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OCTOBER/NOVEMBER 2012
ISSUE #80

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Cover photo by: Nathalie Vaillant

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Education

I became interested in woodworking in my early teens. My father had some very basic tools in our basement and I enjoyed using them. Though my ideas were grand, my first projects were ugly creations that even my mother couldn't love. After taking a few classes in high school, my skills started to improve, but there was still a lot I didn't know, and it showed. I attended Conestoga College's three-year Woodworking Engineering Technology course, learned some of the basics, and my projects improved immediately and drastically.

I was no longer frustrated with each and every step of the building process because I had a wider breadth of knowledge. Formal training gave me crucial practical skills and the confidence to experiment and continue learning on my own. When I graduated, I thought I knew pretty much everything. I quickly learned my education was far from over. Since graduating, and I've pursued a more self-directed style of learning. Curiosity is my guide, and it has led me to books, videos, classes, meetings with mentors and the Internet. When vacuum forming interested me, I immersed myself in all I could find. When I wanted to learn more about marquetry, my browser's history file was full of sites I'd visited. My wife can attest to my passion for learning; my bedside table (okay, and the surrounding floor) is inundated with books about woodworking.

One of the main things that keeps me interested in building furniture is learning new techniques and pushing my boundaries as a furniture maker. I'm sure many of you are the same. That's why this issue is partially dedicated to learning woodworking.

In addition to the education-themed articles, you'll find a wide range of other topics: a list of the best materials for exterior use, how to build a pie safe, a Finer Details column on mitred dovetails, how to make a door harp, a primer on metal drawer slides and, as always, a Woodchuckle column. Speaking of this issue's Woodchuckle, I asked Don to write something on the topic of education for this special issue, and he was happy to oblige. Please continue to read past the first few sentences of Don's column – don't throw it down in anger. Don taught woodworking classes for many years and has a surprising amount of respect for the teaching profession, as well as insight into what it means to be a teacher.

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Issue #80

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CANADIAN WOODWORKING & HOME IMPROVEMENT
One-year subscription (6 issues) $27.95
Single-copy price: $5.95

H.S.T. Reg. #878257302 ISSN #1497-0023
Publications Mail Agreement No. 40035186
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We acknowledge the financial support of the Government of Canada through the Canada Periodical Fund (CPF) of the Department of Canadian Heritage toward our periodical.

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readers' letters

Sorry to be a safety nanny…

…but the chisel photo on pg. 20 of the Aug/Sept '12 issue immediately caught my attention. Ted is a very skilled guy, and is probably taking a super thin slice. Having his hand in-line with the blade is probably okay, but a lot of folks won't realize that. There is a beautiful workbench in the background of that photo. The dovetails in question could be shaved with a five-second position of the board on the bench with a holdfast.

Jonathan C.

Jonathan,
The technique shown is completely safe. You do not use your arms, but rather just your fingers, to manipulate the chisel. Your thumb, on the end of the dovetail, is the stop. If you use your arm, then you will have a problem. The technique is similar to rubbing your thumb and forefinger back and forth.
—Ted Brown

Hello Paul,

I just received my Aug/Sept'12 magazine, and I would like to thank you for the wonderful new product listing you did for us here at Toronto Tool. A number of people have already commented on the article, and we have had a number of inquiries from customers. One customer in particular is going to start subscribing to your magazine, having found out about such new woodworking products – especially from Canada.

Thanks, and keep up the great work.

Roger Hamblen
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woodworkers' gallery

Rocking Chair
by Andrew Coholic

Andrew Coholic, from Timmins, Ont., built this black walnut rocking chair as a way to show potential clients what can be done with wood. The plans for this Sam Maloof-inspired rocker were from a Charles Brock package, which he picked up from Lee Valley. Andrew owns a cabinet-making shop and rarely gets to do this kind of work. "For me, making a chair like this, and having to shape everything by hand, gives me confidence that I can still use my hand tools and shape pieces free-hand," Andrew said of the satisfying 60-hour process to build the chair. All that handwork did pose some challenges though. "Physically it's hard on your hands. After four days of using rasps and hand sanding my fingers were pretty raw." Now that the rocker is complete, Coholic will hopefully have enough time to relax and let his hands heal.

Show your work to the world!
Visit **canadianwoodworking.com** and join our forum!

bestbuild

Check out the Woodworking section of our forum for our latest "Best Build" thread – a tilt-top hall table. This month's winner, Jim Thompson, receives a **dual marking gauge** from **Lee Valley**.

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LAGUNA

14" BANDSAW AWARDS:

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- **2003** Wood Magazine features LT 14 in Idea Shop#5
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A&M Wood Specialties Celebrates 40 Years

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Andrew, along with fellow concerned woodworkers, helped create WARP – Woodworkers Alliance for Rainforest Protection – in the mid-1980s. WARP was one of the catalysts for the founding of the FSC; the leading organization in the world for sound sustainable forest management. In 2007, A&M was purchased by the UCS Forest Group; North America's premier distributor of specialty products to the architectural woodworking industry.

To celebrate its 40th anniversary, A&M will be hosting a number of events throughout the year. It will kick things off on October 13th and 14th with a Lie-Nielsen hand-tool event, a visit from Konrad Sauer and much more. Check out A&M's website for event details – **www.forloversofwood.com**.

Veritas **Bench Chisels**

For the past decade Lee Valley's bench chisels had all the charm you'd expect from tools in an auto repair bay. Maybe it was the yellow and black butyrate handles …

The new Veritas chisels feature kiln-baked maple handles that are luxuriously silky to the touch, with a subtle flat giving a tactile clue to blade position. Custom-turned ferrules seat against the blade and tighten the blade-handle connection through use.

The O1 tool steel blades were designed by someone who actually uses chisels. Their faces are lapped flat to ±0.0005", saving you hours of grunt work, and their straight parallel sides with true bevelled edges permit working into tight recesses.

The ½", ¾" and 1" are ground with a 25° primary bevel, while the ¼" and ⅛" are ground at 30° – a smart feature that helps prevent the edges of the smaller chisels from crumpling during hard use. A 2° micro-bevel on the blades means they're ready to go after only a minute or so of honing.

The mass of the chisels and straight-sided blades make them ideal for mortising, yet their excellent balance means they don't feel cumbersome during fine work. Their edges held up well during some heavy chopping yet were a breeze to hone. My completely subjective evaluation: 9.7 out of 10. A great set of chisels. **www.leevalley.com**

— Bill Perry

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KMS Wood Show COQUITLAM
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KMS Tools and Equipment
110 Woolridge St., Coquitlam, BC
www.kmstools.com

KMS Wood Show EDMONTON
October 25, 26, 27, 2012
KMS Tools and Equipment
14520 111 Avenue NW,
Edmonton, AB
www.kmstools.com

Moncton Woodworking Show
November 16, 17, 18, 2012
The Coliseum, 377 Killam Drive
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www.monctonwoodshow.ca

For more woodworking events: www.CanadianWoodworking.com
List your club and event FREE.

Student Work from Across Canada

Thousands of students attend a woodworking class or school each year. Some have no experience whatsoever before enrolling, while others are quite familiar with the tools and techniques used to create furniture. Here is a small taste of the kind of work they are completing while studying.

BY ROB BROWN

Jeff Freund from Conestoga College – "Walnut Sideboard"

Black walnut

"I was inspired by a design by Paul Harrell. I wanted a project that would showcase my skills and involved curved elements, veneering and traditional joinery." (Photo by Antonia Goga)

Peter Freeman (Roberts Creek, BC), from Inside Passage – "Homage"

Catalpa, myrtle, gary oak, locus, horse chestnut, brass, shellac and wax

(Photo by Ingeborg Suzanne)

Marcel Daigneault from Conestoga College –"Liquor Cabinet"

Black walnut, maple, quilted maple veneer, Danish oil and bee's wax

"I was inspired by prohibition style liquor cabinets where the cabinet was used to conceal the contents inside. Using Michael Fortune's laminated door technique, the doors were created using a form in the vacuum press. The cabinet is finished with Danish oil and bee's wax." (Photo by Antonia Goga)

Joshua Edwards (London, Ont.) from Inside Passage – "JK Silverchatull"

Spalted maple, birdseye and curly maple, basswood, shellac and wax

(Photo by Ingeborg Suzanne)

Melissa Moure Evans (Smithers, BC) from Inside Passage – "Vidars Chair"

Kwila, oil finish and Danish cord

(Photo by Ingeborg Suzanne)

Roch Laviolette (Westport, Ont.) from Rosewood Studio – "Round Sabre Leg Table"

Walnut, European pear and primavera.

(Photo by Ron Barter)

Tomas Rojcik – "Table and Chair".

Hard Maple, rapid-prototyped acrylic joints, water based lacquer.

(Photo by Tomas Rojcik)

Chris Charuk – "Rocking Chair"

Hard Maple, water based lacquer

(Photo by Chris Charuk)

Roberto Telo Sato (Toronto, Ont.) from Rosewood Studio – "Nightstand with Drawer"

Cherry and birdseye maple.

(Photo by Ron Barter)

ROB BROWN
rbrown@canadianwoodworking.com

Make a Door Harp

Provide a musical welcome for you and your guests.

BY MARIAN HOOD

There seems to be some debate about where door harps originated: some sources say China, some say Sweden and some say Finland. Nonetheless, the lore surrounding the door harp's purpose is consistent. In addition to welcoming visitors, the door harp supposedly draws positive energy in and sends negative energy out. The beauty of this project is that you can use hand tools, woodworking machines or a combination of the two, depending on your skills and interests.

A door harp can be any shape. I create designs by cutting shapes from paper. The size of the harp is often determined by the stock I have on hand. This harp is 11" high and 8" wide. The harp should be 1" to 1 ½" thick when completed in order to securely hold the tuning pins. Once you've decided on the shape, you'll need to cut two pieces – a thicker piece for the front and a thinner piece, usually about ⅛", for the back. The back can be made from Baltic birch ply, or you can use a bandsaw to obtain ⅛" stock. I use a scroll saw to cut the initial shape but a bandsaw or a coping saw would also do the job.

Next, drill out the sound chamber using the largest Forstner bit you have. I used a 3" bit. Work from the back of the thicker piece taking care to use the slowest speed on the drill press. Do not drill all the way through. Set the depth stop so the center spur barely cuts through the front face. Using the same center point, turn the blank over and drill a smaller hole from the face side. Choose the size of this sound hole to suit the design of your harp. Place a block of scrap wood in the sound chamber to reduce tear-out as you drill. Once the sound chamber and sound hole are complete glue the face and back together. Once the glue is dry, use a router or spindle sander to flush up the top and bottom, then round over the front edge on the router table or with

The Sound Chamber – Once the harp has been cut to shape, drill out the sound chamber from the back side. Drill just far enough that the center spur slightly protrudes through to the front. Next, flip the harp over and drill the smaller sound hole, centred on the point where the spur came through.

Photos by Marian Hood

Add a Back – Once the two holes are drilled, adhere a thin plywood or solid back panel to the back of the harp.

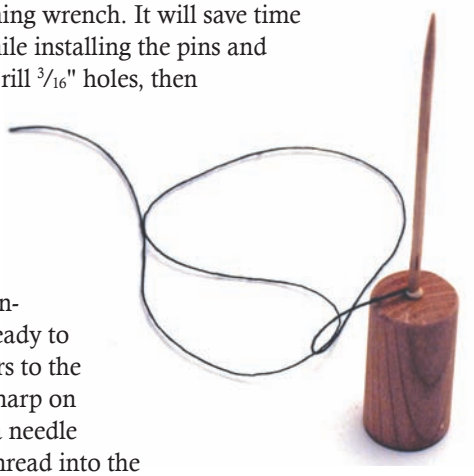
Ease the Edges – Using a router table equipped with a ¼" round-over bit, ease the front edge of the door harp. You could also use some hand tools for this small task.

your block plane and rasp. Find the balance point for the harp and drill a hole in the back that angles upward. This hole fits over a screw driven into the door.

The hanger needs to be long enough so that the hammers don't hit each other when the door moves. Any contrasting wood will do. Cut it to a pleasing shape and glue the hanger to the face of the harp. When the glue is dry, apply several coats of your favourite finish. It's much easier to finish it now before you install the hammers and strings.

Make a dowel section for the hammers either on the lathe or with a block plane, then cut it into lengths for the hammers and drill a 1/16" hole in the center of each one. Put a piece of thread into the hole and secure it with a round toothpick rolled in wood glue. Snip the toothpick off close to the surface and mushroom the end. Drill holes in the hanger to accept the other end of the thread.

Putting the strings on requires some specialized hardware. Zither tuning pins and piano wire are available from meiselwoodhobby.com/Home.aspx. If you discover other sources, please let me know. I'd also recommend purchasing the tuning wrench. It will save time and frustration while installing the pins and tuning the harp. Drill 3/16" holes, then install the pins. Cut the strings over-long so that there are at least three turns to anchor the string before you start tuning. Now you're ready to attach the hammers to the hanger. Hang the harp on the wall then use a needle to insert the first thread into the holes in the hanger. Adjust the length of each thread so that the middle of the hammer hits the middle of the string. This way the hammer will hit only one string. Secure the thread with a toothpick and glue. Repeat for the other hammers.



Threading a Hammer – Drill a small hole into the dowel, put the thread into the hole, add some glue then tap a round toothpick into the hole. Once the glue is dry, cut the protruding section of toothpick off. The same process fixes the other end of the string to the hanger.

Install the strings and tune them so they sound good to you. After a couple of days the pitch will sag as the strings stretch so you'll have to adjust the tuning. Enjoy the results of your work each time someone comes through the door.

Install the Tuning Pins – The pins are installed into 3/16" holes in the face of the harp. Using a special tuning wrench makes the job much easier.

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When not in her workshop, Marian enjoys singing, taking photos, walking half-marathons, riding a tandem bicycle with her husband and trying to teach their parrot the difference between food and fingers.

Materials for the Great Outdoors

Next time you are planning a project for the outdoors, think beyond cedar and pressure-treated as there are many other materials that work great outside. They all have their pros and cons, so here's a primer.

BY RYAN SHERVILL

Outdoor Materials

Whenever we start thinking about an outdoor project, from decks to furniture, our thoughts tend to turn to the traditional lumber choices of cedar and pressure-treated lumber. The truth is that there are many alternatives to these choices that can not only offer you more flexibility in your outdoor designs, but also can boost the quality and longevity of your projects. In this article we are going to take a look at some of the traditional wood and "wood-like" choices, as well as a few you may not have considered before. I've stuck with materials that can be worked with regular woodworking tools, but in your project planning you should also think about some other alternatives that work great outdoors such as concrete, stone, glass and tiles.

Wood

Pressure-treated: This old standby, often the wood of choice for deck work, is softwood that has been chemically treated to resist rot and insect damage. While it is a functional and inexpensive choice for outdoor projects, many people are unaware that the pressure-treated lumber available today is much different than that of a decade ago and requires special treatment. Once treated with toxic chemicals such as arsenic, environmental concerns have resulted in a new breed of copper treated lumber. While less toxic than its predecessors, it is extremely hard on some metal fasteners, with stainless steel being the fastener of choice for longevity. Also, you'll want to ensure that no aluminum comes in contact with this new pressure treated lumber, as it corrodes extremely quickly. For flashing and hardware, stick with painted steel.

Photos by Rob Brown, Lead Photo by Azek

Reasonably Priced – Along with cedar, pressure treated lumber is a very common option for outdoor usage. It does have one large advantage over cedar though; it's generally much cheaper.

Old Standard – White oak has been used outdoors for centuries. It doesn't rot easily, but does have a tendency to darken quite a bit when moisture reacts with it. Keeping it finished properly goes a long way to counteracting that. (Photo by A&M Wood Specialty)

Red/white cedar: Probably the most popular choice for outdoor furniture. At one time this attractive and rot-resistant wood was used to build entire decks, but as costs escalated, most builders now choose a compromise for decks. At a cost two to three times that of pressure-treated, it is quite often used in conjunction with its green-coloured cousin, being used only where it's visible, such as for decking and railings over pressure-treated framing. Cedar is strong enough to build most outdoor furniture, and if left unfinished fades to a classic silver-gray colour.

The hard alternatives: Just because it's used outdoors doesn't mean it has to be softwood. **White oak**, for example, has a long history of outdoor use … in fact, it was often chosen to build the wooden sailing ships and piers of old. Patio furniture in quarter-sawn white oak would look fantastic and last for years. Mission-style anyone?

Ipe is a relative newcomer to the scene that is quickly gaining popularity with woodworkers and carpenters alike. Also referred to as "Brazilian walnut", this attractive teak lookalike is heavy, dense, strong, and virtually indestructible (it even carries a US fire rating equal to concrete!). Mainly imported for decking, it makes an excellent mid-price choice for outdoor furniture projects as well. Be forewarned though, it will require pre-drilling for any fasteners and will have a tendency to dull your tools. On the upside, because it's naturally oily and very hard, it requires no added finishes to protect it, and a light sanding and a rinse every few years is the only maintenance required to keep it looking great.

Exotics and accents: There are other hardwoods that work great outdoors, but due to cost are often used for smaller projects or as an accent on larger ones. These woods include purple heart, most mahogany, teak, blood wood, and jatoba (Brazilian cherry). Picking one of these exotics to add to your outdoor projects can add visual flair and really make your project stand out.

Great Outdoor Accents – Though they can be pricey, mahogany (left), purple heart (centre) and jatoba (right) stand up to the elements well. Along with a few other woods their bold colour make for wonderful accents.

P.T. Ply – Like its solid wood cousin, pressure treated plywood is great for areas that might see some moisture, but aren't visible. It comes in a number of thicknesses.

Sheet goods

Believe it or not, there are sheet goods specifically made for use in outdoor projects. While these may not be

commonly found at the big box stores, most lumber yards will either stock them or be able to order them in for you.

Pressure-treated plywood: This is standard spruce plywood that has received the same chemical treatment as pressure-treated lumber to help it last as long as possible outdoors. Available in 4x8 sheets and in common thicknesses, it's an ideal choice for outdoor construction, especially for applications where it won't be seen, such as shed floors.

Waterproof MDF: Yup, the sheet material that we love to hate is available in a waterproof version. It looks and works very similarly to regular MDF, but uses waterproof resins to allow it to be used in the great outdoors.

MDO: Medium Density Overlay is a "sandwich" consisting of two thin sheets of waterproof MDF wrapped around a core of plywood. Originally developed for making outdoor signs, it works great for any application where you will be painting the final project.

Azek/PVC Sheeting. This stuff is the final word on longevity for any outdoor project. Available in thicknesses from $^3/_8$" to 1" and in sizes up to 4' x 20'. The material works very much like wood and can be routed or cut with standard woodworking tools. Like wood, it can be glued, screwed or nailed into place. And because it is 100 percent plastic, there is no wood fibre to rot, fade or discolour.

Signboard, Etc. – This piece of medium density overlay consists of one piece of 7-ply plywood sandwiched between two very thin layers of waterproof MDF. Some manufacturers produce MDO with MDF face and back layers of different thickness.

Maintenance-free – Azek is available in many different trim options, so you can match the trim in your home to your deck. It will last for years without any maintenance whatsoever. (Photo by Azek)

Plastic/composite decking.

I've noticed that regardless of what the decking is made from, if it isn't solid wood many people call it "composite decking". It's important to understand, however, that **composite** is a very specific type of decking that is composed of plastics and wood fibre or sawdust, hence the term "composite". There are pure **plastic and PVC** selections available as well, and the non-composites tend to be my choice for most projects, although in the past I have installed pretty much every type of manufactured decking.

Off the top of my head there's polyethylene, polypropylene, PVC, hollow, solid, wrapped, etc., and to get into the pros and cons of each type would take an entire article in itself, so here we'll just look at how you can use it.

Obviously decks come to mind, but I've found it generally works very well for pretty much any woodworking project

Composite Materials – Composites are made partially from wood and partially from a synthetic product. There are many companies that produce composite boards, and all are slightly different. (Photo by Trex Company)

where you would normally use 5/4 cedar or PT decking. I've used it for docks, utility trailer sides and decking, table tops, rural trash can boxes and even Muskoka chairs and benches. The uses are pretty much endless, and there's the added benefit of having your completed projects look as good in five years as they did the day you built them, and with virtually no maintenance.

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When he's not making sawdust, you'll find award-winning writer and woodworking pro Ryan Shervill enjoying the woods and waters surrounding his Georgian Bay home. He'll call it "research", but we know he's just avoiding the computer.

A New Tool for your Toolbox—
THE INTERNET

If you're not familiar with what is available, woodworking wise, on the Internet, you will be astounded. There is so much to learn, and the nicest part is that it's all just a click away.

Photo by: Rob Brown

BY CYNTHIA WHITE

Woodworking is a lifelong learning process. Before the advent of the Internet, woodworkers learned from mentors or trade school and experience. Now, every kind of woodworking information is available online, no matter what your interest or skill level is. Here are some of those Internet resources.

Forums

Internet Forums are discussion groups or online bulletin boards. They are divided into headings, and someone starts a subject under a certain heading, called a "thread"; then others chime in with their comments or advice.

The great thing about a forum is that it's a way to connect or network with other woodworkers that you might never run across otherwise, and you can do it as much or as little as you want, any time of the day or night. You can ask questions about a project you're working on, answer others' questions, inquire about tools, see others' projects for inspiration, and buy or sell things in their classified sections. Best of all (in my view), a good forum can be an endless source of humour and entertainment.

In order to say something on the forum, and sometimes to see all the photographs, you have to "register". That means you have to give a name, a password, and an email address. Some forums let you have any kind of nickname (like "Nailbender"); others ask for a real name. Some people give a fake name. Personally, I've never felt compelled to use a fake name instead of my real one. What's to be afraid of? Someone might learn that I like tung oil better than BLO?

Amazingly, forums often foster friendships. I know of one gentleman who makes a trip every year called the "Tour de Wood" when he spends two weeks travelling and visiting different woodworkers from his forum. On one forum, members from a certain area meet for lunch once a month.

Because there are so many woodworking forums, I've limited myself here to a few of the well-known ones. There are ones that are general, specific (just for carving, for example), sponsored and run by different entities (by a tool manufacturer), local to certain geographic areas, busy, quiet, funny and/or serious, and most also have distinct personalities. It's up to you, the reader, to choose what kind of atmosphere you want to be a part of.

Canadian Woodworking

www.forum.canadianwoodworking.com/forum.php

The one associated with this magazine. Almost all members are Canadian so it's great for talking about Canadian-specific issues/prices/resources.

Sawmill Creek

www.sawmillcreek.org/forum.php

Well-known and very busy forum, but not as politically correct as some.

Wood Whisperer

www.woodtalkonline.com/

The forum associated with Marc Spagnuolo, The Wood Whisperer. Moderately busy, and very polite.

Family Woodworking

www.familywoodworking.org/forums/index.php

A moderately busy, very warm and friendly forum. Democratically run with elected moderators.

Lumber Jocks

www.lumberjocks.com/forums

A very busy, friendly forum that is part of a vast website. "LJ" is run on a different software platform so it has a different "feel" to it.

Blogs

A blog, coined from "web log", is like an online diary. If you want to read woodworking blogs, there are ones for every taste, and too many to count.

Below are a few particularly good and well-known ones:

www.renaissancewoodworker.com/blog/
www.tomfidgen.blogspot.ca/
www.villagecarpenter.blogspot.com/
www.beautifulwood.co.uk/blog/
www.robertkarl.org/woodworkingblog/
www.thecarpentryway.blogspot.com/
www.flairwoodworks.com/blog/
www.victesolin.ca/
www.thewoodbug.wordpress.com/
www.grantmcmillan.wordpress.com/
www.woodcanuck.wordpress.com
www.sauerandsteiner.blogspot.ca/
www.woodgears.ca/
www.mokajadewoodstudio.com/
www.atelierdubricoleur.wordpress.com/
www.anterosurbanwooddesigns.com/
www.dorsetcustomfurniture.blogspot.ca

Online Woodworking Courses (Paid)

Believe it or not, there are online woodworking courses, and they're better than you would expect.

Obviously, in-class instruction would be better, but for some of us that's just not possible. I was able to find five paid courses. Although at first glance they may appear expensive, try comparing an online course to a real workshop costing several thousand dollars per week.

Hand Tool School

www.woodworkinghandtoolschool.com/

The Hand Tool School is the work of Shannon Rogers, The Renaissance Woodworker. It costs US$150/year. Shannon's course videos not only show project builds but also concentrate on mastering hand tool techniques. Members have easy access to Shannon.

Charles Neil

www.cn-woodworking.com/join-mastering-woodworking/

Charles Neil offers a paid subscription to a highly regarded weekly video "show". The cost is US$21.95/month. Charles gives access to ask him questions directly and to buy his previous shows on DVD as well as an internal members-only forum.

Chris Pye's Woodcarving Workshop

woodcarvingworkshops.tv/home

Chris is an internationally known wood carver who has authored several books. He lives in the UK. His course costs £66/year or CAD107/year.

Rob Cosman's Online Hand Tool Workshop

www.robcosman.memberlodge.com/

Rob's course has two half-hour taped sessions per week about a project build. There is a members-only forum and he tapes additional sessions as needed to answer questions. The cost is US$199.95/year.

Canadian Woodworking & Home Improvement Magazine and Rob Cosman have teamed up to offer readers a free month in one of Rob's virtual workshops, hand tool or power tool. Go to www.robsworkshop.com and under the subscribe button at the bottom of the list, choose either the hand or power tool Woodriver/Canadian Woodworking Magazine offerings to start enjoying this limited time offer.

Wood Whisperer Guild

www.thewoodwhisperer.com/guild/

Marc Spagnuolo's woodworking course costs US$199/year and significantly less for renewal. He does three projects per year, for which he does several very detailed project build videos. There is a discussion forum for guild members only and the ability to speak directly with Marc. After paying, you have access to all previous project plans and videos.

Videos

If you want to watch free woodworking videos there are tons of them, and they are everywhere: in people's blogs, manufacturers' websites, embedded in forums and on YouTube.

The easiest way to find a video is to go to YouTube (www.youtube.com). At the top of the first page, type in what you want to watch, and you'll see lots of choices. For example, I've looked up (and watched) videos on "hand-cut dovetails" and "table saw safety". If you find a video that you particularly like, you can click on the name of the person who uploaded the video and go to his (or her) "channel" where you'll see a list of all of his (or her) videos.

There is one other source of videos that I want to mention. There's a blog with (free) videos called "Blue Collar Woodworking with Stumpy Nubs" (www.stumpynubs.blogspot.com). They're good – funny, down-to-earth, and designed for the Average Joe (or Jane) who is trying to crank projects out of a small workshop.

Podcasts are a type of audio show which are put out in episodes. You can subscribe to them or simply watch one while you're online. There are many woodworking and woodworking-related podcasts available.

Cynthia spent her summer building a garden shed, repairing her fence, nursing her shop dog that was severely injured, and waving sharp chisels in the air to keep marauding deer away from her fruit trees.

CYNTHIA WHITE
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Mitred-Through Dovetails

A twist on the original, mitred-through dovetails allow you to shape an edge without interruption. They are also strong and beautiful.

BY JACQUES BREAU

When starting a new box, I try to use a technique that will both expand my skills and give the project a bit of interest. In this case, I wanted to build a box with a sliding lid, and I wanted the top of the sides to remain intact. This meant that the lid would have to slide through the sides of the box. Designing the sliding lid in this way liberated me to profile the top edges of the sides on an angle. This led me to the mitred dovetail.

Mitered dovetails have roughly the same mechanical strength as a regular dovetail, but differ in one important aspect; they allow an edge to be shaped without interruption.

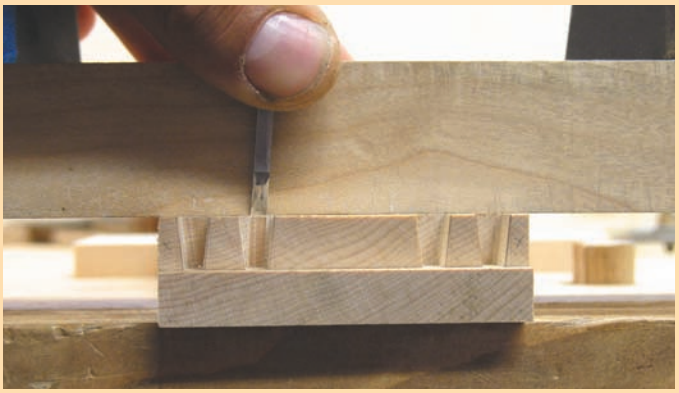
I prepared the stock in such a way that the grain flows all the way around the four sides. I rough-milled the maple, let it settle, and then milled to my final dimension. Before starting to work on the joint, I pre-surfaced the inside faces of the sides. This is a very important step for all dovetailing work, as doing any surface prep after the dovetail is cut will loosen the joint.

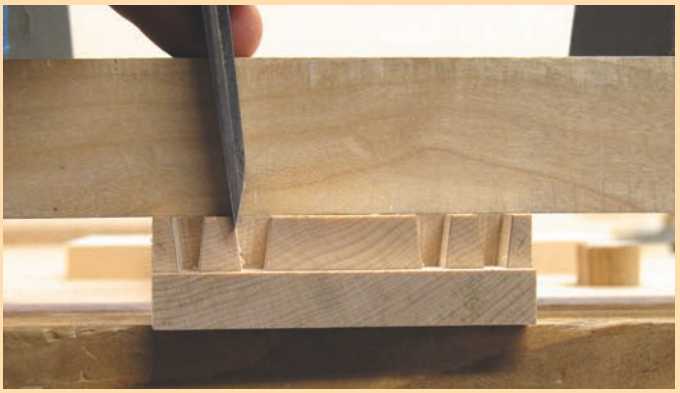
Making a mitred dovetail joint is almost the same as a regular dovetail, with two key things to remember. First off, don't scribe the top and bottom edges of your pieces with your marking gauge. These will be scribed with a combination square and a knife. Secondly, and most importantly, you need to remember to keep some of what is usually waste when you get around to cutting the tails.

Once your scribe has been set to slightly more than the thickness of the sides, scribe the faces of your work pieces. Allowing the pins and tails to protrude a bit will allow some grain consolidation, if needed. Don't scribe the top and bottom edges with your marking gauge. Instead, use a combination square and a knife to scribe a 45° angle towards the outside corner of

Don't Scribe the Sides – Use a combination square to carefully mark a 45° angle on the sides of each piece.

Photos by Jacques Breau





Helping Hand – Breau uses a wooden board with a square edge clamped to the workpiece to help guide his chisel squarely into the joint. First he places the bottom of the chisel against the wood guide and pares the base of the dovetail joint (left), then he rotates the chisel so its side is against the wood guide, which assists with cutting the face of the pin (right).

the joint. This is the mitred portion of the dovetail. Proceed with the layout of the pins with a pencil and a small bevel gauge.

Once the pins are laid out, cut them with your favourite saw. I prefer a Zona saw for the cheeks and a coping saw to get rid of most of the waste. Once the pins are cut, I place the piece in a chopping block. It is critical that the chopping block is perfectly aligned to the scribe line. I use a wide-plane iron, set in the scribe line, to help with locating the block. Clamp it down and chop to the line.

It's very important for the pins to be flat and square. To check the flatness, I simply lay the back of my paring chisel on the cheek of the pin, and check for rocking. When I find a high spot, I carefully pare it down. To check for square, I use a narrow brass blade that I made for a small square. The pins need to be square to the end grain of the work piece. Getting the pins just right is the most important part of dovetailing. Any discrepancies that are left in the pins will make getting a proper fit on the tails exceedingly challenging, if not impossible.

Once I'm satisfied that my pins are all proper, I transfer the layout to the tails. Here is where things diverge from a regular dovetail. It is critical to not cut all the way through the outside tails. This section of waste needs to be mitred. I do this first, so that I don't forget. The center section of tails gets the regular treatment.

We need a 45° hardwood ramp in order to cut our mitre. I usually cut the ramp then shoot it with a block plane, making sure that it is exactly 45° and straight. It can be helpful to use a ramp that is about an inch wider then your sides. The extra material then overhangs and provides you with a better platform for your chisel. Lining up the ramp with your scribe line can be a little tricky. Before you commit to removing the material, double-check that everything is lining up properly. You can do this by laying a ruler on the ramp and checking your 45° scribe line. Adjust if necessary. Once all of your mitres are shot, proceed with fitting the tails to the pins.

Now that the joint is perfectly fit, the profiling of the top can take place. Use layout lines to keep the profile consistent to give a seamless transition from one side to the other. Before gluing the joint, I size the mitres. This consists of applying some watered-down glue to the end grain and letting it dry. Once this is done, the joint can be assembled.

JACQUES BREAU
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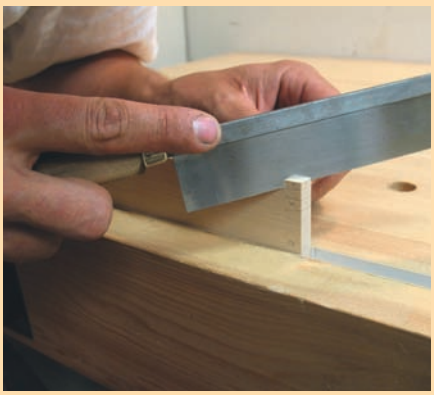
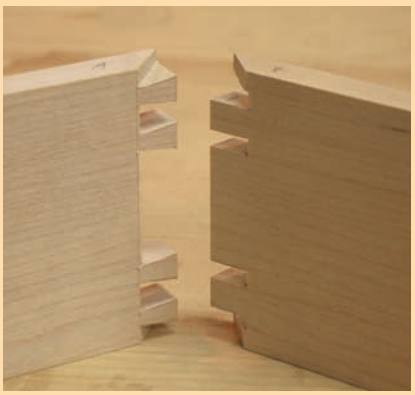
Jacques is quickly realizing how much stuff it takes to be a woodworker. He is currently packing up his New Brunswick shop and moving to Kingston, Ontario.



Cut the Mitre – With a fine handsaw, Breau rough cuts the mitred edges on the 'tails' portion the dovetail joint.

Ramp It Up – A 45° ramp is used to guide the chisel while making the paring cuts on the corners. The ramp must be positioned carefully before it's clamped, but works wonders once it's in place.



Ready for Assembly – The mitred dovetail joint, viewed from the inside, just before assembly.

Build a KID'S TOOLBOX

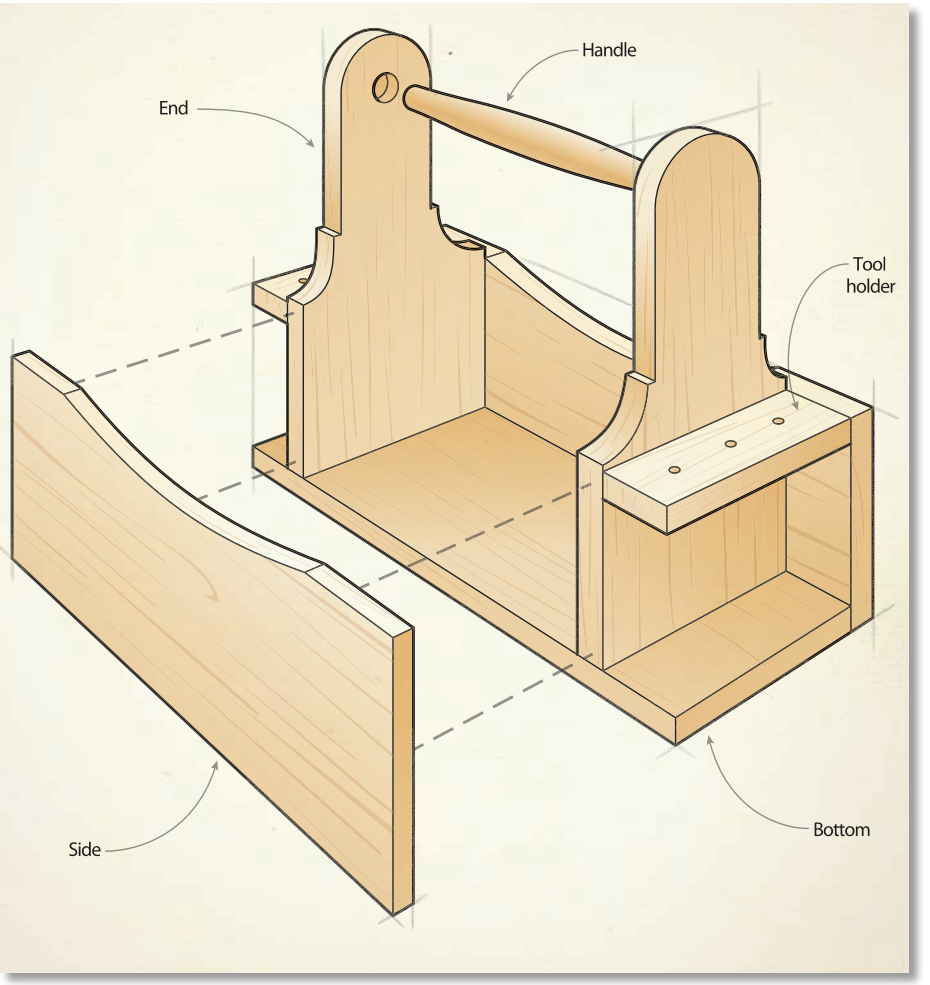
A great way to introduce a child to woodworking is with a simple project that they can use. Depending on your child's level of skill, this toolbox project may be the perfect start to a life-long hobby.

Photos by Rob Brown. Illustration by James Provost

BY ROB BROWN

Materials List

Part	Qty	T	W	L	Material
Sides	2	5/8	5 3/4	16	Solid
Bottom	1	5/8	5 3/4	16	Solid
Ends	2	5/8	5 3/4	12	Solid
Tool Holders	2	5/8	2	5 3/4	Solid
Handle	1	5/8 dia.		To Fit	Solid



My daughter is only 2 ½ years old so she didn't help with this project. Since she already enjoys looking around my shop (I really have to keep an eye on her when she visits me), I'm hoping that over the next couple of years she'll start to show an interest in learning how to use some simple tools and maybe even build something. If so, this toolbox will be hers and we can fill it with some tools that are appropriate for her level of skill. If not, my son is 11 months old, so there's still hope!

If you're working with your child while making this toolbox, it's a great idea to break it down into short segments that are no longer than one hour each. The last thing you want is for them to get bored or to lose attention. Let them do as much as possible, even if it takes 10 times longer. Generally speaking kids would rather do than watch. And don't sweat the details. If all the joints are not perfect I'm sure this will still hold tools and make your child proud. Heck, even when I made this project by myself, I found it was almost refreshing to not worry about perfection. It will get beat up over the years, so as long as it's strong I'm happy. And the exact dimensions don't matter too much, either.

All from one plank

You can start with one pre-planed 5/8" thick board, 6" wide and 8' long. You also have the option of planing down the stock yourself, if the species you want isn't available pre-dressed. Joint one long edge and rip it to 5 ¾" wide. Trim one end of the plank square then cut the two sides and one bottom 16" long. With a combination square mark a line 2" away from either end on both the sides and the bottom. These lines will assist you during assembly, showing you where to locate the ends. Add another line 5/8" away from the first line, signifying the width of the mating board. Drill two screw clearance holes between the lines so you can use a screw to secure the joint during assembly. If you are going to add wood plugs to conceal the screw holes after assembly drill the proper diameter holes now.

Shape the ends

Next cut the two ends 12" long. Determine how high the sides will come on the ends when everything is assembled. Draw a pleasing shape on the top section of the ends, and cut them on the bandsaw. I used a roll of masking tape to help draw the curves. Sand the freshly cut edges, and smooth the corners.

While you have the ends in your hands, drill a hole near the top of each end to accept the handle. I used a 5/8" diameter handle. I also didn't drill all the way through, to keep a cleaner look. This also helps keep the handle from coming loose.

Draw an even, gradual arc on the tops of both sides, between where the ends will be fixed. This will allow tools to be removed or returned to the toolbox a little bit easier. It also adds some shape to an otherwise very simple looking project. Cut these arcs on the bandsaw and ease their edges with a sanding block.

To make the handle, you can either use a solid wood dowel or you can make your own with a spokeshave or block plane. Just make sure it's the right length and both of its ends will fit in the holes.

Mark a Guideline – Mark a line 2" in from the ends of both of the sides and the bottom with a combination square. This line will assist you while lining up the ends during assembly.

Clearance Holes – Draw a second line to depict the width of the mating board then add a couple of screw clearance holes. If you want to plug the holes after assembly, you can flip the boards over and bore for plug at this stage.

Assemble everything

After sanding the parts, and breaking all the sharp edges and corners, ready your glue, pin nailer, screws, driver and clamps for assembly. The pins are just to help with assembly, as they don't provide a lot of strength. If you don't have a pin nailer, a hammer and 1 ¼" nails will work fine. If you use nails, it's probably best to predrill the parts, more to assist with the assembly process than to protect against the wood splitting. All five parts that you've worked on up until this point will go together at the same time so be ready to work smoothly and efficiently, in order to get the clamps on before the glue dries.

Start by applying glue to the sides of the bottom. One by one, line the sides up and fire a few pin nails through each side, into the bottom. The pins temporarily hold everything together. Apply a bit of glue to the sides of one end, slide it in place, line it up with the pencil lines and shoot a few pin nails to hold it in place. Drill pilot holes through the existing holes and drive screws in, securing the first end. The second end will be a bit trickier, only because you have to install the handle at the same time. Start by adding some glue to the sides of the second end and, while you're at it, add some to the inside of the handle holes. Slide them both in place and fasten the end in place with pins and then screws.

Add clamps where you see fit, in order to bring the side-to-bottom and side-to-end joints tight. When the glue is dry add the wood plugs, covering the screw holes.

Sticky Situation – After gluing and pin nailing the two sides to the bottom, I added the ends, one at a time. It was right after I took this photo that I realized I had forgotten to drill holes in the ends to accept the handle. I quickly drilled the two holes, inserted the handle and finished assembling the toolbox. A bit more foresight on my part would have made this glue-up go a bit smoother.

Prepare for tools

Between both sides, at either end, are small tool holders that will house screwdrivers, and other longer items. Cut a piece to fit in the area then pre-drill screw clearance holes through both ends. It's also a good idea to add pilot holes in these small tool holders to be sure they don't split as you drive the screws

Easy Access – A small tool holder on each end keeps often-used tools at hand. After installing the two tool holders with glue and screws, drill holes according to what tools your child will use most often.

home. Apply some glue to one of the tool holder's edges then drive a couple screws through each end, into the tool holder. I also added a couple pin nails through the side, into the end grain of the small tool holders. Repeat for the second tool holder. Drill holes to accept whatever tools you plan on storing in these holders.

A finish isn't necessary, but if your child wants to paint the toolbox their favourite colour, bite the bullet and let them. Purple might not be your first choice, but to them nothing could be better.

Find some small tools that will fit their hands nicely, and teach them how to use them safely and effectively. Starting off with just the basics will give them confidence, then add tools when the time comes.

Teach your kids about tools

A few years ago we got a letter from a reader who shared with us know how he taught his grandchildren to safely use tools. He gave a complete lesson on a specific tool. After testing them, he gave them a certificate that allowed them to freely use that tool from then on. The kids enjoyed the process of building up knowledge, and an arsenal of tools, as time went on. I think this is a great idea.

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Load it Up – If your child uses tools that belong to them they will likely become more attached to them and respect them even more. Buy tools that will fit their hand nicely and are not too big and heavy. Just make sure that your child knows how to use whatever tools are in their toolbox safely and effectively.

Introduce Your Kids to Woodworking

Whether it turns into a hobby or a career (or neither), many parents would love to see their kids try their hand at working wood. Here are some thoughts on introducing kids to the craft.

BY MELISSA MARTZ

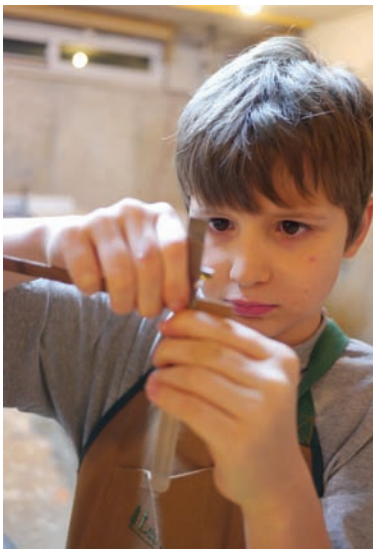
In grade seven I took shop class as part of our curriculum (one year of weekly shop class and one year of home economics (two components that have unfortunately been cut from grade seven and eight elementary school programmes). I remember making a wooden note pad, a key chair and a wooden penguin. I took a straw poll of what some people remembered about shop – most of the people who took part were in their thirties. All of the women remember making similar things (wall-mounted candlestick holder, small shelf unit, name plate, mini baseball bat). They all said they loved shop class. One said, "I use those skills of using machinery in my profession today."

Many times the emphasis that is relayed to students are careers in the technology and business fields, and the courses in high school are tailored for those professions. What many students don't realize is that all the business and computer jobs are appealing to a lot of the students because of the high pay associated with them. Little do they know that, sooner or later, those professions will get saturated and the battle for those jobs becomes very competitive. With the number of students going into trades becoming smaller and smaller, and the existing woodworking and construction workforce getting older, the need to attract students to this profession has become crucial.

Lead Photo by Joe Martz, Photos by Etienne Moreau

Never Too Young – Some kids take to tools right away. There are many sets of plastic tools and workbenches that can be purchased that will feed a child's imagination. (Photo by Joe Martz)

Helping Hand – Moreau and his sons try to spend regular time in the shop, doing whatever the kids want to. Sometimes a helping hand is the best way to show a child a technique.



"All by Myself" – Most kids will want to make something by themselves. There's no substitute for handling the tools and having some success with the task at hand.

One measurement of good parenting is for parents to offer their children a wide range of activities to experiment with, to see what they like, what they don't like, what they excel at, and what they enjoy. Children love to make things. Even as toddlers, how you react when they are playing with blocks could internalize it and make them remember years later when it comes to choosing a career later in life. If, for instance, a three-year-old makes a tower of blocks and is praised and cheered on for their accomplishment, that encouragement will help to feed the fire of "Hey, I'm good at this, and people really like it!" This innocent activity of building block towers could instigate a career in construction or architecture.

There are many woodworking and construction activities for children. Kits at craft and home improvement stores, borrowing books from the library, playing with a toy workshop set and watching home improvement shows all allow a child to enter the world of woodworking and home improvement.

Sesame Street has done much to educate young minds. One of these accomplishments has been the "Fix-It Shop". The "Fix-It Shop" opened in the third season as the "L and R Fix-It Shop", run by business partners Luis and Rafael. Their first job was repairing a broken picture frame of Susan's. After Rafael left the show, it became known as it is today, the Fix-It Shop. Maria starting working at the Fix-It Shop, and became a full-time partner in the fifth season. Having Maria working in the Fix-It Shop shows kids that woodworking, repair work, and

Kids Working Wood

My two boys, Loïc, 10, and Gaël, 8 are mostly interested in video games and pretending they're soldiers, knights or wizards. Those interests steer their time in the shop. They have learned to nail boards together to create swords and rifles, but as they grow, they want to make more complex items. That's when the time in the shop becomes very pleasant. Tools and techniques are extended to meet their needs and we spend time learning together. To achieve a goal, they learn basic shop safety and good working habits. My youngest son is still mostly doing make-believe, but the oldest has clearly shown pleasure in using a hand-plane and often asks to use the chisels. Just the other day I was asked, "Dad, can I decorate my bedroom to look like a castle hall?"

After both boys got Lee Valley aprons and Busy Bee vises as gifts, we decided to spend a few days setting up a small workbench area. We then practised cutting dovetails. This was awesome because it was the first time for both my boys and I, so we were all at the same level. We were all learning together, finding our mistakes, ensuring proper work habits and just enjoying our time together.

Sure it won't always be like this, but times like this are to be cherished and fostered. Who knows, we might come home to a castle hall-themed bedroom someday.

— Etienne Moreau

home renovations are not just a male-gendered profession – girls can be very successful in this trade.

Canadian Mag Ruffman is another role model for girls. She has had two shows on home repairs: *A Repair to Remember* and *Anything I Can Do*. She writes a home improvement column for the *Toronto Star*, published a book of her columns *How Hard Can It Be?* and is now partnering with Lowe's to produce a video series of fun projects families can do together.

Let's not allow woodworking to become a dying art. Help your children discover the joy and creativity it has to offer. Even if your child doesn't become a professional woodworker, they can learn an enjoyable hobby that they will have for the rest of their life.

MELISSA MARTZ
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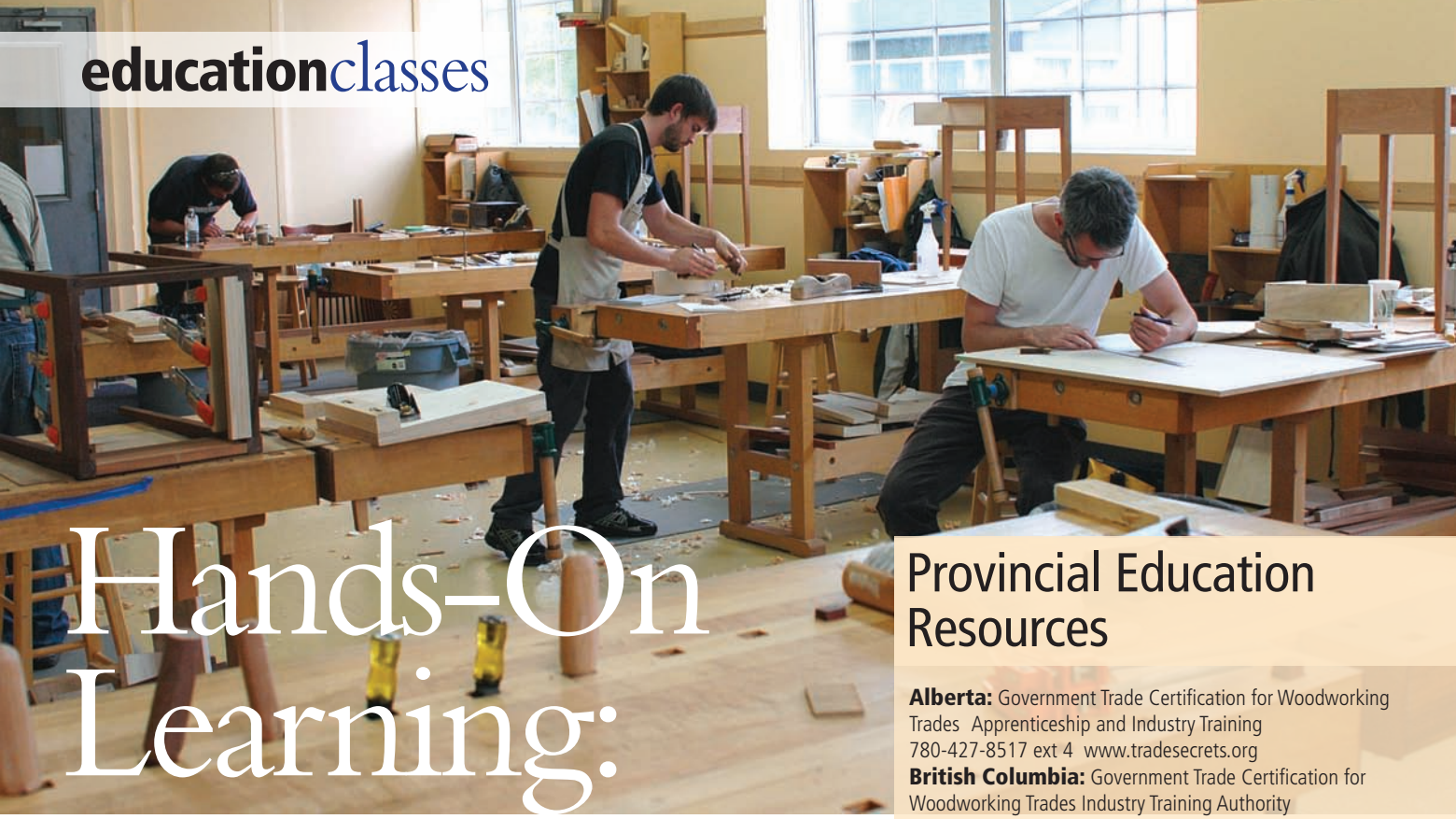
When Melissa isn't writing about kids and woodworking, she's writing on other topics, having a cup of tea or going for a power walk.



Hands-On Learning: Woodworking Classes in Canada

How better to hone your skills or learn some new ones than by taking a course? There are all sorts of woodworking courses, classes, seminars and workshops across Canada to jump start your passion for woodworking.

BY CYNTHIA WHITE

Listed here are many of the informative and entertaining woodworking and wood-related classes that Canada has to offer. The list is by no means exhaustive; many courses are found only by word of mouth. Sometimes a master craftsman is happy to take a private student if you just ask. I found a woodworker at a local lumberyard who was willing to give me private lessons.

Also included here is the contact information by province for learning more about taking classes and pursuing an apprenticeship in the wood trades: carpentry and cabinet making. These two trades are both considered "red seal" trades. Once you get certified, your certification is accepted across Canada without the need for further testing.

Lead Photo by Ron Barter

Provincial Education Resources

Alberta: Government Trade Certification for Woodworking Trades Apprenticeship and Industry Training
780-427-8517 ext 4 www.tradesecrets.org

British Columbia: Government Trade Certification for Woodworking Trades Industry Training Authority
778-785-2400 www.itabc.ca/site3.aspx

Manitoba: Government Trade Certification for Woodworking Trades Entrepreneurship, Training, and Trade
Toll Free: 877-978-7233 www.manitoba.ca/tradecareers

New Brunswick: Government Trade Certification for Woodworking Trades Apprenticeship and Occupational Education
Fredericton, New Brunswick 506-453-2260
www2.ngb.ca/content/gnb/en/departments/post-secondary_education_training_and_labour.html

Newfoundland and Labrador: Government Trade Certification for Woodworking Trades Division of Institutional and Industrial Education
709-729-2350 www.ed.gov.nl.ca/app/

Northwest Territories: Government Trade Certification for Woodworking Trades Department of Education, Culture & Employment Programs, Government of the Northwest Territories
867-873-7552 www.ece.gov.nt.ca/

Nova Scotia: Government Trade Certification for Woodworking Trades Labour and Advanced Education
902-424-5651 www.nsapprenticeship.ca

Nunavut: Government Trade Certification for Woodworking Trades Adult Learning & Post Secondary Services
Arviat, Nunavut 867-857-3050
www.edu.gov.nu.ca

Ontario: Government Trade Certification for Woodworking Trades Ministry of Training, Colleges, and Universities
Toll Free 800-387-5514

Quebec: Government Trade Certification for Woodworking Trades Centre administratif de la qualification professionnelle
Toll Free: 866-393-0067 www.emploiquebec.net/guide_qualif/certification-interprovinciale/index.asp

Saskatchewan: Government Trade Certification for Woodworking Trades Apprenticeship & Trade Certification Commission
Toll Free: 877-363-0536

Yukon: Government Trade Certification for Woodworking Trades Training Programs
Toll Free: 800-661-0408 www.education.gov.yk.ca/

From Sea to Sea – Lee Valley offers in-store seminars across the country ranging in topic from beginner scroll sawing to picture framing, and much more. They're an affordable way to get acquainted with a subject. (Photo by Lee Valley Tools)

Canadian Krenov – Inside Passage, just outside of Vancouver, B.C., offers a seven-week 'artisan program' and a nine-month 'Craftsman Program' based mainly on the teachings of the late James Krenov. (Photo by Inside Passage)

The main purpose of this article is to list "hobby" or non-trade woodworking classes. Some classes are small and some are large. Some have a cosmopolitan international group of students (Inside Passage and Rosewood Studio), and others have an international group of teachers (Black Forest Wood Company). Some classes are usually one-on-one (Birchbark Canoe Company). Most welcome woodworkers of all skill levels.

Music to Your Ears – The Canadian School of Lutherie offers classes on building and repairing guitars. Classes range in duration from one day to one year. (Photo by The Canadian School of Lutherie)

Fine Furniture – Rosewood Studio, in Perth, Ont., offers classes ranging in duration from a weekend to nine months. It also brings in many woodworking experts to teach focused classes. (Photo by Ron Barter)

The variety of woodworking courses that exists is surprising. The Nova Scotia Wildlife Carvers have a course just on carving fish. The Island School of Building Arts has a course on building custom doors. A little homework reveals that there are courses to suit everyone's taste, schedule and wallet.

In addition, clubs and guilds almost always offer short seminars on different techniques. So joining a local woodworking club, association or guild is a great way to improve your skills as well as network with other woodworkers. Keep in mind that classes sponsored by a club usually have a very low or negligible cost if you're a member. Definitely join your local guild.

It's great if there's a course near you, but don't let distance stop you. Make it a holiday to take a class and explore a part of Canada you haven't seen. Hone your skills, learn something new, and most of all, have some fun.

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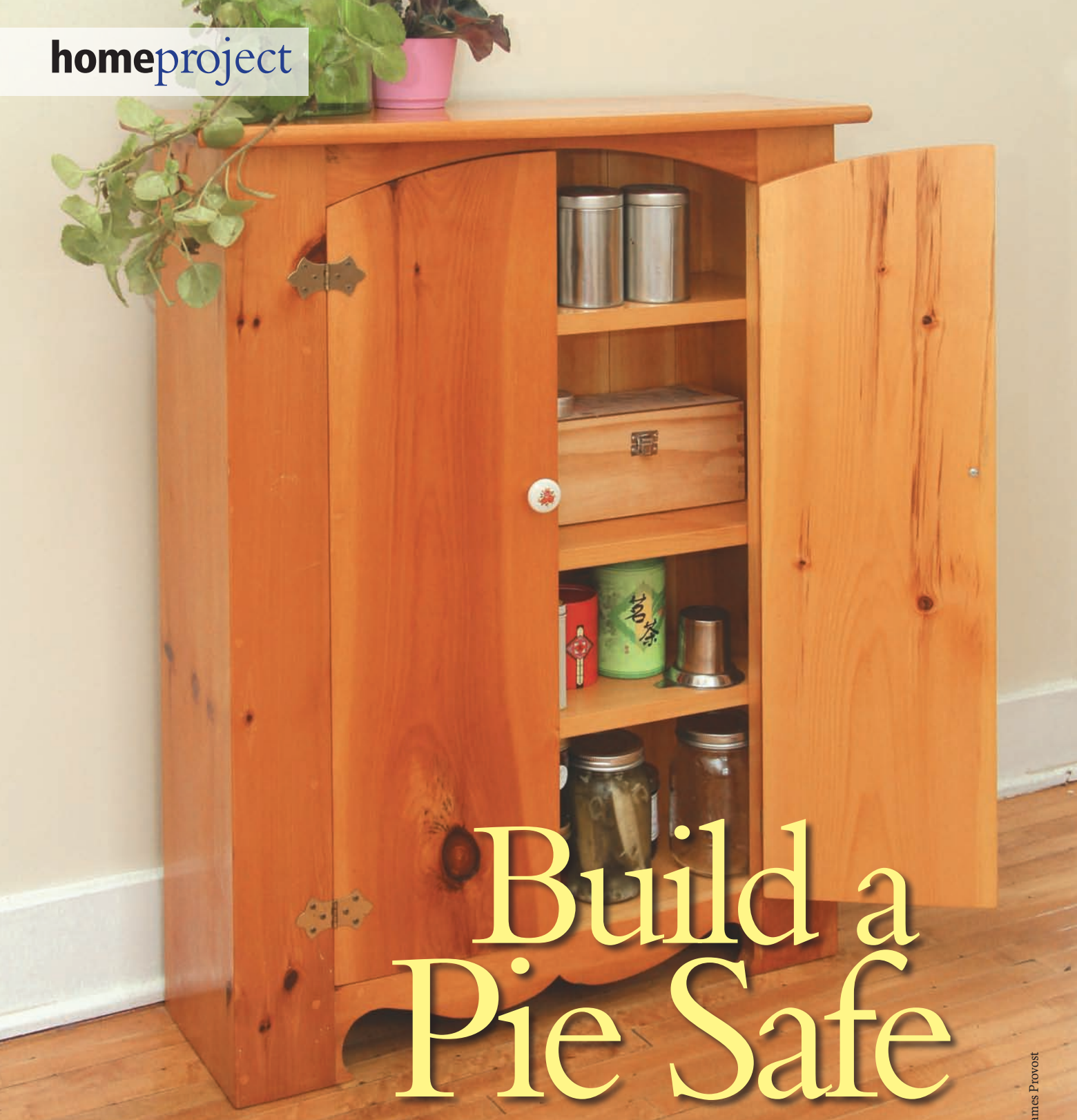
Woodworking Schools Across Canada

Lee Valley Tools	Locations across Canada Contact main office for locations and details Toll Free: 800-267-8761		
Black Forest Wood Company	Calgary, AB	403-255-6044 www.blackforestwood.com	Woodturning and building guitars
NAIT	Edmonton, AB	Toll Free 877-333-NAIT www.nait.ca	Several fine woodworking courses
Quiet Woodworking	Cochrane, AB	403-870-8331 www.quietwoodworking.com	Traditional hand tool woodworking
Inside Passage	Roberts Creek, BC	Toll Free 877-943-9663 www.insidepassage.ca	Fine woodworking
Island School of Building Arts	Gabriola Island, BC	250-247-8942 www.logandtimberschool.com/courses.php	Building with logs
Selkirk College	8 locations in BC call main office in Castlegar for information: Toll Free: 888.953.1133 Ext. 245		
	www.selkirk.ca/programs/trades/finewoodworking/		Fine woodworking
Summit School	Qualicum, BC	Toll Free 888-901-9903 www.luthiers-international.com	Lutherie courses
The Copper Nail Wooden Boat Shop	Slocan, BC	250-355-0035 www.woodenboatshop.ca	Wood boat building
The Joint Woodworking Studio	Vancouver, BC	604-877-2255 www.thejoint.ca/qs/	Furniture making
Wood to Works	Courtenay, BC	250-331-9392 www.woodturning2carving.com/turning-and-carving-classes/	Woodturning and carving
Pembina Valley Luthiers	La Riviere, MB	204-242-2695 www.jeremyhamm.ca/guitar-building-course.html	Lutherie
Prairie Canada Carvers' Association		Winnipeg, MB 205-489-0149 Don Young bdyoung@mts.net	Wood carving courses and workshops
Canadian School of Lutherie	Halifax, NS	902-481-0170 www.canadianschooloflutherie.com/index.html	Lutherie
Nova Scotia Wildlife Carvers and Artists Association	Halifax and Truro, NS	902-835-8846 http://nswcaa.ednet.ns.ca/	Wood Carving
Bear Mountain Boat Shop	Peterborough, ON	705-740-0470 www.bearmountainboats.com/workshops/	Canoe Building
Bear Wood Canoes	Parry Sound, ON	705-732-1273 www.bearwoodcanoes.com	Wood Canoe Building Courses
Birchbark Canoe Shop	Whitefish, Ontario	705-929-4299 www.thebirchbarkcanoeshop.4t.com/forsale.html	Birchbark canoes
Canadian School of Lutherie	Toronto, ON	(647) 469-0400 and (416) 333-7557 www.canadianschooloflutherie.com/index.html	Lutherie courses
Lado Musical, Inc.	Lindsay, ON	705-878-3472 www.jklado.com/lutherie-school/lado-school-of-lutherie	Lutherie
Mapleseed Gallery	Owen Sound, ON	519-270-5531 www.mapleseedgallery.ca	Woodturning
Marquetry Society of Canada	Courses in Ontario and Alberta 905-643-4327 Workshop Coordinator		Marquetry
MacLachlan Woodworking Museum	Kingston, ON	613-542-0543 www.woodworkingmuseum.ca	Variety of courses
Mohawk College Continuing Education	Hamilton, ON	Toll Free 888-385-4295 www.mohawkcollege.ca/continuing-education/contacts.html	Finishing, handtools, kitchen cabinets
Passion for Wood	Acton, ON	519-853-2027 www.passionforwood.com	Fine Woodworking Seminars
Pat Wolfe Log Building School	Lanark, ON	613-256-4997 www.logbuildingschool.net/CourseOutline	Building with Logs
Paul Ross Woodturning	Bloomfield, ON	613-393-1795 www.paulrosswoodturning.com	Woodturning
Rosewood Studio	Perth, ON	613-264-9900 www.rosewoodstudio.com	Fine furniture, etc.
William Perry Studio	Toronto, ON	416-524-7318 www.wmperry.ca	Fine woodworking
Bruand Lutherie	Longueuil, QC	450-679-2631, poste 2460 450-674-3663 www.bruand.com	Lutherie
Cabinetry Canoeworks	Alcove, QC	819-459-2477 www.cyberus.ca/~jriver/index.htm	Birchbark Canoe Courses
Merlin Wood	Quebec	www.merlinwood.com	Traditional fine woodworking
Timeless Instruments	Tugaske, SK	888-TUGASKE www.timelessinstruments.com/classes.html	Lutherie Classes



Build a Pie Safe

If you're in need of extra storage space, a pie safe may be the missing ingredient. Before refrigeration was commonplace, they were used to keep bugs and insects away from food, but today these traditional pieces can still play an important role in a home.

BY ROB BROWN

Photos by Rob Brown Illustration by James Provost

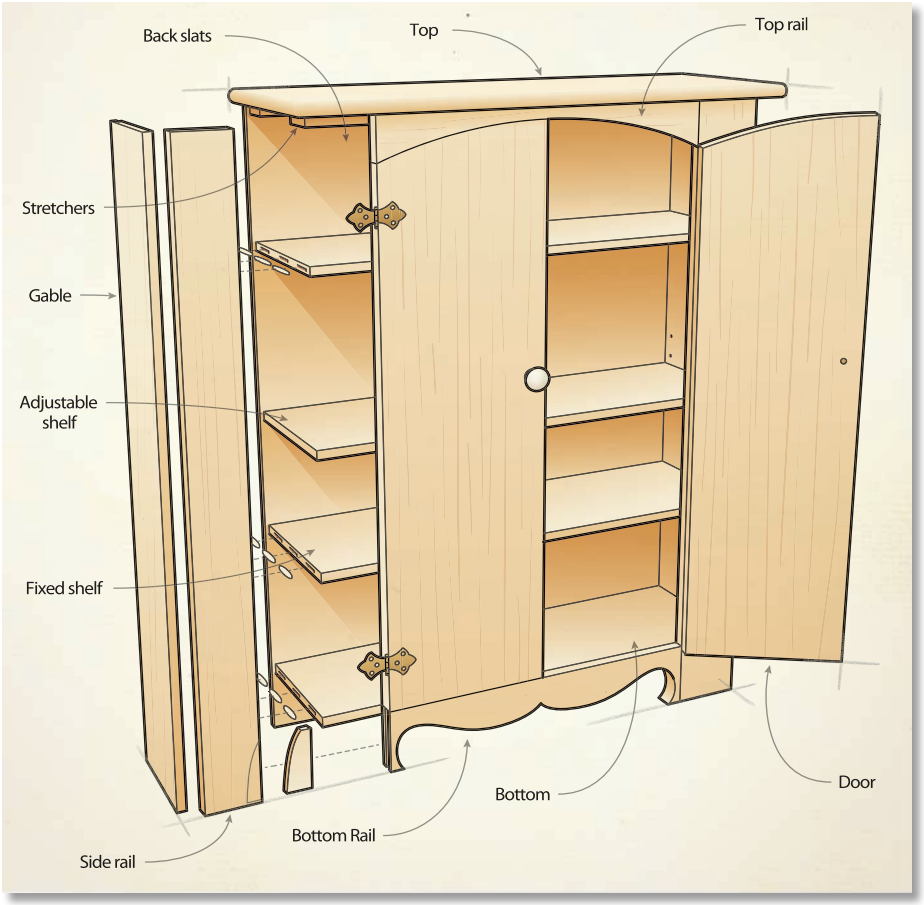
Pie safes were popular about a century ago, before household refrigeration was common. Tight-fitting doors and joints were used to keep small bugs away from fresh food items. In order to allow small amounts of air to circulate, small perforations were added to the door panels. This reduced mold yet still kept the insects at bay. The door panels were often made of tin, and were decorative, as well as functional. Though you're welcome to substitute metal panels in this version, I chose solid wood doors, for a simpler and quicker build.

I rarely use pine, but these wide planks had some interesting colour and this traditional piece needed pine's country charm to add authenticity. Another nice thing about pine is its low cost. To add to the character, most of this cabinet is going to be strengthened with #8 x 1 ¾" screws that are later covered with ⅜" plugs.

Lay out the parts to be cut from the planks, mark them, and cut everything to rough size. Select the doors first, as they are the strongest visually. At this stage, don't worry about breaking out the ¼" thick tongue and groove slats that will make up the back. The slats can be milled later or purchased already finished. Once the parts are in more manageable dimensions, plane everything to ⅞" thick. If you don't have enough thickness to finish at ⅞", remove more material until all the surfaces are smooth.

Materials List

Part	Qty	T	W	L	Material
Gables	2	⅞	10	38	Pine
Bottom	1	⅞	9 ¾	25 ⅛	Pine
Fixed Shelves	2	⅞	9 ¾	25 ⅛	Pine
Adjustable Shelf	1	⅞	9 11/16	25 1/16	Pine
Side Rails	2	⅞	4	38	Pine
Top Rail	1	⅞	2 ½	19	Pine
Bottom Rail	1	⅞	4	19	Pine
Stretchers	2	⅞	2 ½	25 ⅛	Pine
Doors	2	⅞	9 7/16	to fit	Pine
Top	1	⅞	13	30	Pine
Back Slats	1	¼	to fit	35	Pine



Sides, shelves and stretchers

Cut the sides, also known as gables, to finished size, then run a ¼" deep rabbet into the back, inside edge to accept the back. The bottom, fixed shelves and stretchers can then be cut to final size, ensuring the bottom and fixed shelves are the same width as the gables minus the back rabbet. Then use a biscuit joiner to join the bottom and fixed shelves to the sides. Three #20 biscuits slots per joint are sufficient. The top surface of the bottom finishes 4' above the ground. Feel free to place the fixed shelves wherever you like. Having at least one fixed shelf adds a lot of strength to the cabinet, but if you want only adjustable shelves, that is fine too. Add pocket screw holes to the ends of the stretchers so they can be fastened flush with the top of the gables.

Once the cabinet is sanded and assembled squarely, focus on the four-piece face frame. You'll likely find it easiest to assemble the face frame, and then secure it to the front of the cabinet once it's dry. Cut the side rails to finished length, but ⅛" wider than the finished width. This extra width will allow for some flexibility while attaching the face frame to the cabinet, and can be routed or planed flush after assembly. Cut the top and bottom rails to finished size.

Simple Joint with Screws – Pocket screws are very easy to drill if you have a jig, and they provide a reasonable amount of strength for the stretcher-to-gable joint.

Short grain is weak

Pocket screws fix the top rail to the side rails, so you can drill those now. The lower two joints that fasten the face frame together aren't that simple. More work needs to be done to these joints so you can shape the base rail without ending up with too much short grain, which is inherently weak. Run a ⅜" wide x ¾" deep groove in the both ends of the bottom rail. Run a similar groove in the side of the side rail, where it will join the bottom rail.

Be sure to stop the groove just before it becomes exposed above the bottom rail. And also take care to place the same face against the fence while machining all of the joints; either the faces of these three parts, or the backs. It doesn't matter which, as long as you're consistent while machining each joint. These grooves can be machined on the table saw with a dado set, or on a router table. I found the table saw quicker to set up, but stopping the groove accurately was more difficult. Either way, work safely, thinking through the operation before turning the saw or router on. Make two 1 ½" wide x ⅜" thick strengthening strips that can be fit to the grooves. Check to make sure they fit and the joint closes snugly.

Add a curve

Before assembling the face frame draw and cut an arc in the upper rail. The midpoint of the rail should be no narrower than ⅞", so the front stretcher isn't visible. Shape it smooth with some hand tools and sandpaper.

Apply glue to the strips and the grooves and assemble the lower joints, and then fasten the top two joints with pocket screws and some glue. Let this sub-assembly sit until it's dry.

Attach the face frame

Once the face frame is dry you can clamp it to the case and drill screw clearance holes and ⅜" plug holes through the face frame into the gables, bottom, fixed shelves and stretchers.

Two Grooves – In order to strengthen the portion of the bottom rail that will be left with short grain, run a groove in the end of the bottom rail (above) and a mating groove in the side of the side rail (below). Make a pine strip that can be glued in the cavity. Once this face frame joint has been glued, you can cut a shape into the bottom rail without dramatically weakening the area.

Remove the face frame and apply glue to the face of the case. Line the face frame up, drive the screws home and add a few clamps to ensure a strong joint all around. Add plugs in the holes and trim them when dry. When the entire assembly is dry, remove the clamps and flush the outer edges.

Test Fit the Joint – With the grooves cut and the strip made, dry assemble the joint to make sure it fits nicely. The top of the pine strip should finish flush with the top edge of the bottom rail, but if it needs a bit of trimming a sharp chisel is the answer.

Endless Edges – When you're adding an edge profile with hand tools, you have lots of flexibility to customize the end result. Brown opted for a simple bullnose, shaped by a concave spokeshave, to dress the top's edge.

Shape the bottom rail

Draw the shape you want to cut out directly onto the bottom rail. A little experimentation will be needed to find something that is pleasing to the eye. Cut the shape with a jigsaw and smooth the edge. The process of adding the strengthening strips to the lower section of the face frame could be avoided if you didn't mind leaving a lot more material on near either end of the bottom rail. I didn't like the look it would have left me with, so I acted early to take this route.

Two doors

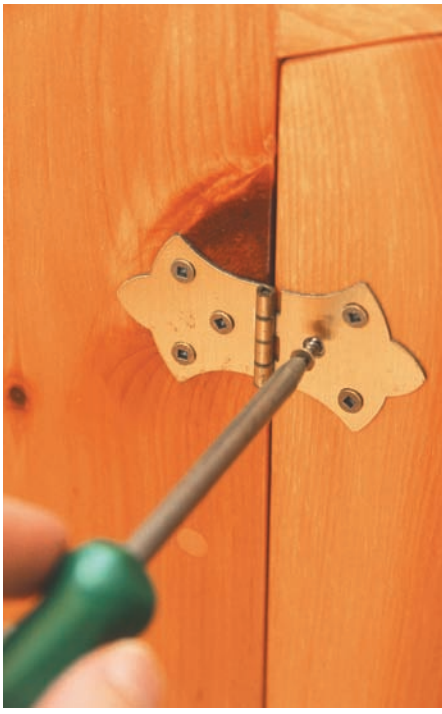
Rip the two doors to width so there is no more than a $^1/_{16}$" gap all around. Cross-cut the bottoms of the doors then place both door bottoms on the bottom rail of the cabinet's face frame. While they're there, you can trace the shape from the upper rail onto the backs of the doors. Cut the doors to finished size, sand them smooth then hang the doors. Test how they work. You may have to bevel the inner edges of both doors so they don't bind while they open. Install the handles on the doors.

Tack on the back

I chose to purchase the back slats rather than make them, but this is your call. Once you have the slats ready, flip the cabinet onto its face and determine if the two outer slats will have to be ripped, in order to keep the slats even across the cabinet. Once the spacing has been determined, trim the two slats accordingly. Apply some glue to the back edge of the bottom and the back stretcher, as well as the rabbet on the gable, and nail the first slat on. Repeat across the rest of the cabinet, leaving a very small gap between each slat so it can expand and contract slightly.

Top it all off

The top can now be cut to finished size then a gradual arc can be added to its front. I used a concave spokeshave to add a light bullnose to the four edges, then sanded it smooth, but you can add any edge treatment that suits your fancy. The top gets secured to the case with six screws that are driven through the stretchers. Make sure to select a screw that will not protrude through the top's upper surface.



The Swing of Things – Simple surface-mounted hinges are installed. They have a traditional look, are very easy to use and can be found almost anywhere.

An adjustable shelf, and a series of shelf holes are all that's left. Remove the top, door and all the hardware, and ensure all the surfaces are nicely sanded. A semi-gloss polyurethane was my choice, so I brushed on three coats, sanding between each coat.

Once the final coat has had time to cure, put everything back together and find a spot in your home that needs a little extra storage. If your home is anything like mine, I'm sure that won't be hard to do.

ROB BROWN
rbrown@canadianwoodworking.com

Although Rob isn't the best baker in his family, he just might try his hand at whipping up a pie to celebrate this new addition to his kitchen.

Drawer Slides
Bring On the Heavy Metal

Photos by Marty Schlosser (Lead Photo by Rob Brown)

Learn about the four most popular types of metal slides, the advantages and disadvantages of each and get a few tips on installing them in both new and retrofitted cabinets.

BY MARTY SCHLOSSER

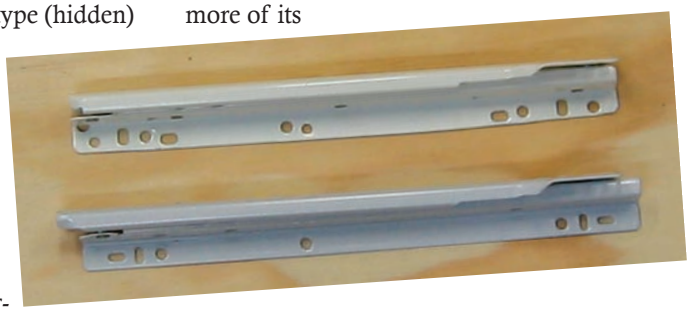
There was a time when I considered wood-on-wood slides to be a hallmark of a good cabinet. While there is undoubtedly a place for them in the studio furniture maker's lexicon, pros and amateurs alike are increasingly turning to metal to answer their drawer slide needs. And it's all because of the many and significant advantages these slides bring to the craft. They don't bind nor become sloppy with seasonal humidity changes. They can carry significant loads – 200 kgs and beyond – with ease. They enable drawers to extend anywhere from three-quarters of the way to completely out of the cabinet. Their prices have come down considerably, with most costing less than your weekly "Timmie's" fix. And most are relatively simple and quick to install.

Before you get carried away and think that metal slides are the best option for every application, look a bit further. They cost from $2.50 a pair for the most basic ones to over $90 for complex ones. With the exception of one type (hidden) the slides themselves are highly visible; not everyone wants to see any metal showing. Further, the hidden slide types reduce the useable interior height of the drawer by as much as ¾". Almost all of them require the drawer to be narrower by as much as ¾". That space is something that cannot always be spared. Finally, they are, well, ugly in the eyes of some.

Okay, so you've decided that the pros outweigh the cons enough for you to take the plunge. Now, then, which type is right for you? As is usually the case, the devil's in the details, so let's take a detailed look at the four main types.

Roller Slides

These basic slides are what you'll find in most cabinets sold in big-box stores. You can also purchase them separately. They're the least expensive of all metal drawer slides, are very easy to mount and work reliably. Many of them allow the drawer to slide three-quarters or more of its



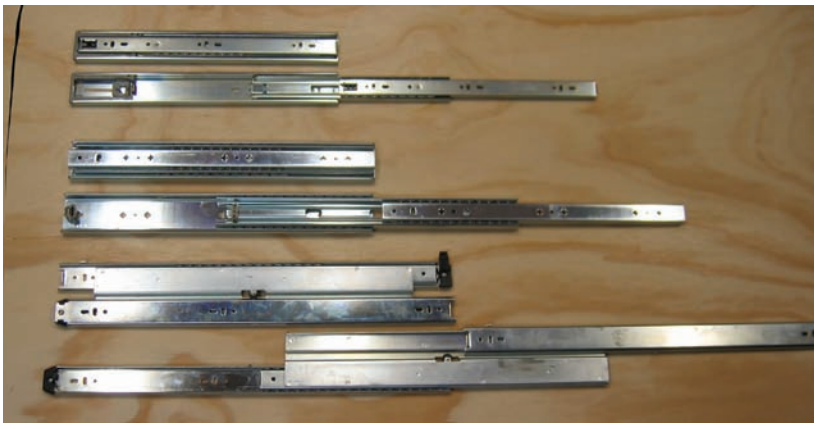
Simple Slides – Roller slides are very common, reasonably priced and easy to work with. They also work great near dust, which make them great for shop applications. (Photo by Rob Brown)

Some Wiggle Room – Not that you can get sloppy with your tolerances, but roller slides usually have one side that rides the roller snugly (above), while the other slide (below) allows for a bit of wiggle room. (Photos by Rob Brown)

length out of the cabinet and have a ramp built into the back which draws the drawer closed over the last few inches of travel. As with most metal slides, the drawer needs to be narrower than the cabinet's opening – usually ½". They're great for workshop cabinets because they readily tolerate high dust conditions, which would otherwise gum up the movements of their more sophisticated, high-count ball-bearing slide cousins. These slides also come in a flip-front version, as well as one which features built-in drawer sides, which some may find convenient.

Side-Mount Slides

These slides are capable of carrying more weight than any other type. As their name implies, they mount to the drawer sides and are therefore



Solid and Visible – Side-mount slides are the highest load-carrying metal slide, which means they are often used in kitchen pantries. Because they require mounting space along each side, the hardware is visible when opened, so they may not be the first choice when making fine cabinetry.

Smooth Action – Because they have a lot of ball bearings, side-mount slides tend to move smoothly and accurately. (Photo by Rob Brown)

Lots of Strength – In situations where larger, heavier drawers are being used, one or more pairs of side-mount slides will provide good results. The slides on this oversized kitchen drawer withstand heavy daily use. In extreme situations, two pairs of slides could be used per drawer, one mounted above the other. (Photo by Rob Brown)

fully visible when opened. Also, because they mount on the sides, the cabinet opening must be wide enough to accommodate their thickness, which can be anywhere from ¼" per side, to as much as ¾" for the really heavy-duty slides. They also have a considerable number of ball bearings, which allows them to operate very smoothly. As with all slides incorporating ball bearing movements, this type is very dust-sensitive, so they should be avoided in most workshop applications. Where they excel, however, is in kitchen pantries or office file cabinets where heavy loads may be encountered. They can also be used in tandem – one or more over the other – for tall openings where they help steady high-sided (6' and even taller) pull-outs. These slides come in three-quarters, full, and more-than-full extension models. They also come in a thin variant, useful where you can't afford to give up the extra width, as well as a more expensive self-closing variant. As you can appreciate, the higher tolerance machining and significant number of ball bearings in side-mount slides make them more expensive than roller slides. However, if it's weight-carrying capacity you want, they're the ones to turn to.

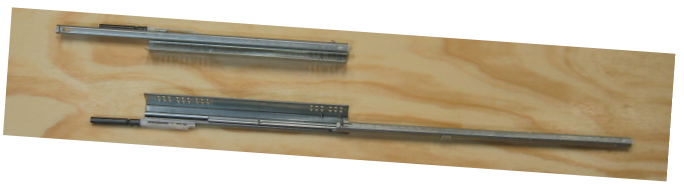
Under-Mount Slides

Under-mount slides were designed for applications where you don't want the slides to show but you also don't want to invest a lot of money. You'll see them on the same, relatively inexpensive cabinets, that sport roller slides. The main difference between these two is a set of plastic runners mounted at the lower corners of the cabinet's drawer opening. Although most of these slides have a carrying capacity similar to roller slides, manufacturers have responded to this shortfall by producing sets that look more like side-mount slides. These variants are capable of carrying nearly as much weight as their look-alike counterparts ... but their price tags reflect this additional capacity.

Select What You Need – As with all slide types there are differences between slides, even though they are in the same category. Higher (above) and standard (below) quality slides are pictured here.

Hidden Slides

If you're looking for the newest, snazziest drawer slides, look no further. These slides were previously featured only in high-end kitchen and bathroom cabinets. However, because manufacturers have since responded to the call for less expensive models, albeit with decreased life-span and with less carrying capacity, they're now being seen in less expensive cabinets. As with all high-count, open ball-bearing slides, these aren't recommended for workshops. There is even a variant of these slides



Invisible – Full-extension, self- and soft-closing hidden slides are the newest series of metal slides and have gained acceptance by virtually all high-end kitchen and cabinet manufacturers. Although most of this family of slides cannot carry the same loads as their side-mount counterparts, most clients like the fact they can't see any hardware and their self-closing and soft-closing features.

Simple Option

When you have lots of drawers to make, it might be worth your while to use slides that come with drawer sides. This way, you will not have to machine drawer sides out of wood or sheet goods. The all-metal slides are finished nicely and add to the look of a drawer. Often, all you have to do is cut a back and bottom to size, then attach a face. It speeds the process of drawer making, and the resulting drawer looks sleek and works well. A number of companies offer these sorts of slides, so check with your local supplier.

Built-in Drawer Sides – When building a large set of drawers for a kitchen a drawer system, which includes drawer sides and slides all in one, may be the best option. (Photo by Hafele Canada)

that incorporate electric motors into their mechanisms, allowing them to open at the touch of a toe or finger. Just don't try to rely on them if the hydro fails! As can be appreciated, with the exception of the relatively inexpensive knock-offs, this family of slides is considerably more expensive than any other metal slide. Despite their high price tags, they're gaining favour with those who want nothing but the best or latest in their cabinets.

Installation Tips

It's important to carefully read, and then re-read, the manufacturer's installations, even before you've designed the cabinet into which you're planning to use metal drawer slides. The reason for this attention is simply because most of these slides are to be installed to fairly high tolerances. Gone are the days of simply being able to plane a bit from the drawer side to provide more clearance. Another important tip is to ensure you use the recommended screw head type and size for affixing these slides; with such little space between the parts that connect to the drawer and those that fasten to the cabinet side, there's very little clearance space. Finally, to help with drilling holes for the mounting brackets, some manufacturers and third-party companies offer interesting jigs that take the guess work out of the hole-drilling activity. I know that had these been available when I was working on the first kitchen upgrade I undertook, it would have made my life that much easier. And everyone I know likes that.

Check the Size – Because the tolerances between two moving slides are tight, make sure the screws you're using are the right size and don't protrude above the slide's surface. (Photo by Rob Brown)

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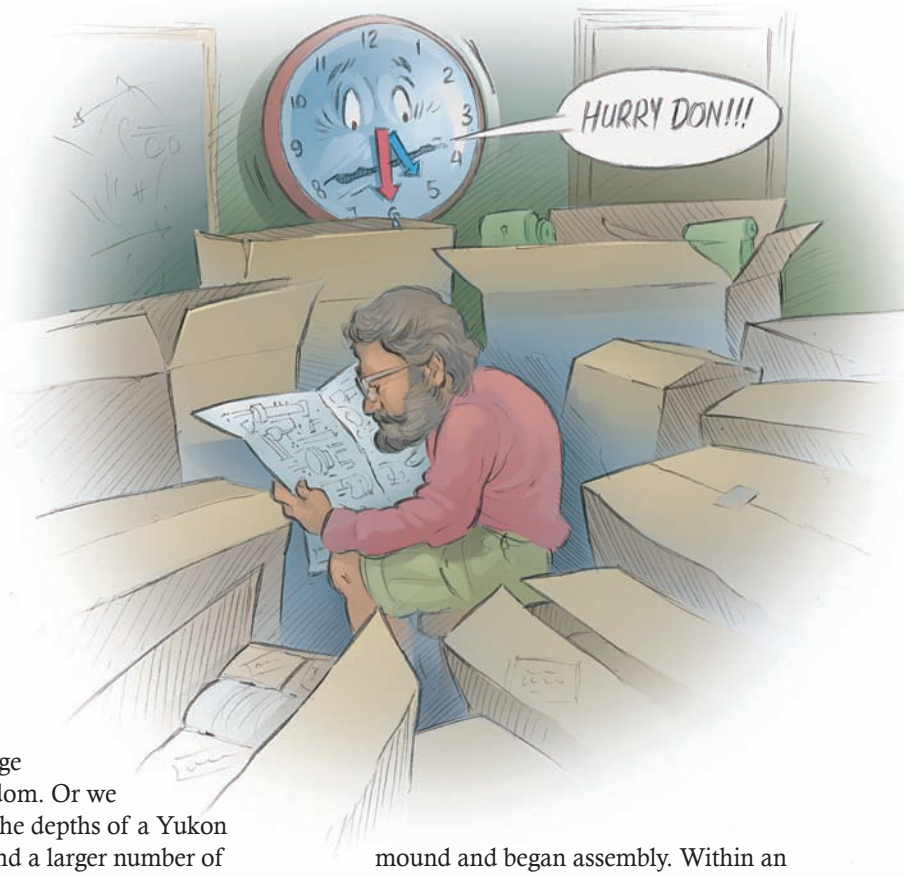

BY DON WILKINSON

Those who can, do; those who can't, teach. The rest become politicians.

—George Bernard Shaw (with apologies.)

Teaching is an honoured profession, I have oft been told. Usually by a teacher. But even as a child I realized what a bunch of hokum that was. What other profession lets you work from nine till three and then gives you four months off every year? And then not only pays ridiculously well but also supplies a really decent pension at the end of your usefulness? (Other than politics, of course.) After careful thought and contemplation, I came to the obvious conclusion: *There is clearly nothing honourable about teaching*.

Which of course is precisely why I decided to become a teacher. So I trundled off and got my teaching papers from Oxford College (that's in England) and went happily off to Prague to teach the little Prawns how to speak English. That did not end well.

After that fiasco, I decided I should probably concentrate on teaching people something that I actually knew a little about. But I couldn't think of anything! Eventually I remembered that I was once a somewhat competent woodworker and a decently competent wood-turner. Maybe I could teach something along those lines. Since I already owned a really nice lathe, that seemed the logical area to concentrate on.

An advertisement in the paper soon had the phone ringing off the hook and to my immense surprise I was able to fill my calendar for months in advance with people anxious to sit at my feet while I regaled them with my immense knowledge and wisdom. Or we were in the depths of a Yukon winter and a larger number of people than normal were going out of their minds with boredom. From the response, it was clear that I would need some more lathes. I phoned my supplier in Calgary and ordered another four lathes, complete with gouges, scrapers, chucks and other assorted paraphernalia, and hoped it would all arrive before the first class was to start.

While awaiting delivery, I erected dividers between the workstations, built fancy tool racks and shelves to hold the nifty new toys and strung vacuum lines everywhere. I was still anxiously awaiting the delivery of my equipment as the day of the first class arrived. Finally, at four o'clock a large truck backed up to the loading bay and began unloading dozens of boxes and cartons and crates of all shapes and sizes onto the ground and then quickly disappeared into the deepening gloom. I collapsed on a crate and dejectedly stared at all the pieces and also wanted to disappear into the gloom. There was no way I could unpack all this crap and assemble four lathes before the students arrived.

Nevertheless, I fetched my tools and tore open boxes, broke open crates and smashed, mashed and crushed fingers with abandon. I gathered all the various bits and pieces together into one huge mound and began assembly. Within an hour I had assembled what appeared to be the launching rails of a small nuclear device. I assumed something wasn't quite right and resorted to that last defence known to men the world over – the instructions – but even though the four lathes were supposedly identical, each one came with a different manual. After carefully reviewing the hieroglyphics, I was finally able to discover where I had gone wrong. I had clearly ordered the lathes from the wrong company!

Eventually I managed to get everything more or less correctly assembled and gratefully collapsed, ready for a well-earned coffee and a smoke. It was too bad that I didn't smoke because I really needed one by that time.

Too soon my students arrived and excitedly gathered around the lathes, gazing up at me in enthusiastic anticipation, ever so eager to acquire the fine art of woodturning. I gazed out at their vapid little faces, completely dumbstruck, as I realized I didn't have any clue whatsoever of what to say. Huh! Maybe teachers really do need to do lesson prep work after all.

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Illustration by: Mike Del Rizzo

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