This plane was designed as an F3P pattern/freestyle practice plane. EPP is extremely crash resistant, yet rigid enough (through design) to allow precise flight.

More information and videos can be found on the thread at RCGroups here.

Equipment used:
3 micro servos
4ch micro receiver
10A ESC
2s 400-500mAh
Sub-ounce outrunner swinging an 8x4 prop

Material required:
8-9mm EPP, 3-5mm EPP, 3mm Depron
Glues: Welder, UHU (Por or Creativ); can also use PU (Gorilla, Sumo etc), epoxy, or CA
**Welder is NOT safe to use on Depron
0.8-1.5mm carbon rod

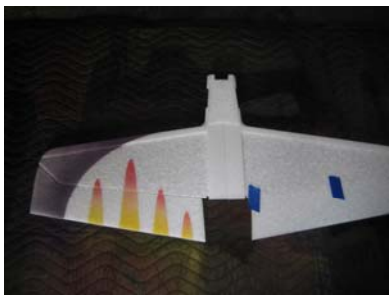
Other notes:
Pull-pull on elevator and rudder (optional)
Plans use a tube mount for motor, can easily be modified for a firewall mount

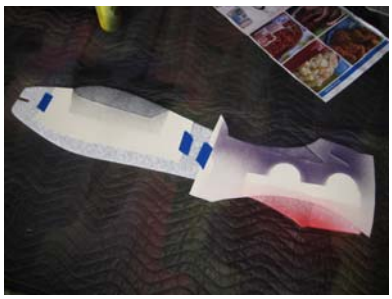
Assembly:

After all pieces are cut, the 3mm Depron is laminated onto 4mm EPP for the ailerons and elevator using UHU adhesive.

The front doublers and Depron wing doublers are assembled (top and bottom, top shown). Welder glue is used for EPP to EPP contact, and UHU is used for Depron to EPP contact.

Now is a good time for paint. Poster board templates mask off the areas to be painted. I use Krylon short cuts, but I'm sure there is a better type of paint to use (Krylon H20?).





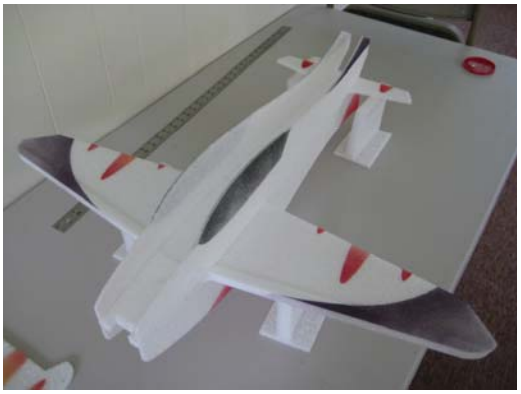
Bevel hinge lines. I bevel ailerons and elevator with a hotwire as shown (or with a sharp exacto), and double bevel the rudder to use a CA type hinge.

Begin the fuse side assembly, front to back. Again use Welder glue for EPP to EPP contact, and UHU for Depron to EPP contact.

More gluing (Welder), working toward the tail.

Glue has been applied back to the horizontal stab leading edge. Measure for a straight build.

Grab a(nother) cold one and let the glue set up.

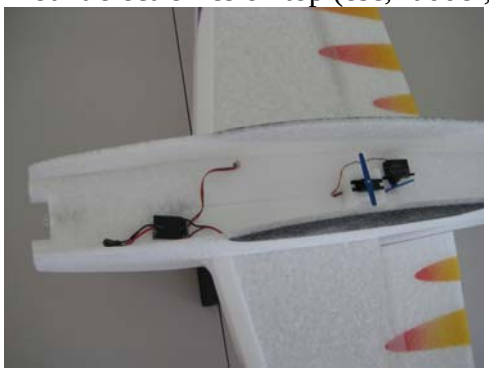


Apply UHU to rear edge of fuselage, use CA type hinges for the rudder (optional).

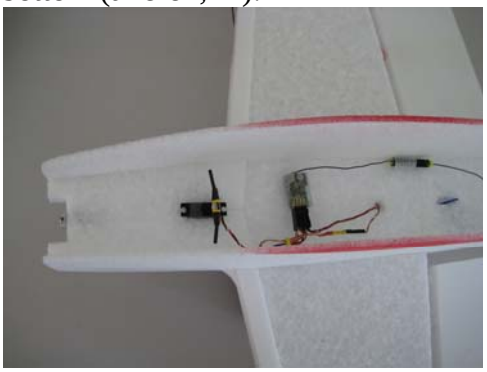
Using UHU, begin closing the rear of the fuselage.

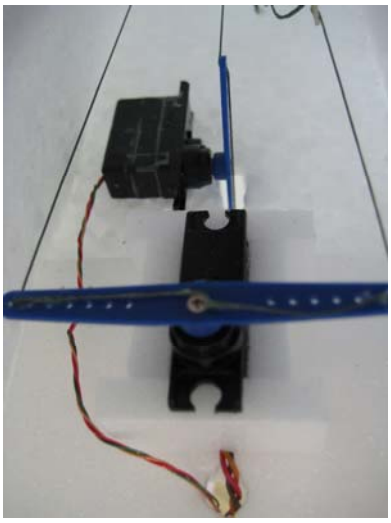
For the tail section, install control horns then control surfaces. The elevator horn is centered on the elevator, and the rudder horn is just above the cutout in the fuse. Also install ailerons. (Blue tape marks preliminary electronic locations.

Mount electronics on top (esc, rudder, elevator)…



… and bottom (aileron, rx):





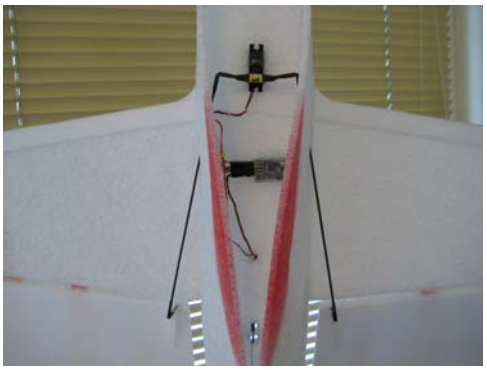
Close ups show riser for rudder servo, elevator servo centered in fuse, and differential on aileron servo:

The rudder servo should be the same height as the control horn

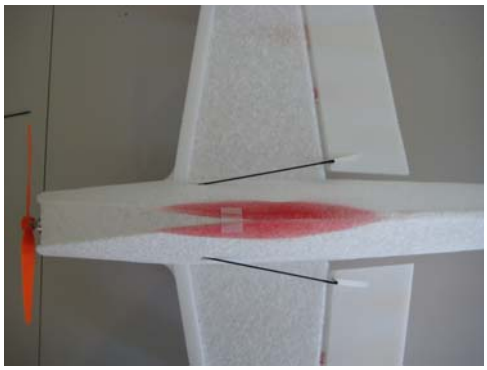
The differential piece is a CF rod,
apply heat until it bends,
hold desired bend until cool
secure to servo arm with heat shrink

Run control lines for rudder and elevator, then begin closing the fuse top (shown) and bottom (not shown).

Next are the aileron controls rods (CF and heatshrink type shown). Detail pic of control horn shown below.



Now it's time to close up the fuselage using UHU. On bottom, close it all the way, using the triangle piece at the front. On top, close the rear leaving room for the canopy, and close the front using the last EPP piece shaped like a trapezoid.



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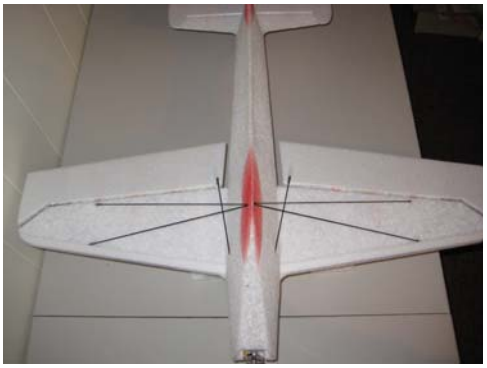
Last step is to add CF supports to the wing. Cut four pieces equal length and glue using Welder. Be sure the wing is straight and level on this step!



All done! Take some beauty shots before the maiden.

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