Free time? Try our free plan!

See U Two

Colin Young's 'See U Two', a sports aerobatic model for a 40 size engine, one of the 1998 'Traplet Designer of the Year' heat winners.



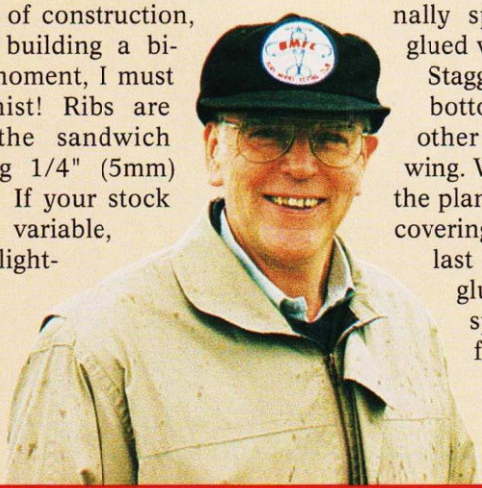
It had been suggested by several club members of the Bury Model Flying Club, why haven't I published this design, but I never got round to making that phone call. Then, to my great delight, Traplet came to my rescue, with their 'Designer of the Year' competition, so no more excuses, here it is!!

The search for a replacement model had been going on for a while, but what to go for? A Hurricane was out of the question and all the sports designs in the various plan handbooks, lacked that instant 'must have' factor (you must know that feeling!). After a fruitless search, it became obvious that I would have to design my own plane. So a full size design was drawn up over a few lunch hours; with access to the engine, tank and battery all considered to be vital. The layout was discussed with more experienced modellers which resulted in a longer tail moment arm and an increased fin and rudder area. With everything beginning to take shape, let the building commence!



The Wing

Building wings, is not my favourite part of construction, but as I am building a biplane at the moment, I must be a masochist! Ribs are made with the sandwich method, using 1/4" (5mm) ply templates. If your stock balsa is a bit variable, then use the lightest towards the tips and the heavier at the root. The spruce spars were diagonally spliced (scarf jointed) and glued with epoxy. So far so good.

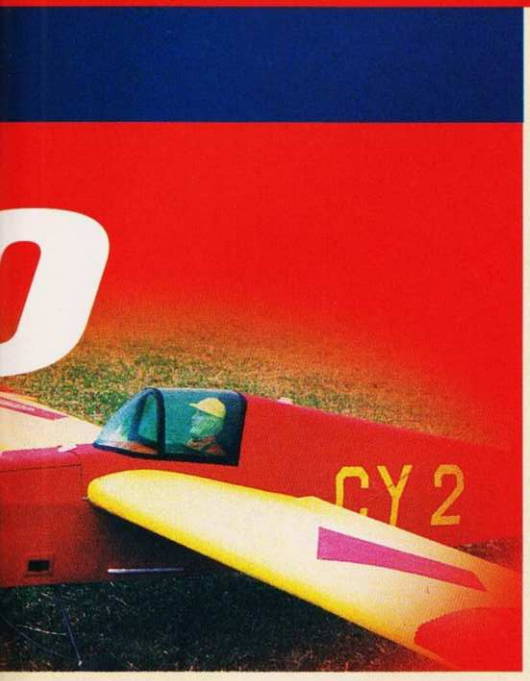


The designer, Colin Young was pleased with the result.

Stagger the joints, one on the bottom of the port wing and the other on top of the starboard wing. Wings, hey! I love 'em! Cover the plan with clear film (saved from covering my, and hopefully yours, last model to protect it from glue) and layout the bottom spar. The wing is constructed flat, without dihedral or washout; pack up ribs and add false leading edge and trailing edges, again with staggered splices. The leading and trailing edge sheeting, were all pre-spliced, ready for gluing into position.

I used a single servo with torque rods in the original model, but with this design I'm using two servos with the leads fed through paper tubes.

When all top sheeting has been fixed (the vertical webs will stiffen the wing) and allowed to dry, remove the wing from the building board and add the sheeting to the leading and trailing edges. True up front and rear edges, add light 1/4" (5mm) balsa tips and 3/8" (9mm) thick leading edge. Complete the centre section and add 1/16" (1.5mm) ply stiffening plate. Phew! It's







Nice to see someone in the office.



Simple, uncomplicated radio installation.

more difficult to put into words than actually do!

The original ailerons were attached with plastic hinges, with metal pins, however, this time I used iron-on hinges by M & M Developments, which I highly recommend, but the final choice is yours.

Sand the wing all over, preferably outside (it's a good idea if you want to keep the nearest and dearest happy!) and wear a dust mask! At this time, check the wing for lateral balance and if necessary, remove balsa from inside the heavy tip. Give the wing a coat of Clearcoat and cover with your favourite covering, Solartex was used on the original.

Install the aileron servo, and make the connection to ailerons. Temporarily rig up your radio gear and set up the movement with 1/2" (12mm) throw, each way. Once you are happy with the set-up (happy now, not sad later) put the radio away and glue in the front locating dowel. The completed wing allows the correct shaping of the fuselage, before final assembly and accurate setting-up. It is also a good idea, to weigh the completed wing and compare it with the data table at the end. Wing business over (great!), what's next?

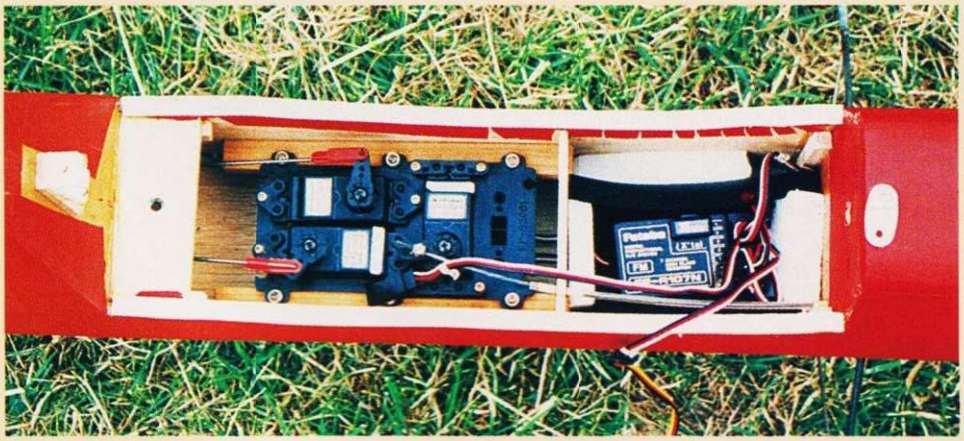
Tail Feathers

Construct all the tail components from medium 1/4" (5mm) balsa, with rounded leading edge and slight taper to the elevators and rudder. Shape and hinge with your preferred method. The fin slots into the tail plane and is glued in position, square to the tailplane and allowed to dry, before fixing to the fuselage. A wire joiner with a single push-rod was used for the elevator on the original model, but a split pushrod could be used and closed loop for the rudder, again the choice is yours. 1/16" (1.5mm) ply plates are used at the horn fixing points.

Fuselage - The Best Part

Now let's move onto the best bit, well it's mine anyway! As customary, select the two sides from matched density 3/32" (3mm) balsa and 1/16" (1.5m) ply doublers and bond together with contact adhesive. Remember to make a 'handed' pair of fuselage sides! The fuselage width was dictated by the standard Futaba servo mounted on 1/2" x 3/8" (12 x 9mm) bearers. Cut out ply formers 1/8" x 3/8" (4 & 9mm) and glue 1/8" (4mm) balsa formers. Note bottom sheet is in one piece, to form a crutch, as I did not have a building jig at that time (How do you do a jig with a crutch? Answers on a postcard to the normal address!!). Epoxy servo rails in position and tank supports to ply doublers. This is best achieved by marking the exact position on each dou-

'I may increase the engine to a 46'



bler, together with former positions. Glue on tail plane supports.

Assuring fuselage sides are together with formers F1 and F5, glue and check that they are true and square with bottom sheet. When dry, add remaining formers and pull in at stern, again check that all formers are true and square. Once everything is dry, glue on tail feathers, checking that they are square to the fuselage and parallel to the wing. Install engine mount, tank and battery, servos, pushrods and radio gear! Enough to be going on with! Note, former F5 may



See U Two as she was presented at Wings and Wheels this year.

'I used iron-on hinges by M & M Developments'

require modification to give pushrod clearance.

Set up servos, to give maximum movement to rudder and allow 5/8" (16mm) each way, for the elevator. A nylon support plate was installed against former F10, which the wire pushrods passed through. When you are satisfied with the installation, complete the top of the rear fuselage. The side stringers are carried past the fin, to provide additional stiffening to the fin and elevator connection. Add wing mounting plate with blind nut for rear fixing of wing. Fit wing and get on with constructing the cockpit, ensure adequate clearance for the wing servo, if fitted, then put in the pilot. Form canopy from an empty plastic lemonade bottle, preferably a clear one.

The engine is up next, along with the remaining radio gear, battery switch and add just enough weight in the engine location, to give CG position (shown on the plan). Construct tank cover and cowl from soft 1/2" (12mm) balsa. Build up battery compartment from hard 1/16"(1.5mm) balsa or ply. After all that it's time to dismantle the aircraft, remove engine and radio gear. What!! Don't panic, it's only so you can shape and sand the cowl, tank cover and fuselage, to shape. Remember to fuel proof engine tank and battery bays, then coat with Clearcoat or whatever to suit your finish. Decision time again, what is the colour scheme going to be? The original had red and yellow as its choice, which looked pretty good. But whatever takes your fancy. Just don't forget to make sure it's visible! Fix undercarriage and tail wheel, refit engine and radio gear, check all is well and wait a minute I think that's it! All you do now is wait two months for a break in the weather so you can get out and test it!

Flying

Surely the moment every modeller looks forward to, even though there is always that small knot of nerves buzzing around in the stomach (well maybe more like a bigger knot!). First flights were run, and as a result rudder throw was increased and a crossbrace added to the undercarriage. A club member suggested I change the tip shape and increase the span by one bag each side, as the model was a bit heavy. Many thanks for the advice.

The Enya 40 SS with 3 bladed propeller and Martin Forrest silencer, is quiet but lacks power, although it is more than adequate for me! She will also fly very slowly, without dropping a wing. Windy and gusty days are no problem, it just requires more effort on the part of the pilot. On the other side of the coin, calm evenings, an absolute doddle. Just to show I am human, the model has now been crash tested! A few sprung joints in the fuselage, broken wing retainers and a crack on the rear fuselage, all were easily and quickly repaired.

On reflection, if I built this model again I would aim to reduce the weight, by selecting lighter balsa, to 6.5 pounds, giving 24oz/sq.ft. which is quite reasonable for this type of model. As my flying improves (hopefully!), I may increase the engine to a 46, but time will tell. It has also been suggested, that a 60 engine in a larger version would be great fun. We shall see! A 10 gauge undercarriage, without the crossbrace, will be fitted this winter, to avoid tripping up the model in long grass.

So there we are, a good solid model for those looking for the next stop after their trainer. For me, I am just finishing a pattern ship, with a bi-plane to complete next winter, but in the meantime, let's fly!

RCMW



Specifications

WINGSPAN	59" (1500mm)
LENGTH	48 1/2" (1230mm)
CORD	11" (275mm)
ENGINE	Enya 40 SS 2° side thrust
WING	2° positive
TAILPLANE	0° to engine C/L
WING WEIGHT	1 3/4 lb
TOTAL WEIGHT	6lb 7oz plus fuel
FUTABA CHALLENGER	FP-T6NL receiver
FUTABA	S148 servos

Colin Young