

Columbus Jets

By Fidget



Equipment:

FMS 50mm EDF x2 (Sold in 3S and 4S versions, I used the 3S, higher kV version)

40A FMS ESC x2

4+ channel receiver and radio

2200mAh 3S Lipo, High enough C rating to support the EDFs. I used a Graphene from Hobbyking

9g servo x2

Servo extensions x2. About 8" each to bring right servo and ESC wires into left wing to meet receiver

Y extension for battery to both ESCs.

1/2 " square dowel rod. Cut to 12.5" long

1/4 " plywood

Zip ties – 10" or more long

Notes on Plans and Building

I've skipped things like how to make a B fold or cut out channels for the folds.

The wings are based on the FT Edge. I haven't repeated instructions about folding and gluing the various folds.

The principles of making the foam into cylinders are well covered in the new FT Corsair build video. I found that making the cylinders requires packing tape to hold them together. Working them more over the edge of the table might also help.

Build Instructions

Cut out pieces. Remove foam from one side of each tubular piece and roll along edge of table.

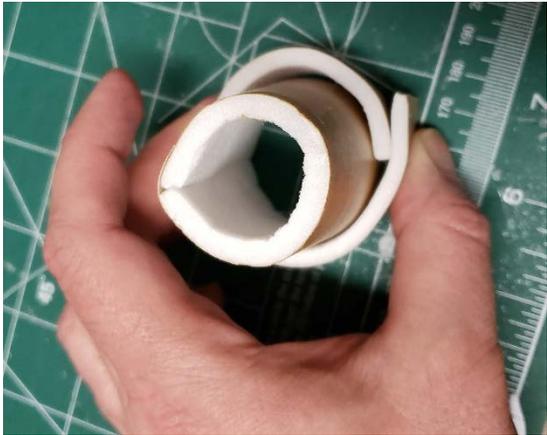


Fold & glue the fuselage center with B folds. Enlarge the rectangular hole in the top of the front enough that your battery will sit in it and rest on the bottom. I enlarged the hole toward the front.

Form each of the fuselage pieces into a cylinder or cone. I taped them overnight with scotch tape, then taped them permanently with duct tape. They have paper tabs to help glue them together, but that didn't seem to be enough.

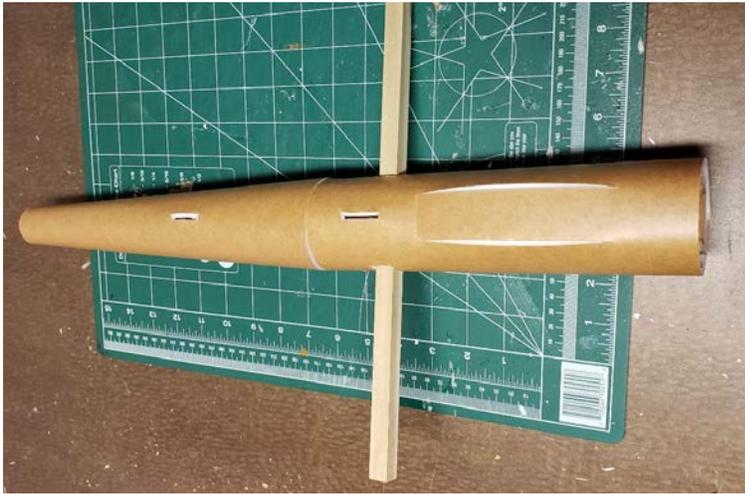


Glue each section of the "bat" to the next. I reinforced each with tape. The "bottom" slides over the small cone. Trim it to fit snugly, then glue it on.



Slide the square inner fuselage into the tubular bat. I did not glue them together, but you could.

Slide the 1/2 " square dowel through the fuselage.



I cut the long sides of the battery hatch and the score in the front but left the rear uncut until I had the bat structure built.

Cut out the wings, and cut the leading edge double bevel. Glue the spars together and glue them to the bottom of the wing.



Make sure the holes in the plywood pieces are large enough for your zip ties.

The forward part of the spar will need to be trimmed to fit the 1/4" plywood pieces that hold the EDFs on. Leave 3/8" (2 foam thicknesses) of the plywood piece beyond the wingtip. That will slide into the EDF pod and rest against the EDF itself.



Place the EDF into the inner EDF tube. You want the EDF “body” to sit where the rectangular hole is for the plywood spar extension to rest on it. The square hole goes toward the rear for the leads to pass through. Wrap the inner and outer EDF tubes together around the EDF, and use packing tape to hold them.



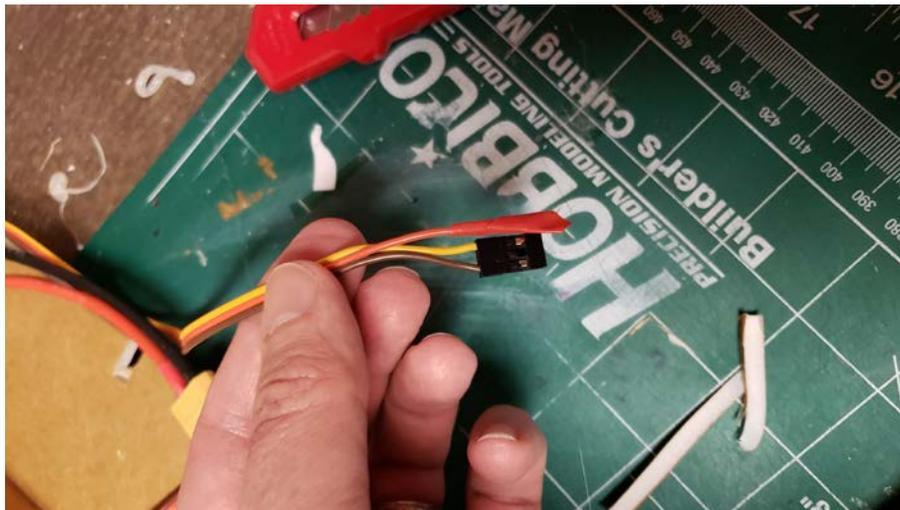
Insert the spacers that hold the wood dowel in the spar. The narrow side goes toward the front of the wing. Trim as needed so that the wood dowel fits snugly into the slot.



Cut a notch in the spar so that the servo leads can pass into the space behind the spar. Then pass the servo leads through the servo hole in the wing and into that slot.



To get the battery extension from the hatch out into each wing, I ended up pulling the “square” portion of the fuselage out of the cylindrical portion and passing them through, the passing them through the cylinder as I slid them back together.



Remove the red wire from one ESC servo connector, so that only one powers the receiver. I pull mine out rather than cutting them and cover it with electrical tape. That makes it easier to repurpose the ESC for another project.



I extended the ESC and servo leads from the right wing through the fuselage to the left. That allowed me to put the receiver in the left wing, behind the spar. I had to cut a hole for it in the lower portion of the wing. That actually let me pull it out and trouble shoot my ESCs after my maiden crash, so I would do it again.

Once you have the wires passed, put glue in the slots for the wooden dowel spar, and glue the wings to it.

Once I was happy with the power setup, I passed zip ties through the plywood spar extensions, slid the plywood into their slots on the EDF tubes, and tied the zip ties. I tried tying them directly around the EDF plastic housing, but that deformed the EDF and bound the blades.

I then glued the plywood extensions and EDFs on to the wing.

I then finished folding the wing over and gluing it. Be sure to put glue on the plywood spar extensions and the wooden dowel. I glued the trailing edges separately.



Where the top wing meets the “bat” will require some trimming. I then glued that piece and the fixed portion of the wing near the EDF pod level with the midline of the fuselage.



The boy is made with the technique of Rasterize and others, gluing one side to the foam board. Then cutting that out. Then cutting out the paper for the other side and gluing it to the foam board. I ran a bead of glue around the edge to prevent delamination. Then he is placed into the slots in the top of the fuselage (which may need to be modified to make him fit). I ran a bead of glue down either side of where the boy meets the fuselage and where the wings meet the fuselage.

Check the CG. It should be at the front edge of the spar. The front and back of the tube are open, so you could add a little weight at either end if needed. Then glue the two circles to the front of the fuselage and taper with a knife.

I taped my battery hatch down with packing tape. The battery is a snug fit.

Enjoy!