

■ JUNE/JULY 2013

HANDY

HANDY MAN CLUB OF AMERICA MAGAZINE

DECK REVIVAL

UPGRADES AND FIXES
TO GIVE AN OLD DECK
NEW LIFE

GREAT SUMMER PROJECTS

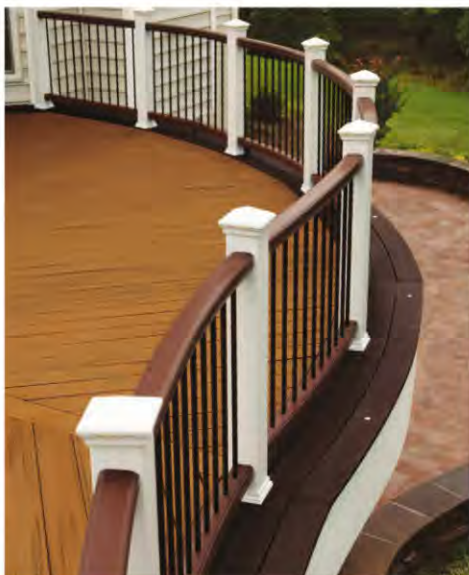
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CLUBHOUSE BY LARRY OKREND

THE ICEBERG EFFECT

PLUNGE INTO A DEEPER EXPERIENCE

During the two decades that *HANDY* has been offering project plans, product news, and inspiration and techniques for DIYers of all interests and skill levels, we've delved into just about every topic of our affinity. So this issue of the magazine is just the tip of the iceberg — there's much more to *HANDY* than meets the eye. That's good news: Rather than sinking ships, this iceberg can help you navigate today's vast sea of project ideas, DIY advice and how-to information — all with a few clicks of your computer mouse.

Making articles from past issues easily accessible has been an ongoing mission for the *HANDY* crew. During the last few years we've been pulling articles from our digital archives and posting them on our Web site (HandymanClub.com). If you're looking for a particular woodworking or home-improvement project or information on painting, electrical work, plumbing, metalworking, etc., go to the Web site and search under "Projects." This will lead you to the most useful articles from 2005 and later, many of which you can download in PDF form. We're always adding more articles, so if you don't find what you're looking for at first, keep checking back.

In addition to mining the past, we're producing new content that's only available online. Many of the articles published in *HANDY* offer WEB EXTRAS — additional sidebars that provide more in-depth information about the topic at hand. And because there isn't enough room in the magazine to cover all of the promising DIY products we see, the editors have been highlighting interesting offerings in "We Tried It" videos that you'll find online once a week. (They're also linked in our e-newsletter, *HANDY* Toolbox, and on our Facebook page: facebook.com/HandymanClub.) Although these brief videos can't tell you everything you need to know about the products, we'll point you in the right direction to learn more.

We've also embarked on a course to help you get started on projects and work more efficiently through short videos and blogs on a wide variety of DIY-related topics. Posted several times a week, the blogs enable us to deliver timely information on subjects as diverse as energy efficiency, painting, new products, housing trends and even DIY humor. We've enlisted several guest bloggers including Red Green, Carmen De La Paz and Joe Provey to add variety and different points of view. If you're looking for the raw facts, opinions or just some fun, click the "Blog" tab on the top bar of the HandymanClub.com home page.

Of course, you can't fully appreciate an iceberg until you dive in and explore what lies beneath the surface. So the next time you see a WEB EXTRAS icon or just feel like surfing, plumb the depths at HandymanClub.com. You'll find that our titanic efforts to make the site more useful will help you sail through your DIY endeavors and inspire you to brave uncharted waters. ■



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OUTDOOR HIGH-TOP TABLE



MATT SPROUSE

COMPLETE YOUR GRILLING ENSEMBLE WITH A HARDY, HANDSOME PLACE TO DINE ALFRESCO

Designed as a companion piece to our grill-cart project (April/May 2013, p. 6), this 38-in.-high table is the perfect place to pull up a barstool for dinner on the deck. Like the grill cart, it is made from rot-resistant white oak and assembled using waterproof glue and rust-resistant screws, so it will weather the outdoor elements well. Its pedestal base is a real plus because there are no table legs to interfere with the chairs or your knees.

The four-piece radiating pedestal base is both attractive and functional. Because of it, the whole is stronger than the sum of its parts. The feet and the top supports are joined with cross-halving joints, which are decorative rather than structural and make the parts appear to magically intersect in the middle. The slatted top sheds rainwater quickly and is easy to re-

pair if a slat gets damaged. For winter storage, simply remove eight screws to disassemble the table into two easy-to-manage pieces.

Although this is more of a woodworking project than a carpentry job, it's relatively easy to build if you have some woodworking experience and

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can figure out ways to use a router to make tear-out-free cuts. (I'll offer some pointers to help you with that along the way.)

You can build this table in a week-end for about \$300 in materials, which should be available at a lumberyard, hardware store or home center. The nylon feet can be purchased online (see SOURCES). Finishing the wood with a penetrating exterior sealer adds protection, but it's not permanent: You'll need to apply a coat of finish every few years to keep the table looking fresh.

CONSTRUCTION NOTES

Aside from common shop tools, building the table requires a table saw, a band saw or jigsaw, an orbital sander, a few bar clamps, four 48-in.-long pipe clamps and a router with a top-bearing pattern bit, a bottom-bearing flush-trim bit and a 1/4-in.-radius round-over bit. If you own a planer, jointer, drill press, spindle sander and stationary belt or disc sander, they'll come in handy as well, but you can get by without them.

You could cut the shapes with a band saw and sand them smooth, but using a router and templates ensures that the parts are uniform and precise. This approach gives the finished table a more professional look, and I think it is less work in the long run. Make the templates from 1/2-in. MDF. Keep in mind that the shapes of the actual workpieces will only be as good as the templates, so take the time to make accurate ones. The shapes of the top supports (D and E) are so simple that it makes no sense to create a template for them — plus they aren't even visible.

I did the template routing in two steps using two different flush-trim router bits because the bits I own are too short to make the cuts individu-

SHOPPING LIST

- ▶ 6/4 white oak (25 board ft. — includes 50 percent waste)
- ▶ 4/4 white oak (23 board ft. — includes 50 percent waste)
- ▶ No. 10 x 2-in. stainless steel flathead screws (16)
- ▶ No. 10 x 1-1/2-in. stainless steel flathead screws (4)
- ▶ No. 8 x 2-in. stainless steel flathead screws (12)
- ▶ No. 8 x 1-1/4-in. deck screws (32)
- ▶ No. 20 biscuits (24)
- ▶ No. 0 biscuits (4)
- ▶ Nylon chair nails (4)
- ▶ Exterior wood glue
- ▶ Clear penetrating exterior wood sealer (1 pint)

CUTTING LIST

▶ KEY	NO.	DESCRIPTION	SIZE
WHITE OAK			
▶ A	1	Long foot	1-1/4 x 5-1/2 x 34 in.
▶ B	1	Short foot	1-1/4 x 5-1/2 x 32 in.
▶ C	4	Pedestal pieces	1-1/4 x 6-1/2 x 36-1/2 in.
▶ D	1	Long top support	1-1/4 x 3-3/4 x 39-1/2 in.
▶ E	1	Short top support	1-1/4 x 3-3/4 x 33-1/2 in.
▶ F	2	Apron sides	3/4 x 2-1/2 x 39-1/2 in.
▶ G	2	Apron ends	3/4 x 2-1/2 x 35 in.
▶ H	2	Side cleats	3/4 x 3 x 39-1/2 in.
▶ I	2	End cleats	3/4 x 1-1/2 x 27-1/2 in.
▶ J	13	Slats	3/4 x 3-1/16 x 36 in.

ally, and I prefer to remove less material with each router pass. Because I'm cutting only about halfway through the thickness of the workpieces, I can make the cuts without having to hang the workpiece edges over the ends of my sawhorses or workbench — that saves a lot of setup time.

The top frame pieces (F through I) are assembled with biscuits and waterproof glue and clamped together. The rest of the table is assembled with screws only. You'll need to drill pilot holes for the No. 8 and No. 10 stainless steel screws, but pilot holes aren't necessary when driving the deck screws used to attach the top slats.

SHAPING THE BASE PIECES

Cut all of the pieces to size (see cutting list, above). Cut template patterns to size and lay out the template shapes following the drawing (opposite). Drill the screw holes in the pedestal template and countersink those holes from

the side facing you in the drawing. Cut out the three MDF template shapes and sand them smooth (photo, below). Make sure your cross-halving template fits the thickness of the stock you'll use for the feet and top supports.



▲ Smooth the sawn curve of the pedestal template. Make a wooden sanding block with the front edge shaped to the radius of the template curve. Use 80-grit pressure-sensitive-adhesive (PSA) sandpaper on the block.



TEMPLATE MAKING

To watch a video about how to enlarge and transfer a pattern to create a template, scan this tag or visit HandymanClub.com/magazine.



HIGH-TOP TABLE

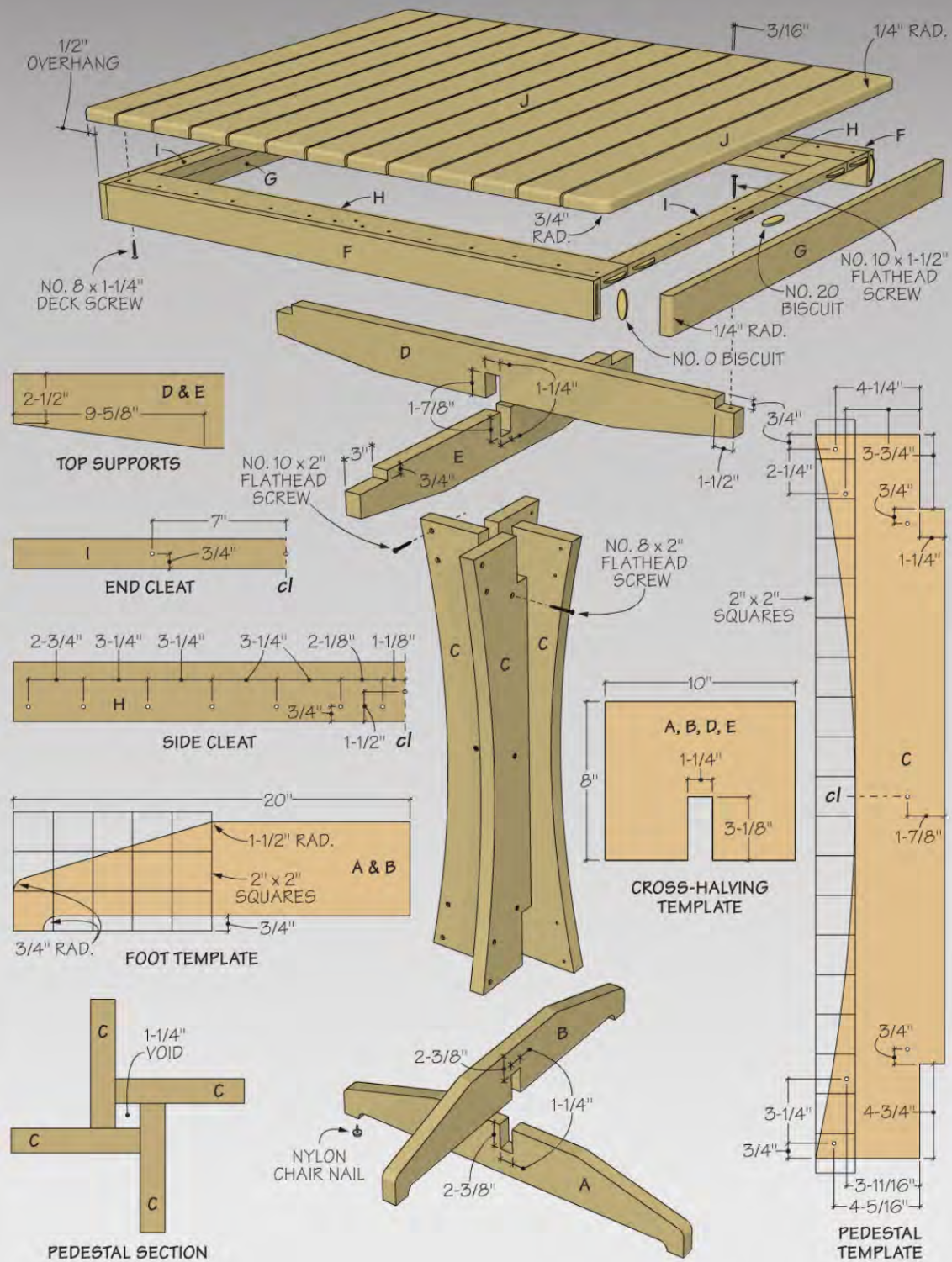


ILLUSTRATION BY BRUCE KIEFFER

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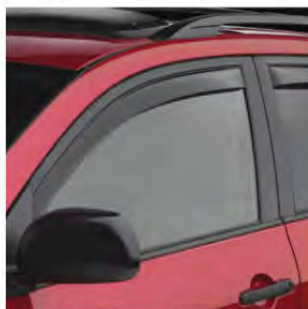


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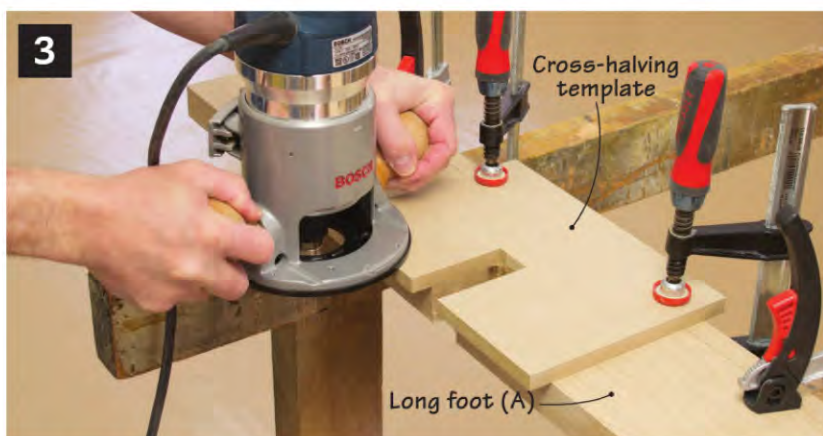
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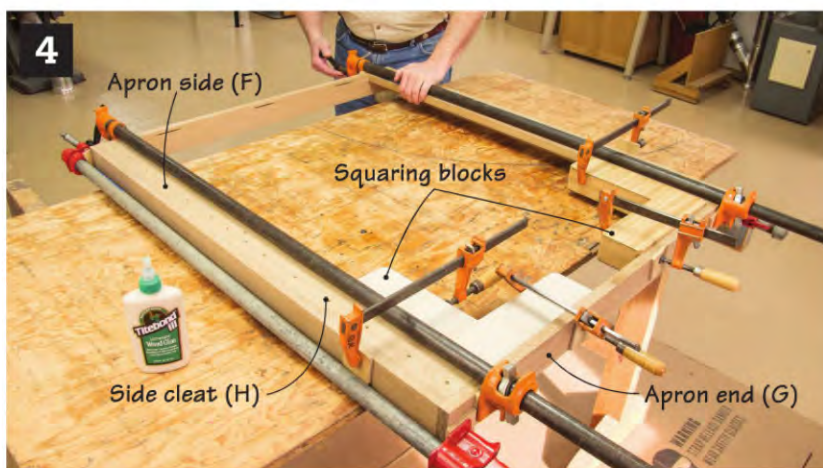
▲ To rout the template shapes, use a top-bearing pattern router bit guided against the template. It cuts only part of the edge. Go slow to avoid tear-out, especially when routing uphill against the grain.



▲ Remove the template and flip the pedestal piece over. Use a bottom-bearing flush-trim router bit guided against the first cut edge.



▲ Follow the two-step template-routing method shown in photos 1 and 2 to cut the cross-halving slots in the feet (A and B) and the top supports (D and E). Note that the lengths of the cross-halving slots vary. In this case, the template's 3/4-in. overhang results in a 2-3/8-in. slot.



▲ Assemble the top frame in stages: Start by gluing and clamping one apron corner (parts F and G); add the other apron side and then the other apron end. Make sure the assembly is square as you go and before the glue sets up.

WORKSHOP

Trace the shapes of the pedestal pieces (C) and feet (A and B) on the workpieces. Lay out the end shapes and notches on the top supports (D and E) and mark the cross-halving slots on the feet and top supports. Be careful to orient the cross-halving joints as shown in the drawing.

Rough cut the shapes of the pedestal pieces using a band saw or jigsaw. Cut as close to the lines as possible to minimize the amount of wood that needs to be removed with the router. Screw the pedestal template to each pedestal piece and rout the shapes (photos 1 and 2, opposite). You'll face two potential problems when routing: First, the curve on the uphill side (right of center) is routed against the grain, which can cause tear-out; you'll need to use a high-rpm setting and move the router very slowly. Second, exiting cross-grain on the foot and top-support notches can lead to blowout, so clamp a scrap board at the exit point to support the wood as it's cut.

Rough cut the cross-halving slots in the feet and top supports; then use your template and router to finish the slots (photo 3). Again, you'll want to protect the edges from blowout where the bit exits. Use a band saw to "square up" the corners of the pedestal end notches and the cross-halving slots where the router bit did not reach. Finish rough cutting and routing the feet shapes. Next, cut and sand the tapered ends of the top supports; then cut the end notches.

ASSEMBLING THE TOP

Following the dimensions in the illustration, (see the cleat details), drill the holes in the side and end cleats (H and I). From the top side, bore countersink holes for the screws that will go into the top supports. From the underside, bore countersink holes for the screws that will secure the slats.

Cut the biscuit grooves for joining the top frame pieces. Cutting the No. 0 biscuit grooves in the ends of the apron end parts (G) might be tricky if your biscuit jointer has a very open fence that leaves nothing to support the jointer on the narrow end of the workpiece. One solution is to attach an auxiliary fence made of clear acrylic



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▲ To gang rout the 1/4-in.-radius roundover edges of the slats ends, align the slat ends and tops flush; then lightly clamp them together. Routing the tabletop edges this way saves so much time you'll be amazed.



◀ Start assembling the base by attaching one pedestal piece (C) to the long foot (A). Work on a flat surface and use a framing square for perfectly square alignment.



▲ Add the next pedestal piece to the base. Make sure the center void you create is not smaller than the thicknesses of your top-support pieces; otherwise the top supports will not slide in place.

plastic to bridge the opening.

Apply glue, insert biscuits and clamp the side cleats (H) to the apron sides (F). Assemble the top frame (photo 4); then add the end cleats (I). Rout a 1/4-in.-radius roundover on the top frame corners. Shape the 3/4-in.-radius corners of the outside slats (J); then round over the slat edges (photo 5, above).

BUILDING THE BASE

Drill pilot holes in the feet for the nylon chair nails, and bore the screw and countersink holes in the pedestals. Ease any sharp edges and finish sand all of the parts. Hammer the chair nails in place. Interlock the feet, and screw the first pedestal piece in place (photo 6). Add the next pedestal piece (photo 7) and then add the last two pedestal pieces.



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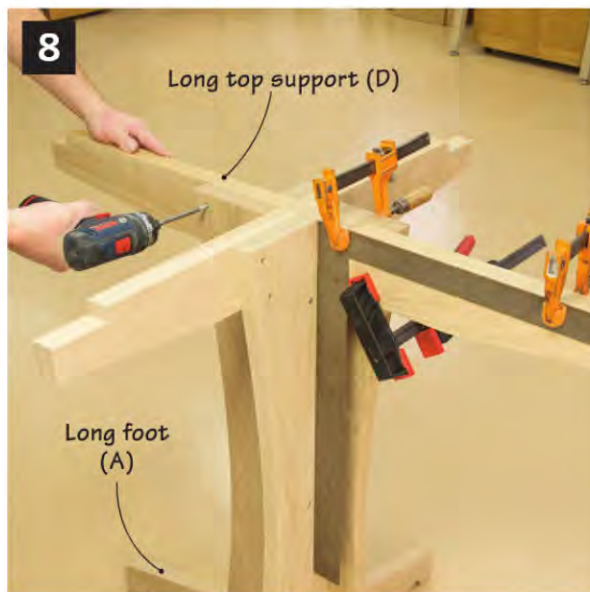
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◀ Interlock the top-support pieces (D and E) and set them in place in the pedestal; then drive the screws. Make sure the long top support (D) is in the same plane as the long foot (A).



▲ Screw the center and outer slats to the top frame. Make sure the spacing is exactly equal. This assembly sequence is designed to ensure that all of the slats are equally spaced.



▲ Fasten two more slats, centering them exactly between the center and outer slats. Then add — and evenly space — the remaining slats.

Check the fit of the top supports (D and E) between the aprons of the top frame; shorten them if necessary. Now screw the top-support pieces to the pedestal (photo 8, above).

FINISHING TOUCHES

Apply two coats of clear penetrating exterior sealer to all of the wood parts. (You don't need to disassemble the base for this.) Let the finish cure for a few days before you screw the top frame to the top support and attach the slats to the top frame (photos 9 and 10).

Don't forget that you can remove the screws to break the table down into two easily movable sections to take it outside. There's nothing quite like building a big piece in your shop and realizing that you can't get it through the door. ■

Handyman Club life member Bruce Kieffer is a custom furniture builder, freelance woodworking author and technical illustrator. You can see a collection of his work at kcfi.biz.

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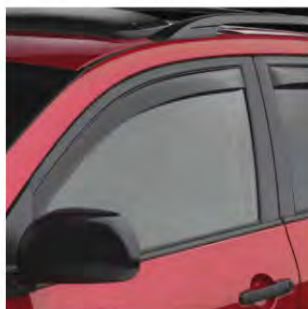


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PROJECTS

TEXT AND PHOTOS BY BRUCE KIEFFER

SPORTS HUTCH

ORGANIZE BATS, BALLS, GLOVES, SHOES AND OTHER CLUTTER IN A LARGE-CAPACITY CABINET



**Makes and
keeps wood
beautiful.**



PHOTO BY WATT SPROUSE

/// If you or your kids are involved in sports, you probably need a way to corral the gear involved. This hutch is an attractive project that brings order to chaos. The cabinet has lots of room for lots of stuff. It is easy to build and finish and can be mounted to a wall in an entryway or mudroom. The oak stain and satin polyurethane finish are extremely durable and long-lasting to withstand the rigors of everyday use.

All of the materials you need are available at local home-improvement centers. I used preassembled red oak panels and other dimensioned red oak boards, which greatly reduced my work. The materials cost \$280, and I spent 10 hours over four days building and finishing the cabinet.

CONSTRUCTION NOTES

Almost all of the parts are joined with pocket screws. If you're not familiar with this joinery method, here's how it works: You drill angled holes in the backs of workpieces using a pocket-hole drill guide and then drive special pocket-hole screws through the angled holes and into the adjoining workpiece. It's simple and fast, and the parts can be disassembled if necessary.

In addition to a pocket-hole drill guide, you'll need a table saw, an orbital sander and a few bar and pipe clamps to complete the project. A router is nice for cutting the rabbets for the back, but you could cut those joints on a table saw.

It's much easier to finish the parts before assembly. Applying the finish with the parts laid horizontally will help to eliminate runs and sags, but you still need work carefully when applying the polyurethane to the vertical edges. Watch for runs down the unfinished edges — they tend to roll over to the other side and make a real mess.

BUILD, FINISH, ASSEMBLE

Cut all of the pieces to size (see cutting list, opposite). Miter the ends of the crown pieces (H and I). Rout the back rabbets (photo 1). Drill the pocket-screw holes (photo 2). Drill the screw holes in the cubby section top and bottom shelves (B) for the dividers (C) and the screw holes in the sides (A) for attaching the top. Also predrill the screw holes for the coat hooks in the upper cross brace (D). Glue and nail or glue and clamp the shelf edges (F) to the angled shelves (B). Now finish sand all the parts, and use sandpaper to ease all exposed sharp edges.

Wipe on one or two coats of stain to the exposed surfaces of all parts. Two coats will make the color more even and darker if that's what you want. Now apply the finish (photo 3). The unexposed solid-wood surfaces only need one coat of finish to seal them. There's no need to seal the back of the back panel (G).

Assemble the cubby section. Set it faceup on 1/4-in. spacers and attach one side (photo 4). Attach the center shelf (photo 5) and then the cross braces (D), the toe kick (E) and the three angled shelves to the side. Align the angled shelves flush with the front and rabbeted edges of the sides; then finish the assembly (photo 6).

The hutch must be secured to a wall. You can mount a cleat to the wall at the height of the coat hooks, remove the two end coat hooks and screw behind them into the wall cleat, or you can secure two metal L-brackets to the rear of the hutch top and to the wall. All that's left is to gather up your gear and stow it inside.

SOURCES

Go to HandymanClub.com/magazine and click on WEB EXTRAS.

Minwax (No. 270 Weathered Oak Stain; Fast-Drying Satin Polyurethane; No. 6 Cherry Blend-Fil Pencil), minwax.com



▲ Rout the rabbets in the rear edges of the sides (A). Use a straight router bit and an edge guide. Make the cuts 1/2 in. deep x 1/4 in. wide, and cut from end to end.



▲ Drill the pocket-screw holes in the undersides of four of the shelves (B), the top side of the cubby shelf (B) and the backs of the cross braces (D) and toe kick (E).



▲ After applying the stain with a rag and letting it dry for a couple of days, brush on three coats of polyurethane. Smooth the finish between coats using 220-grit sandpaper.

Wood finishing projects are easier with Minwax.



4 Screw one side (A) to the assembled cubby section. Clamp every joint you screw together; otherwise the parts may wander and not align correctly. Drill pilot holes for the non-pocket-hole screws.



5 Flip the partially assembled hutch up on its side and add the center horizontal shelf. Carefully handle the parts so you don't damage the finish. It can take a few weeks for the finish to fully cure.



6 Screw the other side panel in place and nail the back and crown pieces on. Fill the crown nail holes using a Blend-Fil pencil (see SOURCES). Attach the coat hooks, and secure the hutch to a wall. ■

SPORTS HUTCH

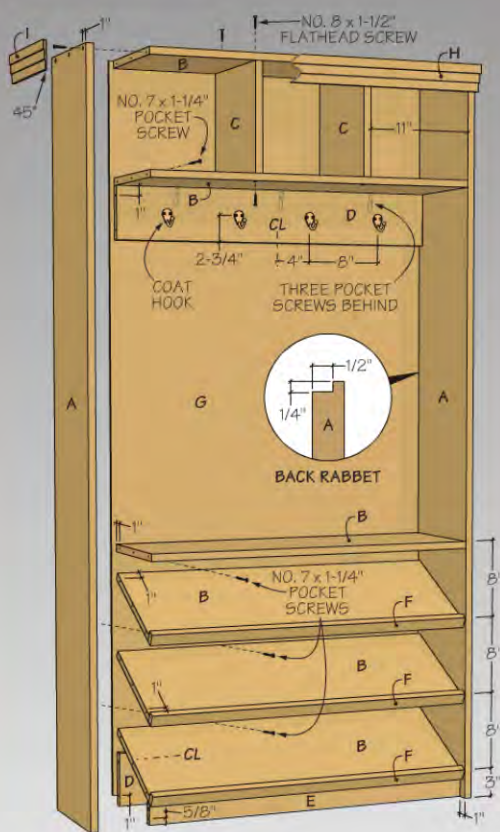


ILLUSTRATION BY BRUCE KIEFFER

CUTTING & SHOPPING LIST

► KEY	NO.	DESCRIPTION	SIZE
► A	2	Sides	3/4 x 11-1/4 x 76 in.
► B	6	Shelves	3/4 x 11 x 34-1/2 in.
► C	2	Dividers	3/4 x 11 x 11 in.
► D	2	Cross braces	3/4 x 5-1/2 x 34-1/2 in.
► E	1	Toe kick	3/4 x 2-1/8 x 34-1/2 in.
► F	3	Shelf edges	3/4 x 1-1/4 x 34-1/2 in.
► G	1	Back Panel	1/4 x 35-1/2 x 75 in.
► H	1	Long crown	1/2 x 2-3/4 x 37 in.
► I	2	Short crowns	1/2 x 2-3/4 x 11-3/4 in.

► 1x12 x 8-ft. red oak boards (2), 1x12 x 6-ft. red oak boards (3), 1x6 x 6-ft. red oak board (1), 1x3 x 3-ft. red oak board (1), 1x2 x 3-ft. red oak boards (3), 1/2 x 2-3/4 x 7-ft. red oak casing (1), 1/4 x 48 x 96-in. red oak plywood panel (1), coat hooks (4), screws (see illustration), stain and varnish



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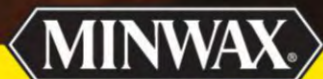
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DECK REVIVAL

HOW TO GET STARTED REPAIRING, UPGRADING OR REPLACING YOUR DECK

One of the joys of summer is spending more time on your deck. With a little planning and good weather, you can while away the hours in leisure mode. But first you'll need to invest some time in caring for your deck to make it a safe, appealing outdoor-living space.

The most sensible and economical way to extend the life of your deck is to perform regular maintenance and repair and replace components as needed. When the time comes to tackle these projects, the new products outlined on the following pages may make the job easier and more satisfying. Here's a brief overview of some options to get you started on your quest for a better deck.

DECKING

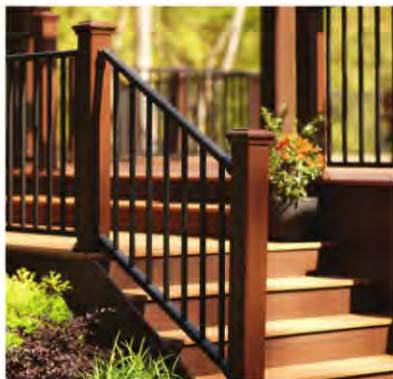
Wood decking offers a lot of advantages: It's attractive, relatively economical (depending on the wood) and easy to in-

stall and repair with common tools. However, it does require regular maintenance (cleaning, staining, etc.) because the elements can quickly cause wood to deteriorate. You'll find a wide variety of wood choices, including cedar, cypress, redwood, pressure-treated pine and Perennial Wood, a new type of treated wood (see SOURCES and WEB EXTRAS, p.25).

If you'd rather spend more time relaxing on your deck than maintaining it, a composite product might be a good alternative. Composite decking has been growing in popularity, and its quality has improved considerably in recent years. Most composites are extrusions composed of wood fiber and plastic resin. They're almost as easy to work and install as wood, but the weight of the material and how it cuts, drills and fastens are different, so be prepared for a learning curve. You'll need to exercise a little extra care, such as drilling pilot holes and using an appropriate saw blade to prevent problems such

as splitting, mushrooming, etc. Unlike wood, composite decking cannot be used for structural applications. However, many of the manufacturers of composite decking make products for structural purposes (see SOURCES). Be aware that there are significant differences between brands in texture, color, workability, the materials used to make the products and prices.

Deck fasteners are even more var-



ied than decking materials. There are two basic categories: exposed fasteners (mainly screws and nails driven through the top of deck boards) and hidden fasteners, which typically employ small clips that connect to the edge of the decking. Most composite manufacturers will recommend specific types of fasteners for their products. But when you're working with wood, you can use almost anything available that offers the appropriate corrosion resistance (particularly important for pressure-treated wood).

RAILINGS

Railings are typically the most noticeable deck component, and they're essential and required for safety with

◀ Trex Reveal is an aluminum railing system that's available in black, bronze and white and with aluminum posts or composite post sleeves (shown).

elevated decks (see "Don't Mess With Codes," opposite). Sometimes they need to be replaced because they're worn, unsafe or simply unattractive. Wood railings in particular require a lot of TLC, so low-maintenance alternatives are a wise choice.

Most decking manufacturers offer a wide selection of low-maintenance railing systems in a variety of materials including composite, PVC, steel, aluminum (photo, left) and combinations of materials (see SOURCES). Some systems are DIY-friendly (see "Deck Railings" in WEB EXTRAS, opposite); others require professional installation. Most manufacturers' Web sites feature excellent step-by-step instructions and FAQs so you can determine whether the system is the right one for you.

LIGHTING

Everyone is familiar with the ubiquitous wall-mounted deck spotlight that

DECK TUNE-UP

Old decks don't die; they just fade away — at which point they need to be torn down. But yours doesn't have to get to that point. With regular maintenance, you can keep a wood deck safe and looking good for many years.

A deck's life span depends on factors such as climate, the amount of use and the type and quality of construction and materials. However, you can maximize the longevity of any deck by making the following checklist an annual ritual.

CHECK FOR ROT AND ITS CAUSES

Rot can be caused by standing water (resulting from poor drainage), mildew and the use of inappropriate construction materials (such as untreated

lumber). Inspect deck boards, the ledger board, support posts and structural members for evidence of rot (bottom photo, opposite), and look for cupping, which can cause deck boards to hold water. (Cupping usually results from improper installation.)

Whenever necessary, replace boards with rot-resistant woods such as pressure-treated or cedar lumber. Do not use plastic or composite materials in structural applications unless they are specifically rated for that purpose.

You may need to fasten a cleat to the existing joists to support new deck boards. Support posts can rot at the base, which could cause a collapse. Replacing support posts is typically best left to professionals. However, you can fix drainage problems to keep the base as dry as possible.

CHECK THE FASTENERS' INTEGRITY

If nails have popped, driving them back in won't solve the underlying problem. Pull the nails and replace them with deck screws (photo, opposite). You may need to use a larger screw if the hole has become enlarged. Sink the screws just below the deck surface, no deeper — you don't want to create a place for water to pool.

Replace corroded fasteners with new ones that are corrosion-resistant. If many of the fasteners are loose or corroded, check the deck for excessive movement and squeaks. This is particularly important if your deck has hidden deck-board fasteners. Pressure-treated wood requires fasteners such as stainless-steel or hot-dipped zinc-coated galvanized nails, screws or bolts that are resistant to the corrosive effects of the treating chemicals, such as ACQ.

CHECK THE RAILING AND STAIR STRUCTURE

A structurally unsound railing can be an accident waiting to happen. Make sure railing fasteners are tight and that there's no rot at joints. Although many

provides illumination, but the light it sheds is harsh and tends to attract a lot of bugs. Integral low-voltage LED deck lighting is a much more pleasant and energy-efficient alternative.

WEB EXTRAS



PERENNIAL WOOD

To get plans for a Perennial Wood Adirondack chair, scan this tag or visit HandymanClub.com/magazine.



DECK RAILINGS

For a step-by-step deck railing replacement guide, scan this tag or visit HandymanClub.com/magazine.



▲ Adding lighting to your deck enhances its aesthetics and safety. Many mounting options are available, such as this post-cap light.

DON'T MESS WITH CODES

Despite what some people may say, building codes are not a government plot to inconvenience you or strip away your freedom (see *HANDY HISTORIES*, p. 70). They help to ensure safety, uniform construction and property values. There are many horror stories of decks' collapsing and causing injuries or deaths because builders and homeowners ignored codes regarding the structure and deck-to-house attachment. Another common hazard is improperly attached deck railings that break under load. You can easily avoid many potential problems by checking with your local building authority before you build or renovate a deck. And be sure to get a permit for the work, if required. — LO

communities allow railings that complied with code at the time they were built, do yourself a favor and replace old railings with safer new ones that meet current code standards.

Stairs endure a lot of wear and tear and should be checked frequently. Inspect the framing for rot, cracks and failing attachment points. Replace damaged stair treads as needed.

CLEAN AND RESTORE

Decks typically need to be refinished every two or three years. A semitransparent water-repellent stain is your best bet because it's easy to apply and renew on a regular basis. Do not use paint on decking. Painted deck boards become slick when they get wet, posing a safety hazard. In addition, paint doesn't wear well



▲ Replace popped deck nails with stainless steel, coated or galvanized deck screws. Use a pry bar and a block to gain leverage and protect the deck surface.

and makes refinishing extremely difficult.

Before applying a fresh coat of finish, you should spot-clean oil and grease stains with a citrus-base or nonchlorine cleaning product. You can use a pressure washer for removing embedded dirt, but be careful. Using too much pressure too close with a tight spray pattern will pulverize wood fibers or cut into composite decking. A stiff brush on a long handle works just as well.

◀ Rot often starts on the ends of deck boards. You can replace the entire board or remove the rot and patch the area with wood or a polyester filler.

Once the deck is clean, you can quickly and neatly apply finish to deck boards with a pole and painting pad and to the railings with a small roller.

If the deck surface is in really rough shape — with cupped boards, finish buildup, badly weathered wood, etc. — it might be time for a full surface restoration. To do this you'll need to rent a belt floor sander from a local rental company. The work will be hard and dirty, but when you're finished the deck will look like new, and you'll have extended its life for many years. — LO

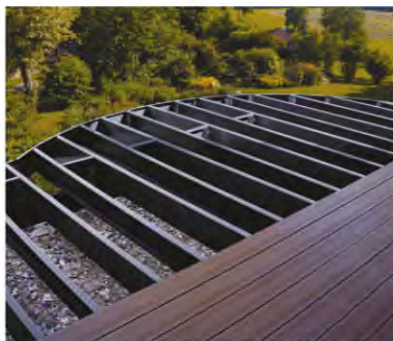
Several manufacturers offer lighting as integral components to their deck and railing systems and as stand-alone products that can be retrofitted to an existing deck.

Post-cap lights sit on top of the railing posts and are typically the easiest to install. Under-rail lights provide soft, even illumination that can extend completely around a deck. For safety's sake you can install lights that fit on stair risers and deck posts as well as recessed lights for the perimeter of the deck.

OTHER OPTIONS

The array of products you can use to dress up and improve your deck is mind-boggling. For a new worry-free deck structure, consider Trex's new steel structural system called Trex Elevations (photo, below), introduced at this year's International Builders' Show. Its coated, galvanized-steel parts are strong and should provide a long life and low

▼ To provide an extremely strong and durable deck structure, Trex Elevations is made entirely of galvanized, coated steel.



▲ Rust-Oleum's Deck & Concrete Restore is a thick coating that's formulated to extend the life of a badly weathered deck.

► The Azek in-deck storage kit is a weatherproof box that installs flush with the deck's surface and between the joists.



maintenance. But if you just want to repair your existing deck's structure, you can do the job yourself with pressure-treated wood and reasonably good carpentry skills (see WEB EXTRAS, right).

For decks that are still sound but need help to extend the life of the deck boards, check out Rust-Oleum's Deck & Concrete Restore (photo, below). This thick, durable coating isn't cheap, but it's far less expensive than replacing deck boards. And to give your deck a clean, spacious look, Azek's in-deck storage kit (photo, above) is a great way to keep cushions, umbrellas, grilling supplies, etc., out of sight.

Other deck-enhancement products include everything from trim and molding to drainage systems (to keep the space under your deck dry) and awnings. Searching online and visiting hardware stores and home-improvement centers can open your eyes to the myriad possibilities. Along with practical and financial considerations, keep in mind that your deck enhances your lifestyle. Creating a space that's highly functional and aesthetically pleasing can be every bit as important as ensuring that it's structurally sound and durable. ■

WEB EXTRAS



HOW TO REPLACE ROTTEN DECK POSTS

To learn how to replace a rotten post on your deck, scan this tag or visit HandymanClub.com/magazine.



DECK REDO

To learn how to rebuild a deck with composite decking, scan this tag or visit HandymanClub.com/magazine.

SOURCES

Go to HandymanClub.com/magazine and click on WEB EXTRAS.

METAL AND COMPOSITE

Azek, azek.com

CertainTeed, certainteed.com/products/fence-railing-deck-more-info/Composite-Decking.aspx

ChoiceDek, choicedek.com

EverGrain, tamko.com/Decks-Docks-Railing/ProductLine/DeckBoards

Fiberon, fiberondecking.com

Latitudes, latitudesdeck.com/decking/

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Trex, trex.com

WOOD DECKING PRODUCTS

Perennial Wood, perennialwood.com

Rust-Oleum, rustoleumrestore.com

Wolmanized, wolmanizedwood.com

MORE INFORMATION

North American Deck and Railing Association, nadra.org

Southern Pine, southernpine.com

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OUTDOOR LIVING

BY VERN GRASSEL | PHOTOS BY LAURIE GRASSEL

BACKYARD BRIDGE



A photograph of a garden featuring a wooden footbridge with rope railings crossing a small stream. The bridge is made of light-colored wooden planks and has vertical wooden posts with thick rope railings. The stream is bordered by a stone retaining wall and various rocks. There are some plants, including tall grasses, near the bridge. The background shows a wooden deck and more greenery.

ADD A FUN FUNCTIONAL ELEMENT TO YOUR LANDSCAPE

Whether you need a way to traverse a backyard stream or just want to add architectural interest to a garden path, this gracefully arched footbridge creates a dynamic focal point in any landscape. It also offers an attractive spot to pause and admire your garden from a new perspective.

You only need a few tools to make this easy-to-

build bridge: a circular saw, a jigsaw and a drill/driver. By carefully planning the measurements and angles before making the first cut, even a beginner can successfully complete this project.

DESIGN NOTES

The plans in this article are for a 4-ft.-wide x 16-ft.-long bridge that measures about 2 ft. high from the top of the arch to the ground. You may have to make adjustments to the bridge plans to suit your needs. For strength and durability, I used pressure-treated lumber without finish and planned to let it age naturally. My bridge is solely intended for foot traffic; if you want to drive golf carts or ATVs across your bridge, you'll need to reinforce the curved beams.

I wanted the arch of the bridge to be high enough that it's visually dramatic but not so high that crossing the bridge would be difficult. If your bridge will be part of a well-traveled walkway, you may

SHOPPING LIST

- ▶ 2x10 x 12-ft. pressure-treated boards (10)
- ▶ 2x6 x 8-ft. pressure-treated boards (18)
- ▶ 2x4 x 8-ft. pressure-treated boards (5)
- ▶ 3/4-in.-dia. x 64-ft. rope
- ▶ 3-in. deck screws (5-pound box)
- ▶ 2-1/2-in. deck screws (1-pound box)
- ▶ Construction adhesive (5 tubes)

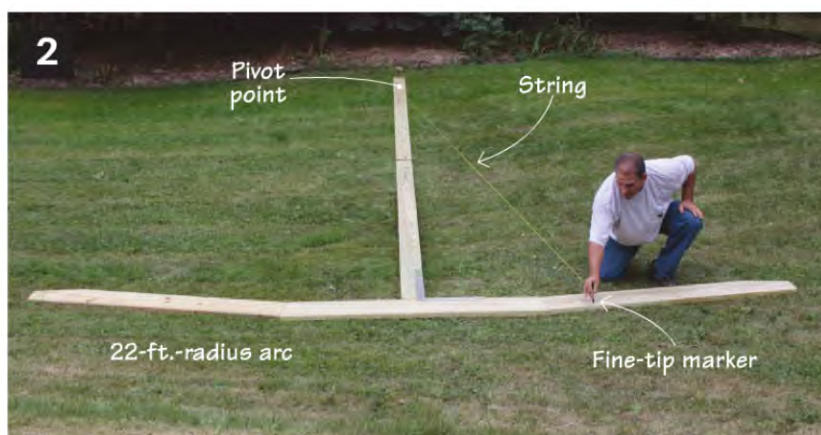
CUTTING LIST

▶ KEY	NO.	DESCRIPTION	SIZE
▶ A	8	Outer end-beam sections	1-1/2 x 9-1/2 x 66-7/8 in.
▶ B	4	Outer middle-beam sections	1-1/2 x 9-1/2 x 63 in.
▶ C	4	Inner end-beam sections	1-1/2 x 9-1/2 x 36-1/4 in.
▶ D	4	Inner middle-beam sections	1-1/2 x 9-1/2 x 62-5/8 in.
▶ E	2	Faceplates	1-1/2 x 3-1/2 x 44 in.
▶ F	2	Bottom plates	1-1/2 x 9-1/2 x 44 in.
▶ G	2	Spreaders	1-1/2 x 3-1/2 x 35 in.
▶ H	36	Deck boards	1-1/2 x 5-1/2 x 48 in.
▶ I	10	Posts	1-1/2 x 3-1/2 x 28 in.

THE PROCESS



▲ Position your work at a comfortable height and use a circular saw to make the straight cuts. Be sure to follow the layout lines.



▲ When dealing with a large radius, a string compass is a quick and accurate way to draw a continuous arc. Use a carpenter's square to establish a 90-degree angle at the center.



▲ Use a jigsaw to make the long, curved cuts in each beam section.

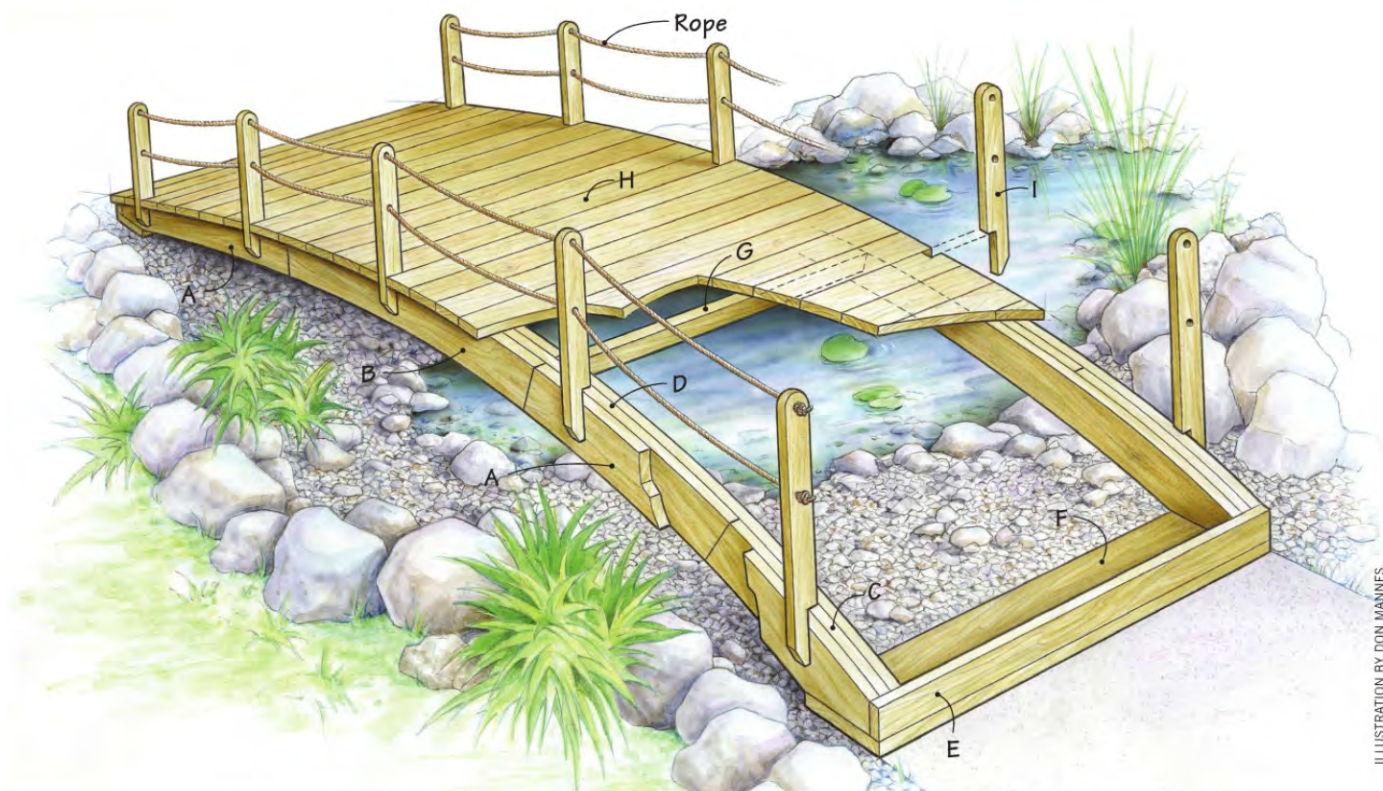


ILLUSTRATION BY DON MANNES



▲ Trace the curves from the outer layer onto the inner layer.



▲ Use the previously cut beam sections as templates to trace the curves on all identical beam sections.



▲ Glue and screw together one inner layer and two outer layers to make the arched beams. Use construction adhesive and 2-1/2-in. or 3-in. deck screws.

want to consider a shallower arch. If you are building a bridge as more of a design element, you could scale back the size and increase the height of the arch.

When designing the bridge I first determined the length and miter angles of the beam sections; then I used a string compass (or trammel) to draw the arc. A 22-ft. radius provided the symmetrical arc that I wanted.

BUILDING THE BEAMS

You will need two arched beams for a 4-ft.-wide bridge. If you're planning to build a bridge that's wider than 4 ft., I recommend making a third beam to support the center. Each beam has three layers and consists of four outer end-beam sections (A), two outer middle-beam sections (B), two inner end-beam sections (C) and two inner middle-beam sections (D).

I used 2x10 boards to make the beam sections. Pick boards that are flat, as you will be face-gluing the curved beam sections together later.

First, mark all of the miter angles and then cut all of the beam parts (A, B, C and D) to length before cutting any

This gracefully arched footbridge offers an attractive spot to pause and admire your garden from a new perspective.

Partially drive a nail into the top of the spare board 22 ft. from the top of the middle beam section (B). Tie a loop at the end of a string and hook it on the nail; then tie the other end of the string around a fine-point marker 22 ft. from the pivot nail. Hold the string tight and

draw the top arc on the beam sections (photo 2). Then tie the marker 6 in. closer to the pivot point and, without moving the beam sections, draw the bottom arc. Use a jigsaw to cut the 22-ft.-radius curves on those parts (photo 3).

Next, lay out the four sections that make up the inner layer of the beams (C, D, D, C) on a flat surface. Place the sections of the outer layer that you just cut (A, B, A) on top of the inner-layer pieces and trace the arc (photo 4, p. 31). Then use a jigsaw to cut the curves on the inner-layer sections. After

curves. I used a circular saw for this step (photo 1, p. 30).

To create a beam, lay out the three sections (A, B, A) that make up the outer layer on a large, flat surface. Then lay out a couple of spare boards centered on the middle section (B) at 90 degrees.

THE PROCESS



▲ Flip the beams upside down to attach the bottom plates.



▲ Fasten the deck boards in place with two 3-in. deck screws at each end, maintaining a 2-in. overhang on both sides.

you cut the arc in the first two beam layers, you can use those pieces (A, B, C, D) as templates to mark the radius curves in all similar beam sections (**photo 5**).

To assemble the beams, lay out the three sections (A, B, A) that make up an outer layer; then, beginning with part C, start lining up the inner layer (C, D, D, C) and screw the layers together. Use an exterior construction adhesive for pressure-treated lumber and 2-1/2-in. deck screws. Attach the other outer layer with 3-in. deck screws (**photo 6**).

ASSEMBLING THE BRIDGE

With the beams upside down, attach a temporary 44-in.-long spreader board between the beams at the center; then use 3-in. screws to join the faceplate (E) and bottom plate (F) to the ends of the beams (**photo 7, opposite**). Flip over the beams and place the assembly in the desired location, taking care to level and flatten the ground where

the bottom plates will sit. Next, remove the temporary spreader and attach the permanent spreaders (G) by toenailing them through the spreader ends and into the beams.

Cut the deck boards (H) to length. Center the deck boards on the beams, leaving a 2-in. overhang on each side, and attach them with 3-in. deck screws (**photo 8**). **Note:** I butted the boards tightly because I was working with wet lumber and knew that there would be some shrinkage. If your lumber is dry, leave a 1/8-in. space between the deck boards to allow for seasonal wood movement.

ADDING THE POSTS

Cut the posts (I) to length, radius the top, drill holes and cut notches as shown in the illustration. You can adjust the top angles of the notches to fit when you install the posts; each notch will be slightly different.



ANOTHER TAKE ON A FOOTBRIDGE

To see plans for another footbridge project, scan this tag or visit HandymanClub.com/magazine.



Center the middle post and determine where you want the end posts to be placed; then equally space the remaining posts on both sides of the bridge. Use a level and hold the posts plumb while you draw the notches on the deck boards (**photo 9, below**). Angle the base of the jigsaw and cut the notches in the deck boards (**photo 10**). Set the posts in the notches, make sure that they are plumb and drive 3-in. screws into the sides of the beams (**photo 11**). Finally, thread 3/4-in.-dia. rope through the holes in the posts and tie off the ends. ■

Handyman Club life member

Vern Grassel is a woodworking designer in Elk River, Minnesota.



▲ Hold the post plumb and use it as a guide to trace the angled notches onto the deck boards.



▲ **Tip:** By angling the base of the jigsaw so the blade is plumb, you can easily cut the angled notches in the deck boards.



◀ Drill the holes before fitting the posts into the notches. Secure each post in place with two 3-in. deck screws.

ELEVATED GARDEN

AN EASY-TO-BUILD
PLANTER BOX BECOMES
AN EASY-TO-TEND GARDEN



One of the not-so-enjoyable aspects of gardening is the constant stooping to plant, weed, water and harvest. My solution was to build a garden planter on legs. It is simple enough for even a beginning woodworker to make in one weekend using only a few hand tools.

The interior of the box features a corrugated asphalt roofing panel (see SOURCES) that enhances stability and water resistance and adds color to the project. All of the other parts are made of cedar, screwed and glued together to form a strong framework.

CONSTRUCTION NOTES

Cedar is a weather-resistant wood, but because it can split easily, I recommend boring pilot holes before driving the 1-1/4-in. stainless steel screws (chosen because they do not stain the wood.) A countersink drill bit helps to hide the screwheads. For a strong, invisible joint, we used a Kreg jig to drill pocket holes.

Although it's not required, using a Type 1 PVA glue,

MATT SPROUSE

RAISED PLANTER BOX

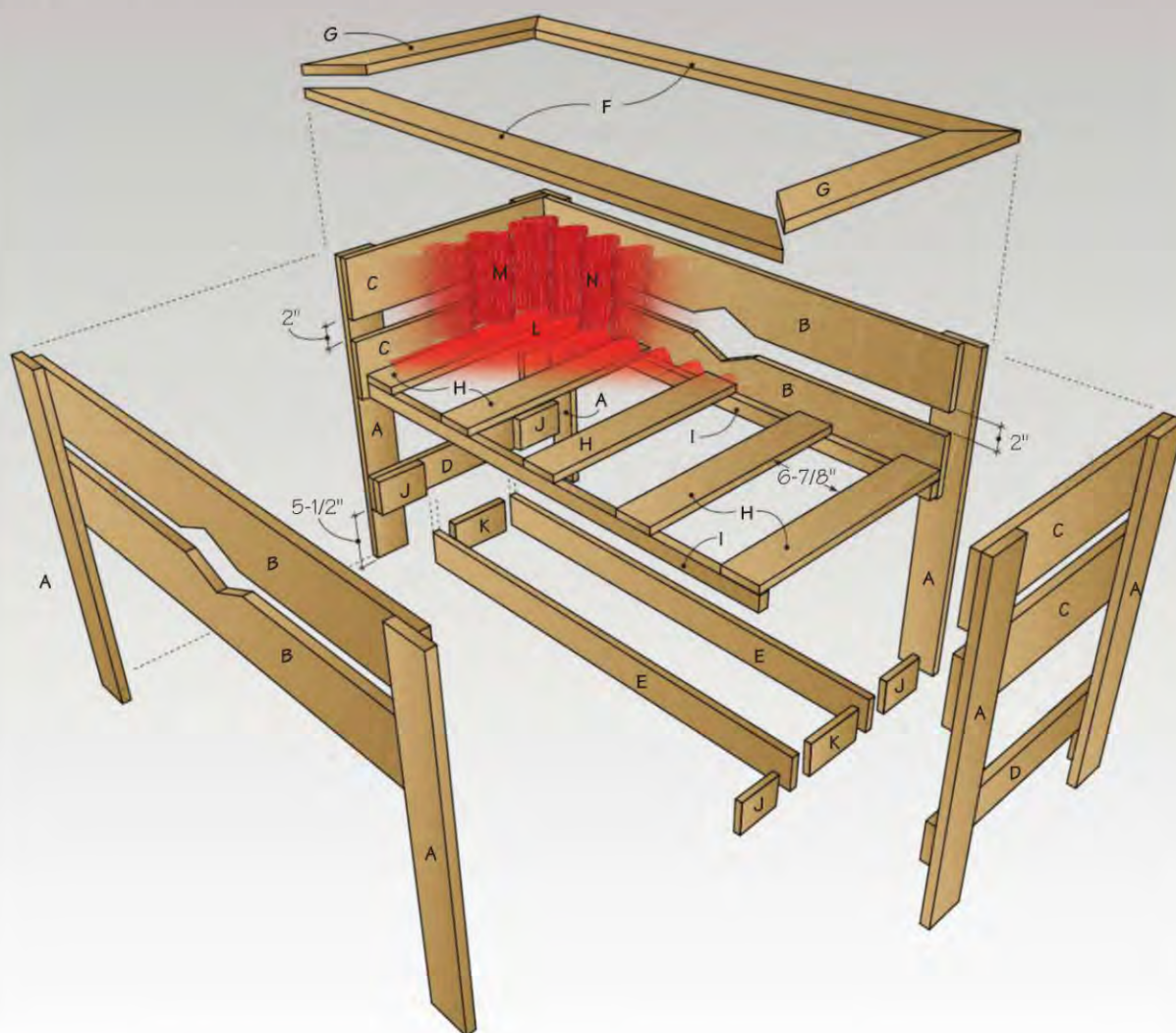


ILLUSTRATION BY MICHAEL R. ANDERSON



Use soil-less potting mix rather than planting soil or dirt from your yard for a container garden, recommends Kathy Childers, editor of Gardening How-To magazine. A typical mix is a blend of mineral rock, compost and peat moss, which makes it lightweight and well-draining yet able to retain moisture and nutrients.

CUTTING LIST

KEY NO.	DESCRIPTION	SIZE	KEY NO.	DESCRIPTION	SIZE
CEDAR					
A 8	Leg parts	3/4 x 3-1/2 x 30 in.	H 5	Slats	3/4 x 3-1/2 x 21 in.
B 4	Front/back panels	3/4 x 5-1/2 x 45 in.	I 2	Slat supports	3/4 x 1-1/2 x 45 in.
C 4	Upper end panels	3/4 x 5-1/2 x 22-1/2 in.	J 4	Outer spacer blocks	3/4 x 3-1/2 x 6 in.
D 2	Lower end panels	3/4 x 3-1/2 x 22-1/2 in.	K 2	Inner spacer blocks	3/4 x 3-1/2 x 8-3/4 in.
E 2	Stretchers	3/4 x 3-1/2 x 45 in.	CORRUGATED ASPHALT PANEL		
F 2	Front/back top frames	3/4 x 3-1/2 x 49 in.	L 1	Bottom panel	22 x 44 in.
G 2	End top frames	3/4 x 3-1/2 x 25 in.	M 2	End panels	10 x 18 in.
			N 2	Front/back panels	10 x 44 in.

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SHOPPING LIST

- ▶ 1x2 x 8-ft. cedar board (1)**
- ▶ 1x4 x 8-ft. cedar boards (8)
- ▶ 1x6 x 8-ft. cedar boards (3)
- ▶ Corrugated asphalt roofing panel (1)
- ▶ 1-1/4-in. stainless-steel screws
- ▶ Exterior-rated glue or epoxy adhesive
- ▶ Landscape fabric
- ▶ Staples

**If you have a table saw, you can rip the 1x2 slat supports (I) from one of the 1x4 scraps.

epoxy adhesive or polyurethane glue before you clamp and screw the boards together will ensure a strong bond that resists splitting. When using epoxy, be sure to wear gloves and a respirator and work in a well-ventilated area. Mix only the amount of glue that you can apply within the setting time. Use a flat stick or disposable chip brush to apply the glue; then clamp the parts and drive the screws. Wipe away any excess glue before it dries.

BUILDING THE PLANTER

Following the cutting list dimensions (p. 35), measure and cut all of the cedar parts (A through K). We used a carpenter's saw (photo A, opposite), but a circular saw or miter saw would speed up the process. All of the parts have 90-degree cuts, except for the top frames (F and G), which have 45-degree miter cuts.

To create the decorative cutout on the four front/back panels (B), measure and mark the panel centers at 22-1/2 in. along one edge; then measure 3-1/2 in. on either side of the centerline and 1-1/2 in. from the edge of the board to form a triangle (photo B). Using a handsaw, carefully cut the reveal.

Follow the step-by-step photos on pp. 37 and 38 to build the planter. When construction is complete, you can sand and finish the wood or leave it natural, depending on the look you desire. Place the planter on level ground in a spot that gets sufficient sunlight. Fill it with good-quality potting soil, plant vegetables or flowers and let nature do the rest.

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◀ Measure, mark and then cut the cedar boards to length. All of the cuts can be made with a carpenter's saw or a power saw.



▲ Cut a triangle from the center of each of the four panels that form the back and front of the planter.

STEP-BY-STEP



▲ Start by constructing the four legs. Clamp two leg parts (A) together at a right angle and drill pilot holes to prevent splitting. Glue, clamp and fasten the joints. (You can also use a pocket-hole jig for joinery throughout the project; see inset, right, and "Joints with a Jig", p.38.)



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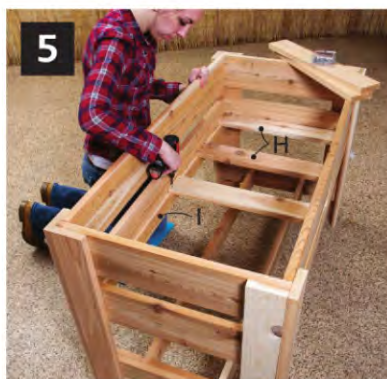
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▲ Assemble each planter end, gluing and fastening two upper end panels (C) and one lower end panel (D) between two leg assemblies. Refer to the illustration for proper spacing between the panel pieces. Note the direction of the leg butt joints in the photo.



▲ Using glue, clamps and screws, fasten an inner spacer block (K) to the center of each lower end panel (D). Next, fasten the stretchers (E) to the ends of the spacer blocks. Secure the four outer spacer blocks (J) to the lower end panels on either side of the stretchers. The spacer blocks help to lock the stretchers in position.



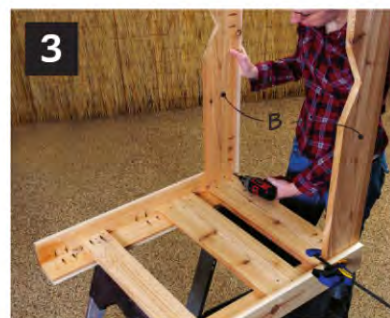
▲ With the stretchers and blocks in place, turn the planter upright and check that it is plumb and square. Fasten the two slat supports (I) to the lowest inside edges of the front/back panels (B). Attach the five slats (H) to the slat supports.



▲ Following the cutting list dimensions, use a saw or sharp utility knife to cut the corrugated panels (L, M and N). Fasten the panels to the inside of the planter with brad nails or screws.



▲ Drill 1/2-in. drainage holes in the "channels" of the bottom panel between the slats. To help retain the soil, staple landscape fabric to the inside of the planter. (Another approach is to use individual plant containers, which would allow you to easily swap out plants.) ■



▲ Lay an end-panel assembly on a flat surface; then glue and clamp the front and back panels (B) to the legs. Be sure that the triangle cutouts are facing the right direction to form the diamond-shape reveal and use a carpenter's square to ensure a 90-degree joint. Add the second end panel in the same way.



▲ Fasten the top frames (F and G) to the top edges of the planter using glue and finishing nails as shown here. (If you prefer, you could use pocket holes and screws driven from the inside of the side panels.)



JOINTS WITH A JIG

To see how to create tight joints with a Kreg Jig, scan this tag or visit HandymanClub.com/magazine.

SOURCES

Go to HandymanClub.com/magazine and click on WEB EXTRAS.

Henkel Corp. (Loctite Epoxy Extra Time Pro) 800-624-7767, loctiteproducts.com

OFIC North America Inc. (Ondura corrugated asphalt roofing panels) 800-777-7663, ondura.com

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DIY DETAILING

MAKE YOUR RIDE SHINE WITH THESE TIPS FROM A HANDY GEARHEAD



CARRIE LAPKA

Amidst the dazzling array of products promising to make your car or truck look brand new, it can be difficult to know which claims to believe or where to begin. So we asked our resident gearhead, *HANDY* Art Director Matt Sprouse, for his detailing recommendations. Here are the methods he uses to keep vehicles looking clean and pristine.

INTERIOR

- Vacuuming the floor and seats is an obvious first step, but shampooing will give the interior extra sparkle.

Matt recommends using a foaming carpet cleaner, which will lift dirt and debris out of the carpet fibers so you can clear it away easily with a wet/dry vacuum. If you live in a region where salt is applied to roads and sidewalks in the winter, use a towel soaked in warm water to scrub away any buildup before you shampoo.

- Use a can of compressed air to blast dust that collects in vents and around knobs and buttons on the dash. One of Matt's favorite dusting tools is a foam brush commonly

used for art projects. The soft, tapered edge is easy to squeeze into crevices, and it won't scratch plastic. A regular paintbrush from a home-improvement store also works well for dusting, but Matt recommends covering the ferrule with duct tape to prevent the metal from scratching surfaces.

- Use a soft cloth and all-purpose interior cleaner to wipe all hard surfaces. If spills or dirt are crusted on plastic parts, Matt recommends using a more abrasive cloth and a little elbow

grease. A wet toothbrush can help to loosen stuck particles as well.

Scrub stains off of seatbelts with a soft cloth and soapy water. Be sure that the soap you use is free of detergents so it won't harm fabrics. Check your vehicle's manual for seatbelt-cleaning guidelines.

- Finish the interior by cleaning the glass. Matt has a homemade solution that works like a charm: Mix one cup of rubbing alcohol, one cup of water and one tablespoon of vinegar. Pour the mixture into a spray bottle, spritz it on the glass and wipe the surface clean with a soft towel.

HOW TO FIX CHIPPED PAINT

Chipped paint is an unpleasant reality for vehicles, but simply ignoring the damage is not the solution. Left unchecked, chips can become a source of corrosion that will undermine the surrounding layers of paint.

General maintenance is just as important to your car's finish as it is to the engine. Applying high-quality wax and quickly repairing chips in the finish will ensure that your vehicle looks as good as it runs.

To learn how to repair paint chips like a pro, check out the tips Matt offers at Handymanclub.com.



CHIP REPAIR

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+TIP

Do not use brush-type automatic car washes, as the brushes can scratch paint and may be loaded with dirt from the previous vehicle.

EXTERIOR

- Before cleaning the exterior of your vehicle, make sure it is parked in the shade so the water won't dry before you can wipe it off. Wash your vehicle's exterior by hand, using soft sponges with a bucket of water and car-wash soap. Temporarily remove license plates, spare tires, racks and other items mounted on the outside of the car if you want to clean under them. After a thorough rinsing, dry the exterior with a soft microfiber towel to prevent the formation of water spots.
- Avoid directly spraying doorjamb and the edges of the hood and trunk with water from a hose; instead, wipe these areas clean with a damp towel. If they are heavily soiled, use a little car-wash soap to loosen

the dirt, and then wipe it off with a clean, damp towel.

- Thoroughly clean the seals around operable windows by pulling them back and using a damp cloth to wipe dirt off of the inside surfaces. If your car's window seals are completely rubber and do not feature felt on

the inside, Matt also suggests using a clean rag to apply a light coat of Rain-X to the inside of the seals; this will eliminate squeaks caused by friction when opening and closing the windows.

- Tires can be cleaned with car-wash soap and a scrub brush, but wheels require a different approach. Use a specialized wheel cleaner and a towel to remove tough, baked-on brake



◀ One of Matt's favorite detailing tools is a foam brush, which works perfectly for dusting hard-to-reach spaces without scratching plastic surfaces. Foam brushes can be found at craft or home-improvement stores.

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◀ A buffing machine works well for creating a shiny surface quickly, but it can also leave behind fine, circular marks in the final coat of wax. For a perfect, swirl-free finish, complete your last buffing pass by hand with a soft towel.



BUG OFF

If you need to remove bug remnants from your vehicle, Matt recommends using this spray-on solution from Wizards. For product info, scan this tag or visit HandymanClub.com/magazine.



PHOTO COURTESY MANUFACTURER

dust and grime. Be sure to rinse the tires and the wheels thoroughly. After the wheels are clean and dry, Matt recommends applying a light coat of wax and buffing the wheels to help prevent brake dust from sticking in the future.

- If your vehicle's paint color seems dull, follow these two steps to make it look new:

1. Apply a small amount of liquid

detailler as a lubricant to a 2-sq.-ft. area at a time and then gently rub a clay bar in a straight back-and-forth motion across the area (repeat this step across the entire surface).

2. Use a buffing compound and a low-rpm buffing tool with a soft pad for an initial polish. Then follow it up with a soft polishing compound and another round with the buffing tool. Be careful around edges, so you don't rub off the clear coat.

- The final step to achieving a like-new look is to add a coat of wax, which will protect the shiny surface that you worked so hard to create. Apply the wax and buff again with a soft microfiber cloth or a power buffer set at a low speed. Matt suggests doing the final buffing by hand with a microfiber towel to smooth the surface completely and avoid the circular pattern caused by the rotation of the buffing machine. ■



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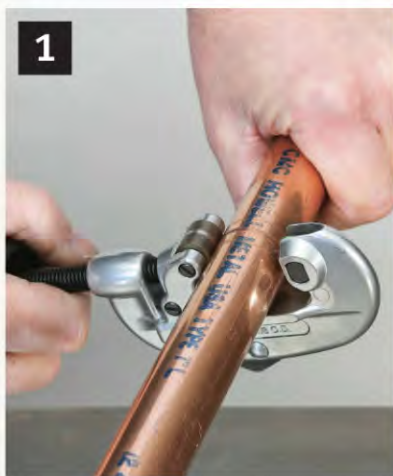
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THE ART OF CATCHING WIND

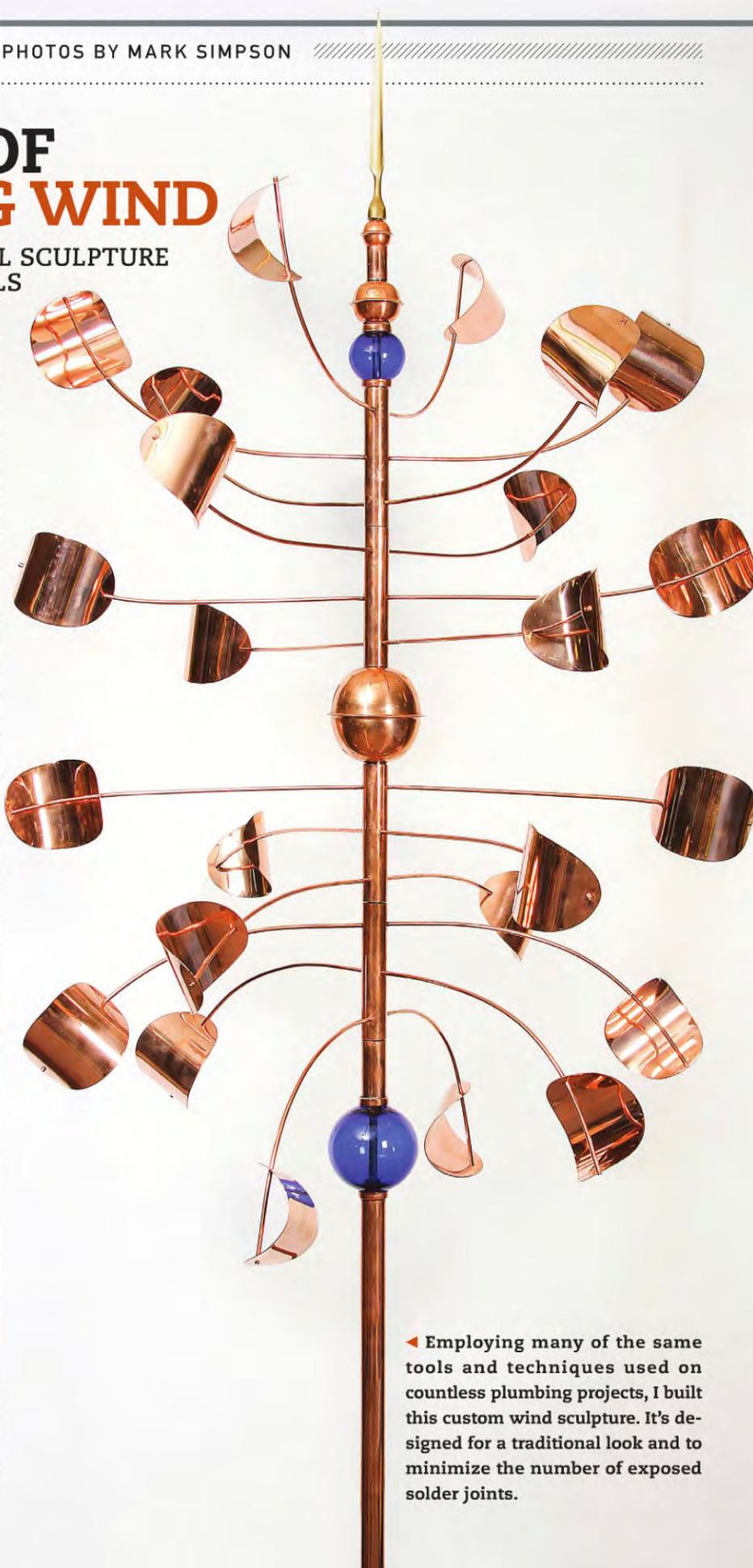
CREATE A KINETIC METAL SCULPTURE USING BASIC HAND TOOLS

Harnessing the powers of nature remains one of mankind's eternal quests. Most often these efforts focus on meeting utilitarian demands or simply easing our workload. But these same forces can also be directed to artistic and whimsical endeavors. Wind-driven creations go by many names: *kinetic art*, *whirligigs*, *spinners*, *pinwheels*, *buzzers* and *wind sculptures*; all of these types provided inspiration for this project, as did more functional weathervanes.

After considering many materials for this sculpture, I determined that despite its relatively high price, copper would be the best choice because of its corrosion resistance and low maintenance. I also considered clear coating it to preserve the metallic luster but ultimately decided to let the copper naturally age from brown to soft green. Follow the step-by-step photos to see how you can create an eye-catching piece of art for your landscape. The size and complexity are up to you.



▲ Begin by building the top sections of the sculpture, as they will be used to align the main support rod later. Use a tubing cutter to cut four 6-in. pieces of 1-in.-dia. Type L copper tubing.



◀ Employing many of the same tools and techniques used on countless plumbing projects, I built this custom wind sculpture. It's designed for a traditional look and to minimize the number of exposed solder joints.



▲ Remove the ridge created by the tubing cutter using the reamer on the back of the tool.



▲ Lay both the tube and a marker on a flat surface and draw a reference line down the length of the tubing.



▲ Each of the top sections has three 3/16-in. copper rods that pass through it. Draw lines at the 1-in., 3-in. and 5-in. marks.



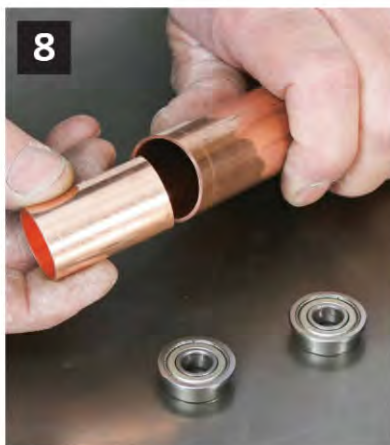
▲ The three rods will be separated from the others by 120 degrees. To determine their location, first wrap a piece of paper around the tube and mark the reference point.



▲ Next, remove the paper from the tubing and divide the total distance into three equal parts.



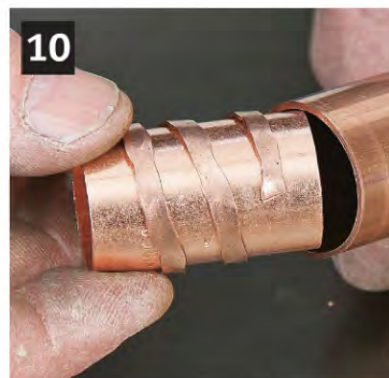
▲ Wrap the paper around the tubing at the 1-in., 3-in. and 5-in. marks you made earlier and transfer the location of the holes that you will be drilling in the tubing.



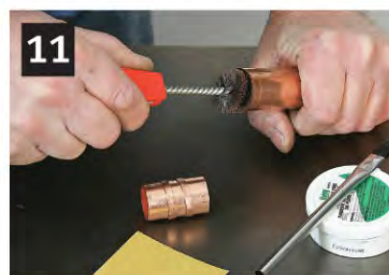
▲ To keep the bearings from being visible once the project is complete, use a sleeve to recess the bearings into the tube section. The bearings have the same outside diameter as the inside diameter of a 3/4-in. copper union fitting. You'll need to use shim stock so the union fittings rest snugly in the 1-in. tubing.



▲ The strength of any solder joint starts with a firm fit between the pieces. Fabricate shim stock by flattening a piece of 12-gauge wire.



▲ Wrap the shim stock around the fittings, completing at least two full revolutions for stability.



▲ To prepare for soldering, sand and wire brush each of the pieces before applying a coat of soldering paste and assembling them.



▲ Use a socket that's slightly smaller than the inside of the 1-in. tubing to gently tap the bearing sleeve to the desired recess depth.



▲ Using a propane or map gas torch, apply heat until the solder reaches its melting point; then feed solder into the joint. Avoid building up too much solder in the bearing mounting areas.



▲ Using a drill press is the easiest way to bore the holes that the 3/16-in. rod will pass through. If you don't have a drill press, you can use a hand drill; just be sure to mark and bore the entry and exit holes separately.



▲ A buffing wheel (known for its ability to tear parts out of your hand and fling them across the shop) gives the pieces a uniform luster.



▲ Fabricate a work stand for the project using 3/4-in. square steel tubing that fits nicely inside the main 1-in. copper tube.



▲ The inside diameter of the bearings and the outside diameter of the main support rod are both 3/8 in. Lightly sand the main support rod so the bearings will slide more easily.



▲ To join the 3/8-in. rod to the 1-in. main tube, use a 3/4- to 1/2-in. pipe reducer in combination with a 1/2-in. to 3/8-in. bushing and another 3/8-in. bushing cut down. Drill out the combined assembly to 3/8 in. to accept the 3/8-in. rod.



▲ After soldering the two adapters to the main 3/8-in. rod, slide the assembly into the 1-in. main support tube with shim stock.



▲ Automotive-style hose clamps and a piece of 3/4-in. angle iron hold everything "true" during the soldering process.



▲ Apply heat to the outside of the joint while feeding solder on the opposite side. After the joint has cooled, remove the angle iron.

22



▲ Various sizes of copper and glass balls, typically found on weather-vanes and lightning rods, make the project eye-catching.

23



▲ To fasten the large glass ball to the main support, first solder the support ring to the tube.

24



▲ Apply silicone inside the ring to cushion the glass. Let the silicone dry before installing the glass ball; otherwise outgassing may cloud the glass.

25



▲ The main support-section tube above the glass ball is constructed similarly to the lower tube; a drilled-out cap is used to finish the top.

26



▲ The 3/8-in. tube bushing is cut down to fit inside another 3/8-in. tube bushing and drilled to match the support rod.

27



▲ Slowly warm the joints to be soldered to reduce the possibility of cracking the glass.

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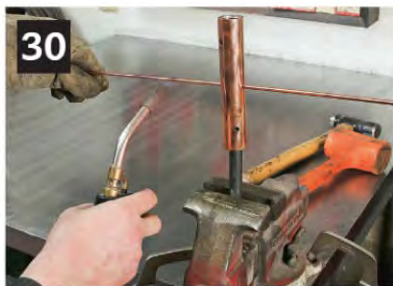




▲ In the next few steps the rods are inserted, bent, rotated and soldered in the tube sections.



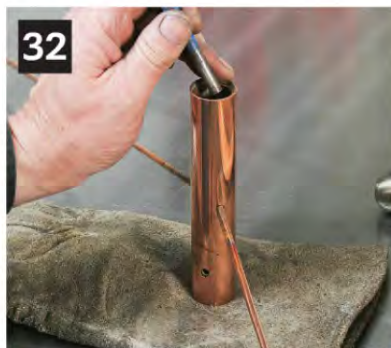
▲ Begin the rod-forming process by rounding over the end of a 1/2-in. steel rod in one direction and clamping it in a bench vise.



▲ After marking the center, insert the copper rod into the tube section. Anneal the center 3 in. of the rod by heating it cherry red and allowing it to slowly cool.



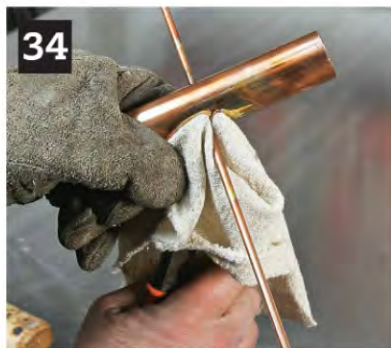
▲ Once it has cooled to the touch, pull the annealed section of the rod into the tube and form it by striking the end of the tube with a soft-faced dead-blow-type hammer.



▲ Use a flat-faced punch to turn the newly formed rod to the side of the tubing.



▲ With the rod contacting the side-wall of the tubing, solder the rod to the inside of the tube.



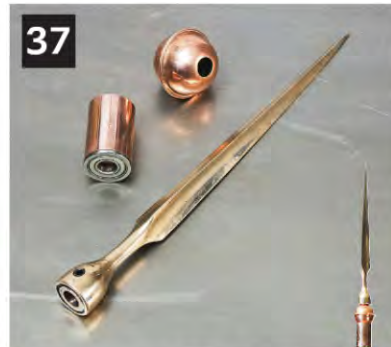
▲ Wrap welding pliers in a shop towel and adjust the rods.



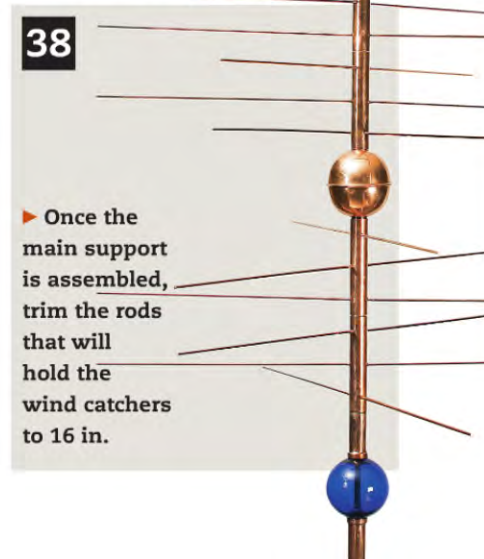
▲ Insert the bearings into the upper sections and slide them onto the main support rod. Use nylon washers between the bearings on different sections.



▲ Use bearings in the support rings for the upper glass and copper balls, centering them on the shaft.



▲ A brass finial that once adorned a lightning rod tops the wind sculpture.



▶ Once the main support is assembled, trim the rods that will hold the wind catchers to 16 in.



39 ▲ Bending the horizontal rods is a relatively easy process. Support the rod on both sides of the bend, and compare the bends on each side.



40 ▲ To create the wind catchers, make a pattern, photocopy it and attach the pattern with spray adhesive to .040 copper sheet; then cut the pieces out with a jigsaw.



41 ▲ After sanding and buffing each of the pieces, form them into the curved shape by pressing them over the tank on your torch.



42 ▲ Slide the catchers onto the rods and solder them in place. The direction of the cup shape determines the direction that section will travel. ■

SOURCES

Go to HandymanClub.com/magazine and click on WEB EXTRAS.

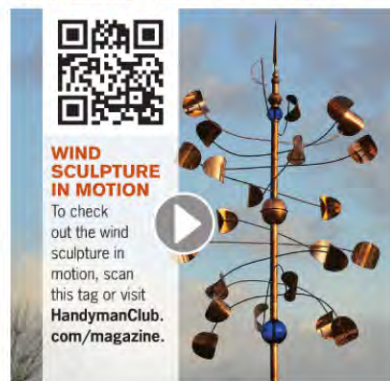
AA Statuary & Weathervane Co. (glass and copper balls), weathervaneparts.com

Discount Steel (copper sheet metal), discountsteel.com

Metals4u (copper round bar and rod), stores.ebay.com/Metals4u-Online

USA Bearings & Belts (FR6-ZZ shielded flange bearing), usabearingsandbelts.com

WEB EXTRA



WIND SCULPTURE IN MOTION

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THE ULTIMATE TOOL-TESTING EVENT

CLUB MEMBERS TAKE THE NATIONAL HARDWARE SHOW BY STORM, TRYING OUT THE LATEST TOOLS FOR HOME-IMPROVEMENT ENTHUSIASTS

Selected in a contest that brought in more than 1,000 entries, four talented Club members joined *HANDY* editors to test tools and see the sights at the 2013 National Hardware Show in Las Vegas. Our Top Tool Testers' enthusiasm and expertise proved that HCOA members are the real deal. Here's a little bit about each of the winners and a recap of the cool products revealed at this year's show.

HEAD OF THE CLASS

These products scored high marks in *HANDY*'s 2013 Product Test Shop.



▲ HYDE PIVOTJET PRO

Turning a standard garden hose into a versatile cleaning and watering wand, the PivotJet Pro features an adjustable spray pattern that ranges from a fine mist to a high-power pressure washer.

Its built-in soap reservoir and soap-mixture controls make outdoor cleaning jobs such as washing the driveway and house siding a breeze. hydetools.com



TOP TOOL TESTERS



Michael Hermesen of Cockeysville, Maryland

Michael just finished a 2,160-sq.-ft. addition to his home, installing the insulation, plumbing, electrical wiring, tile, hardwood and drywall himself — he only hired contractors to put up the exterior shell of the addition and to install the furnace and air conditioning system. His photos show a few of the great improvements that he has added to his home.



PHOTOS COURTESY CLUB MEMBERS AND MANUFACTURERS



▲ RYOBI HYBRID STRING TRIMMER

Ryobi's new string trimmer can be operated by plugging in a cord or by attaching an 18-volt One+ battery, so homeowners can choose longer runtime (with the cord) or enhanced mobility (with the battery) to suit their lawn-care needs. ryobitools.com

★ **2013 HANDY Innovation Awards Nominee**

RIDGID 12V AND 18V 2AH AND 4AH BATTERIES ▶

Adding even more versatility to its battery offerings, Ridgid's 12V and 18V 2Ah Hyper Lithium-Ion batteries provide two times the run time and longer life compared with standard Li-Ion batteries, and the 4Ah versions provide four times the run time, according to the manufacturer. All of these new batteries, available this summer, also feature Triple Protection Electronics technology, which protects them from overcharging, overheating and overloading and boosts cold-weather performance. ridgid.com



HART 21-OUNCE MILLED FACE FIBERGLASS FRAMING HAMMER ▶

A durable, anti-vibration fiberglass handle is just one of this hammer's great features. It also has an angled face that allows for more efficient driving, a side nail-strike face for working in tight spaces, a 180-degree side nail pull for removing stubborn fasteners and a magnetic nail set for duplex and standard framing nails. harttools.com



Charlie Peters of Peachtree City, Georgia

Known as the go-to DIY guy by his neighbors, Charlie has taken on some major projects, including a recent remodel of his daughter's kitchen in Fairfax, Virginia. He removed a wall and tile, installed hardwood flooring and new cabinetry and completed the plumbing and electrical work — all in just three weeks. Charlie has also designed and built several grandfather clocks using walnut from a family farm in Iowa.

OTHER HIGHLIGHTS

Check out these other standout products revealed recently and at the show.

STANLEY UTILITY MAT ▼

Made of durable polyurethane and designed for use in spaces such as a workshop or garage, the Stanley Utility Mat from Sleep Innovations is resistant to tears, stains and harsh chemicals. It is also slip-resistant and offers cushioning for users' feet, knees and back during long periods of standing. Available in September

**WAGNER SPRAY TECH FLEXIO SPRAYER ▲**

The first handheld sprayer designed for both indoor and outdoor painting projects, the Flexio features a turbine that runs at 60,000 rpm with adjustable control settings for airflow, pattern and paint volume. Its needle-nozzle design allows for easy application of both thin and thick coatings, and the 1-1/2-quart coating capacity can cover up to 125 sq. ft. with each fill. wagnerspraytech.com



★ **2013 HANDY Innovation Awards Nominee**

3M SCOTCHBLUE EXTERIOR PAINTER'S TAPE ►

This weather-resistant tape from 3M will hold up in direct sunlight, wind, humidity and even rain, but our favorite attribute is its innovative, easy-to-tear material. With a simple pinch-and-tear motion, this tough tape breaks off cleanly, leaving a smooth, 90-degree edge. scotchblue.com



★ **2013 HANDY Innovation Awards Nominee**

TOP TOOL TESTERS**John Parkes of Middleton, Wisconsin**

Through the years, John has completed many DIY projects in his home, first out of necessity and then for fun. His woodworking endeavors include cherry kitchen cabinets, a Brazilian cherry coffee table and other furniture; he also turns intricate wood vases using a lathe, and when a tree in his yard had to be cut down because of Dutch elm disease, John used the wood to create a turned planter.

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◀ BRIGGS & STRATTON ELITE SERIES PRESSURE WASHERS

Two new pressure washers from Briggs & Stratton provide an extra-large, 3-gallon remote fuel tank for longer runtime and an easy-to-start OHV engine that runs cool and quiet. The units also feature a four-wheel design and a three-position, fold-down handle for easy maneuverability whether you're pulling or pushing. briggsandstratton.com

SKIL 360 QUICK SELECT CORDLESS SCREWDRIVER ▶

This cordless screwdriver features an integrated, enclosed magazine that stores the 12 most commonly used bits onboard and locks them in place for a variety of DIY tasks without your having to handle them individually. A lighted window lets you easily view and select the right bit for the job, and a work light illuminates hard-to-see work surfaces. Perhaps the most innovative feature of this tool is the universal USB charging port, which allows users to charge the 4-volt Li-Ion battery using computers, cell phone chargers, etc., for added convenience. skiltools.com



★ 2013 HANDY Innovation Awards Nominee



RUST-OLEUM DECK RESTORE ▲

For use on wood or composite decking, Rust-Oleum's new Deck Restore fills cracks, nail holes and other imperfections while providing a solid barrier of protection on worn decking materials. It's available in 60 colors to complement a variety of exterior color schemes, and it creates a slip-resistant, uniform surface for a fresh look. rustoleum.com

TOP TOOL TESTERS



Mark Musick of Sellersville, Pennsylvania

A self-taught woodworker, Mark demonstrated his impressive carpentry skills in the photos that he submitted. His beautiful built-in bookcases with crown molding and fireplace mantel featuring decorative panels show great attention to detail. He also incorporated cabinets at the bottom of the bookcases and a chair-rail treatment along the adjacent walls. His handmade bar (not shown) and corner entertainment center are also fantastic home-improvement projects. ■



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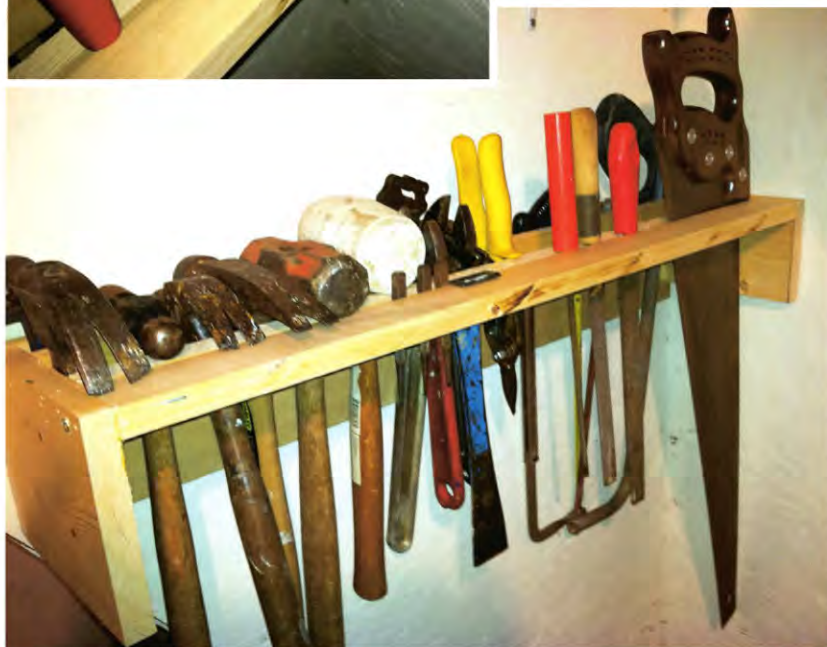
SIMPLE HAND-TOOL STORAGE

Frequent *HANDY* contributor **Joe Provey** of Bridgeport, Connecticut, shared this idea to help fellow Handyman Club members store many hand tools in a small amount of wall space. It's constructed by simply screwing together a few pieces of scrap lumber: Two sturdy ends are stabilized with a back support piece that is

secured to a wall; then you can add as many hanging rails as you'd like for supporting hand tools. You can vary the sizes of the slots between the hanging rails to fit thin and thick handles as well as saw blades.



BEST TIP
WINNER \$200



STAY-PUT CAULK TUBE

Another *HANDY* contributor and Club member, **Roger Johns** of Exeter, Rhode Island, uses painter's tape to secure a tube of caulk in a caulk gun so that it doesn't spin. Roger's solution ensures that the tip remains at the proper angle, and it works especially well for projects that require precise caulking.

HOOK SCREW FOR HOLE SAWS

The wood slug left behind after you use a hole saw can be a pain to remove, but Handyman Club life member **Mike Schultz** of Newport, Kentucky, stumbled upon a solution: A 5/16-in. hook screw happened to be within reach just when he needed it. "All you have to do is remove the pilot drill or arbor and hand-thread the hanger hook into the slug and pull," Mike says. "I now keep that hook in my saw kit." ■

SUBMIT YOUR TIP

The member who submits the best tip wins \$200. Other published tips are awarded \$50. Submit your tips by e-mail to:

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or mail them to:

Tip Trader c/o Jenny Stanley
HANDY, 12301 Whitewater Drive
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Include your name, member number, address and daytime phone number. Sketches and photos are encouraged. We regret that we cannot acknowledge or return submissions.



PHOTOS COURTESY CLUB MEMBERS

DIY DILEMMAS SOLVED

LAMINATE OR LAMINATED?

Q: I can't decide what type of flooring to install in my lower-level family room. I've narrowed the choices to some type of wood, but I'm confused about the terms *lamine flooring* and *laminated hardwood*. What's the difference, and which is best to use in a basement?

JERRY KUTCHNER

MADISON, WI

A: In general, *lamination* describes a process in which multiple layers or strips of materials are bonded together. Laminated products include plywood, a butcher block cutting board or workbench, plastic-laminate countertops (such as Formica or Wilsonart), engineered beams, laminated hardwood flooring (A, above right), laminate flooring (B) and more. Some materials, such as butcher block and laminated hardwood flooring (also called *engineered hardwood*), are made entirely of wood. Others, such as laminate flooring and laminate countertops, consist of a synthetic veneer applied to layers of wood, wood composites, cork or a combination of backing materials.

At one time, all wood floors were made from solid lumber, typically 3/4 in. thick and milled to create a tongue edge and a groove edge (C). The only variables were the species (oak, birch, maple, fir, etc.) and the width of the planks. Solid hardwood floors can be sanded and refinished numerous times and can still look like new after a century (or longer).

Although solid hardwood remains popular for its beauty and endurance, manufactured materials allow for a greater variety of styles and prices. Modern composites also offer advantages over solid wood for certain applications, such as your basement.

Because it withstands humidity and temperature fluctuations better than solid wood, laminate flooring (sometimes called "click flooring")



▲ Engineered hardwood flooring (sometimes called laminated hardwood) is available for a floating floor installation (shown) or as a nail-down floor, which requires a wood subfloor.

is a good choice for a finished basement. It is easy to install and comes in a wide range of colors, patterns and styles. However, it will not hold up to standing water (as can occur in a bathroom), and the top layer, though very hard, is paper thin, so you cannot sand and reapply finish to renew the surface as you can with solid hardwood or even some laminated hardwoods. If you choose this type of flooring, be sure to follow the manufacturer's instructions for surface preparation, underlayment materials, tools and installation methods.

Like laminate flooring, engineered (or laminated) hardwood — which is made of a layer of solid wood backed with plywood or medium-density fiberboard — is also resistant to humidity changes, making it more dimensionally stable than solid wood flooring. As long as your basement is not at risk for wetness or flooding, you can consider installing a floating engineered hardwood or a laminate flooring. Regardless of which type you choose, always allow the recommended acclimation period for the product to adjust to the room's temperature and humidity before you install it. ■

PHOTO BY LARRY OKREND

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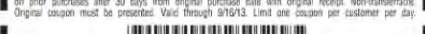


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\$12.99

REG. PRICE \$29.99



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TRIPLE BALL TRAILER HITCH

HaulMaster

LOT NO. 94141/69874

Item 94141 shown

SAVE 61%

\$19.99

REG. PRICE \$51.99



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2-IN-1 FLOORING NAILER/STAPLER

CENTRAL PNEUMATIC

LOT NO. 97586/69703

Item 97586 shown

SAVE \$70

\$99.99

REG. PRICE \$169.99



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800 RATED WATTS/900 MAX. WATTS PORTABLE GENERATOR

NEW!

LOT NO. 66619/60338/69381

Item 69381 shown

SAVE \$90

\$89.99

REG. PRICE \$179.99



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80 PIECE ROTARY TOOL SET

CHICAGO ELECTRIC POWER TOOLS

LOT NO. 68986/97626/69451

Item 68986 shown

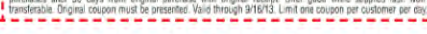
SAVE 72%

\$6.99

REG. PRICE \$24.99



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10" SLIDING COMPOUND MITER SAW

CHICAGO ELECTRIC POWER TOOLS

LOT NO. 98199

SAVE \$70

\$79.99

REG. PRICE \$149.99



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90 AMP FLUX WIRE WELDER

CHICAGO ELECTRIC WELDING

LOT NO. 68887/61207

Item 68887 shown

SAVE \$60

\$89.99

REG. PRICE \$149.99

NO GAS REQUIRED!



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RECIPROCATING SAW WITH ROTATING HANDLE

CHICAGO ELECTRIC POWER TOOLS

LOT NO. 65570

SAVE 50%

\$19.99

REG. PRICE \$39.99



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RAPID PUMP® 1.5 TON ALUMINUM RACING JACK

PITTSBURGH AUTOMOTIVE

WEIGHS 27 LBS.

LOT NO. 68053/69252/60569

Item 68053 shown

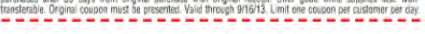
SAVE \$60

\$59.99

REG. PRICE \$119.99



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SUPER COUPON!

7 FT. 4" x 9 FT. 6" ALL PURPOSE WEATHER RESISTANT TARP

LOT NO. 877/69137/69249/69129/69121

Item 877 shown

SAVE 60%

\$279

REG. PRICE \$6.99

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SUPER COUPON!

700 LB. CAPACITY US* GENERAL PRO

LOT NO. 95272/69397/61427

Item 95272 shown

FIVE DRAWER TOOL CART

SAVE \$135

\$164.99

REG. PRICE \$299.99

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SUPER COUPON!

CHICAGO ELECTRIC POWER TOOLS

Item 68861 shown

OSCILLATING MULTIFUNCTION POWER TOOL

LOT NO. 68303/60428/68861

SAVE 75%

\$14.99

REG. PRICE \$59.99

8 Functions: Sanding, Remove Grout, Cut Metal, Cut Flooring, Cut Plastic, Plunge Cut, Scrape Concrete, Scrape Flooring

Accessories sold separately.

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SUPER COUPON!

CENTRAL MACHINERY 5 SPEED DRILL PRESS

LOT NO. 38119/44506/60238

Item 38119 shown

SAVE 44%

\$49.99

REG. PRICE \$89.99

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SUPER COUPON!

29 PIECE TITANIUM NITRIDE COATED DRILL BIT SET

drillmaster

LOT NO. 5889

SAVE 60%

\$9.99

REG. PRICE \$24.99

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SUPER COUPON!

CENTRAL PNEUMATIC 3 GALLON 100 PSI OILLESS HOT DOG STYLE AIR COMPRESSOR

Item 97080 shown

LOT NO. 97080/69269

SAVE 50%

\$39.99

REG. PRICE \$79.99

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SUPER COUPON!

MULTI-USE TRANSFER PUMP PITTSBURGH

LOT NO. 66418/61364

Item 66418 shown

SAVE 64%

\$4.99

REG. PRICE \$13.99

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SUPER COUPON!

ELECTRIC RECEPTACLE TESTER

LOT NO. 32906

SAVE 40%

\$2.99

REG. PRICE \$4.99

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SUPER COUPON!

4 PIECE 1" x 15 FT. RATCHETING TIE DOWN SET

Item 90984 shown

LOT NO. 90984/60405

SAVE 52%

\$7.99

REG. PRICE \$16.99

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SUPER COUPON!

350 LB. CAPACITY FOLDING SAW HORSE

LOT NO. 46762/69446/60710

Item 46762 shown

SAVE 37%

\$9.99

REG. PRICE \$15.99

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SUPER COUPON!

3-IN-1 JUMP-STARTER AND POWER SUPPLY

CHICAGO ELECTRIC POWER TOOLS

LOT NO. 38391/60657

Item 38391 shown

SAVE 40%

\$35.99

REG. PRICE \$59.99

900 PEAK AMPS

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SUPER COUPON!

1500 WATT DUAL TEMPERATURE HEAT GUN (572°/1112°)

drillmaster

LOT NO. 96289

SAVE 60%

\$7.99

REG. PRICE \$19.99

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SUPER COUPON!

SPLIT LEATHER WORK GLOVES 5 PAIRS

Item 66287 shown

LOT NO. 66287/60450

SAVE 40%

\$5.99

REG. PRICE \$9.99

One size fits all.

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SUPER COUPON!

7 PIECE RATCHETING COMBINATION WRENCH SETS

PITTSBURGH

SAE LOT NO. 96654 | METRIC LOT NO. 95552

SAVE 55%

\$17.99

REG. PRICE \$39.99

YOUR CHOICE!

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SUPER COUPON!

2000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE

Item 68146 shown

LOT NO. 68146/61258/61297

SAVE \$50

\$49.99

REG. PRICE \$99.99

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 Indio, CA | Waterbury, CT | Hyannis, MA | Southaven, MS

Vote for your favorite project, and enter a project of your own



1 RELAXING RIDE

Club member **Sam Martin** of Horseshoe Bay, Texas, converted an old dune-buggy-style go-cart into this impressive mobile relaxation machine. After stripping the go-cart down to just the frame and engine, he reconfigured the steering, acceleration, braking and shifting controls; then he mounted a La-Z-Boy recliner to the frame for a driver's seat. Martin also

added a canopy for shade, a Heineken pony keg for a gas tank, new lights, an FM/MP3 stereo and speakers. Other extras include a horn, a backup camera, an oscillating fan, a cup holder and a solar-panel battery charger.

2 STATEMENT GATE

When one of his customers wanted a creative gate for a fence, Club member **Nick Fullerton** of

PHOTOS COURTESY CLUB MEMBERS

VOTE NOW

San Pablo, California, came up with this Celtic-inspired design. He used beautiful redwood and incorporated 1x8 fence boards into the curved top. Nick kept costs down by purchasing the cast-iron hinges on Ebay and the Schlage door lever at a local resale yard. He embellished the bottom half of the gate with slots routed in the panels, and to add a decorative element that matches the other hardware (and to help protect the wood), he secured a piece of galvanized water-heater stripping to the curved top and painted it black.

3 STUDIO WITH A VIEW

To give his wife room to work on arts and crafts projects with their granddaughters in a peaceful setting, Club member **Dale Lockwood** of Honor, Michigan, built this 12 x 16-ft. studio with a loft for extra storage. He used T1-11 plywood siding to dress up the exterior, which also boasts redwood window boxes, cantilevered steps, outdoor lighting and a weather-vane. Three sliding-glass windows face a nearby lake, and two other windows face a wooded area.

4 BONUS-SPACE BAR

Club member **Thomas George** of Montague, Michigan, made his basement an inviting retreat by adding paneling to the walls and creating a small kitchen with a sink, stove and bar. He installed cabinets and a Formica countertop in the corner; then he constructed an L-shape bar similar to an island with cabinets, drawers, a countertop and a prefabricated oak bar rail. Thomas surrounded the unit with plywood paneling for a finished look and made the bar lights by hand, drilling holes in the bottoms of a few metal pails, adding fixtures to the inside of each and suspending them from the ceiling. ■

VOTE ONLINE FOR YOUR FAVORITE PROJECT

Vote online for one of these projects to receive the Critics' Choice Award. Go to HandymanClub.com and click on WEB EXTRAS.

1. RELAXING RIDE
2. STATEMENT GATE
3. STUDIO WITH A VIEW
4. BONUS-SPACE BAR

Voting will end July 31, 2013.

The winner will be announced in the October/November 2013 issue.

SHOW OFF YOUR PROJECT

To have your project considered, send:

1. A photo of your project
2. A detailed description of your project

Address to:

HandyWorks (or GoodWorks)
c/o Jenny Stanley
HANDY
12301 Whitewater Drive
Minnetonka, MN 55343

Or e-mail to:

HandyWorks@HandymanClub.com or
GoodWorks@HandymanClub.com
We regret that we cannot acknowledge or return submissions.



CRITICS' CHOICE AWARD

WINNER: Stephan Cutshaw of Newport, Tennessee

PROJECT: "Stained-Glass-Style Floor," February/March 2013

PRIZE: Stephan will receive an official certificate and two Stanley Utility Mats from Sleep Innovations. Congratulations, Stephan!



GOODWORKS

HANDY APPLAUDS THOSE WHO EXTEND A HELPING HAND

SANITATION SOLUTION

To help protect the health of people in developing countries that use open-pit latrines (which can spread deadly diseases), American Standard has promised to donate hundreds of thousands of its SaTo hygienic latrine pans to Bangladesh in 2013 — one for each of its top-rated Champion toilets sold in North America. The cost-effective SaTo employs a mechanical seal and a water seal to reduce disease transmission by closing off pit latrines from the open air. ■



HYGIENIC LATRINE PANS

To watch a video about American Standard's SaTo hygienic toilet pan, scan this tag with your smartphone or go to HandymanClub.com/magazine.



Limited to the first
5000 respondents
to this ad only

Truly Unique



Scan to observe the
unique features of the
Dashtronic Watch

Time travel at the speed of a 1935 Speedster?

The 1930s brought unprecedented innovation in machine-age technology and materials. Industrial designers from the auto industry translated the principals of aerodynamics and streamlining into everyday objects like radios and toasters. It was also a decade when an unequalled variety of watch cases and movements came into being. In lieu of hands to tell time, one such complication, called a jumping mechanism, utilized numerals on a disc viewed through a window. With its striking resemblance to the dashboard gauges and radio dials of the decade, the jump hour watch was indeed "in tune" with the times!

The Stauer 1930s *Dashtronic* deftly blends the modern functionality of a 21-jewel automatic movement and 3-ATM water resistance with the distinctive, retro look of a jumping display (not an actual



True to Machine Art esthetics, the sleek brushed stainless steel case is clear on the back, allowing a peek at the inner workings.

jumping complication). The stainless steel 1 1/2" case is complemented with a black alligator-embossed leather band. The band is 9 1/2" long and will fit a 7-8 1/2" diameter wrist.

Try the Stauer 1930 *Dashtronic* Watch for 30 days and if you are not receiving compliments, please return the watch for

a full refund of the purchase price. If you have an appreciation for classic design with precision accuracy, the 1930s *Dashtronic* Watch is built for you. This watch is a limited edition, so please act quickly. Our last two limited edition watches are totally sold out!

Not Available in Stores

Stauer 1930s *Dashtronic* Watch

\$99 +S&H or

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Promotional Code DRW881-03
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**MEMBER
TESTED AND
RECOMMENDED**

Smart Sump Pump

MEMBER RATING: 9.4 BEST FEATURE: PERFORMANCE

Wayne Water Systems, 800-237-0987, waynepumps.com

To prevent a basement from flooding, the Wayne Sump Minder (\$500) uses intelligent diagnostics, a powerful DC backup pump and an auto dialer to call up to three phone numbers if you lose electricity during a storm. The micro-processor controller of the Sump Minder checks for AC power and battery status continuously; then it self-tests for float and 12-volt pump operation every 14 days. If you lose AC power to the house, the unit calls to notify you, and a 12-volt battery powers the DC backup pump to move 2,300 gallons of water an hour up to 10 ft.

Dennis Hannan, Stratford, WI: "The Sump Minder was simple to install with the step-by-step instructions. The monitoring system provides peace of mind knowing that the system is fully operational."

Dean Newman, West Des Moines, IA: "The Sump Minder has eased my concerns, and now if the electricity goes out, it is more than capable to pump out any backup problems."

**Multipurpose Power Steamer**

MEMBER RATING: 8.5 BEST FEATURE: VERSATILITY

HomeRight Inc., 800-264-5442, homeright.com

The HomeRight SteamMachine Multi-Purpose Power Steamer (\$99.99) comes with six attachments to easily remove wallpaper and sanitize floors, stovetops, ovens, bathrooms, grills and more. It uses pressurized, high-temperature steam to loosen glue and wallpaper, and it dissolves dirt, grease and grime and kills 99 percent of germs and bacteria. Other features include two wheels for easy mobility while working, a user-controlled trigger to deliver steam to any surface, an 8-ft. hose to reach high or low surfaces and a two-year warranty.

Daniel Hall, Flatwoods, KY: "The SteamMachine takes the effort out of cleaning. I am a cleaning contractor, and I used it to cut through the grime of a restaurant floor, sanitize a dance studio, clean wax crayon off of walls and clean mirrors."

Robin Davidson, Oxford, NC: "We just bought a home about six months ago. I used the SteamMachine to remove wallpaper in my daughter's room; it was a huge success. The size is perfect, and it has a ton of attachments for various uses."

PHOTOS COURTESY MANUFACTURERS

HGOA RECOMMENDED

Products earn additional seals when they receive favorable ratings from Club members who are trades contractors, automotive mechanics or avid woodworkers. These products are identified with Contractor Tested, Mechanic Tested and Woodworker Tested icons.

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The Deals & Discounts icon appears next to select tested and recommended products to signify a special members-only offer. For details, go to HandymanClub.com, click on the Member Benefits tab and then click on Deals & Discounts.

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Pressure-Washer Accessory

MEMBER RATING: 8.1

BEST FEATURE: EASE OF USE

Kirkvision Group, (646) 396-7557
sprayglide.com

Made to securely attach to all gas and electric pressure washer wands, the Sprayglide ProSupport (\$24.99) combines the pivot wheel and the height-adjusting feature so you can dial in the appropriate psi for the material you are cleaning, helping to prevent damage and provide streak-free results. It can be used to clean driveways, sidewalks, decks, pools, etc.

Jack Wellman, New Knoxville, OH: "The Sprayglide ProSupport is a fantastic pressure-washer accessory, as it allows you to stay a set distance away from the surface and avoid damaging wood. It also keeps fatigue to a minimum."

James Monroe, Alvaton, KY: "It made pressure washing my deck and sidewalk so much easier on my back. Plus it cleaned well, so there was less time going back over missed areas."

Toilet Tank Support

MEMBER RATING: 8.6

BEST FEATURE: EFFECTIVENESS

Vadco Innovations, (651) 485-3585
tanktruss.com

The Mighty TankTruss (\$9.99) is made in the USA and is a support system that prevents a toilet tank from wobbling (and potentially causing damage). Installation takes only two minutes, and a utility knife is all that is required to cut the support mechanism to fit between the wall and the toilet tank.

Mike Dodge, Jackson, MI: "After we remodeled our bathroom, the toilet tank no longer touched the wall, so every time someone leaned against the tank, it would leak on the floor. The Mighty TankTruss immediately fixed our problem, and I didn't have to change the plumbing."

Darrell Loomis, Newport, PA: "Very clever idea! I've always used foam blocks or something similar on my toilet repairs with varied success. After installing the TankTruss, I can't get over how stable it makes the tank."



LED Flashlight

MEMBER RATING: 8.8

BEST FEATURE: AMOUNT OF LIGHT

Stone River Gear LLC, (203) 470-2526
stoneriveroutdoors.com

The Stone River Adjustable Focus Rechargeable LED Flashlight (\$69.95) has three lighting options: a super-bright 500-lumen high beam, a 150-lumen low beam and a strobe feature, all activated by an encapsulated push-button switch. Made with a machined aluminum barrel and an adjustable-focus sliding head, it can produce a pinpoint beam or a wide-angle floodlight. Other features include a 50,000-hour LED life, a water-resistant O-ring seal, a lithium battery with a charging cradle (including both wall- and car-charging adapters) and a 10-year limited warranty.

Ralph Bennett, Willard, UT: "I'm in law enforcement, and I took the flashlight to work with me. Using a side-by-side comparison with police flashlights, I determined that it is brighter and has a stronger beam. Hands down, this is the brightest light I've ever used."

Quentin Chapman, Auburn, ME: "It's lightweight and has proven to be very durable. My kids and I have submerged it in a bathtub and thrown it down the stairs onto a concrete floor, and this flashlight hasn't let us down."



Correction

Phone number correction from the April/May 2013 issue: Dripless Inc., maker of the Handyman Club of America Tested & Recommended ETS 1000 Caulk Gun, can be contacted at 800-960-1773 or dripless.com.

Two Paints

MEMBER RATING: 8.7 BEST FEATURE: FINISHED APPEARANCE
Behr Process Corp., (714) 545-7101, behrpro.com

Behr Premium Plus Ultra Interior Stain-Blocking Paint & Primer in One (\$30.48 a gallon) features improved adhesion and durability that seals and protects uncoated and previously painted surfaces without the need for a separate primer. Its acrylic, low-VOC formula has an antimicrobial, mildew-resistant finish that is durable and easy to clean. Another alternative, Behr Premium Plus Self-Priming Zero-VOC Interior Paint (\$29.96 a gallon) features a GreenGuard-certified formula that helps dissipate lingering odors. It seals and paints in one step, creating a smooth acrylic finish.



Jacqueline Babey, Long Lake, MN: "The Behr paints went on smoothly. I used a lot less paint for my living room compared with other brands."

Keith Richardson, Magna, UT: "These two paints are far superior to anything I have used in the past. There were minimal fumes, and after about an hour you couldn't even smell that I had painted!"

Bathtub Drain Stopper

MEMBER RATING: 7.0
BEST FEATURE: EASE OF USE
PF WaterWorks, 877-265-9777
pfwaterworks.com

The DrainEasy (\$14.99) is a universal bathtub stopper that minimizes hair buildup and helps to prevent clogged drains. It comes with three set screws to match your bathtub drain, and it captures hair in the grate. Every time you open and close the stopper, the grate pulls and rips the hair into smaller pieces so it can easily flow through the drain.



Robert Marshall, Ravenna, OH: "The DrainEasy works well for cutting up the hair in the drain. You can feel when it's cutting the hair and notice the water draining faster after use."

Rhett Mora, Fernley, NV: "It's extremely easy to install and use, plus it comes with extra adapters so it can fit onto different drains. I no longer have to pull nasty clumps of hair out of my drain."

Cabinet Light

MEMBER RATING: 8.3 BEST FEATURE: CONVENIENCE
Xodus Innovations, (269) 925-1445, jenesisproducts.com

Powered by four C batteries, the wireless LED In-Cabinet Light (\$29.99) uses new sensing technology to automatically illuminate the inside of a cabinet when the door is opened. It's designed for use in kitchen cabinets, bathroom vanity cabinets, armoires or any other small storage area with a door and works as an emergency light during power outages. You can choose between automatic and manual lighting modes and two mounting mechanisms: a magnetic plate secured with two screws or an adhesive pad to secure the unit without drilling holes.



Gregory Castora, Elmhurst, IL: "I installed the light under my sink, where I would normally require a flashlight to see. Regardless of which cabinet door I open, the light turns on. I mounted it so that I still have access to switch it to the manual mode."

Christopher Herrera, Los Angeles, CA: "The light is soft and bright; it doesn't overwhelm you. We placed it in a closet that had no lighting and now we can find things without having to search in the dark." ■

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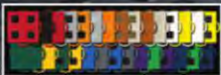




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BUILDING CODES

The whys and wherefores of those seemingly wretched rules

Many people never need to ponder building codes, but if you're a handy homeowner, you must. As a DIYer, someday you'll decide to finish a basement, add on to your house, replace the roof, build a deck or upgrade your landscape (or all of the above). At the time, you might find the requirements and restrictions demanding and, well, restrictive. But when the project is done, you'll be glad you followed the rules — and so will your neighbors. After all, who wouldn't prefer to live in a house where the builder and all previous owners respected property boundaries and adhered to codes designed to keep everyone safe?

All those pesky policies are purposeful and derived from a need to ensure safety and sanitation standards and preserve order. They also have a story — a long story that began at least 4,000 years ago — and were tied to severe punishment, even death. King Hammurabi of Babylonia (who reigned in about 2000 B.C.) is considered the first known enforcer of a building code, and he followed the “eye-for-an-eye” principle: If a citizen was injured or died because of a faulty construction practice, the builder had to face a matching fate. Unlike modern building codes, this consequence-based punishment didn't offer guidance on proper construction practices or methods. It was up to the builder to figure out how to prevent calamity.

As builders learned optimal practices the hard way, so did generations of government officials. Many building ordinances were developed as a result of various plagues and other major disasters. In 17th-century England, for example, Parliament responded to the bubonic plague and to the Great Fire of London (1666) with new building re-



THE GREAT FIRE OF THE CITY OF NEW-YORK, 16 DECEMBER 1835.

Published January 1836, by the Proprietor, M. R. Solomon, 104 Nassau Street, New-York.

quirements designed to thwart disease-carrying rats and fleas and prevent future blazes from being fed by timber construction and closely built structures.

Early America's growing pains forced construction improvements as well. Owners of crowded tenements in large cities during the 1800s disregarded inhabitants' health and safety until code requirements forced the inclusion of sanitation systems, fire escapes and more windows for ventilation. Other factors such as earthquakes on the West Coast have driven advancements in structural design and materials — as have hurricanes in the Southeast and tornadoes in the Midwest. Out of such varying needs and conditions arose three regional codes and agencies. In 1994 these groups combined to form the International Code Council (ICC) and establish a consistent code model for the entire country.

Besides promoting health and safety, these standards help to clarify the rules and create a universal approach

▲ The Great Fire of New York City (1835), one of the city's three historic, devastating blazes, validated earlier ordinances banning wood structures in new construction. Older wood buildings fortified the flames, whereas stone and brick buildings slowed the fire and incurred less damage. Subsequent catastrophes have led to design improvements and more effective regulations.

to construction. The relatively recent focus on conserving natural resources and energy has resulted in building-code changes that benefit homeowners as well as the environment.

Over the centuries, disasters and discoveries have prompted expectations, enforcement policies and consequences to evolve. Some say our code requirements are overbearing, but it's unlikely that any of today's builders, architects, engineers and remodelers would prefer King Hammurabi's approach. And as a homeowner (and DIYer), I appreciate the scrutiny, the guidance and the reassurance of modern methods. ■

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