

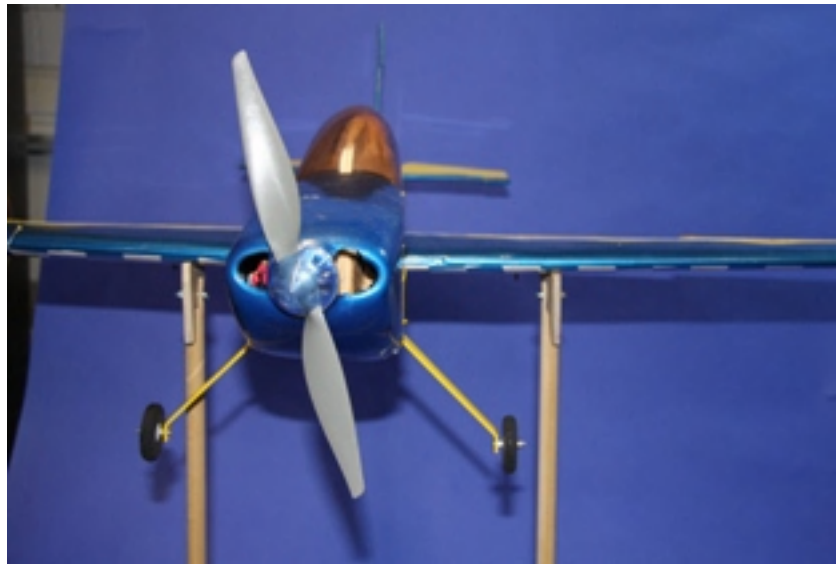
Center of Gravity (CG)

Balance Tool

Joe Redan

One item that every model plane builder must perform is to static balance his model. Over the years there have been any number of ways to perform this mandatory function. If your arms are long enough or the model is small enough we could use our fingers.

If you look at any number of hobby catalogs you can find CG tools costing less then a hundred dollars to over three hundred dollars. This article is to show you how to make a poor mans CG tool for fewer than ten dollars by using items found in Home Depot or Lowes or your local hobby shop.



The materials needed are a 4 foot length of $2\frac{3}{4} \times \frac{3}{4}$ pine, a $\frac{5}{8}$ diameter hard wood dowel, and a piece of $\frac{1}{4}$ plywood 8 inches x $2\frac{1}{2}$ inches. To act as a bearing I used a $\frac{3}{16}$ -diameter length of brass tubing and two 6-32 screws one-inch long and flat washers and nuts to fasten the pivot arms with.



The major difference between this CG fixture and a commercial fixture is there is no counterbalance base. To hold this fixture you will have to leave enough length that you can clamp the ends to your workbench or table.



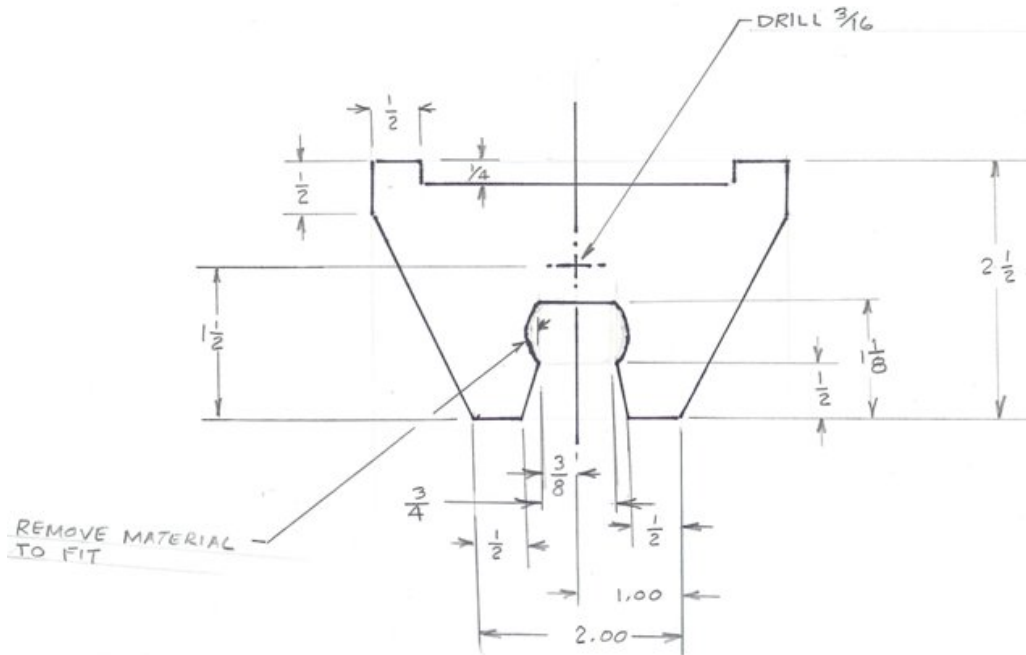
Cut the base to length to suit the size of the models you plan on balancing. I made my length 36 inches and spaced the dowels 12 inches apart. I added an extra block that I can vary the center distance between the dowels.

Once the base and the added blocks are glued and mounted find the block centers and drill a 3/8-diameter hole. I used a 3/8 Speed Bore however a 3/8 drill will work almost as well. The models will determine the height of the dowels you plane on building which in my case was 18 inches.

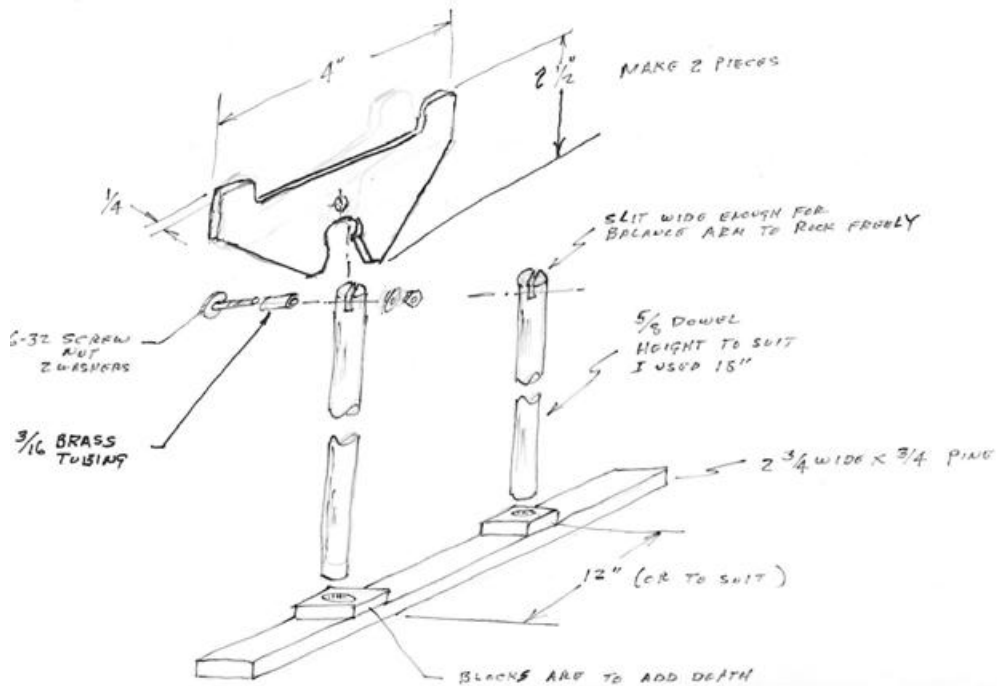
The next step and the only one that requires any real work is to make two pivot arms on which the models will rest.

In the top of the two dowels you have to cut a slot to fit the pivot arms. I used a hobby saw and then enlarged the slot with sandpaper. You only have to make the slot just wide enough for the pivot arms to move freely. Now match drill the dowels and pivot arms.

MAKE 2 PIECES FROM
 $\frac{1}{4}$ THICK PLY WOOD



Be careful not to make the “V” notch too wide as it is the stop to keep the pivot arms from going too far and making it difficult to hold your model in position.



When completed your CG balance fixture can be modified to suit any number of models of all sizes and weights and when you have finished balancing your latest creation the whole assembly can be disassembled for easy storage. If desired foam tape can be applied to the top of the pivot arms to protect the models finish.