

Full-size plan feature by Chris Golds

Silver Beauty

Another electric-powered scale delight from the board of Chris Golds - a 36" (915 mm) span **HAWKER FURY Mk.1**

The Hawker Aircraft Company was doing very well with its production of the Hart two-seat bomber which began in 1928 and included the Hart Fighter or 'Demon' (see my plan in *Flying Scale Models* - April 2003), most of which were powered by the Rolls Royce Kestrel in-line engine.

The Company responded to the RAF requirement number F20/27 (fighter requirement number 20 issued in 1927) with a neat, single-seat, single-bay biplane powered by a Jupiter radial engine. This was followed by the Hoopoo naval fighter using virtually the same airframe, again with a radial engine, but somewhat encumbered by the necessary naval equipment. Then came the Hornet that employed the RR F XI S in-line engine which provided such

a sparkling performance that the Royal Air Force placed a production order with Hawkers in 1930 and chose the name 'Fury' for possibly the most beautiful biplane ever built.

Whilst I had built an i.c.-powered and heavy Hawker Demon many years ago, I had never built a Fury as the seeming necessity to hang a great lump of exhaust out to one side of the streamlined nose really offended my aeronautical senses. So when my electric-powered Demon proved to be such a nice flying scale model, I was tempted to design a Fury to use the same power-train of a Mega 16/15/6 brushless motor running from nine 1850 NiMH cells. The Demon was, if anything, slightly overpowered so I projected the Fury to be a little larger and to keep the same wing loading of

just over 15 ounces per square foot.

The plans were started on 18 February 2003 and were completed the very next day. I had learned a great deal about small e-powered biplanes from my Curtiss P-6E and Hawker Demon and I was convinced that I knew where I wanted everything - and especially the critical coupling of the C of G and the placing of the main wheels ground-contact point.

The design was for a wing span of 36 inches and a length of 31.3/4 inches and I was very surprised to find that this gave a wing area of 2.3/4 square feet, very much more than the only slightly smaller Demon. The reason for this anomaly was that Fury wings do not have any wing-root cut-outs as Hawkers had refined their wing planform from that of the Demon. I reckoned that I



could build to a maximum of 34 ounces total and this would give the surprisingly low wing loading of about twelve and a half ounces per square foot. In my drawings I paid great attention to the fuselage contours, especially at the nose where I refined the mounting of the motor and the conical spinner. I also proposed to use streamline aluminium tube for the interplane struts to improve the appearance of the model and to get closer to 'scale'.

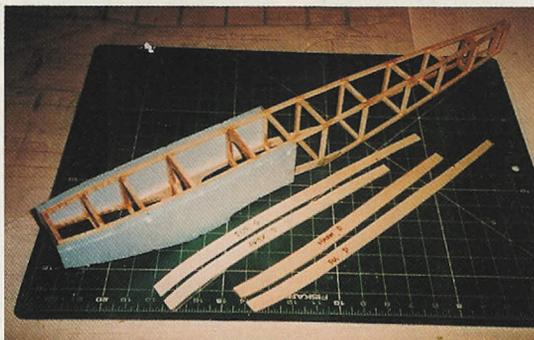
Building began on 22nd February 2003 (ended on 21st March '03) and was quite straightforward as most of the construction had been sorted out on the Demon. The magazine plan will have full building instructions printed with it, so here detailed 'tab A into slot B' instructions are not needed. Careful selection of materials helped to keep the weight growth under control and the final figure was just below the proposed limit of 34 ounces. The final wing-loading was only a little over 12 ounces per square foot, so a good flying performance was expected. The longest single task was the finishing, because I wanted to do full justice to the original aircraft which appeared in my 43(F) Squadron history book photos, both in its silver beauty and - sadly - in its drab and ugly green/brown camouflage brought on by 'Munich'. However, the latter photo showed the tail wheel that I desired and which superseded the tail skid that will not provide ground steering on the tarmac surfaces from where I fly.

Finishing

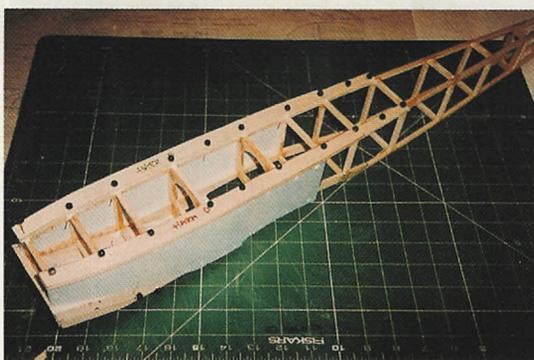
I chose K1944 as at one time it was the mount of the 'B' Flight Commander and sported colourful yellow markings to distinguish it from those of A and C Flights. When, in 1961, I took command of B flight on the same Squadron, I was lucky enough to have my name painted on the fuselage just below the cockpit of my Hawker Hunter, but the era of 'flight colours' was long gone by that time, so my Fury would have to



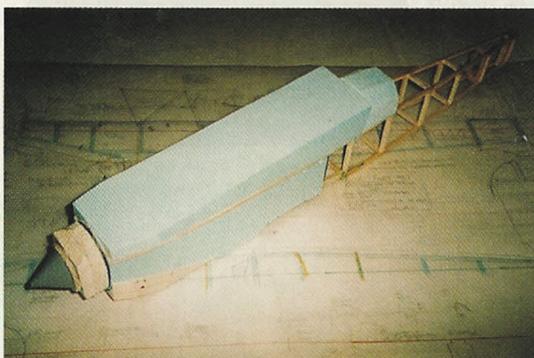
A kit of parts for the fuselage - side frames, formers and bulkheads.



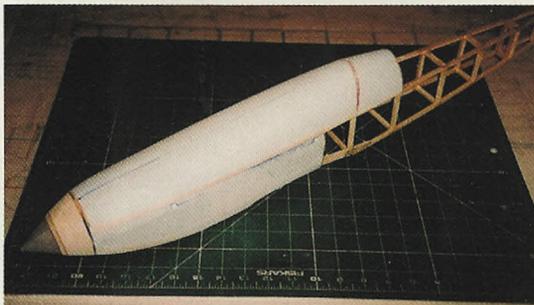
First stage in assembly - fuselage boxed with side foam fitted.



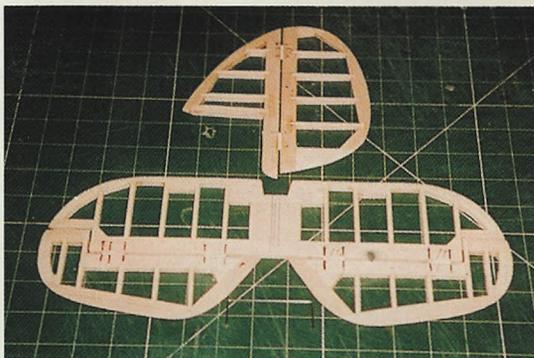
Next stage - the basic fuselage with hatch 'ledges' in place.



Foam hatch block and spinner added.



Fuselage after sanding the foam components to shape to match spinner.



The tail components finished and ready for sanding to section.

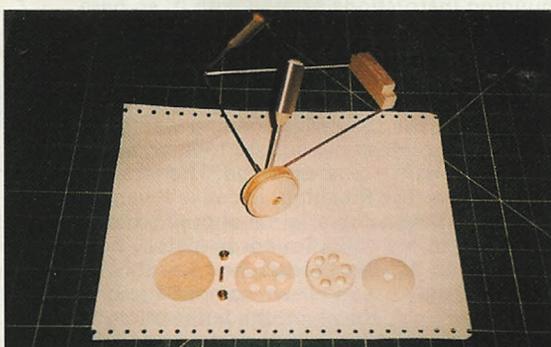
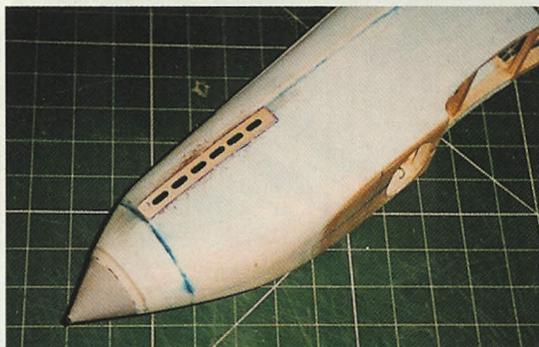
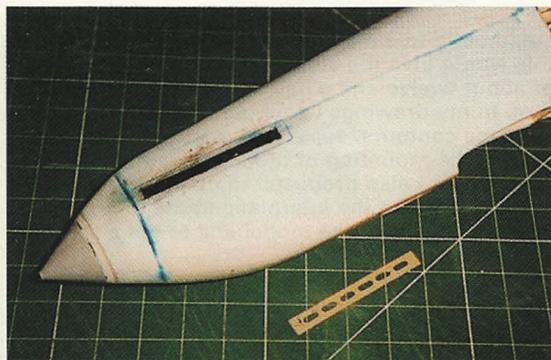
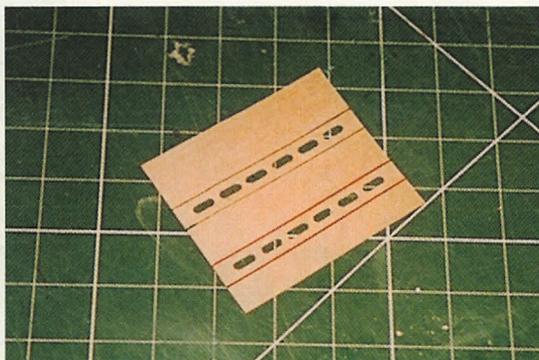


RIGHT: Making the exhausts, step 1. The ports drilled and sanded.

FAR RIGHT: Step 2. Ports area cut out and painted black.

RIGHT Step 3. Exhaust ports fitted on left-hand side of fuselage.

FAR RIGHT: Kit of parts for a wheel with undercarriage unit and finished wheel at rear.



serve the purpose by proxy! I did suggest to my boss (an excellent and friendly Squadron Commander) that we should revive the flight colours system on our Hunters and in reply he described to me the exact length of pier from which I should jump!

I used silver Profilm for the open areas of the airframe and I find this material gives excellent results with no sagging in sunlight (sunlight? What sunlight in the winter of 2002/2003?). The markings were all hand-made from Protrim and even the very distinctive black and white chequers came out exactly as I wanted and with only a little experimentation. She was finished and, with some trepidation, I placed her upon my weigh-scales and was delighted to see that I had not exceeded the planned-for weight of 34 ounces. Now we had to wait for the right weather.

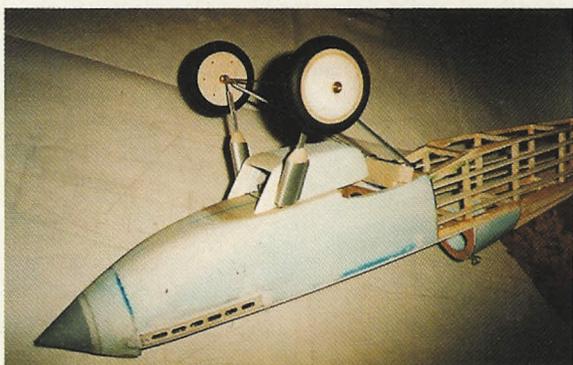
Flying

On Saturday, 22nd March 2003, the wind had

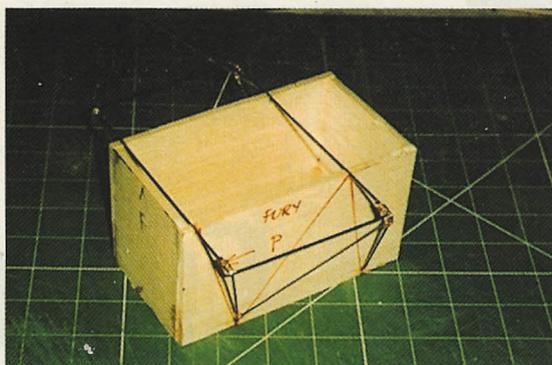
gone right down and we assembled at our flying site in calm and cold conditions with a bright blue sky, that promised good quality photos and video coverage. The range checks went without a hitch at 75 yards Tx aerial down with motor on and off, so I top-up-charged and drank some coffee to calm my twitches. Strange that I am always nervous about the first flight of a new model, but I find the process invigorating in the extreme and even look forward to it!

With cameras at the ready, I opened the throttle slowly to avoid nosing over on the tall undercarriage and made ready to boot in the rudder to counter the inevitable swing. Unnecessary! She tracked dead straight and, with a little elevator, I lifted her off the ground after only about three seconds and then we settled into a steady climb to a safe altitude to get the first taste of the model's handling. I could feel the relief as I found her to be absolutely honest in manoeuvring with no signs of design errors in C of G or control





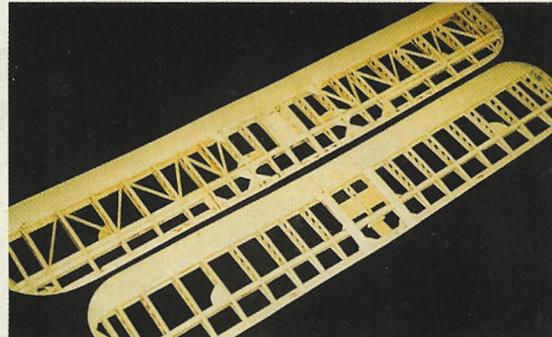
FAR LEFT: Main undercarriage, wheels and radiator in place.



LEFT: Accuracy is ensured by using a simple balsa jig when building the cabane strut assembly.



FAR LEFT: A balsa jig is also used when mounting the cabane unit to the fuselage.



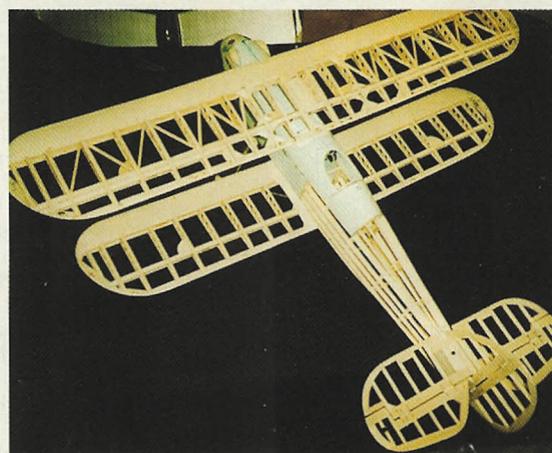
LEFT: Wings finished and awaiting Profilm covering.

throws and I settled down to really enjoy my first trip. Even the landing was easy, with a little power left on, to counter the drag of a scale biplane on finals and give a positive flare to touch-down almost exactly where I wanted to.

The second trip was even better, with loops, rolls, stall-turns and spins all safely and easily executed, despite the ever-increasing wind and turbulence, which bounced her about considerably.

Another of my 'must-dos' had been done and I was pleased with the scale effect of the model's finish and with its beautiful handling in the air. My 'silver beauty' was just that, in both looks and performance and my designing brain was already at work with a seductive 'what's next?'

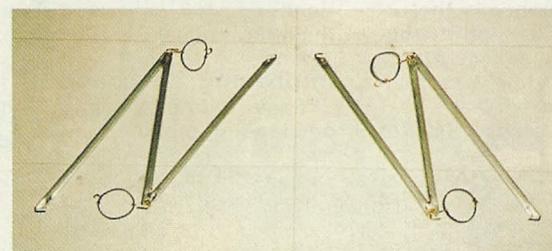
Enjoy your Hawker Fury and polish up those aerobatics. Perhaps you could persuade some friends to build their own models and you could practise some formation aerobatics as they did in the 1930s. Tied together of course! A dream, I agree - but a very pleasant one, to be sure! Fly safe.



LEFT: Completed airframe prior to covering; finished model came out below Chris' target weight of 34 ounces.



LEFT The interplane 'N' struts are from 1/4" streamline aluminium tubing.



LEFT: Cockpit detail with pilot figure; also visible is aileron servo in top wing centre-section.

Specification

Name: Hawker Fury (Biplane)
Type: R/C Electric Scale
Designer: Chris Golds
Wing span: 36 inches
Motor: Mega 16/15/6 400 Brushless
Prop: 7 x 5 APC 'e'
Flight pack: 9 x 1850 NiMH cells
No. of channels: Four - rudder, elevators,

Construction: ailerons, throttle
 Built-up light ply, balsa, blue foam
Covering: Profilm
Trim: Protrim
All-up weight: 33.1/2 ounces
Wing loading: 12.2 ounces per square foot

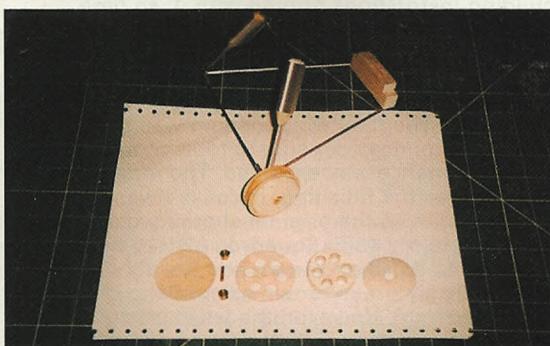
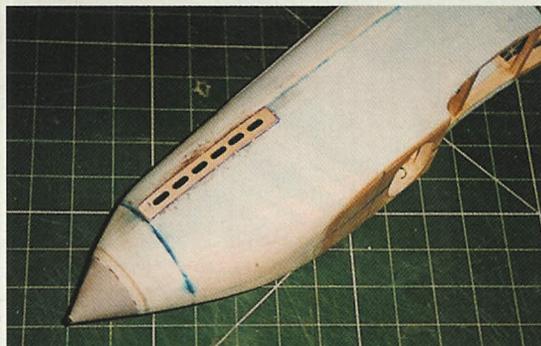
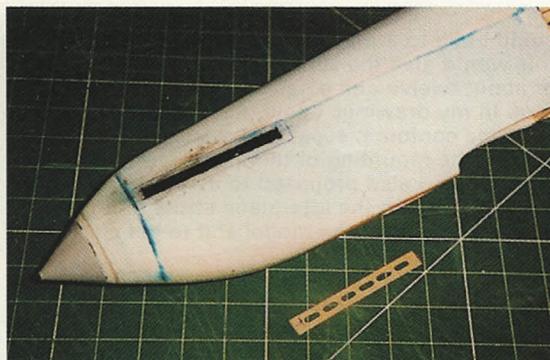
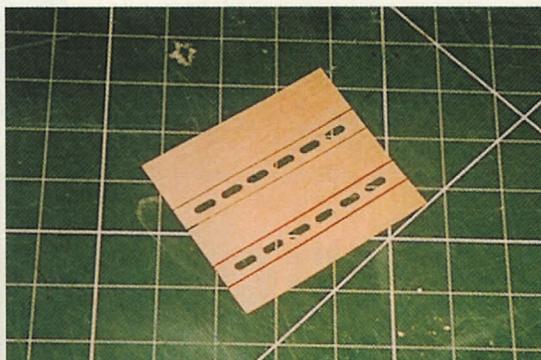
FAR LEFT: A very happy Fury pilot! Chris Golds with the prototype.

RIGHT: Making the exhausts, step 1. The ports drilled and sanded.

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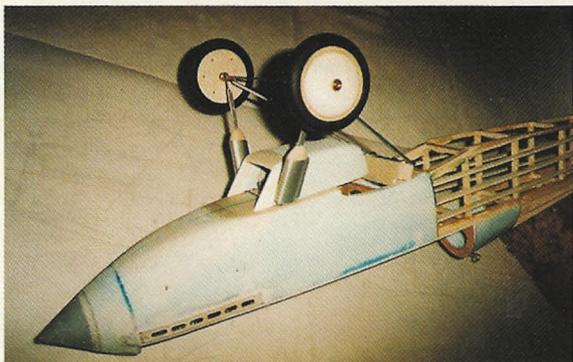
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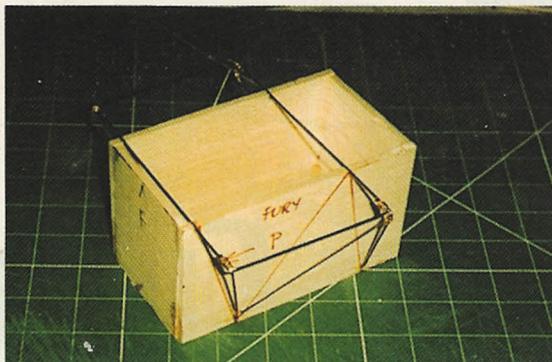
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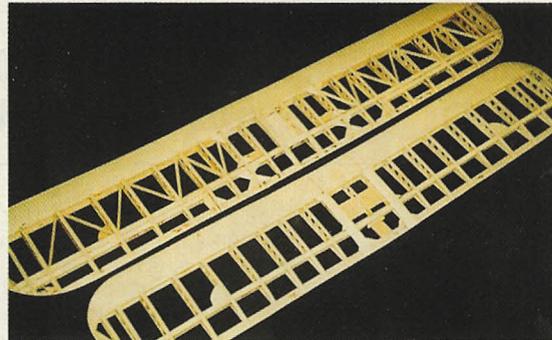
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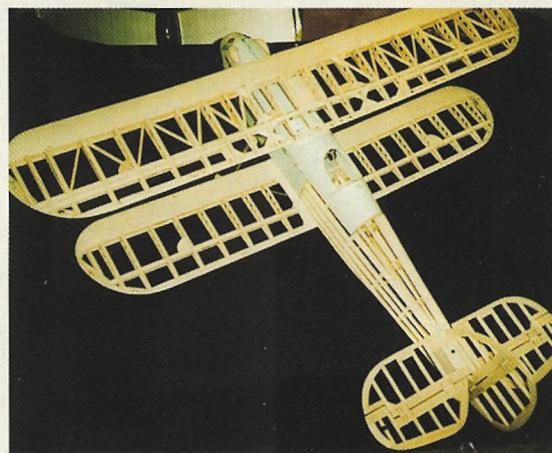
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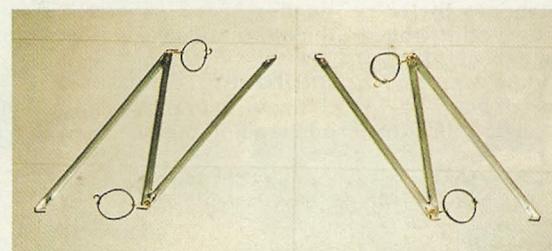
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