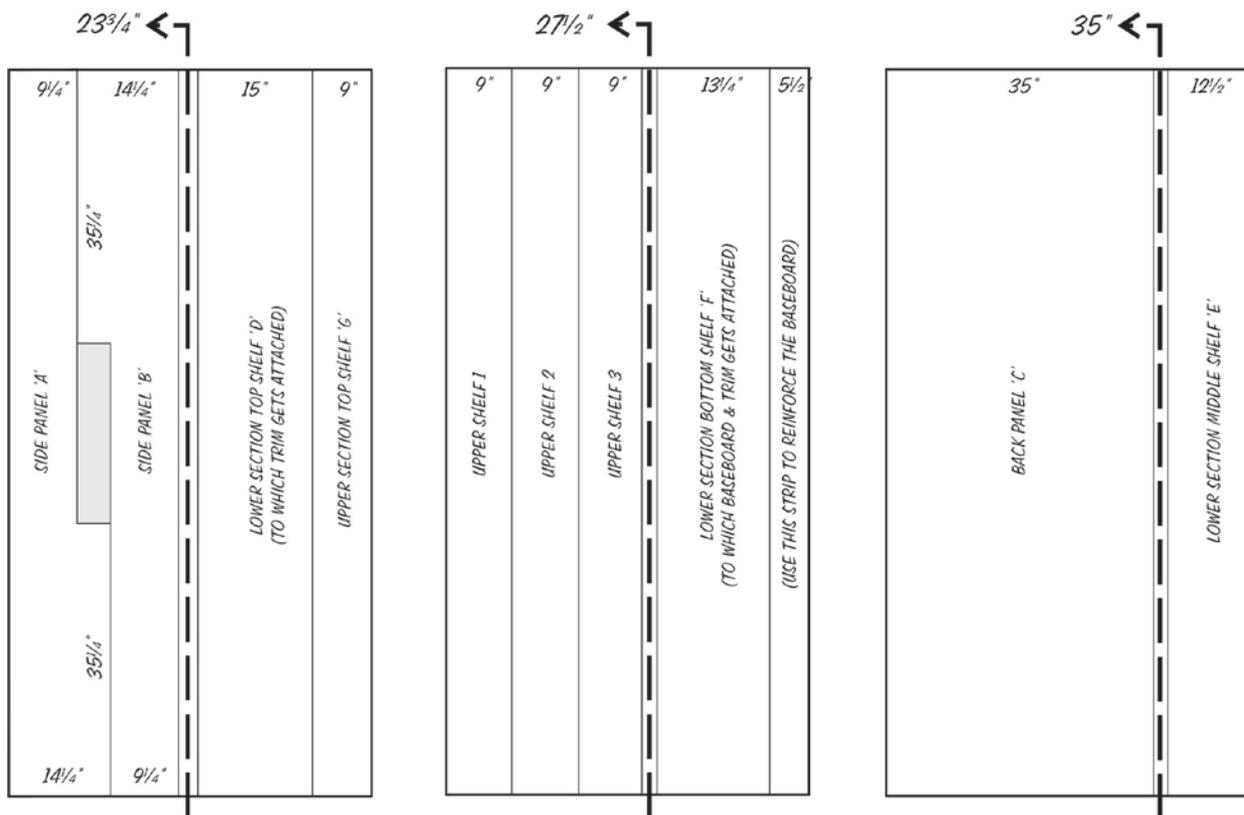


KNOCKDOWN BOOKCASE

These notes are for a single unit, 8' wide by 92" high. Accordingly, my horizontal shelves were all cut 94½" long (with the exception of the trim and moldings used on baseboard 'F' and shelf D, which are a full 96", extending in front of the side panels). My vertical side panels are 92" long, but of course these dimensions can be adjusted based on your own requirements. (Pay particular attention to the height of your crown moldings, not ceiling height, since the unit will have to fit under any crown moldings.)

STEP 1: CUTTING THE PLYWOOD

I started by buying three sheets of suitable plywood (¾" x 4' x 8'), and had each one cut in half (where indicated) right there on Home Depot's power saw, to make it easier to transport them in my SUV. (I'm not a professional woodworker, just a hobbyist.) The rest of the ripping I did at home – I have a small table saw. Here is the layout for all the panels and shelves:



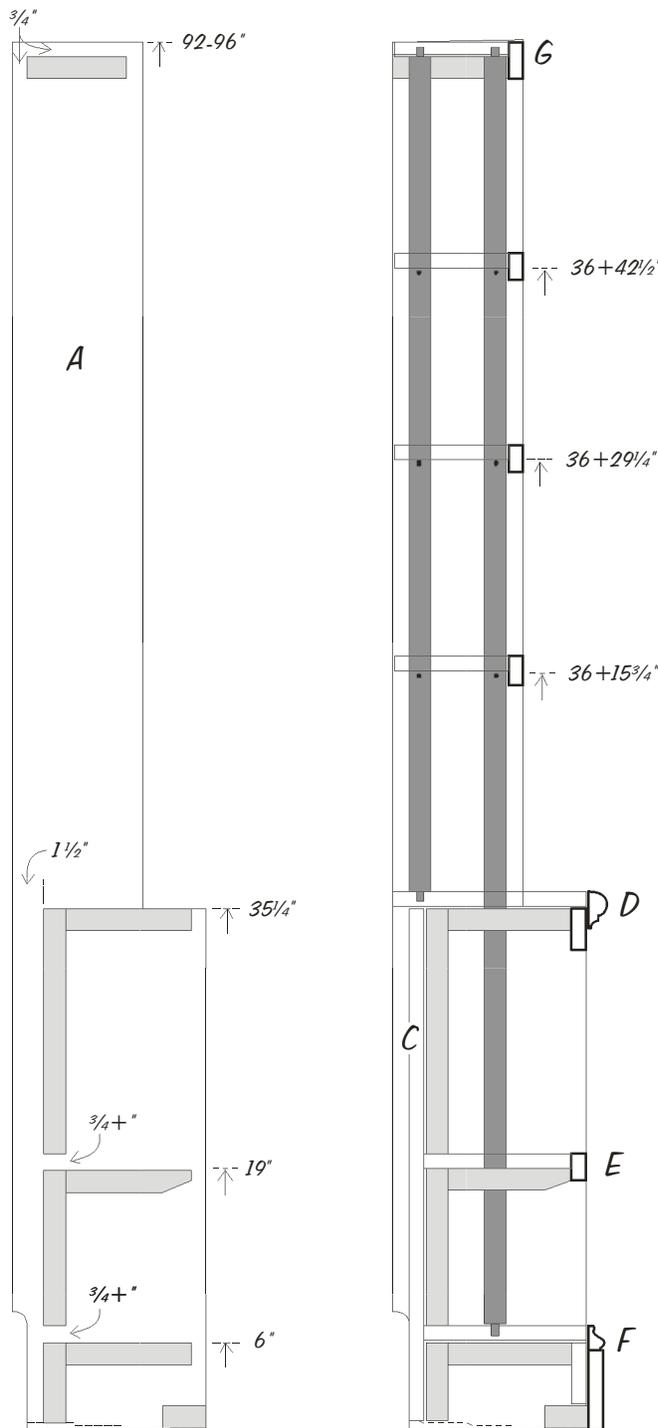
STEP 2: TRIMMING OUT THE SHELVES AND PANELS

I finished all the shelves and panels with trim on the front side, using bar clamps and non-drip glue for moldings. Instead of buying wood designated as 'trim, which tends to become expensive, I opted for regular wood instead, cutting my own basic square trim strips. In this case I simply bought 1½" x ¾" pieces of solid wood and ripped each one in half to form square ¾" x ¾" strips, which were then glued to the shelves with the finished surface facing outside. For the four regular shelves (1, 2, 3 & 'E') 1¼" x 8' poplar worked fine. The shelf designated as 'G' needs a wider piece of trim – 2" – while 'D' and 'F' are the wide shelves in the

lower section to which I attached moldings. (You will have to scrutinize my sketch below to see how this was laid out ...)

STEP 3: ATTACHING THE 'RIBS'

The key to the stability of this unit is the 'ribs' attached to the inside of the two side panels. For this purpose I used $1\frac{1}{4}$ " x $1\frac{1}{4}$ " – typically sold as pickets for deck rails – to save time:



The two side panels, showing how the $1\frac{1}{4}$ " x $1\frac{1}{4}$ " 'ribs' have been permanently attached.

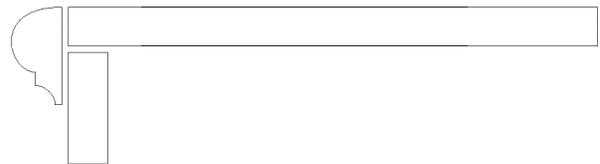


I also attached two long horizontal 'ribs' to the Back Panel 'C' (which can be seen above on the right) to support the center and lower shelves ('E' and 'F'), since the back pair of dowels do not go all the way down. (See Step 5).

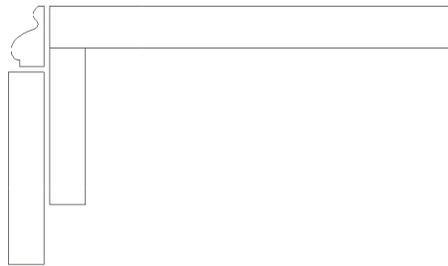
Once these ribs are permanently attached (glued and screwed) to the inside of the side panels, the Back Panel 'C' and lower shelves 'D' and 'F' can then be screwed to them – four screws on each corner of the Back Panel and two screws into each shelf – which turns the whole unit into a pretty solid piece of furniture. I used self-drilling galvanized deck screws, since they are not visible, making it easy to remove them again for the 'knockdown.' Notice also how the side panels have been notched 8" x 3/4" at the back to accommodate baseboards, and slanted 1/4" shorter at the bottom to make the unit lean back against the wall.

STEP 4: CREATING THE LOWER SECTION TOP AND BOTTOM SHELVES

The shelves designated as 'D' and 'F' required special attention. They are both L-shaped – the horizontal shelf, with a front attached below, and a piece of molding to cover the joint. In the case of the baseboard ('F') it was also necessary to reinforce the inside, using that offcut left from your three sheets of plywood. Here are some detailed views ...



This shelf-assembly is permanently glued, and not disassembled in the 'knockdown.' Notice how the front part of the shelf is wider through the addition of a piece of 3/4" x 3/4" square trim, so that the molding extends past the side panel (but not attached to it).



A typical baseboard configuration in our part of the country is a basic 5 1/2" x 3/4" plank with 'baseboard' molding above that. As in the case of shelf 'D' (above), these four pieces are also permanently glued together. And notice that the baseboard extends in front of the side panels. Notice also how I cut an 8" x 3/4" notch in the back of the side panel to accommodate the baseboard.

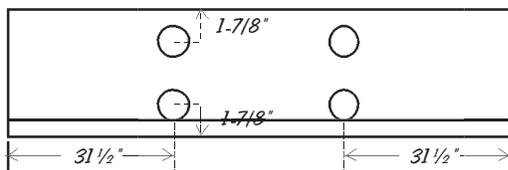


STEP 5: CREATING THE DOWELS AND HOLES

I used 1-3/8" dowels (typically bought for closet rods). Notice that the front pair extends all the way from the top to the surface of the lowest shelf, whereas the back pair only supports the top section of the bookcase.



Each rod has a smaller dowel glued into the end of it – this fits into a small hole in the shelves at the top and bottom.



I used a hole saw to drill 1-5/8" holes in the shelves. (Hint: start drilling on the one side and then finish the hole from the other side, so as not to damage the plywood.)



STEP 6: INSTALLING THE SHELF SUPPORTS

Instead of using the standard shop-bought spoon shelf supports (which are obtrusive and, not to mention, expensive) I discovered a little trick – metal pop rivets work just as well. The thick shaft goes into a hole of the exact same diameter, and the protruding pin gets trimmed down to $\frac{3}{4}$ " -- perfect. (Don't forget to drill holes into the dowels also at the exact point where they support a shelf.) I only drilled holes where they were needed, instead of a whole row up the side panel, figuring that I can always drill additional holes later if I ever need to adjust a shelf up or down.



STEP 7: FINAL TRICKS

1. Take another look at the diagram for Step 3 and you will notice that I slanted the bottom of each side Panel ($\frac{1}{4}$ " shorter at the back than at the front). The reason for this is that such a tall structure may be inclined to 'wobble,' especially on thick carpeting, but this little trick uses gravity to force the bookcase to 'lean' back against the wall. I also cut a notch 8" x $\frac{3}{4}$ " at the bottom to accommodate baseboards.
2. If you intend to use small electric appliances such as a lamp, radio or printer anywhere in your bookcase, it would be a good idea to cut a neat hole at the appropriate place in the Back Panel to expose a wall outlet. (Once the bookcase is full of books it becomes a little late to think of this!) Also, you may want to consider installing a plastic grommet in the corner of each shelf (using a hole saw), in case you ever need to feed wires to the upper shelves.

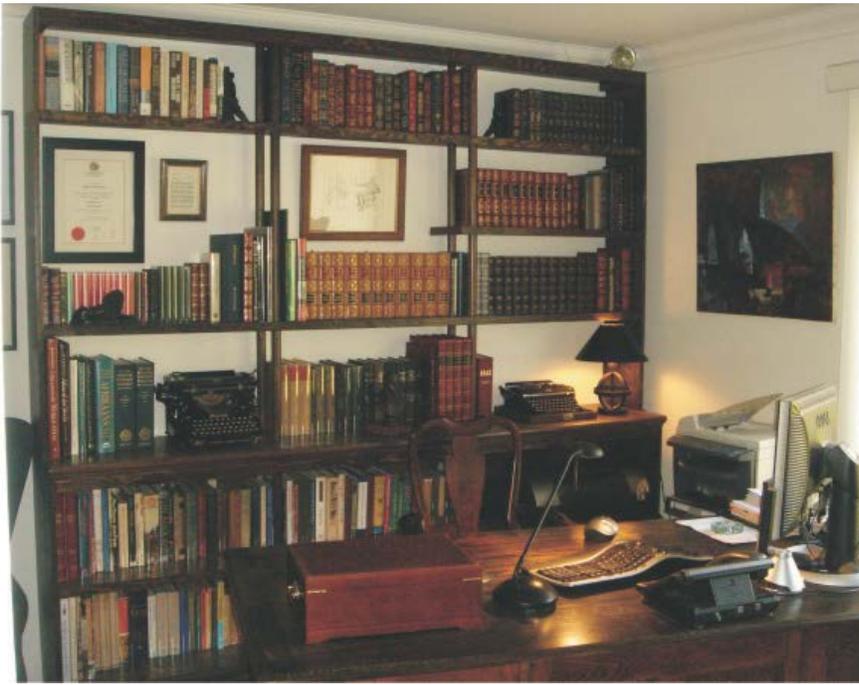
STEP 8: FINISH AND ASSEMBLE

Before staining and finishing each piece, I took the time to assemble the unit to check that everything was as planned. Here is the assembled unit ...



and here is my 'pile of planks' ready to be stained and finished, after disassembling the unit in only 12 minutes:





Success with your project – and don't hesitate to ask if you have any questions!

Bernard Krüger

BBK@BernardKruger.com

(415) 705-9050