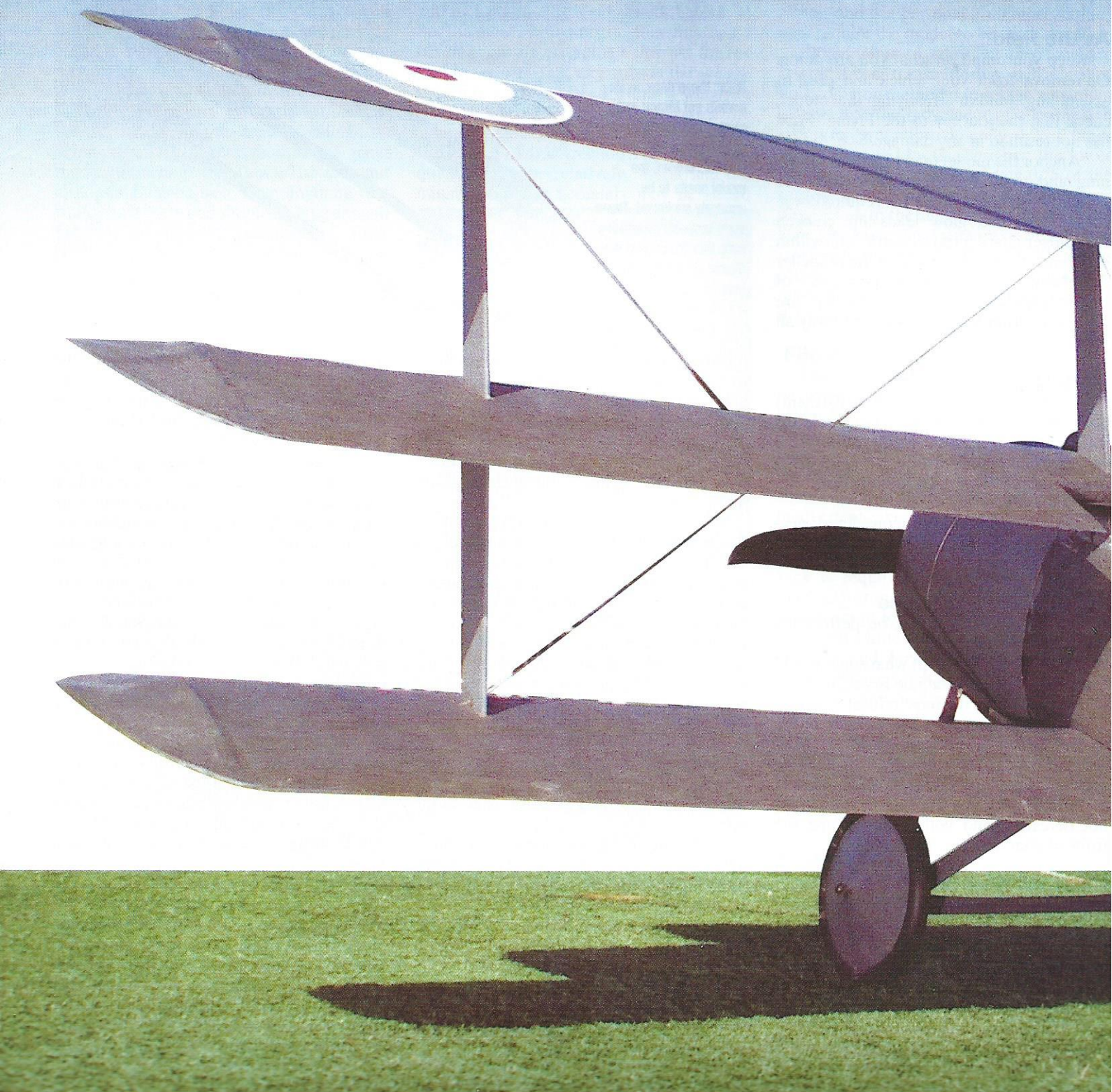
A PARK-FL

Mike Roach based his SP 400-powered Sopwith Triplane on
Peter Rake's popular Pup



TRIPLANE

Why the Triplane?

This model is the result of my inability to build an aircraft straight off a plan - I have to change something or not build it at all! However, I admired Peter Rake's Sopwith Pup so much that I drew it up as both a Tabloid and the plan presented here. I don't think that any aspect of the Pup plan remained unchanged for the former, but, on the face of it, the Triplane is very close to the Pup. However, as soon as you start measuring and comparing in detail there are a number of minor alterations to make (OK, I know about the three wings, thanks!). The undercarriage is much longer and the wheels larger, the cockpit is different, as is the tailplane and fin, and the cowl has a smaller chord. But this is only a sport scale model and I did not go overboard on detail apart from the pilot, cockpit and Vickers gun, which are faithfully reproduced, as are the markings and 'sit' of this wonderful aircraft. The covering is Litespan dark green, which I suspect is too dark even for an RNAS aircraft: it's certainly nowhere near the khaki/green of the AFC. The undersurface is in Litespan cream, which is a good match for doped fabric. All the markings are from painted Solartrim, of which more later. The Triplane was a popular aircraft with its pilots and after its first flight was memorably described by a contemporary as 'looking like an intoxicated flight of stairs'!

Since I have merely taken Peter's plan and amended it, I make no claim to have 'designed' the Triplane. Anyone with the Nov./Dec. 1999 issue of FSM, where the Pup appeared as a full-size plan along with a mass of photographs and three-views, could build it immediately. It is an excellent flier, turns heads at the local park and so far everyone has recognised it. If you want to make one, there are a few changes to the building sequence and one or two alterations to the construction to suit my style of landing. It remains a simple and economical model which flies well and looks perfect in the air or on the ground.

Fuselage and tail

Laminate the 0.8 mm ply for the struts first and cut and sand them to their exact length and shape from the plan. I don't believe in cutting them to fit during assembly - this can only build in inaccuracies. Make the fuselage sides from light 3mm sheet and glue in the centre section struts, packing and ply doublers over the plan. Don't forget the dihedral brace cut-out, which is my preferred method of adding a bit of beef to the wings. Please use Peter's peg joints if you prefer. Add 3 x 3 strip reinforcements and the ply patches where shown, and then join the two sides with the formers, battery and motor plate and your choice of servo mount. I prefer to make the motor plate with two laminations of 2mm liteply since the glue adds so much to the strength of the structure.

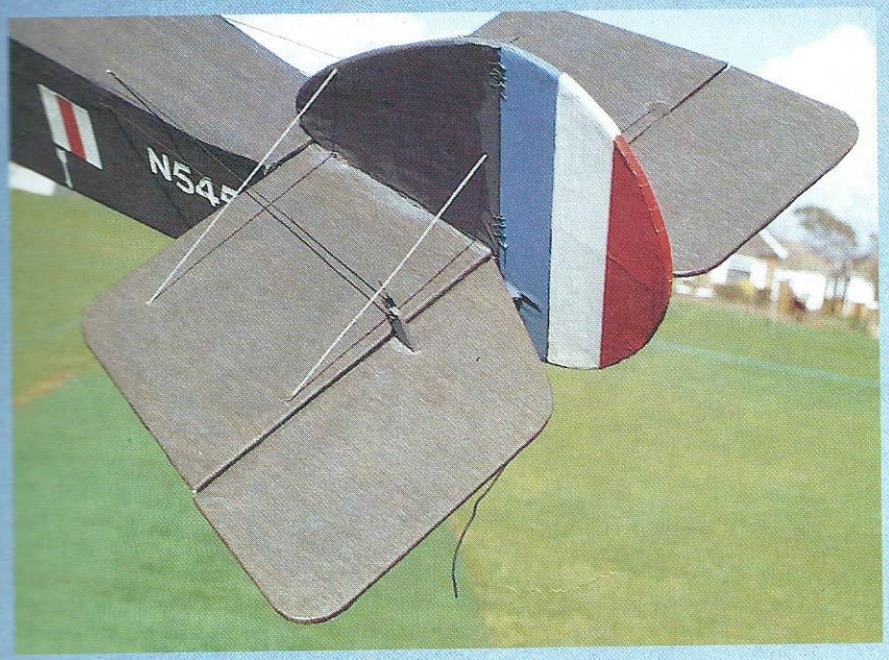
Whether you have the servos in line or side-by-side in the fuselage is your choice. I

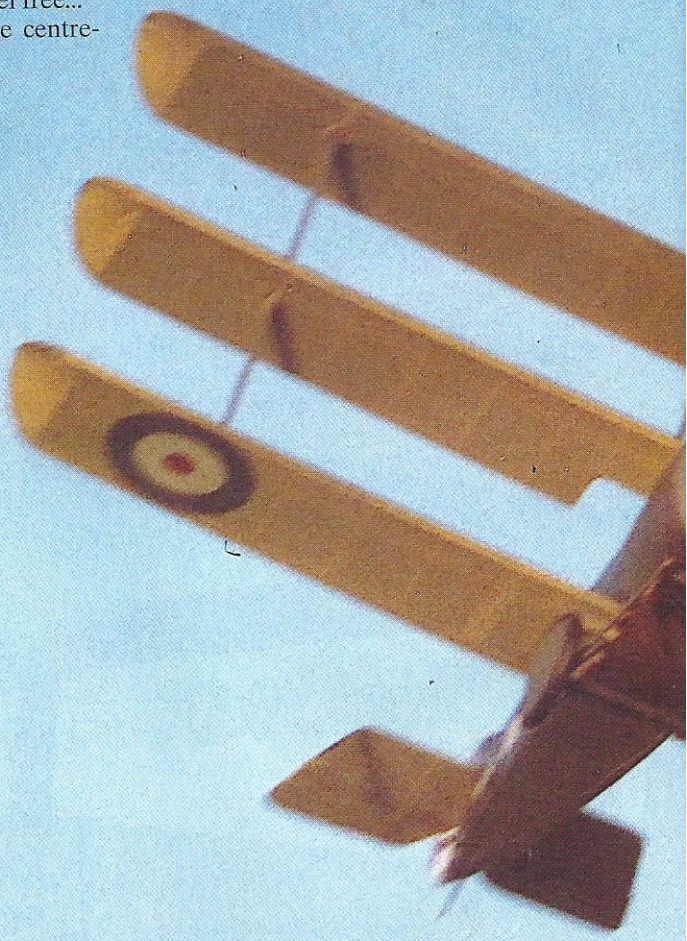
Wings

Cut out a 2mm liteply pattern rib (easily strong enough for the job), turn on the Vivaldi and cut out all 58 ribs in one go. It won't take you more than an hour, so you needn't even change the CD in your player. If you stack the ribs up in lots of 15 or so, a little light sanding will ensure they are all the same. Now just build the wings: this does take a little longer! Notice that I have used 0.4 ply patches on the strut ribs rather than Peter's 1/8" reinforcements, but feel free...

Join the upper wings with the centre-section and dihedral brace, and the lower wings with just the brace and a section of spar, making sure that the lower wings slot exactly into the fuselage. Dry runs at the assembly are a good thing, as they show up inaccuracies and allow you to get used to the jigging necessary to get everything straight and level. The centre wings just slide over the struts, but must be adjusted carefully to the correct incidence.

Tail surfaces are very straightforward. Prototype features laminated outlines but sheet parts would be quicker and just as good. Hinges can be tape or sewn.



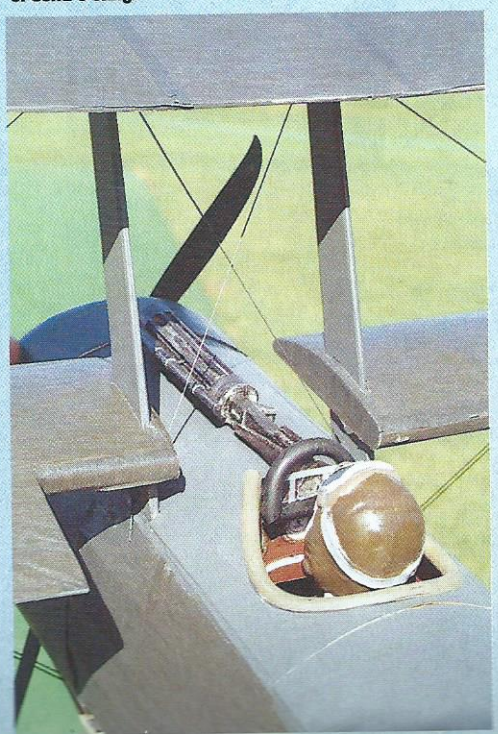


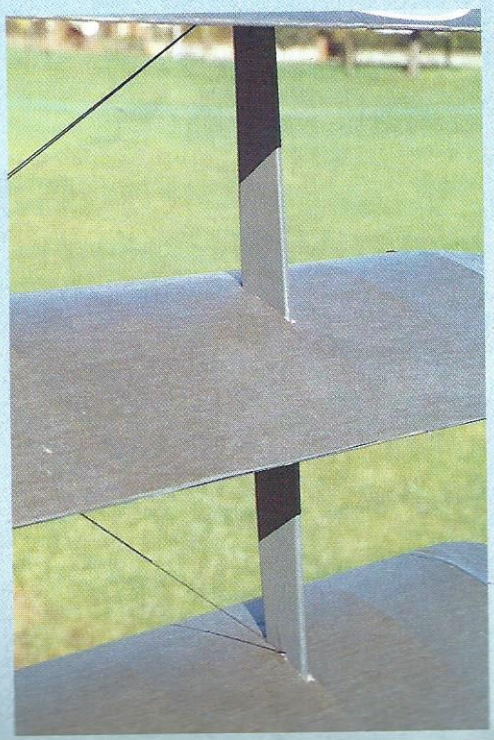
haven't noticed any control surface problems with the side-by-side layout. Because I have kept to the scale cowl length, I installed my battery quite far forward, and have made it removable, but you could use the Pup cowl chord to give yourself some leeway. Now build the rear fuselage and join the two components together as squarely as you can - the long overlaps of the 3mm sq. longerons make this quite easy.

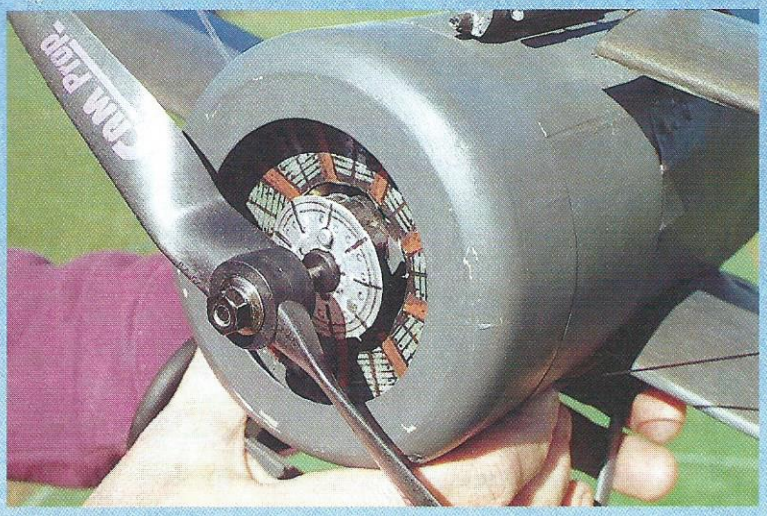
The tail is straightforward. You may choose laminated outlines as I did, or the Kiel Kraft strip balsa of my youth; I don't suppose it makes any difference. I use sewn hinges at the moment because they are so light and positive, but tape works well. I find that there isn't enough thickness of balsa to use mylar hinges. The rudder and elevators are linked to two micro servos by 15lb 'pike line' and Drennan crimps (from my local fishing shop) in the Rake fashion. I have experimented with button thread control lines and find them light, positive and easy to install. They stretch a little when wet though!

I sew the undercarriage legs to 2mm liteply formers using button thread. The formers are only glued into the fuselage after covering and decorating. The u/c legs can also be bound and soldered together at this late stage.

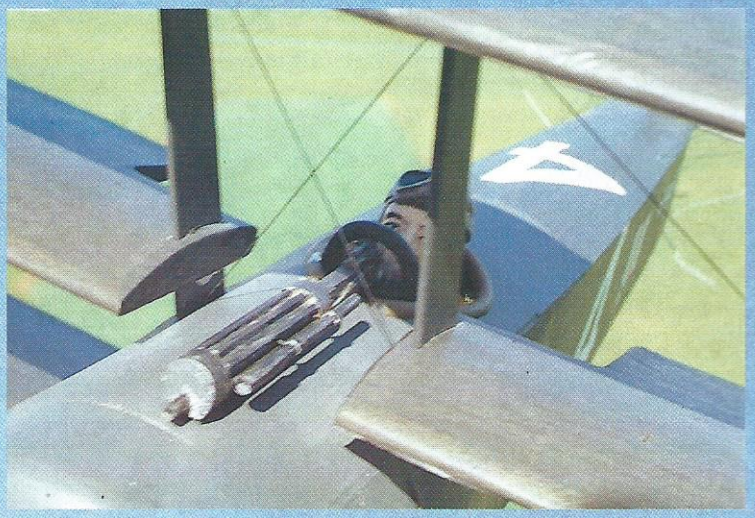
Struts are from laminated 0.8mm ply. Mike recommends making them to exact length and shape from the plan, rather than cutting to fit during assembly, which can introduce inaccuracies. Take care when setting the incidence of centre wing.







A spot of engine detail is essential inside that prominent cowl ring. Speed 400 motor is carried on laminated 2mm liteply mount for added strength.



Model may only be sport-scale but still worthy of a pilot, Vickers gun and cockpit details. Markings are from painted Solartrim - text explains how to make them.

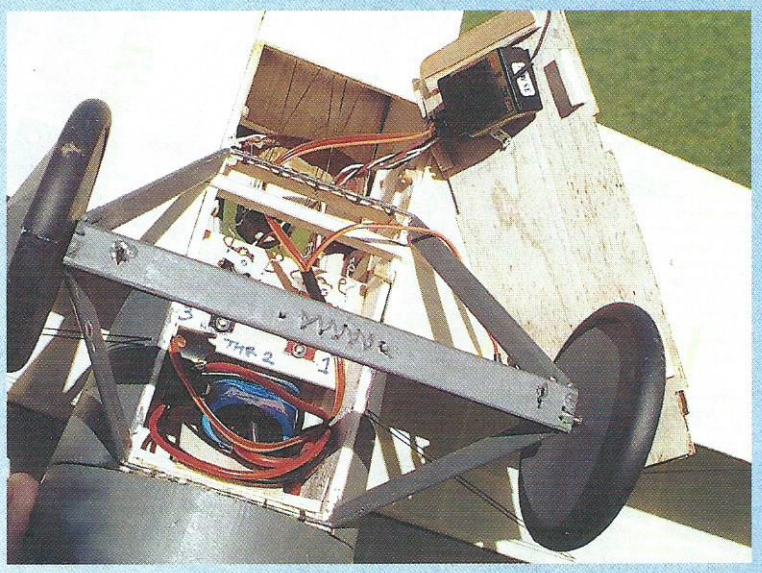
Cover the wings now. I found that I could add the roundels to the lower wing after assembly, but that those on the upper wing were not so successful and would have been better painted directly onto the Litespan before covering.

Covering with Litespan

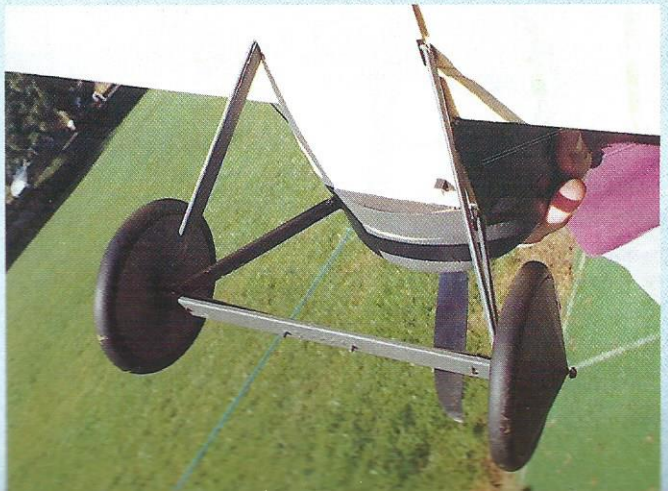
Decide which grain direction and side of the Litespan you are going to use. (Panels cut across a sheet sag more between the ribs than if cut with the grain; the matt side is arguably more 'authentic' than the semi-gloss for this aircraft). Start with the undersurfaces and cut panels exactly to size, plus a 3mm allowance at the leading and trailing edges and for any folding over (try to avoid getting the folds in the material near the edge of your panel). Paint a 10mm stripe all around the edge of the inside of the panel with slightly thinned Balsaloc and wipe a Gluestick round the edge of the balsa structure. This will enable you to accurately position and tighten the Litespan before using heat and is a technique I find essential. Then seal the edges with a warm iron, keeping the covering tight and even. Don't shrink it yet! Finish all the undersurfaces, then the upper surfaces and only then allow yourself the luxury of shrinking with a medium hot iron. I just love this bit!

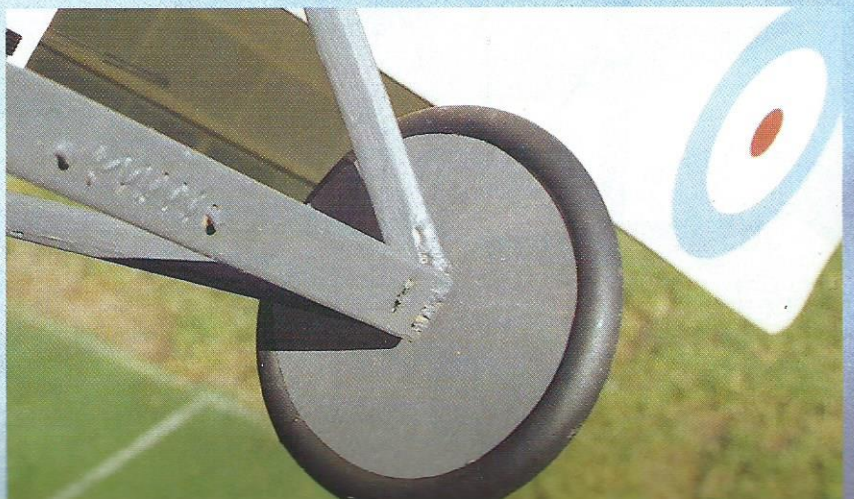
Decoration

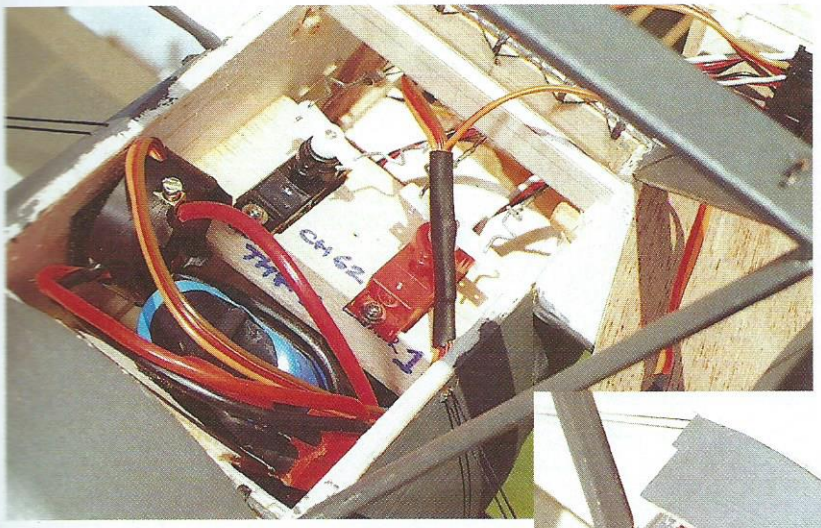
I left the Litespan unpainted, sealed all the bare balsa and ply and painted it dark grey, then used painted Solartrim for the markings. The results are excellent for sport scale and resist handling damage. The tech-



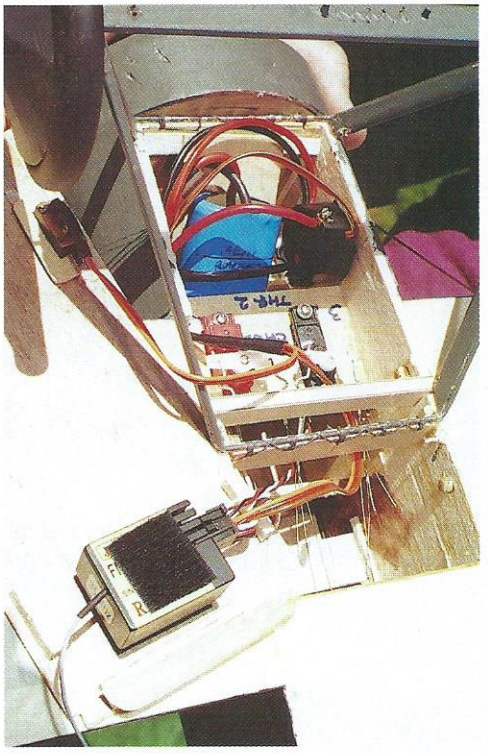
Avionics are carried in lower fuselage hatch above undercarriage with battery stowed well forward. Undercarriage legs are sewn to 2mm liteply formers and only fitted when the model is covered and decorated.



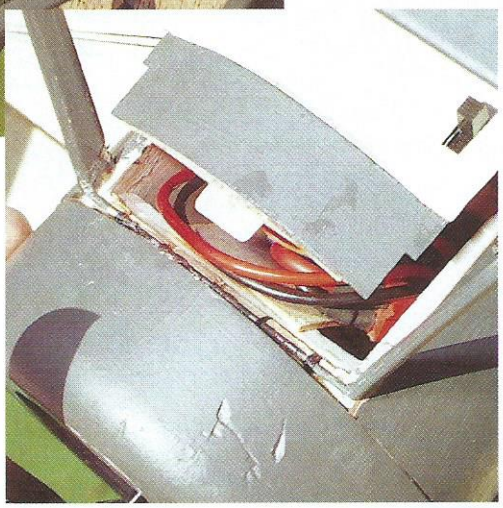




Twin micro-servos sit side-by-side in the prototype, operating closed-loop control system to rudder and elevators using 15lb 'pike line'. Button thread could be used as an alternative.



nique is simple: tape down a sheet of Solartrim and paint it in the right colour for the markings. I used Humbrol matt enamels, but acrylics work just as well. You will need two coats of white to cover the base colour (I used silver left over from another model, but I suppose 'linen' would be best). Then, using a cutting compass or a sharp knife, cut out the marking. Follow the 'soapy water' instructions for application and pat dry. Even the small 'lift here' arrows and the serial numbers can be made in this way. By the way, the model represents an aircraft of No 1 Squadron RNAS in 1917.



Little model is a nice flier and looks totally convincing in the air. However, the glide is non-existent due to all that frontal area and drag-inducing clutter - so watch it!

Assembly and flight

After all those dry runs, the final assembly should be a piece of cake. I usually have to repeat the fiddly process of linking the flight controls to the servos since my fingers are all thumbs at this stage. Flying is as good as Peter's Pup and the model looks wonderful in the air but has too much drag to glide - keep the power on unless you have plenty of air under the wheels! I would be keen to hear from builders at 5 Foxwood Avenue, Christchurch, BH23 3JZ or roachfoxwood@aol.com. Now, where's that 1/72 scale plan of a Camel?