

# Hickory and Ash Blanket Chest



Floating tenons and a consistent angle  
keep joinery manageable

BY PETER TURNER

When thumbing through furniture books, I find myself drawn to long, low chests, similar to the wooden chests my folks had in our living room when I was a kid. So when I was invited to participate as a guest artist in the New Hampshire Furniture Masters Association's 2008 auction, a blanket chest was one of the three proposals I submitted, and this is the piece the jury chose.

To present my proposal, I offered scaled drawings that gave top, front, and end views. The process of drawing usually lets my mind walk through the fabrication so that I'm sure the piece will work. Everything comes off the drawings. When things get tricky, like angled or intricate joinery, I go back to them, laying pieces right on the full-size drawings to physically check measurements and angles. I did full-sizers of the leg blank and the ends, and to be extra sure I made story sticks to lay out the frames and panels.

The legs of this frame-and-panel chest serve as end pieces for the front, back, and end frames. The top and panels are ash; the frames are hickory. I applied battens to the one-piece top to keep it flat. I kept all thicknesses beefy for heft and used double floating tenons for strength. To emphasize the length of the chest, the grain of the panels runs horizontally.

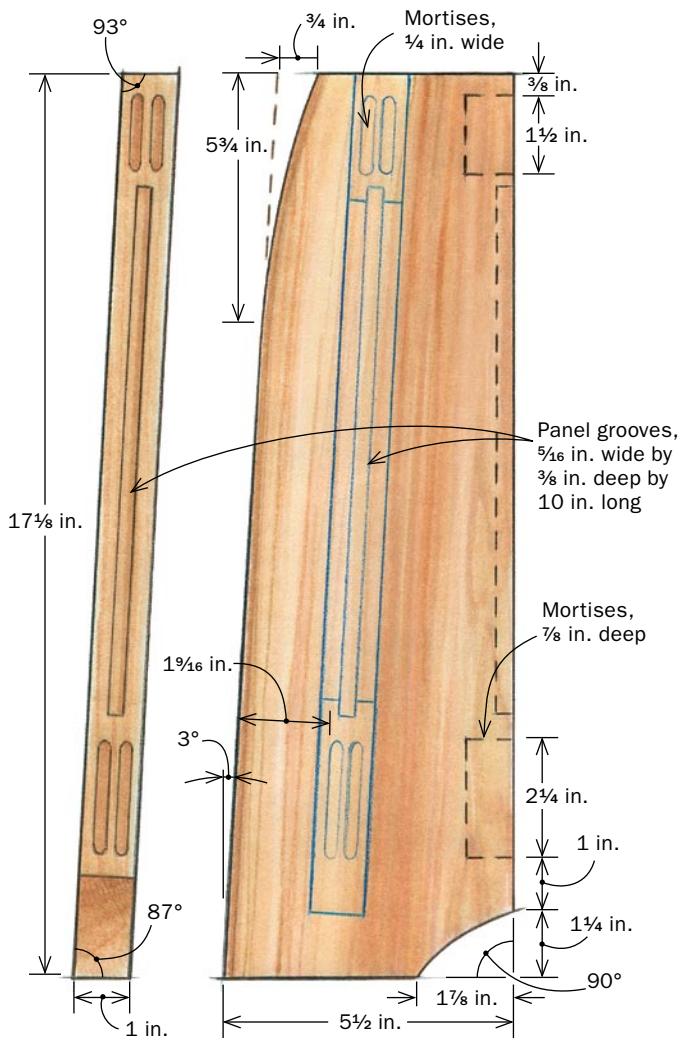
To keep the construction manageable, all the angles are the same, off from square by 3°. First, the angle is found on the outside top and bottom of each leg. Next, the end frames and panels also get the 3° angle, but the front and back frames and panels don't, which means the end joinery is angled but the front and rear are not. The front and rear assemblies lean into the angle on the end assemblies, so the tops of all the long top rails will need the angle, too.

I favor floating tenons because of their efficiency when dealing with angled joinery. They are as strong as any integral tenon, and you don't need to fit angled shoulders—you just make simple butt joints. After planing my tenon stock to fit a test mortise, I rounded both edges of the stock on the router table and scored both faces with two shallow kerfs for glue relief. With a few crosscuts, I had my tenons.

## Create compound-angled legs

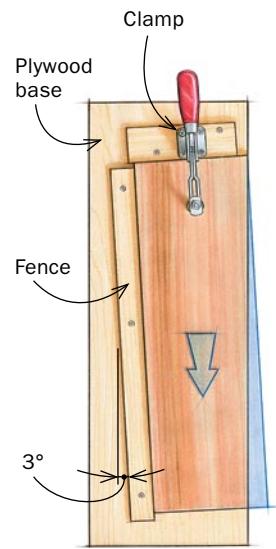
Generally, I like to start with the trickiest joinery. That way, I can get the most difficult parts finished and know it will

# Legs are the cornerstones



## TAPER THE LEGS FIRST

**A simple jig establishes the angle.** To keep the grain parallel with the outside slant of the leg, Turner tapers the inside edge.



**Now cut the legs to length.** Putting the inside edge against the fence means you can avoid cutting a compound angle on the ends. A simple 3° blade tilt does the job.

## THE LEGS ARE MORTISED ON THEIR FACES AND EDGES

Run the router's edge guide along the outside edge when cutting both mortises.



**Face mortises.** After cutting the first set of mortises, Turner attaches a spacer with double-faced tape (left) to bump out the edge guide and make the second set of mortises parallel to the first (right).

**Same method for edge mortises.** When cutting double mortises on the leg edges, stack two legs to give the router base more surface to ride on.

only get easier as I go. On this chest, the mortises on the legs and rail ends called loudest to go first. Before I cut any mortises, I had to create the angles in the legs. By removing the wedge from the inside of the leg rather than the outside, I kept the grain orientation parallel to the leg's outer slanting edge. Then I cut them to length at an angle, which establishes the only compound angles in the piece (see photos, p. 55).

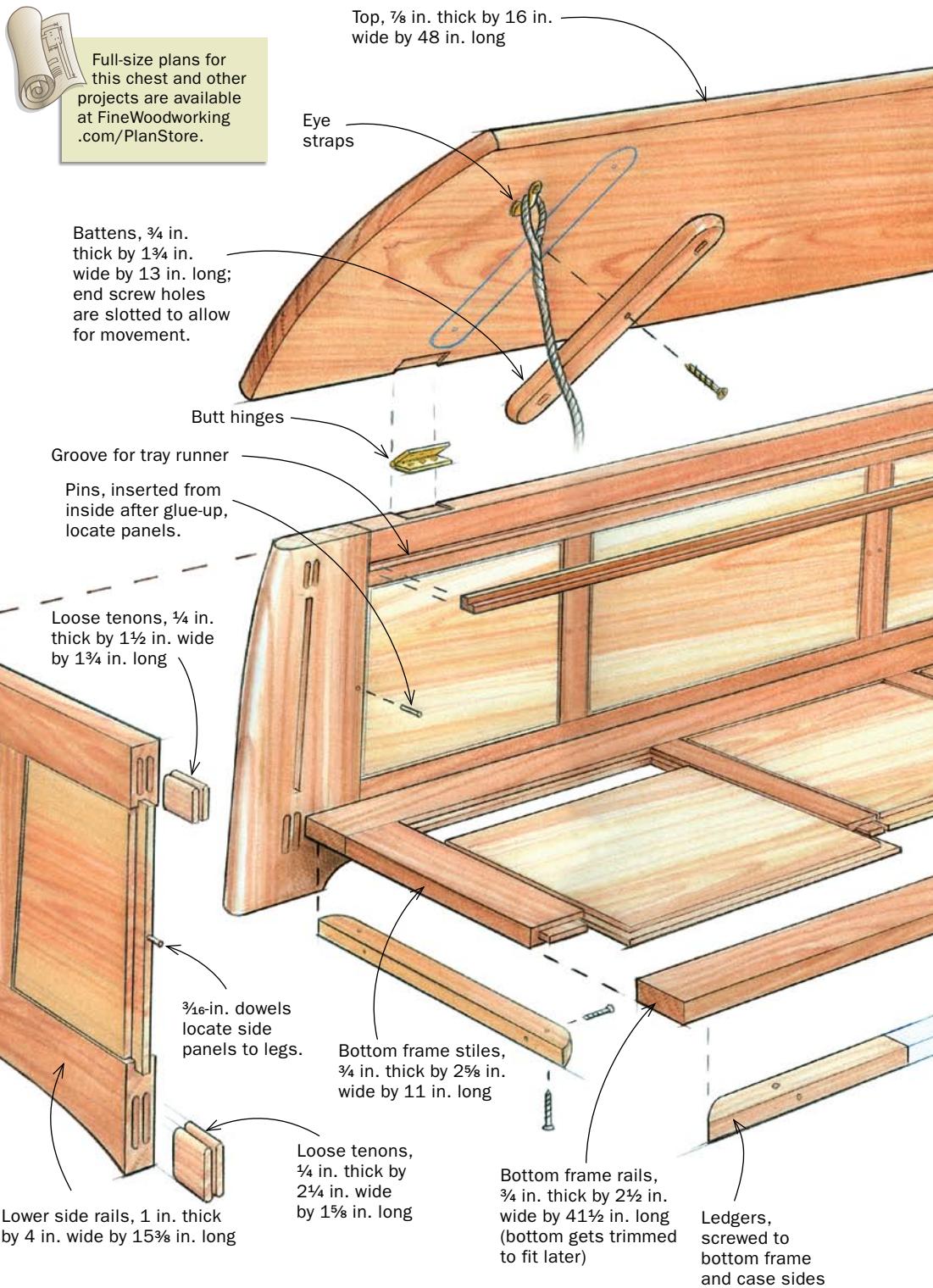
### Cut mortises in pairs

Nearly all the parts of this chest are 1 in. thick. The weight called for substantial joinery, so I doubled the tenons to create twice the glue surface. There are a lot of mortises to cut in the leg edges, leg faces, and all the rail ends. I used a basic spacer method on the edge guide of my router to give me repeatability so that all the pairs of double mortises would match.

To cut the leg face mortises, transfer the locations from the drawing and use a plunge router with an adjustable edge guide. Though the tenons come in at an angle, I cut the mortises perpendicular to the leg face. The time savings makes up for the bit of glue surface that must be trimmed from the tenons.

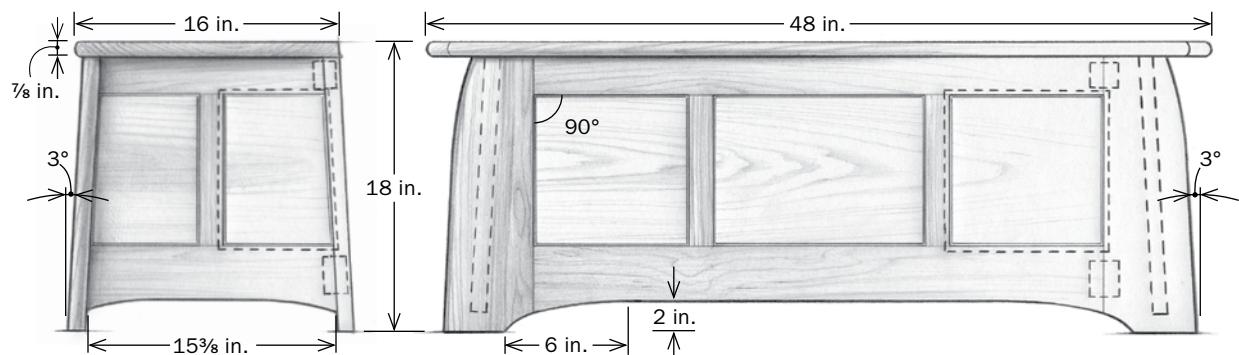
I mortised the leg edges by again using a plunge router with an edge guide. To give the router base more surface to ride on, I stacked two legs together, flush at the angled edge. For the rail ends, I used a jig that mounts in my bench vise. For all of these doubled mortises, use the same spacer for the second cut.

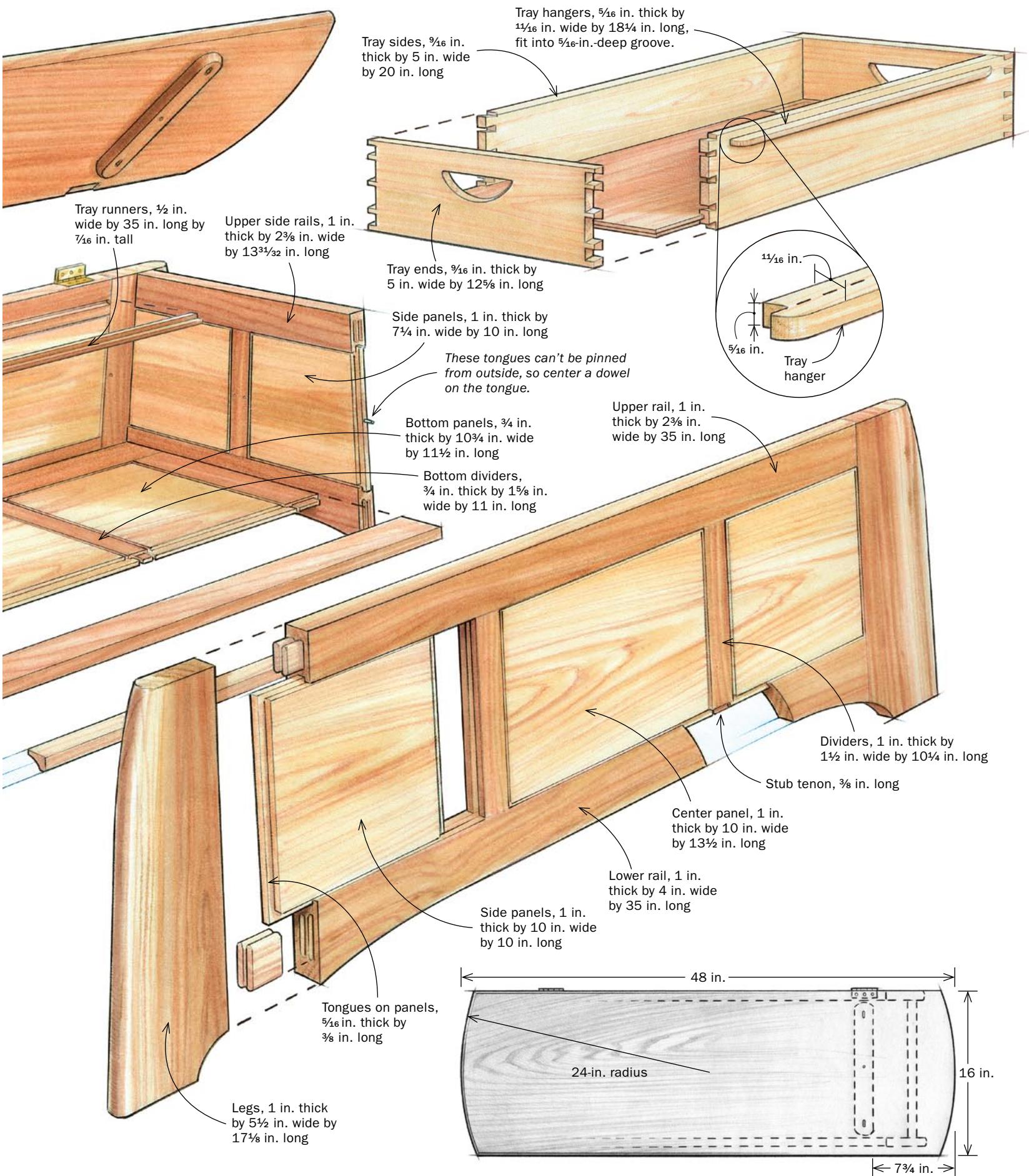
Later, I used a dado blade to cut grooves in the rails and dividers that hold the panels. But



## BLANKET CHEST

A straightforward approach to angled joinery simplifies the construction of this frame-and-panel chest, while thick parts and dense woods (ash and hickory) lend heft to a sleek design.







## MORTISE AND SHAPE THE RAILS

**End rails have angled shoulders.** Turner cuts the 3° angle on one end of the rail, and then uses a full-size drawing to mark the length (above) of the other end. He uses a simple, vise-mounted jig when mortising the ends. It holds the rails square and gives a surface for the edge guide to ride on. The jig works for the angled rails, too (right).



**Cut the curve in the lower rails.** Once the mortises are cut, Turner bandsaws the curve of the lower rails close to the line, and then template-routs the final curve.

the panel grooves in the leg faces and leg edges cannot go through or they will be visible, so while you're working on the legs and the router is out, plunge-rout all of these stopped grooves with a  $\frac{5}{16}$ -in. straight bit. Square up the ends by hand.

Once all the mortises and grooves are cut, bandsaw the curves that define the feet and give the lower rails their final shape. After glue-up, you'll return to the spots where the feet meet the bottom rails and refine the curve.

## Panels and dividers are tongue-and-groove

After the mortises, it's time to work on the dividers, rails, and panels. Using multiple passes over the tablesaw blade and a stop clamped to the crosscut sled, cut stub tenons on both ends of the dividers. Then, using a dado set, cut grooves for the panels in the edges of the dividers.

Without changing the dado-blade setting, run the straight grooves (for the panels and divider tenons) in the long rails. And while the dado set is still in the tablesaw, make the angled grooves for the tray runners in the inside faces of the long upper rails. Finally, rip the angle on the top edge of the upper rails.

I like the look of uninterrupted surfaces on the same plane, so rather than inserting thin panels in a groove, I used thick panels and cut a tongue in the center to keep the faces of the panels flush with the frame. First I cut the angle on the outside edges of the end panels. Then I cut the tongues on the tablesaw.

## Glue up in sections

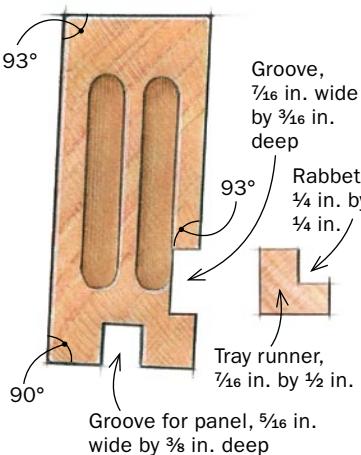
Start the glue-up with the front and back, each with two legs, two long rails, two dividers, and three panels. Use angled cauls and pipe clamps to help distribute pressure.

Once the front and back assemblies have cured, pin the panels in place from the inside with toothpicks. This keeps the gaps even as the solid panels expand and contract. Pinning the panels after the glue-up works with the front and back frames but doesn't work on the ends of the chest, where the panels fit into the face of the leg. There, I used a dowel centered in the tongue and groove.

After finish-sanding the interior, it is time to add the short sides (two angled short rails, one divider, and two panels per side), reusing the angled cauls to clamp the case.

## GROOVE THE RAILS

All of the panel grooves are square, but the long top rails need an angled groove for the tray runner.



**Angle the dado set.** Use a bevel gauge to ensure that the dado blade matches the 3° angle on the rest of the blanket chest.

Take care that all top rails sit flush with the legs, or you'll have to take great pains to flush everything up after the glue-up.

While this assembly is drying, glue and clamp the bottom frame (two rails, two dividers, and three panels), and set it aside to fit into the case later.

### Hinge the lid after glue-up is complete

On a one-piece top, I like to orient the lid's end grain so that the rings look like smiles. Then, at some point in the future, if it wants to cup, the front edge of the lid should dive into the front of the chest rather than up and away.

Rout the rear rail for its hinges. Place the oversize lid on the chest to adjust its position. Once you're sure about the placement of the lid, use the mortises in the rail to mark and then rout the corresponding mortises in the lid. By mounting the lid, you can test its fit again, mark and cut its finished dimensions, and grab a measurement for the rope stop.

With the top cut to length, I used a template and router with a flush-trimming bit to cut the lid to shape. I made a full-size template for the end curves, but before using the template and the router to cut the shape, I wasted away close to the line



**Cut the groove.** Once the dado blade is tilted, set the blade height and cut a through-groove to hold the tray runner.



**Bevel the top edges.** After switching back to a rip blade, the top edge of the top rails must also be cut to the 3° angle.

## MAKE THE PANELS



**The side panels are tapered.** To angle the outside edges, Turner uses the same jig that he used to cut the angle on the legs.



**Cut tongues on the tablesaw.** With the panels facedown, cut around the edges on all sides. Then ride the panel on edge (above) and cut off the rest of the waste material, leaving the tongue. Keep the panel between the blade and fence so the offcuts fall to the outside of the blade.



## GLUE UP IN STAGES

**Front and back first.** Turner uses Unibond 800 for more open time. Place the center panel into the bottom rail, add the dividers and then the end panels, set the top rail on, and add the legs last (above). Center marks help locate the dividers and keep everything evenly spaced. Angled cauls keep the clamps aligned. Next, Turner uses a coping saw to cut the curve at the top of each leg, and then uses a block plane to take it to its final shape (right).



**Add the ends.** Lay the front assembly face down and add the end rails. Slide in the first panel, then the divider, and the second panel (above). Once you add the back assembly, gently turn the whole thing upside down and clamp securely (right). Use the same angled clamping cauls as before.



with the bandsaw. From there I used a handheld router and a 1/2-in. roundover bit with bearing to shape the ends and front edge to their final profile, a round-over with a distinct sharp edge.

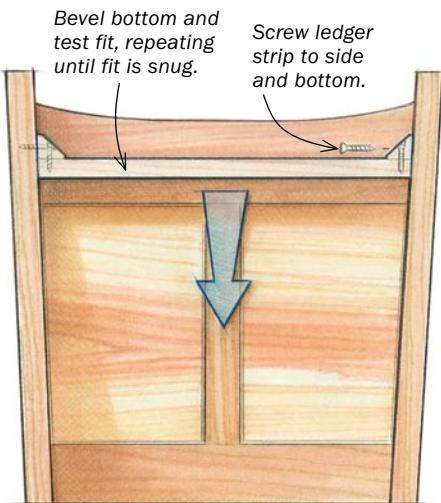
### Sliding tray glides on shopmade runners

The carcase glue-up gives interior dimensions for both the dovetailed sliding tray and the frame-and-panel bottom.

Cut the rabbet for the chest-mounted tray runners from wide stock on the tablesaw. Then rip the pieces to width. Chop the runners to length to exactly match the length of the upper rails. Give both ends a curve, and then glue them into the front and back rails of the chest. It's important that the runners be fully seated in their grooves so that they provide maximum support for the sliding hangers.

After hand-cutting the dovetails, rout stopped grooves on the outside top of the tray sides to hold the hangers, and then glue and clamp the hangers into their grooves. To make the openings for the tray handles, I used a shopmade template and a router equipped with a guide bushing and 1/4-in. straight bit. First I marked the cutouts and removed the waste, just outside the line, with a jigsaw. Then I clamped the template on the tray and routed to the line, removed the template, and hit the edges with a 1/4-in. roundover bit to soften them.

## INSTALL THE BOTTOM AND TOP



**Fit and secure the bottom.** The ledger strips have pairs of holes: One is for screwing the strip into the side of the chest (above), and the other is for fixing the bottom in place.

### Ledger strips hold the bottom in place

Because the sides and ends of the chest angle in, the frame-and-panel bottom must be fitted from the bottom and then secured with a ledger strip from underneath. I drilled and countersunk for pairs of screws in the ledger strips. There's a little trial and error as you sneak up on the fit of the bottom. Keep in mind that a small decrease in width and length allows the bottom to take a large jump up into the chest.

### Apply finish and add a rope stay

I finished the lid and bottom prior to attaching them to the chest. The interior and tray got a couple coats of Zinnser's Bulls Eye clear shellac, cut with equal parts of denatured alcohol. For the outside, both sides of the top, and the battens, I wiped on a mixture of equal parts tung oil, satin spar varnish, and thinner. When the finish

**Attach the lid.** Turner uses a strip of wood, clamped to the back of the chest, to help hold the lid in place while he secures the hinges.



### Online Extra

For the complete finishing recipe, go to [FineWoodworking.com/extras](http://FineWoodworking.com/extras).

was dry, I attached the battens, remounted the lid, and secured the bottom.

For the rope stay, I found a Web site, [www.animatedknots.com](http://www.animatedknots.com), that showed me step by step how to create an eye in the end of a line. I positioned the eye straps and rope so that the straps clear each other when the lid is closed and the open lid rests just a bit past vertical. □

Peter Turner is a furniture maker in South Portland, Maine.