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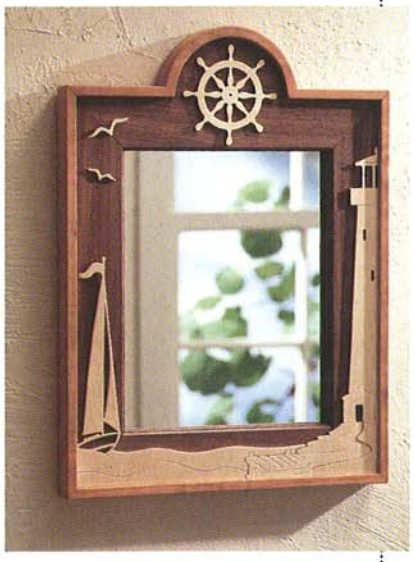
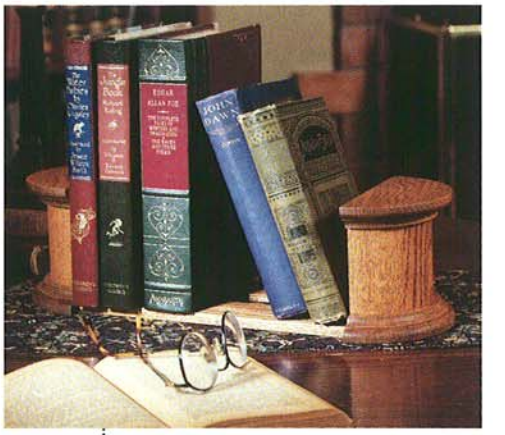
Weekend Woodworking Projects™





Cover photograph: Bill Hopkins, Jr.

A Brief Note to the Owner (You!)

My column for this issue will be a short one because of the Statement of Ownership at the bottom of this page. It lists corporate officers, directors, and major stockholders, as well as circulation facts and figures. Although the Statement of Ownership looks complete, one name is missing: yours.

This is, after all, *your* magazine. We select projects we think *you* will like to build. When we describe machining operations, we consider the tools *you* have in *your* shop. We're partners dedicated to *your* success in woodworking.

When you look through *Weekend Woodworking Projects*, act like you own the place. If you've been hoping that we would publish a special project that you've been wanting to tackle, let us know. If we hit the nail on the head with a design you liked, write and tell us so. If you have other suggestions, we'd like to hear them, too. Let's work together to make this the best magazine you ever owned.

Bob Settich

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Weekend Woodworking Projects

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WEEKEND WOODWORKING PROJECTS (ISSN 1042-6094; Canadian GST Reg. #R123482887) is published bimonthly in January, March, May, July, September, and November by Meredith Corporation, 1716 Locust Street, Des Moines, IA 50309-3023. 0Second-class postage paid at Des Moines, Iowa, and additional offices. SUBSCRIPTION PRICES; One year $27.97 in the United States and its possessions. Canada and other countries add $6 per year. POSTMASTER; Send address changes to: ***WEEKEND WOODWORKING PROJECTS***, P.O. Box 55364, Boulder, CO 80322-5364.

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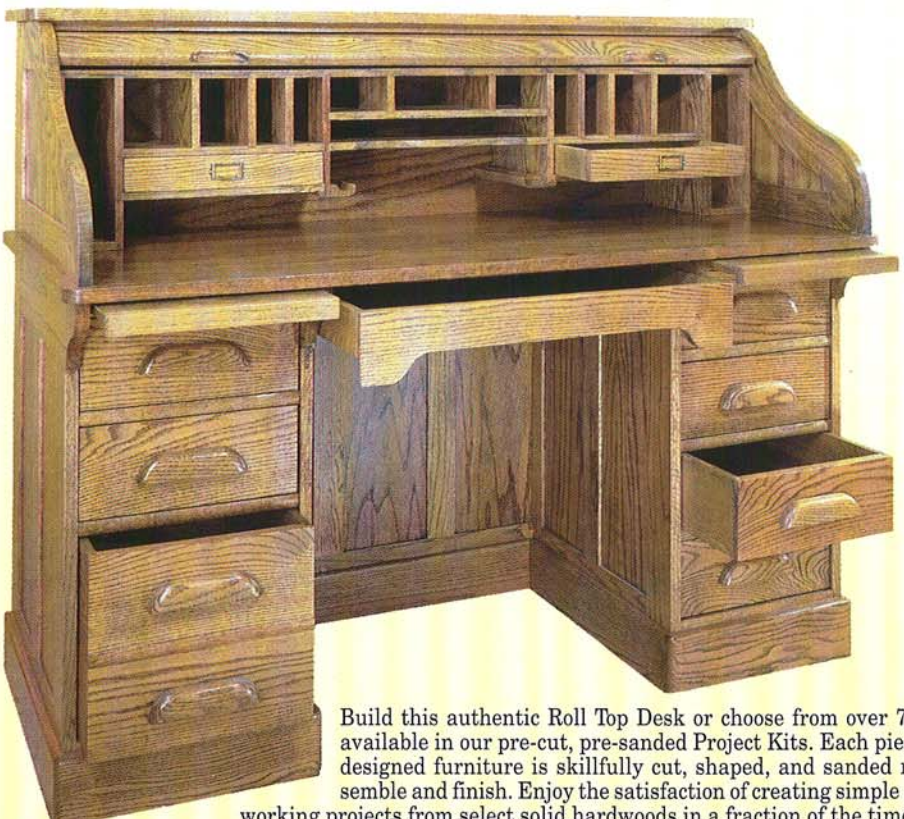

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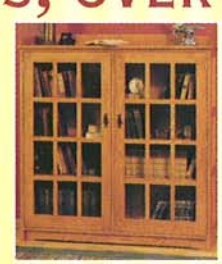

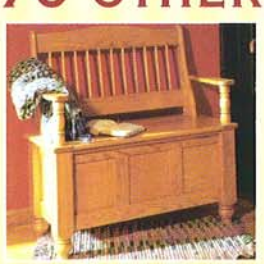

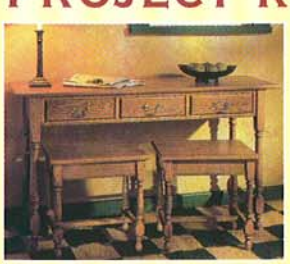

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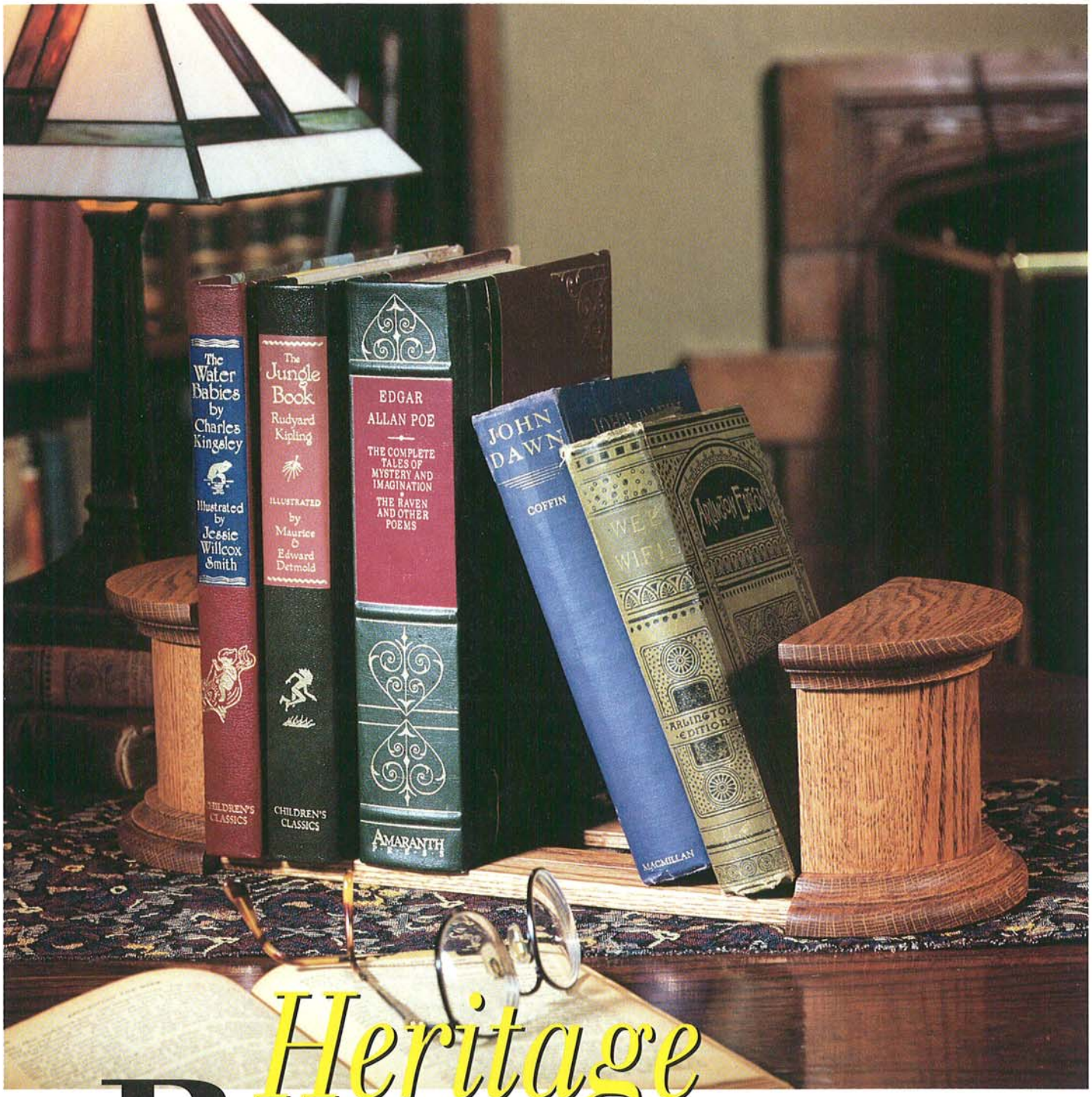


Heritage BOOKENDS

While visiting an antique store recently, we came across this pair of Craftsman Era bookends with a clever tongue-and-groove sliding mechanism. As you can see, the project has a unique combination of simple beauty and utility that makes it fun to build and use. Be warned though, it may not always be on the book shelf. Your friends will want to see the mechanics beneath this classic design.

Continued

Heritage BOOKENDS

TIP **Tip No. 1—To get the best-looking columns,** cut all the lamination pieces from one piece of wood that has consistent color throughout..

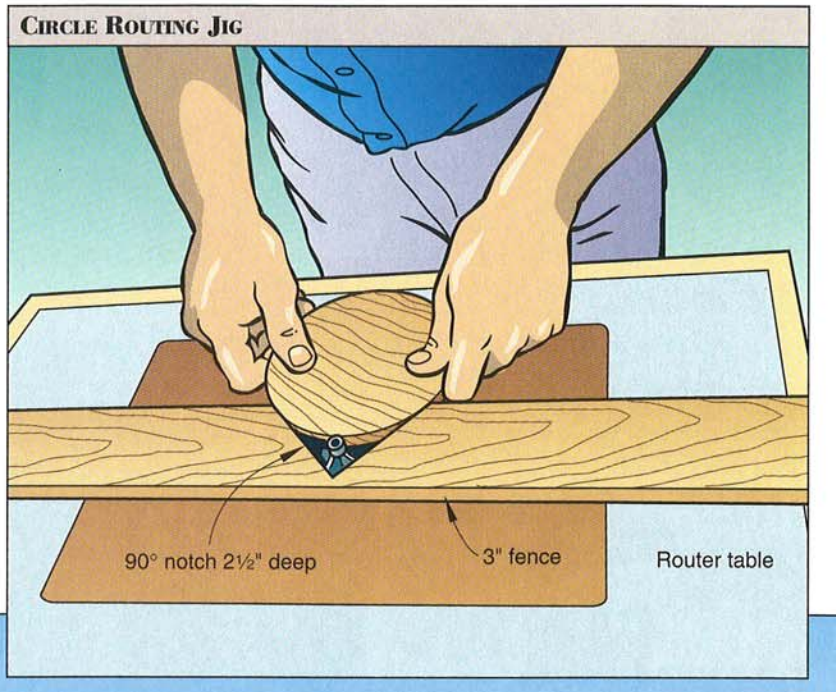
BILL OF MATERIALS

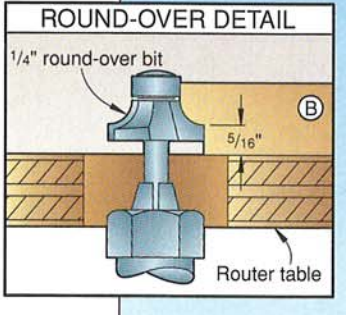
Part	Finished Size*			Matl.	Qty.
	T	W	L		
A* columns	2¼"	4½"	3½"	LO	2
B* bases/tops	¾"	3"	6"	O	4
C inner slides	¼"	1"	11¼"	O	2
D outer slides	⅜"	1"	11¼"	O	2
E inner spreader	¼"	1"	3¼"	O	1
F spacer	⅛"	1"	1¼"	O	1
G outer spreader	⅛"	1"	5"	O	1

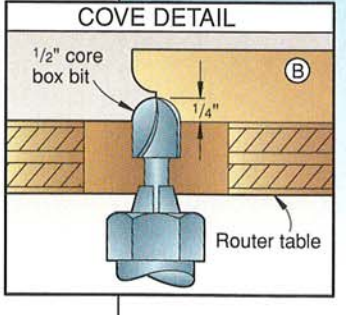
*Cut part to final size during construction. Please read all instructions before cutting.

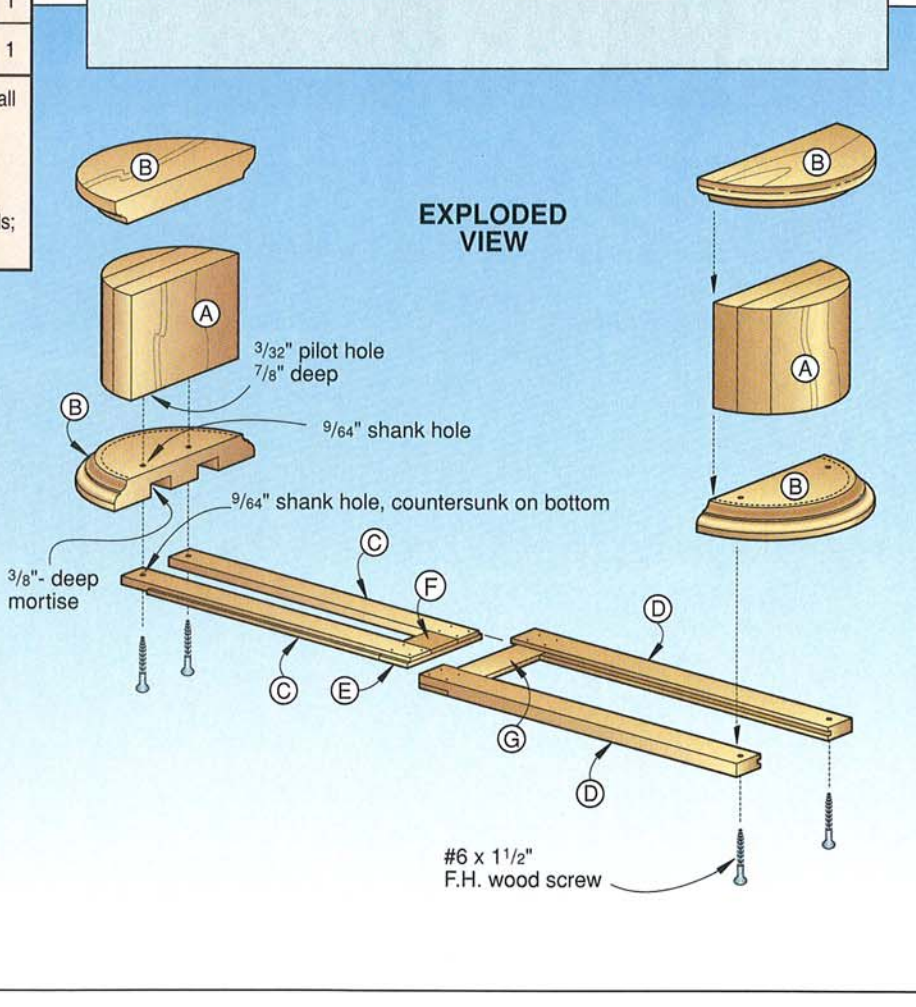
Materials Key: O–oak; LO–laminated oak

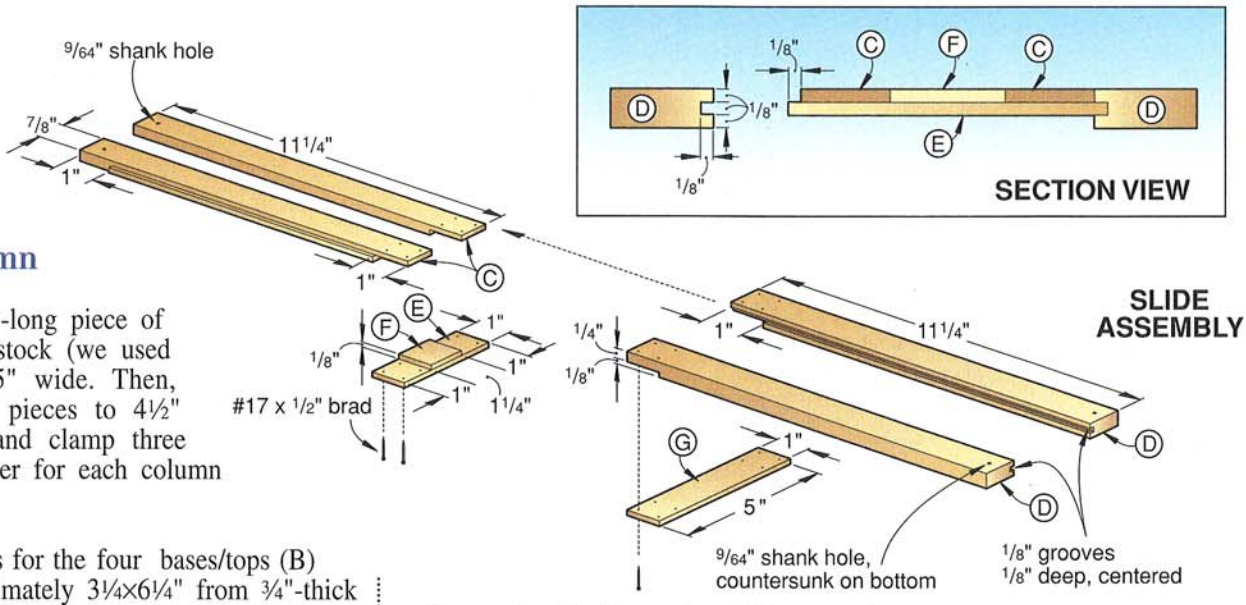
Supplies: #6×1½" flathead wood screws; #17×½ brads; finish.











Fashion The Column Halves

1 Rip a 30"-long piece of ¾"-thick stock (we used walnut) to 5" wide. Then, crosscut six pieces to 4½" long. Glue and clamp three pieces together for each column half (A).

2 Cut blanks for the four bases/tops (B) to approximately 3¼×6¼" from ¾"-thick stock. Set aside for now.

3 Trim the laminated column blocks to a finished length of 3½", making sure that the ends are even.

4 Use double-faced tape to join the column halves. Put your compass point on the taped joint line and mark a 2¼" radius. Bandsaw to shape, sand, and separate the columns. A bit of acetone will help release stubborn tape.

5 Now, tape the base/top halves together, then saw to a 3" radius. Sand the edges smooth. Otherwise, any irregularities will be magnified by the routing you will do next.

6 Install a 90° v-notch fence on your router table, as shown in the Circle Routing Jig drawing. Using a ¼" round-over bit, shape the edges of the base/top disks where shown in the Round-over detail at *left*. (Raise the bit incrementally to avoid overloading the router.) Next, install a ½" core box bit, adjust the fence and finish routing the disks. Separate and sand the base/top halves.

Next, Make the Slide Assembly

1 Resaw the slide assembly parts from thicker stock. After resawing, cut the rabbet in the inner slides (C); next, cut the groove in the outer slides (D). For safety and accuracy, we used a zero-clearance tablesaw blade insert, an auxiliary wooden rip fence, and featherboards to hold the stock against the fence.

2 Rout or chisel mortises in the bases where shown on the Bottom View drawing in the pattern pullout in the center of the magazine. Note that the mortises are all ⅜" in depth, but their locations and widths are not identical in both pieces. Test-fit the slides into the base halves. Remove the rabbetted lip on the ends of the inner slides where they will be mortised into the base. Hold these two strips in their installed position to make certain that you cut away the material on the correct ends.

3 Make the spreaders next. Note that the spacer (F) is glued to the inner spreader (E). Cut lap joints on the ends of each pair of slides (C and D) to accept the spreaders.

4 Make the column assemblies by gluing a top and mortised base to each column half. When the glue dries, sand the inside surfaces of the column assemblies to ensure that the top, column, and base are aligned.

Finally, It All Comes Together

1 Attach the pairs of slides (C and D) to the column assemblies with glue and countersunk wood screws. Note that the screws in the outer slides (D) are offset toward the center of the column. Now glue the spreaders (E and F) to the respective pairs of slides. Be sure the slides are parallel while the glue dries. Unclamp when dry and sand both assemblies to final smoothness.

2 Apply stain, if you want, then finish the bookends to your liking. We used a medium walnut Watco oil finish for a warm classic look. A final coat of paste wax will protect the finish and keep the mechanism working smoothly for years to come. ■

TIP **Tip No. 2—Dry-clamp the sliding parts in their operating position as a final check before gluing.** The most important thing is that the rails are the same distance apart at both ends. With a little planning, you can glue up the assembly in operating position. Use glue sparingly to make sure you don't accidentally glue the mechanism into a fixed position!

Written by: Jon Greising
Project Design: Jim Downing
Project Builder: Erv Roberts
Illustrations: Roxanne LeMoine, Carson Ode
Photograph: King Au

Shaker Oval Carrier

An adaptation of oval carriers constructed by Shaker craftsmen of yesteryear, our design lends itself to a lifetime of around-the-home usefulness. And like the original Shaker carriers, our version features pleasing, simple lines and graceful fingers with tacked-and-pegged joinery.

Note: *You'll need some thin stock for the carrier band and handle/divider. You can plane or resaw thicker stock, or see our kit source listed in the Buying Guide on the next page.*

Start with the Band Form

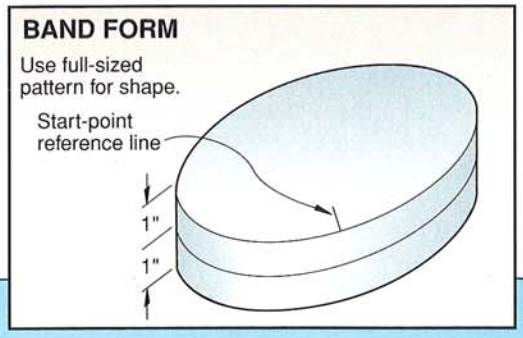
1 To make the form for the band, cut two pieces of 1"-thick rigid foamboard (Styrofoam is one brand) to 9×13". (You'll probably have to buy a 1"×4'×8' sheet like we did. It costs about $7. Or, see the Buying Guide for our source of 10×14" blanks.) Using spray adhesive, glue the two pieces face-to-face, with the edges and ends flush.

Continued

2 Transfer the full-sized band form pattern from the pattern pullout in the center of the magazine to the top of the foamboard. Bandsaw the foamboard form to shape.

3 Mark the start-point reference line on the top surface of the band form where shown on the full-sized band form pattern.

4 Clamp a 10"-long piece of 2×4 upright into your bench vise. Securely clamp the shortest bar clamp you have to the 2×4. You'll use this later as an anvil when tacking the band.



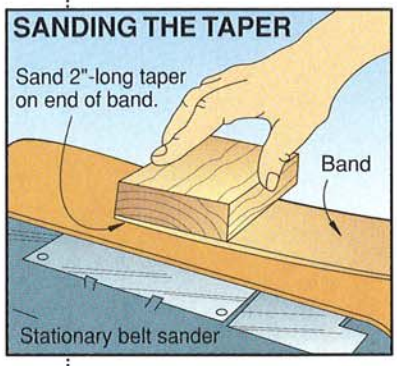
Let's Form the Band

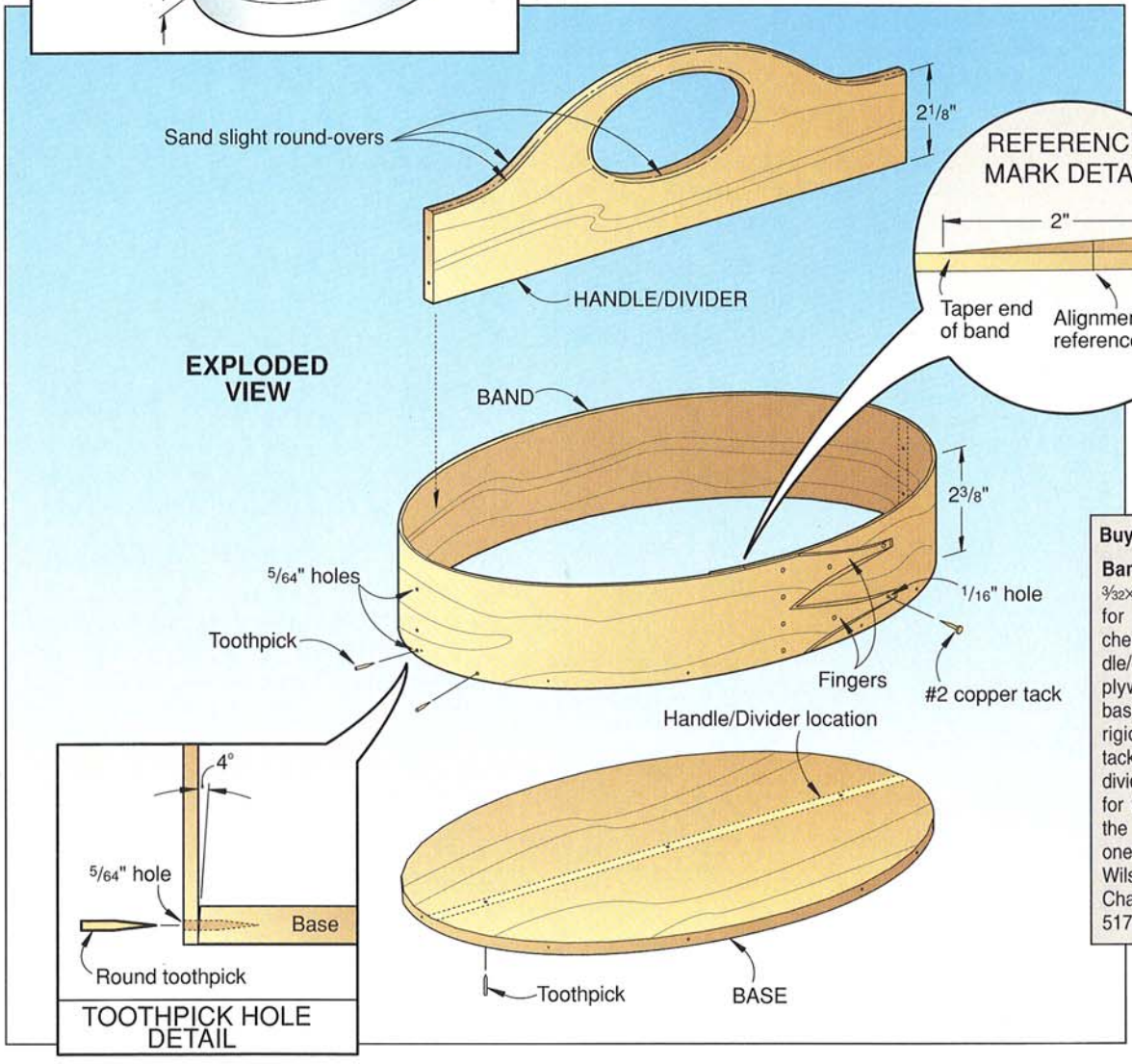
1 From 3/32"-thick cherry (the Shakers also used maple, birch, and oak), cut the band to 2 3/8" wide by 40 1/2" long.

2 Transfer the full-sized finger patterns and hole locations to one end of the band (see the full-sized Band drawing in the pattern pullout in the center of the magazine for reference). Drill the eight holes through the band where shown.

3 Sand a feathered edge about 2" long on the end opposite the fingers. See Sanding the Taper drawing at *right* for reference.

Continued





Buying Guide

Band stock and tacks. 3/32×2 3/8×40 1/2" cherry (enough for one band), 5/16×5×14" cherry (enough for the handle/divider), 1/4×10×14" cherry plywood (enough for one base), 1 piece of 2×10×14" rigid foamboard, #2 copper tacks. $29 (U.S.) ppd for #7 divided carrier kit. $47 (U.S.) for two kits. If you don't need the foamboard, $24 ppd. for one kit, $42 ppd. for two. John Wilson, 500 East Broadway, Charlotte, MI 48813. Or call 517-543-5325 to order.

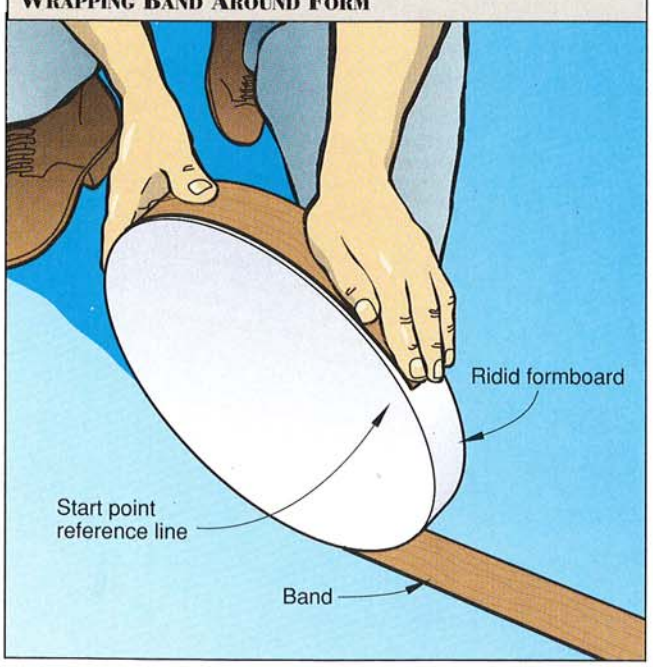
Shaker Oval Carrier

TIP **Tip No. 1—Immediately wrap the band around the form** after removing it from the hot water. The wood band cools quickly and loses its flexibility.

4 Bandsaw the fingers to shape. Using a utility or hobby knife and the full-sized pattern for reference, bevel-cut the edges and ends of each finger. (For clean cuts, we recommend starting with a new (sharp) blade in your utility knife and soaking the end of the band in hot water for several minutes before cutting the bevels. We followed the Shaker tradition of beveling the edges of the fingers at about 20° and reducing the bevels to about 10° near the end of the fingers.) Now, finish forming the beveled V where the 20° cuts meet.

5 Soak the entire band in very hot water for 20–30 minutes (we did this in a bathtub). Intermittently drain the water as it cools and add new hot water. Finally, drain the water, immediately pour boiling water over the band, and soak it for another minute. Working quickly now, remove the band from the water, and wrap it snugly around the foamboard band form. When wrapping the band around the form, hold the band firmly against the form, and support the two fingers on the band with your own fingers to prevent the band from splitting between the fingers. (We found it easiest to lay the band on the floor with the form on top, and then roll the band around the form as shown in the sketch *below*.) Position the band so that the tapered end aligns with the start-point reference line on the form and the beveled edges on the fingers face out.

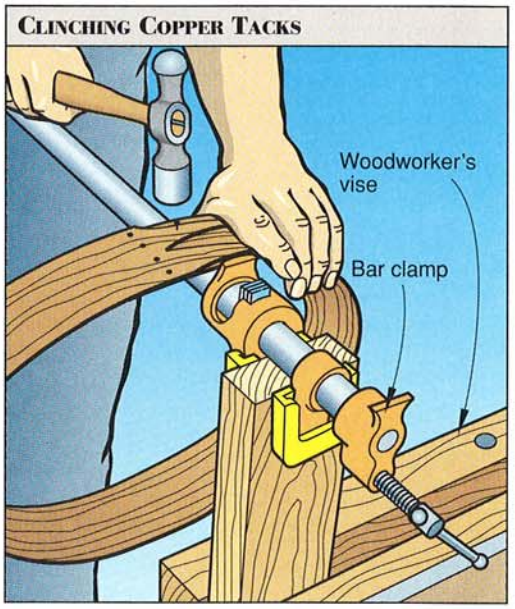
WRAPPING BAND AROUND FORM



6 Lightly mark a pencil reference line across the top edges of the two lapped portions of the band. See the Reference Mark detail accompanying the Exploded View drawing for reference. The pencil line allows you to later realign the band to precisely the same position for nailing.

7 Loosen the band, and slide it off the form. Realign the pencil marks as you put the band over the pipe as shown *below*. To avoid splintering the band between the fingers, hold both fingers until the tacks are secured in the following step.

CLINCHING COPPER TACKS



8 Hold the band with one hand so the previously marked lines on the top edges align and the band top and bottom edges are flush. Position the four 1/16" holes in the band directly over the pipe. Drive #2 copper tacks through the four holes and against the pipe as shown in the drawing *above*. The ends of the tacks will clinch against the pipe. Be certain that you don't drive the tacks at an angle; they won't clinch properly and will cause the band to fit loosely. Next, drive and clinch the remaining four tacks through the fingers.

9 Slowly work the band down onto the form, and let it dry on the form for 24 to 36 hours. Allow additional drying time during humid weather. Remove the band from the form.

Now, Shape and Install the Base

1 Place the band on ¼" cherry (or other) plywood, and trace the inside perimeter of the band onto the plywood. Mark a reference mark on both the inside surface of the band and the top surface of the bottom for aligning the two in the same configuration later.

2 Using your bandsaw or scrollsaw, cut the carrier bottom to shape, cutting just outside the marked oval line. Save the scrap from which you cut the carrier bottom; you'll use it in the next step. Then, using your disc sander with the table tilted to 4°, sand to the line until the base fits snugly into the band and until the bottom edge of the band is flush with the bottom edge of the base.

3 Position the carrier bottom scraps on your workbench, and clamp one piece of it to the bench. Next, turn the carrier upside down and fit it into the oval opening formed by the scrap stock on your workbench, and complete the clamping as shown in the Sanding the Bottom Flush drawing at *right.*

4 Fill any gaps between the band and the base with glue. Wipe off the excess immediately, and belt-sand the bottom surface to load the glue-filled crevice with sanding dust and to make the bottom of the base flush with the bottom of the band. *Be careful not to sand through the face of the plywood.* See the drawing at *right* for reference.

5 Drill 5/64" holes through the band and ½" into the base (see the full-sized pattern drawing for hole locations and the Toothpick Hole detail accompanying the Exploded View drawing for reference). Cut a round toothpick in half, dip its tip into glue, and tap the toothpick through the hole in the band and into the base. Trim the end of the toothpick, and sand it flush with the outside surface of the band. Repeat the process all around the carrier. The pegs, not the glue, hold the bottom in place.

The Handle/Divider Comes Next

1 Transfer the full-sized pattern for the handle and its opening to 5/16"-thick cherry. Cut the handle to shape, allowing about ¼" in additional length at this time.

2 Drill a blade start hole, then cut the opening to shape with a scrollsaw. If necessary, sand the opening to a smooth curve.

3 As noted on the Exploded View drawing, sand slight round-overs along the edges of the handle opening and along its top edge.

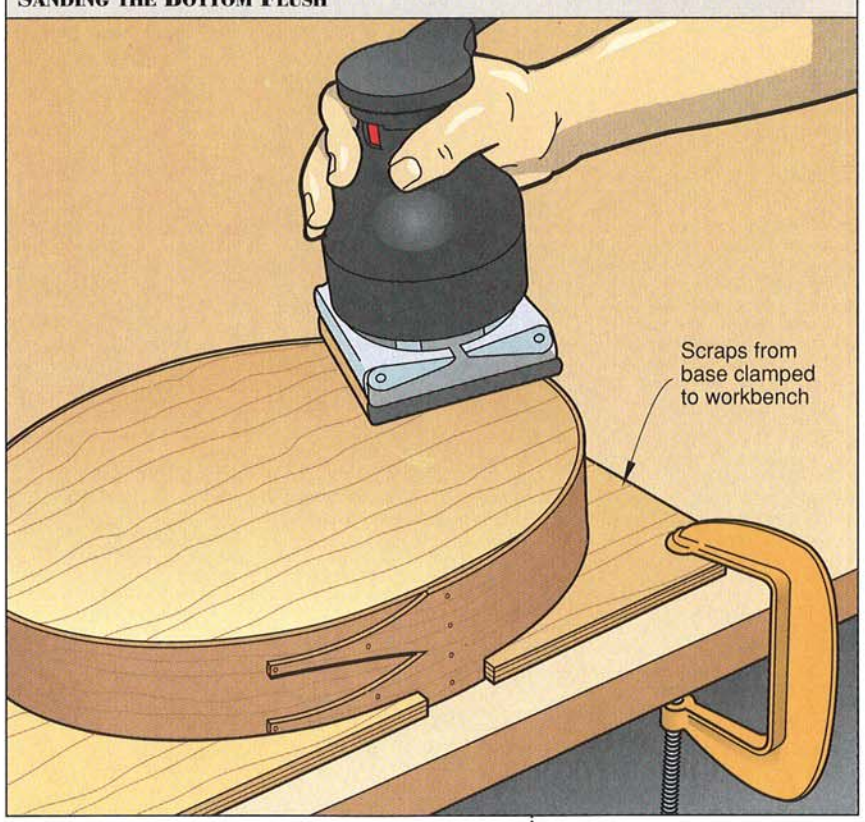
4 Carefully mark the necessary length, and trim an equal amount off both ends of the handle to keep the handle hole centered. Place the handle in the carrier, check that it is square to the base, and then lightly mark in pencil the location of the bottom edge of the handle on the inside surface of the base (see the Exploded View drawing for reference.) Drill three 5/64" holes through the base, centered between the marked lines.

5 Reposition the handle in the carrier, and use the previously drilled holes in the base as guides to drill into the bottom edge of the handle. Drive toothpick halves into these holes, utilizing the same technique you used to attach the base to the band. Now, drill a pair of holes through the band and into each end of the handle. Peg these holes with toothpick halves.

6 Sand the carrier smooth, then apply the finish of your choice. The Shakers used milk paints, stains, and clear finishes. ■

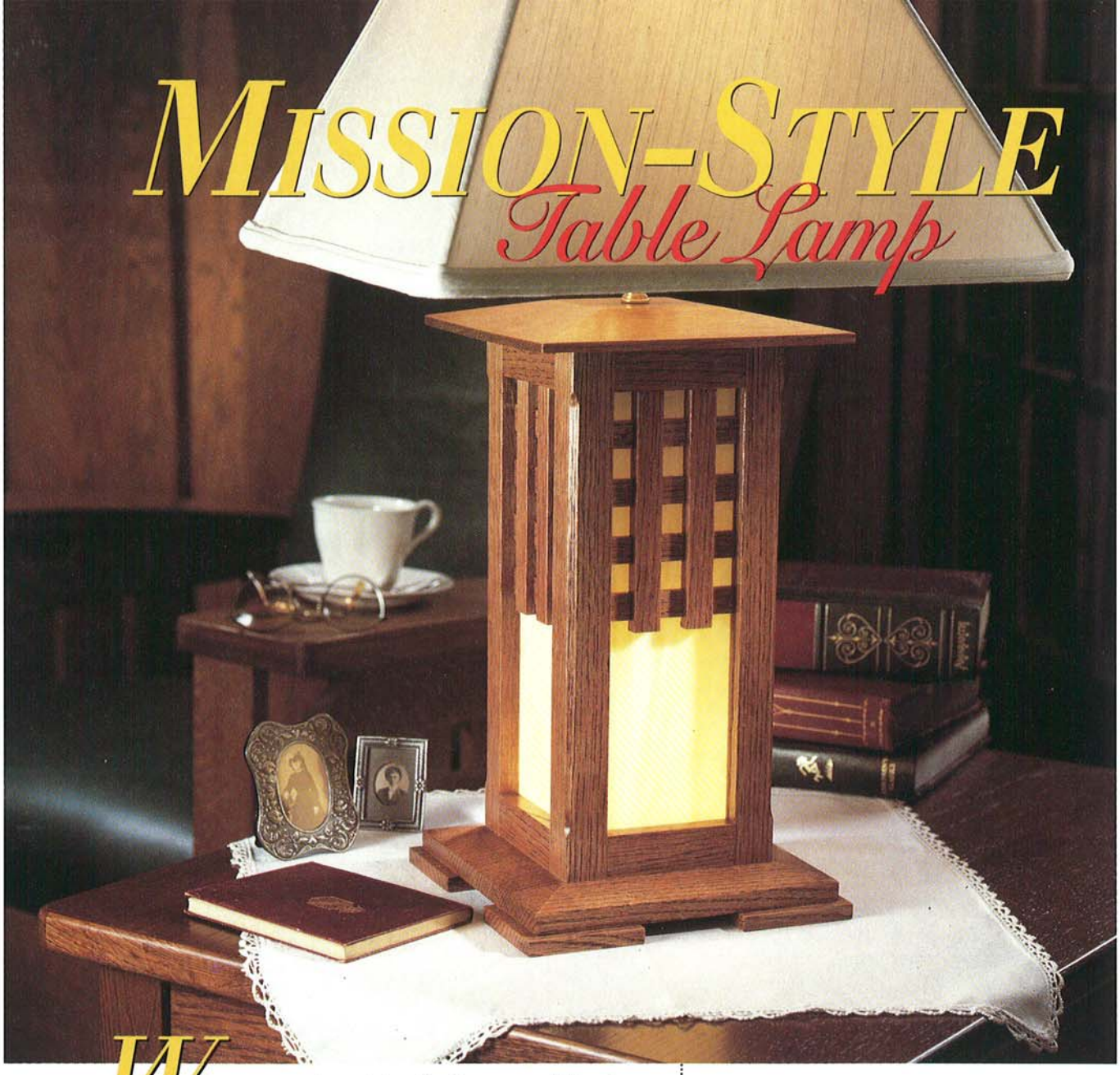
TIP **Tip No. 2—When belt-sanding the band flush** with the plywood, sand lightly. It is easy to sand through the top ply.

SANDING THE BOTTOM FLUSH



Written by: Marlen Kemmet with John Wilson
Project Design: John Wilson
Photograph: King Au
Illustrations: Roxanne LeMoine, Carson Ode

Mission-Style Table Lamp



When we set out to design our Mission-style table lamp, we studied museum-quality originals so our adaptation would capture the subtle design features that give this style its enduring appeal. And judging from the response of everyone who has seen the final version, our hard work paid off. They love it! A low-wattage bulb in the lantern base casts a warm glow through the stained glass, and the practical reading height of the lamp makes it every bit as functional as it is handsome.

Note: *you'll need some 3/16, 3/8, and 5/8"-thick stock for this project. You can resaw or plane thicker stock to size.*

Let's Begin with the Frames

1 Rip a total of 12 lineal feet of 3/4"-thick oak to 1" wide for the stiles (A) and rails (B). Plane or resaw to 5/8" thick. Attach an extension to your tablesaw's miter gauge. Clamp a stopblock to the extension and crosscut the eight stiles to 11 7/8". Then, adjust the stopblock, and cut the eight rails to 5 1/8".

2 Change to a dado blade, and cut the 1" half-lap joints on the inside face of the stiles and the outside face of the rails. See the Frame Assembly drawing for reference. Glue and clamp the four frames, making certain that they

Continued

BILL OF MATERIALS

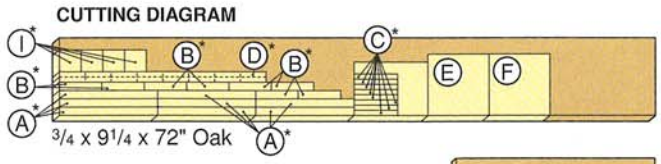
Part	Finished Size T	W	L	Matl.	Qty.
A stiles	5/8"	1"	11 7/8"	O	8
B rails	5/8"	1"	5 1/8"	O	8
C grille stiles	3/8"	5/8"	5 1/4"	O	8
D grille rails	3/16"	5/8"	3 1/8"	O	16
E base	3/4"	7 3/8"	7 3/8"	O	1
F top	3/4"	7 3/8"	7 3/8"	O	1
G cover plate	1/8"	3 7/16" dia.		H	1
H base insert	1/8"	3 7/8"	3 7/8"	H	1
I feet	3/8"	2 5/8"	2 5/8"	O	4

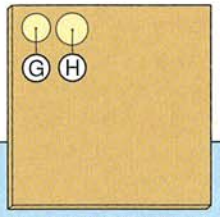
Please read all instructions before cutting.

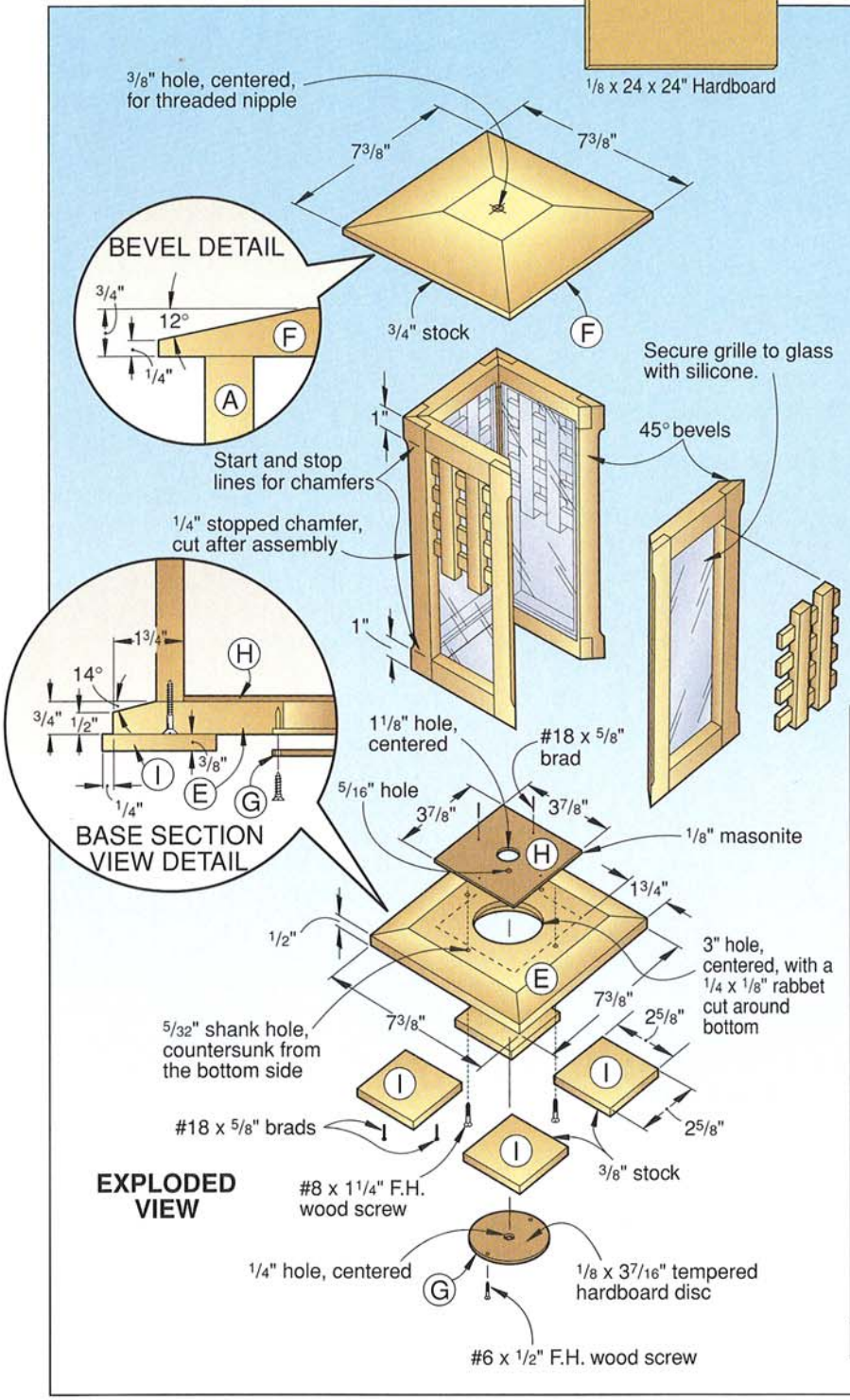
Materials Key: O—oak; H—hardboard

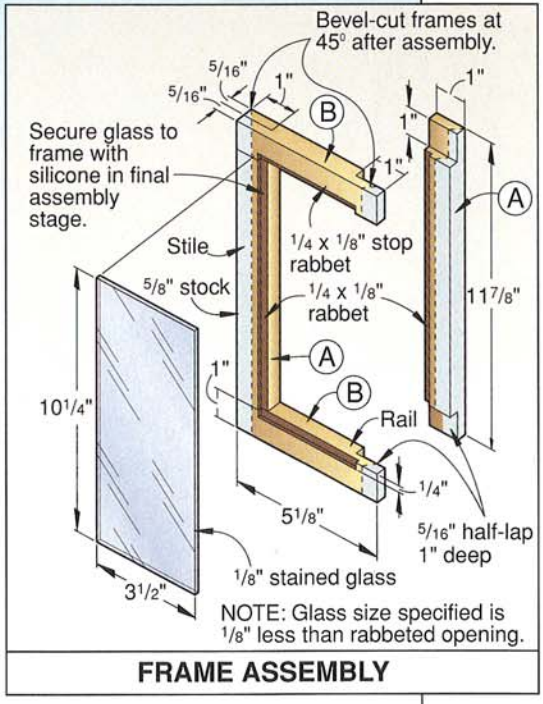
Supplies: Stained glass; #8×1 1/4" F.H. wood screws; #18×5/8" brads; #6×1/2" F.H. wood screws; stain, finish

Buying Guide
Mission-Style Lamp Parts Package. This package includes a two-circuit turn-knob socket, candelabra socket, lamp harp, cord set, 7 1/2 watt bulb, and miscellaneous lamp hardware. Order Part #1248, $12.99 plus $3.50 shipping, from Meisel Hardware Specialties, P.O. Box 70WEW, Mound, MN 55364-0070. Credit card customers call 1-800/441-9870. MN residents add 6.5% sales tax.



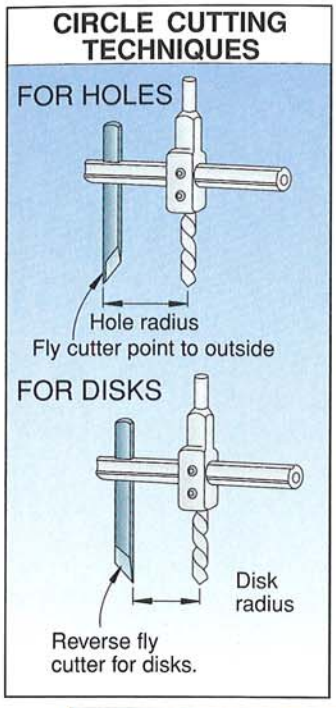






FRAME ASSEMBLY

Mission-Style Table Lamp

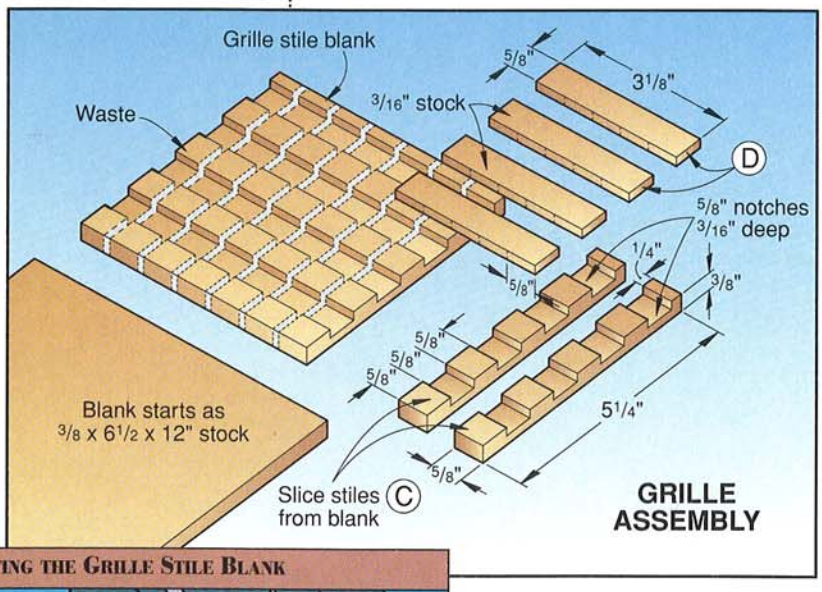


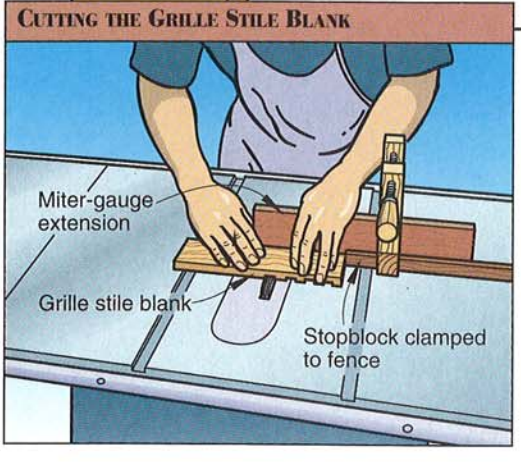
are flat and square. Unclamp when the glue has dried, and mark the outside face of each frame with masking tape.

3 Put a ¼" piloted rabbeting bit into your table-mounted router. Adjust the depth of cut to the actual thickness of the stained glass you will be using (our glass measures ⅛"). Rabbet the recess for the glass panels where shown on the Frame Assembly drawing. Square the corners of the rabbets with a chisel.

4 Bevel-cut all long edges of the four frames. But before you do, make test cuts on scrap lumber to ensure tight joints. Adjust your rip fence so the cut will be right at the corner of the frames, retaining their full 5⅛" width. Now, glue up the four frames, clamping with band clamps. Use your try square to make sure that the lantern assembly is square.

5 Mark start and stop lines for the chamfers where shown on the Exploded View drawing. Put a piloted 45° chamfer bit into your table-mounted router and adjust the height. You can guide the cuts freehand or attach a fence with stopblocks on your router table.





The Grilles Are an Authentic Touch

1 Start with a piece of ¾"-thick oak, initially cutting it oversized to approximately 6½" wide × 12" long. Plane the blank to ⅜" thick. Use a dado blade in your tablesaw to cut the ⅝" dadoes 3/16" deep where shown on the Grille Assembly drawing *below left*. To do this, attach an extension to your tablesaw's miter gauge. Next, clamp a stopblock to the extension, positioning it to make the edge of the first dado ¼" from the end, and make the cut. (See the Cutting the Grille Stile Blank drawing *below left*.) After you have cut all the dadoes, trim the ends of the blank to reduce its length to 5¼". ***Note:*** *the edge of the bottom dado is ⅝" from the end of the blank.* Rip the grille blank to make eight stiles ⅝" wide.

2 Rip a 30" length of ¾"-thick oak to ⅝" wide for the grille rails (D) after you double-check the actual width of these pieces against the size of the dadoes you cut in the grille stiles (C). If necessary, plane to get a tight fit. Now, resaw the stock in half, then plane to the finished 3/16" thickness.

3 Check the finished dimension of the grille rails against the frame opening of the lantern assembly, then crosscut the grille rails to final length.

4 Glue up the grilles, using ⅝"-wide scraps to space the stiles. Use only a small dot of glue in each notch. Keep the grilles square.

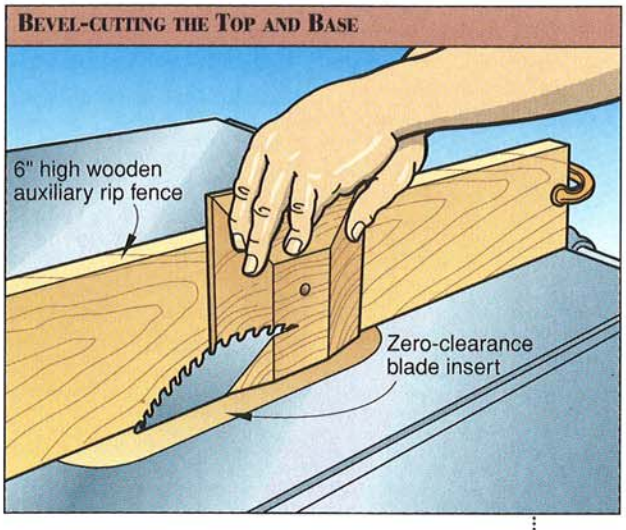
Make the Base and Top Next

1 Rip and crosscut two pieces 7⅜" square from ¾"-thick oak. One will be the base (E), and the other is the top (F). Draw diagonal lines from the corners of each piece to locate the centers. Drill a ⅜" hole in the top (F), then set it aside for now.

2 Put a circle cutter in your drill press, and cut a 3" hole in the base (E). Refer to the Circle Cutting Techniques drawing *above left* to see how to position the fly cutter. For safety, use a slow speed (250 rpm or less).

3 Go to your table-mounted router, and install a piloted ¼" rabbeting bit. Cut a rabbet ⅛" deep on the bottom side of the base.

4 Fasten an auxiliary fence about 6" high to your tablesaw's rip fence as shown on the Bevel-Cutting the Top and Base drawing *above right*. Completely lower the blade, and fit your tablesaw with a zero-clearance blade insert. Move the rip fence over the edge of the



insert to hold it in place. Set the blade angle at 14°, turn on the saw, and then raise the blade through the insert. Shut off the saw, move the rip fence into its final position, and adjust the blade height to about 1½". Make the bevel cuts on the top surface of the base (E) by keeping the rabbeted side of the hole against the fence.

5 For the top (F), completely lower the blade, change the blade angle to 12°, and then raise the running blade through the blade insert. Note that you will have to adjust the rip fence and set the blade height to about 2½". Make the cuts in the top.

Assemble the Lantern to the Base

1 Mark the locations of the four screw centerpoints 1⅜" from the edges and along centerlines on the bottom of the base (E). Do not drill yet.

2 Clamp the lantern assembly to the base using the setup shown on the Bolt-Clamp Fixture drawing. Position the clamp bar diagonally so you have access to all four screw locations. Make registration marks on the inside of the lantern assembly and base so you can reassemble the parts in the same position later. Drill pilot holes for #8×1¼" screws through the base and into the lantern assembly. Be careful not to drill too deeply. Unclamp the base, enlarge the holes through the base to 5/32", and countersink. Do not drive the screws yet.

Complete the Base Assembly

1 Use a circle cutter to make the 3 7/16" diameter cover plate (G) from ⅛"-thick tempered hardboard. Refer to the Circle-Cutting Techniques drawing for the proper position of the fly cutter. Also see Tip No. 1 *above right.*

2 Now, cut the base insert (H), checking the dimensions against the inside of the lantern assembly. Draw diagonal marks to quickly locate the center, then drill a 1⅛" hole.

3 Get a piece of ⅜"-thick stock to make the feet (I). Rip and crosscut four 2⅝" squares. Attach to the base (E) with glue and brads, allowing a ¼" projection on both outside edges of the feet. Be certain that the grain in the feet and the base runs in the same direction.

You're Almost Done

1 Glue the top to the lantern assembly, making certain it is centered and that the grain aligns with the base. Refer to the Bolt-Clamp Fixture drawing for an easy way to hold the top in position while the glue dries.

2 Stain the parts before final assembly. (We used the Early American shade of Minwax Oil Stain.) See Tip No. 2 at *right.* Once the stain has dried, apply a clear finish. (We sprayed three coats of Deft lacquer, sanding between coats with 320-grit paper.)

3 Temporarily screw the lantern to the base assembly. Transfer the registration mark you made earlier on the base to the base insert (H), then attach it with glue and brads. Remove the screws joining the base and lantern.

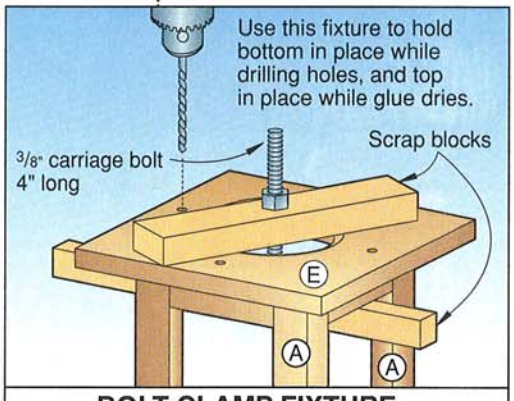
4 Have stained glass panels cut slightly undersized for the openings in the lantern. Now, secure the glass with a few dots of clear silicone adhesive around the perimeter of the glass inside the lantern. (See Tip No. 3 *above right.*) Next, secure the grilles to the glass, holding them in place with masking tape until the silicone cures.

5 The lamp hardware we chose includes a two-circuit socket that allows you to independently switch the reading lamp and the light in the base. See the Buying Guide in the Bill of Materials for the parts you'll need. Wire your lamp, referring to the Wiring Diagram and how-to instructions in the pattern pullout. ■

TIP **Tip No. 1—When you cut disks with a circle cutter,** adhere your stock to a backup scrap with double-faced tape. This will prevent the cutter from picking up and damaging the disk when the cut is completed.

TIP **Tip No. 2—Wipe excess stain from the edges of the grille openings** for consistent color (we used a cloth over the end of a small square stick).

TIP **Tip No. 3—Secure the stained glass with silicone adhesive.** To reach inside the lantern assembly, put silicone adhesive on the end of a stick. Secure the first panel, then prop the lantern diagonally to install a second piece of glass. Wait for the silicone to set up, then do the last two glass panels.



BOLT CLAMP FIXTURE

Project Design: Jim Downing, Joe Warwick
Illustrations: Roxanne LeMoine, Carson Ode
Project Builder: Jan Hale Svec
Photograph: King Au

Natty NAUTICAL MIRROR

It seems that even landlocked souls long for the freedom of the sea. That's why every time you look at this frame, you'll remember the gentle pleasures of past summers: the warmth of sand beneath your bare feet, the bracing spray of salty surf, and the soft breezes that lifted your spirit.

Note: *For this project, we used a walnut board measuring ¾ ×4×30", a cherry board measuring 1 1/16×3×30", and a ⅛×24×24" piece of Baltic birch plywood.*

Start with the Walnut Frame

1 From ¾"-thick walnut, rip and crosscut two pieces to 1¾×25". (Each piece will make one long and one short frame side.) Cut a 5/16" rabbet 5/16" deep along one edge of each piece.

2 Set up your table-mounted router as shown in the Routing the Cove drawing at *right.* Cut the cove.

3 Miter-cut two pieces 13" long and two pieces 11" long. Glue and clamp. If desired, you can reinforce the walnut frame with finish nails. See the Tip at *right.*

4 Cut a semicircle with a 2" radius from ¾"-thick walnut. Glue and clamp it centered on the top of the frame.

Now, Fashion the Outer Frame

1 Cut a piece of 1 1/16"-thick cherry to 3×13". Clamp a length of scrap where shown on the Laying Out the Cherry Outer Frame drawing. Place the cherry stock atop the scrap, and mark the rounded top for the inside cut. To get a fine line for accurate sawing, use a sharp pencil. Then, use a piece of ⅜"-wide scrap to mark a second cutline—one that parallels the first—where shown.

2 Scrollsaw the inside half-round, cutting just on the waste side of the line. Now, carefully sand to the line. (We used a 3" drum sander.)

3 Form the straight lengths of the top outside frame part by following the three steps in the Making the Stopped Cuts drawing. Next, scrollsaw the curved outer portion of the cut. Sand to the cutline. Use a sharp chisel to pare clean, sharp corners.

4 Center the top outside frame part on the top rail of the walnut frame, and mark the corner miter cuts. For accuracy, we made these cuts with the tablesaw blade set at a 45° bevel.

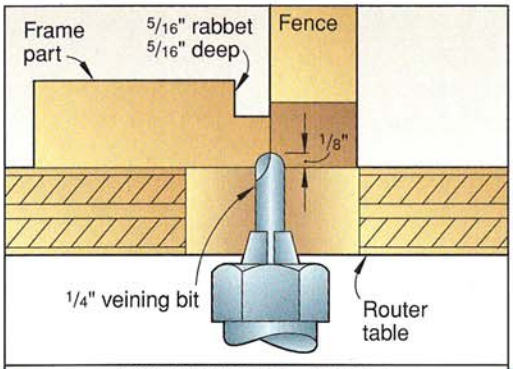
5 Rip pieces of 1 1/16"-thick cherry to ⅜" wide for the remaining outside frame parts. Miter-cut to length, and test for fit.

6 Glue and clamp the cherry outside frame parts to the walnut frame. When the glue dries, sand a slight round-over on all edges.

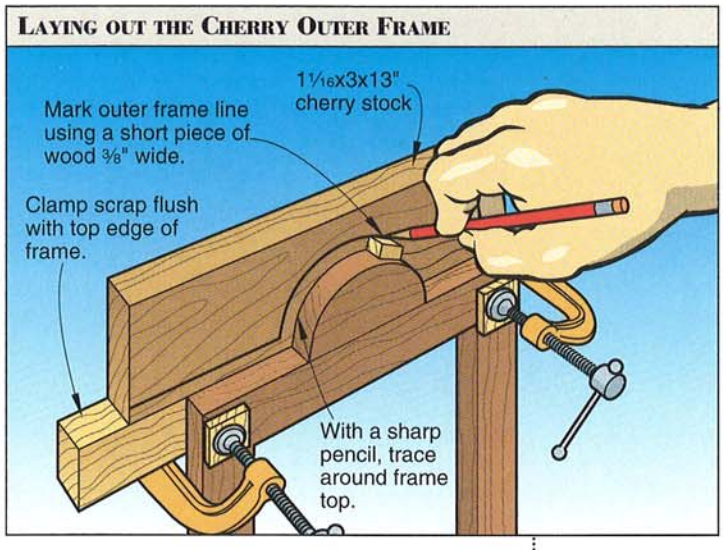
Scrollsaw the Nautical Scene

1 Cut a piece of ⅛"-thick Baltic birch plywood to a snug fit within the frame edges. Adhere to it a copy of the full-sized scene from the pattern pullout in the center of this issue.

2 Use a No. 5 scrollsaw blade to cut the scene. After cutting, remove the paper patterns and sand the scene with 220-grit paper.



ROUTING THE COVE



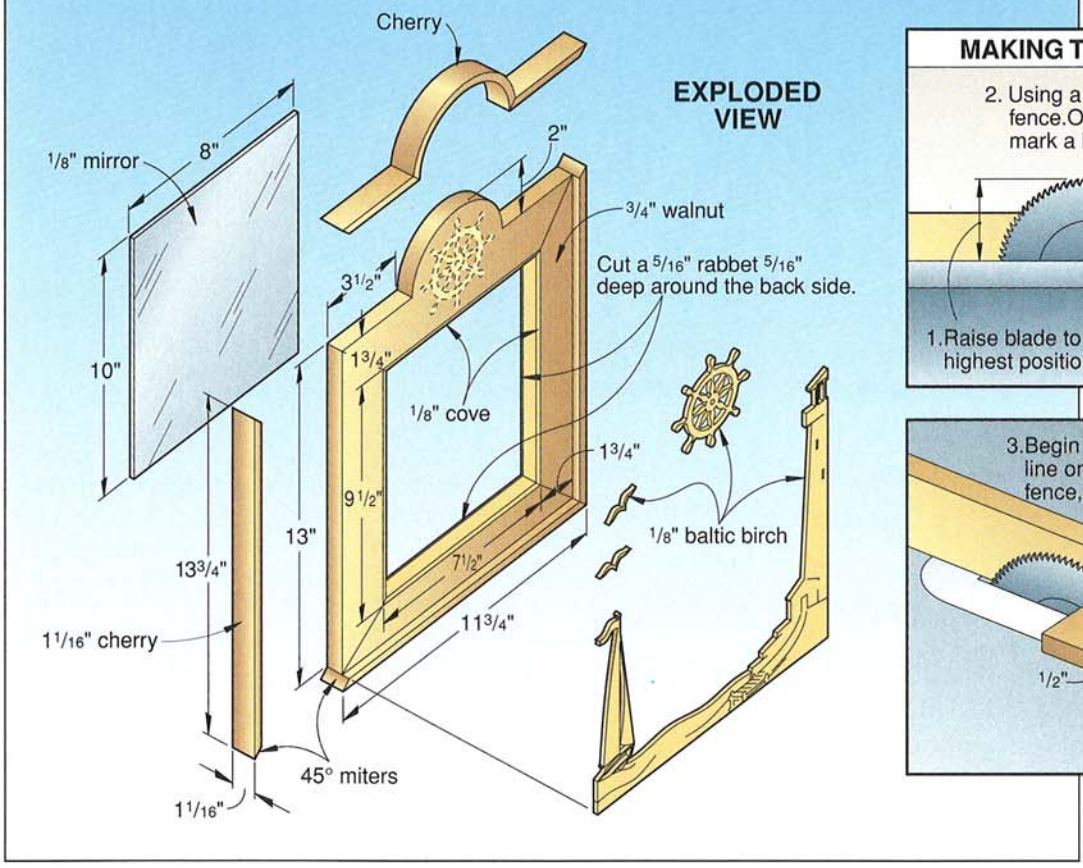
LAYING OUT THE CHERRY OUTER FRAME

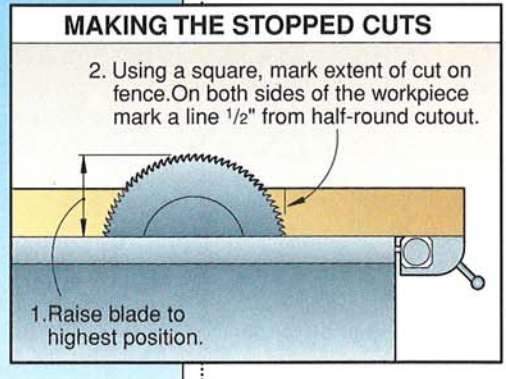
3 Spray the completed frame and scene pieces with two coats of aerosol lacquer. When the finish dries, glue the scene parts to the frame. We used cyanoacrylate (instant glue).

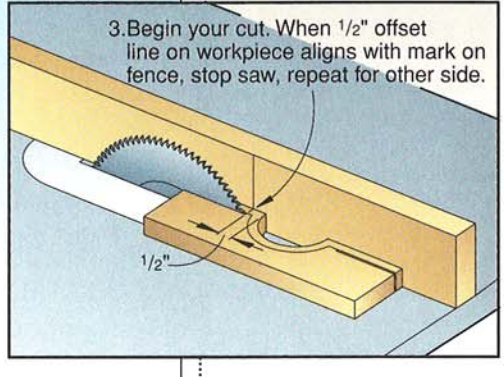
4 Attach a sawtooth picture hanger to the frame's back, then install the mirror (or a ⅛" glass panel, an 8×10" photo, and cardboard backing) with glazing points. Hang it on the wall and bask in the compliments you'll get! ■

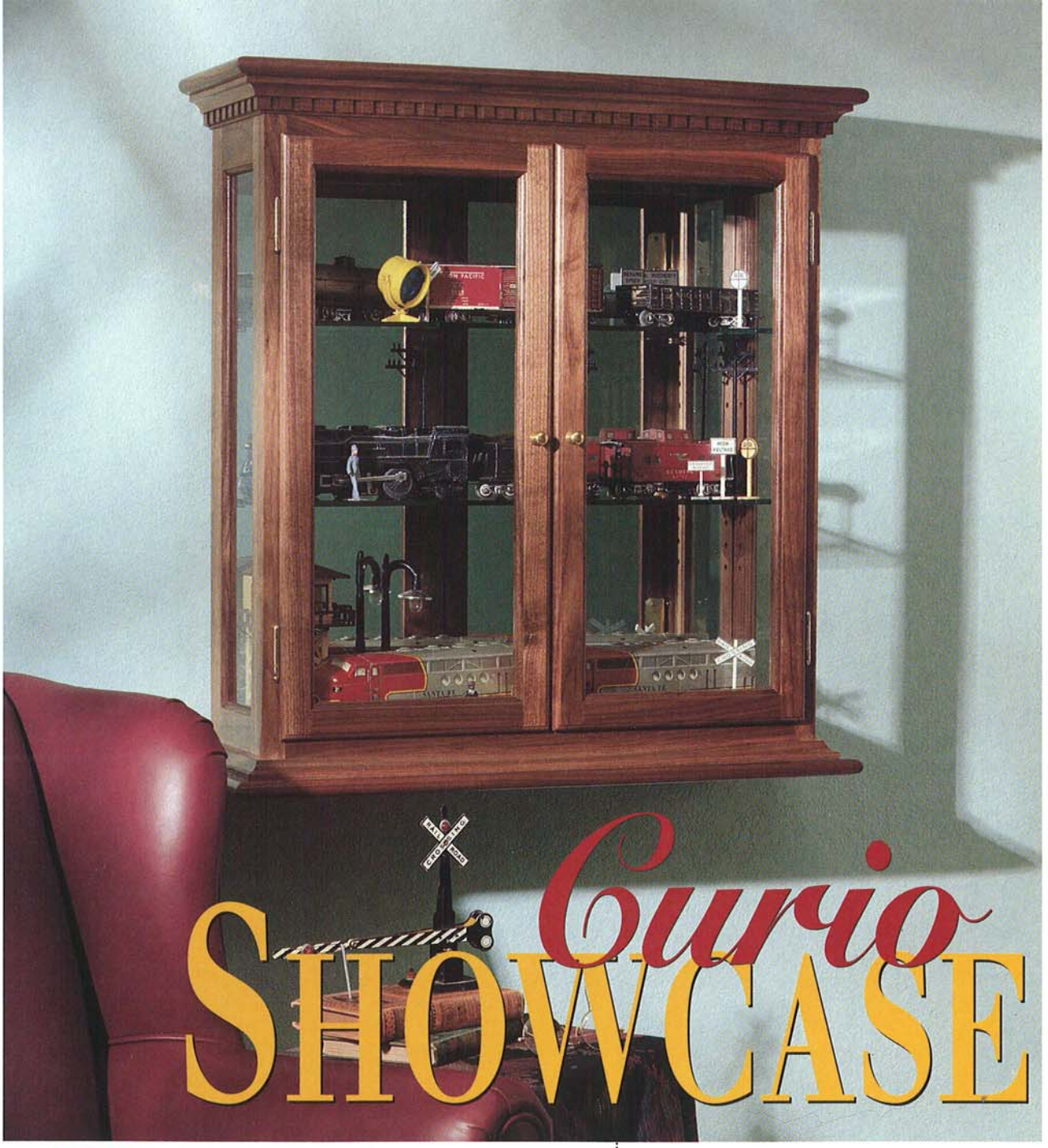
TIP **To create an even stronger frame,** wait until the walnut frame dries. Then, drill pilot holes on adjacent edges of each corner. In these, tap in 4d finish nails. Sink the heads with a nailset. These nails will be hidden by the cherry outer frame.

Project Design: Jim Downing
Illustrations: Roxanne LeMoine
Project Builder: Jim Downing
Photograph: King Au









Curio SHOWCASE

This handsome walnut and glass cabinet has it all—elegantly trimmed door and side frames with glass panels, a mirrored back, and built-up moldings at top and bottom. Each of these design elements contributes to its rich, substantial appearance, and makes it a welcome addition to any traditional room setting. We'll bet that you end up building several of these.

Let's Start With the Face Frame

1 Rip and crosscut the top rail (A), the bottom rail (B), and the stiles (C) for the cabinet face frame to the dimensions listed in the Bill of Materials. (We used a stopblock set-up to assure that the length of Part A was the same as Part B, and that the stiles were identical.)

2 Dry-assemble and clamp the face frame parts together, checking for square. Now, mark the dowel pin locations on the face frame where shown on the Face Frame drawing. (We discovered that it was a good idea to label

Continued

BILL OF MATERIALS

Part	Finished Size* T	W	L	Matl.	Qty.
FACE FRAME					
A top rail	¾"	2½"	22⅞"	W	1
B bottom rail	¾"	1⅝"	22⅞"	W	1
C stiles	¾"	1"	28⅛"	W	2
SIDE FRAMES					
D top rails	¾"	3¼"	4"	W	2
E bottom rails	¾"	2⅜"	4"	W	2
F front stiles	¾"	¾"	28⅛"	W	2
G rear stiles	¾"	1½"	28⅛"	W	2
CROSS MEMBERS					
H top, bottom	¾"	6¼"	23⅞"	W	2
I rear top rail	¾"	3½"	24⅜"	W	1
J rear bottom rail	¾"	2⅝"	24⅜"	W	1
K back	¼"	23"	24⅜"	H	1

*Cut part to final size during construction. Please read all instructions before cutting.

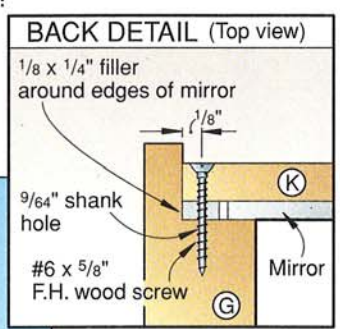
Materials Key: W—walnut; H—hardboard.

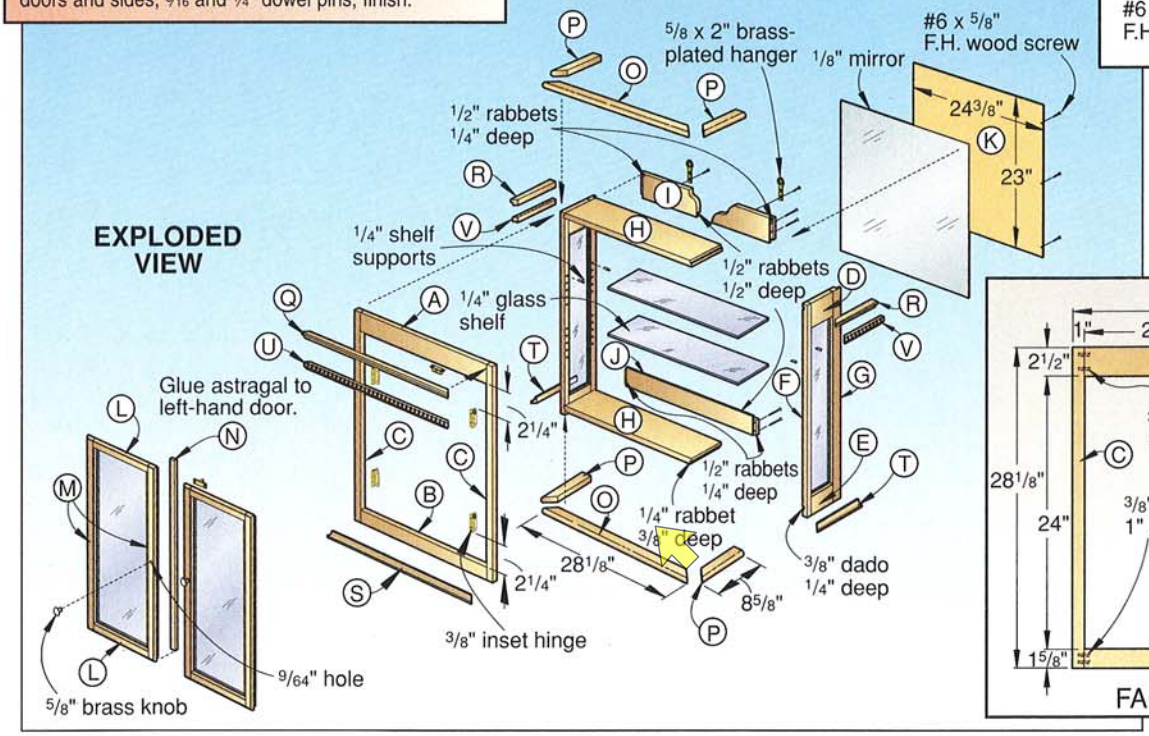
Supplies: #17×¾" brads; two ⅝"-dia. brass knobs; two pair of ⅜" inset hinges (polished brass); brass ball roller catch; eight ¼" shelf supports (brass); two ⅝×2" brass-plated hangers; #6×⅝" flathead wood screws; ⅛" mirror for back of cabinet; two ¼" glass shelves; ⅛" glass for doors and sides; 3/16 and ¼" dowel pins; finish.

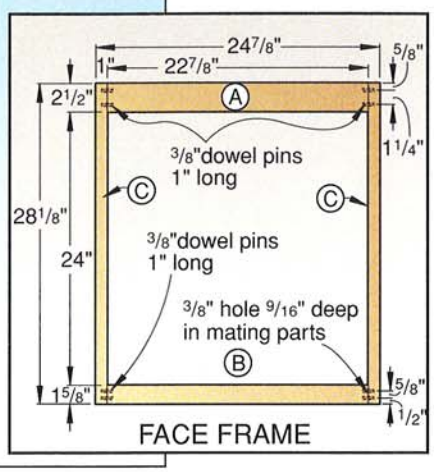
BILL OF MATERIALS

Part	Finished Size* T	W	L	Matl.	Qty.
DOORS					
L rails	¾"	1¼"	9⅛"	W	4
M stiles	¾"	1¼"	24½"	W	4
N astragal	⅜"	¾"	23¾"	W	1
CABINET TRIM					
O* front bullnoses	¾"	2⅜"	28⅛"	W	2
P* side bullnoses	¾"	2⅜"	8⅝"	W	4
Q* top front cove	¾"	1⅛"	27⅛"	W	1
R* top side coves	¾"	1⅛"	8⅛"	W	2
S* bot. front cove	¾"	¾"	26⅜"	W	1
T* bot. side coves	¾"	¾"	7¾"	W	2
U* front dentiled mold.	½"	⅝"	25⅞"	W	1
V* side dentiled mold.	½"	⅝"	7½"	W	2
GLASS-PANEL STOPS (CABINET)					
W* cabinet rail stops	¼"	¼"	4"	W	8
X* cabinet stile stops	¼"	¼"	22½"	W	8
GLASS-PANEL STOPS (DOORS)					
Y* door rail stops	¼"	¼"	9⅛"	W	8
Z* door stile stops	¼"	¼"	22"	W	8

TIP **Tip No. 1–To test-fit a doweled assembly,** dry-assemble with dowel pins sanded slightly undersized. They should fit snugly enoughly to let you check the fit, but loosely enough to allow you tor remove them easily.

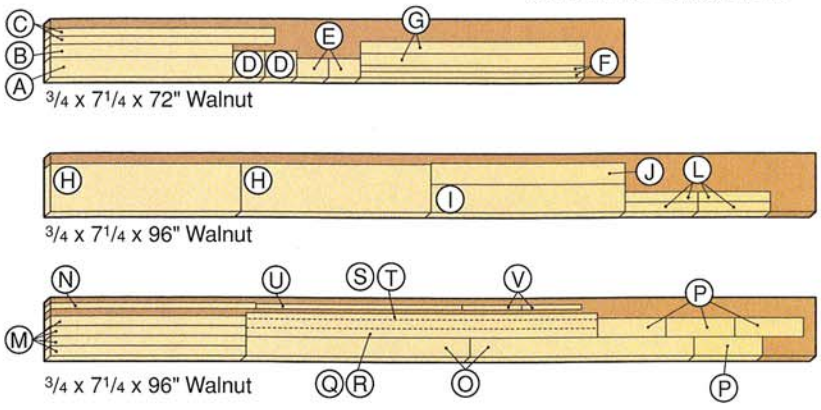


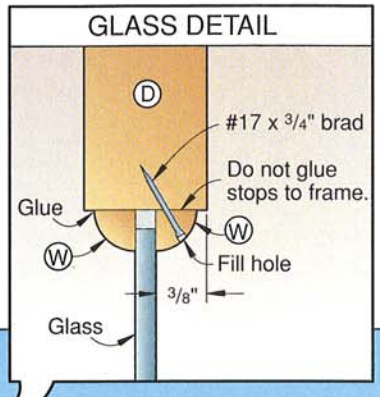


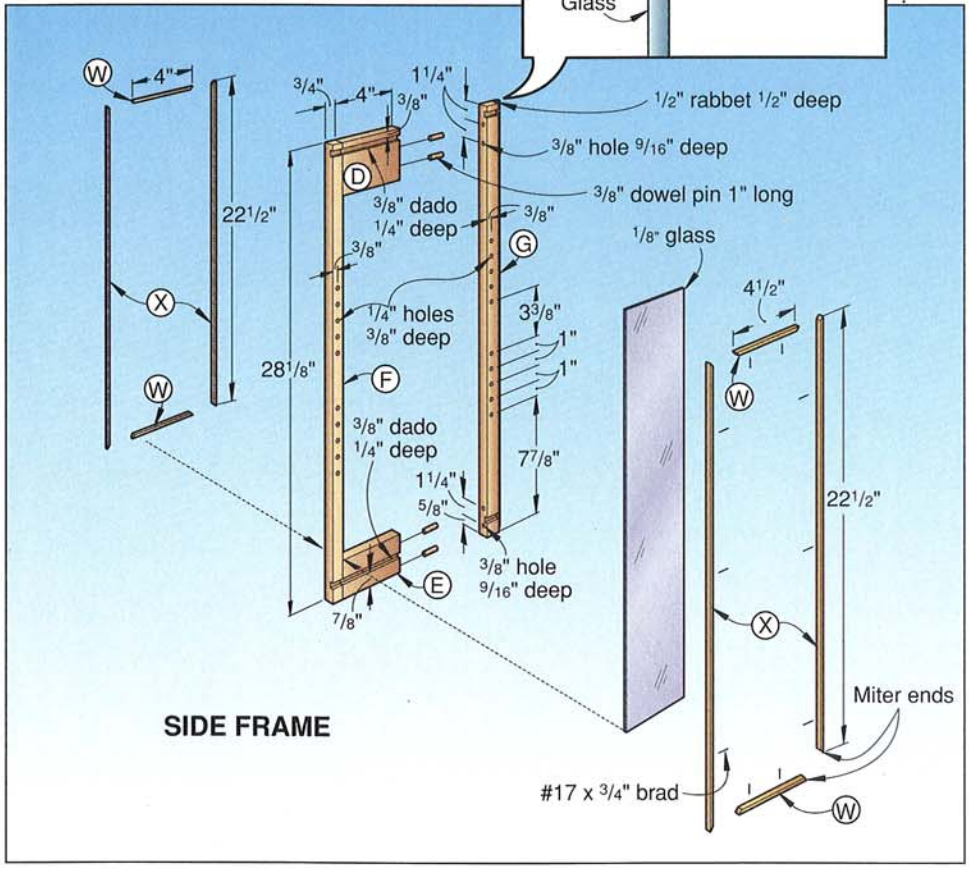


Curio SHOWCASE

CUTTING DIAGRAM







the corners to keep mating pieces in the same position throughout the marking, drilling, and assembly process.)

3 Using a doweling jig, drill centered 3/8" holes 9/16" deep in face frame parts A, B, and C where marked .

4 See Tip No. 1 for a method of dry-assembling the face frame to check the fit. Glue and clamp the assembly together, making sure it is square and flat. Set the face frame aside until the glue is dry, then unclamp.

Next, Build the Side Frames

1 Cut two each of the top rail (D), the bottom rail (E), the front stile (F), and the rear stile (G) to the dimensions in the Bill of Materials.

2 Repeat Steps 2 and 3 *above* to fashion the side frames. Dry-assemble with dowel pins, then disassemble.

3 Mark the centerpoints and drill the 1/4" shelf support holes 3/8" deep where dimensioned on the Side Frame drawing at *left.*

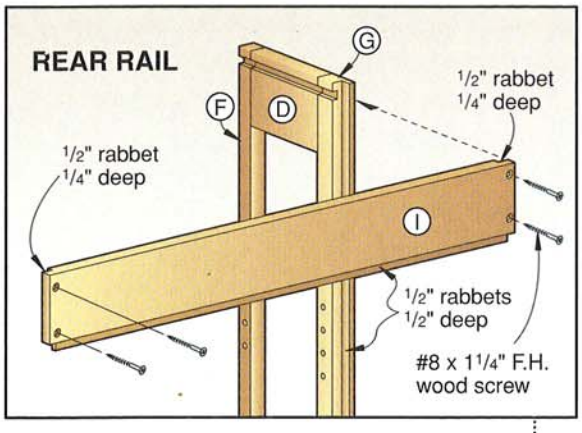
4 Glue and clamp the side frames until dry. Fit your tablesaw with a 1/2" dado set, and raise it 1/2". Attach an auxiliary wooden fence to your rip fence, and cut 1/2" rabbets 1/2" deep along the inside back edges of the two rear stiles (G).

5 Mount a 3/8" dado set in your tablesaw, and raise it 1/4". Place a side frame against your rip fence to cut the dadoes along the inside top and bottom edges where shown on the Side Frame drawing.

Cut the Cross Members, and Assemble the Cabinet Carcase

1 Cut identical parts for the cabinet top and bottom (H). Next, cut the rear top rail (I) and the rear bottom rail (J) to the dimensions in the Bill of Materials.

2 Install a 1/4" dado set, and cut 1/4" rabbets 3/8" deep along the ends of the top and bottom pieces (H) where shown on the Exploded View drawing. Next, cut 1/2" rabbets 1/4" deep along the inside ends of rails I and J. Finally, cut 1/2" rabbets 1/2" deep along the bottom outside edge of rail I, and on the top outside edge of rail J.



3 Dry-assemble the frame sides, top, and bottom to check the fit. Then, glue and clamp these parts, squaring the corners and making sure that the front edges of all parts are flush.

4 Glue and clamp the face frame to the cabinet carcase. Once the glue has dried, glue and screw the rear rails into place where shown on the Rear Rail drawing *above*. Cut and test-fit the back (K) but hold off installing it.

Then, Make a Pair of Doors

1 Rip and crosscut four door rails (L) and four door stiles (M) to the dimensions listed in the Bill of Materials.

2 Dry-assemble the rails and stiles to make two doors. Referring to the Full-Sized Dowel Hole detail on the Door drawing at *right*, mark the location of the 3/16" dowel holes. Label each door corner with matching letters on each part, disassemble the doors, and use a doweling jig to drill centered 9/16"-deep holes at the marked locations.

3 Glue and clamp the doors together, making certain they are flat and square.

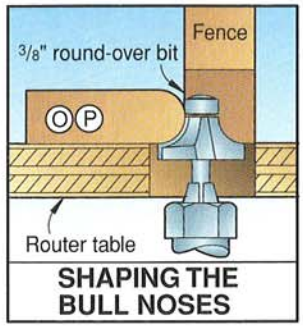
4 Chuck a beading bit into a table-mounted router, and cut a 1/4"bead around the front outside edge of each door.

5 Chuck a 3/8" rabbeting bit, and rout a 3/8"-deep rabbet around the back outside edge of the door to make the profile shown in the Full-Sized Dowel Hole detail.

Note: We used thin stock for the astragal and some of the trim parts below. *You can resaw or plane thicker stock to the thicknesses listed in the Bill of Materials.*

6 Cut a length of stock measuring 3/8x3/4x23 3/4" for the astragal (N). Center, glue, and clamp the strip into the left-hand door rabbet and where shown on the Exploded View drawing.

7 Determine the centers of the neighboring door stiles that will meet at the middle of the cabinet opening. There, drill 9/64" holes for the brass-knob screws. (We found the brass knobs and other supplies at local hardware stores.)

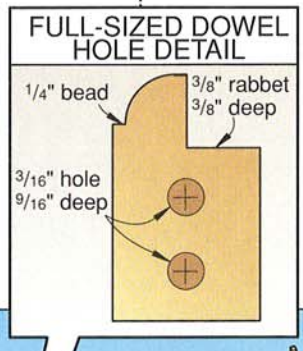


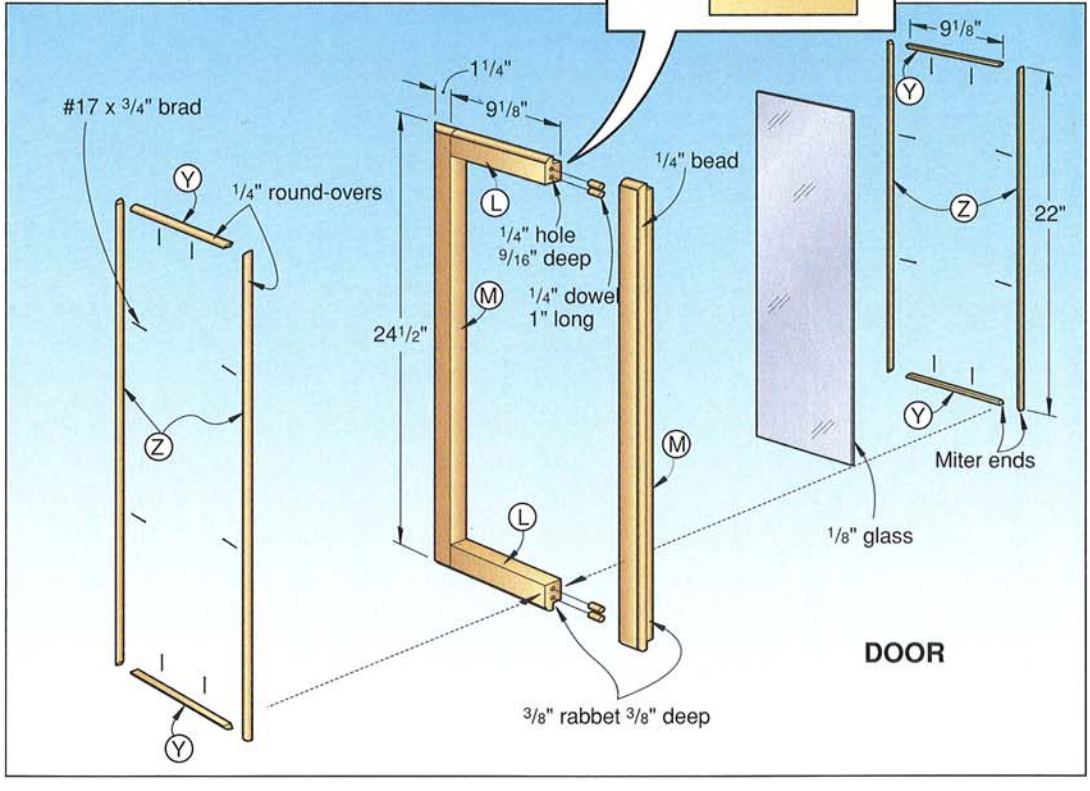
SHAPING THE BULL NOSES

It's Time to Decorate the Carcase With Fancy Trim

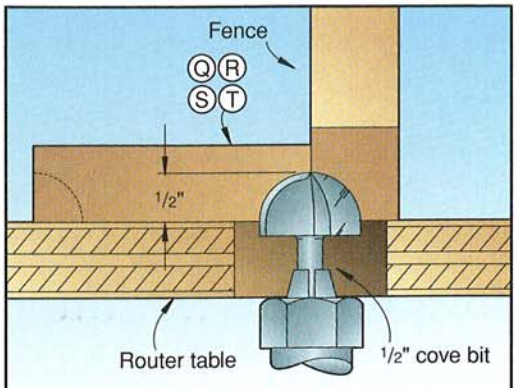
1 Rip two 48"-long pieces of 3/4"-thick stock to 2 3/8" wide for trim parts O and P. Next, rout a bullnose profile along one edge of each piece. (See the Shaping the Bullnoses drawing *above right*.)

2 Miter-cut bullnose pieces O and P to length. Check the fit,

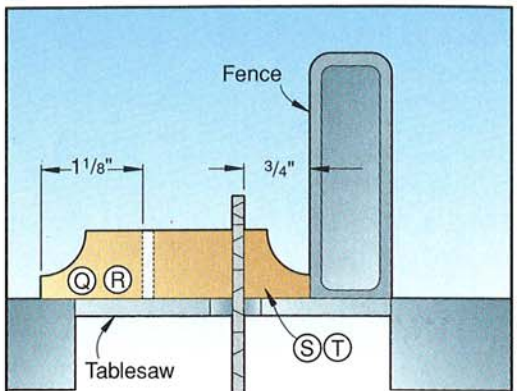




TIP **Tip No. 2–To install glass panels so they won't break** when the frame moves due to moisture changes, have the glass cut ⅛" undersized.



ROUTING THE COVE MOLDINGS



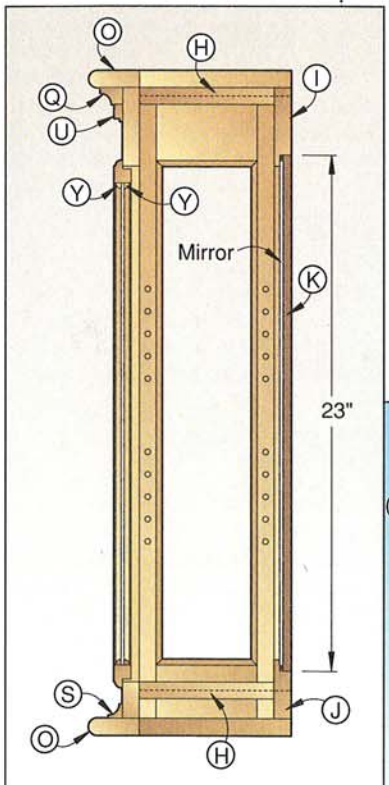
CUTTING THE COVE MOLDINGS

then glue and clamp in place to the top and bottom of the cabinet where shown on the Side Section View and the Front Section View drawings. Make sure that the side bullnose pieces P are flush with the cabinet back.

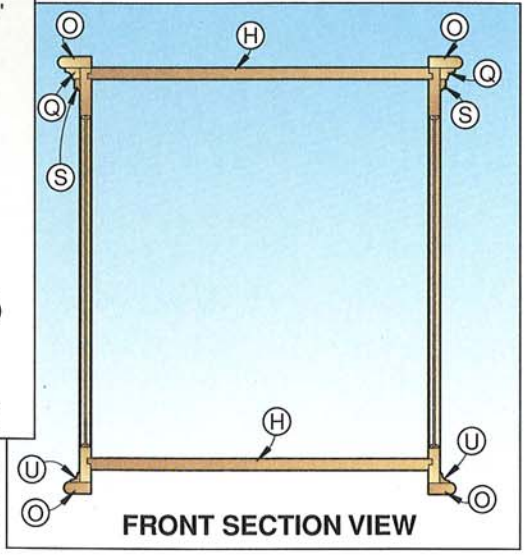
3 Rip and crosscut a piece of ¾"-thick stock to 3×48" on your tablesaw. Now, chuck a ½" cove bit into your table-mounted router. Adjust the fence and bit height as shown in the Routing the Cove Moldings drawing *above*, and cut a cove along each edge of the stock.

4 Next, with your tablesaw, rip one strip to 1⅛" wide for the top cove moldings (Q, R). Adjust the fence to rip a ¾"-wide strip for the bottom moldings, (S, T), and cut off the other edge. See the Cutting the Cove Moldings drawing *above* for help with your saw set-ups.

5 Miter-cut the cove moldings (Parts Q, R, S, and T) to length and glue them to the cabinet at the locations shown in the section view drawings.



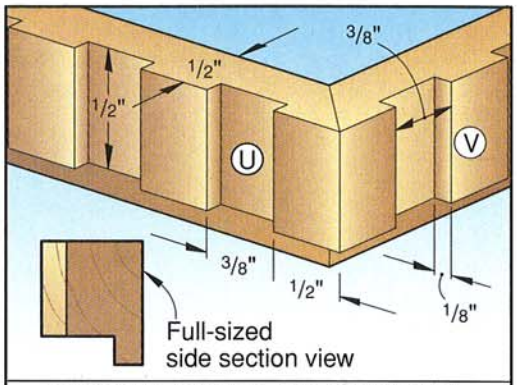
SIDE SECTION VIEW



FRONT SECTION VIEW

6 Plane a 48" length of stock to ½" thick. Rip to ⅝" wide. Next, mark the dentil locations on the back of the workpiece. (Refer to the Dentiled Molding Detail.) Make Xs in the ⅜" spaces between the dentiled squares to indicate the waste areas. you will be cutting away in the following step.

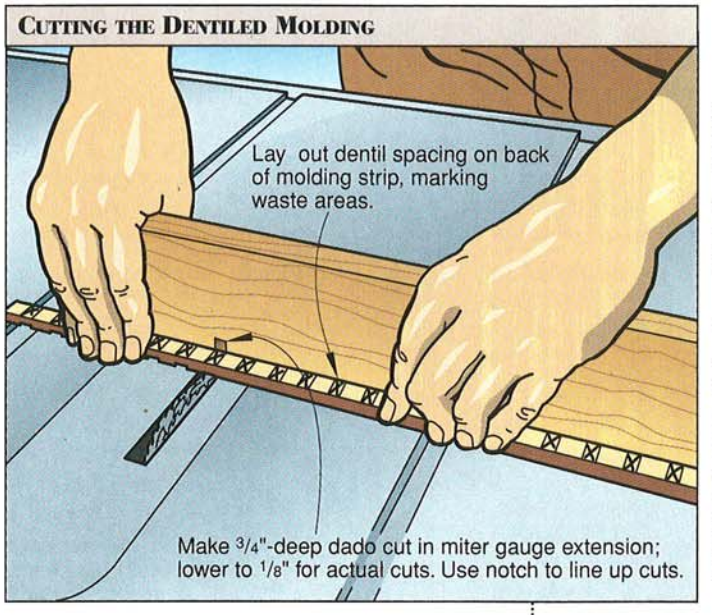
7 Install a ⅜" dado set in your tablesaw, and attach an extension to your miter gauge. Raise the blade to ¾" above the table and cut a dado through your extension. Now, lower the



DENTILED MOLDING DETAIL

dado set to ⅛", and place the strip cut in Step 6—back side up—on the table and against the extension. Align the edges of the dado in the extension with the lines you drew to locate the dentils. (An X should be centered in front of the dado in the table saw extension.) Turn on the saw, and begin dadoing out the waste between the raised portion of dentil molding where shown in the Cutting the Dentiled Molding drawing *above right.*

8 Change saw blades and crosscut the dentiled molding into one 32" length and two other lengths just under 9". Refer to the Dentiled Molding drawing *above*. Position the 32" length on the cabinet front beneath the top

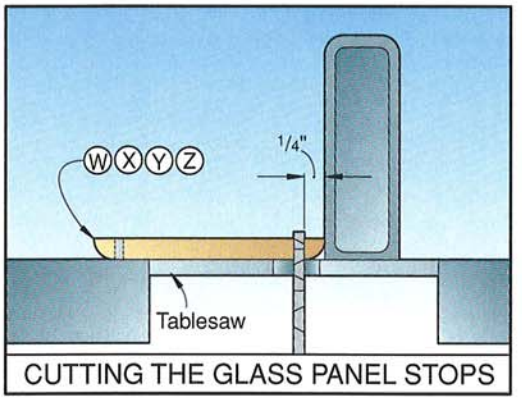


front cove. Ensure that a full dentil is located over each corner. Mark and miter-cut the front dentil molding (U) at each end.

9 Mark and miter-cut the shorter side dentiled moldings (V). Glue all three moldings to the cabinet. (We drove a few brads in the moldings to hold them in place.)

OK, Let's Secure the Glass Panels with Stops

1 Resaw a ¾×5½×24" piece of walnut into two pieces, then plane to a finished ¼" thickness. Install a ¼" round-over bit in your table-mounted router and rout both edges. Install a zero-clearance blade insert into your tablesaw, then adjust the rip fence for ¼"-wide



CUTTING THE GLASS PANEL STOPS

quarter-round strips. Rip off both molded edges as shown on the Cutting the Glass Panel Stops drawing. (We used a pushstick when ripping to prevent the small strips from catching on the saw blade and kicking back.) Repeat this process until you have enough quarter-round material (22 strips) for the cabinet and door glass stops (W, X, Y and Z). We've found that it is a good idea to cut a few exta pieces in case some get damaged in later assembly steps.

2 Miter-cut the outside and inside stops for the cabinet and doors. (For best results, we checked the fit of each piece in its opening.) Glue the outside glass stops into place using the technique described in Tip no. 3 at *right*. Hold off installing the inside stops.

Putting It All Together

1 Lay the cabinet carcase on its back. Install the ⅜-inset hinges on the face frame stiles where shown on the Exploded View drawing. Make marks on the face frame stiles at the center of the opening. Next, mark the center of the door stiles. Put a door on the opening, match the marks, then reach inside the cabinet to mark the screw locations on the door. Repeat this process for the other door, drill pilot holes, and drive the screws.

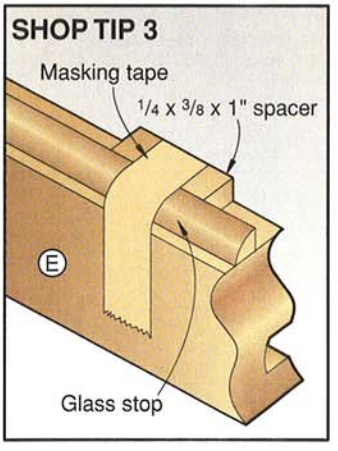
2 Remove the hardware and finish-sand all parts. Finish the cabinet and doors. (We applied three coats of Deft semi-gloss clear finish, sanding between coats with 320-grit paper.) For a smooth finish, use a tack cloth before applying the finish.

3 Once the finish is dry, have the glass panels cut to fit, and install them. (See Tip No. 3 for installing glass panels.) Now, carefully nail (no glue) the inside stops in place. (We drilled pilot holes in the stops prior to nailing them.)

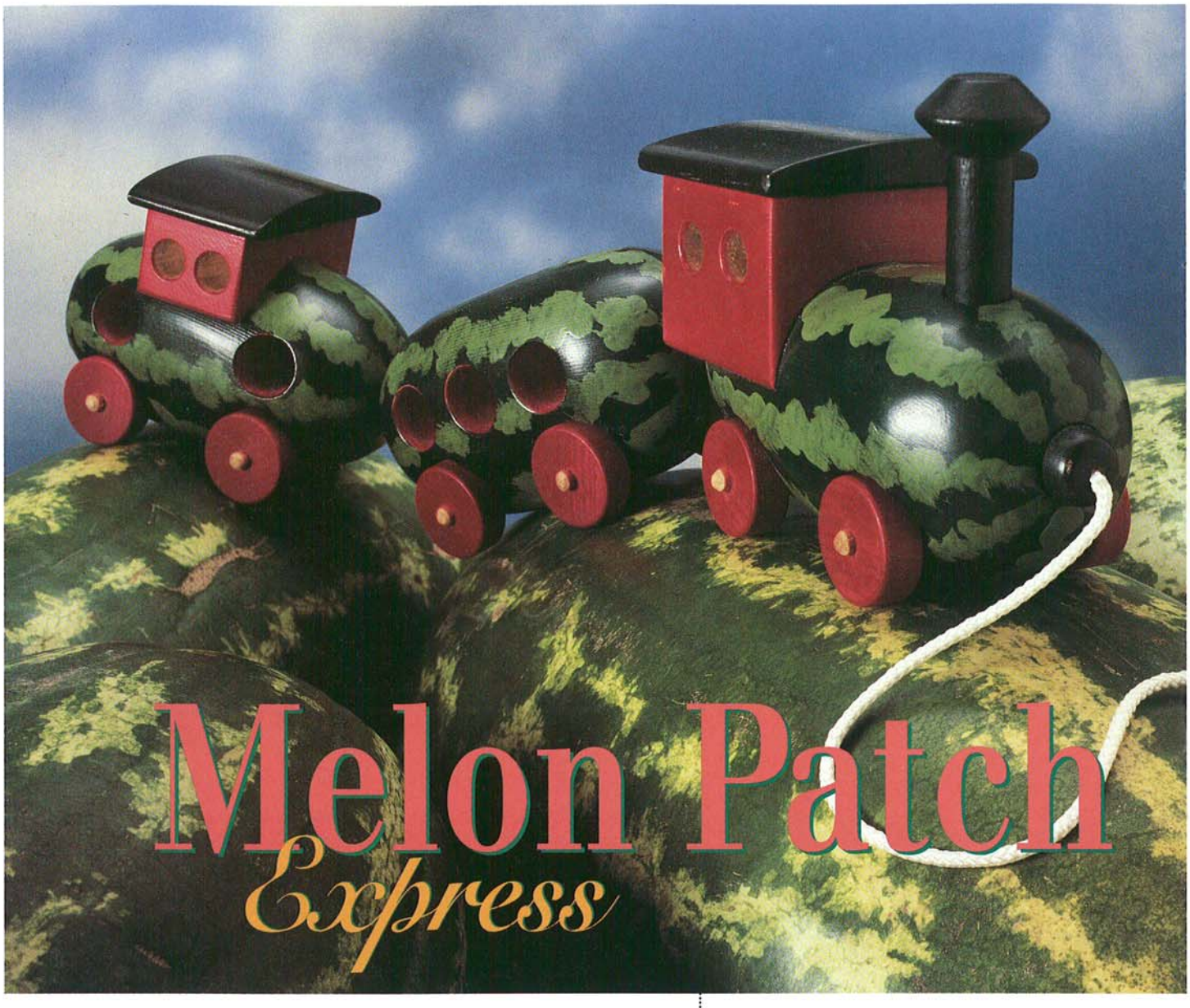
4 Lay the mirror in the recess at the back of the cabinet. Place ⅛×¼" filler strips around the mirror where shown on the Back Detail accompanying the Exploded View drawing. Lay the hardboard back over the mirror, and screw it in place through the filler strips

5 Reinstall the hinges on the doors and the doors on the cabinet. Add the brass knobs to the doors, the brass ball catch to the right-hand door, and the hanging hardware to the cabinet back. Then, find the perfect place to show off your masterpiece. Once you have hung it, insert the shelf clips and glass shelves. ■

TIP **Tip No. 3–To glue in quarter-round glass stops,** cut spacer strips from ¼-thick × ⅜"-wide hardboard. Crosscut a supply of spacers to 1" long. Align one edge of a spacer with the inside edge of the frame. Apply glue to the glass stop, and place it in the frame opening and against the spacer strip. Clamp the stop and spacer in place with masking tape as shown in the drawing below. Use spacers and tape every few inches to ensure accurate results. Add the remaining outside stops this way.



Written by: Jim Harrold
Project Design: Jim Downing
Illustrations: Roxanne LeMoine, Carson Ode
Project Builder: Bill Wright
Photograph: King Au



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Let's Begin by Roughing Out and Drilling the Cars

1 Crosscut two 24" lengths of standard 2×4 fir stock, and glue and clamp them together face-to-face. When the glue has dried, crosscut an 18" piece, setting the remainder aside for later use. Rip and plane the 18" length to 2¾" square. ***Note:*** *It is critical that the piece is square so the holes and cut-out sections will be square to the wheels.* Crosscut 5½" blanks for the engine (A), coach (B), and caboose (C).

2 Cut out the full-sized patterns for the sides and tops of the engine, coach, and caboose from the pattern insert in the center of this magazine, and adhere to each blank with spray adhesive. Indent the centerpoints of all holes on each car with an awl or nail.

Continued

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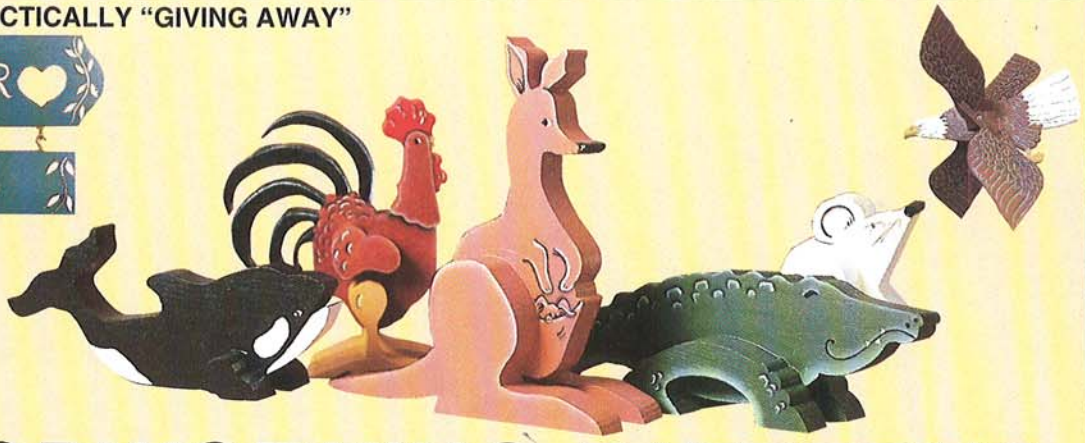

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Tip No. 1—Select a slow speed (500 rpm or less) and use a slow feed rate when using a large spade bit. The drilling will take only a few moments longer than using a high speed, and it will be safer.

Tip No. 2—Don't worry about sanding each car absolutely identical. Melons naturally vary in shape.

3 Chuck a 1⅜" spade bit in your drill press, and drill wheel wells 7/16" deep into the sides of each car at the marked centerpoints. See Tip No. 1 at *left*. Switch to a 9/32" bit, and drill through the cars at the spade bit's mark.

4 Switch to a ¾" bit, and drill window holes through the coach and caboose.

5 Drill a ¾" hole ⅜" deep into the front of the engine where shown on the full-sized patterns. Switch to a ⅝" bit, and drill ⅞" deep at the marked centerpoint of the smokestack hole.

6 Mark centerlines for the string holes on the bottoms and ends of the cars. Chuck a ¼" bit into the drill press, and drill 1" deep into the ends. Next, switch to a ⅜" bit, and drill 1⅜" deep into the bottoms, so the holes meet.

7 Cut the rabbet in the engine with two cuts on your tablesaw. Then, remove the top pattern from the cutout and put it on the bottom of the rabbet.

BANDSAWING THE CARS

Change to a dado set, adjust it for a ⅝"-deep cut, and make the 1⅝" dado in the caboose.

Next, Shape the Cars

1 Bandsaw the cars along the lines of the top pattern. Next, use transparent tape to adhere the scraps back into their original positions. Then, bandsaw the side profile of each car.

2 Round each car on a stationary disk sander, using 80-grit paper. Keep the melon shape moving to avoid flat spots. See Tip No. 2 at *left*. Then, use a palm sander with 100-grit paper to refine and smooth the shape.

Continued

BILL OF MATERIALS

Part	Finished Size* T	W	L	Matl.	Qty.
A* engine	2¾"	2¾"	5½"	LF	1
B* coach	2¾"	2¾"	5½"	LF	1
C* caboose	2¾"	2¾"	5½"	LF	1
D engine cab	2"	2⅞"	2½"	LF	1
E caboose cupola	1⅛"	2⅞"	1⅝"	LF	1
F cab roof	½"	3½"	3"	F	1
G cupola roof	½"	3½"	2⅛"	F	1

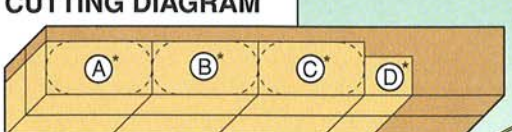
*Cut part to final size during construction. Please read all instructions before cutting.

Materials Key: LF—laminated fir; F—fir.

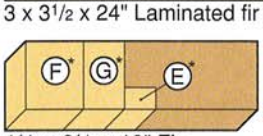
Supplies: ¼, ¾, and 1¼" dowel stock; smokestack; latex interior primer; acrylic paint, ⅛" nylon cord.

Buying Guide:
Melon Patch Express Hardware Parts Package. It includes four 2-oz. bottles of paint, smokestack, and wood doweling necessary to build one project. Order #1260, $11.95 plus $3.50 shipping from Meisel Hardware Specialties, P.O. Box 70WEW, Mound, MN 55364-0070. Credit card customers call 1-800/441-9870. MN residents add 6.5% sales tax.

CUTTING DIAGRAM

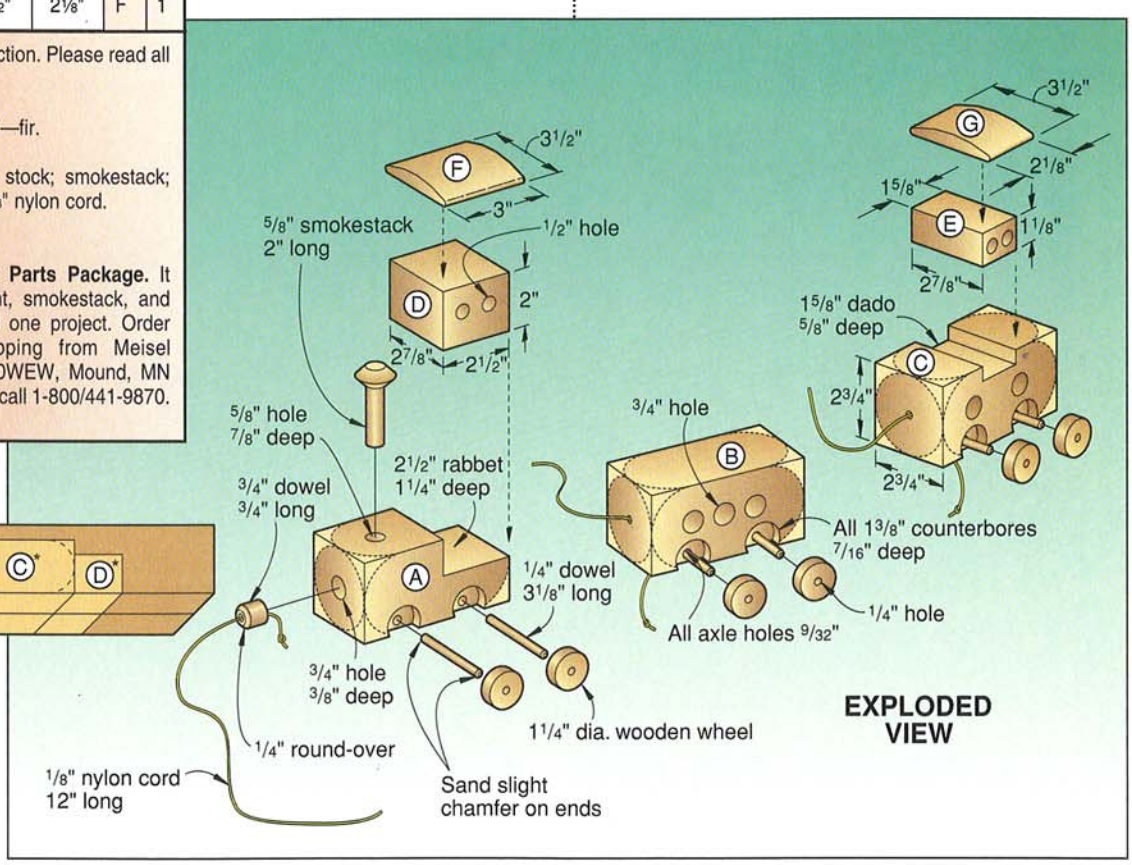


3 x 3½ x 24" Laminated fir



1½ x 3½ x 12" Fir

*Plane or resaw to the thickness in the Bill of Materials



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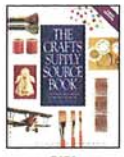

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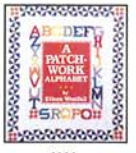

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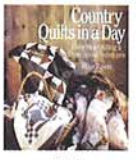

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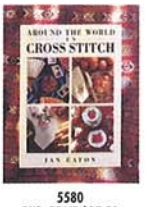

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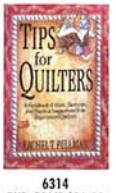

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WEEKEND WOODWORKING

Melon Patch Express

Tip No. 3—Insert scrap dowels into the axle holes before painting. This will prevent paint buildup in the holes and also allow you to put the cars "up on blocks" so you can paint the entire melon without waiting for the bottom section to dry.

Tip No. 4—Practice painting the stripes on the bottom of the melons. By the time you're ready to paint the more visible stripes on the sides and top, you'll have your technique perfected.

Tip No. 5—For added protection and luster, you can use a clear acrylic coat on top of the paint. Don't use regular varnish; it can give the paint a yellow-

Build the Cab and Cupola

1 Resaw the remaining 3×3½" stock to 2" thick. Then, rip and crosscut the engine cab (D) to the dimensions listed in the Bill of Materials. Resaw, rip, and crosscut the caboose cupola (E) from a piece of 2×4 stock to the dimensions listed in the Bill of Materials.

2 Transfer the full-sized patterns to the engine cab and cupola, and mark the centerpoints of all holes with an awl or nail. Drill ½" holes through the parts where marked.

3 Resaw or plane stock to ½" thick for the cab roof (F) and the cupola roof (G). Then, rip and crosscut a blank to 3½×6". Sand along the blank's length to match the end view shown in the full-sized patterns. Finally, cut these parts to the lengths listed in the Bill of Materials.

Now, Machine the Wheels, Axles, And String Plug

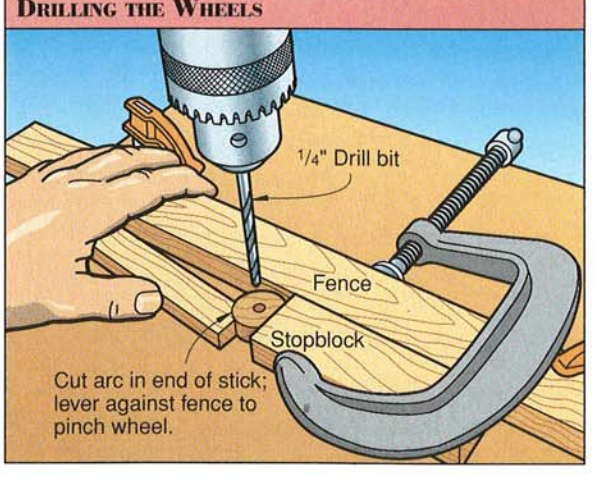
1 Set your bandsaw's rip fence 7/16" from the blade and use your miter gauge to cut 12 wheels from 1¼" dowel stock. Use a pushstick to move the wheels clear of the blade.

2 Center a wheel under a ¼" bit in the drill press, using the setup shown in the Drilling the Wheels drawing. Pinch the wheel against the fence and stopblock with a stick that has an arc cut in its end. Then, drill the wheels.

3 Cut six axles 3⅛" long from ¼" dowel stock. Sand a small chamfer onto each end.

4 Sand a ¼" round-over on one end of a ¾" dowel to begin making the string plug for the front of the engine. Refer to the full-sized drawing of the string plug in the pattern insert. Next, crosscut the dowel to form a ¾" plug. Mark the center of the unrounded end and drill a 9/32" hole ¼" deep. Switch to a 5/32" bit and finish drilling the length of the plug.

Drilling the Wheels



Now, Add the Finishing Touches

Note: *You'll get a sharper paint job by assembling the pieces after painting them. Mask areas that will be glued to ensure a good bond.*

1 Finish-sand all parts by hand with 100-grit paper, softening any sharp edges, and clean with a tack cloth. Then, paint a coat of primer on all parts of the train. (We applied Sherwin-Williams Pro-Block Interior Primer with a 1" foam brush). See Tip No. 3 at *left* for a time-saving idea. Sand the primer with 180-grit paper to get a smooth surface.

2 Paint the train with two coats of paint. (The color names are those of Accent Acrylic Country Colors brand. See the Buying Guide accompanying the Bill of Materials for our source for paint.) Use Soft Black for the smokestack, roofs, and string plug (paint the front of the plug only; leave the rest bare for a gluing surface); Razzle Red for the wheels, cab, cupola, and ¾" window hole interiors; and Deep Forest Green as the base coat on the cars.

3 Draw eight evenly spaced longitudinal lines with a faint pencil line on each car. Do this by first dividing the melon into quarters with lines at the top and bottom, then along both sides. Next, pencil in lines between those first four. The paint job looks complicated, but it's really just dabs of paint, with smaller dabs near the ends of the melon. Dip your #10 round brush in Green Olive paint, moving the brush from side to side to create a wavy stripe. (See Tip No. 4 at *left.*) Only one coat is necessary.

4 Remove masking tape, and glue the pieces together when you finish the painting. For an added sheen, apply a clear finish over the paint (see Tip No. 5 at *left*).

5 Wax the middle section of the axles, then place them through the axle holes, and glue the wheels in place. Leave the chamfered ends of the axles protruding about 1/16".

6 Thread ⅛" nylon sash cord through the front string hole of the middle car. Knot the end of the cord, then shove the knot up into the hole where shown in the Joining the Cars drawing on the pattern insert. Tie a knot in the cord between the coach and engine, then thread the cord into the engine's string hole. Before tying the knot in the bottom of the engine, put some hot-melt glue down the hole to form a plug, then make a knot,push it into the hole and secure it with more hot-melt glue. Attach the caboose in the same manner. Finally, thread cord through the string plug, knot the end, and glue the plug into its hole in the front of the engine. ■

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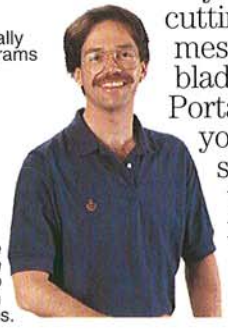

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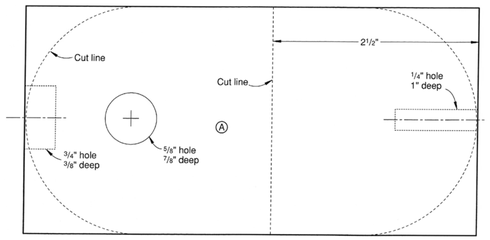

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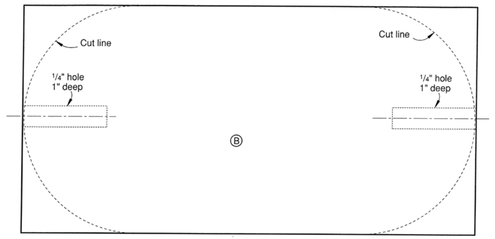

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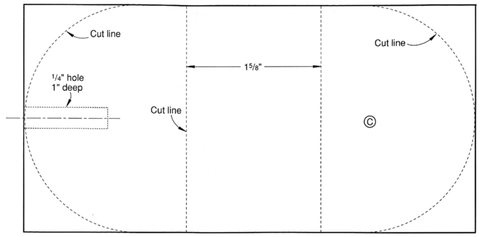
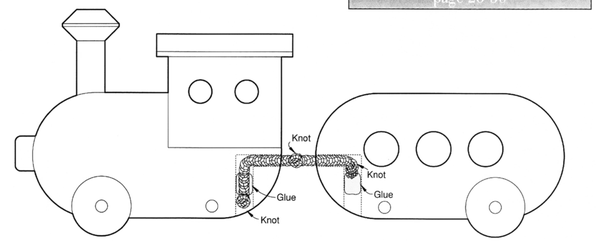
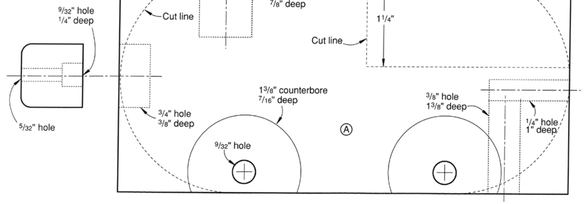


TOP VIEW

Watermelon Train
page 26-30





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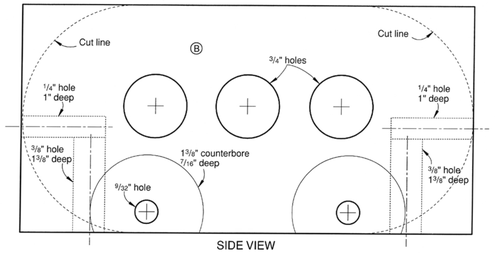

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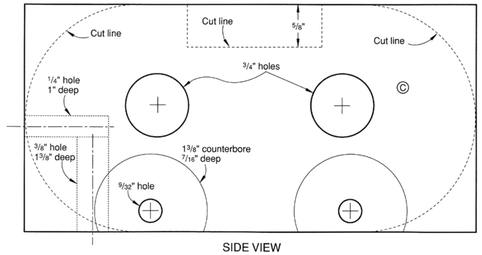

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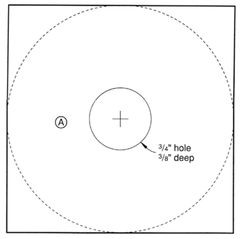

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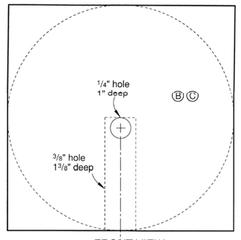

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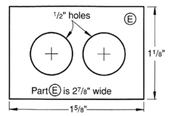
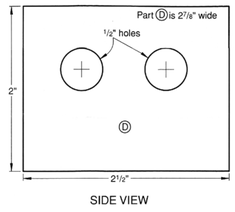
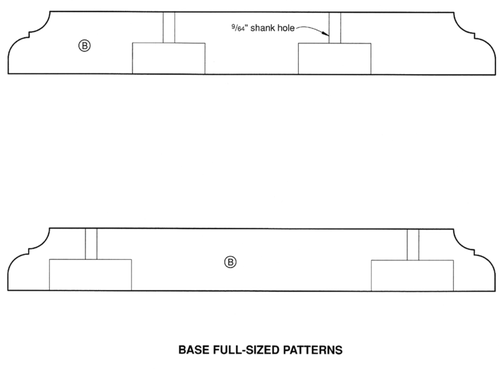




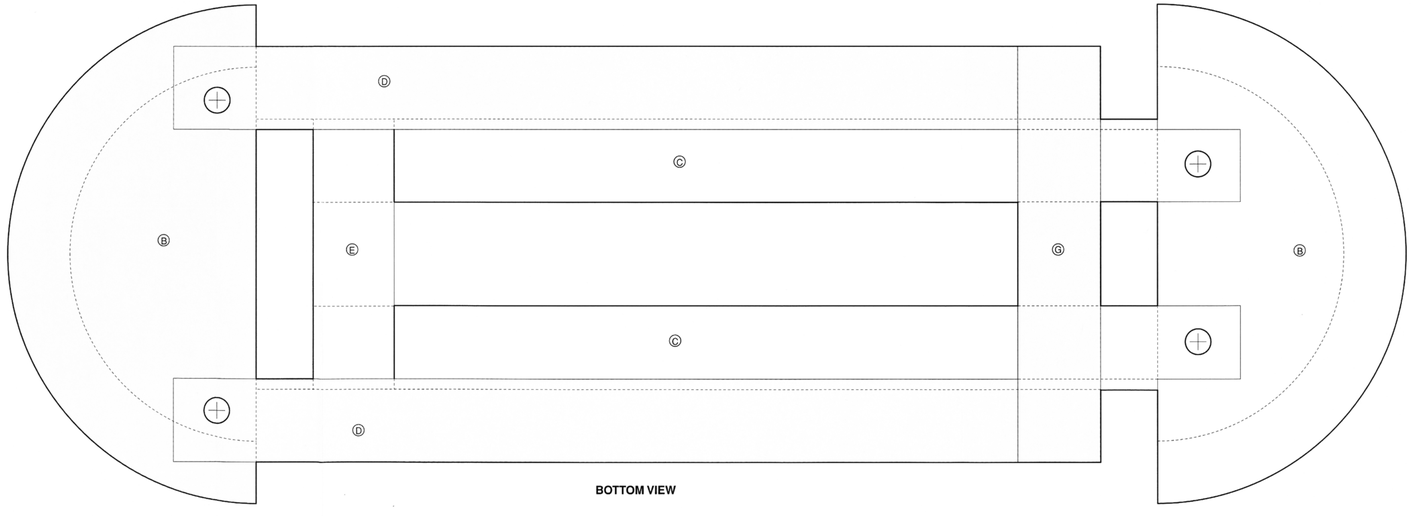
SIDE VIEW

END VIEW

Heritage Bookends
page 7-9



BASE FULL-SIZED PATTERNS



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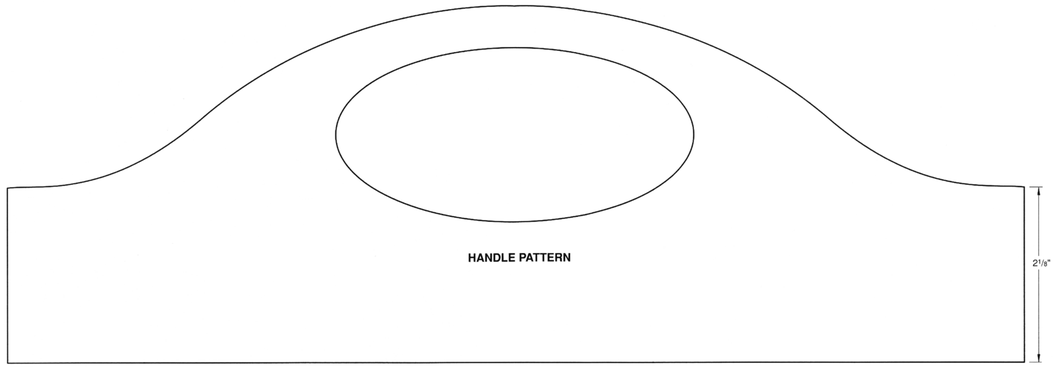

Shaker Carrier
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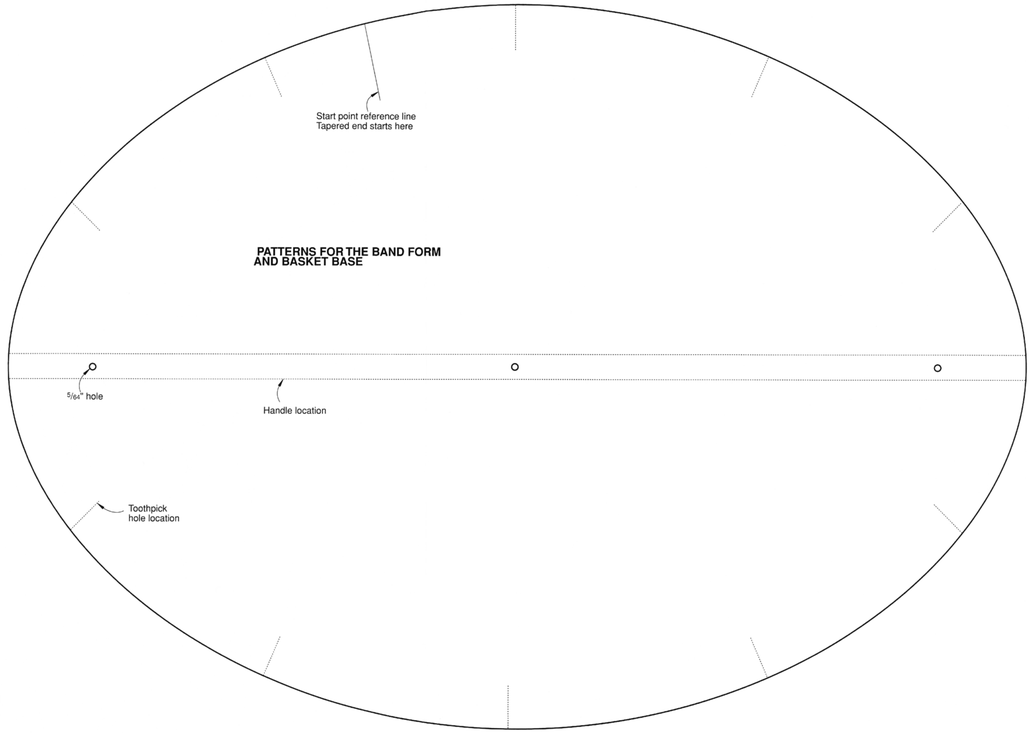

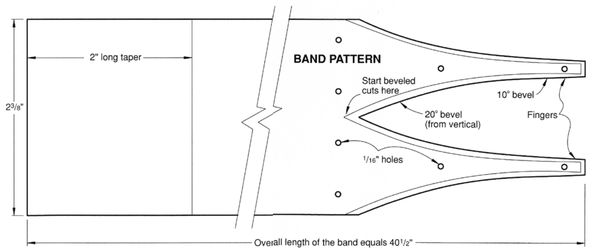

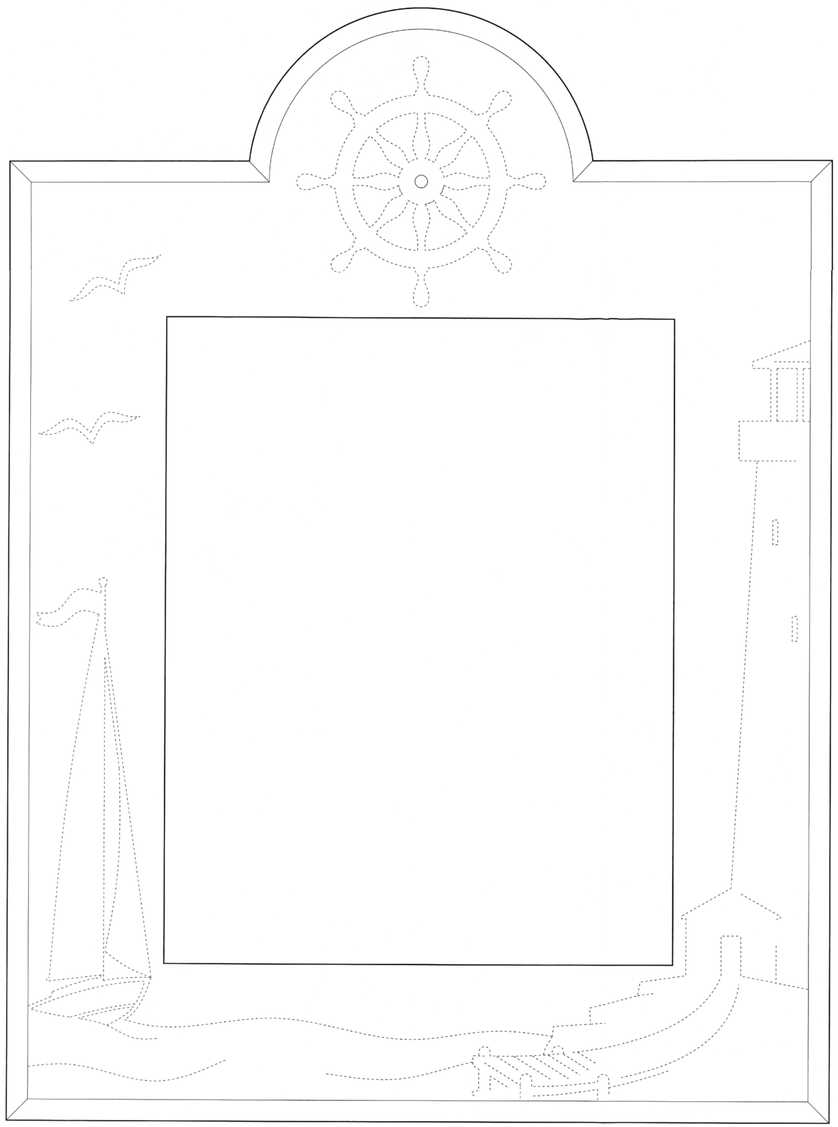

Nautical Frame
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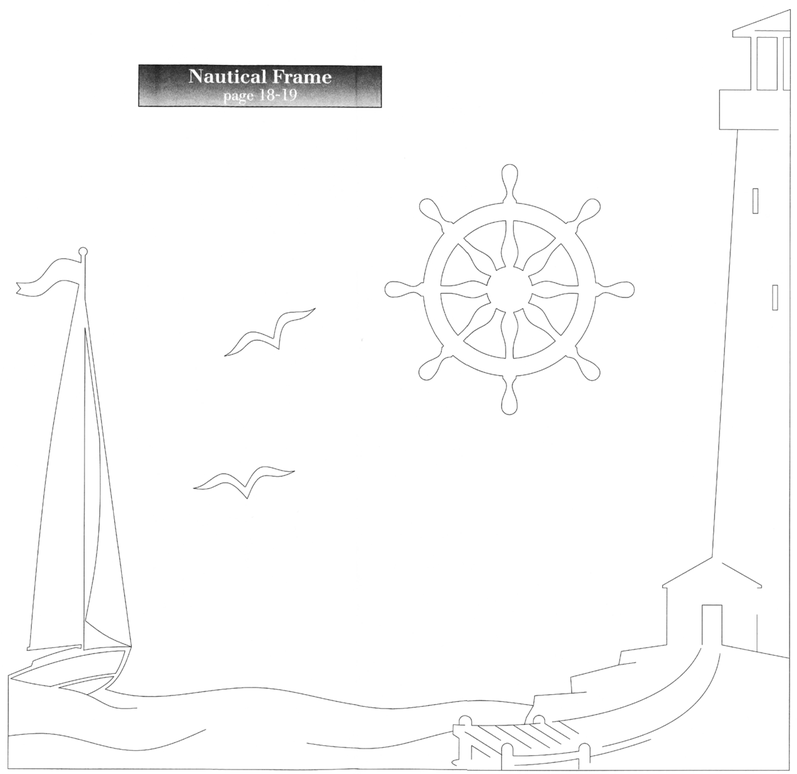
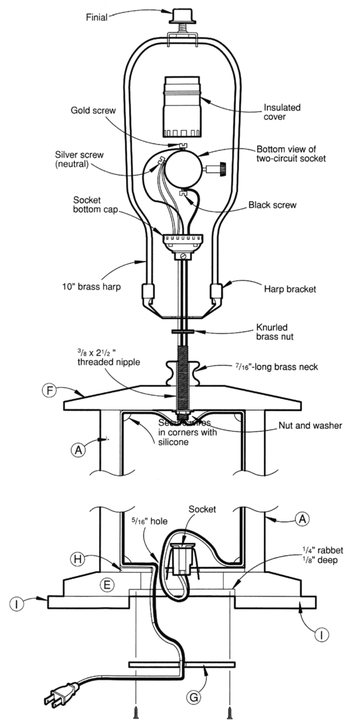




WIRING DIAGRAM

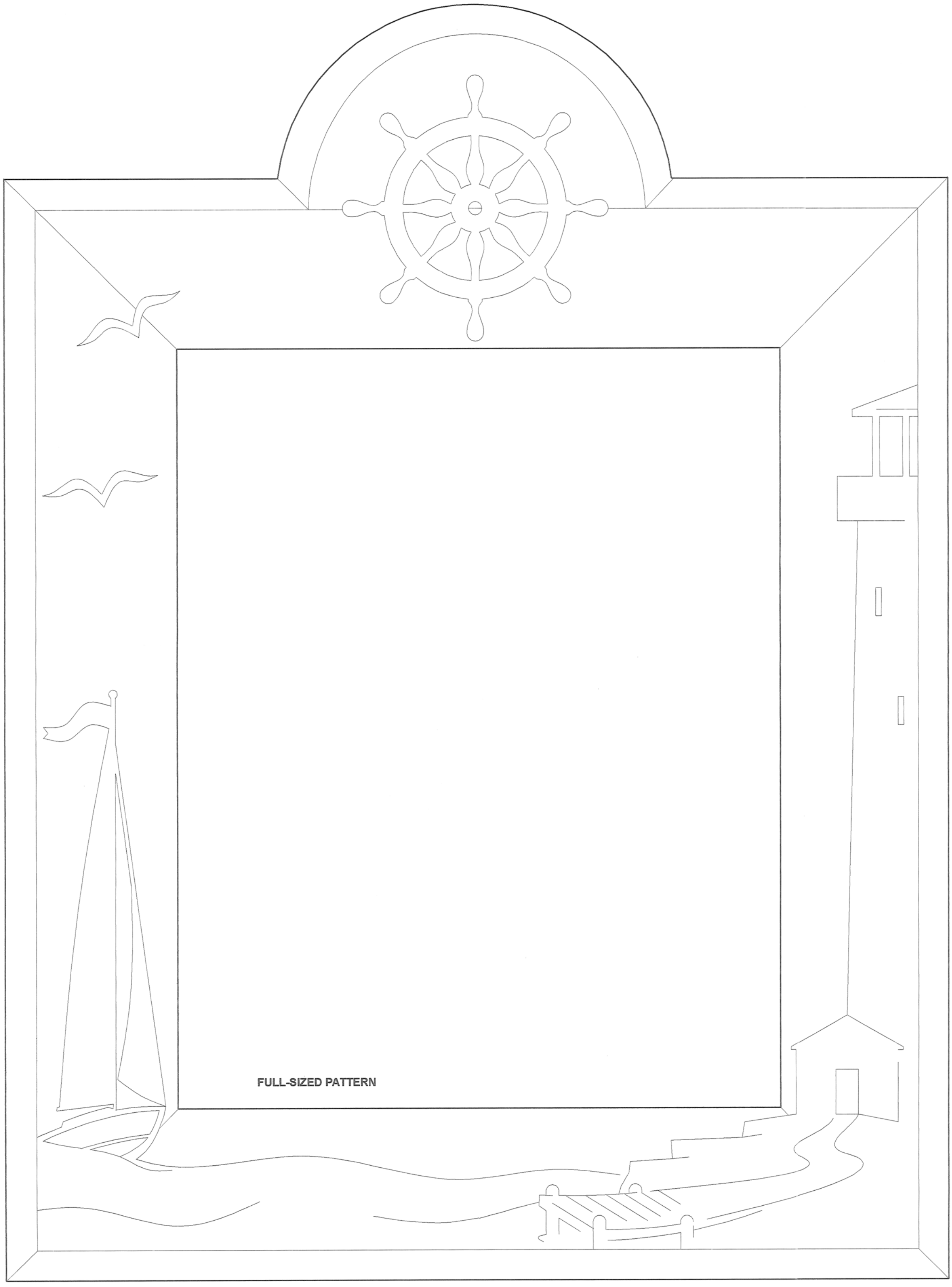
Here's How to Wire the Lamp

1 Push the 3/8×2½" threaded nipple through the top, and attach the brass neck, nuts, washer, harp bracket, and socket bottom cap where shown on the Wiring Diagram.

2 Drill a 5/16" hole through the base insert (H) near the edge of the hole through the base. Thread the end of an 8' length of brown lamp cord (with a plug at its other end) through the cover plate (G). Continue threading the wire through the lantern and the socket bottom cap. Separate and strip both wires, then take the one without the ribbed insulation, and attach it to the gold screw of the lamp socket.

3 Snap a night light socket with 24"-long pigtails into the base insert (H). Thread the wire back up through the 5/16" hole in the base insert,then through the lantern, pipe nipple, and socket bottom cap. At the top, separate and strip the wires. Take the wire with the ribbed insulation and twist it together with the similar wire that has the plug at its other end. Attach these joined wires to the silver screw on the socket. Attach the other wire to the third (black) terminal on the socket.

4 Finish installing the large socket, and snap the insulated cover into position. Attach the wires to the inside corners of the lantern with silicone. After the silicone dries, install the 7 watt night light bulb, then attach the base assembly to the lantern. Finally, screw in the cover plate, install the light bulb in the large socket, plug in, and turn on your new lamp. ■


FULL-SIZED PATTERN