

MiniCraft EPS 2002 Electric Glider.

By Klaus Weiss.

For the beginner, the choice of which electric sailplane to buy is rather limited. Several brands have established a good reputation amongst modellers, and a few of them are Almost Ready To Fly (ARF) versions. As with all models, beginners should find someone to instruct them. It is possible to learn on your own, but it can be a steep curve, when all that is required, is a little tuition to greatly speed things up.

Entry level electric gliders are reasonably priced, but when you factor in the cost of batteries, charger, speed control, motor, prop and radio, the cost can rise significantly.

A 2 metre span model, which is fairly new on the market, is the Minicraft EPS 2000. This model comes as a glider or an optional electric version. The electric model, comes with a 550 motor and 8.5 x 16 folding prop and hub. Lets have a look at the kit.

Kit.

On opening the box, it is immediately apparent that the model is indeed, almost ready to fly. The separate pieces are individually wrapped and require very little effort to assemble. The wings are covered in transparent plastic film, as are the fuselage and tailplane.



The elevator and rudder, are hinged, saving you even more time. The kit also includes a 550 motor, folding propeller, spinner and hub. There are a few pieces which do need gluing, including the canopy frame, wing hold down dowels and the pushrods. The kit contents include a very basic construction leaflet, so as this is a

'beginners' kit, I will briefly outline some of the ambiguous construction steps. For those of you who are proficient builders, bear with me.

All in all, this is a very complete kit, only requiring radio gear and batteries.

Assembly.

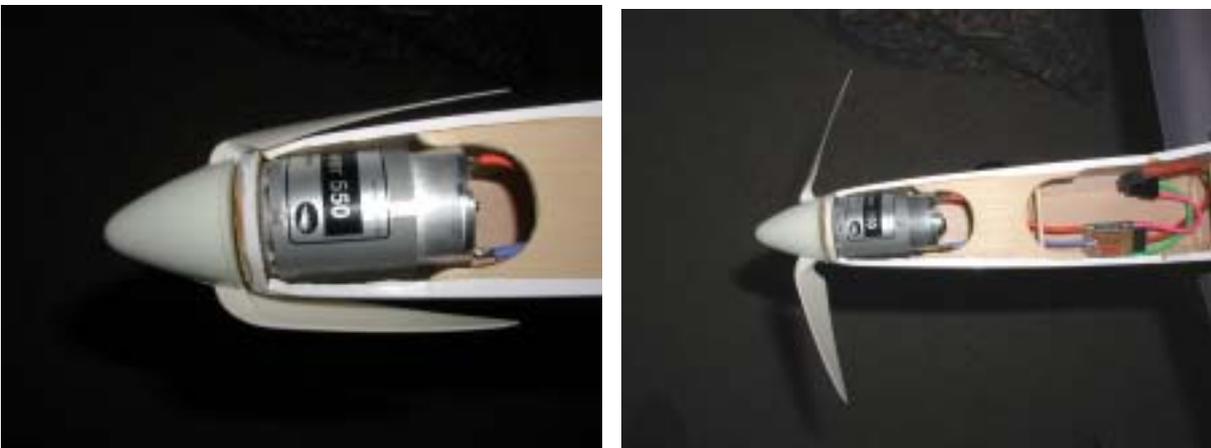
The EPS 2002 can be used as a pure glider, and as such, comes with the nosecone attached. It assembles fairly quickly, as all of the major construction has already been done. To build the plane, it is just a matter of assembling the parts and installing the equipment. This simple process was made less simple, by the poorly written instructions that came with the kit. I think that kits of this nature, designed for the novice to intermediate pilot, should have detailed assembly instructions, but this is not a reflection on the quality of the model.

First thing you need to do, is slice around the covering material, where the nose block meets the plywood F1 former (motor mount) and 'snap' it off. It is only spot glued, so removal is easy.

The next step, is to install the motor. You need to make a paper template of the motor mounting holes, so that you can transfer them to the F1 former.

Drill the plywood motor mount, to fit the supplied 3mm x 32mm screws.

Trial fit the motor. You may want to slightly countersink the drill holes in the plywood, so that the screws sit flush. If you don't then there is a chance that the backplate will rub on the screw heads.



Fit the stabilizer and fin, ensuring you carefully cut away the covering material, so that you get a good wood to wood, glue joint.

Next, assemble the plywood canopy crutch, sanding a bevel onto the backrest, so that it sits snugly on the fuselage. Tack glue with CA and then remove it from the fuselage, to glue it together properly. Cut out the plastic canopy bed and clear canopy. Glue the bed to the crutch, and then the canopy. I used Zap a Dap a Goo, to glue the transparent top to the base, as it

dries clear and gives a very strong bond. Make sure that you cut out the vent holes in the front of the bed.

Self adhesive Velcro* squares will hold the battery, ESC and receiver in place, and makes it easy to move the components around to achieve a balance.

The pre- installed servo tray already has the cut outs to fit standard size servos. I wanted to cut down on a little weight, so I glued on some mounting rails, in order to fit mini servos.

Assemble the pushrods as per instructions, glue in the wing retaining dowels into the fuselage and that is about it for assembly.

You will also require an electronic speed control (ESC) and battery pack. I chose to use the Jeti JES 500, which will handle 6 to 12 cells. It also has temperature overload protection, brake and BEC, making it ideal for this type of electric glider application.

When soldering the speed control to the motor, remove it from the firewall. I soldered a Deans connector to the 7 cell NiMh pack, reinstalled the motor and secured the prop and spinner to the motor shaft. I also used a neat JR610, 6 channel micro receiver with this setup. Finish setting up the radio and adjust the control throws of the surfaces, as per the instruction sheet, and get ready to go flying.

Flying.

The EPS 2002 will fly reasonably well on 6 cells, but the addition of an extra cell, will boost the power by almost 30%, which is a real bonus over the slightly higher wing loading. My finished kit came in at 1375 gm (3lb 6 oz), ready to fly.

The polyhedral wing design, makes for a very stable glider, and it only flies slightly faster than a similar 2m span polyhedral thermal glider. Having said that, it is a general rule of thumb, that an electric sailplane can end up being twice as heavy as a 'normal' similar sized glider, and by doubling the weight of the model, you also double the wing loading and increase the stall speed by about 50%.

This plane is a balsa, built up, model so any hard arrivals, can result in the likelihood of damage caused to the airframe. This can be a stumbling block to those who are trying to teach themselves to fly. As I have said before, seek someone out who can help you to learn.



Using the included propeller setup, the model climbs out quite well at an angle of around 30 degrees and motor run times are around 10 to 14 minutes. This time can be extended when a thermal is encountered, and the glider climbs strongly. Switch the motor off and enjoy the experience.

After a range check, I enlisted the help of Club member Laurie Dunstan, to give the glider a good toss. The glider pulled away nicely, only requiring a click of elevator trim to begin a nice climb. When sufficient height was gained, I switched off the motor and trimmed the model to fly straight and level. It handled thermal turns very nicely, and there were no unpleasant surprises. Stall behaviour on the EPS 2000 is very tame, and the model will practically recover by itself if you take your thumbs off the sticks. In a turn, just feed in a little elevator to maintain a flat circle. This stability, makes it easy for first timers to concentrate on making smooth turns and hanging in lift. This feature, coupled with the ready to fly package, makes the EPS 2000 a very good electric trainer choice and a terrific way to get started in electric flight.

The MiniCraft EPS 2000 is distributed by the Hobby Headquarters, and represents very good value for the person who does not want to build a model from a pile of ply and balsa. Have a look at it, next time you are in a hobby shop.