

RV-10 FUSELAGE CRADLE PLANS

These plans are written and designed for the intent of building one fuselage cradle for the Van's RV-10 aircraft pictured below.



Materials List

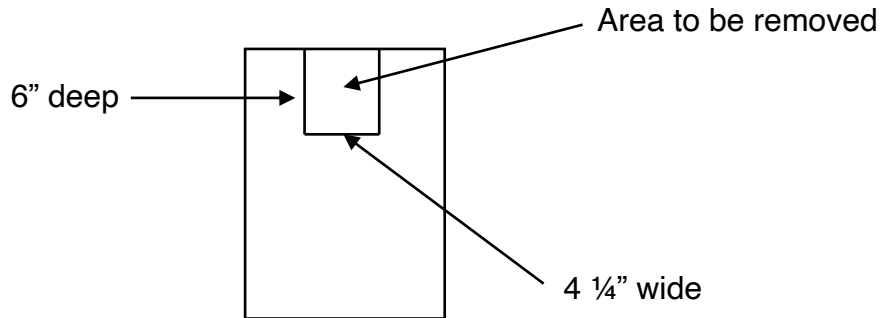
- #1 2" x 8" x 10'
 - #4 2" x 6" x 8'
 - #4 Casting, locking wheels (I used 3" wheels, but at your discretion)
 - #16 Bolts for attaching wheels (size based upon your wheels)
 - #16 Nuts for wheel bolts
 - #16 Washers for wheel bolts
- Spare carpet cut to fit (~ 12" x 40") – I found a small piece for free at my local hardware store

Cut List

2x8x10

Board 1:

- 1) Forward base – 54"
- 2) Forward right side – 24"

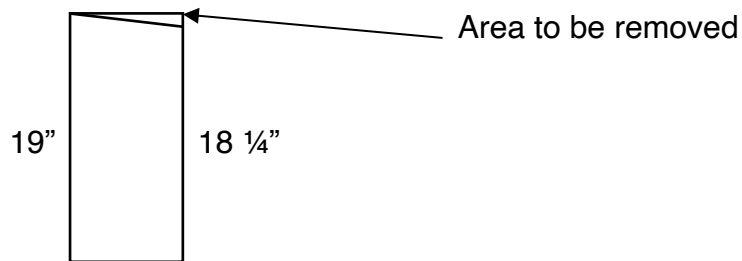


- 3) Forward left side – 24"
 - a. See diagram above for cutout dimensions

2x6x8

Board 1:

- 1) Center brace 1 – 72"
- 2) Aft right side – 19"
 - a. The top of this board needs to be tapered at an angle.



Board 2:

- 1) Center brace 2 – 72"
- 2) Aft left side – 19" (see same taper diagram from above for this board)

Board 3:

- 1) Aft base – 43"
- 2) Forward cross piece – 51"

Board 4:

- 1) Aft cross piece – 40"
- 2) Aft top piece – 43"

Assembly

Forward cradle



While the spacing is not critical to get “perfect”, the dimensions supplied address the key concerns you see above. The spars rest in the notches cut in the 2x10 pieces, but you can see that if you make them too close, the wing skin juts out a bit and the landing

gear tubes also get in the way. The supplied dimensions do a reasonably good job of avoiding these scenarios.

From here, just screw together the four pieces comprising the forward cradle using 3" construction screws. Again, use what you have in your shop, I had 3" screws on the counter so they got put in the cradle.

Aft Cradle



Similar to the forward cradle, there is nothing complicated here. Screw together the four pieces comprising the aft cradle. There is no need to try and shape or cut angles on the top piece that will be covered in carpet. It can just get screwed directly into the two tapered legs supporting it. The carpet will cover it up nicely.

Tack the carpet in place with a staple gun. Start from the center, move all the way down the carpet, and then move out towards the edges and finally wrap around to the bottom of the piece stapling as you go.

Finish

Start by attaching the cross beams down the center line of the cradle. I simply measured from the center line out to two equidistant points and attached the beams in this manner. Be sure to leave enough room on the sides for access to bolt in the wheels (pictured below).



Leave room to drill holes for securing the locking, castoring wheels to the forward and aft assemblies.

Final thoughts: again, nothing about this particular build needs to be extremely exacting, but still build with care. Modify as you need to fit available materials or shop space, but I have found that these dimensions give me good ground clearance without needing a ladder to climb in for future work as well as a reasonably compact design.