

**Sports biplane with a vintage air by Mike Conrad
46in. wing span for '20' size engines and three function radio**



SUNDAY Flyer

Mike shows off the pleasant lines of his vintage influenced biplane design

I SUPPOSE THE FACT that I have been building nothing but Vintage models for the last 5 years has been the reason why Sunday Flyer came into being.

I somehow felt that I had got to the point where my next model would have to be built without the constraints of someone else's ideas. And as all my non-vintage models had been my own design anyway, I decided to revert to type and get back to rolling my own.

Of course, it had to be a biplane, it also had to be suitable for a newly acquired OS 20 four stroke, so it had to be light and not too large. Drawing on the experience of my previous biplanes, I went ahead and the 'Sunday Flyer' is the result.

My original came out at 3lb 12ozs and the model flies quite happily and is reasonably aerobatic at this weight. I doubt if it can be built very much lighter, so if you feel the need for more performance, an HP25FS or PAW 29 Diesel might be the answer.

One other virtue this model had to have was ease of assembly. I know rubber bands are the traditional method of holding a vintage model together, but trying to cope with greasy rubber bands, on a freezing cold February morning, is not my idea of happiness.

So, how should it be held together? The top wing was no problem, using the fore and aft springiness of the cabane struts to engage in small plastic saddle clamps under the centre section has all been done before, and is dead reliable.

The method chosen to attach the bottom wing, however, may cause a certain amount of concern, but fear not, it works. The cupboard clips shown on the plan can be obtained at any B & Q store, and, I am sure,

other DIY outlets stock these or similar types.

Is it safe? You may ask. Well, I have rolled the model, flown it inverted in quite windy weather, and it's still in one piece. Quite honestly, anything more dramatic than this is not really in keeping with this type of model anyway, so if you must do bunts, fit wing bolts.

As far as I am concerned, if one tries an unusual idea such as this, and it proves a success, it is a great source of satisfaction.

Now, I think I know the sort of modeller who may consider building this model, and I am sure he will not need me to give him detailed instructions.

However, a few hints and tips will not go amiss.

Fuselage

The brass tube through which the tail wheel leg passes must be very firmly attached to the sternpost, and the alloy plate underneath the fuz is very necessary, as it limits the vertical movement of the leg, which as you can see, goes through a right angle and controls the rudder. Tail draggers put quite a load on their tailwheels, and

since rudder control is dependent on this component, it is very important that it should not be knocked loose on the occasional bumpy landing.

One other point concerning the fuz. Do "eye-ball" the formers fore and aft before planking and fitting stringers. Perhaps it's the way I fit formers, but slight smoothing always seems necessary.

Wings

Wing construction is very straightforward.

Yes, I know the top and bottom main spars are only 1/8in. square spruce, but they are a long way apart on the very thick section, and in any case, the extra spars along the L.E. ensure adequate strength plus helping toward giving the model that vintage look.

Struts are very easy to make fit top and bottom wings and run the 1/8in. dowels through their holes in the triangular pieces on top and below the wings. Dowels should protrude into the wings about 1/2in., ensure gap between wings is equal on both sides and fit 1/16in. hard sheet each side of the twin dowels. Be careful the glue does not get where it is not wanted during this operation.

Wing and tail tips are laminated strips of 1/8in. x 1/32in. ply. Easiest way, I found, was to put pins in all round the inner curve of the tip outline, bend round 4 strips of ply, leaving some extra length at each end, now push pins in round the outer curve, holding laminations together, then flood cyano right

round the curve. When it is dry and removed from board, this curved strip is incredibly hard and strong.

Covering

I covered my model in Vintage Solartex which gives a nice see-through finish. An alternative would be Mica film, if you have used it before and can get the necessary mortgage!

Now, the bit that makes it all worthwhile.

Time for Take-Off

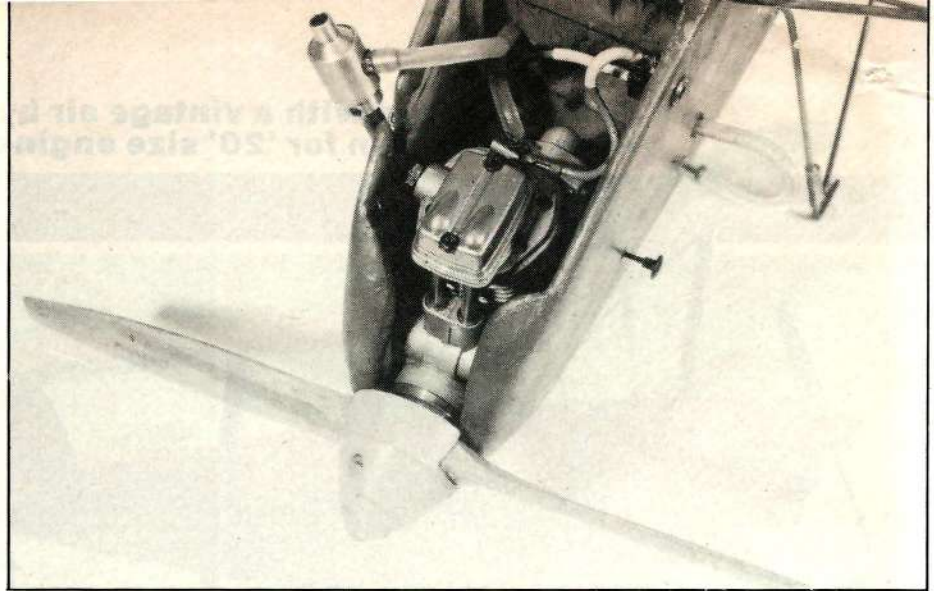
Full up elevator and a touch of right rudder till she gathers speed, then relax the elevator, hold her straight on the rudder, and up she goes.

Strangely enough, even though the wheels are quite far forward on this model, ground loops do not form part of its repertoire.

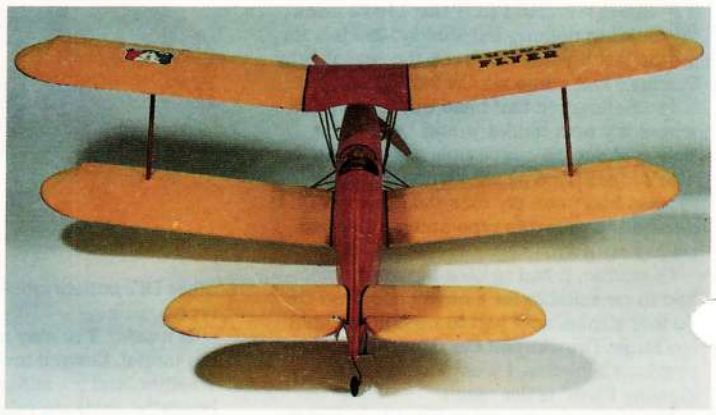
Sensitivity in the air, of course, is up to you, I always set my models up to be pretty sensitive, but you will need lots of rudder and elevator movement to spin it, and I would suggest you arrange for this, as S.F. does a very pretty and very flat spin, pulling out the instant controls are centralised.

Of course, it will not do the axial roll of an aileron equipped model, but even my OS 20 version will carry out this manoeuvre, albeit downwind and after a shallow dive. Trick is, not to use too much rudder and down elevator during the inverted part of the roll.

One virtue of this design I have found to be very pleasing is its windy weather performance. This, plus its excellent glide

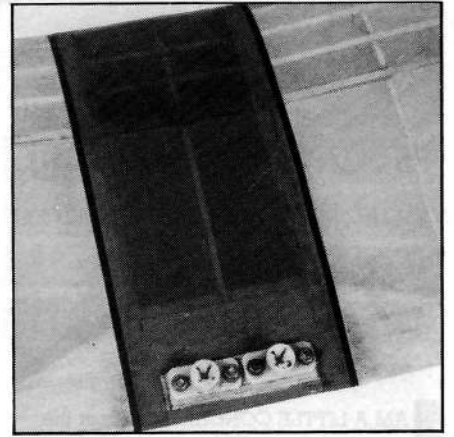
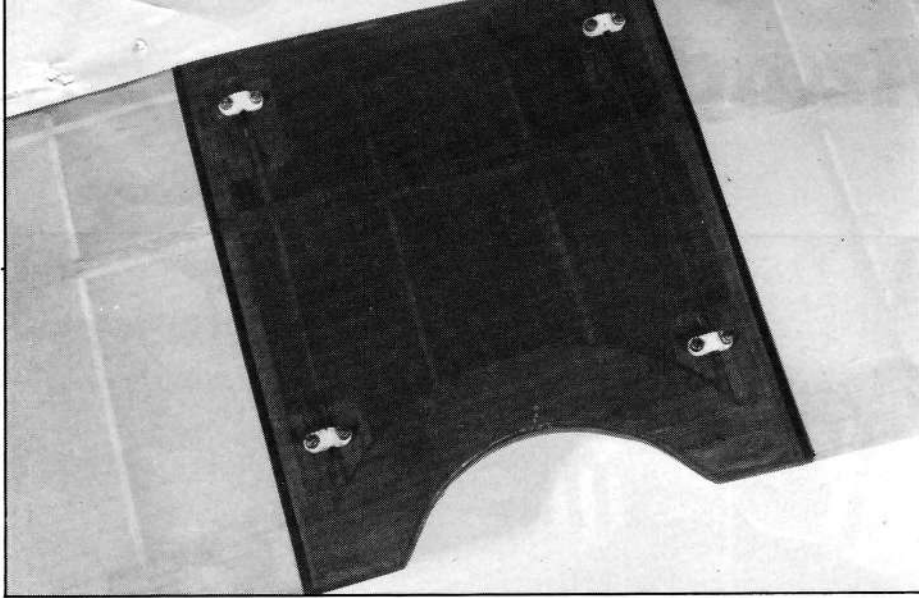


O.S. 20 four-stroke engine fits neatly into the cowl, note the remote plug and socket connection for the glo plug. Steerable tailwheel/rudder connection - plus tail weight for balance shown on left.

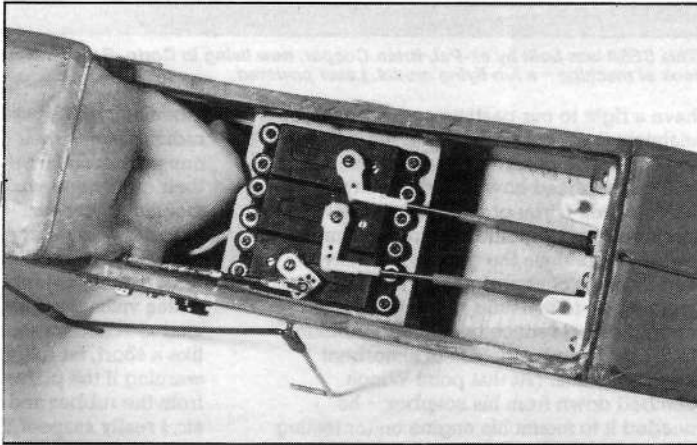


A very durable and practical design, the flying characteristics are the total antithesis of the 'Jean Machine' (also featured this month) as it is slow, stable and predictable - a true 'Sunday Flyer'. Covered in vintage style coloured Solartex the atmosphere of Mike's model is strongly reminiscent of free flight designs from the 1950's. No doubt the 'Sunday Flyer' could be converted to free flight operation - making a pleasant reversal of the normal trend!





Upper wing, above, is secured by saddle clamps into which the cabane struts slide. Lower wing fixing utilises B&Q or MAP Cupboard catches, available from hardware and D.I.Y. stores. Servos fit three abreast in the fuselage, the throttle servo is reversed to avoid clashing of output arms.



for a Bipe would probably make it a very good trainer if handling was the only requirement of a trainer.

This, by the way, is one of those models where, with a reasonable breeze, one can hover stationary over the patch.

Landings of the 3 point variety come naturally to this model, stick full back just before touchdown, and provided you've got the airspeed low enough, she settles on to all 3 wheels in a way that makes the average tricycle U/C model green with envy.

I must say this model has given me a great deal of pleasure and has proved to be not only my favourite Sunday Flyer, but providing I can "escape", it is also my favourite Saturday Flyer!

Part two of the plan will be included in the February issue of R.C.M.&E. - DON'T MISS IT.

