Plans for depron F16 pusher prop

First I want to thank ezonemag.com for their great website, this goldmine of knowledge.

These plans are based on my previous F16. The plans are drawn by hand on A4 paper and then scanned to a PDF file. There is a construction drawing that shows all the pieces in place and a parts template drawing. All the drawings are tiled so it takes some time to put everything together.There is a number/letter on each tile. Start in the LH top corner with 1A. Go 1B, 1C, 1D etc for horizontal tiles. Go 2A, 3A, 4A etc. for vertical tiles All parts are numbered using the stepnr. they are used in. For example pieces 1A and 1B and 1C are the three pieces you need in step 1.
The new F16 is a little bit different from the old one for the following reasons:

-The size is about 10 % smaller. The AUW of the old one was 530 grammes which was just a little bit to much for my power system. It flew fine but I didn't have a big reserve.
-This one only has tailerons instead of ailerons and a full flying elevator for much easier building

The aircraft is made from 6 and 3 mm depron. All bonds are made with styrofoam safe CA and accelerator. When I had to carve and sand after laminating several pieces of depron (nosecone) I did not use accelerator because it makes the CA too hard to sand. Spars and firewall are glued with 5 min epoxy.
In some areas it takes some sanding and carving, but other than that it is a conventional contsruction. The canopy is made with the thermoplastic bottleshrinking method. The wings have a 5mm diameter CF spar and balsa leading edges. The nosetip is full balsa and the belly is covered with a glass/resin strip to protect it during landing (this under –belly big intake damages easily).

My power system consists of the following:

PJ550 Brushless motor (60 grammes)
Kokam 1200 3S1P battery (75 grammes)
Jeti 8 amp BEC controller (9 grammes)
Multplex 4 channel mini receiver (10 grammes)
Two mini servo's (8 grammes each)

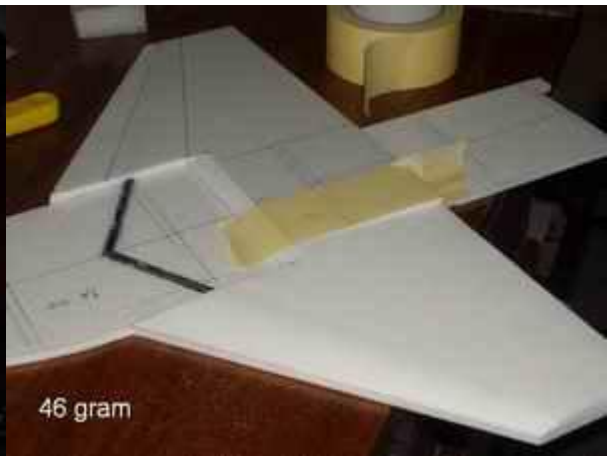
I measured 450 grammes static thrust with 8 amps, and 6700 RPM and a 9X4,7 prop. Handlaunches were not a problem but I didn't get very high speeds with this propellor. I guess I need a different set-up for that.

Points to consider before building:
-My motor mounts very easily with a flange and four screws on a vertical (bulkhead) surface. If your motor mounts differently you already have to consider how to adapt before you start building.
-The equipment bay below the canopy cover measures 180X40X40 mm. make sure that your battery will fit in the nose. You need all the weight you can get in the nose to get the C of G right.

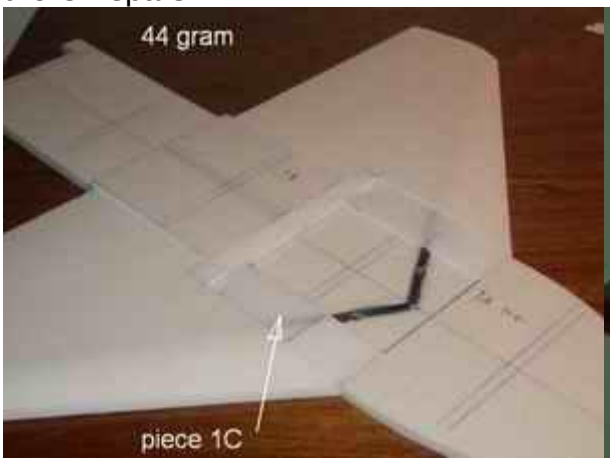

Tools
-Sharp hobby knife, and my two trusty sanding blocks. One side of the block has coarse sandpaper glued to it and the other side fine. So when you're sanding it is just a matter of turning the block when you go from coarse sanding to finetuning.
Same with the broomhandle sander for round shapes.
-A tableknife to score panel lines in the depron.

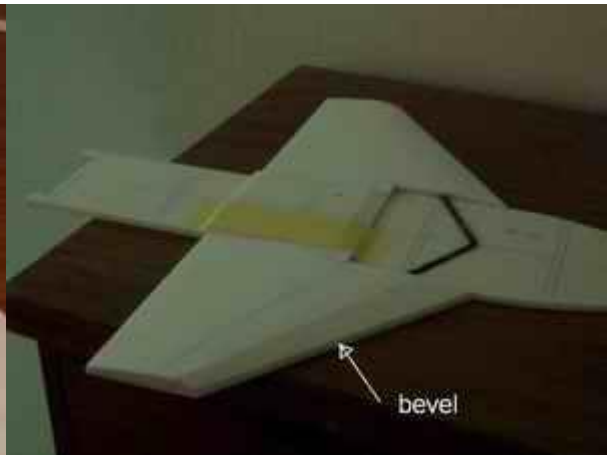
Building
Step 1

Cut out piece 1A and 1B .I drew the locations for the formers on with a pen for future ref.
Cut the 5mm diameter CF rod to length. Make a slot in the top of piece 1A so that the CF rods are embedded halfway into the depron, and glue with epoxy.
Push piece 1B on top of the CF rods so they make a mark. Make a slot in piece 1B. Bevel 1B as indicated on the plans (from 6 to 3 mm not 0 mm). To laminate both pieces I used foamsafe CA only. Apply around edges and on spots in the middle. Foamsafe CA does not cure as fast as normal CA on balsawood so you have enough time to install the piece and weigh it down with some books. Should be fully cured after a few minutes.
Draw the profile forming lines on top of the wing. Bevel top piece from the thickest point to leading and trailing edges. **Do not** bevel bottom piece 1A. I used masking tape to get a clean straight edge where the fuselage will be.This is important for later. After beveling just slightly round of the top and the wingprofile is finshed. This way you're sure both wings have the same profile.

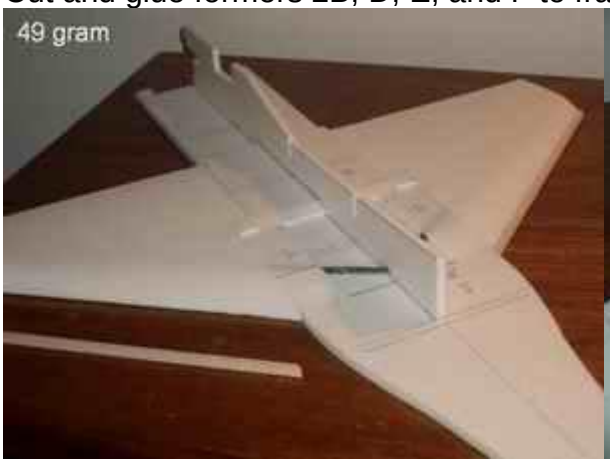


Cut out and slot two pieces 1C (3 mm depron 30 X 100 mm) so they can be glued on the CF spars.

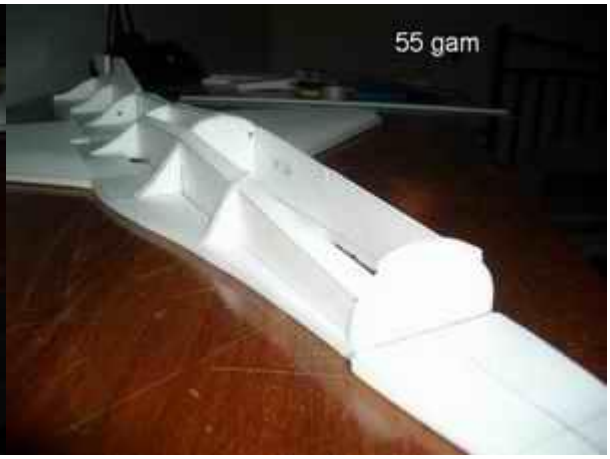




Glue 4 mm wide balsastrips to the leading edge and sand to shape.
Cut and glue piece 2A to frame using the penlines drawn before.
Cut and glue formers 2B, D, E, and F to frame



Cut and glue pieces 3A, B, C and D. Bevel 3A so it is flush with the formers, and can be sheeted later.



Install push rod outer tubes. Cut them flush with bottom so frame can still be built on a flat surface. They do have to exit with a pretty shallow angle on the bottom so they approach the horns on the right angle. Test with inner tubes, should run very free.