The Wombat

3D Fun Flyer
Build Guide

30’ Span

Designed by Me_Wantee

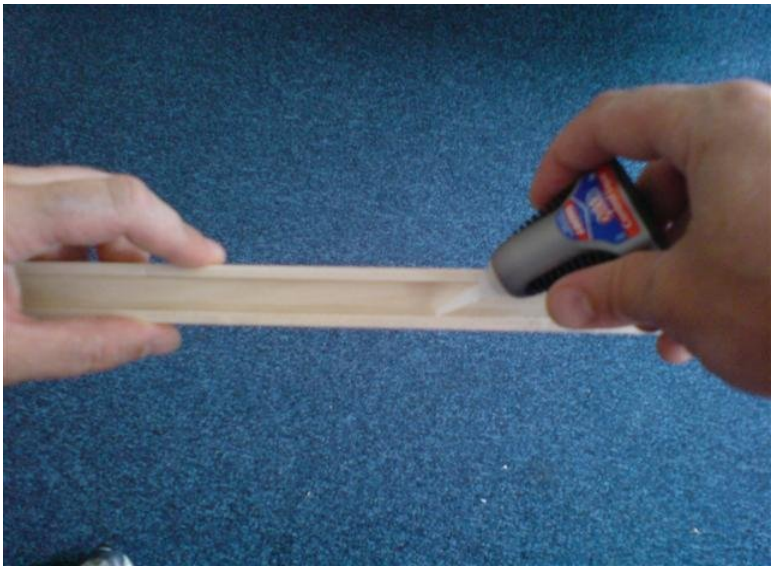
RC Groups Thread
http://www.rcgroups.com/forums/showthread.php?t=659911&pp=25

My Setup
Motor Axi 2212/34
Prop 10 x 4.7
Speedie 18A
Servos are eflight S75's
Battery Hyperion 1200mAH 3S 20C
but it also flies nicely on 1000mAH 3S 15C.

Thanks for downloading this build guide. Hopefully you will have your plane in the air in no time.

Let's get started.

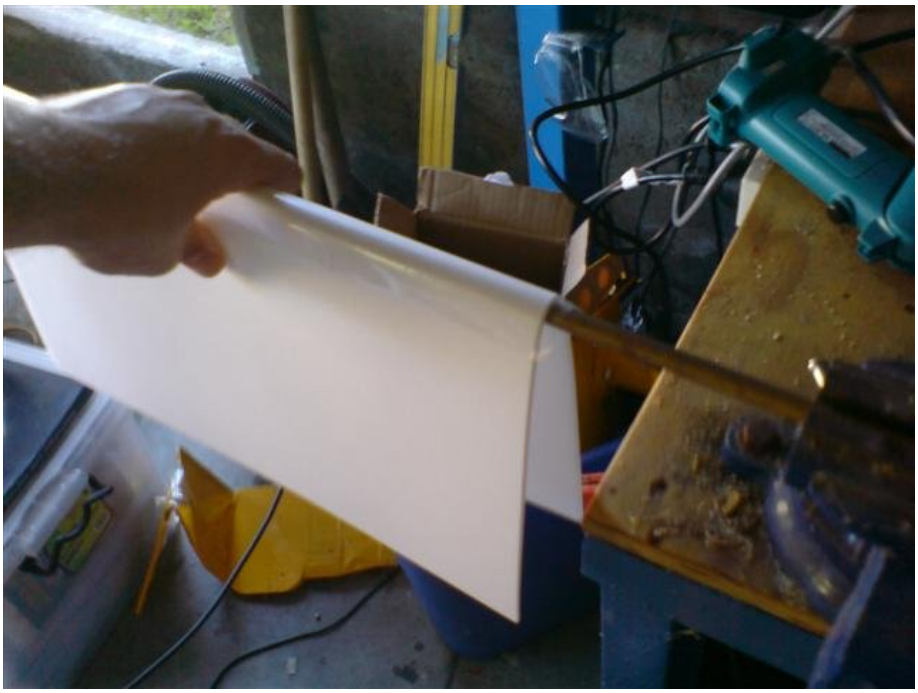
1. Cut 3 strips of Balsa 15mm wide and 29" long. These will be used to make the wing spar. Use CA to tack the strips into an I beam, then run a bead of CA down the length of the joins and allow to dry.



2. Cut out the nose doublers / motor mount from Balsa or Ply.
Cut a 40mm square from Balsa and sandwich it between 2 pieces of 1mm ply cross grained.
While you have the wood out, it might be an idea to cut 8 pieces of ply to mount the servos with. 4 of them will need to be raised with Balsa to allow the servos to fit into the wing.

3. Time to build the wing.
Lay the plan on some 3mm Depron, mark out then double the chord. Make sure you have your Depron the right way around. We are going to fold the wing in half, so the fold needs to be made *with* the grain. If you are unsure try bending the corner of the Depron both ways. One way will be much easier.
Tape the outside of the sheet on the middle along the fold line.

4. Heat a length of metal pipe about the thickness of a towel rail with a heat gun or hair dryer. Get it hot enough so that you can still touch it briefly. You don't want to melt the foam. Now slowly bend the 3mm over the tube until you have folded it in half.

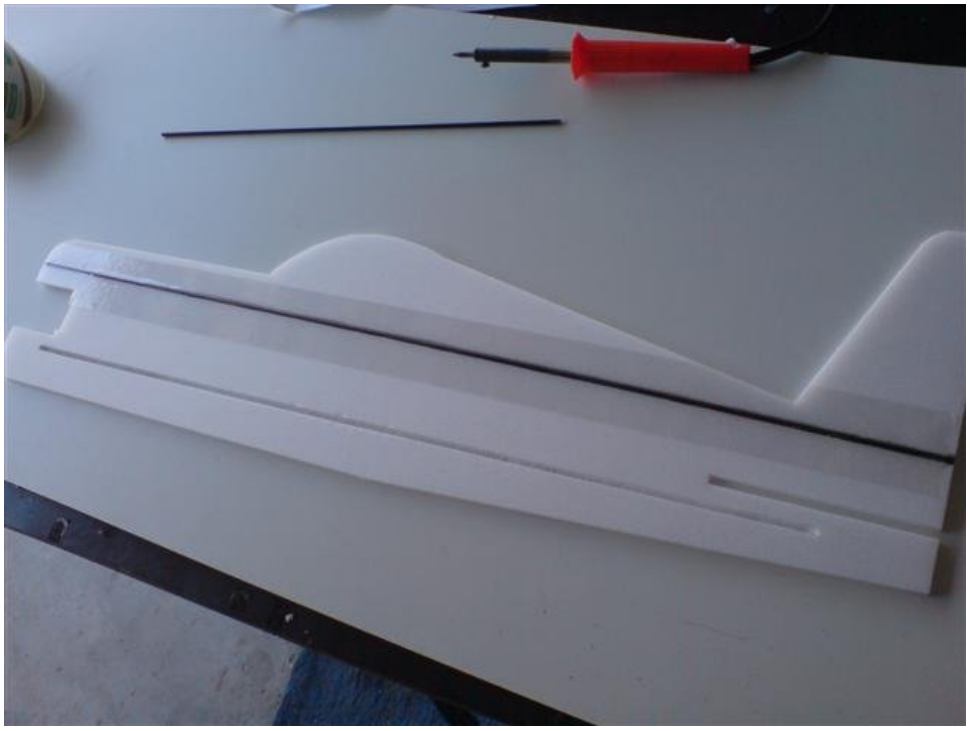


5. Glue the trailing edge with your glue of choice. I use UHU foam glue or hot melt. They both work well. Push the spar into the wing sideways, then twist it upright to pop the wing into shape. Repeat the process for the other wing.

6. Fuselage time.
Cut the fuse from the plans. You will need 1 from 6mm and 2 from 3mm to use as skins. Ignore the nose double in these pictures. I just had it there for test fitting.

Take the 6mm section and use a hot soldering iron to make channels for the carbon spars.

Now lay the spar into the channels and cover them with tape. (No glue required here because the whole piece will be sandwiched between the 3mm skins anyway).



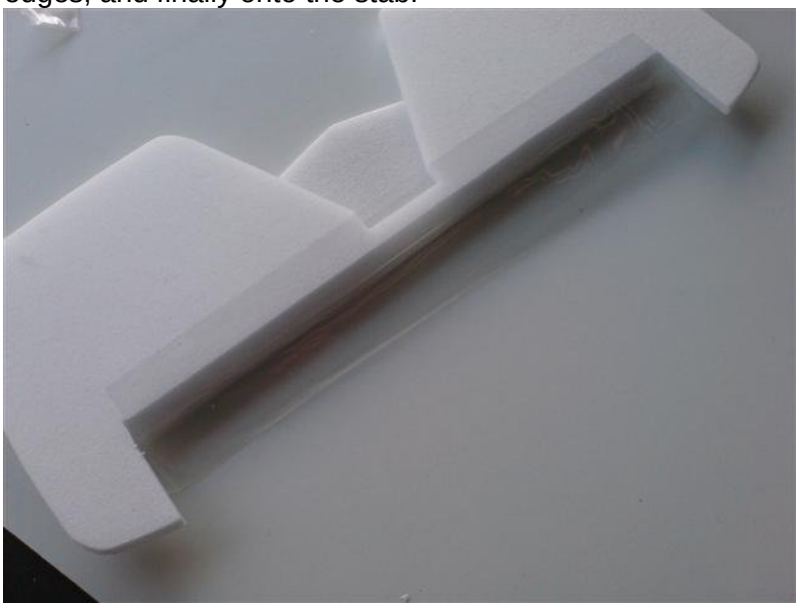
Now Glue the skins to the outside to produce a nice stiff 12mm thick Fuselage.

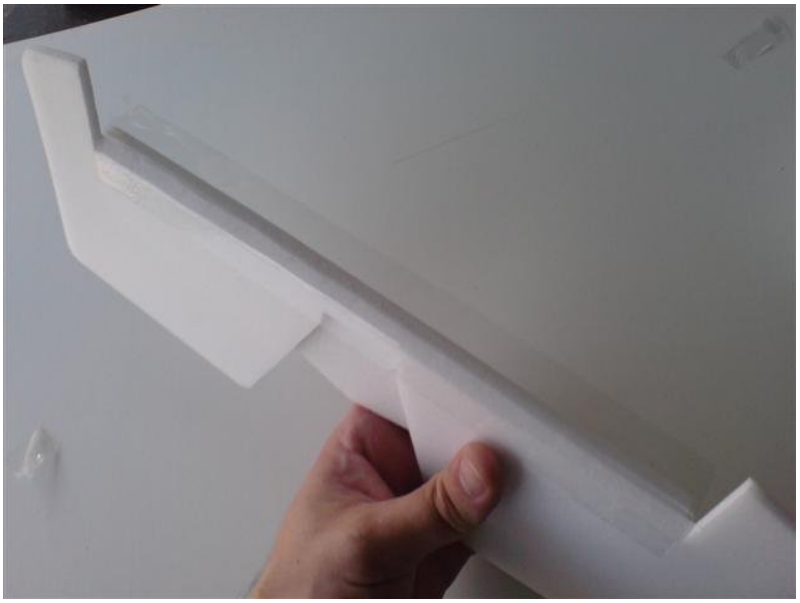
Trim the trailing edges of the wings square, fit the spar and mark the wing leading and trailing edge location from the plan onto the fuse.
Next use the wing to trace around and draw the outline onto the fuse. Cut out a hole to fit the wings into.

Fit the wings. Take your time with this part. It’s the hardest bit of the build.
Make sure the wings are level, and then glue them in place using 5 mins epoxy. You can use hot melt if you like, or both. Finish the join with a bead of glue where the wing and fuse meet.

7. Time to make the horizontal stab and elevator assembly.
I don't want to teach you how to suck eggs, but here's a mini-how-to on taping hinges.

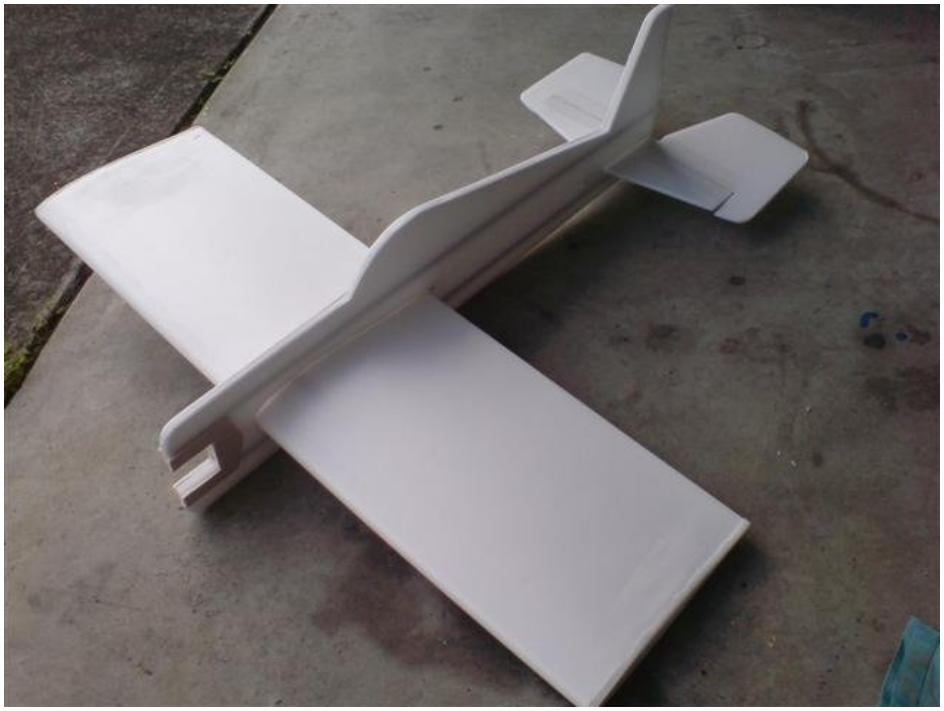
Put a length of tape along the top surfaces and stick it down, Fold the hinge back on itself then flip the whole thing over.
Get another length of tape and stick it on the underside of the elevator. Now press the tape onto the edges, and finally onto the stab.



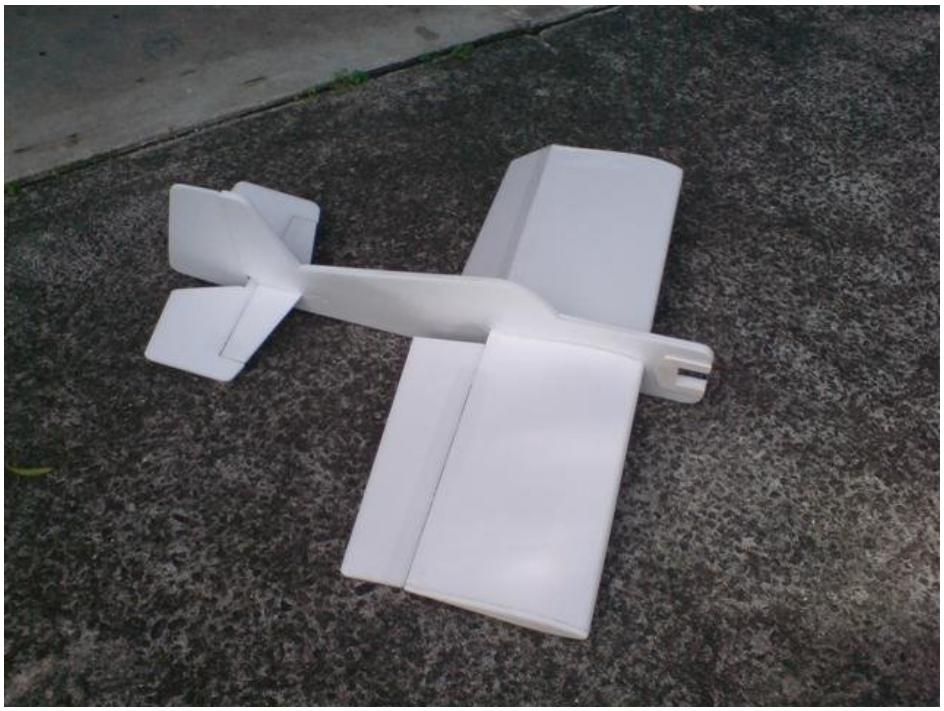


Here’s how it should end up.

Attach the rudder using CA hinges then add end caps to the wings.
6mm Depron is best for this. Cut out the end caps to fit inside the ends of the wings, not like these photos where I capped the outside of the wings. You will get a much better finish when you come to sand them.



Next tape on the ailerons using the same method as you did for the elevator. CA hinges could be used for all control surfaces if you preferred.



Congratulations. You have finished the airframe. It's your choice how you want to mount your gear. Make the throws on the surfaces nice and big for some wild 3D action, or keep them low for a great docile park flyer. Have fun with 'The Wombat' and thanks for your interest.