

Project 16939EZ: Freestanding Shelf System

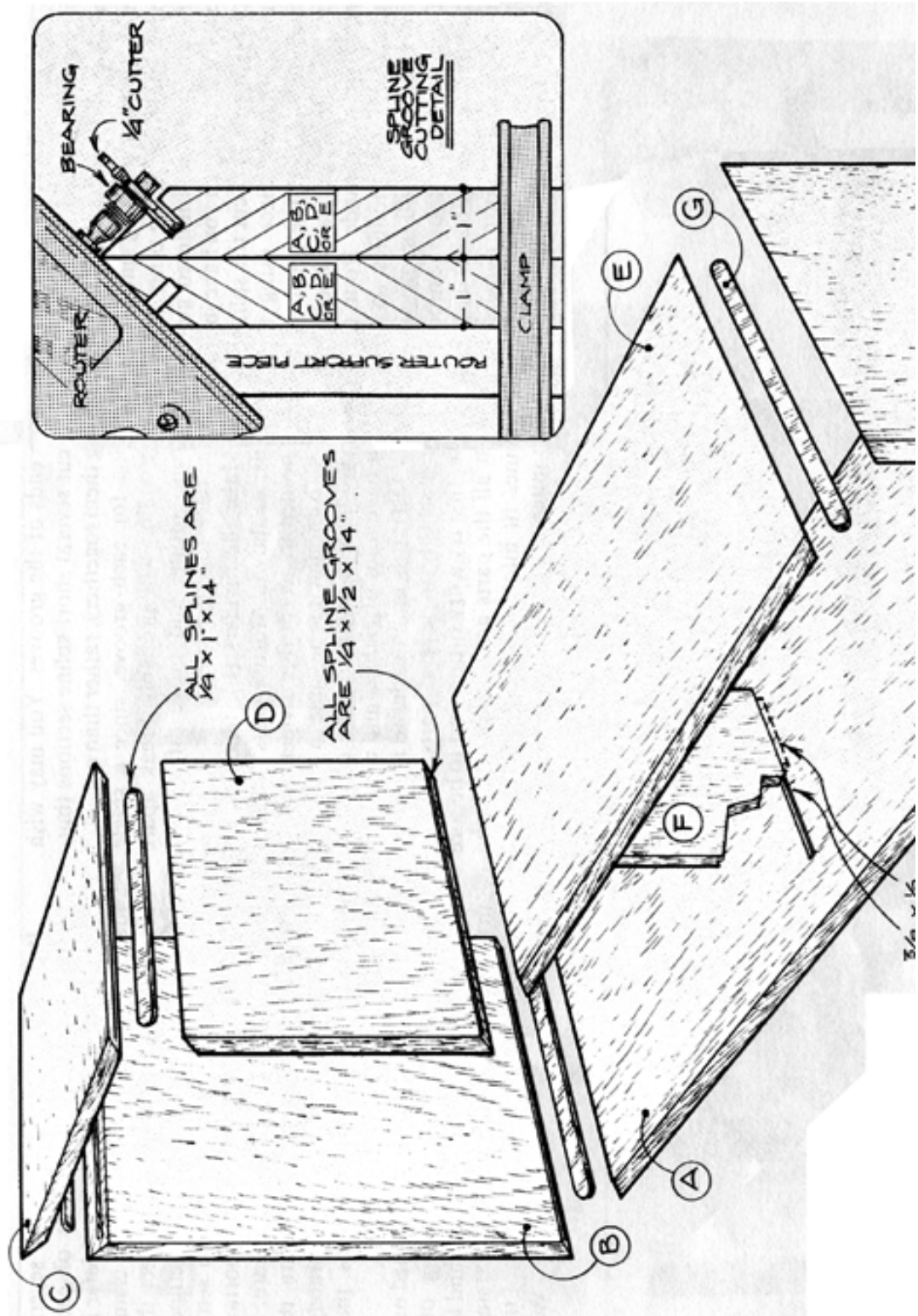


There is little question that these freestanding shelf modules are a popular item; everyone who has seen them wants a set for themselves. Given the virtually endless number of possible arrangements, and the fact that they can be used for so many different purposes, we are confident that this shelf module system will be a popular project.

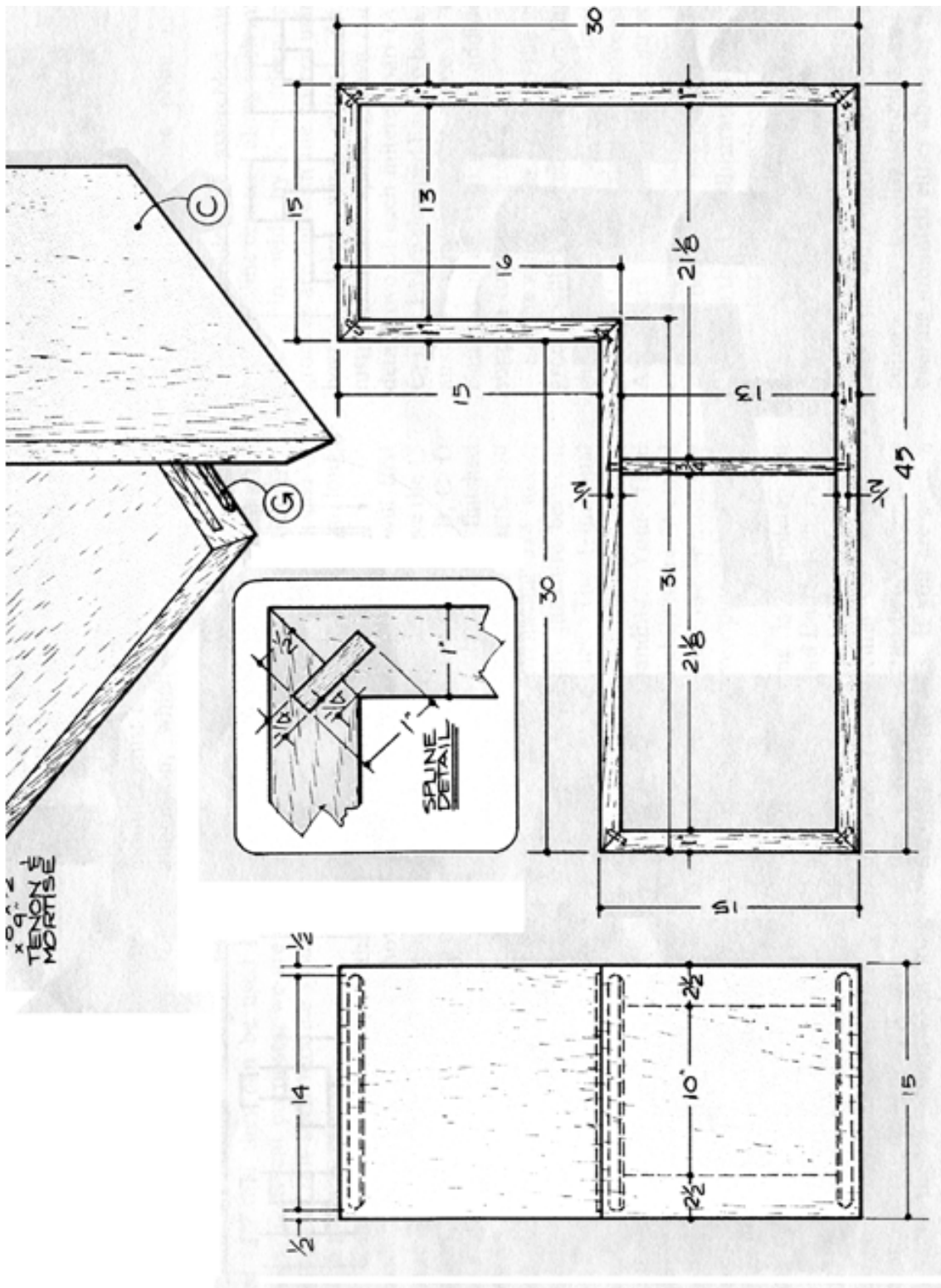
They can also serve as end tables, on one or both ends of a couch, as a coffee table, as a room divider, as a corner unit, or as bookshelves. By experimenting with the modules in various configurations they can even become a sort of kinetic sculpture, taking a new form every day if you prefer. Although our photos and illustrations show some of the possibilities with two modules, we might add that a whole realm of new designs can be created should you choose to add a third or perhaps even a fourth unit. The key to the tremendous versatility of the modules is their design. Very simply, the sides are sized in a 3 to 2 to 1 relationship. As you will note, in our modules the “3” side is 45 inches long, the “2” side is 30 inches long, and the “1” sides are 15 inches long. The depth of the modules must be equal to the short side dimension, which is 15 inches for our system. This feature helps facilitate the arrangement of the modules in various right angle groupings, such as would be needed for a corner setting. Because of the inside corner at the intersection of parts D and E, part D will be 16 inches long, and part E will be 31 inches long.

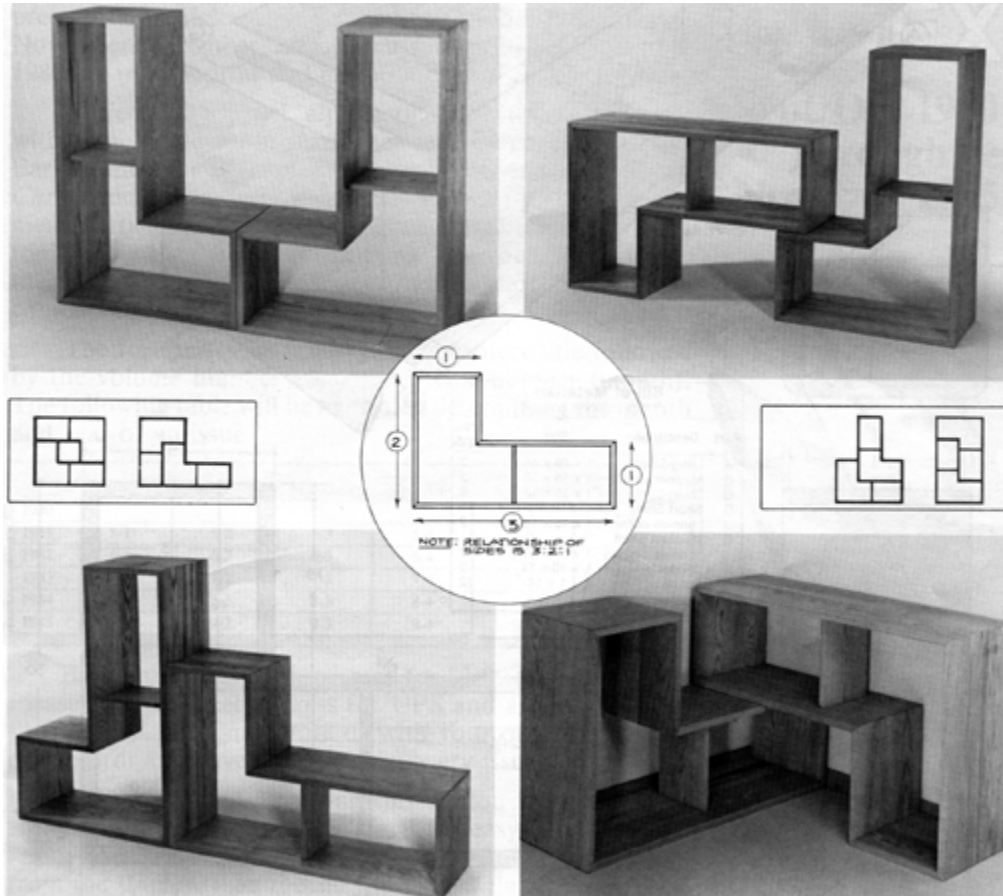
The 1" final dimension refers to approximate thickness after sanding. Your final thickness may be slightly more. We used oak for our modules, however most any hardwood - or even pine - could be used instead.

Freestanding Shelf System Complete Schematic



TENON & MORTISE





Freestanding Shelf System Materials List

Part	Description	Size	No. Req'd
A	Long shelf	1" x 15" x 45"	2
B	Medium shelf	1" x 15" x 30"	2
C	Short shelf	1" x 15" x 15"	4
D	Short shelf (inside corner)	1" x 15" x 16"	2
E	Medium shelf (inside corner)	1" x 15" x 31"	2
F	Divider*	3/4" x 10" x 14"	2
G	Spline	1/4" x 1" x 14"	12

* Includes tenons

Freestanding Shelf System Step-by-Step Instructions

1. Edge-glue stock first to achieve the 15" width required for parts A, B, C, D and E. **NOTE: Although we show a finished thickness of 1" for these parts, you will in fact be purchasing 5/4 stock, which will probably measure between 1-1/16" and 1-1/8" thick.**
2. Cut parts A, B, C, D and E to length.
3. Select a piece of scrap material to test mitering the corners. **NOTE: It is important that these miters be accurate. If you are even 1/2 degree off in the setting, there will be a noticeable gap at some point in the mitered corners.**
4. Cut the actual miters when you are satisfied with your tests.
5. Use a bearing-guided wing cutter to cut the 1/4" wide x 1/2" deep spline grooves with the router for the simple splines centered along each miter that are used to assemble the pieces.
6. Clamp two of each mitered part (A, B, C, D or E) back-to-back.
7. Clamp an auxiliary mitered guide piece in place to provide additional support for the router base.
8. Set the wing cutter depth so the spline groove will be located 1/4" from the inside of each miter.
9. Mark the point 1/2" from either end of each miter where the 14" long spline grooves will begin and end. **NOTE: Our illustration shows the wing cutter bearing positioned above the cutter.**
10. Hold the router firmly and plunge the wing cutter in to start the groove.
11. Back the cutter up to the stop mark.
12. Guide the router along until the cutter meets the mark at the other end of the groove.
13. Switch the mitered guide piece to the side on which you have just cut the spline groove.
14. Cut the spline groove in the opposite piece using the same technique.
15. Repeat the process until all the spline grooves have been cut. **NOTE: The splines (G) are made from the same material as the modules so that any wood movement will be proportionate.**
16. Round the spline ends as needed to fit in the ends of the grooves. **NOTE: You may wish to cut several short spline sections (butting them together), rather than one long spline for each groove, since a single long spline will probably break apart during cutting, and prove difficult to piece back together later.**

17. Make the dividers (F), tenoning the ends as shown.
18. Mortise parts A and E as needed to accept this divider.
19. Dry fit to be sure that all the parts are cut right, that the splines fit into their grooves, and that the miters match up properly.
20. Clamp up several corners, or perhaps the ends of each module, and then join the parts later in the final assembly. Use special clamp blocks, cut to fit over and protect the mitered ends, if you select this method. **NOTE: Whichever assembly process you settle on, remember that the most important point is the modules must be square. If every corner is not perfectly square, the modules will not fit together accurately, look right, or be as strong as they should.**
21. Sand carefully.
22. Finish as desired.

These plans were originally published in Volume 10, Issue 1 of *The Woodworker's Journal* (Jan./Feb. 1986, pages 30-32).