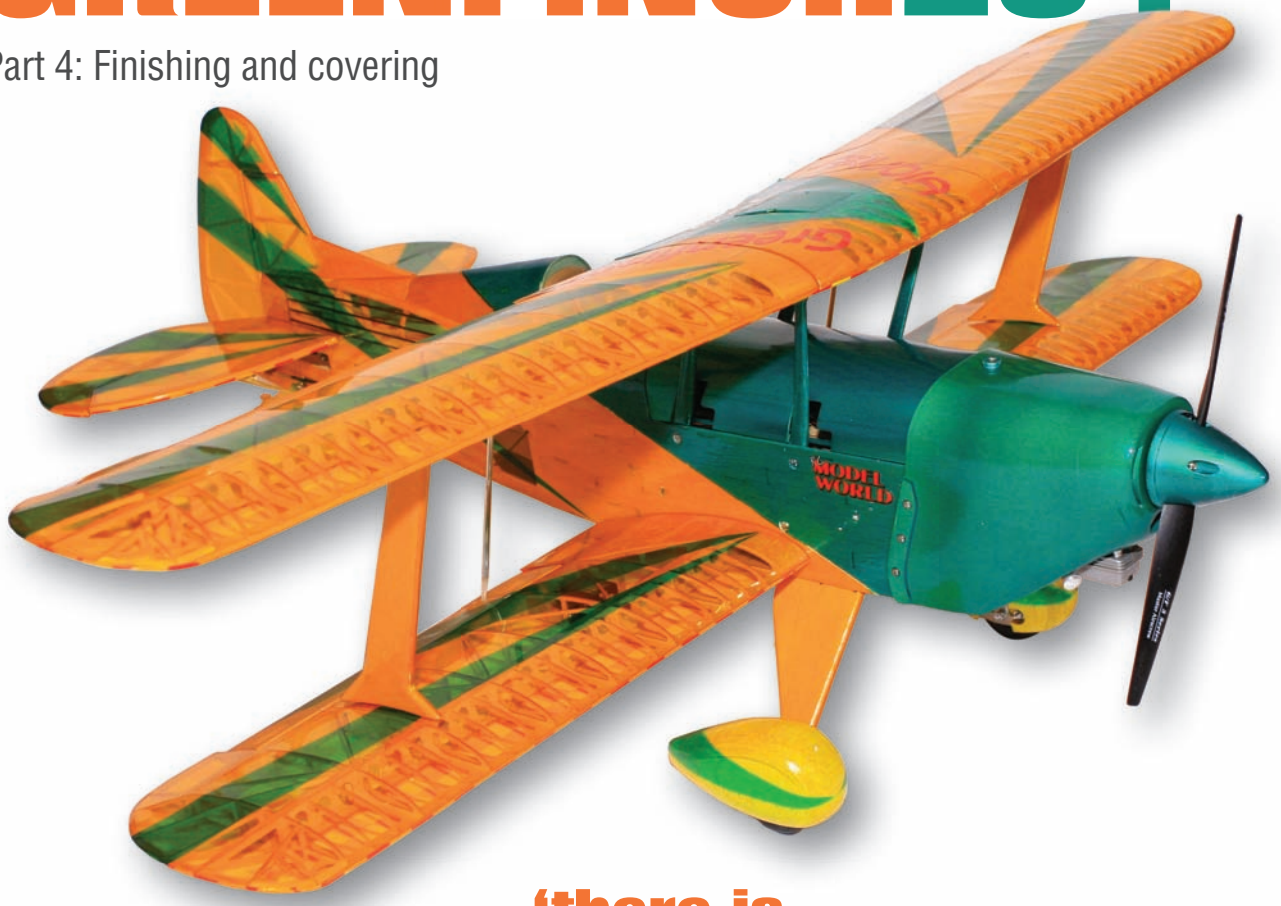
Author / Photographs: **TONY VAN GEFFEN**

GREENFINCH234

Part 4: Finishing and covering



‘there is no reason to assemble these incorrectly’

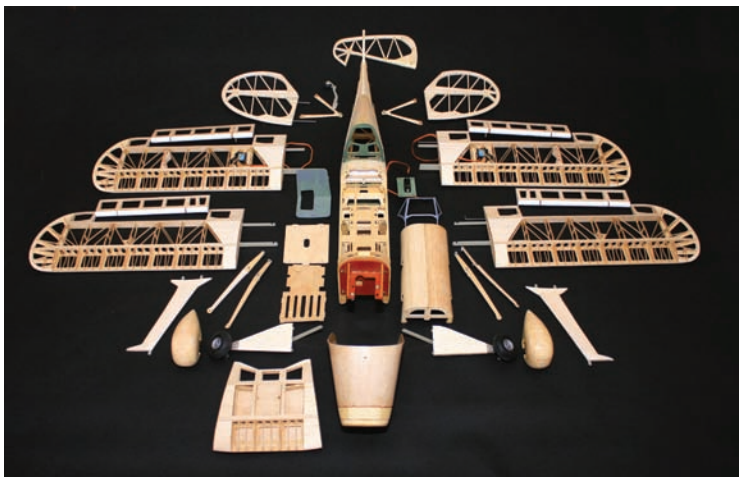
FLASHBACK

Regular readers will remember that we recently undertook the (pleasant) task of constructing this little Greenfinch model from the Sequoia Systems kit consisting of over 1000 individual precision machined parts, and chose to install an ASP 30 four-stroke engine for power. We have now reached the stage of finishing the model and this is where my personal challenge begins, but first we needed to make the pushrods and fit the servos and fuel tank, etc.

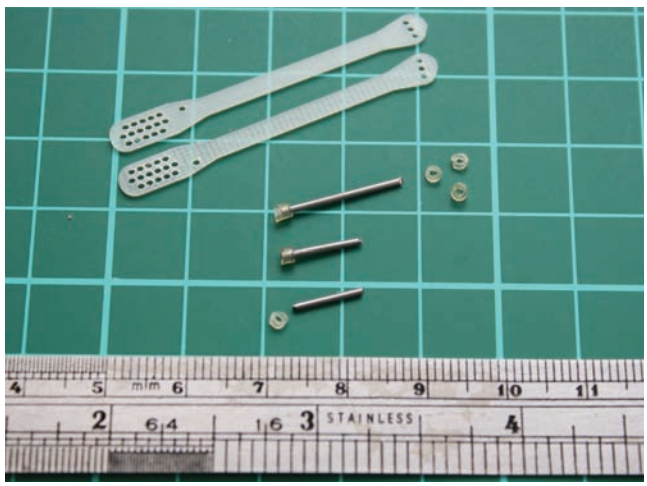
AILERON PUSHRODS

The aileron link rods from the lower wing to the top wing are constructed mainly from aluminium tube, which is gently squeezed at the ends and epoxy-glass end fittings glued into these ends. These together with wire connecting parts and heat-shrink tube (provided) form a very neat and strong component that is more than adequate for their purpose, and can be very quickly fitted and removed easily if needed.

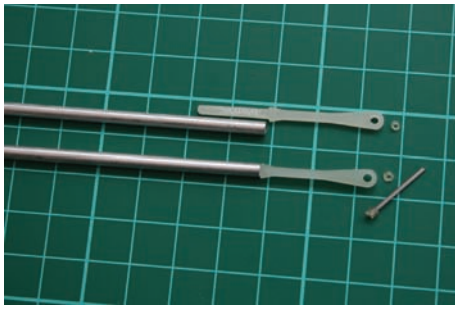
The servo-to-aileron connecting pushrod consists of two shaped 1.0 mm thick epoxy-glass plates sandwiching the servo horn



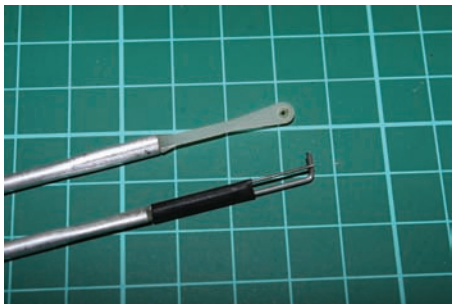
Airframe components ready for final assembly and covering



The aileron pushrod is made from two identical fibreglass pieces with adjustment holes; 1 mm wire pins are made up to secure the pushrod

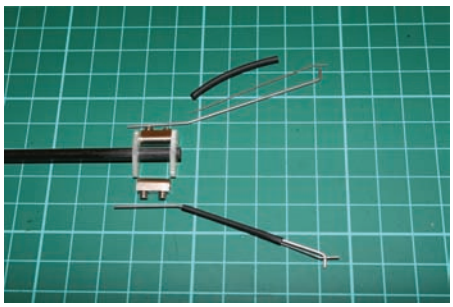


2 mm tube bearings are fitted in fibreglass top ends of the aileron connecting pushrods



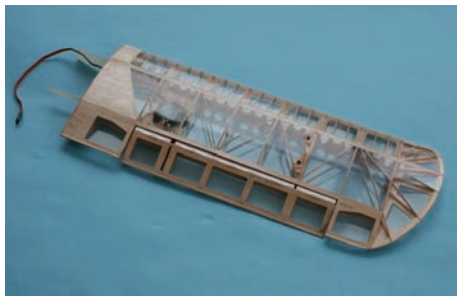
Aileron pushrod with lower wing connection shown with the hole and tube bearing, with the top wing connection shown below

Elevator pushrod servo end; note the rounded off carbon tube



Elevator pushrod rear end is made from several parts; note the electrical connectors have been removed from the plastic housing and are sandwiched between two fibreglass ends

1.4 mm rudder pull-pull wires are straightforward 90-degree bends with 0.6 mm retaining wire



A 'glass-like' finish to the wings with clear Solarfilm

and aileron horns, and these are connected to the horns with a 1 mm wire pin retained by short lengths of 2 mm tube epoxied in place at either end. These epoxy plates are provided with multiple holes at the aileron horn end, arranged in such a pattern that adjustment is allowed in 0.2 mm stages. (Note: This is the same as half a turn of an M2 thread, which would be the smallest adjustment possible with a normal M2 clevis).

The aileron link rods from the lower to top wing are not adjustable when finished and therefore careful attention is needed during the assembly of these to make sure the aileron alignment is correct with the appropriate top wing incidence (this review model was set at 0-degrees relative to the bottom wing). Do not glue the final assembly until this is achieved and double-checked. Note that parts for a second set of link rods are included with the kit in case you wish to change the upper wing incidence later on, to suit your style of flying.

RUDDER AND ELEVATOR PUSHRODS

Clear instructions with pictures and illustrations are included in the comprehensive construction notes and there is no reason to assemble these incorrectly – unless your name just happens to be 'Tony'! My first attempt at the rudder pull-pull wire rods meant that 5 mm short was not acceptable, and of course being short meant I needed more 1 mm wire, which of course I didn't have in stock so this caused a bit of a delay in the proceedings.

However, I did manage to connect the elevators using the twin wire system shown in the instructions and using the metal 'chock block' adjustable system was able to get it right first time. The rudder system is simply a matter of cutting everything to the correct length first time and getting the 90-degree bends exactly in the right place as no adjustment is available here apart from the slight adjustment available of the rudder servo tray, (which is to remove free play in the wires). Careful reading of the instructions leaves no doubt of how the procedure is undertaken, but if you don't read it first and clearly understand it then be prepared to make a second set! (Roger tells me he will send spare wire if required... now he tells me!).

'I wanted a transparent finish'

FITTING OUT

After some deliberation the Dubro 2 oz fuel tank was installed quite successfully by suspending it with plastic tie-wraps from the underside of the battery tray under the main top hatch. This meant that all three fuel tubes needed to enter the engine compartment through the firewall and the 3 mm Tufnol motor mount. Holes were measured and drilled accordingly and the tubes entered the engine compartment close to the bottom edge of the mount and were routed behind the engine to the carb feed and exhaust pressure nipple. The filler tube was left dangling with a metal stopper to prevent drainage. A fourth tube was fitted to the engine rear crank case as a breather, and this made things a bit tight but it all worked okay.

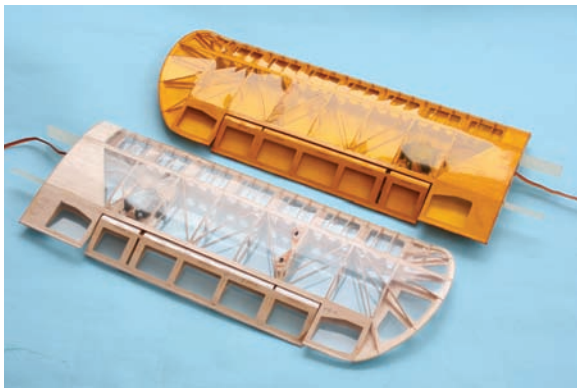
I opted to use Spektrum radio and an AR500 full range 2.4 GHz receiver was mounted inside the top hatch on the battery tray with Velcro, with all servo leads routed down the inside of the fuselage and neatly out of sight. A receiver switch was installed in the cockpit underneath the instrument panel and easily accessible by hand, while the battery connecting lead was routed into the rear battery compartment.

COVERING AND FINISHING

Covering a model is usually a simple matter of painting or film covering, but not me; I wanted my model to be different and to retain the same original pattern and colour scheme as the prototype by Sequoia, but I wanted a transparent finish

With tissue applied, several coats of Poly-C were brushed onto the fuselage to give a smooth finish

With several coats of Poly-C and sanding, the sprayed finish looks perfect



It was finally decided to change the clear transparent film finish to a coloured transparent scheme

All the green components and fuselage front end were sprayed with Auto-Air Colours paint, and then fuel-proofed with FlexiKote

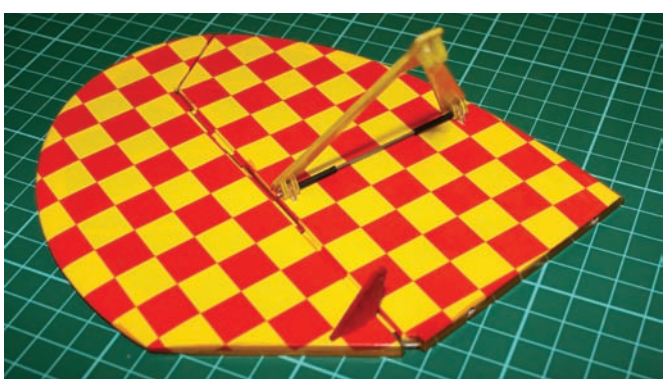
so the model could be 'looked at' so that the craftsmanship and engineering could be admired and enjoyed, as well as being flown – it seemed to deserve it!

I first decided that the solid fuselage areas at the front could be primed and painted, with the open areas covered in clear heat-shrink film. I would then add colour to the film by painting with transparent acrylic water-based paints (green and yellow, acquired as part of my airbrushing workshop with The Airbrush Company). Not knowing how the two would mix this was a bit of an unknown area for me so I tried a test piece that seemed to work quite well before I committed myself to spraying the airframe.

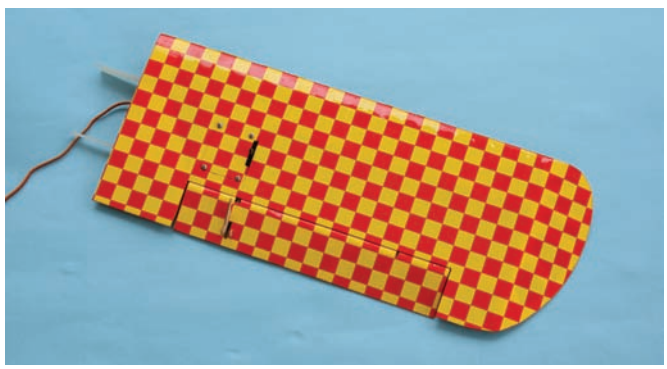
'the only route would be to start again'

The fuselage and hatch doors were all first primed with several coats of Poly-C (a water-based primer) and sanded between coats until I had a smooth-to-touch 'like glass' finish all round. Poly-C is a good all-round model finishing product for levelling off the wood grain and preparing for painting or even fuel proofing. I gave the model up to six coats in places, and sanded between applications. I then sprayed the cockpit interior and inside the main hatch and cowl with thinned Humbrol Cockpit Green enamel – after a second coat it was perfect!

When this was dry the fuselage, main hatch and cowl were masked off and sprayed with water-based acrylic Auto-Air



Underside of one tailplane half and the strut is now fitted; note the plywood horn has been painted to match the scheme



Undersides of the flying surfaces were covered with chequered Oracover, and the pattern match was fairly easy to achieve

Colours transparent green, which seemed to go on quite well at the time. When dry a second coat was added to the three components and surprisingly the finish seemed different, uneven, so after sanding between coats a third paint coat was applied and this changed the overall finish with varying shades of darkness a little more – and still with a variation in colour match. A fourth coat was out of the question so I left it at that and hoped they would dry out evenly.

Next I masked off the flashes on the wing top surfaces and sprayed on the green. Initially it looked good but as it dried it seemed to bubble and create holes, as if the surface was greasy, so I wiped it off, cleaned the film with Acetone, and started again. To my surprise the same thing happened, so I gave the wings a coat of Solarfilm Prymol to give the paint a base to grip. The next coat of paint went on well, but just wouldn't dry; the paint seemed to gradually run into the lower areas and became very uneven and thin in places. Perhaps my spraying skills needed a little more practice? With no other choice I cleaned the paint off the wings and put them aside.

I left the model a few days while I gave this some serious thought and decided that the only route would be to start again, so a different approach was made.

I loved the clear film finish – it looked like the airframe was in a glass case and really showed off the construction well, but something that hadn't been thought over too well was the fact that when it would eventually fly there may be an issue with orientation! Reluctantly (and I really mean that), I carefully removed all the clear Solarfilm and decided that green and yellow transparent Solarfilm would perhaps be the next best thing, but how would I contrast the underside? My thoughts came up with a small chequered pattern, and red and yellow Oracover was chosen for this. The advantage with this material is that the inside (not usually seen) is yellow and this would make a good base for the wings when viewed from the top. The yellow and green transparent film on top would still allow one to view the craftsmanship of the design – a real winner!

SPECIFICATION

INFORMATION

NAME:	GREENFINCH234
MANUFACTURER:	Sequoia Systems Ltd
PRICE UK:	£336.00
I/C OPTION KIT:	£24.00
83-DEGREE EXHAUST MANIFOLD:	£24.00 (suits .30 four-strokes; consult Sequoia)
MODEL TYPE:	Sports aerobatic
ENGINE:	.26~.30 cu in 4-stroke (suits OS/ASP/SC 30FS) .10~.25 cu in 2-stroke glow/diesel
MOTOR:	200 W~350 W Brushless
BATTERY:	1500~2100 mAh 2S~3S LiPo
SERVOS USED:	Five Etronix 9 g 1.6 kg micro
TEST ENGINE:	ASP30FS
CONSTRUCTION:	Full kit build: All CNC cut balsa and plywood parts

SPECS

WINGSPAN:	34½" (876 mm)
WING CHORD:	6" (152 mm)
WING AREA:	2.6 ft² (24.2 dm²)
WING LOADING:	13½~15 oz/sq ft (41~ 46 g/dm²)
TARGET WEIGHT:	35~39 oz/1.0~1.1 kg
LENGTH:	30½" (775 mm)

So, the next two weeks of evenings were spent stripping the old and recovering the model entirely, but remembering that the fuselage parts were still painted green and needed to match (as near as I possibly could). You can now see the finished model at the beginning of this article. I think it's different, do you?

Next time we shall be putting the finishing touches to this connoisseur's model and test flying it – with everything crossed!

RCMW

CONTACTS

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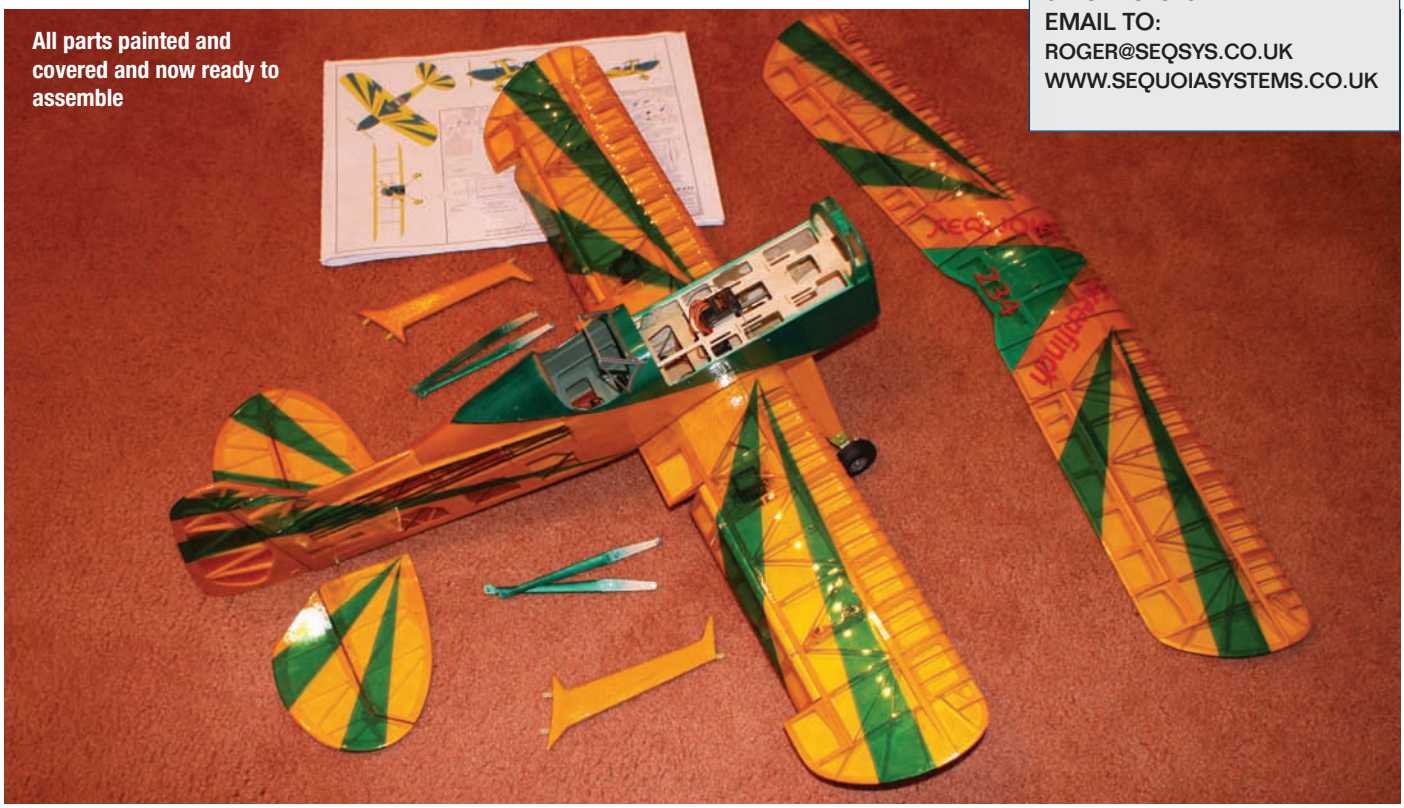

All parts painted and covered and now ready to assemble