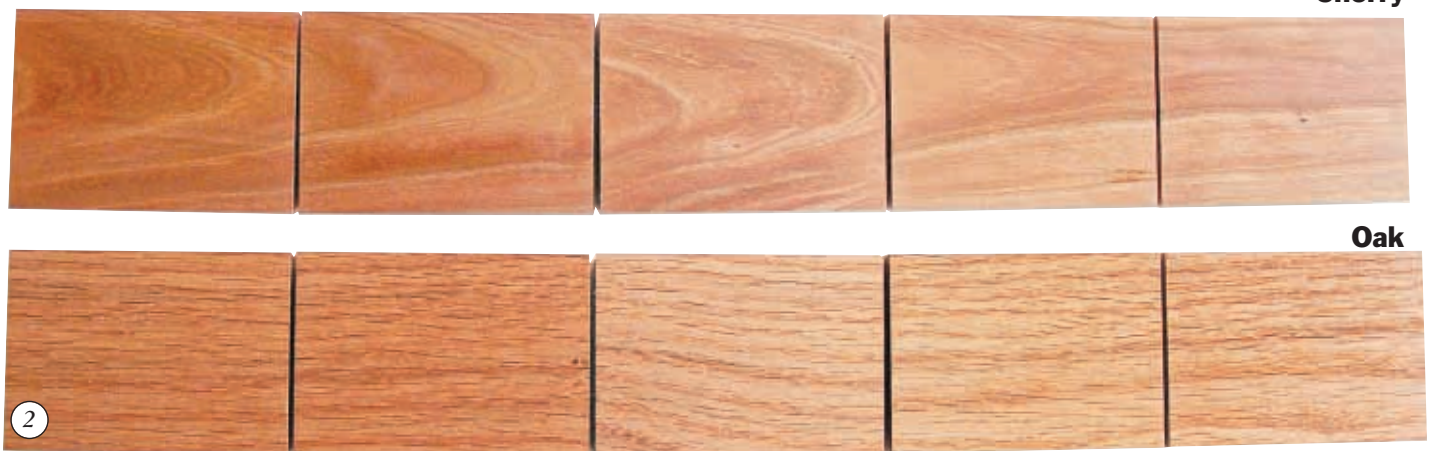
Kinds of Oil Finishes

Oil finishes are referred to as penetrating finishes: the oil permeates the wood by capillary action, forming a continuous film over the surface. Most of the literature lists four kinds of oil finishes: 'true (or straight) oil', 'polymerized oil', 'blended oil', and 'wiping varnish'. The first three are oils, while the last is not an oil, it is a diluted varnish (which we will cover in a future article).

True oils include linseed, boiled linseed (linseed oil to which heavy metal dryers have been added), tung, and walnut oils. They have a distinctive 'nutty' odour. These oils cure slowly to a comparatively soft and satin sheen. If you apply five or six coats, pure tung oil is supposed to offer fairly good water resistance, but it still scratches easily and doesn't offer much water vapour exchange protection. Linseed oil takes forever to dry, and it imparts a yellowish hue to light woods. Boiled linseed oil, available from your local hardware store, cures a lot faster than in its raw form. Tung and walnut oils are commonly used by those desiring a toxic-free finish.

If you heat linseed or tung oil to around 500ºF in an oxygen free environment it undergoes a chemical change called polymerization, producing, of course, polymerized oil. The heat treatment increases the oil's hardness and gloss and speeds up its drying time. Some polymerized tung oils are very thin because of the addition of a high proportion of mineral spirits (up to 50%). When buffed they produce a high lustre and sheen. Once these finishes have cured and

How the finish affects the wood.



the mineral spirits dried off, the finishes are non-toxic. (Note: the polymerized linseed oil is sold as Tried and True's Danish Oil) (Photo 1).

Blended oil finishes contain a true oil mixed with varnish or polyurethane (they may also contain other components: most commonly, mineral spirits and heavy metal dryers). The oil in the finish makes it softer, makes it cure more slowly and makes it cure to a satin sheen, while the qualities imparted by varnish make the finish cure harder, glossier, and increase the protective characteristics of the finish. Blended oils may bleed finish from the pores back to the surface if you apply too much finish. Better to apply thin coats and wipe well. There are a lot of different blended oils on the market. Many of the products sold as 'Danish Oil', 'Antique Oil', 'Teak Oil' or 'Finishing Oil' are l ikely blended oils. One of the most popular is Liberon Finishing Oil. Another that is becoming popular is Tried and True's Varnish Oil (available from Lee Valley), which is polymerized linseed oil combined with natural-resin varnish (modified pine sap). Once these finishes have cured and the mineral spirits dried off, the finishes are non-toxic; unless the manufacturer has added metal dryers or other nasty surprises (which may or may not be listed on the product).

The first photo shows four different oils finishes. Notice how thick the Tried and True is in comparison to the others, due to the higher proportion of varnish in the mix. The Liberon is very thin; you can see it's more quickly penetrating the wood than the other finishes. The linseed oil shows its characteristic yellow tone (which also shows in the Tried and True oil).

Applying Oil Finishes

Oil finishes are about the easiest to apply, which makes them so popular. Until you're familiar with the characteristics of a product, it's best if you follow the directions supplied by the manufacturer. Typically, here is what you do. First, make sure that you've finish sanded your wood. Now raise the grain by sponging the surface. Once it's dry, light sand with one grit higher than the last grit you used in preparing the wood. Flood the surface and let it stand for half an hour. If you notice any dry spots daub on more finish. Now wipe off the surface. Let it dry overnight, then sand with 220 or 320 paper, dust off, and apply another coat. Two or three coats are all you need. With your last coat wet-sand using 400 or 600 grit, then wipe the surface and buff it with a cloth. After letting the finish cure for a few days you can apply a wax coat. Notice that I never mentioned the dreaded "D" word: dust. Because oil finishes penetrate the wood so quickly, and dry very rapidly, you don't have to worry about dust contamination (or brush marks for that matter). Some people wet-sand the finish with each application of finish rather than wet-sanding only the final coat.

Why Use an Oil Finish

We've already discovered that oil finishes are pretty easy to apply, and the least toxic finishes. They are also very easy to maintain and repair: just wipe more oil on the surface, perhaps with a light wet-sanding or using steel wool if you've fine scratches to deal with. Unlike film finishes, that put a tactical and visual membrane between the wood surface and your hand, oil finishes give the most 'natural' look and feel. The wood feels like, well, wood. The downside is that you don't get a lot of protection. Generally, you won't want to use an oil finish on items that are going to be exposed to a lot of hard use, moisture, heat, or chemicals. So, while you wouldn't use it for a kitchen or coffee table top, it might just be the ticket for that special display shelf or cabinet, turned bowel, or hand carved sculpture.

Look and Feel

I applied five different oil finishes to a cherry and an oak board following the manufacturers instructions (Photo 2). The cherry absorbed the finishes much more quickly than the oak. The linseed and raw tung oils gave the darkest finishes. I found that the polymerized tung and blended oils gave pretty similar finishes, being pretty hard to tell apart from one another. These last three finishes looked and felt very nice.

Testing with Water

I was curious to see how these finishes would stand up against moisture. After letting the finishes cure for 3 days I placed a drop of water on the center of each finish and left it there for 60 minutes. No surprise that there was a water mark left on each sample. The water marks were much more visible on the cherry samples than on the oak samples (Photo 3). The most noticeable was on the raw tung oil finish, and the least noticeable was on the Tried and True Varnish Oil finish. While oil finishes do look good, they are not going to offer as much protection as a film finish.

In my next article I will cover Shellac and French Polishing. Au revoir!

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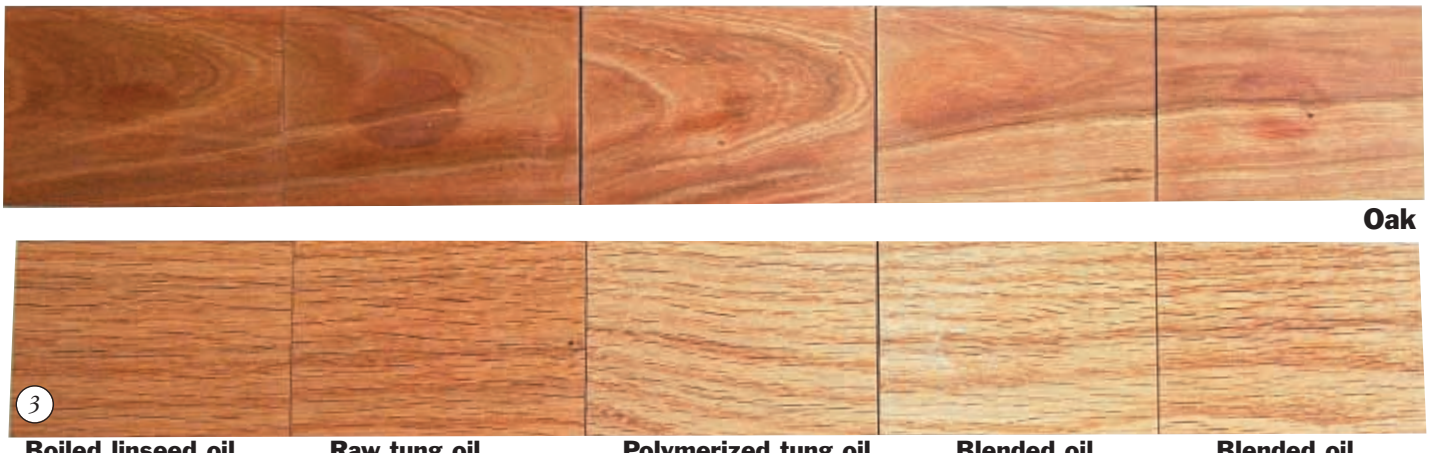
The water marks were much more visible on the cherry samples than on the oak samples.



Captive Ring Rattle

This form of turned rattle has been around, in various forms, for many years. It is used here to offer good spindle and skew practice. There are specific tools to make the rings, but traditionally these rings were cut with a skew. It is with a skew that I cut these rings.

The tools that are available to produce captive rings (such as on this rattle) come in a couple of different sizes and are called 'captive ring tools'. They are scrapers, so you have to remove or rough out some of the bulk, or waste wood, before you use them. The tool is simply half a concave bead. It is presented to the wood on the left side and rotated in, towards the bead being cut. Next it is turned over so that the open side of the concave bead of the tool faces the opposite direction that it was facing. To cut the bead in the wood from the other side, you will cut back and forth on both sides of the bead, until the ring is freed.

Start with a piece of wood that is suitable for the size of rattle. I started with a piece of 2"x 2". Mount the piece between the centres and set the rest as close as you can. Make sure that the piece is able to rotate freely and that the rest height is a little below the centre of the spindle.

With a roughing out gouge, turn the piece down to a cylinder as shown in (Photo 1).

Next, with a parting tool, define where the rings are to be cut. Use the parting tool to cut the inside of the ball on the rattle (Photo 2),

Shape the ball end with a spindle gouge (Photo 3).Lay out the rings with a pencil and part either side of them using a 1/8" parting tool.

Rough out the beads with a spindle gouge to make the rings (Photo 4). Then use the skew to undercut the rings. It is the long end of the skew, or the 'toe', that does the work. Material along the shaft of the rattle (the part where the rings spin freely) has to be reduced. This can be done with a skew or a spindle gouge.

Keep under-cutting the rings with the toe of the skew. Reduce the shaft and the ring will come free. An alternative tool to undercut these rings is a 9-in-1 tool (Photo 5). This tool is being used like a skew, although it is a lot narrower. When the rings are cut, shape the handle. All you need to do now is to sand it.

To sand the inside of the rings, a piece of abrasive paper is taped to the shaft and the ring is then held over the abrasive (Photo 6).

On this particular rattle, I cut three rings but you can cut as many as you like. For this particular project, I think that the best finish is no finish.

Try different sizes and vary the number of rings. It's a great way to practice using your skew.


1


2


3

4

5

This rattle is strictly a decorative piece. If it were a child's rattle, the ends would be large enough so that a child could not get it into their mouth. Please take this into consideration when proceeding with this decorative rattle.

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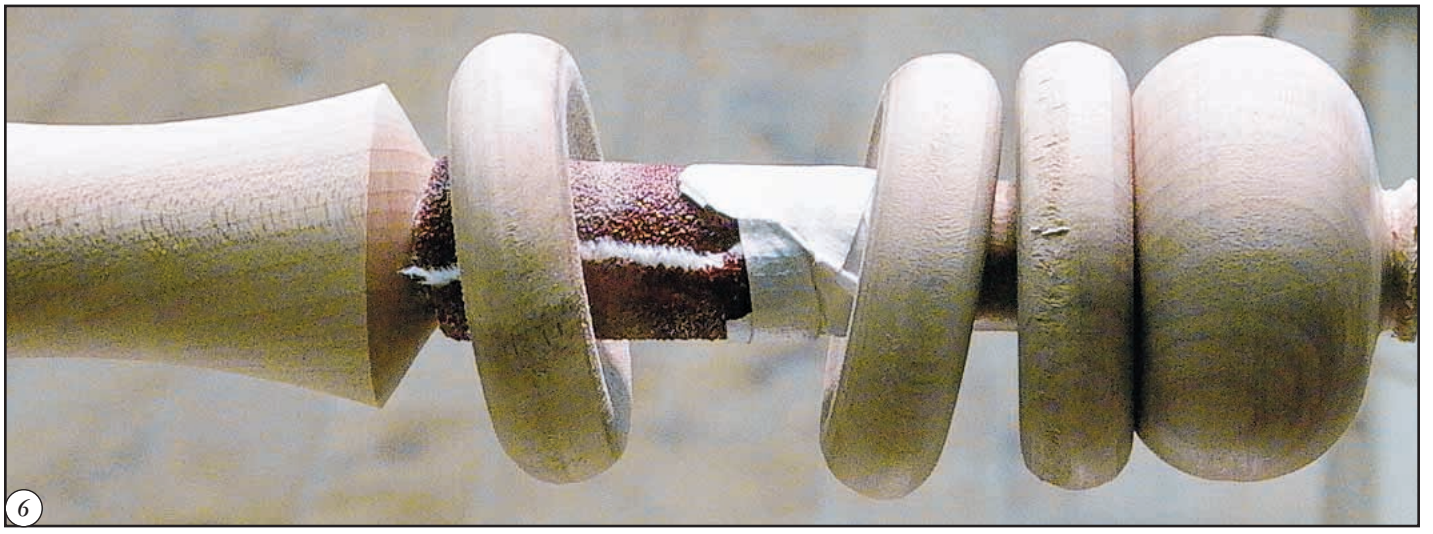

6

Ridgid Combo Kit

Last issue I told you about a whole new line of tools that will have features unheard of, until now, in the woodworking tool business. That new line is Ridgid and it will now be appearing in places like Home Depot. Look for the orange coloured corded and cordless portable hand tools.

Hammer Drill

The X2 18-volt cordless Hammer Drill has a high-speed gearbox that will drive through masonry or concrete at up to 25,600 blows per minute. The 2-speed transmission matches the power to the task. Add to that a 24-position clutch, a 360º auxiliary handle, a two sleeve ratcheting carbide chuck and a resilient overmold for comfort.

Reciprocating Saw

At 0 - 2,500 strokes per minute, the X2 Ridgid Reciprocating Saw is a cordless tool with a 1 3/16" stroke. The saw has a variable speed switch with a brake, a front pivoting shoe, soft overmold for comfort and tool-less blade changing.

Flashlight

To light up those dark corners, the X2 Ridgid flashlight features a 90º swivel head, a Xenon bulb and a focus ring to change the light pattern from flood to a direct spotlight.

Rapid Max

The Rapid Max charging system is what makes these tools stand out among its competitors. The Ridgid Rapid Max is a dual diagnostic battery charger that will charge two, 18-volt X2 batteries in just 30 minutes. You read that right, two battery packs in just 30 minutes. The Rapid Max will charge regular Ridgid battery packs in just 20 minutes.

Circular Saw

The X2, 6 1/2" Circular Saw comes equipped with a carbide tipped saw blade and will bevel-cut a 2x4 at 45º at a single pass. At 90º, the Ridgid X2 saw will cut to 2 1/8", has a spindle lock and a strong aluminum blade guard and shoe.

What's In The Kit

This kit consists of a center-handle hammer drill, reciprocating saw, a flashlight, 30 minute dual port charger, and a 6 1/2" circular saw, - all packed nicely into rugged, water resistant, canvas tool bag, with a hinged metal frame that holds the bag open for quick loading and unloading. The bag is large enough to carry a lot more than the four Ridgid, 18-volt cordless tools.

Check out the entire line of new Ridgid tools. This company is bound and determined to raise the bar on woodworking tools and their performance.

GRAHAM McCULLOCH is a woodworker and writer living in Halifax, Nova Scotia
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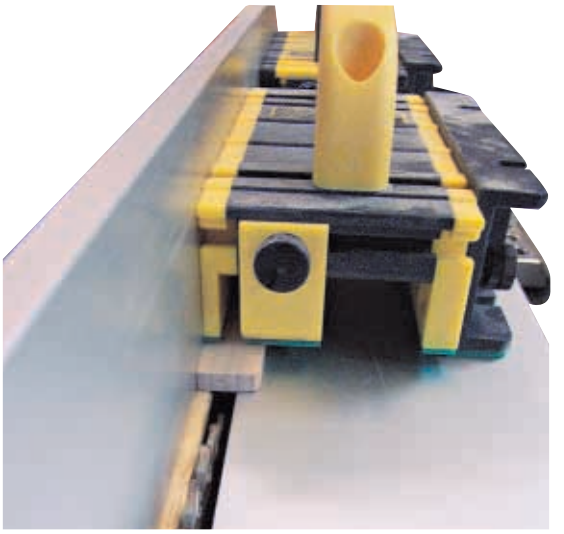
Wish List



GRR-RIPPER: The Adjustable Push Block System

Ripping stock on the table saw, particularly small dimension material, is one of the most likely ways to nip a bit of flesh, or worse. Some woodworkers opt to cobble together their own push sticks or blocks. Others purchase off the shelf items to facilitate this task. One of the drawbacks common to all of these accessories is that your hands are still exposed to the saw blade. Push sticks really don't hold stock all that securely, even when used in conjunction with a feather board.

Henry Wang, at Micro Jig Inc, has designed what is probably the safest and most versatile push block on the market: the GRR-Ripper. Henry refers to it as a 'push block system', and that's what it is. I've been using the GRR-Ripper for the past three months, and really like the product. One of the features that impressed me the most is its ability to feed both parts of a board parallel through the saw blade. You'll really appreciate this when ripping thin stock or veneer. As configured, it handles stock as narrow as 1/4" wide, and with a bit of improvisation, as narrow as 1/8". You can cut stock quickly with complete accuracy. All without the use of a feather board! Another superb feature of the GRR-Ripper is the non-slip sole. It's molded from thermal plastic elastomer and grips stock securely. Because of it's superb grip, you don't even have to use your table saw's splitter. You can also use the GRR-Ripper when profiling small stock on a table-mounted router. Your hands ride on top of the GRR-Ripper. That way they are completely protected from the blade. Notice how the blade runs in a channel between the two support arms. Both sides of the stock are held securely as you cut.

There is a bit of time required to adjust the GRR-Ripper when you use stock of different dimensions. But once you get the knack of adjusting the push block, it goes pretty smoothly. Besides, the significantly increased safety and security easily offsets any extra adjustment time. In fact I'd like to see use of the GRR-Ripper mandatory in all school wood shop programs.

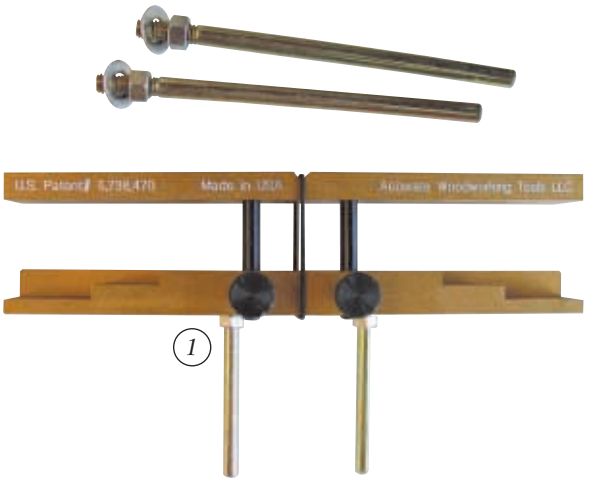
I would recommend getting two GRR-Rippers. That way you can use them in tandem for long stock. Durably made, the GRR-Ripper comes with a well-written assembly/instruction manual. That's important, because the unit comes disassembled. The web site is also very informative and shows how to get the most from this innovative, and indispensable shop accessory.

Getting your grip on the GRR-Ripper is easy (call 407-696-6695 or visit www.microjig.com) and affordable (approx. $65.). Warranted for one year.

ACCURATE GUIDE: Self-Centering Dados and Dovetails

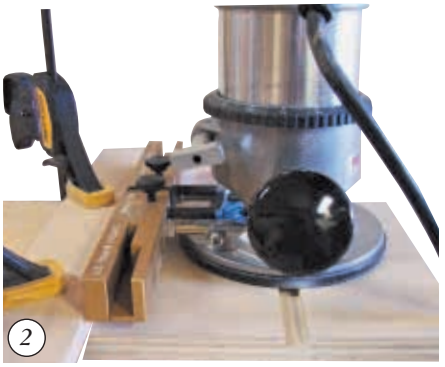
'Not another dado jig!' you may be thinking. Well, yes, because this one really works. The Accurate Guide makes it easy and effortless to rout precise dadoes and sliding dovetail slots. John La Prest, a woodworker, designed this guide. It allows an exact fit without having to make extra passes or measurements. That virtually eliminates the chances of making a mistake. We all know the hassles of cutting dadoes for plywood of variable thicknesses, or trying to mill stock to closely match a specific bit size.

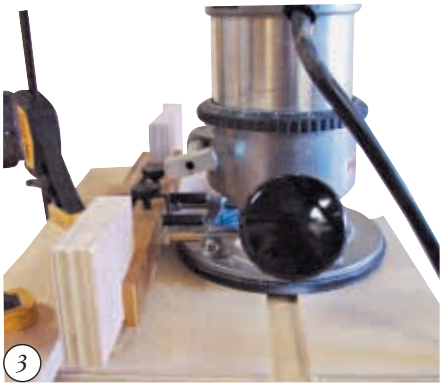
The guide is well machined (Photo 1) and easy to attach to your router. The guide comes with either a short or long set of arms, depending upon the router you're using. Unfortunately it only mounts to a few routers at this time. If you have a Bosch, Porter Cable, DeWalt, or Milwaukee router you're in luck. If not, check the web site or call. John will be adding others in the near future.

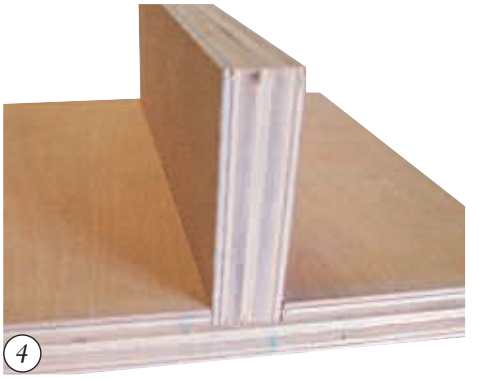


1

Using the Accurate Guide is enjoyably easy. It mounts to your router in seconds. Say you want to cut dadoes for a shelf. Attach the guide to your router, make sure the two arms of the guide are closed, then cut a test dado (Photo 2). Take a scrap piece of wood from the shelf, cut it in two and use those as shims in the guide. Now rout the same dado again (Photo 3). The results should be a perfect fit (Photo 4), which is the first dado I cut with the Accurate Guide). I've cut dozens of dados since, and haven't had to make any adjustments. However, if the resulting dado is too tight, then add a piece of paper to each shim. That's it. Two passes per slot, and you're done. A quick and easy procedure that always gives precise fitting joints. The method for dovetail slots is







similar. You can see on the body of the jig that there are two recessed pockets; use the narrower one for shelf thicknesses of 1/4" to 1/2", and the other for 1/2" to 1 1/2" shelves. You need either a 1/4" (for the small pocket) or 1/2" (large pocket) straight or spiral bit. I use spiral bits and find that they cut cleaner.

The Accurate Guide is the tool for anyone routing dadoes or sliding dovetails. It is priced very reasonably (approx. $78.), and warranted for life.

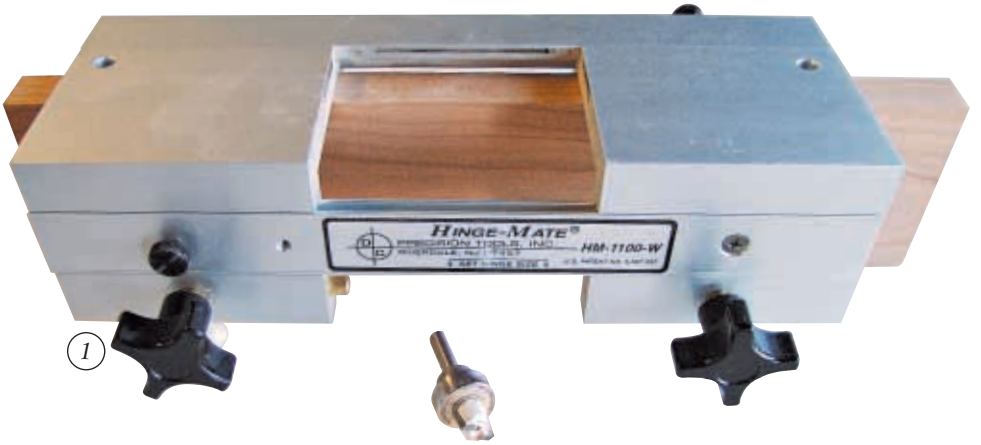
Visit www.accuratewoodtools.com or call 920-589-4010 for a list of dealers.

HINGE MATE:
Perfect Hinge Alignment

This item will be loved by anyone who installs a lot of hinges, particularly door hinges. The Hinge Mate II is a finely engineered precision hinge routing jig made of extruded aluminium (Photo 1).

The Hinge Mate clamps securely to cabinet face frames, doors, and door jambs. In fact, any stock from 1/2" to 1-3/4" thick. It handles butt hinges from 1" to 5" wide, and you can adjust the backset edge from 1/8" to 1/4" by means of a set of plastic shims. Once you've used the jig three or four times you'll find that it can be set up in a couple of minutes. I've been using my Makita trim router to rout the hinges, but you could probably use a mid size router as well.

To use the jig you simply insert your hinge into the bottom of the jig and set the opening of the work window (Photo 2). Insert the bit into your router, clamp your stock onto the jig, and set the depth of cut for the bit.



Now Go To It!

Cutting a hinge can't get any quicker or easier than this (Photo 3-4). Of course you still have to square the corners by hand. If you only occasionally cut hinges, then this is a bit of a luxury. If you do a lot of cabinetry, or install doors for a living, then you'll really save a lot of time using the Hinge Mate.

The Hinge Mate includes a sturdy carrying case, 1/4" radius carbide router bit with a 1/4" shank, plastic shims for adjusting the backset, and an instruction guide. Available from Lee Valley for $179: 800-267-8767 or www.leevalley.com.

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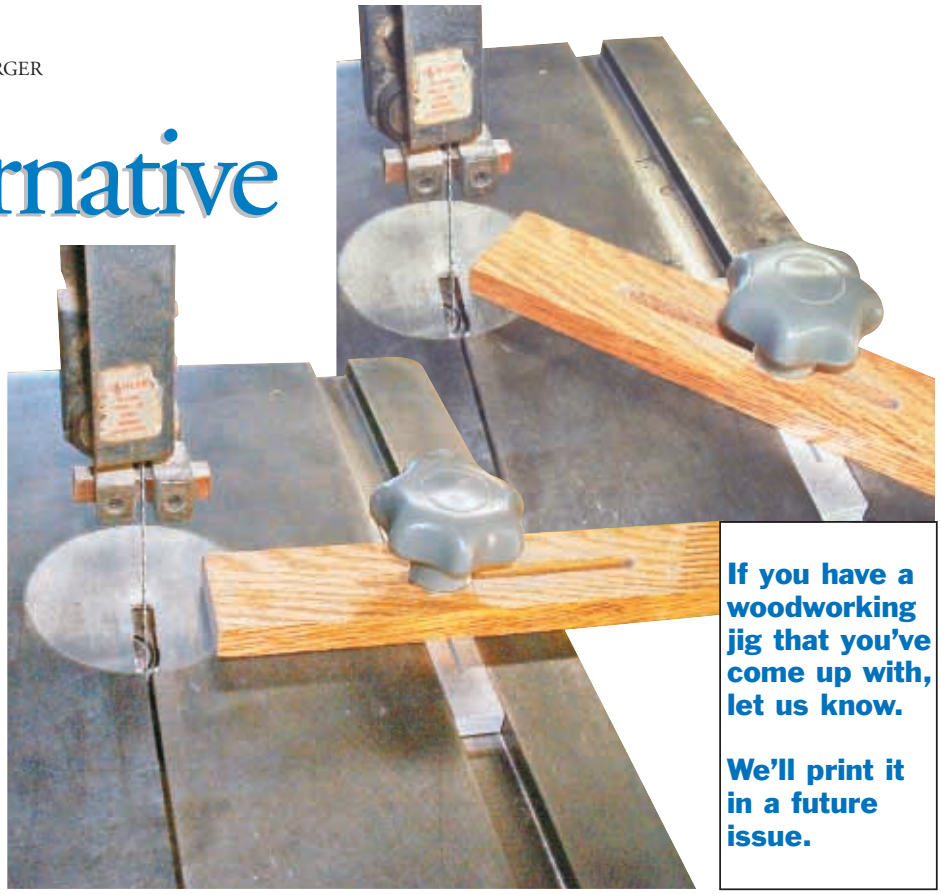
woodjig By Wally Scheenburger

Fence Alternative



One day, I was trying to follow a line with my bandsaw, and I wasn't having a lot of luck. I stopped and stood there, wishing I had a fence. I looked around hoping to see something that would help me… I'd heard that "necessity is the mother of invention", so I continued to look around.

I looked back and forth and all around my workshop, and then I saw it: a feather board sitting on a rack.

I just flipped it over and set it to my blade. One minute it was a featherboard, the next it was a bandsaw fence. Now when I resaw my stock, I can successfully follow that line.

WALLY SCHNEEBERGER is a renovations carpenter in Calgary, Alberta wallygs@hotmail.com

If you have a woodworking jig that you've come up with, let us know.

We'll print it in a future issue.

■ continued from page 3

website). As a beginner hobbyist woodworker, I have found the magazine and forum to be very informative and educational. I keep regular tabs on the forum (for both personal and professional reasons) and I read the magazine from cover to cover every issue. Keep up the great work!
Norm Frampton
Inside Sales & Marketing General International

Norm
My pleasure! I really appreciate your involvement and contributions to our woodworking forum. I know it means a lot to the woodworkers who use the forum that companies such as General are listening to them, and responding to their needs.
Paul

Good Afternoon Paul
Thanks for your magazine and website. I have used both the magazine & the free classified section on your website, to source out lumber in my area. I have also used your woodworking forum to find answers to some of the questions I have. As an example, a couple of years ago I found an old Shelton handplane at a yard sale for a couple of dollars. There were some parts missing from this plane. Having never heard of this brand of handplane, I posed a question to anyone knowing where I could find the missing parts. Within a couple of days I had access to more parts than I could have ever used!
Keith
Cambridge, ON

Keith
I'm glad that you are using the free classified section of our website. A lot of woodworkers have told me that they have that page bookmarked, and check it everyday so that they don't miss any bargains. As for the forum, I still can't believe the wealth of knowledge, insight and humour that goes on there. Whenever a woodworker calls or emails with a woodworking related question I always send them to the forum. Then, I delight in seeing how well the question is answered by avid (and helpful) woodworkers across Canada. It really is a fun way to learn.
Paul

Dear Paul
I noticed your pattern for the folding beach chair in your June/July '03 issue. One rainy afternoon I was supposed to throw out the old hockey sticks that were in the basement. The shafts were still good and I couldn't see letting all of them go to waste, so I made them into this chair.
I am Canadian after all.
Rodger Mordue
Princeton, ON
mordue@rogers.com

Canadian Woodworking Competition 2003

The 2003 Canadian Woodworking Competition has been judged, and some of the 1st prize pieces are shown below. For a complete listing of all winners, their pieces, and prizes go to: www.CanadianWoodworking.com

Prizes include: **Delta** 36-255L Twin Laser 12" Compound Mitre Saws; **Porter-Cable** 9826 19.2 volt Cordless Drill/Drivers, **Lee Valley Tools** gift certificates, **Robert Sorby** carving tool sets, **Wizard** Metal Detectors, Canadian Woodworking Magazine subscriptions, and exclusively designed trophies. All in all, almost $15,000.00 in prizes!

The publishers of Canadian Woodworking Magazine and judges Bill Luther (Busy Bee Tools), Don Gimby (Lee Valley Tools) and Graham McCulloch (ShortCuts) congratulate all of the entrants. Our decisions were tough as the entries were superb.

Watch for details on our 2004 Canadian Woodworking Competition.

Bowl Turning 1st - Jaimie Wolverton

Interior Furniture 1st - Wally Power

Carving Misc. 1st - Jean Claude Caron

Exterior Furniture 1st - Jeff Norris

Novice 1st - Brian Knodel

Scroll Saw Intarsia 1st - David Tarr

Carving Birds 1st - Michael Trask

Carving Wildlife 1st - Dan MacLean

Fretwork 1st - Don Nicholas

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