Rest assured this model has been flown and tested by countless top quality pilots, and it works beautifully.

too brittle) and maintain the correct dihedral angle until the glue's firmly set. Then, smear the dihedral braces with PVA and slide them down into their slots, wiping away the inevitable excess glue. The panels should then be left overnight to bond fully. (Don't be tempted to reinforce the join with a bandage as it's unnecessary - the 2 ply braces will never let go, and the bandage will simply add weight and make the underwing sheet more difficult to fit).

So, there you have it - a finished wing. Quick and easy, eh? The 45" span will be very strong and should weigh 7 - 8oz complete with ailerons, torque rods and hinges. If you wish, the wing can be covered at this stage up to the inner aileron extent, ready for the fuselage to be completed - it's much easier to cover whilst it's just a wing!

TAIL SURFACES

Very soft, light $^3/_{16}$" sheet can be used for the tail parts, so choose your grades carefully and cut out the various pieces that make up the tail. The only exception here is the fin post, which should be from quite firm stock as it will support the large rudder and has to withstand all the associated stresses. A cross grain fin top hasn't been incorporated as I didn't experience any warping problems with any of the prototypes, but if you insist on doing this it's straightforward enough. Be sure to cut out the tailplane slot very accurately using the fin post as a guide, these two parts will locate later. Add the tailplane tips and round off the leading edges of the whole unit, except for where the two tailplane gussets will attach.

After tapering to $^3/_{32}$" at the rear, round off (or bevel) the leading edges of the elevators to allow 10mm movement each way. These can be slotted and hinged but don't make them permanent yet.

$^3/_{16}$" dowel is used as the elevator joiner for two reasons; (a) it's lighter than a metal rod and, (b) a metal rod can erode the soft balsa within the control surface after long term use, ending up with only the directly operated elevator enjoying full up and down travel, the 'slave' elevator lagging behind at travel extents.

The rudder should also be tapered to $^3/_{32}$" at the rear, and its leading edge bevelled to allow up to 25mm of movement each way. (You'll also need to remove a suitable segment with a round file to allow clearance for the elevator joining dowel, but this shouldn't be done until the fuselage and tail parts have been assembled).

Finally, find some firm $^1/_{16}$" balsa ($^1/_{32}$" ply will do) and cut out the fin gusset extension piece so that it will exactly match the $^3/_{16}$" gusset. This really adds to the realism of the Tucano's quite complex tail configuration and is well worth doing.

DATAFILE

Name:	Tucano
Model type:	Electric sports
Wingspan:	45"
Wing chord:	9"
Wing area:	360 sq. in.
Fuselage length:	$40^1/_2$"
All-up weight:	48 - 56oz
Wing loading:	19 - 22 oz / sq. ft.
C of G:	80mm from root l.e.
Control functions:	Aileron, elevator, rudder, throttle
Surface travel:	Aileron ±12mm, elevator ±10mm, rudder ±25mm
Motor type:	Geared 600
Parts:	Vacuum formed clear canopy priced at £13.75 plus £3.00 UK p&p. Ref. CANRC2009 available from the Nexus Plans Service. Tel. 01322 616300.

FUSELAGE CONSTRUCTION

Once again, balsa selection is very important. It's easy to pick up a very light, soft balsa sheet and think, 'no, this is far too flimsy for fuselage sides' - well don't! You won't be saying that after the build as the curves and other components consolidate the strength - so please choose the lightest grades you can find.

Cut a pair of fuselage sides from identical $^3/_{16}$ x 4 x 36" sheets, prepare the doublers F2, F3 and have the previously-made fin post to hand. These components are sufficient to get started, and as the fuselage is completely flat-bottomed it's simple to make a jig on your building board.

The first thing to do (and much easier at this stage) is to draw around the wing root templates (made earlier) onto the respective fuselage sides and cut out the apertures, using the finished wing as a guide for final adjustments. The flat bottom of the wing must line up exactly with the flat bottom of the fuselage to get the correct incidence. Chamfer the inner rear edges of the fuselage sides (almost to a point) so that they meet squarely with the fin post when pulled together, and mark the position of F3 on each side. Fit the doublers and triangular section at the front as these dictate the position of F2.

The fuselage sides can now be joined to F2 and F3 using epoxy, but only glue half way down the formers at this stage to prevent the fuselage from bowing. When set, pull the rear ends together onto the fin post and glue it in place ensuring that it's absolutely vertical and that fuselage alignment is maintained. At the front, glue the smaller pieces of triangular section above the doublers and a piece of triangular on the back of F1, which will aid shaping of the chin.

No down-thrust is necessary but the large fin allied to a fairly big prop means that the Tucano has quite a pronounced rotating vortex effect, so 2 - 3° of right side-thrust will be essential to avoid large quantities of rudder trim. It's far easier to build this in to the fuselage front using a sanding block before fitting F1. When happy with the resulting thrust angle F1 can be glued in place with epoxy, holding the sides firmly together until set.

F1 takes quite a lot of making from good quality $^1/_8$" birch ply, however Graham Cornford of Fellside Precision Cutting (01539 536184) has produced CNC-cut F1s for the two powerplants we'll be using.

TIME OUT

That's it for now, don't miss next months RCM&E when we'll wrap things up with the completed fuselage construction, motor and radio installation, covering and flying... in the meantime, get building!