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## In this plan you will be getting:

- Step by Step construction instruction.
- A complete bill of materials.
- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.



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## Build Your Own Steamer Trunk



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*This classic steamer trunk makes a perfect storage locker for extra blankets and sweaters.*

Building the steamer trunk will take about 30 hours to complete. Nearly all the joints are some variation on the tongue and groove, which will require extensive use of a table saw and router. Varnish is the recommended finish.

- 25 bd ft of 3/4" riftsawn red oak
- 3 bd ft of 1/2" riftsawn red oak
- 2 bd ft of 5/16" walnut
- A sheet of 1/4" riftsawn red oak plywood
- A half sheet of 1/2" red oak plywood
- Brass steamer trunk hardware

# Build Your Own Steamer Trunk

**B**efore the days of Samsonite, big voyages required big steamer trunks. While travel has changed quite a bit over time, the allure of a solid steamer trunk hasn't passed away with the jet age. You'll probably never use this sturdy, handsome trunk for a trip, but it's the perfect accent piece at the foot of the bed for storing winter blankets.

Remember the wonderful old road movies with Bob Hope and Bing Crosby? Those two zany characters travelled from one exotic locale to another, creating chaos wherever they went. Aside from their antics, one of the recurring travel images from most of those movies was that whenever Bob and Bing disembarked from their ships, they were surrounded by steamer trunks plastered with stickers from their many ports of call. Those classic camelback trunks captured all the excitement and wonder of faraway places and unusual cultures.

This steamer trunk will probably never see the baggage hold of a steamship, but we still wanted it to have an air of authenticity. That's why

we've settled on the camelback top, the extensive use of brass hardware and the walnut "strap" design. The curved top makes for a slightly more challenging project, but don't be scared off by this feature. The curved pieces are shown in detail on the accompanying drawings.

### Starting with the Corners

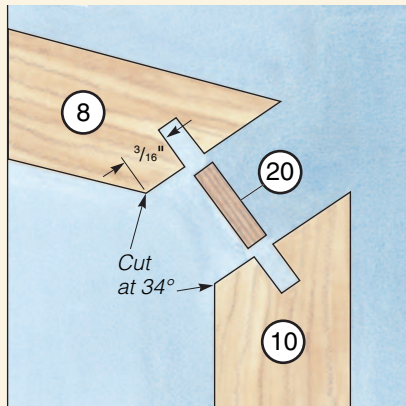
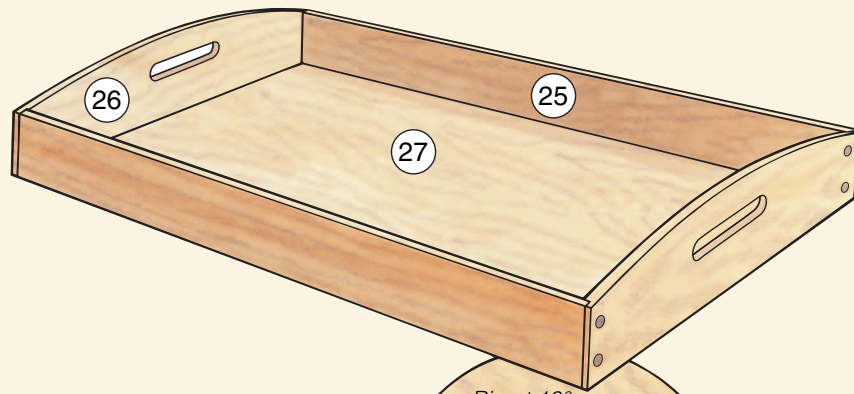
The framework provides the real strength in this project's construction, while the thin panels merely serve to enclose the box. Since the corners (pieces 1) link the four frames together, this is the best place to start. Rip the pieces 1/16" oversize, then joint their edges square and to the correct width. Now cut the pieces to length.



**Figure 1:** For balance, tape a 1/4"-thick strip to the side panels when making the bottom groove dado cuts.

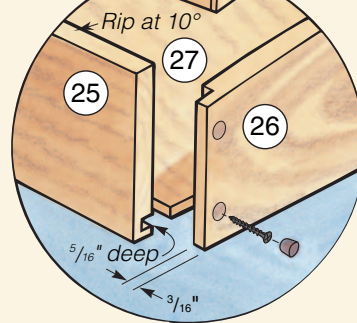
Sort your eight corner pieces into four pairs, watching for color and grain similarities, and mark the top of each pair with its position in the trunk construction. This helps eliminate confusion

## Trunk Exploded View

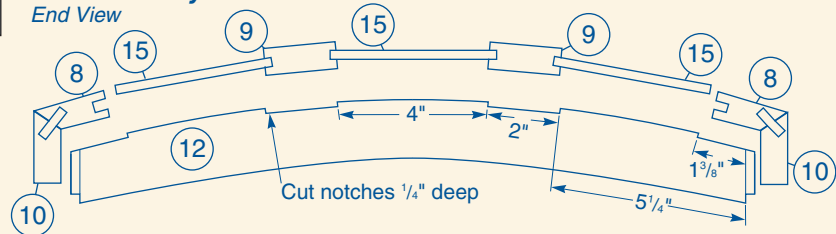


Lid Corner Detail

Tray Detail

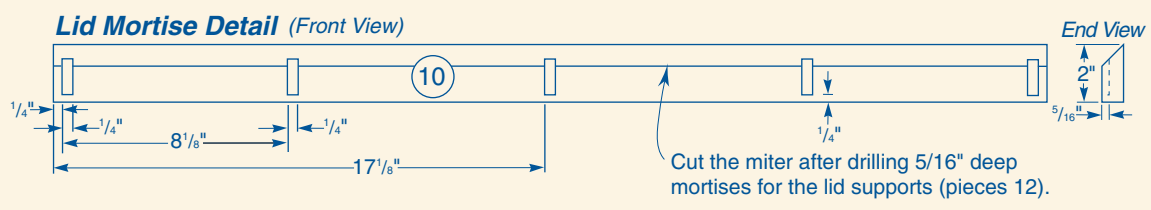
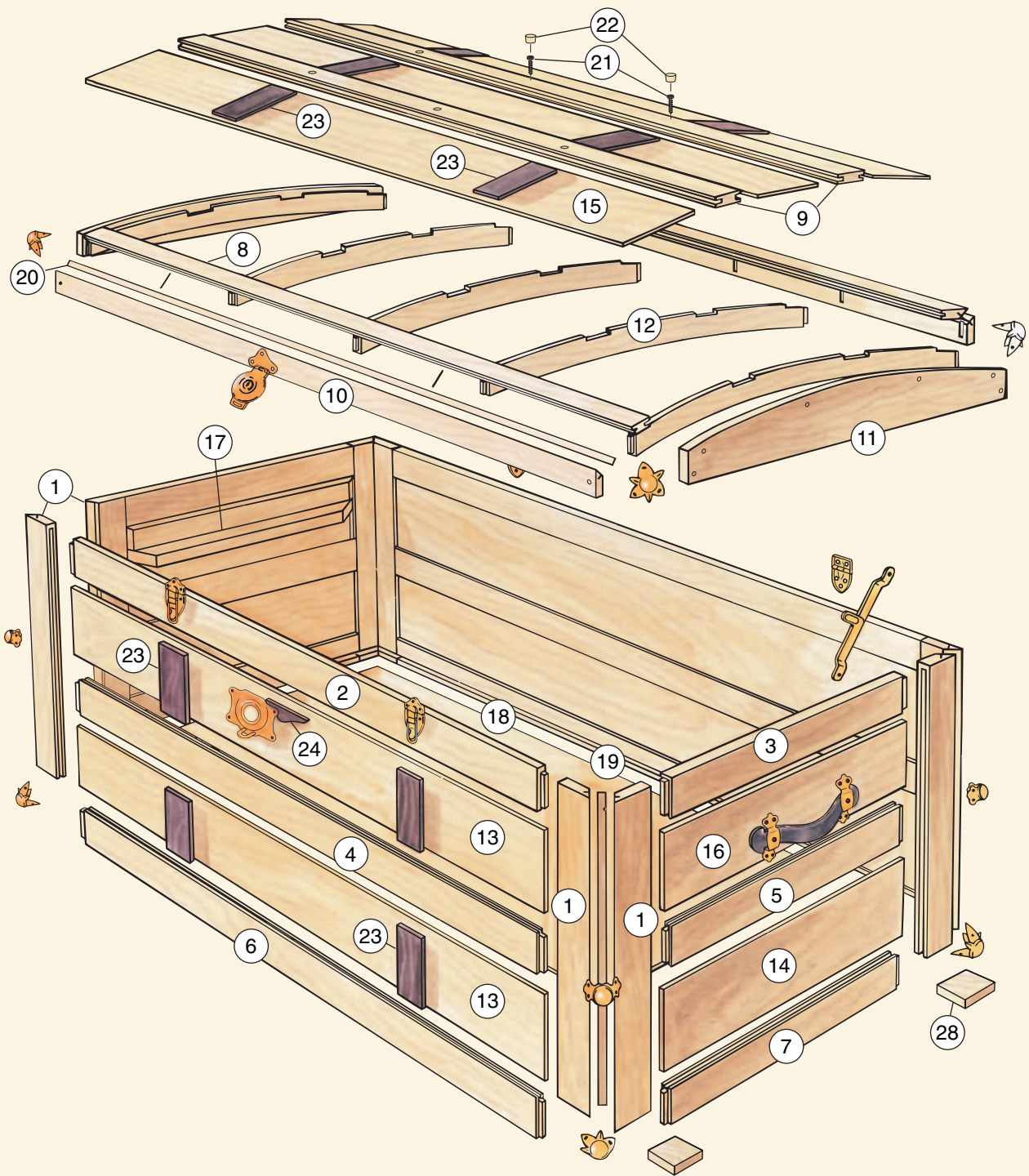


Lid Assembly Detail  
End View

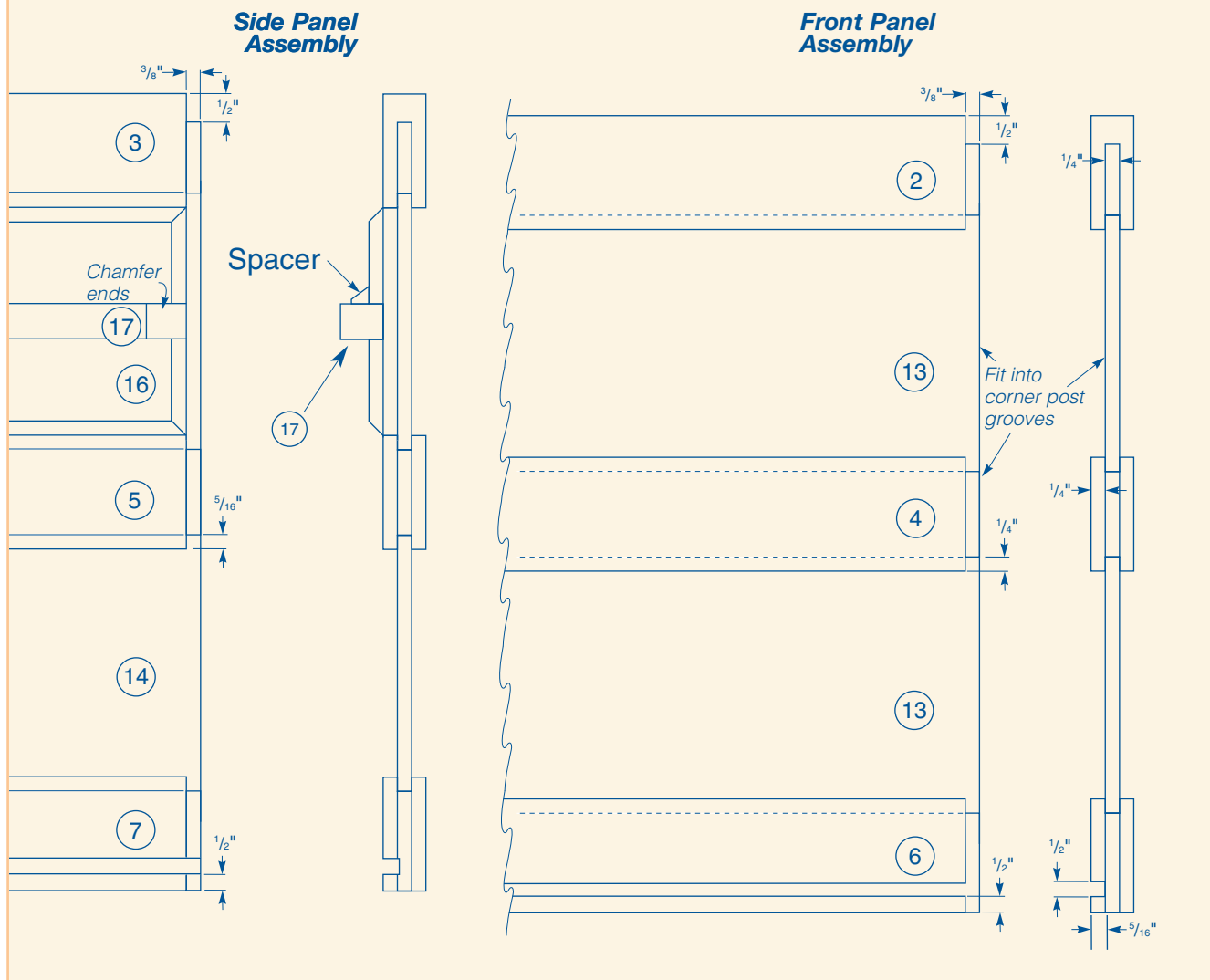


## MATERIAL LIST

	T x W x L		T x W x L		
1	Corner Posts (8)	3/4" x 2" x 14"	15	Lid Panels (3)	1/4" x 4 5/8" x 34 1/2" (Ply)
2	Upper Front and Back Rails (2)	3/4" x 2" x 32 3/4"	16	Upper Side Panels (2)	3/4" x 4 5/8" x 16 5/8"
3	Upper Side Rails (2)	3/4" x 2" x 16 3/4"	17	Tray Support Ledgers (2)	3/4" x 7/8" x 16"
4	Middle Front and Back Rails (2)	3/4" x 2" x 32 3/4"	18	Bottom (1)	1/2" x 19" x 35" (Ply)
5	Middle Side Rails (2)	3/4" x 2" x 16 3/4"	19	Splines (4)	1/8" x 3/4" x 14" (Ply)
6	Lower Front and Back Rails (2)	3/4" x 2" x 32 3/4"	20	Splines (2)	1/8" x 3/4" x 34 1/2" (Ply)
7	Lower Side Rails (2)	3/4" x 2" x 16 3/4"	21	Screws (30)	#8-1 1/2"
8	Lid Front and Back Rails (2)	3/4" x 2" x 34 1/2"	22	Plugs (30)	3/8" Dia. (Walnut)
9	Lid Middle Rails (2)	3/4" x 2" x 34 1/2"	23	Bandings (2)	5/16" x 2" x 36" (Walnut)
10	Lid Front and Back (2)	3/4" x 2" x 34 1/2"	24	Shim (1)	1/4" x 4 1/4" x 2 7/8" (Walnut)
11	Lid Sides (2)	3/4" x 3 3/8" x 20"	25	Tray Front and Back (2)	1/2" x 3 3/4" x 32 3/4"
12	Lid Supports (5)	3/4" x 3" x 19"	26	Tray Sides (2)	1/2" x 4 3/4" x 17 3/4"
13	Front and Back Panels (4)	1/4" x 4 5/8" x 32 5/8" (Ply)	27	Tray Bottom (1)	1/4" x 17 1/8" x 32 3/4"
14	Lower Side Panels (2)	1/4" x 4 5/8" x 16 5/8" (Ply)	28	Feet (4)	1/2" x 2" x 2"



## Technical Drawings



during the building process. To cut the groove in one edge of each piece, chuck a 3/16" straight bit in your router table and lay out the stopping point for each groove, as shown in the *Corner Detail* on the next page. Stopping the groove short of the top leaves a little meat above the rail tenon when the trunk is assembled, resulting in a stronger load-bearing joint for lifting the completed project. (Note: Use a 3/16" bit since 1/4" plywood usually isn't a full 1/4" thick. With this bit first make a pass to form the mortise, then take a second pass to shave the mortise about 1/32" wider. Once you get a snug

fit for the plywood, cut the rail tenons to fit the mortises.)

Now use a piece of scrap wood that's the same thickness as your corner pieces to test your router table set up. You want to be sure that the bit is exactly centered when you rout the 3/8"-deep grooves. Don't miter the other edge of the corners until after the panels are fully assembled.

### Forming the Rails

With the corner grooves completed you can build the rest of the framework for the trunk. Following the dimensions provided in the *Material List* on page 128,

cut your stock to size for all the rails (pieces 2 through 9), and label each piece with its position in the assembly. Take the rails over to your router table to cut the mortises (see *Front and Side Panel Assembly Drawings*, above) in all the appropriate edges (i.e., wherever a panel will be inserted).

After routing grooves in the rails, step back to your table saw and cut material for the lid front, back, sides and supports (pieces 10, 11 and 12). The sides and supports feature curved top edges, but for now just cut the material to the overall dimensions provided in the *Material List*.

All the rails for the box portion of this project join the corner pieces with tenons. In addition, the lid supports join the lid front and back with short tenons. To cut these tenons, set up a 3/8" dado blade in your table saw and clamp a protective wood face to the saw's fence. Raise the blade a hair over a 1/4" and adjust the fence so it grazes the blade. Now use your miter gauge to pass a test piece over the blade, then test the tenon's fit with the grooves in the corner pieces. Once the tenon on your test piece fits well, go ahead and cut the tenons for the rest of the rails and supports.

Don't forget that the tenons on the upper rails (pieces 2 and 3) need a 1/2" shoulder at their tops so they'll sit flush with the corners (see *Front and Side Panel Assembly Drawings*).

### Cutting the Panels

All but two of the panels in the trunk are cut from 1/4"-thick riftsawn red oak plywood (pieces 13 through 15). The two upper side panels (pieces 16) are made of 3/4" solid stock for extra strength, as these pieces secure the handles and carry the load of the trunk when it's lifted off the ground, in addition to supporting the tray inside the trunk. Cut the plywood panels to the sizes specified in the *Material List*, and find some matching 3/4" stock for the upper side panels.

The plywood panels will fit right into the grooves you made earlier, but the 3/4" upper side panels will require a little extra machining. Start with a 3/8" dado blade to rabbet the back of each panel, as shown at right and in the *Side Panel Assembly Drawing*. The tongues remaining after the rabbets are cut must fit comfortably in the rail grooves. Switch to a 3/4" dado blade to cut the grooves for the tray support ledgers (pieces 17) and then chamfer the edges.

### Assembling the Box

For the most part, the pieces for the box portion of the trunk are completed, so now you can begin assembling each wall of the project. Do a dry run without any glue first to check the fit of all the parts. While you're at it, make sure the upper and lower rails are flush with the ends of the corners and that the middle rails are exactly centered. Mark each of these joints so that reassembly will be easier.

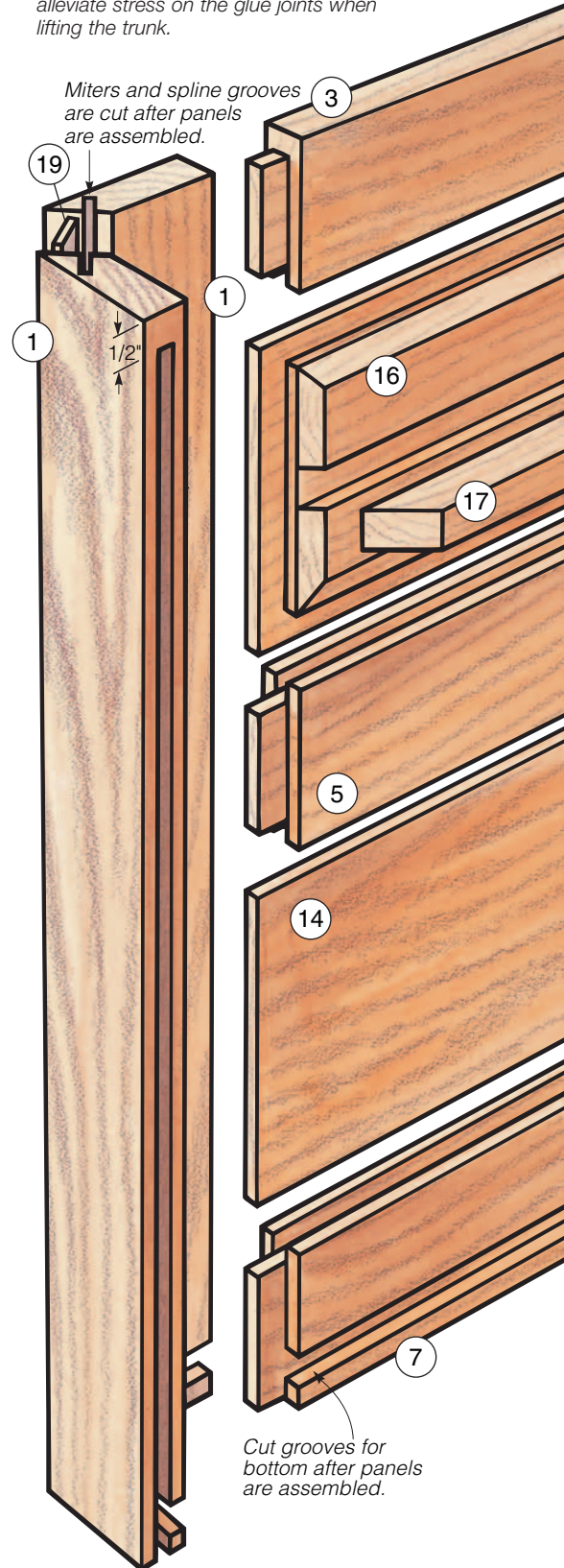
Take apart each wall and put glue on the tenons and in the grooves where the tenons will be inserted. Reassemble the parts and draw each wall tight with bar clamps. Don't forget to measure diagonals to ensure squareness.

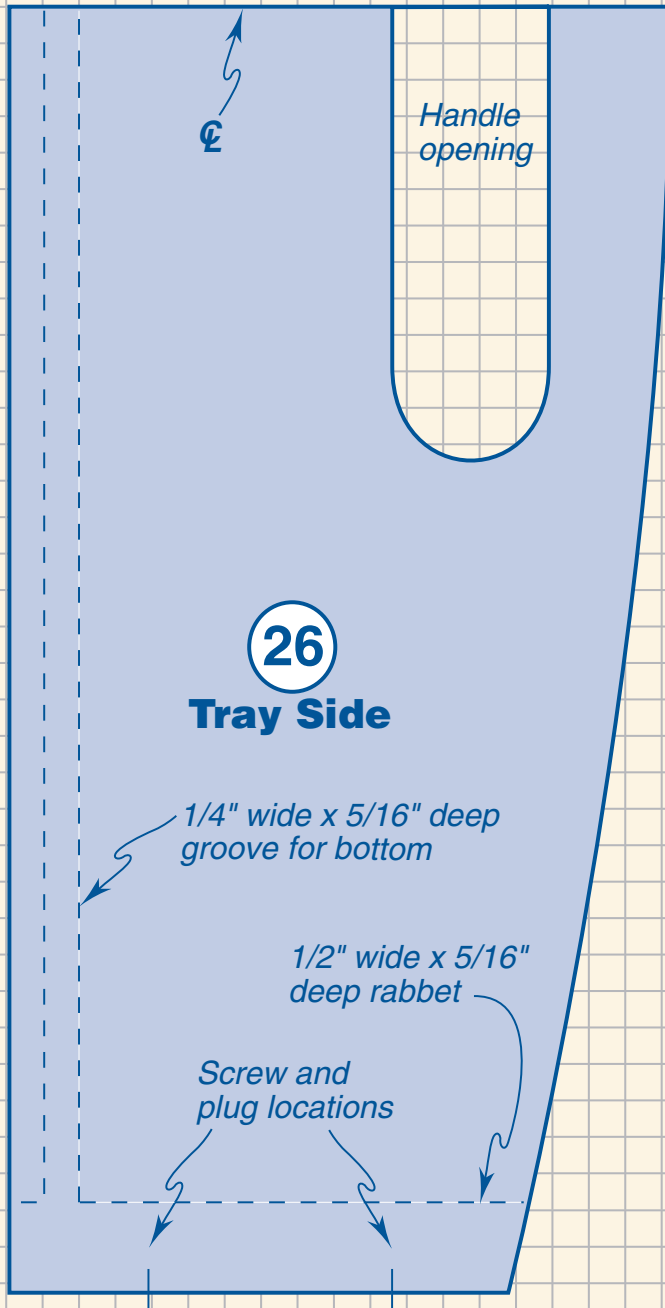
Clean up any glue squeeze-out and sand the joints flush. The bottom (piece 18) will be held in grooves (see *Side Panel Assembly Drawing*) in the front, back and side walls. These grooves are easily cut on your table saw with a 1/2" dado blade, but you'll need to balance the end walls on a couple of 1/4" strips during the cut to compensate for the extra thickness of the upper panels. After cutting the 5/16"-deep grooves in the front and back walls, use two-sided tape to secure the strips to the end walls and raise the blade another 1/4" to make the cuts, as shown in *Figure 1* on page 127.

The four walls are now ready to be joined together with splined miters. Cutting these joints follows much the same procedure you just completed when cutting the grooves for the bottom panel. To cut the miters, tilt your blade exactly 45° (test-cut some scrap wood to get this perfect) and clamp a wood face to your fence. Without the wood face, the tip of your first mitered edge might slip under the fence while making the second cut. We used a right-tilting table saw. If you have a left-tilt saw, you'll have to cut the miters

### Corner Detail

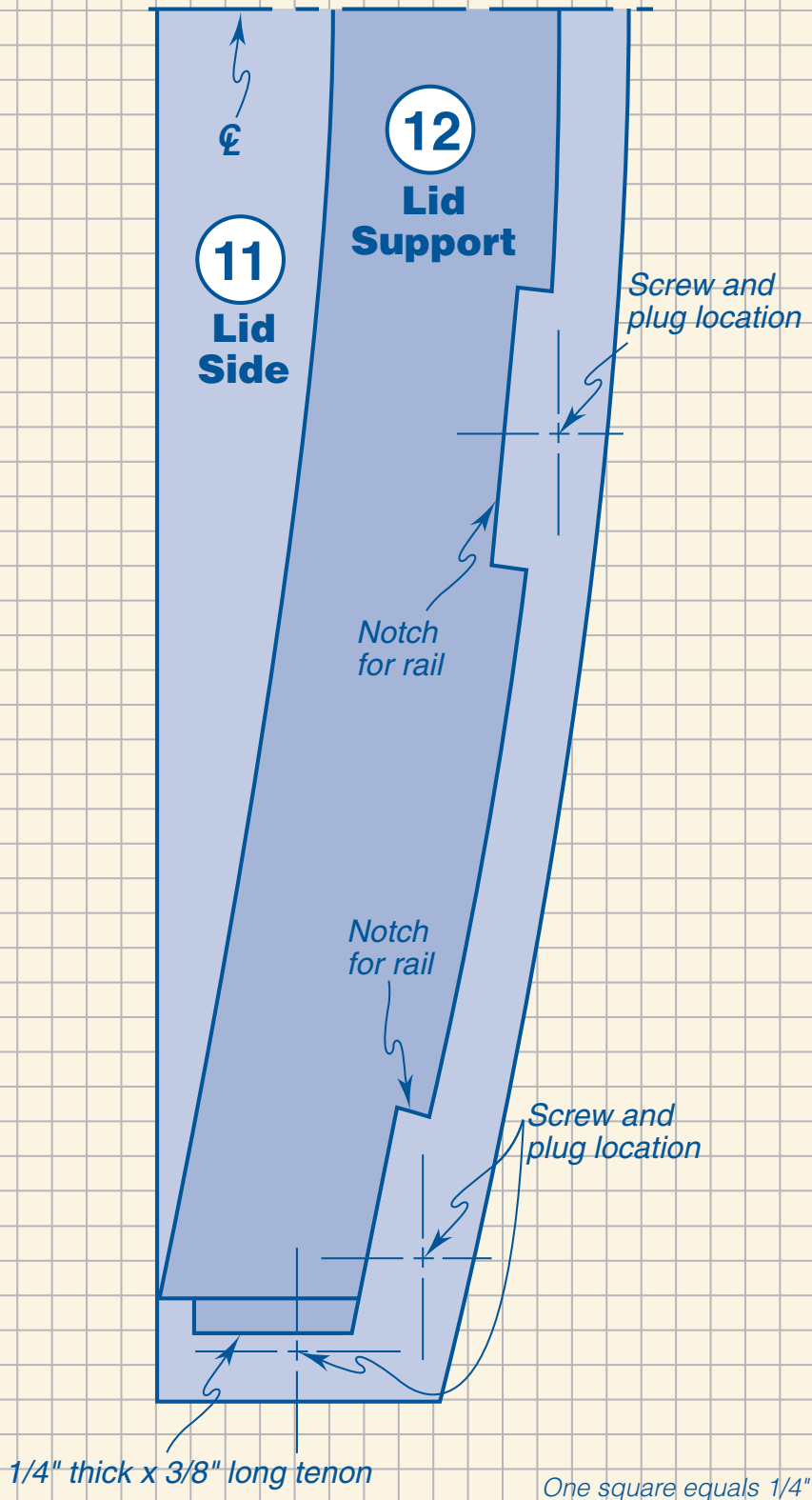
The corner joints provide structural strength for the steamer trunk, and the 1/2" bit of wood at the top of each mortise helps alleviate stress on the glue joints when lifting the trunk.





One square equals 1/4"





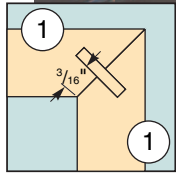
with the inside surface of the walls riding on the saw table. Since the upper side panels stick out 1/4", you'll have to use the 1/4" strip method on the end walls to keep these pieces balanced during the cuts.

Once the miters are completed, set up your saw for the spline cuts (see *Figure 2*, above). Since all these cuts must be made with the inside surface riding on the saw table, you'll have to continue using the 1/4" strips on the end walls. Keep the blade tilted 45° and adjust the blade height and fence position to make the cuts. First make the spline groove cuts in the front and back walls, then readjust the fence and raise the blade to make the end wall cuts.

Using 1/8" plywood, rip four 3/4"-wide splines (pieces 19) for the corner joints. Dry-assemble the four walls with the splines and the bottom panel in place to make sure everything fits and then glue the box together. You'll notice during the dry assembly that the bottom panel prevents the splines from going all the way to the bottom of the joint. Just butt the spline into the bottom panel and let the excess run out the top for now. Don't worry about the exposed spline groove showing at the bottom—it will be covered by the brass corner hardware later on.

### Making the Lid

You cut tenons on the lid supports (pieces 12) earlier, but you still need to cut the mortises in the lid front and back (pieces 10). Lay out these mortises as shown in the *Lid Mortise Detail* on page 129, then chuck a 1/4" brad-point bit in your drill press and drill out the waste in each mortise to a depth of 5/16". Don't bother cleaning up with your chisel yet because in the next step your miter cut will remove the tops of these mortises. They'll be a lot easier to



**Figure 2:** When cutting the spline grooves, once again use 1/4" strips to balance the side panels.

clean up at that stage.

As noted, the front and back of the lid (pieces 10) meet the front and back rails (pieces 8) with another spline-mitered joint. However, due to the curve of the lid, the miters aren't exactly 45°. Tilt your saw blade 34° and rip the top edge of the front and back pieces and one edge of each rail. Once the pieces are ripped, lower the blade (keeping it at the same angle) and adjust the fence to cut a spline groove in each edge.

Rip two 1/8"-thick splines (pieces 20) and glue each set of mitered pieces together. We recommend using band clamps to hold the narrow lumber at this odd angle.

The lid supports are curved and have a series of notches along their top edge to accommodate the rails in the lid. Photocopy and cut out the full-size pattern of the lid support and sides

(pieces 11 and 12) on page 135 and trace the shape onto your stock. Bandsaw the sides and supports to shape, checking the fit of your rails in each of the support notches before proceeding. The width of the rails should fit snugly into the notches, and the lower wall of the rail mortises should be flush with the top of the support. Before you glue and assemble the lid, be sure to test the fit of the front and back subassemblies you just glued together. They should fit nicely into the end notches on the supports, as shown in the *Lid Assembly Detail* on page 128.

Once it's clear that all the lid pieces fit together, drill counterbored pilot holes to secure the front and back subassemblies to the lid supports and spread a little glue in each mortise in the front and back pieces. Slip the lid support tenons into the mortises and clamp the subassemblies to the five support pieces.

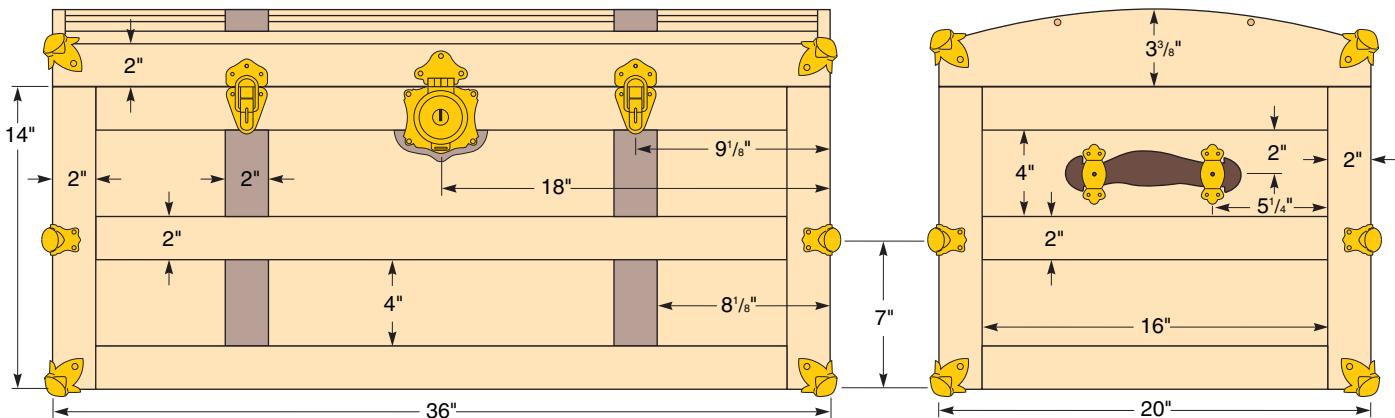
Fitting the rest of the lid is just a matter of popping everything into place. Loosely assemble the three lid panels (pieces 15) and the two middle rails (pieces 9), then flex this assembly to get the outside panel edges to start sliding into the front and back rails. Once the

edges are all aligned, press down on the arched center of the assembly to force the panels into the grooves. You may need to adjust the rails a little to slip them into the support notches. When all the pieces fit well and are firmly seated on the supports, drill six counterbored pilot holes (see *Exploded View*, page 129) to secure the rails to the supports and cover the screws with walnut face-grain plugs (pieces 22). Now simply add the sides. Counterbore pilot holes where each rail meets a side piece and drive your screws, then fill the holes with walnut plugs.

### Walnut Strapping and a Few Details

The top of this chest arches just a little bit, but it's not necessary to steam-bend the walnut strapping (pieces 23) to get a good fit. Instead, start with 5/16"-thick pieces, cut to fit between each rail, and sand one face slightly with a drum sander until they match the curve of the lid panel. After fitting all the curved sections of banding, spread glue on the walnut and press the banding into place. You can sand the tops after the glue dries so they conform to the arch. Apply the straight pieces to the box when you're done with the lid and plane them flush with the rails. Be sure

### Hardware and Banding Locations



Mount hinges on rear of trunk in same locations as hasps are shown on front of trunk.

to line up the walnut strapping on the box with the walnut on the lid.

Earlier you cut a groove in each upper panel in the side walls for mounting the ledger strips (pieces 17). These strips will support the tray when it's completed in the next phase of the project. But for now, cut the ledger strips to length, chamfer their ends and glue them into place.

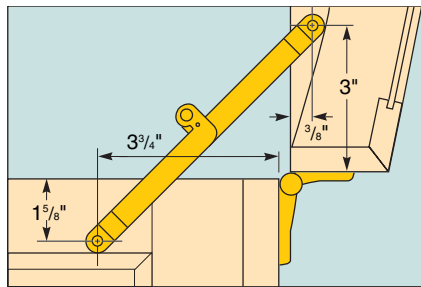
Mounting the main latch for the trunk hardware requires a shim (piece 24) so that it sits level with the upper rail on the front wall. Using the pattern on page 134, trace the lock shim shape onto some 1/4"-thick walnut and cut it with a band saw. Sand the edges smooth, center the piece on the upper front panel and glue it into position.

One final detail to take care of is to glue the small feet (pieces 28) to the bottom corners of the trunk. These feet provide solid backing for screwing the bottom corner hardware into place.

At this point sand the whole project to 220 grit and wipe it down with mineral spirits to find any glue spots that need to be removed.

## Building the Tray

The tray is a simple structure that fully uses the space in the arched lid. Begin by cutting the front, back and sides (pieces 25 and 26) to the sizes in the *Material List*. Don't cut the sides to shape until after the joints are formed. Install a 1/4" dado blade in your table saw and cut 5/16"-deep grooves along the entire length of the front, back, and sides to accommodate the bottom piece (see *Tray Detail* on page 128). As long as the dado blade is installed, go ahead and rabbet the ends of the side pieces. Next, photocopy and cut out the pattern of the tray side on page 134, trace it onto your stock, and band-



**Figure 3:** Due to the construction of the steamer lid, the lid supports must be installed differently from the instructions provided with the hardware.

saw the sides to shape. To form each handle, drill an access hole first, then cut the opening with a jigsaw. To get the front and back pieces to conform to the shape of the sides, rip the top edge of both pieces to final size with the blade set at a 10° angle.

Cut the bottom (piece 27) and dry-fit the tray parts to check their fit. When they all go together well, put glue in the bottom grooves and drill the counterbored pilot holes in the corner joints for the screws. Drive the screws, fill the holes with walnut plugs and sand the tray to 220 grit.

## Adding Trunk Hardware

Steamer trunk hardware has a unique look about it. It's somewhat oversized and durable, perhaps still reflective of a time when its primary purpose was to protect the trunk from burly baggage handlers. Start installing your hardware by mounting the hinges (be sure



The structure of the camelback lid makes it as interesting to look at as the outside of the steamer trunk, and the curved top of the tray takes full advantage of the extra space.

the strapping stays lined up!) and then move to the lock mechanism, the handles, the lid supports (see *Figure 3*) and finally the corner pieces (all 12 of them). It's pretty straightforward, except for the top corners, which have to be slightly stretched outward to accommodate the curved top.

## Finishing Up

We recommend using a durable finish like varnish or polyurethane to protect this project. First apply a coat of sanding sealer, then sand it smooth, following with two more coats of finish, sanding between coats to remove any dust nibs or rough spots. After the last coat of finish dries, reinstall all the hardware. Now you can get busy planning your next big trip. You'll certainly be travelling in style—with or without an exotic port of call.

