

# Built-ins for Odd Spaces

A simple, foolproof method  
for off-angle cabinets

BY GARY STRIEGLER



**J**ust about every job I work on has one or two odd cabinets that aren't quite what your typical kitchen-and-bath cabinetshop is used to dealing with. What I call "off-angle cabinets" are a great example. Sometimes you find them tucked under a stairway, but they are also common in second stories with sloping ceilings. The room shown here was an unfinished bonus room that the owners wanted to turn into a play and study room for two young boys, and I had to make two off-angle cabinets to fit against the slope of the gable roof.

I developed a method to build these odd-shaped cabinets so they fit every time. It all starts with the back; I scribe-fit a piece of 1/4-in. plywood that will become the cabinet back, but first I use it as a template to build the cabinet. The face frame exactly matches the template, but the cabinet box doesn't. Instead, when I draw the layout on the template, I shift the lines for the sides close to the wall and ceiling in about 1/4 in. That leaves 1/4 in. of face frame overhanging the cabinet box to be scribed to fit the wall and ceiling.

My construction methods for off-angle cabinets are a little bit different than standard cabinets. I essentially build a box within a box. The interior box supports the shelves and reinforces all the joints in the outside box. For the room here, I realized it would be a lot easier to get all the pieces of material I needed up the narrow stairway than to bring the assembled cabinet upstairs. So I started by ripping 3/4-in. plywood into eight 11 1/4-in. strips in my shop. I also cut and sized all the lumber I needed to make the face frames. I planned to make all the plywood cuts with a track saw, but first I had to figure out what angle to cut the plywood. I cut a scrap of lumber and made a couple of test cuts comparing them to the layout on the plywood back; it turned out to be 44°.

I'm sure there are some carpenters who could just take some measurements and go build this cabinet. When possible, I am much more comfortable marking the length in place than measuring. Working from a full-scale pattern reduces the chance of error, in my experience; once I have the pattern right, I just cut pieces to match and put them together. It is pretty simple, but I'll take simple every chance I get. □

Gary Striegler is a trim carpenter in Fayetteville, Ark. Photos by Matthew Millham.



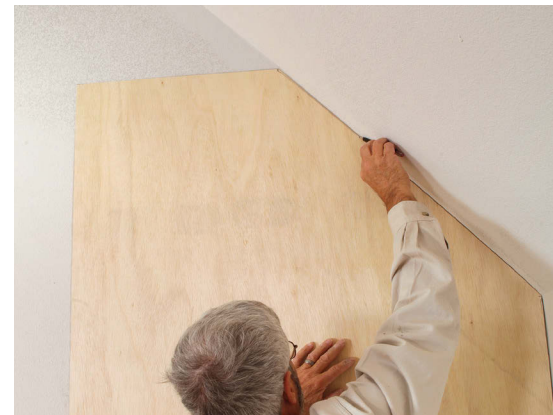
## MAKE A TEMPLATE

It all starts with the back panel, which also serves as a template for the carcass. I already know the height and width I'm aiming for, and how far off the floor it has to be to accommodate a built-in-desk below. I simply draw the outline of the cabinet's perimeter on the wall, then cut and scribe the back to fit in that space.

**MARK THE PERIMETER** Measure off the floor to mark the top and bottom of the cabinet back, and off the wall to mark its width, then use a level to extend the marks level and plumb.



**ROUGH THE BACK** Measure the lengths on the wall, transfer them to the plywood back, then use a track saw to cut the plywood to its rough shape.



**SCRIBE TO FIT** Hold the plywood back in position on the level lines and check the fit. If there are any gaps along the wall or sloped ceiling, mark and scribe it to fit.



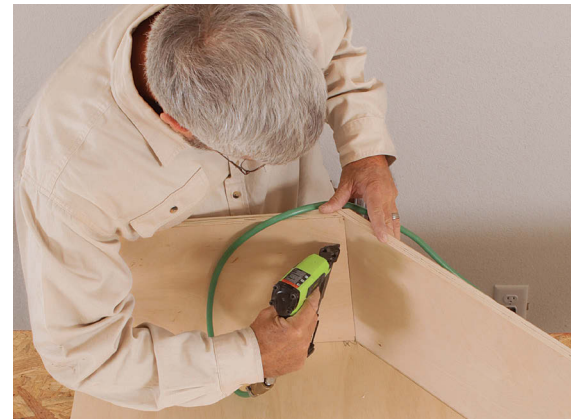
**MARK OFFSETS** I draw lines 1 in. in from the edge of the sides that butt into the wall and ceiling, which leaves the plywood back hanging over 1/4 in. A 3-in. offset at the bottom accommodates the bottom shelf and a hardwood cleat for fastening to the wall. Use an angle finder or make test cuts to determine the cut angle for the intersecting wall and ceiling planes, which is needed later.

# BUILD THE BOX

I prefer to mark trim lengths in place rather than use a tape, and I use that same method for the parts of these cabinets. The layout lines and the edge of the plywood back are my starting points. I precut all of the plywood to width on a tablesaw at my shop, and cut all the parts to length on-site with a track saw.



**MARK IN PLACE** When possible, use the layout lines as a guide to mark where to cut pieces to length.



**FASTEN AS YOU GO** Fasten parts as they're cut for a tight fit, for accurate marks, and to ensure nothing gets mixed up.



**PREP THE POCKETS** Pocket-hole screws secure the face frame along the sides that butt into the wall and ceiling. Drill the pocket holes before the entire perimeter of the cabinet is fastened to make things easier.



**SPACE IT OUT** Adjustable shelves don't work with this cabinet, so I space them evenly with pieces of plywood cut to the height between shelves, and nail them to the sides of the box with 1 1/4-in. brads.





**HIDE THE FASTENERS**  
Fasten the shelves through their tops down into their supporting spacers using 2-in. brads. The next layer of spacers will conceal these nails—just one less thing to fill before finishing.



**FIND THE INTERSECTION** To determine where the spacer goes on the angled side, I simply pull a tape square off the previous shelf and mark where the shelf's height intersects the slope.



**TWO-PART SPACER**  
Depending on your shelf layout, the spacer on the sloped side may require two pieces. The cut angle identified earlier (in this case, 44°) comes into play here.



**SLIDE CAREFULLY**  
Go slow when adding shelves in the upper sloped portion to avoid damaging the sharp edges created by the angled cut.

# STIFFEN AND TRIM

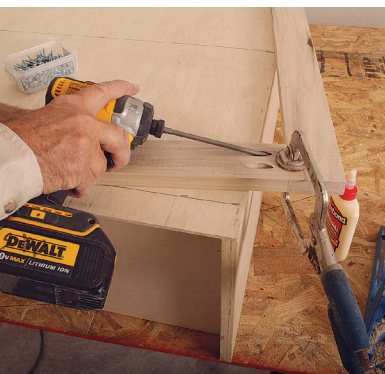
The plywood back and 1-in. (nominal) face frame give the cabinet rigidity, and cleats provide the needed strength to hold it on the wall. Trim is optional, but I never miss an opportunity to add a little flourish.



**BACK IT UP** Align the back flush with the side that will be visible in the room, leaving the edge against the wall running long. This excess gets trimmed later.



**STAPLE LIBERALLY** Because this construction method is a little unorthodox, I fasten the back with  $\frac{5}{8}$ -in.-long  $\frac{3}{8}$ -in.-dia. crown staples around the entire perimeter and into the shelves roughly 3 in. on center to add rigidity and holding power.



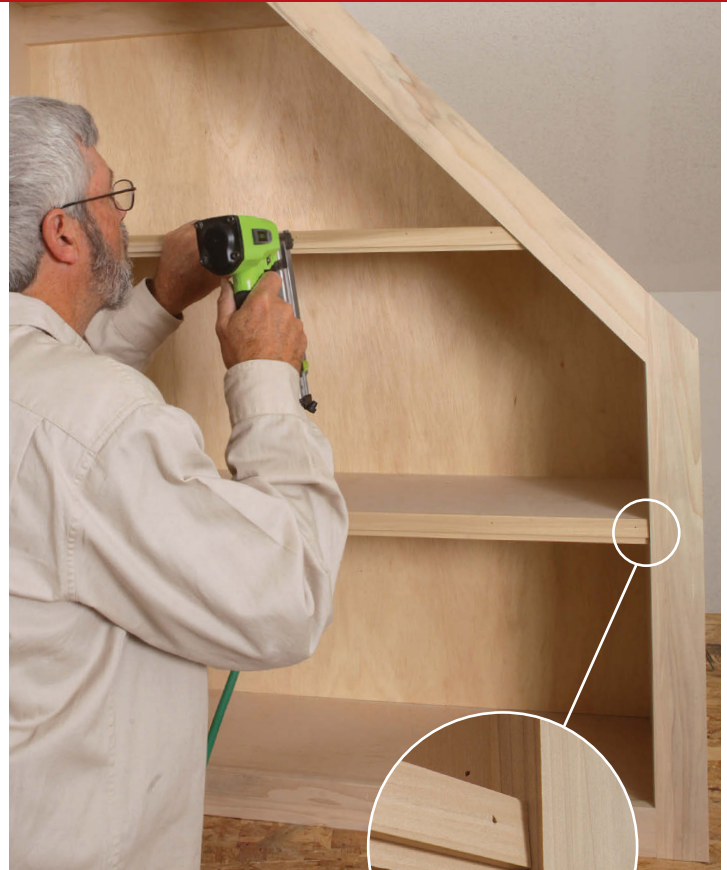
**ASSEMBLE THE FACE FRAMES** I build the face frames using the back template as a guide. Because the back is slightly larger than the cabinet box, the face frame will overhang slightly, to be scribed to the wall and ceiling if necessary.



**FASTEN THE FACE** Glue around the entire front edge of the box, then clamp the face frame to the box along the bottom and side that faces into the room, and fasten the hidden sides, which overhang the box, with pocket screws. Allow the glue to set before removing the clamps and sanding.



**CLEAT IT** Add 2¼-in. cleats to the bottom and upper interior of the box for attachment. Cut the pieces for a tight fit, then fasten with 2-in. brads through the sides and crown staples through the back.



**ADD THE NOSING** To hide the edges of the plywood shelves, cut and fasten molding with glue and 2-in. brads.



**PLANE IT FLUSH** Trim the bit of the back that overhangs the cabinet before testing its fit against the wall and ceiling. Scribe the face frame as necessary for a tight fit, then fasten the cabinet to the studs with long screws through the top and bottom cleats.



**TRIM IT OUT** Though not entirely necessary, I like to add a little trim to these odd cabinets. The top has a routed-edge top cap over a piece of panel mold. A narrow scribe mold covers the plywood back.