A Magazine Rack with a Top

Introduction:

I have never come across a good **free** plan for a magazine rack. Yet almost all homes have one. So this is one of the few items I have made on my own, as I don't consider myself a master woodworker.

The driving force for this plan was my wife who wanted both some paper/magazine storage **AND** a small side table for a sofa in our home. So the basic layout features offered by this design are:

- a 12 inch by 25 inch top at the correct height for a small sofa side table,
- a small shelf area below the fixed top to store a few days papers horizontally,
- two lower storage areas for papers and magazines on a long-term basis.

My rack was made from 4/4 red oak with the partitions from oak plywood.

Some General Comments:

- I modeled the basic layout after the many small bookcase plans with the sides, bottom, top and shelf similar to basic parts of a bookcase.
- I **didn't** use any dado cuts to support parts. For a small rack such an extra support feature would be overkill. I just used screws, with holes countersunk enough that I could put in wood plugs.

List of the figures that follow:

- **Figure A - Rack with Top Sizes**
- **Figure B - Layout distances**
- **Figure C – Details of the brace groove**
- **Figure D - Approximate positioning of the 14 screws.**
- Three views of the actual rack showing some detail as only a picture can.

Figure A - Rack with Top Sizes -- Shows the dimensions of all the pieces. I used 13/16” oak for all the pieces except the slanted sides and inner partition, which were made by doubling 1/4" oak plywood. This makes them fairly strong. Also since most oak plywood has only one good side, I could glue the not so good sides together to get oak ply with two good sides.

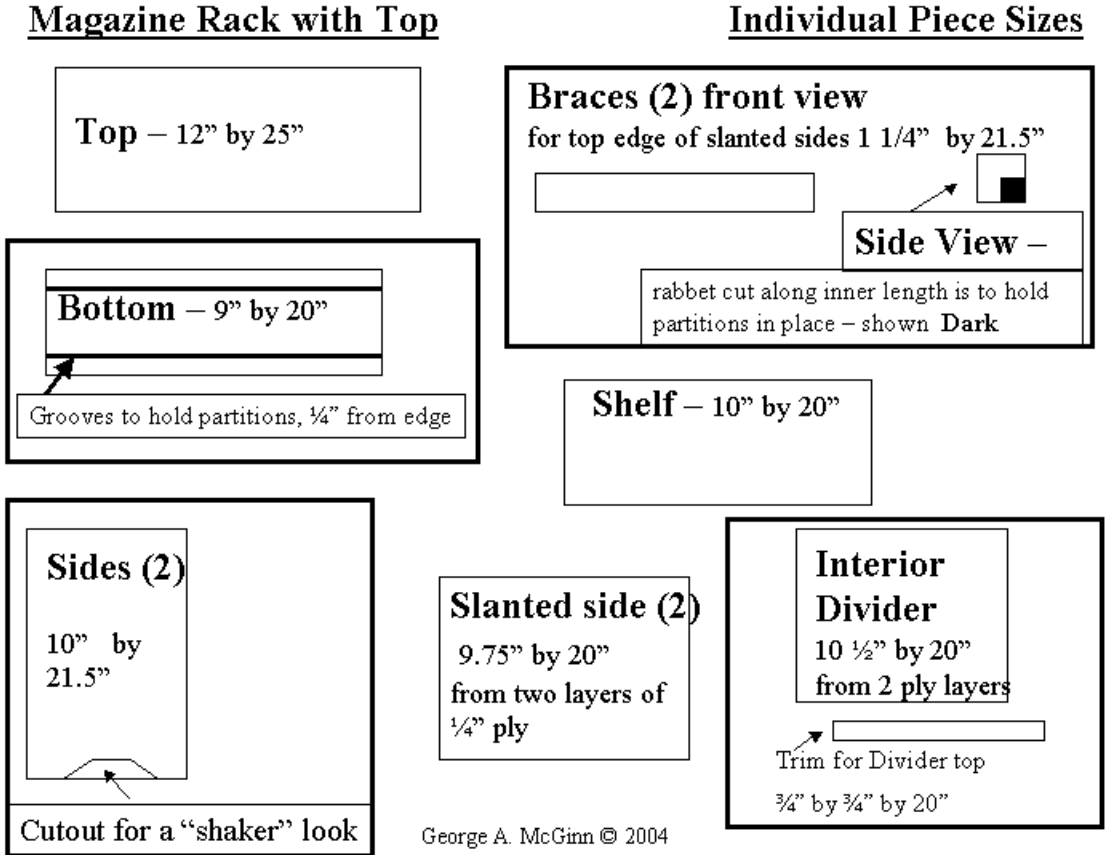


Figure B - Layout distances.

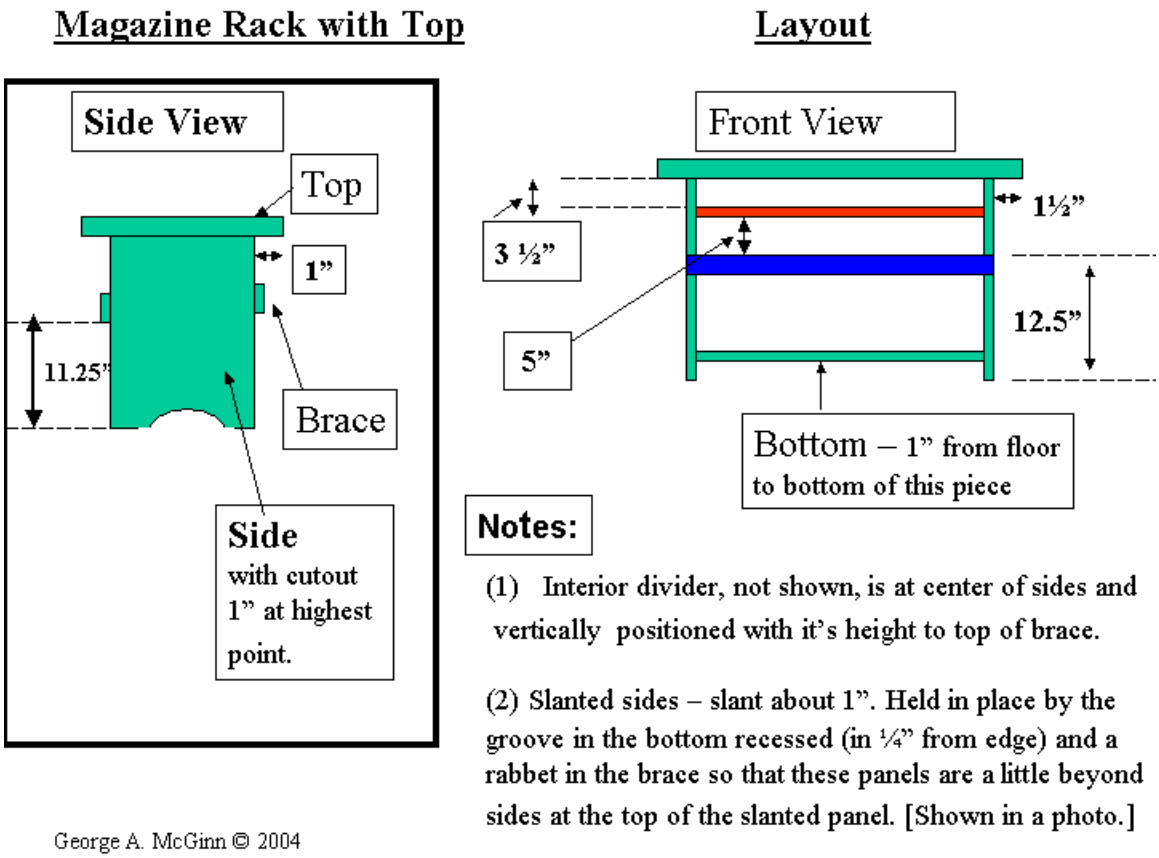


Figure C - Details of the brace groove to support the slanted sides.

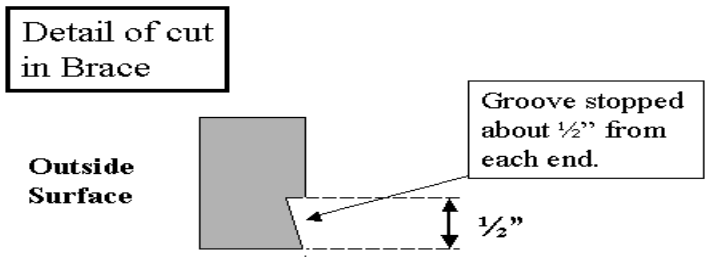


Figure D -- Showing approximate positioning of the 14 screws.

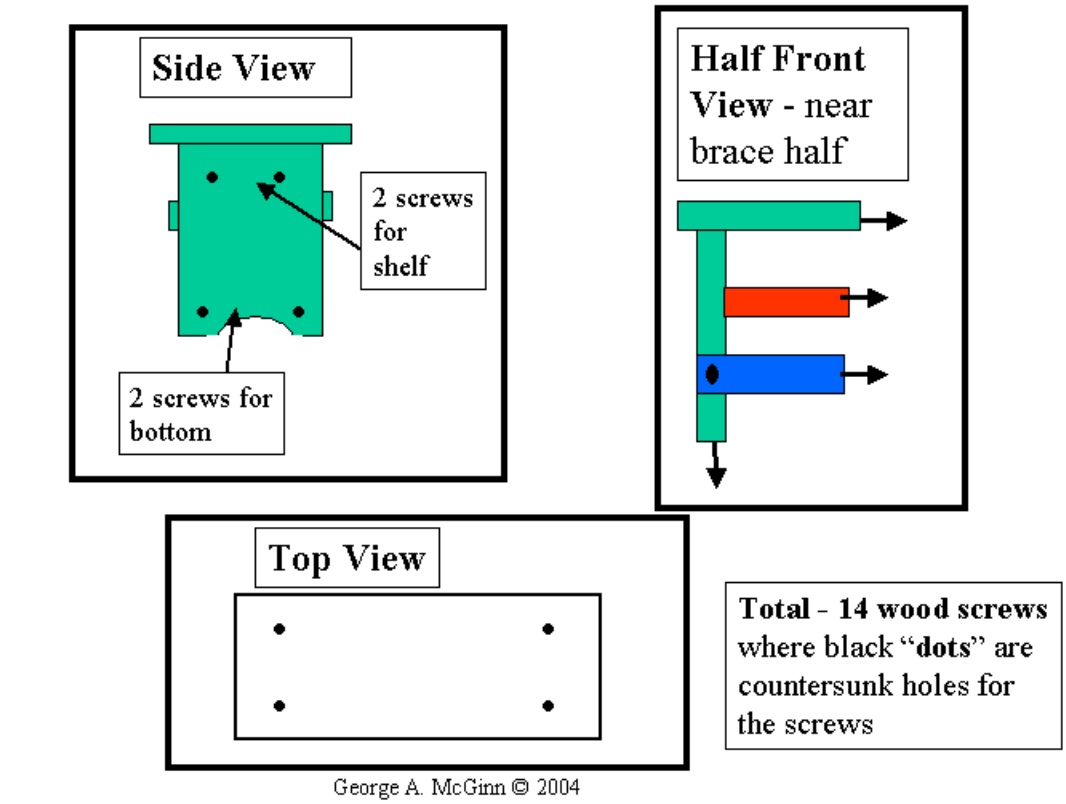


Table Side View 1

Table – View of Side Slant

Table Side View 2

What I Don't Cover:
There are a few things not covered or not covered in detail. They include the following:

A. The option to place the interior partition in dado grooves to eliminate the simple molding described in this document. This might be nice but most of the inner partition is never seen once the rack is in use.
B. The option to make the upper shelf moveable, that is allow for two or three different height positions as in common in bookcase designs. Here I discuss a fixed shelf at what is the middle position in my own rack.
C. The exact placement of the 14 screws. This depends on the thickness of the wood you use and exact dimensions of the pieces. One of my desires is to make this plan general enough that if you want a slightly longer, wider, or higher rack you can make that adjustment on your own.
D. Any discussion about wood buildup. For my rack I only needed to use buildup for the top as the other pieces only required 9" and 10" wide oak. But this depends on where you buy your wood. I buy my lumber from Steve Wall Lumber Co. in Mayodan, N.C. You can visit their web site at: www.walllumber.com

The General Rules for use of screws in hardwood - just in case you're new at woodworking.

- A screw should go into the center of a boards thickness
- A screw should not be within about an inch from the end of a board, unless necessary. A case in point for this rack is the braces on the rack.
- The predrilled hole in the piece of wood that **accepts the screw head** should be wide enough that the screw shank **drops through** and the head rests on the countersink just by gravity. If you do this it is impossible to get a split in the top piece of wood.
- I always use the new "modern" narrow shank, aggressive thread, coated wood screws like those sold by McFeely's Square Drive Screws. Visit their web site at www.mcfeelys.com.
- When working with hardwoods, I tap holes into the second piece of wood even though the manufactures of these narrow shank, aggressive thread, coated screws say that is no longer necessary .

Now on to the details of assembly!

Assembly Suggestions:

These suggestions are not intended to cover every minute detail but to address the major assembly steps**. Please read all the steps through at least once before cutting any wood!**

Part A – Wood Preparation:

1. Get all the major solid wood pieces cut to the size for your rack. This would include
   - Top
   - Bottom
   - Sides (2)
   - Shelf

   Now is a good time to sand these pieces to at least a 120-grit grade. I assume the molding used to support the inner partition will be just simple quarter round molding that you purchase at a local hardware supply store. You will need about 8'.

2. If you want to do the oval cutout on the bottom of the sides, now is the time for that. The max height should be the same as the height of the bottom off the floor, 1`" in my layout.

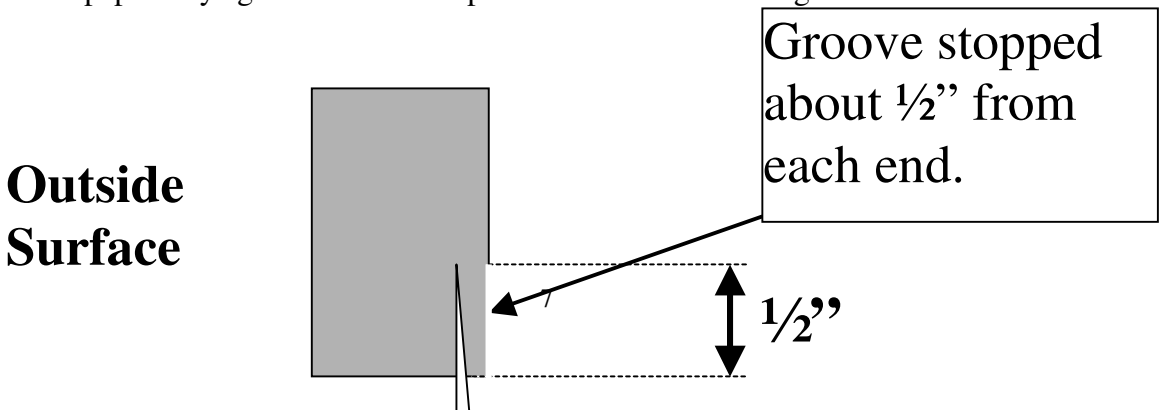
3. Cut the two braces and the top for the inner partition but leave them a little long so they can be trimmed to the exact size later. Sand these as well.

4. Cut the grooves in the rack bottom piece that will hold the bottoms of the slanted partitions. I cut 1/4" by 1/4" groove **in 1/4"** from the edge of the bottom. I also cut the same size groove, 1/4" by 1/4", in the top trim piece for the inner partition.

5. Cut the rabbet on the inside bottom side of the two braces. If you have the ability these rabbets should be "stopped" about 1/2" from both ends. Then the cut will not be seen when the braces are installed. Also **don't** make the cut too high as this is the area where the screws attach the braces to the rack's sides. You might want to try making a groove on a scrap piece of wood, test sink a screw hole and verify that that ther are no issues.

   If you are using a router and have a chamfer bit or dovetail bit you could use it. A groove that is deeper at the top of the cut, see below, will help establish the "slant" set by the
   - the offset of the groove in the rack bottom,
   - the fact that the rack bottom is one inch narrower then the width of the sides,
   - the braces are placed on the outside of the sides.

   Together these give a 1" offset at the top over a 10" vertical drop. This is enough to have newspapers lay against the slanted partition instead of folding into the bottom.



6. Build up the 1/4" plywood so that you get three panels a little larger then the dimensions quoted. I've found it fairly difficult to keep two plywood sheets **exactly squared** as you glue them up. It is easier to make them "square" with a little trimming after. You will need 6 pieces about 11" by 21" each, a little under 1/2 of a sheet of plywood.

Part B – Assembly:

7. Drill holes with countersinks in the top and sides. The general positions are shown in the accompanying figure Magazine Rack with Top - approximate position of screws. As a general guide the holes should be at least 1.5" in from the edge of the Side pieces. For the Top I had the screws in 2 3/4" from the long edge. Remember the top is wider then the sides. You need to determine the exact position based on the thickness of your wood and the exact size you are building

8. With the holes drilled, I assembled the shelf, sides and bottom. Don't tighten the screws all the way at first. Rather assembly with the screws a little loose. Check this frame to make sure it is square. If not try to shift the assembly as needed. When it is square, tighten up the 4 screws in each side.

9. Next I added the top to this frame.

10. Place some small molding a little off center, about 1/4", on the bottom and the inside of the sides to support the inner partition. I used a little glue and a few brads per strip.

11. While the glue is setting up, get exact measurements for the inner partition and trim up the oak plywood inner partition piece to that size.

12. Measure the length needed for the partition top and cut the trim piece to this length. Dry insert the inner partition against the molding and test to see that the top trim will fit over the plywood partition and not be held up by the side molding. If the molding is too high trim off a little. Also adjust the molding not yet attached to this height. If it's a little short, say 1/8" or so, that's fine because it will not be seen once the top molding is on and the slanted sides are installed.

13. When you are satisfied with the fit, insert the inner partition and install the molding on the second side to hold it in place.

14. Test the top trim piece again to make sure it fits down and isn't held up by the molding. Then install with a little glue. Don't use too much. I just put a little on the top of the plywood partition and placed the trim top on it.

15. Check the length needed for the brace pieces and trim them to be the exact length. I installed them with one screw on each end. Again you need to set the exact screw position based on your wood.

16. Install the braces at the height indicated in the diagram. These braces really stabilize the rack.

17. Now measure the dimensions needed for the slanted sides. Check that both sides are the same. If the rack is a little off square the two panels might be slightly different. An easy way to get the correct size is to do your measurements and then cut out a piece of fairly heavy cardboard to that size. Test the cardboard and modify your dimensions as needed. Then cut the plywood panels to the size of your modified cardboard templates. **Test their fit.** I would also suggest marking them as they might not be identical.

18. When happy with their fit, assemble using a little glue at the back side of the lower groove and a little glue along the top edge of the plywood panel. This glue layout is to minimize the chances that you will get glue runs onto the outer plywood surface. If you do, try to wipe it off before it sets on the plywood. You might also want to use some duck tape to hold the panels in place as the glue sets up. Another way to do this is to lay the rack on its side with the partition being glued "down" and add a little weight to hold the panel until the glue sets up. With this approach it is more difficult to spot glue runs and you can only do one side at a time.

19. Now insert whatever plugs you will use to hide the screw heads. Sand them down. The side and brace plugs could be flat or rounded per your desire. The four plugs on the top will need to be sanded so that the top is a flat surface.

20. Do a final fine sanding on all the exterior solid wood and a light fine sanding on the outside surfaces of the slanted plywood panels. I usually slightly round all the exterior edges on an oak piece so if someone bumps into an edge they will not get hurt.

21. You're ready to stain and finish to your taste.

Hope this is a help to someone that might want a table / magazine rack.
George McGinn

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