

# Construction Plans for a Wooden Display Easel

Updated October, 2002



**T**hank you for purchasing these easel plans. I think you will find this to be a fun, easy-to-build project that will serve you for years to come.

I realize this may be the first woodworking project for some of you. Some of you have created much more complicated pieces. I've tried to keep the materials and techniques simple so that this will be a quick and easy project. But if you want to embellish on these plans, please feel free.

I've included some notes for more experienced woodworkers. They are designated with a diamond  $\diamond$  and are inside a shadowed box.

## Supplies

Everything listed below should be available at your local hardware store. These prices are from our local Home Depot. Your prices will vary.

Remember that 1" x 2" boards are actually about ¾" x 1 ½" when you measure them. Keep this in mind when centering and screwing together the material.

Quantity	Item	Price ea.	Item Total
5	1" x 2" x 8 ft pine	\$0.98	\$4.90
1	¼" x 4 ½" hex bolt. Fully threaded	\$0.18	\$0.18
1	¼" wing nut and washer*	\$0.10	\$0.10
1	Pair of 1 ½" hinges	\$1.66	\$1.66
14	1 5/8" drywall or wood screws (buy a box)	\$2.77	\$2.77
	Total (before tax)		<b>\$9.61</b>

\* Check that the wing nut threads match your bolt. Buy coarse threaded wing nuts. Thin threads don't work. (Learned the hard way!) If you can't find the correct hex bolt, you can substitute a carriage bolt, but it will be a little harder to hide the head.



The supplies

## Tools

- Electric Drill with 1/8 inch countersink bit and a 5/16 inch bit.  
A 1/2 inch bit will also be handy.
- Phillips Screwdriver
- Hand Saw
- Sanding block and sand paper
- Tape measure
- Protractor (lots of angles here)
- Wood glue

### Optional Tools and supplies:

If you need an excuse to go buy some useful tools, here's your chance. These items will allow you to build your easel (and anything else you can dream up) quicker, better, and more efficiently. Besides the basic tools listed above, try to find these:

- Cordless Electric Screw Driver. (This really should be a necessity. I couldn't image life without one.)
- Combination square or T Square for small measurements and drawing 45 degree angles
- Electric Sander
- Safety glasses. (Required if you use any of the following power tools.)
- Table, belt, circular, or compound miter saw. (A compound miter would be the best bet for this project.)

◇ Router or router table with a quarter round bit



Advanced Tools

◇ On my newest easels, I've switched to using a Kreg Jig to join pieces of wood. What a wonderful tool! It creates a really strong, quick joint. Check them out at <http://www.kregtool.com> . Samples of its use are shown later.

Because thin pine likes to split, be sure to pre-drill all screw holes with a 1/8 inch countersink bit. No exceptions!

## Wood Cuts

Once you have all of your supplies, it's time to measure and cut the boards. Usually, you would measure each piece and cut as you go to compensate for loss from the saw blade. In this case, you can measure and cut all the first 90 degree cuts at once. You will be making a second set of angled cuts later and you'll have plenty of room. Mark each piece lightly in pencil with the appropriate letter as you go.

### 1<sup>st</sup> and 2<sup>nd</sup> piece of 1 x 2 pine –

1 – 26" foot length           **A**

Save the 70 inch length       **B**

### 3<sup>rd</sup> and 4<sup>th</sup> piece of 1 x 2 pine –

1 – 16 inch length           **X**

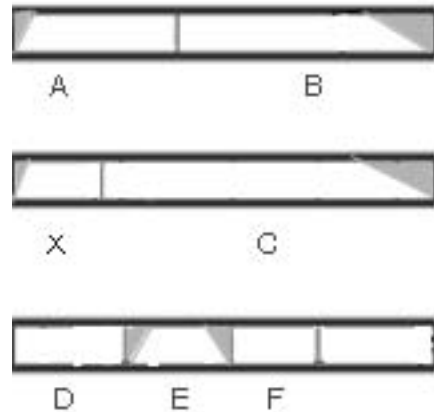
Save the 80 inch length       **C**

### 5<sup>th</sup> piece of 1 x 2 pine –

2 – 22 inch lengths           **D, E**

1 – 18 inch length           **F**

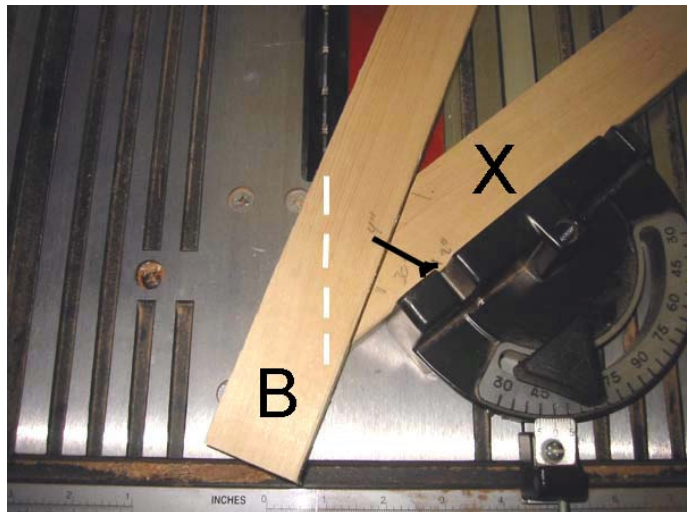
The rest of this wood is scrap.



## The Uprights Angled Cuts

You will need to cut 20 degree angles on the 2 **B**'s and 2 **C** pieces. Because most miters do not extend past 30 degrees, you will use piece **X** to make a jig.

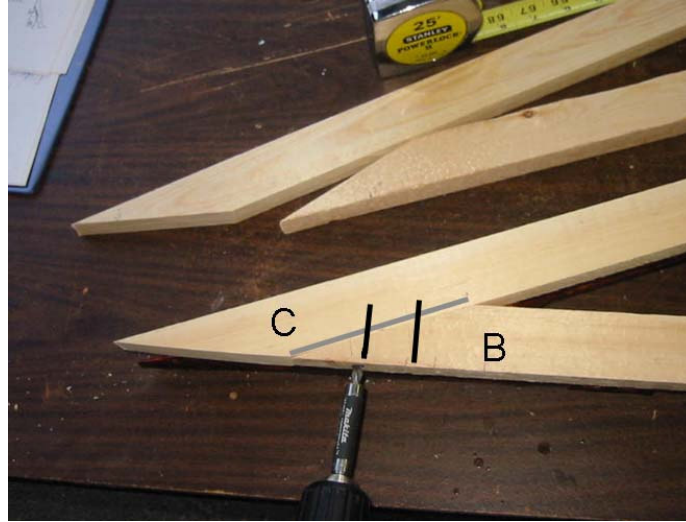
- Cut one piece **X** end at a 30° angle.
- Use a countersink bit to drill a hole 2" from the tip of piece **X** to temporarily attach it to piece **B**. Piece **B** should protrude about 4 inches.
- Set the miter to 50° and cut piece **B** as shown here.



You will be cutting off slack at the other end, so the location of this cut is not critical.

- Repeat this process 3 more times on both the **B** and **C** pieces.

- Using two 1 5/8" screws, temporarily attach pieces B and C as shown. Hold the screws over the wood to determine where they should go, then pre-drill holes with the 1/8" countersink bit.
- Hand tighten the screws to prevent splitting the pine.

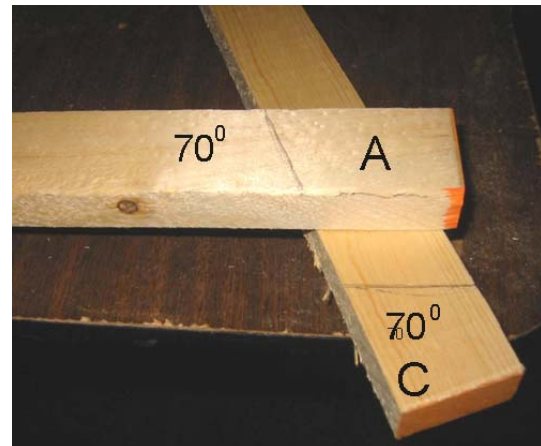


Top Connection

- Place the second set of uprights over the first set. Repeat the fastening process. If the angles of the two units don't match up, you can re-cut piece B now.

◇ Mark the area where the pieces join with a pencil if you plan to round both sides of the uprights. This section will need to stay squared.

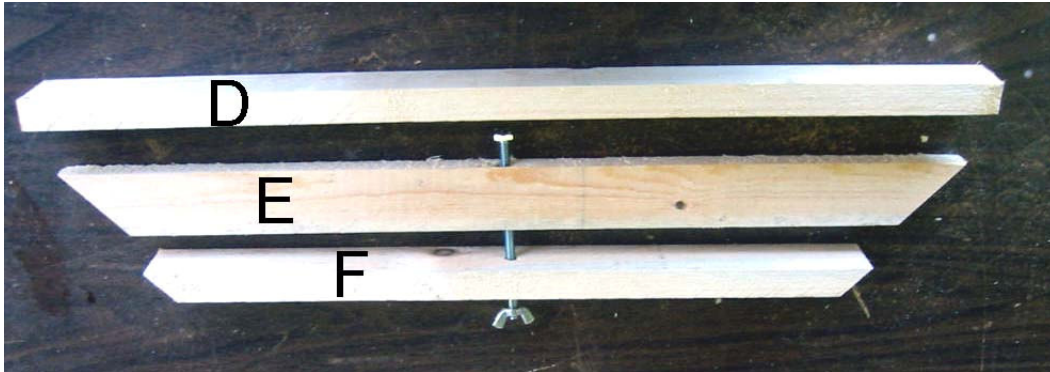
- Set both easel halves at the corner of a table to square things up before marking these next cuts. You can adjust the total height of the easel by cutting off the bottom ends of pieces B and C and shortening piece A.
- Piece A should sit about 1 inch above the ground once cut and assembled. The angled cuts on piece A and C should work out to 70 degree angles.
- Unscrew pieces B and C before making your cuts. Remember, all that really matters is that the two halves of the easel match when the unit is folded. So cut accordingly.



## Picture Holder Angled Cuts

- Cut the ends of piece E at 45 degree angles.
- WITH PIECE F STANDING ON EDGE, cut the ends of piece F at 45 degree angles.
- Drill a 5/16 inch hole through the center of pieces E and F as shown.

◇ A drill press would come in handy here, but it can be done without it.



- Expand the hole at the wide end of piece E with a 1/2" bit.
- Drill in about 1/4" to recess the head of the hex bolt. If you don't have a large bit, you can ream out the hole with a smaller bit until the hex bolt sits flush.

## Sanding, Routing, and Smoothing

◇ Before final assembly of the unit, you might want to round the front edges of piece C or round all 3 triangular pieces. Rounding off 3 sides of the picture holder D is also a nice touch. Use a router or table router with a quarter-round bit for this.

- Now sand all the pieces smooth to prevent splinters.

## The Final Stretch

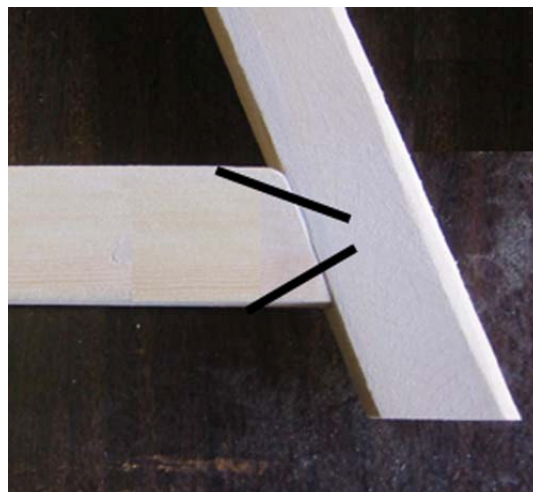
- Glue the front picture holder lip (piece D) to piece E. Load some extra glue on the hex bolt head to keep it from spinning. Clamp or weight this unit and set it aside.

## Finish the Uprights

There are several ways to connect piece **A**, to **B**, to **C**. The easiest method is to drill countersink holes or use a pocket hole cutter like the Kreg Tool.



Pocket Holes



Counter sunk screws

## Install the Hinges

- Set the hinges roughly 6 inches from the base and 12 inches from the top. Do the bottom hinge first. Make sure the unit closes properly once the hinges are secured.
- At this point, a fine sanding and the application of a protective coating of paint, stain, or Verathane would be a nice touch.

That's it. You're done!! To store the unit, clamp the picture holder around the uprights.



Storage Mode





The picture holder can be moved up or down depending on the size of work you are displaying.

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Please let us know how your project turned out. Also any suggestions to improve these plans or our web site would be appreciated.

Sincerely,

Bob Spier

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