Floating Top Entry Table



PHOTOS BY LOGAN WITTMER

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This mitered case and veneered top make this project an interesting challenge.

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Grizzly®
MAKERS CHALLENGE
2025

In partnership with: Woodsmith Popular Woodworking



This floating top entry table was a project that I designed and built for the 2025 Grizzly Makers Challenge. As with most of my projects, I try to add in elements that challenge me and make me a better woodworker.

Some of the challenges on this table are apparent when you first look at it, while others are more subtle. The top features a sunburst style veneer, and getting the proper grain match and tight seams can be a bit of a trick. The front of the doors is covered in a variety of geometric shapes (triangles) that are actually thin veneers glued in place.

One of the subtle details that I believe helps complete the look of this table is the grain-matched miters of the case, as well as the bent lamination edging around the top.

Hardwood Case

Before diving into the construction of the case, there is a bit of prep work to do. The top of the table is veneered with that radial veneer. A balance veneer needs to be applied to the bottom of the top before we do anything else. This can be glued in place with PVA glue. If you don't have a vacuum bag, heavy weights (such as car batteries) work well to clamp this as it dries.

The case of this entry table is built out of white oak. I glued up three pieces of stock to get it to the final width. My material here is long enough to get all of the



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1 The top is made of a plywood core, covered on both faces with veneer. A veneer needs to be applied to the bottom so that the panel remains stable and flat.

2-3 Rough cut the material for the case to length using a track saw. I do this outside on a piece of foam, simply due to limited space in my shop. The ends of the panels are mitered at the table saw.

4-5 Rout a rabbet along the back edge of the case parts at the router table.


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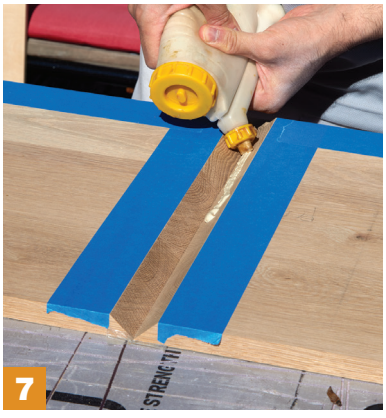
parts out of, so I'll have a grain match on three of the corners.

I find it easiest to take the stock outside and break down the material with a track saw. Then, I use the table saw to cut the miter on each end of the case parts. Now, I'll admit that miters aren't the strongest joint around. And you could certainly reinforce these in various ways (splines, dominoes, dowels, etc). However, I decided to just glue the back into a rabbet. This plywood back adds a lot of strength to the case, and I've had good luck with this construction method. The rabbet for the back is cut at the router table. A rabbeting bit does the heavy lifting. Cutting this in a few passes minimizes chip-out and makes it an easy cut.

With the rabbets cut, the case is ready to be glued up. I use packing tape for a hinge, as you can see in Photo 6. I tape the inside of the joints with painters' tape to help capture any squeeze-out. The yellow PVA glue is applied liberally — the endgrain is going to wick in a bit of the glue, so make sure there's plenty there.

After gluing the joints, you can start to fold up the case, using that packing tape as a hinge. Apply a few clamps, but not too tight yet. The back will have the added benefit of helping keep the case square during drying. Once the back panel is in the rabbet, clamp


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6 The outside of each joint is layered with packing tape.

7-8 Glue the miters and fold up the case. The painter's tape helps contain squeeze out.

9-10 The back is glued in place. The back helps hold the case square and adds rigidity to the mitered carcass.

11 Check the miters and adjust the clamps as necessary to close up any joints.


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everything together nice and snug, paying attention to the miters. You might need to do a bit of a dance with the clamps to wiggle the miters together.

12 Drill the ends of the rails. A stop collar on the drill sets the depth so you don't drill deeper than your dowels are long.

13 Use dowel centers to transfer the dowel locations to the other parts.

14-15 Apply glue to the dowel and mating faces and assemble the joint. A clamp across the part holds it while the glue dries.

Walnut Legs

The legs for this table are based on the classic mid-century rectangular style. Each leg assembly has two rails and two stiles. The joinery here isn't fancy. As you can see in the photos on this page, dowels are the ticket here. I start by marking the center on the ends of the rails. Then, clamping it in a vise, I drill a hole in each end. To transfer the dowel location to the stiles, I use dowel centers. These are little metal plugs that fit snugly in the pre-drilled hole. A point on the outside marks your workpiece as you squeeze it together. It's a great way to get accurate dowel holes with minimal tools.

With both parts drilled, I applied glue to the dowel and tapped it in place. I also applied a good bit of glue to the mating parts. Even though one of the surfaces here is endgrain (the ends of the rails), I just want the glue to hold for a bit to keep the parts from twisting. Complete both of the legs like this — once they're in clamps, double check that the parts haven't twisted, and set them aside and start to think about the sunburst veneer on the top.



Shop-Sawn Veneer

When it comes to veneer, you have a ton of different options to choose from. You can buy presawn veneer from most woodworking retailers. You can get figured, fancy wood, or veneer that is dyed different colors. However, sawing your own veneer isn't complicated, and you can save quite a bit of money doing that. Plus, you can get some really interesting patterns if your beginning stock has some prominent grain. For the veneer on this table, I chose to use black walnut.

The trick with sawing veneers is to have a good blade on your saw, make sure that your fence is set parallel to the blade, and that your stock is jointed flat and square. Use a featherboard to keep the stock pressed up against the fence and slowly feed the stock through the blade. Keep the feed rate constant; any slight hesitation when feeding can cause the blade to drift slightly.

After sawing off one veneer, head to the jointer and re-joint the


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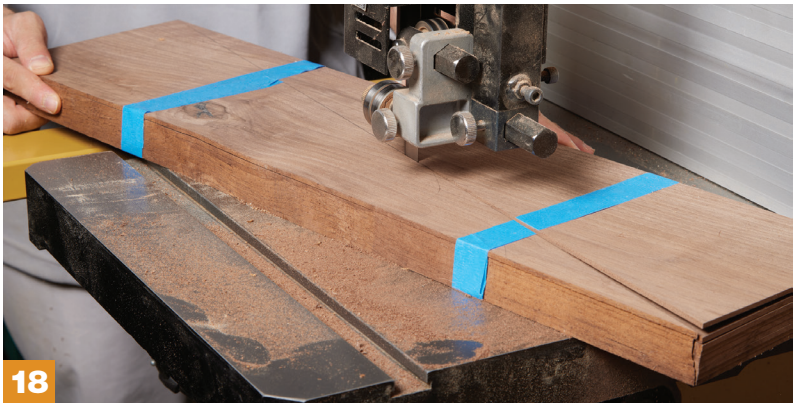

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16 Veneer is sawn at the bandsaw using a featherboard.

17 Send the veneer through the drum sander to flatten out the back.

18 Cut the veneer into triangles.

19-20 Clean up the edges of the veneer at the jointer and start to lay out the pattern.


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face that you just cut. You want one smooth and flat face against the fence at all times. Saw through the entire stock to produce the veneer. I ended up with nine sheets out of this 8/4 board. I ran all of these sheets through my drum sander to smooth out both sides and remove any of the bandsaw marks that may be left.

Because this is a sunburst (or radial) veneer, I want to cut these into triangles. The veneer gets reassembled back into the board form, making sure they're stacked up exactly as they came off the saw. Then, I wrap the bundle several times with painter's tape. The bundle gets ripped at the bandsaw into triangles, as you see in Photo 18. Cut as straight as possible, but if you wander a little bit, don't worry. The entire packet (now cut into triangles) can be run over the jointer. Add a few extra strips of tape before you joint the bundles to keep any slipping to a minimum. I ran both edges of both packets over the jointer so that I had straight, glue-ready edges.

Now it's time to figure out what pattern you want. You'll be doing yourself a favor if you label each veneer with a number, so that you'll always know how they came out of the bundle. Try different orientations, flipping, and rotating the veneers until you find a pattern that looks pleasing. Some of the things that I keep an eye on during this process is to not only watch the grain pattern as I'm arranging them, but I also watch the color. A simple shift in hue in each veneer can create a very interesting-looking fan pattern if laid out with intention.

Once you've decided on your pattern, it's once again time to start taping the veneers together.


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Veneer tape is an actual material — it has a water-activated adhesive (like a stamp) on the back, and is perforated. I'm sure it works great. But I've found that blue painter's tape also works great for this. As I'm taping the veneer together, I am using several pieces along the seam, making sure that I'm stretching the tape a little bit to add tension to the











21-22 Start to tape the veneers together with painter's tape. After the entire fan is together, use a few long strips to add extra strength.

23-25 The joint of each veneer is glued together with CA glue. Press the glued joint down flat and spritz it with accelerator. Hold it for a few moments to let the glue cure.

joint. Depending on the width (angle) of your veneers, this process can take some time. But, don't lose focus and concentrate on keeping each and every seam as tight as possible.

Once you've taped together enough veneer to create a "fan" that's at least 180°, it's time to add more tape. That's right—now you're going to go all the way across the veneer, adding long strips to help hold the entire unit together. Now, you may need a helping hand to flip the veneer over so that the untaped face is up. Use a shim (a dowel works great) to slip under the first joint. You'll see that it opens up like a book. The glue I prefer to use for the edges of the veneer is CA glue. A thick CA glue applies easily, and you can also speed up the curing with an accelerator. The process is as follows: Slip the dowel in place under the unglued joint. Apply a bead of CA along the entire edge. Remove the dowel and press the joint down flat. You'll notice you start to get a little squeeze out. Holding the joint down, spray a few dabs of accelerator along the joint. The fibers will wick it in and help cure the glue from the inside out. Keep your hands in place over the joint for a few moments, just to make sure that it holds. Then, it's rinse and repeat for the remaining joints.

Back To The Top

Once all of the veneer has been glued together, you'll want to let it set and cure for a bit. The accelerator offers a good initial grab, but let it rest to make sure it's fully cured. By this time, the glue used to attach the top core to the bottom veneer is cured. I use my bandsaw to trim the veneer down to be close to the same size as the plywood core. Then, with minimal waste remaining, I use a flush-trim bit in the router table to make sure the bottom veneer is exactly the same shape as the plywood core.

The bent lamination edges of the top are in place so that a large chamfer can be added to the top. The bent laminations are made


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26 Flush trim the backing veneer off of the top's core.

27-28 Glue up the bent lamination pieces that will become the edging. These are clamped in place, starting with the two end pieces.

29-30 After dry, trim the end laminations, and start working on the front and back. A bunch of clamps from front-to-back will help you get tight glue lines with no gaps.


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exactly the same way as the veneer was done before—joint, resaw, re-joint, and saw again. The bend in this top isn't super severe, so the laminations can be a little thicker. You'll be building up a pretty thick layer, though (it's a heavy chamfer that's added later), so I leaned toward the thinner side with these laminations.

The easiest way to glue all of these laminations together is to lay them out flat on a work surface. The biggest surface I have in my shop is my CNC, so I cover the CNC bed with plastic and do my large glue-ups there. With the laminations spread out, I use a roller to roll out a layer of glue on each. Then, the laminations can be added. I did the two ends first. These are shorter curves. Once these are dry, the ends can be trimmed and sanded flush, and the front laminations can be added.

You'll want to add several clamps along these curves—the more clamps, the better. One thing to keep in mind, however, is that the glue is adding a lot of water back into the stock. Because it's getting re-hydrated, it's easy to "squish" the laminations with your clamps (actually denting the material) and end up with a little bit of a wavy edge when you remove them in a bit. Squeeze the clamps just enough to get a good squeeze out.











Attach The Legs

As the laminations are drying, the legs can be finished up and attached to the case. First things first—the corners get routed with a radius so that there is no "point bit" on the legs. I use a simple aluminum template to create this. The template allows me to mark the corner and nip off the waste at the bandsaw. Then, the same template can be used with a flush trim bit to round over the corner. See Photo 31. The edges get a heavy roundover to soften the look. Now, the entire leg (inside and out) gets a heavy roundover. Depending on your material, you might get away with doing this in one pass, but it's a safer bet to rout this in a few passes—there's nothing worse than getting to this final step and getting a big piece of tearout.

Keeping in the theme of the leg construction, they are attached to the case with a series of dowels. As before, I drilled the dowel locations with a hand drill with a stop collar. Then, using a spacer under the case (Photo 35) I positioned the legs where I wanted them and used the dowel center to make a mark. The case gets matching holes for the dowels.

Take a few minutes and sand the case and legs now. Once everything's glued together, it's a bit harder to reach everything and sand efficiently. Apply glue to the dowels and drive them home. I also applied a thin bead of glue to the stiles—it's a long-grain surface, so it makes a good glue joint. Yes, I know that wood movement between the case and the legs could be an issue. However, the legs have plenty of flex in them, and I haven't had any problems with this style of leg and case connection. If you are worried about it, you could attach the legs to the case with screws from the inside (with oversized holes). However, I wanted to avoid hardware.

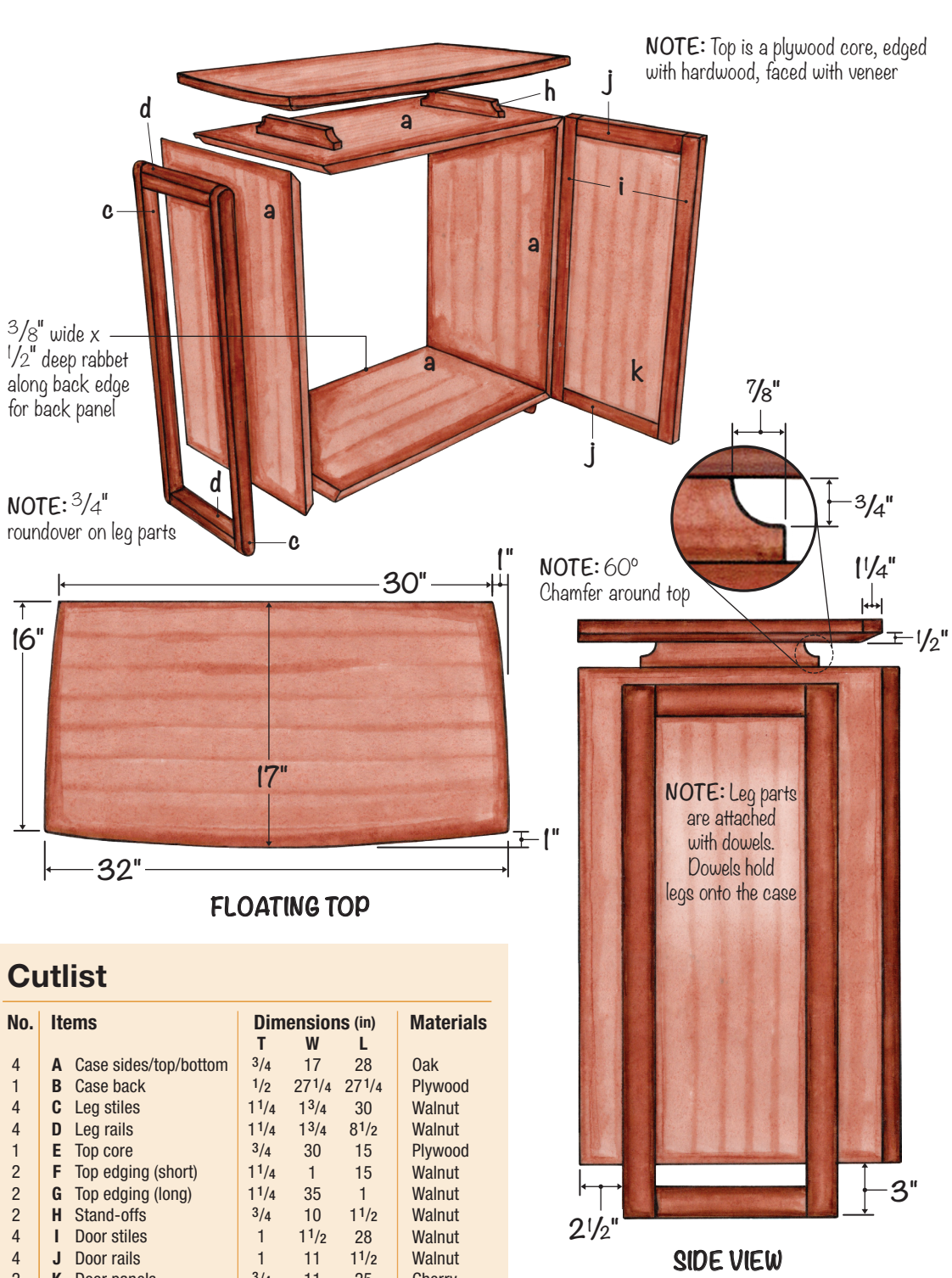
31 Use a roundover template to round the corners of the legs.

32 A large roundover bit softens the legs. Rout all of the edges of both the legs.

33-34 The legs are mounted with dowels. Drill the dowel locations and place dowel centers in the holes. Transfer the locations to the case and drill those next.

35 A bit of glue and clamps hold the legs onto the case.

Floating Top Entry Table



Cutlist

No.		Items	Dimensions (in) T	W	L	Materials
4	A	Case sides/top/bottom	3/4	17	28	Oak
1	B	Case back	1/2	27 1/4	27 1/4	Plywood
4	C	Leg stiles	1 1/4	1 3/4	30	Walnut
4	D	Leg rails	1 1/4	1 3/4	8 1/2	Walnut
1	E	Top core	3/4	30	15	Plywood
2	F	Top edging (short)	1 1/4	1	15	Walnut
2	G	Top edging (long)	1 1/4	35	1	Walnut
2	H	Stand-offs	3/4	10	1 1/2	Walnut
4	I	Door stiles	1	1 1/2	28	Walnut
4	J	Door rails	1	11	1 1/2	Walnut
2	K	Door panels	3/4	11	25	Cherry

* 10 sq. ft. of walnut veneer for the top







36-37 Mark the size of the top on the veneer. Trim it down so there's not much over hang.

38-39 Spread glue on the surface of the top's core and position the veneer on it. Line up the points of the veneer with the center line.

40-41 Wrap parchment paper around the top before putting it into the vacuum bag. Apply vacuum to clamp the veneer to the core.







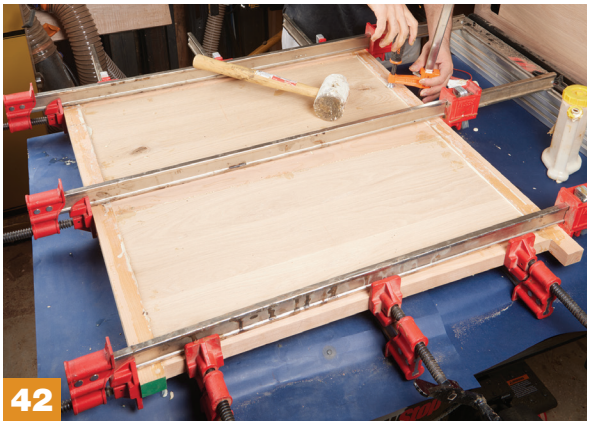
The Radial Veneer

Applying the radial veneer to the top is old news at this point. My veneer, as you can see in Photo 36, was intentionally oversized. This makes handling and alignment much easier, but it does need to be trimmed down before glue-up. I used the track saw to cut it to a more manageable size, leaving enough extra material around the perimeter for final trimming. With that done, the veneer is ready to be glued in place.

A good, even layer of PVA glue is applied to the core using a roller. Take your time here—consistent coverage is important to avoid dry spots or bubbles later. The biggest thing to watch is alignment. When you apply the veneer, the points of the veneer (the focal point of the radial pattern) need to be dead-center on the top. If it's even a little off, it will be immediately noticeable and look goofy. Spend some time nudging it into position and checking it from multiple angles. Once you're satisfied, use painter's tape to lock it in place so nothing shifts during clamping.

Here's a great trick when working with a vacuum bag. Large sheets of waxed paper or parchment paper are readily available online or from restaurant supply stores. These are perfect for wrapping your veneered panel and preventing glue squeeze-out from sticking to the vacuum bag—or worse, getting into the vacuum pump. Wrap the entire top in the parchment paper and tape it into a tidy envelope. The wrapped top then goes into the vacuum bag. Pull vacuum to clamp the veneer, and if you're anything like me and have trust issues, feel free to stack some weight on it as extra insurance.

Once the glue has fully cured, flush-trim the top veneer to the core using the same process we used on the bottom veneer.







42 The door is glued up in one shot, with wide center edging.

43 The doors are cut apart and to size with the track saw.

44 Drill recesses for the Euro-style cup hinges.

The Doors

My construction method for these doors is a bit unconventional. That said, it's worked well for me, so this is the approach I'm sharing. Each door is made up of a panel with solid hardwood edging applied all the way around. On the original cabinet, the panels were covered in a geometric pattern. We've covered veneering techniques pretty thoroughly by now, so I'll leave the exact design choice up to you.

For the doors on the original cabinet, I cut all 150 pieces by hand. If that sounds a bit excessive to you, you have several options. A patterned veneer would work well, or you could echo the radial veneer from the top and use a mirrored layout on the doors. Either approach can look great—it really comes down to the look you're after. Of course, using a nice hardwood would look great, too.

The edging around the doors is thicker than the panel itself, creating a subtle recess that adds depth and shadow to the door face. The edging is glued all the way around the perimeter. The center edging is intentionally wider, allowing for a saw kerf to separate the doors after glue-up. This lets you glue both doors as a single assembly, ensuring perfect alignment. See Photo 42.

Once the glue is dry, I take a few careful measurements to confirm the exact location of the saw kerf. The cut is then made with the track saw, separating the doors cleanly and accurately.

The doors are mounted to the case using 35 mm full-overlay Euro hinges. These hinges require a precisely located 35 mm hole drilled into the inside face of each door. Careful layout here is important. After marking the locations, head to the drill press and drill the hinge cup holes as shown in Photo 44.

Finishing Touches

Now we're in the home stretch. There are just a handful of finishing steps left before the table is complete. The first task is cleaning up the veneered top. I flush-trimmed the veneer at the router table, just as we did with the lower veneer. Take extra care here, because you're routing across the grain of a thin veneer; chip-out can happen quickly. Light passes, and sharp bits are your best defense.

With the veneer trimmed, it's time to rout the large chamfer on the bottom edge of the top. This is done using a large 60° chamfer bit in the router table. Be sure to slow the router speed down—the large diameter of the bit requires a lower RPM for safe, clean cuts. Because this bit removes a lot of material, make the chamfer in multiple passes. About 1/4" per pass is a good rule of thumb until you reach full depth. The chamfer runs along the front and sides of the top, as well as the back.

At this point, the top itself is complete. The next step is attaching it to the case. I used shaped stand-offs mounted to the case interior. These are drilled on the drill press using a Forstner bit, and the curves are refined at the spindle sander or with a dowel wrapped in sandpaper.

To mount the top, drill holes through the stand-offs. Screws driven from inside the case,







through the stand-offs, and into the underside of the top secure everything in place. Two screws per stand-off are more than enough to hold the top firmly.

The doors are then mounted using the Euro hinges. The hinge cups are pressed into the holes drilled in the doors, and the mounting plates attach inside the case. These are 110° full-overlay hinges, so the doors swing wide and provide easy access to the interior.

Finally, consider the inside of the case. Depending on what you plan to store in this entry table, adding a shelf can make the space much more useful. I used a scrap of plywood with evenly spaced holes drilled into it as a drilling guide for the shelf pins. This makes it easy to ensure the pin holes line up perfectly on both sides of the case. The shelf itself is simple—a piece of plywood edged with hardwood to match the rest of the piece.

Now the cabinet is ready for whatever finish you choose. I prefer a warm, oil-based finish that enhances the character of the wood. When I designed this project, my goal was to incorporate and practice several new techniques, and it delivered on that front. My hope is that you'll try a few of these methods in your own shop and carry them forward into your next project. **PW** – *Haseeb Ahmed*

45 Trim the show-veneer to the top core using a flush trim bit.

46-47 In several passes, rout a large chamfer on the bottom of the top. The chamfer wraps around the front onto the sides.

48 The top is mounted using a few standoffs. These are shaped with a swooped end, and raise the top off of the case.

49 The hinges are installed into the doors using euro-hinges. The hinges install with a pair of screws into the door and into the case.

50 The inside of the case is a great place for a shelf. A scrap of plywood with holes makes a great shelf-pin jig.

