Depron Cartoon Warbirds - Building

Parts List

Ply – Engine mount / former, battery tray (Spitty doesn't have one), ply control horns x 3. The Corsy also has 2 x dihedral braces. Both the Thunderbob and the Butch bird have a thin ply rectangular elevator doubler.

6mm Depron – Wings, wing doublers, ailerons, tailplane, elevator, fin, fuselage sides, fuselage top and bottom, cockpit, various formers / spacers (model dependant)

3mm Depron – Cowl for radial engine (not the Spitty)

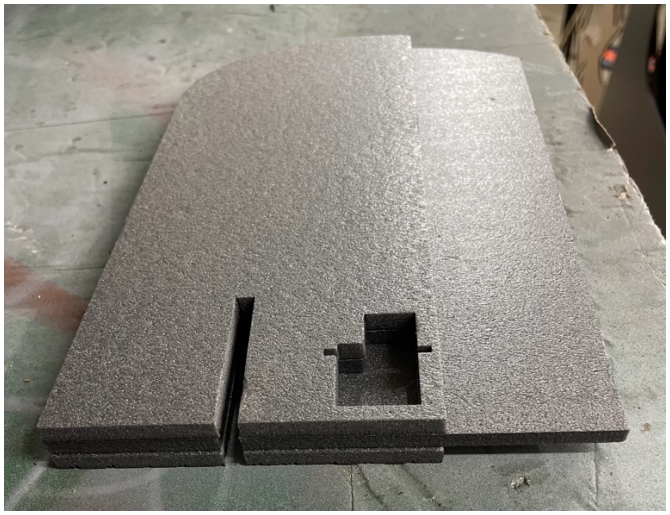
Glues

I use UHU POR for sticking the wing doublers to the main wing core sheet but any glue will be fine as long as it sets based on a chemical reaction rather than relying on air (the Depron is a good insulator!). For the rest of the construction I use Gorilla Glue Clear but I have also used hot glue and Superphatic. To join the wing halves together I use Gorilla Glue Brown as it expands to fill any gaps due to poor sanding to the dihedral angle! If you are building the Corsy then it's either that or epoxy.

Assembly

Wings For all apart from Corsy –

Glue the wing doublers to the main wing sheet making sure that the cut outs for the aileron servos line up. Note that the cut outs go through the top doubler and the main wing core but not the bottom doubler. (You could, if you want to, build the wing with the aileron servos underneath in which case the doubler with the cut out will be on the underside).



Once dry sand the leading edge to profile, the wing cut out in the fuselage sides will show what you are aiming for. There is no need to sand the TE and it is beneficial to leave it square!.

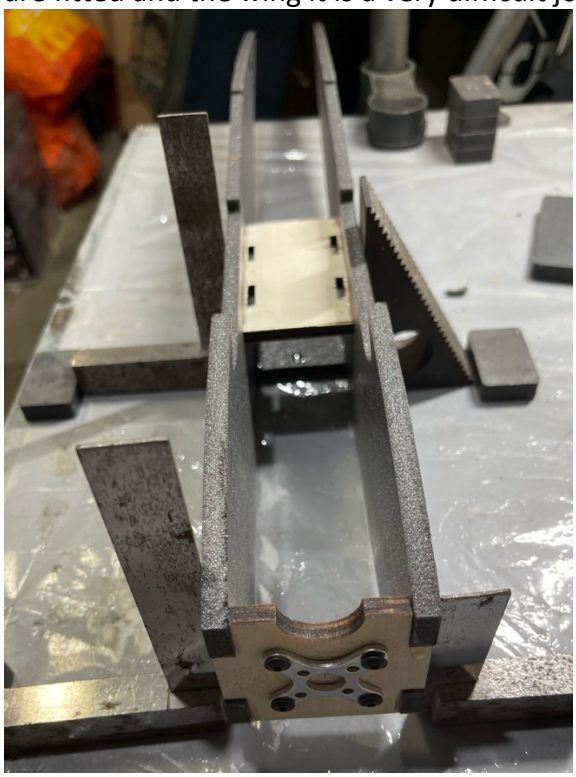
All wings are joined together with dihedral, keep one half flat on the building board and raise the other to about 60mm at the tip. The Corsy is different and to help achieve the Gull wing shape there are 2 Depron templates provided with the correct angles, plus there are also 2 ply dihedral braces included in the kits.

For all of my control surfaces I chamfer the leading edge to an angle and use Blenderm tape to attach them to the wing / tailplane, one strip of tape underneath and one on top. The easiest way to apply it is to have the control surface hinged back over the wing / tailplane then apply the tape. Next hinge the control surface the other way and apply the tape to the other surface. I do the bottom followed by the top. Note that for the Thunderbob and the Butch Bird you will need to strengthen the elevator at the centre with the small rectangular ply doubler.

Fuselage

All models have a box section fuselage so I start with gluing the ply battery tray into the corresponding slots in the fuselage sides followed by the Depron spacer pieces on the top of the fuselage (this spacer is also where the top hatch closes and where you can fit hatch magnets). Make sure that everything is at 90º. Note that the Spitty has a Depron vertical former plus Depron spacers under the wing as its battery hatch is on the underside. The Butch Bird also has 2 triangular Depron pieces that are used to form the angled battery hatch. Whilst the fuselage is drying offer up your motor mount and mark the fixing holes on the ply motor mount. I use T nuts to bolt the motor to the mount but small screws are just fine. Once the fuselage has dried glue the motor mount in place noting that there is downthrust already built into the fuselage sides. You can reinforce the motor mount by gluing some scrap Depron or balsa behind it where it joins the fuselage sides. If you are going to use a Velcro strap to hold the battery in place now would be a good time to fit it

through the slots in the battery tray, if you leave this out then once the fuse top and bottom are fitted and the wing it is a very difficult job to do!



When all the formers / spacers, trays are dry then fit the fuselage top, bending the rear of the fuselage sides in to match the curve. To make threading cables easier fit the rear fuselage mounted elevator servo, I use hot glue to hold it in place.

Next glue the wing to the fuselage making sure that it is lined up correctly. It may help if you make a couple of small cut outs in the fuselage sides to make threading the aileron servo cables easier.

Place the ESC in the fuselage with its motor wires passing through the semi circular cut out in the ply motor mount then glue the underside fuselage pieces in place, in the case of the Spitty don't forget that the battery hatch is on the underside. The Corsy is the only model that really does benefit from covering the underside of the wing as it hides the gull shape. The front, top fuselage is the last to fit making sure that for all models apart from the Spitty, the access / battery hatch is in the correct place. The front of the hatch has a thin (20mm) strip of Depron glued to the underside to act as a tongue to locate the front of the hatch. Chose whatever method you prefer to locate the rear, I use small hatch magnets. When dry, shape the edges of the fuselage with fine sandpaper and then glue the cockpit in place on the access hatch (Thunderbob and Butch Bird).

Fit the fin and tailplane making sure that they are level and square to the main wing.

For those models with a radial engine (Thunderbob, Corsy, Butch Bird) you have the option of fitting a round Depron cowl to make the model more realistic. This is made using the 2 6mm Depron rings and the strip of 3mm Depron. Glue the 2 rings together then, when dry bend the 3mm Depron around the rings, cutting the length to suit. Glue the 2 edges of the

3mm Depron together, holding with some masking tape until dry then apply some glue to the rings and slide on, lining up the front edge. When dry sand the front edge to form a nice radius. With the motor and prop in place offer up the cowl noting that you may have to sand the fuselage to make a good fit and mark its position on the fuselage. Apply glue and stick the cowl in place holding with pins until dry. Note that you may want to add some 'chin reinforcement' in the form of glass cloth or similar to the cowl as that will bear the brunt of a lot of landings!

Fit the aileron servos to the cut outs in the wing, you may need to trim these to suit your choice of servos. You can run the cables to the fuselage fixing them to the step in the wing or you can cut a thin strip out of the Depron wing doubler to form a channel for the cable to run in and then cover with some tape, I use Blenderm for this. The servos can be wrapped in masking tape then glued into position in the wing but make sure that you centre and fit the control arms first. With all the servos now in place mark the location of the thin ply control horns on the ailerons and the elevators and form a thin cut to locate them. Glue them into position, I use hot glue for this. Cut and fit the pushrods for the 3 servos.

The ESC fits in the fuselage behind the motor mount and the Rx fits wherever it can within the fuselage! Move the battery backwards and forwards on the battery tray to achieve the CofG which is 600mm back from the LE on all models but you can change this to suit your style of flying. I use 1300mAh batteries.

Control movements:

Ailerons - 8mm up/down on low rates. I have increased these to 15mm but the roll rate then becomes somewhat ballistic!

Elevator – the elevator is very sensitive on all models so use 5mm up/down to start with.