Coz-Mick Star

Fast, light and fully aerobatic, Coz-Mick Star spans 49" and weighs in at around 27 ozs. with foam wings.

When naming this .25 - .40 powered low wing aerobat, Mick Rudge made sure that he left his mark...

Ever since the days of free flight, then single channel escapement, to the first "Do you remember the heavy valve sets?" and onto propo sets, I have built and designed model aircraft, mainly for my own benefit. But recently people have begun to urge me to share my enjoyment with others. And so, when plans were formulated for this design, I put to paper and began work on the construction of Coz-Mick Star.

First and foremost it had to be fast and light, so I worked on a model of 49" wingspan, which should go quite fast on a .25, but I managed to shoehorn in a hot 40. The end result was an airframe of 27 ozs., inc. tank and engine mount. This combo is no slouch and cycle clips should be worn!

Wings

Before I started to cut the wings, I had to calculate the wing section. For this I used my own secret formula, the end result of which is a tapered, swept back wing with very little drag.

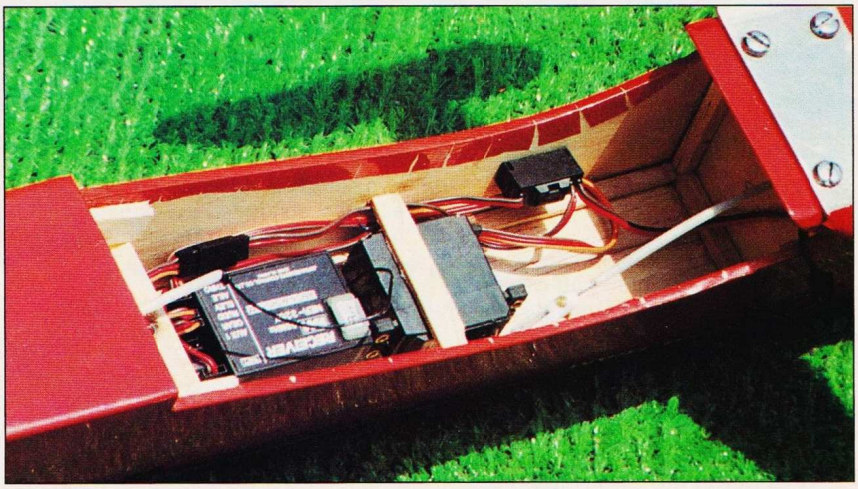
The wing panels were cut from foam, with the taper to suit the sweep back of the leading edge. Pre-cut wings and

a foam fuselage decking to suit Coz-Mick Star (order code FWTRC1779) are available from the Nexus Plans Service for £20.20 inc. UK p&p, or you can cut your own.

Two templates, one for the tip and one for the root, are cut from liteply and sanded with very fine paper. I wax the edges with an old candle, so that the hot wire slides over them better. Fasten the two templates to the ends of the foam panel with 1" x No. 8 self tapping screws, making sure that the taper is to the leading edge and that they are straight with no washout. Place on a flat surface and weigh down. Run your hot wire bow over the templates, top and bottom, and, hey presto, you've made a wing panel.

Now trim a piece of obechi veneer to size. Lay on a flat surface, rough side up, and paint with Copydex. Do the same with the wing and leave to dry for about 15 minutes. Bring the foam and veneer carefully together, repeat for both panels, then trim and sand ready for the leading and trailing edges, and wing tips.

The two halves are now ready for joining. Note the dihedral on the plan. Tack together with epoxy, then put to one side.



The R/C gear should be moved around before being finally secured to help attain the correct C. of G. position.

Fuselage

The fuselage is a simple box type, with a foam top deck. I used light balsa and liteply for most of the construction, and 6mm ply for the main bulkhead and F3.

The top deck is cut from foam the same way as the wings, then glued to a flat piece of 3mm balsa sheet. It is rolled onto the veneer after it is almost dry. The foam at the front end needs to be trimmed back by 6mm to fit over F2, whilst the rear end is set at an angle for the dashboard.

Cut out the two fuselage sides from 3mm balsa sheet. To keep it light I used veneer for the fuselage doublers instead of plywood. Build up the fuselage with F2, F3 and F4, making sure that all is square. Then fit F5 and F6. DO NOT glue the tail as the fin slots in later after it has been covered.

Now fit the top turtle deck, followed by the top rear side pieces, and sheet the rear underside, all except the last 3". This is for the ply tailwheel support. The tank bay is covered later.

Its now time to drill the holes for the front wing dowels. Offer the wings up to the fuselage, then drill two 3/16" holes through the front of F3 into the leading edge of the wings. Cut two pieces of 3/16" dowel to size, then epoxy these into the wing. Clean out the holes in F3 so the wing dowels slide in and out.

All square?

With the model upside down and with the wings in place, measure from the wing tips to the tail. This should be the same both sides. If all is square mark the wing for the 1" x 1/4" trailing edge centre piece. This is 5" long, with a slot cut for the aileron horns. Pin this into place, shape the F7 fillet, assemble with the horns and glue into place.

Next step is to build a servo box from liteply, then cut out the foam and fit the box into the wing. The wing is now ready for the epoxy and fibreglass bandage joint.

Tail

The tail is of sheet construction, cut and sanded to shape as per plan. I like to place the tailplane in position, mark with a pen, then remove and cover for fitting after covering the fuselage.

Mick shoehorned a .40 into the prototype Coz-Mick Star, which provides him with exciting flying performance. Less experienced pilots are urged to fit a .25 for more relaxed flying.

Power house

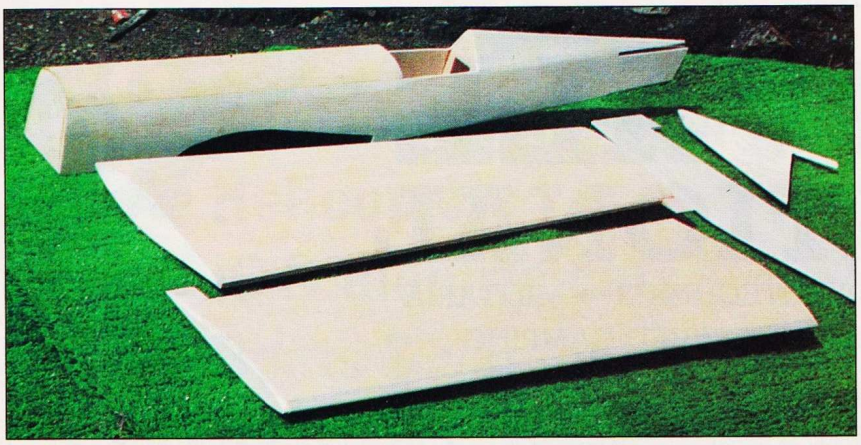
Fit the engine mount of your choice. Unless you are an above average pilot, I strongly recommend a 25. When the fuel tank and throttle cable are fitted, you can then fit the ply u/c mount and tank bay floor. Then sand the whole fuselage to shape.

With the engine in place, cut and fabricate the engine cowl from 3/8" soft balsa sheet, with a 2" liteply nose ring, to fit a 2" spinner. Remove the engine and sand the cowling to shape. The fuselage is now ready to cover.

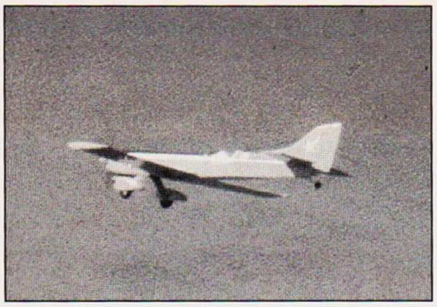
For this model I chose a lightweight film for ease and speed. First I covered the tail bits, then the fuselage. Then the tail bits were glued into position, and the wings covered, followed by the ailerons, rudder and elevators.

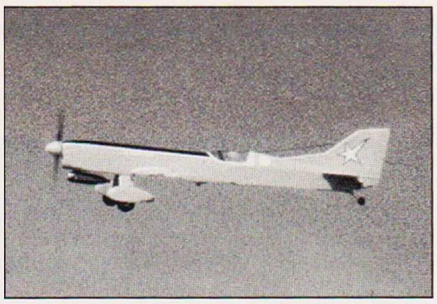
With the wings in place, drill through for the wing bolts, then fit the wing mounting plate.

The cockpit cover was a cut down commercial canopy, but a plastic pop bottle cut to shape will do the job just as well.



Quick to build, this model uses a simple box fuselage with foam deckings, foam wings and a balsa sheet tail. An alternative built up wing is shown on the plan.





Radio

Fitting the radio equipment is probably the most important part of the construction as it not only operates the controls, but is also used to bring the centre of gravity to the right position. I worked on 27% as a start point.

On the prototype model, I had to fit two servos and the nicad inside the cockpit to offset the weight of the 40 used to power the beast. I also used two servos in the wing for the ailerons, so I could use flaperons and flaps using the mixers on my JR X347.

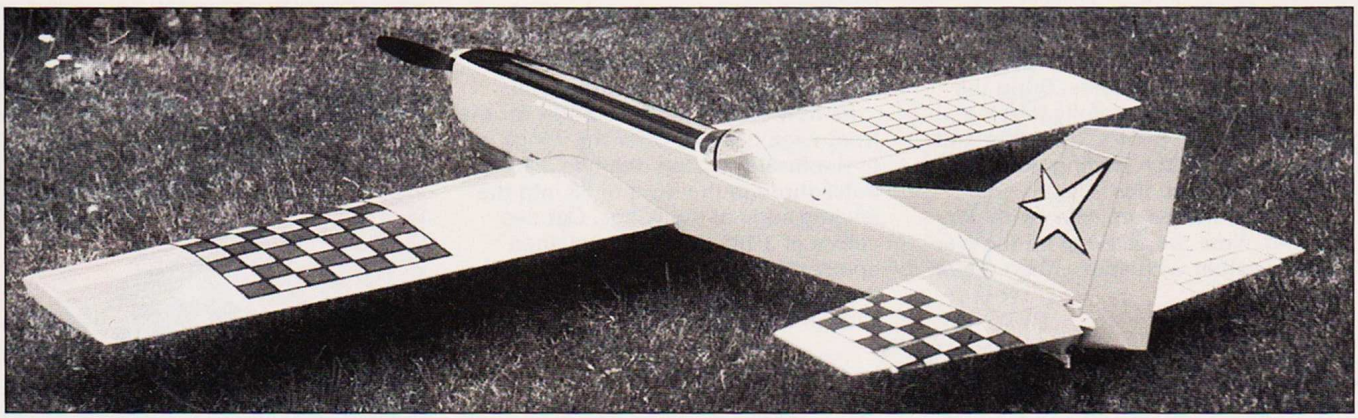
Going up...

Well after all the delaying tactics and excuses (and complaining about the weather) the time came to unleash Coz-Mick Star.

I fired up the new engine, which had been run in very carefully and was in fine tune, pulling 13,500 rpm on a 10 x 6.

Off it went on half throttle like a Patriot missile, with just a little trim to attain level flight. As I said before, don't use a 40 unless your flying is above average. This model will fly vertically, is ballistic and yet with low power and flaps down, it's a pussy cat.

I hope you like it, it's quite a fun machine.●



A bright and colourful colour scheme aids visibility when flying this fast and agile model.