

# Oak TV Trays



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**Note:** The length of 23 11/16 inches was used to allow room to square the ends of the long board and for the width of the saw.

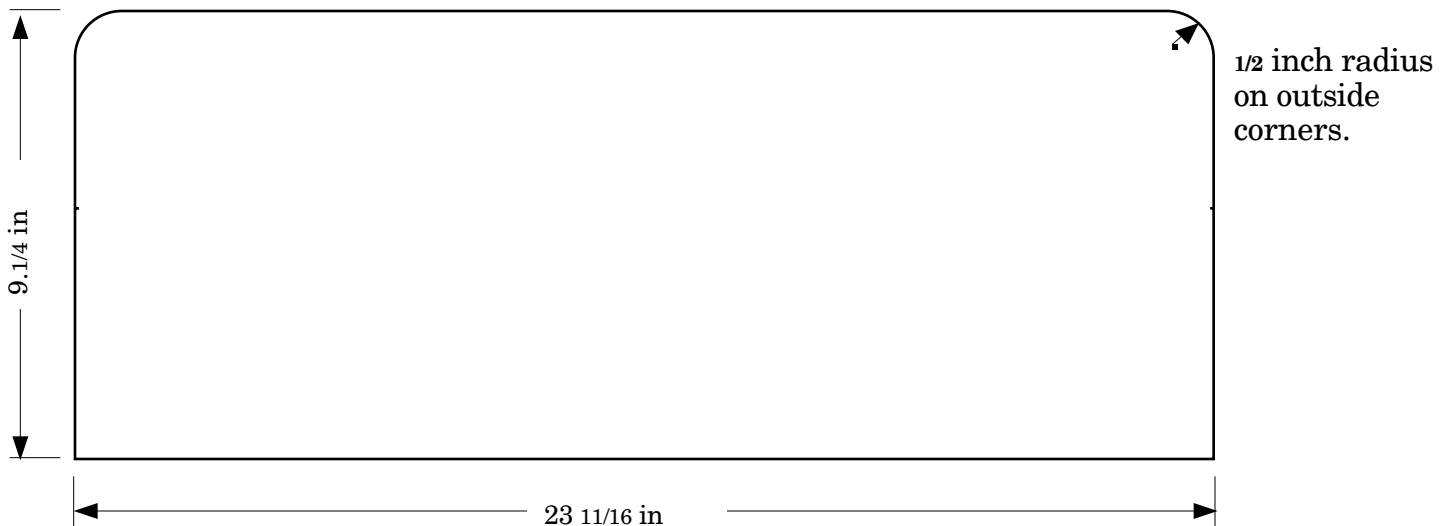
## Material List for One Oak TV Tray

| <b>Part</b>       | <b>Material</b>                          |                                  |
|-------------------|------------------------------------------|----------------------------------|
| Top               | 1" x 10"                                 | 4 feet long (two 2 footers)      |
| Handle            | 5/8"                                     | 2 feet long                      |
| Top supports      | 1" x 1 1/2"                              | 5 feet long (four 28" pieces)    |
| Legs              | 1" x 1 1/2"                              | 8 feet long (four 2 foot pieces) |
| Legs braces       | 1/2" x 2 1/2"                            | 4 feet long (two 20" pieces)     |
| Brass wood screws | 1 1/4" long                              | 20 screws                        |
| Top Center Dowel  | 1/4" dowel peg to align top when in use. |                                  |

### Top Details

The top is made from 1" x 10" oak boards. Only the outside corners are rounded.

**All drawings are to 1/4 inch scale.**



### Corner details

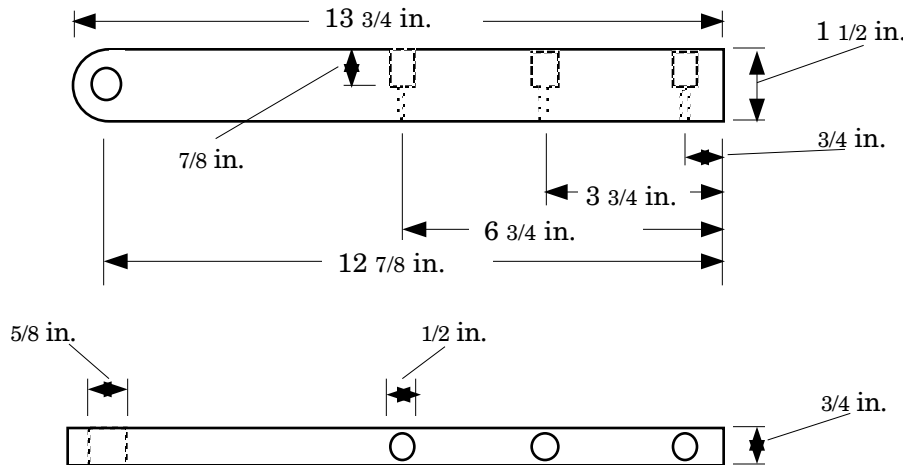
I used a 1" socket from my toolbox to draw the radius in pencil. I then used a power miter saw set at a 45 degree an to remove most of the corner. I then used a belt sander to finish the corner. I am using an oscillating vertical belt sander.

|   | A                        | B           | C   | D          |
|---|--------------------------|-------------|-----|------------|
| 1 |                          | Actual Size |     | Scale Size |
| 2 | Width                    | 9.25        | in. | 2.3125     |
| 3 | Length                   | 23.6875     | in. | 5.921875   |
| 4 |                          |             |     |            |
| 5 |                          |             |     |            |
| 6 | Convert 11/16 to Decimal | 11/16       | =   | 0.6875     |

# Oak TV Trays

## Top Support details

The top supports are screwed to the under side of the top to carry the weight and keep both halves level with each other. These will be fastened to the underside of the tops using glue and 1 1/4 #6 wood screws.



Notes: The large hole was drilled using a drill press and a 5/8 inch forstner bit. To prevent damage when drilling all the way through, I drilled halfway from each side.

I used a 1 1/8" socket from my toolbox to draw the radius in pencil. I then used a power miter saw set at a 45 degree an to remove most of the corner. I then used a belt sander to finish the corner. I am using an oscillating vertical belt sander.

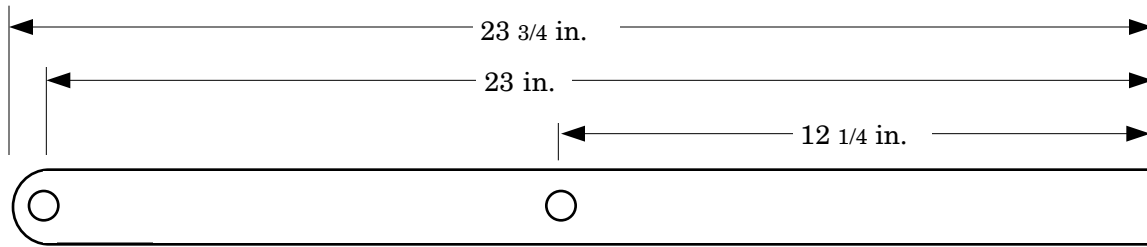
I used a 1/2 forstner bit on a drill press to drill the top portion of the screw holes to a depth of 7/8 of an inch. This is needed to allow an electric screw driver to install in the screws. The rest of the hole, I used a countersink bit to finish the hole through to the opposite side and provide a small countersink for the wood screws to seat.

I used #6 wood screws that are 1 1/4 inches long.

|   | A                                    | B           | C | D          |
|---|--------------------------------------|-------------|---|------------|
| 1 |                                      | Actual Size |   | Scale Size |
| 2 | Width                                | 1.5 in.     |   | 0.375      |
| 3 | Length                               | 13.625 in.  |   | 3.40625    |
| 4 | Diameter of Dowel Hole               | 0.625 in.   |   | 0.15625    |
| 5 | Diameter of counter sunk screw holes | 0.5 in.     |   | 0.125      |
| 6 | Depth of counter sunk screw holes    | 0.75 in.    |   | 0.1875     |
| 7 |                                      |             |   |            |
| 8 | Convert 5/8 to Decimal               | 5/8 =       |   | 0.625      |

# Oak TV Trays

## Leg details



Notes: The holes were drilled using a drill press and a 5/8 inch forstner bit. To prevent damage when drilling all the way through, I drilled halfway from each side.

I used a 1 1/8" socket from my toolbox to draw the radius in pencil. I then used a power miter saw set at a 45 degree an to remove most of the corner. I then used a belt sander to finish the corner. I am using an oscillating vertical belt sander.

|   | A                                 | B           | C | D          |
|---|-----------------------------------|-------------|---|------------|
| 1 |                                   | Actual Size |   | Scale Size |
| 2 | Width                             | 1.5 in.     |   | 0.375      |
| 3 | Length                            | 23.75 in.   |   | 5.9375     |
| 4 | Diameter of Dowel Holes           | 0.625 in.   |   | 0.15625    |
| 5 | Depth of counter sunk screw holes | 0.75 in.    |   | 0.1875     |
| 6 |                                   |             |   |            |
| 7 | Convert 5/8 to Decimal            | 5/8 =       |   | 0.625      |
| 8 |                                   |             |   |            |

# Oak TV Trays

## Dowel and washer details

Each TV table has 4 short 5/8 inch diameter dowels to hinge the legs.

Each TV table has 1 long 5/8 inch diameter dowel to hinge the legs and act as a handle.

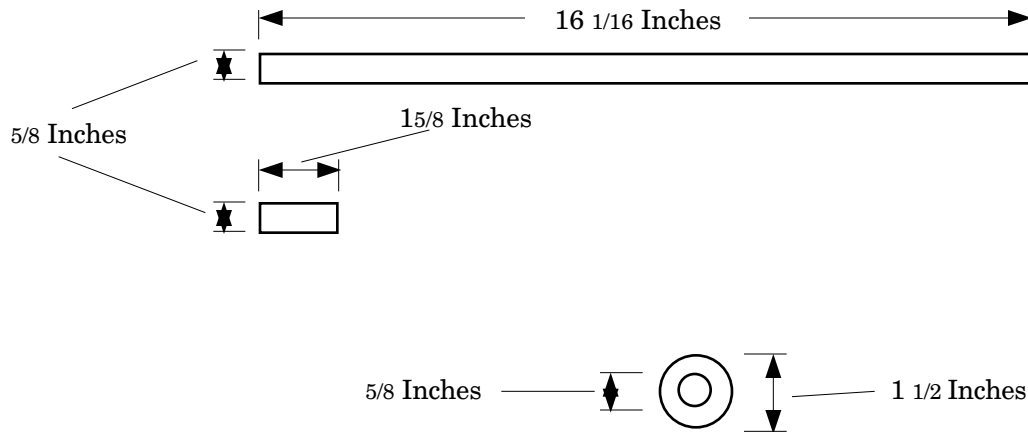
Each TV table has 1 dowel pin to align the tops when in use -- 1/4 inch

Each TV table has three wooden washers to allow some tolerance for the legs when the table is opened and closed.

Some dowels have a painted color on the ends to help identify the sizes in the store. It is best if these ends are cut off before cutting the finished lengths.

## Washer details

The washer was cut from 1/8 thick plywood. I used pieces left over from my kitchen cabinets. You should be able to located this at a Home Depot in the cabinet section. I cut the plywood into 2 inch strips and drilled the center hole using a drill press. I drilled three strips of plywood at one time to speed up the process. I used a clamp to hold the three pieces in the drill press so that I could drill the centers using a 5/8 inch forstner bit, change the bit to 1 1/2 inch key hole saw bit to finish the washer.

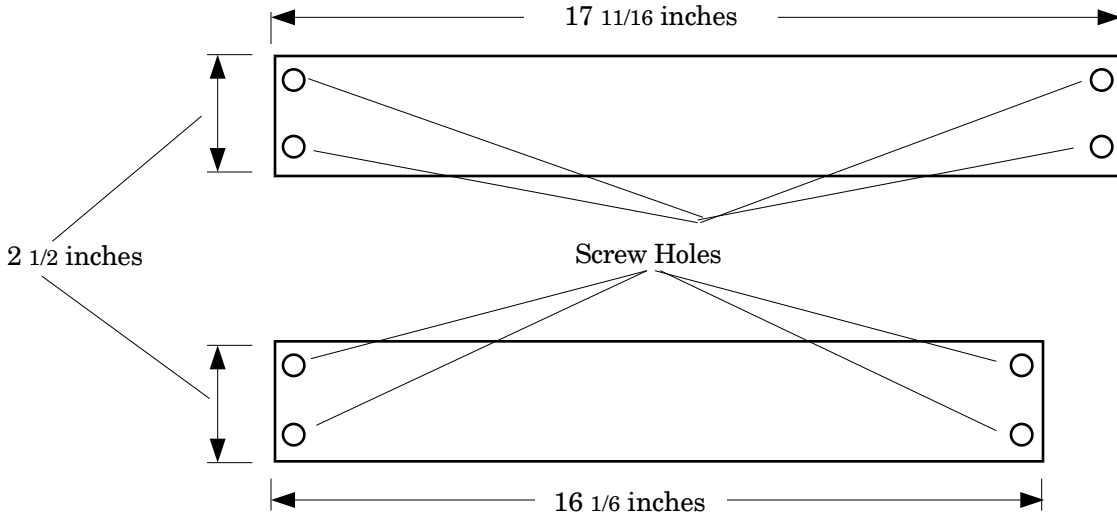


|   | A                        | B           | C   | D          |
|---|--------------------------|-------------|-----|------------|
| 1 |                          | Actual Size |     | Scale Size |
| 2 | Diameter of 5/8" dowel   | 5/8         | in. | 0.15625    |
| 3 | Length of longest dowel  | 16 1/16     | in. | 4.015625   |
| 4 | Length of shortest dowel | 1 5/8       | in. | 0.40625    |
| 5 | Diameter of washer       | 1 1/2       | in. | 0.375      |
| 6 | Convert 5/8 to Decimal   | 5/8         | =   | 0.625      |
| 7 | Convert 1/16 to Decimal  | 1/16        | =   | 0.0625     |
| 8 |                          |             |     |            |

# Oak TV Trays

## Leg brace details

Each TV table has one long and one short brace. I used a drill press and a counter sink bit to drill the screw holes.



|   | A                        | B           | C   | D          |
|---|--------------------------|-------------|-----|------------|
| 1 |                          | Actual Size |     | Scale Size |
| 2 | Width of brace           | 2 1/2       | in. | 0.625      |
| 3 | Length of longest brace  | 17 11/16    | in. | 4.421875   |
| 4 | Length of shortest brace | 16.0625     | in. | 4.015625   |
| 5 | Diameter of washer       | 1 1/2       | in. | 0.375      |
| 6 | Convert 5/8 to Decimal   | 5/8         | =   | 0.625      |
| 7 | Convert 11/16 to Decimal | 11/16       | =   | 0.6875     |
| 8 | Convert 1/16 to Decimal  | 1/16        | =   | 0.0625     |

# Oak TV Trays

## **Dowel Pin detail**

To give the table a bit more stability, I used a 1/4" dowel pin. It is glued to one side and half of it sticking out to insert into a matching hole when opened. A 1/4" forstner drill bit was used to drill the dowel holes in each half of the table top. I set the depth of my drill bit to 1 5/16" for use in my drill jig. I used the drill jig to drill one hole and a dowel centering tool to mark the matching hole. The hole that does not contain the dowel was drilled a little deeper.



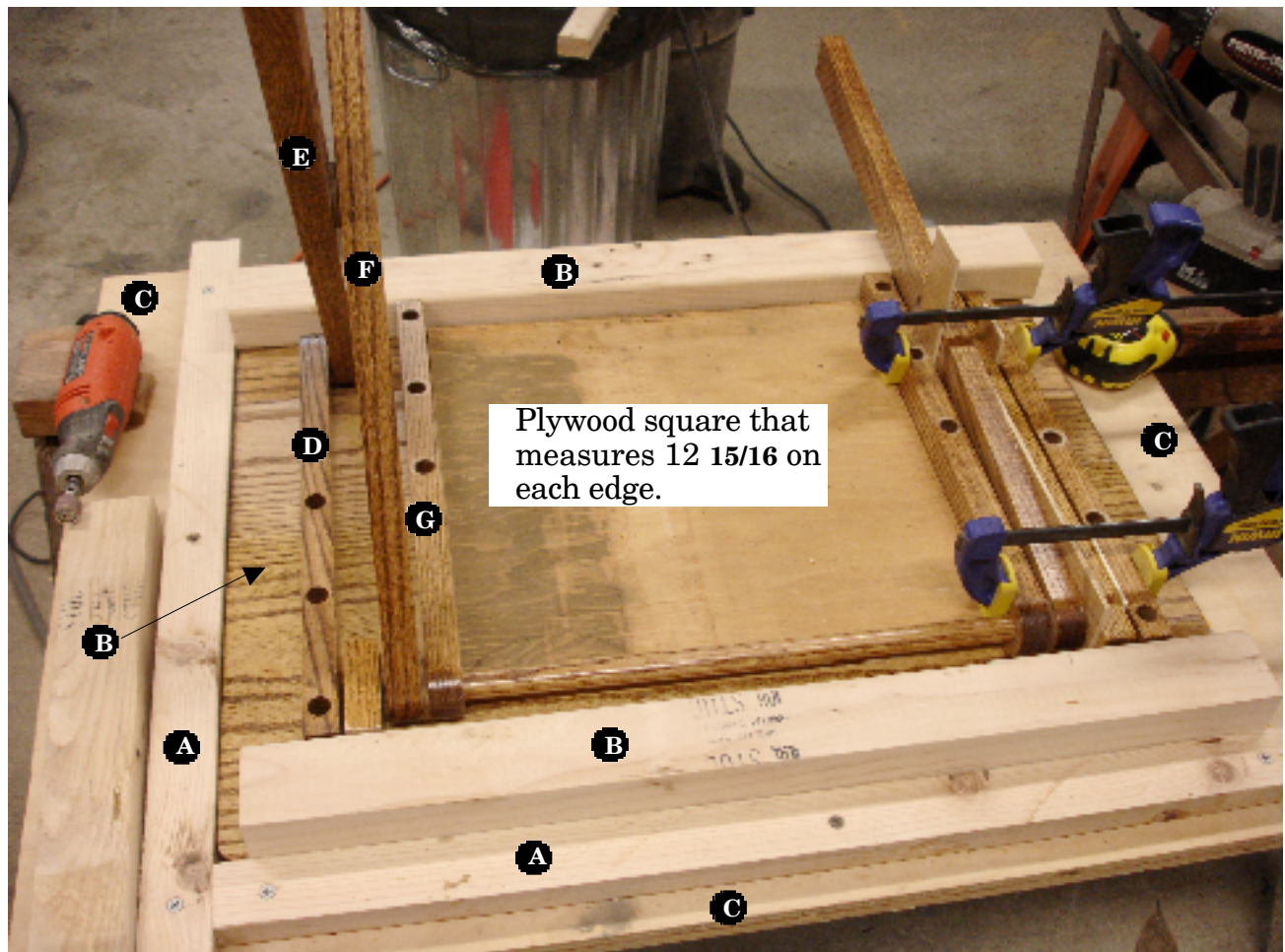
# Oak TV Trays

## Assemble details

The assembly of the table parts is critical to ensure that the legs and supports close and DO NOT rub against each other. A piece of plywood **C** was used to act as a jig to help assemble the tables. A square corner was created using 1" high and 1 1/2" wide boards **A** and attached to the plywood jig using screws. The board at the top of the photo was not screwed to make it easy to place the tops in the jig. 1 1/2" high by 2" wide boards **B** were used to gauge how far in from the edge of the table tops to place the first support.

Set up a drill to have a 7/64 inch bit with 2" from the chuck exposed -- not counting the steel fingers that actually hold the bit. Use this to drill the guide holes for the 1 1/4 inch screws.

1. Glue the bottom of a table support **D** where the screw holes are and place it against the 2" guides as shown. Drill the guide holes into the top and attach using three 1 1/4 inch wood screws.
2. Attach one leg **E** to the attached support brace using the short dowel and wooden washer
3. Add a 1/8" plywood spacer and then a 1/12 inch spacer (not shown) to hold the place of the second leg **F** for now. Add a piece of 1/8" plywood spacer and then the next table support **G** facing in the opposite direction and held 2" from the opposite (top) direction.
4. Add the long dowel, wooden washer, and the second leg **F**.
5. Use a short dowel and wooden washer to connect the legs together. Use a nail gun to place a brad the the outside member and the dowel.
6. Glue the screw area and then place the table support against the top 2" spacer. Drill the guide holes into the top and attach using three 1 1/4 inch wood screws.
7. Add the 12 15/16 square plywood spacer
8. Install the opposite members in a similar fashion working from left to right.





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## Leg Support Details

The leg supports provide the side-to-side stability needed for the TV trays and they force all the support members into their final position. I made an alignment jig for the leg supports to make the work a little easier. The leg supports are positioned 1 1/2 inches from the bottom of the legs. I started with the inside legs (shortest brace).

The screw holes were countersunk in the braces, glued, and clamped into place. A 1 1/4 inch screw was used to fasten the braces. I preferred a screw that was not bright -- brass or dark colored.



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## Final Notes

The finish used was Minwax products. The stain is Early American Minwax shown below. I used a Minwax Helmsman Spar Urethane for the protective finish shown below. These products can be found in almost any home improvement store. If you have a scratch, you can use the Early American stain to blend it back in with the rest of the tray.

