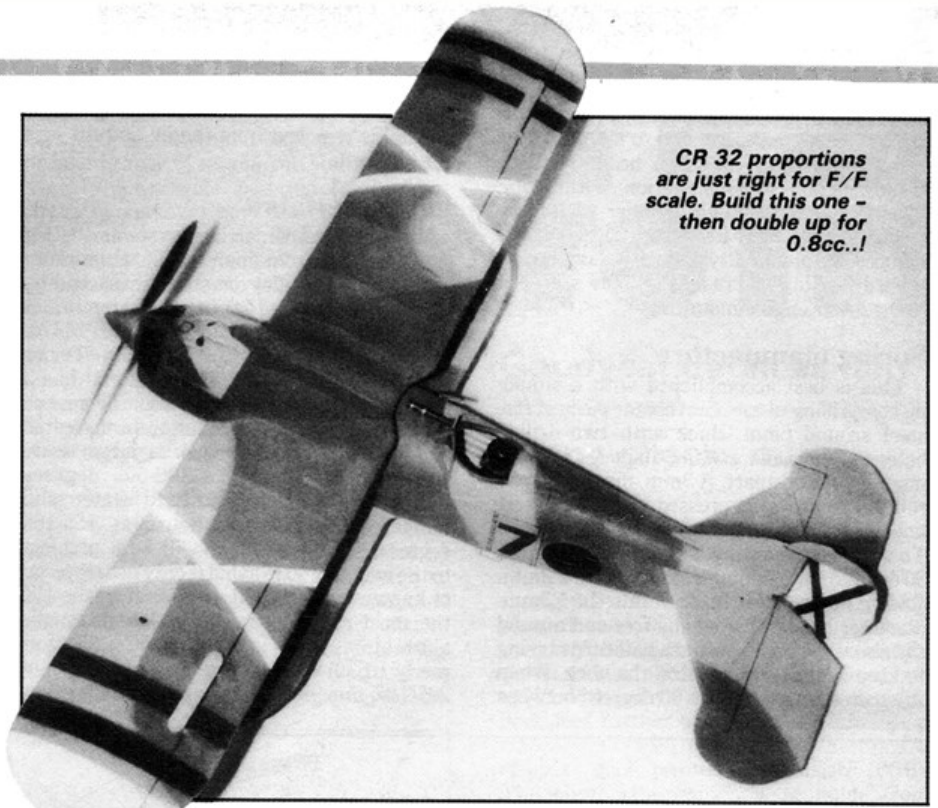


BUILD FROM OUR
FULL SIZE
PLANS!

MY acquaintance with this aircraft resulted from reading the Spanish aviation magazine *Avion Revue* a couple of years ago whilst on holiday. Surprisingly, the subject has not often been modelled, although – quite apart from its character, which is considerable, it was produced in large numbers and served in several air forces. Indeed, there are so many variations in CR 32 colour schemes and national markings that one could spend a modelling lifetime on little else.

The first version was Peanut-sized. At the time I didn't realise just how ambitious a project this was – the small size is deceptive – so, many useful lessons were learned. The



CR 32 proportions are just right for F/F scale. Build this one – then double up for 0.8cc..!

Try a fine Fiat fighter – the

CR32

To accompany our scale drawings here's Mike

Green's 17.1/2in 'Chirri' for Indoor rubber. Get

building ready for this season!

model turned out a shade too heavy, so duration was limited, but it looked pretty in flight and I was encouraged to build a larger one.

The model described here was produced for this year's Indoor Scale Nationals, but presented a few teething troubles – however, proper attention to the CG position these have been eliminated, although there is no doubt that expert trimming would improve performance even more...

Building the CR 32 should present no difficulty to the modeller already experienced in small aircraft, but some aspects are demanding and patience is of the essence. Weight must be kept to a minimum, especially behind the wing. The greatest risk is overdoing the finish. Use only the best materials for the job. Cost factor on such a small aircraft as this is insignificant.

Fuselage construction

The basic, entirely conventional fuselage structure is mostly from 3/32in sq. Longerons and spacers can be carefully trimmed to a triangular section. Use white glue; cyano is OK for certain tasks but it is a bit fierce for small aircraft and mistakes cannot easily be undone. Add the front formers and tack sheeting. Carefully study photographs of the prototype and carve and sand the nose to shape. This must look right, so take your time. Likewise, tack glue the rear foam section and carve paper. When satisfied with your efforts, these three components can be hollowed out as thin as possible with a small rotary tool. Leave the rear turtledeck about 3/32in thick. A face mask is essential, or you will risk asphyxiation – and foam plastic is a horrific substance when reduced to dust.

When all this is satisfactory add the

stringers at sides and bottom, cut away where shown and sheet the spaces between. Reinforce the interior of the fuselage at the motor peg position, taking care because this needs to be an exact fit. Tidy up with fine emery paper. The headrest fairing can be left until later, as can the cockpit cut-out. Carefully prepare and glue the nose disc.

Check the undercarriage angles and lengths against photographs as this is a particularly distinctive feature of the aeroplane. If you choose the spatted version, a useful tip is to line the insides of the spats with aluminium foil – or cleaned yoghurt tops – shiny side in; this avoids unnecessary friction and improves take-offs. For the same reason, wheels are slightly thinner than scale. Make sure they are a free fit or the model simply will not take off, but ground loop, making ROGs a source of frustration.

Noseplug and prop assembly must fit accurately – with no wobble. There is scope for experimentation with propellers but the one shown works quite well enough. Do not overlook the small key.

Wing surfaces

These are reasonably conventional. Sliced ribs give a little extra rigidity and are lighter than all-sheet equivalents. Note that top and bottom slices are fixed next to, rather than directly on top of, each other. This gives a stronger trailing edge (TE) attachment. Sand the TE to section before assembly to avoid distorting the wing. The leading edge (LE) needs to be raised from the building board. Carve and sand carefully to section. Trim the lower rib carefully to matching section. It is only too easy to exaggerate the scalloped effect at the TE so be restrained! The lower wing is made in one piece thanks to its lack of dihedral. Root ribs are trimmed to mate up with the curve of the fuselage. TE and spar fit under the front longerons as shown to give the correct incidence.

Avoid unintentional warps, but as the model must fly 'left' the lower, port wing may be allowed a little positive incidence – say, 3/64in – which may be built-in or introduced

during assembly.

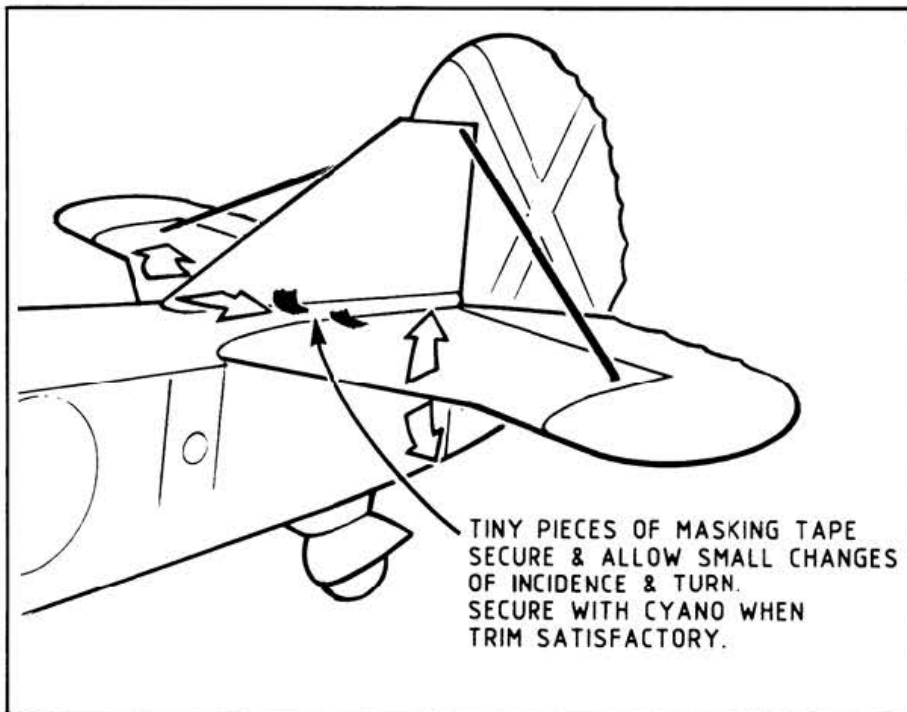
The fairing for the fuel tank on the top wing is carved from plastic foam and cut to fit the wing. One or two attempts may be needed to get it right. When satisfied, cover wings with tissue; my preference is for thinned white glue as adhesive.

Tail and fin affairs

These are simple – but only light wood must be used. The separate elevator is hinged with soft wire. Refuse bag wire ties or heavy-duty fusewire are fine. Build tail and elevator together, carefully parting afterwards. Trimming is greatly helped by a working elevator, so be careful with the covering. If the whole lot gets gunged up some other means of adjustment will be necessary. When fitting the tail to the fuselage you may find that judicious trimming of the LE is necessary. The fin is even easier. You may hinge the rudder if you like, but I did not, preferring to offset the whole affair slightly to port on assembly.

Covering the bones

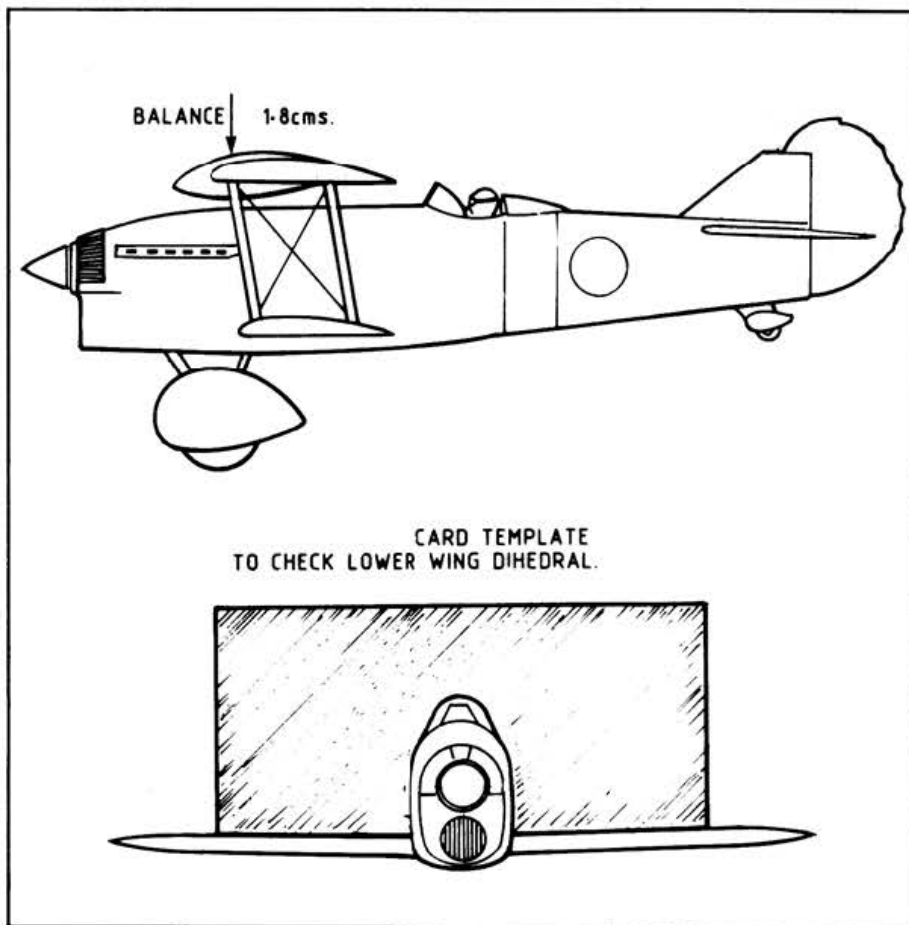
I used genuine Jap tissue, fixed with diluted PVA which is also used to apply the tissue to the turtledeck as it allows the slight double curvature to be accommodated. Use sufficient thinned dope just to fill the pores. Take it very easy because warps will be extremely difficult to remove. If you get dope on the foam parts they will dissolve and you will have to make them again. Lightly sand the covering with very fine emery paper to remove the hairy bits and you are ready to apply the colour scheme. I chose Humbrol enamels, well thinned. A good airbrush is a great asset. Generally speaking, it is best to get as much painting done before final



assembly. Actually, final assembly is the hardest part of the whole business...

Cut the slots for lower wing LE, TE and spar, and check for fit. You may have to trim root rib, spar and LE to suit. I used small amounts of Devcon because this adhesive gives plenty of time to make adjustments. Card jigs will ensure correct positioning. Pins may be needed to secure the top wing temporarily in position. Double check all angles. This is fiddly so make sure you have

everything just right. Trim outer wing struts to fit and fix (use Devcon again – cyano may well be tempting but you have no chance if you make a mistake). If you have made a rigid tail, fix it with just a spot of glue at the spar and a temporary fastening of masking tape at the LE – this permits incidence adjustment for trimming. Tail struts and bracing are omitted until the model is flying as desired. The undercarriage is secured to the fuselage with Devcon. Chamfer oleo legs to shape and fix. Add the tailwheel and windshield and you are ready to try the air...



Trimming and flying

The model must balance 18mm behind the top wing LE. Ballast if necessary with small pieces of lead and plasticene located in the space behind the radiator shutters.

The original model flies quite happily with a loop of 3/16in rubber of twice the length of the 'between-hooks' distance. This is perhaps a trifle long; 'one-and-a-half-times' should be enough to begin with. Start with short, low hops just off the decks, for which 250 turns will suffice. All this assumes Indoor flight – otherwise you will have to find the traditional 'flat calm and long grass'. Long grass, certainly! Indoors, the biggest risk is banging the walls. A touch more noseweight may be needed to prevent a 'floundering' pattern, and sidethrust can be added in small increments to generate the left turn under power. Gradually increase turns. If all is OK try a ROG. If the model fails to unstick, or chases around its wingtip, try a small amount of ballast on the outer wingtip. This is a handy trimming tip which is just as applicable to larger power models, for its effect does not increase with airspeed, and thus it is a relatively docile means of adjustment.

When all is satisfactory, the time has arrived to experiment with various rubber motors. You will shortly become very aware of the difference between various batches of apparently identical rubber! All that finally remains is to add fine detail, including, of course, the pilot.

Enjoy flying this characterful Italian job!