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EDF DELTA JET

VOL. 68 NO. 10 OCTOBER 2025

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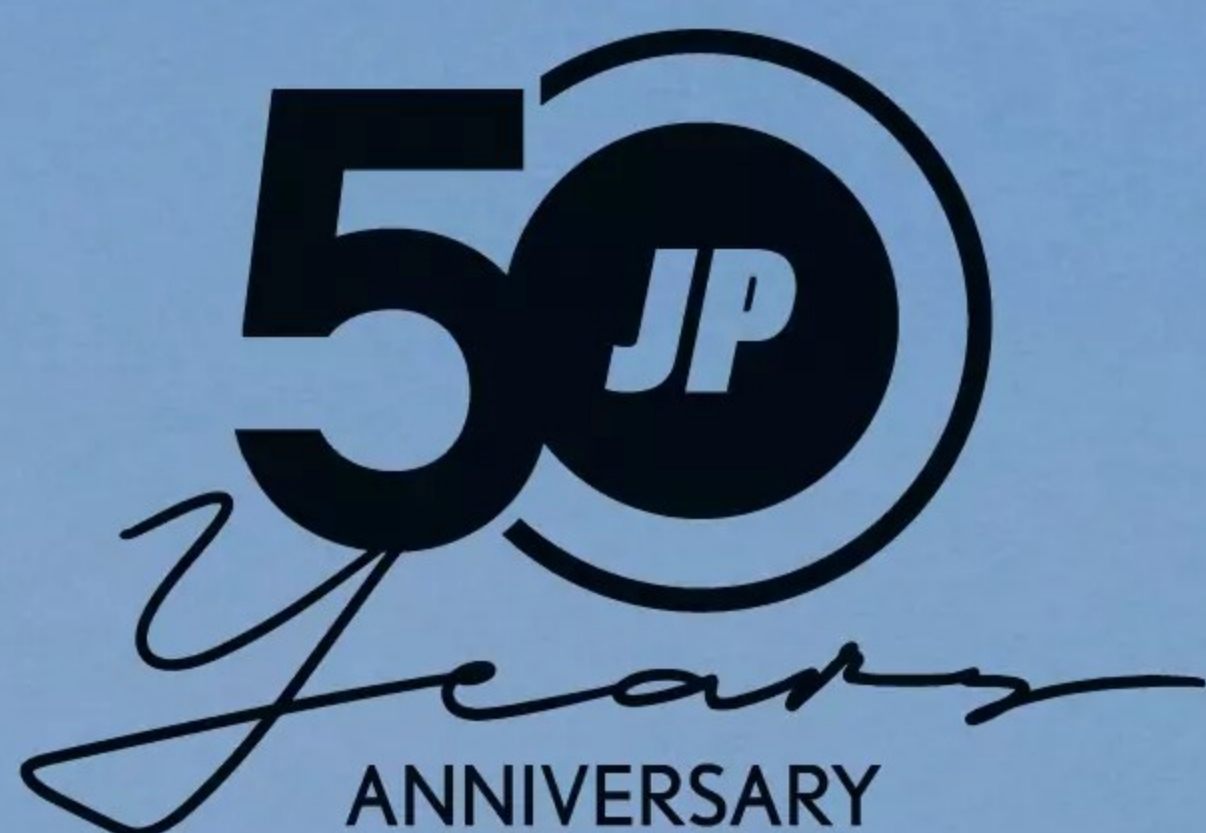
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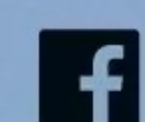


SPECIFICATION

Wingspan:	1340mm / 53"
Fuselage length:	1160mm / 46"
All-up weight:	2.5 kg / 5.5 lbs
Rec'd engine:	SC .40-.52 2-stroke SC .52-.70 4-stroke
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Welcome

Welcome to the October 2025 issue of RCM&E.

At my local model club over recent weeks, it has been interesting to witness one of my clubmates being coached as a new examiner for the BMFA Achievement Scheme. After finishing a flight during my last session Neil sidled up to me with a grin on his face and I had an inkling of what was coming, 'Please can you take a dummy B Test for me?' I was only too pleased to help, on the proviso that Neil and our Area Chief Examiner, John wouldn't take my 'proper' B away from me as without any prior practice I knew my flight would be a bit rough around the edges! It was also a very windy, gusty day and I hadn't flown the B schedule for many years.

Sure enough there were plenty of things for both to dissect, with Neil being a far more demanding taskmaster than John, the rascal! For my part, I found it a very interesting exercise as although the schedule holds nothing to fear for any experienced pilot it really needs practicing a lot to make sure that the required manoeuvres are flown correctly. It also pays not to be too clever as I found out with the Figure of Eight. As an occasional R/C helicopter pilot I like to play around with the rudder so I thought I would display my mastery of this oft underused control by clearly using it to steer my model around the eight. How good was that, I thought, but I was wrong as both examiners criticised my turns as being too flat... Hopefully by the time you read this Neil will have gained his examiner's ticket and our club will have its first fully qualified examiner.

One last thing about the B. Please don't do as I did all those many years ago, when I passed my FW test. At the time I also took my Heli A and I should have immediately took the Heli B, but I was worried my nose in hovering wouldn't be good enough. I've kicked myself ever since as other than this I was fully prepared, mentally and practice wise. It would be so much harder now, many years later. So my advice to anyone who has just passed their Fixed Wing A (or any other A test) is don't delay taking your B or even a C. Do the next step as soon as you can whilst you are 'in the zone' for taking any of the BMFA achievement tests.

Now for a quick look at the main articles in this month's magazine.

Stuart Mackay gets things off to a good start with his Model Magic feature about Colin Enk's stunning Stearman biplane built from the



Flair kit. Our first review of this issue comes from Andrew James who assembles Top RC's 1500mm S Cub in less time than it takes to make a cuppa! Danny Fenton (Make It Scale) resumes work on a twin engine Piper Apache as his next control line scale model before Chris Williams (Scale Gliding) shows how to splice together a spruce wing spar when building a scale glider. This month's big show report comes from Mike Freeman who braved the strong summer sun to capture the models flying at Woodspring Wings.

The middle of the magazine is the usual place to find your free pull-out Pro-Plan which is filled this time by drawings for Tony Nijhuis' latest EDF jet, a stunning Gloster Javelin.

David Ashby begins our second half by attending Intergride 2025, a top F5J thermal soaring event for UK and international gliding enthusiasts. Next, we have a second look at the Fly Wing Bell 206, which takes to the air under GPS guidance, and then it's over to John Stennard for his latest Insider column and coverage of more indoor model flying topics. Finally, in my latest RTFM feature, I unbox a fifty size, ARTF Tiger Moth from VQ Models

I hope you enjoy reading it all.

Happy Flying!

Kevin Crozier

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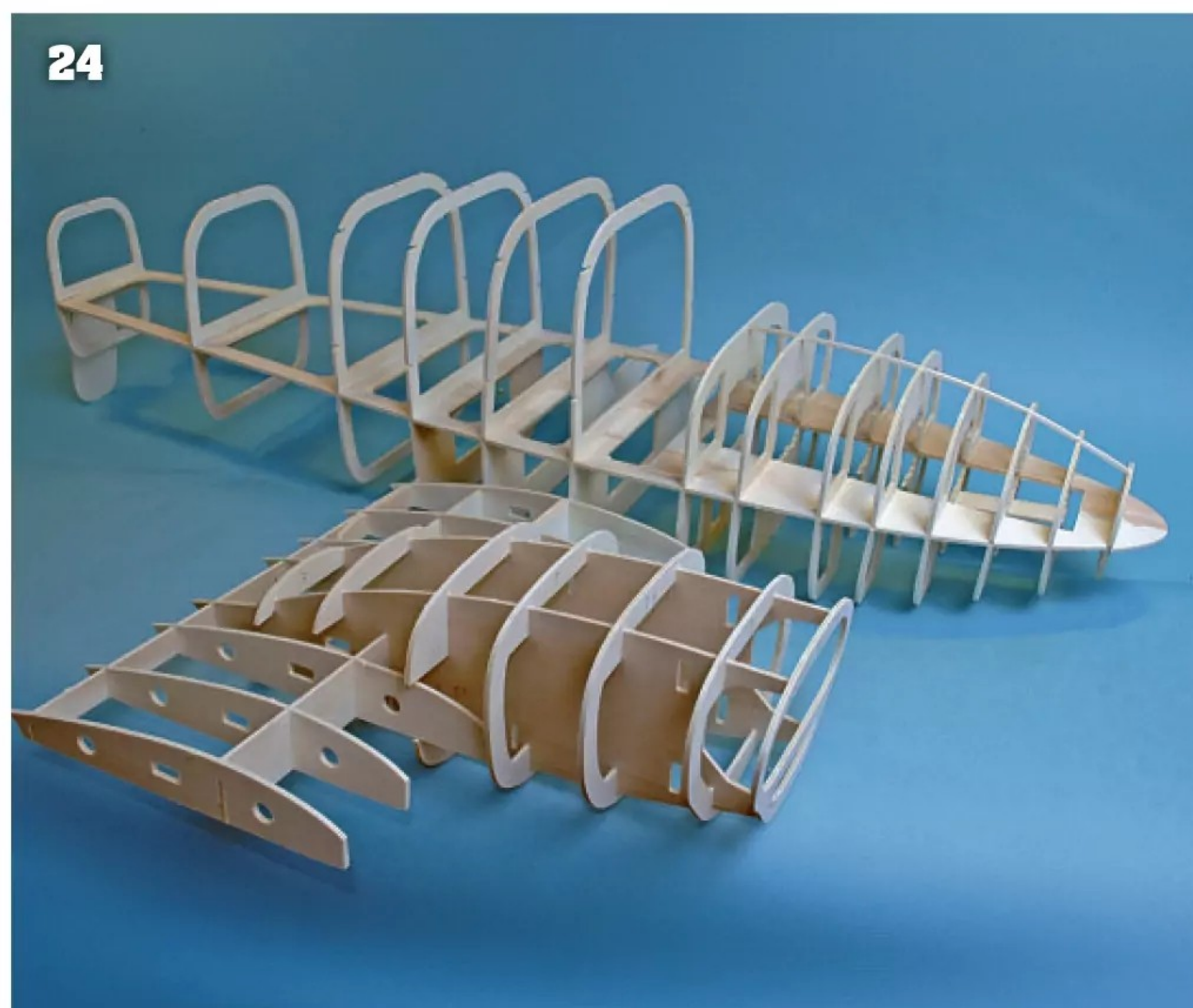
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On the cover

Photo: Mike Freeman

Woodspring Wings MAC is located on the North Somerset Levels, just off the M5 at J20, where the club has been holding its annual model show since the early 1990s. The 2025 event happened to coincide with the hottest weekend of the year so far with temperatures well into the 30°Cs. Mike Freeman visited on the Sunday, which was cooler but with more of a gusty, variable breeze. Plenty of pilots braved the conditions though, giving the crowd an exciting and varied display throughout the day.





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BMFA NATIONAL CENTRE AUTUMN EVENTS



Rotary models line up at September's Scale Helicopter Fly-in.

Manny Williamson, Manager of the BMFA's National Centre at Buckminster writes:

There is no doubt that it's been our busiest year at the National Centre and it's been extremely pleasing to welcome so many new visitors. Although the first signs of Autumn are already in the air there is still plenty going on and the programme of events goes on until almost the end of the year. As always there's a wide selection of activities to cater for all model flying tastes, from turn up and fly sessions to the more formal competitions and National Championships, as well as regular training events and shopping opportunities, with the added bonus of camping availability. What's not to like!

Coming soon

Here's just a sample of events over the coming Autumn months:

September

20th/21st Scale Helicopter Fly-in –



The stage is set for another Model Engine Collector Auction in November.

probably the largest gathering of scale helicopters in a relaxed fly-in format. Bring your scale heli and join in or come along and spectate. There are always some stunning models in attendance and it remains one of my favourite events of the year due to the sheer quality of the models.

27th/28th Aerotow Meeting – the second aerotow get together of the year, hosted as always by the Ghost Squadron team, with tugs and pilots available all weekend. Come and join in with some late season soaring. There are always some spectacular models on show but it's also a great introduction to aerotow for those who haven't tried it previously.

October

3rd/4th/5th JMA Jet Meeting – Autumn meeting organised by the Jet Modellers Association. Prebooking and JMA membership are required to fly but non JMA spectators are welcome. Three days of jet action.

11th/12th SAM 35 Autumn Gala – the final SAM get together of the year. Two days of all things Vintage, Radio Control, Control Line and Free Flight, with some Tether Car action for good measure.

12th National Centre Swapmeet – the NC swapmeets need no introduction and Autumn's is usually the largest and busiest with over 60 indoor tables loaded with 'stuff' you never knew you needed, as well as outdoor stalls in the courtyard and car park. £5.00 on the door entry, with shoppers access

to the hangar from 10.00am. Traders space still available. Contact manny@bmfa.org for enquiries/pre-booking.

November

1st BMFA AGM – not adrenaline fuelled entertainment by any stretch, but important all the same. The statutory annual meeting to conduct the formal business of the Society of Model Aeronautical Engineers... your BMFA.

7th/8th/9th Model Engine Collector Auction – engine and kit auctions have now become a popular and well-established aspect of the National Centre annual programme, with several auctions taking place each year. Our 3-day November sale covers the collection of well-known engine enthusiast, the late Mike Haines, and features everything from tiny diesel masterpieces to large multi-cylinder four strokes. The sale takes place live in the Goldsmith Hangar for attendance and bidding in person, as well as broadcast live to the internet for remote bidding. Pre-sale viewing is available. It's a great shopping opportunity and a great day out.

The popular Flyers' Café is open for all the larger events. For further details and information on the site status visit the National Centre website at <https://nationalcentre.bmfa.uk>

Standard flying rate is £10.00 per day with no charge to spectators.

We look forward to seeing you at the BMFA National Centre.

Manny Williamson

WORCESTER MAC

In 1908 and somewhere in Worcester, Mr S. Pollard was hard at work on his new model

aircraft. Although it was not a flying aircraft it was considered a showpiece and would be the starting point of a club that would form a year later. In 1909 the Worcester Model

Aero Club was formed and by 1913 the members were achieving flight times of around 30 seconds. It was around this time that the club started to hold meetings and

Earl Beauchamp was appointed Club President.

During World War 2 the club stopped flying but once the war was over, they soon got back too it, only now the models had engines. These were control line and radio control would appear later. Scale models soon graced the flying site.

In 2009 there was a fly in BBQ for members and their families to celebrate Worcester MAC's 100th anniversary and a beautiful cake was made in celebration.

Formed in 1909 it is very likely that the Worcester Model Aero Club is the oldest model flying club in the world. But as you can imagine, at the good old age of a 116 it has hit some turbulence along the way. Field losses due to planning issues at their flying sites have been a bit of a struggle on two different occasions, the first in 1993 and again in 2023. But the club is special and its members are far too dedicated to let any of the above get in the way of a smooth flight.

The club currently has two fields. Rushwick, to the west of Worcester, sits near to the Malvern Hills and offers a large open flying space. It is one the nicest places you could wish to be on a summer's day although it can flood in winter. We have been flying at Rushwick for over 20 years and have a great relationship with the landowner.

Our Goosehill site, to the east of Worcester, also offers beautiful views and is also a

fantastic flying site. It has a secret weapon hidden underground which makes it the best winter site I've ever flown from. The site is on a slight slope, with the strip cleverly placed on a flat area and running underground are clay drains. So, where our Rushwick site can flood, our Goosehill site more than makes up for it and, again, we have a fantastic relationship with the landowner and the local residents. In fact, most of them attend our BBQs.

The club has a strong committee who really are a great bunch. In fact, that goes for the whole club and its members. It is a very friendly club and the banter floats around just lovely. It's always good fun at both fields and a good laugh.

We are very luckily to have an abundance of good instructors, and I have just been appointed as a club examiner. We also have an Area Chief Examiner and member of ASRC, so all newcomers to the hobby are very welcome. We work hard to promote our hobby through the powers of social media. We have ideas to work with local schools and the Air Cadets, and the club supported the BMFA at Shed Fest in Worcester in July where some of our members spent the day with Andy Symons of the BMFA showcasing the hobby and helping with experiences on the simulators.

If Mr. Pollard could see what he'd started all those years ago I'm sure he would feel extremely proud and he'd be right, too. Worcester Model Aero Club has a massive place in the history of our hobby and a huge place in its future.



Neil Hall, proud WMAC member, as well as RCM&E's Golden Glow correspondent, has been kept busy this summer training as a BMFA Achievement Scheme Examiner. Here he is collecting his signed paperwork from Area Chief Examiner, John Harris.

If you are interested in joining Worcester MAC, then please visit our website: <https://wmac.uk/join/>

Neil Hall

JMA MAVERICK BALL

The Jet Modellers Association (JMA) is the BMFA's Specialist Body that looks after model jet flying in the UK. We organise jet flying events throughout the country so that our members have access to the sort of facilities required for turbine flying which aren't always available at club sites. This year we have organised over 30 days of flying, spread over four locations, with a mix of weekend and mid-week events, including a summer barbecue and 'Top Gun' event at BMFA Buckminster.

The JMA also run a mentoring scheme for those new to turbine flying to help members get up to speed (excuse the pun) and membership is only £25 per year. So why not join and tap into the collective knowledge if you have ever been tempted by a turbine.

What many of you may not know is that the JMA also organise an end of season model flyers' ball, which is open to all model pilots, not just JMA members. Attendance has typically been a roughly even split between JMA and other members, so you won't feel out of place. The appropriately named Maverick Ball has run for several years and thanks to some fabulous sponsorship from the model trade and other industries it has raised over £2000 annually in support of The Air Ambulance Service.

The Ball is an evening's celebration of model flying and a great social event for like-minded modellers dedicated to making a difference.



JMA Chairman, Lewis Embling with his Composite ARF Viperjet.

Whether you choose cocktail attire (black tie is optional) or casual, you'll fit right in among modellers uniting for a worthy cause and to celebrate our sport.

The evening features pre-dinner drinks, a four-course dinner, DJ and the buzz of anticipation for the raffle, which includes a separate auction for a week's B&B at the RC Hotel in Corfu. Every ticket purchased goes directly towards supporting the The Air Ambulance Service. It's the perfect opportunity to mingle, celebrate and contribute to a fantastic charity.

To reserve your place today and look forward to a fabulous evening just go the JMA website <https://jmajets.bmfa.uk> and click on the 'Maverick Ball' button on the home page.



Attendees gathering for last year's JMA Maverick Ball.

Together we can make a difference, one fun evening, at a time!

Duncan McClure,

JMA Secretary & BMFA Rep



STEARMAN MODEL 75

Stuart Mackay takes a close look at Colin Enk's modified Flair biplane

Words & Photos: **Stuart Mackay**

The Stearman (Boeing) Model 75 is a biplane initially used as a military training aircraft. Over ten thousand were built in the USA during the 1930s and 40s. Stearman Aircraft became a subsidiary of Boeing in 1934. Known as the Stearman, Boeing Stearman or Kaydet, it served as a primary trainer for the US Army Air Forces, the US Navy (as the NS and N2S), and with the Royal Canadian Air Force as the Kaydet throughout World War II. After the war was over thousands of surplus Stearmans were sold for civilian use, becoming popular as crop dusters and sport planes, as well as for aerobatic and wing walking displays at air shows.

In the UK the Stearman is probably best known for the thrilling wing walking displays by the AeroSuperBatics team's pair of 450 hp Super Stearmans, currently flying in orange



Colin's model is based on the Flair Products kit and is 1:4.3 scale with a wingspan of 89 inches.



The original engine was an OS 40 cc four stroke, balanced using three pounds of lead!



Colin's model is based on the Stearman operated by the Flying Bulls Display Team fleet, sponsored by the Austrian drinks manufacturer.



Top centre section is attached to the fuselage by cabane struts with the wing panels mounted via aluminium spars located into corresponding sockets.

and white Breitling sponsored schemes as the 'Breitling Wingwalkers'. Depending on the size of your wallet and nerves you can even get the ride of your life by paying for a wing walking experience from their base at Rendcomb in Gloucestershire!

The aircraft that the model shown here is based on is part of the Flying Bulls Display Team fleet, sponsored by the Austrian drinks manufacturer and displayed in their stunning Hangar-7 exhibition space/museum at Salzburg Airport in Austria. With its classic biplane layout, vigorous flaming livery and powerful Pratt & Whitney Junior Wasp R-985 14 B twin-row radial engine, this aircraft is known as the 'Harley Davidson of the Sky'. No wonder it's one of the most



Colin shows the size of this large 89" span biplane.



With its classic biplane layout, vigorous flaming livery and cowled engine the Super Stearman makes for an eye-catching scale model.

“Colin built his model from the basic kit but converted it to a Super Stearman with a cowled engine”

photographed aircraft based at Hangar-7:
<https://www.flyingbulls.at/en/fleet/pt-17-stearman>

FLAIR STEARMAN

Colin Enk's model is based on the old Flair Products kit and is 1:4.3 scale with a wingspan of 89 inches (2260 mm). The prototypes were flown on Laser 150 four strokes, which were fine, but were limited in performance.

Colin built his model from the basic kit but converted it to a Super Stearman with a cowled engine and added ailerons to the top wing. It proved to be a straightforward build; two aileron servos were installed in the lower wings and the upper wing ailerons were linked by means of pushrods to the lower wing's control surfaces. Colin fabricated the cowling to replicate the Super Stearman arrangement and made epoxy glass copies of the original kit's ABS parts. The fuselage is constructed from formers and stringers, with built-up tail feathers.

The SIG Koverall fabric covering was attached with dope and super-glue. It was then heat shrunk and three coats of Bucks-Composites water-based coating were applied by brush to seal the weave prior to painting with Colin's favourite Tractol agricultural (!) paint. A coat of grey primer



Front view showing the rigging which makes a whistling sound when the aircraft is on the glide.



Side view showing off the dramatic Flying Bulls artwork.



Looking pretty and ready to fly.



Performance was lacking with the original four stroke, so a ZDZ 70 engine was fitted turning a Punctilio 22 x12 wood prop.

was sprayed and denibbed, followed by Tractol Leyland Tractor Blue. This paint is low cost, very tough and petrol proof. The Red Bull logo, silver flames and bull motif on the nose were all drawn and cut in vinyl by Watton clubmate, Jason Skitmore, using his home-built CNC laser cutter.

The pilots are from Tony Nijhuis and the instruments are commercially available items built into a scale like dashboard which make the two offices look busy and lived in!

The top centre section is attached to the fuselage by cabanes and the four wing panels are mounted via aluminium spars locating into corresponding wing sockets and retained by shear bolts. Colin believes the rigging to be functional and it makes a pleasant whistling sound when the aircraft is gliding! ✈



ZDZ 70 is silenced by a Zimmerman Zenoah 62 silencer modified by Colin using Krumscheid stainless exhaust bends and a ZDZ compatible exhaust flange.



Faired and sprung main undercarriage detail.



Vertical performance after fitting the ZDZ 70 was greatly improved.

“Using this motor and prop combination transformed the aircraft into a superb aerobatic display model”



Despite the increased weight of the model with its replacement petrol engine low speed performance is excellent.

PETROL POWER

The landing gear was built by Colin, modified with stronger springs to cope with the higher-flying weight of 12 kg (26 lbs) when fitted with a ZDZ engine compared to the original quoted weight of 8.2 to 9.5 kg. The original powerplant was an OS 40 cc four stroke, balanced using 3 lbs of lead, which flew the model, but performance was lacking. So, a ZDZ 70 cc engine was added

and the lead ballast removed. This turns a Punctilio 22 x 12 wood prop at around 6000 rpm on the ground, silenced by a Zimmerman Zenoah 62 stainless steel silencer modified by Colin using Krumscheid stainless exhaust bends and a ZDZ compatible exhaust flange, silver soldered in place to adapt the silencer to suit the installation in the model. The fuel tank is from MacGregor, with a felt clunk installed, and



Just about to straighten up for the flare. Three-point landings are easy to achieve.

a capacity of approximately 20 ounces. Colin uses unleaded petrol in a 50:1 two stroke oil mix, which proves sufficient for 15 minutes of general flying.

Using this motor and prop combination transformed the aircraft into a superb aerobatic display model, allowing long axial and barrel rolls, large looping manoeuvres and knife edge flight to be accomplished. Vertical performance is also sparkling and towering stall turns can be flown with ease.

The model is guided by a Futaba T18SZ transmitter and matching receiver. The two on-board batteries are four cell 4000 mAH NiMHs for the receiver with an RCExl ignition switch/ZDZ ignition. The model uses Hitec HS-645MG servos all round.

Despite the increased weight of the model low speed performance is excellent, with take-off and landings being achieved at very modest speed. Three-point landings are easy to achieve and are a delight.

Colin now has had many hours of happy flights with the Stearman and it always impresses with its presence, not only on the flying field but, as you will see from the flying shots, in the air too! ■



Since his retirement a few years ago Colin now spends much of his time building and flying established designs like the Flair Stearman.

THE ENK TOUCH

Colin Enk is a retired farmer and builder who started aeromodelling more than 55 years ago when he was 12 with a control line Peacemaker fitted with a PAW 2.49 diesel. During his teenage years Colin flew in his school aeromodelling club, progressing during this time to fly radio control models. His first R/C outfit was a Swan Electronics four channel proportional set, flying a DB Ghost Rider 50 on three channels. Later, he converted it to an advanced trainer by building another wing fitted with strip ailerons, with a single servo operating the controls. Various other sports models followed including the Radio Modeller Piper Cub with an OS 60 Gold Head and a DB Tinker biplane. A favourite was the Gangster 63 from Mick Reeves.

Colin was a member of the North Norfolk Aeromodellers which had several 'star' local flying heroes in their membership. In the seventies, Colin married his lovely wife Kay and modelling was put on pause for a while as business and family commitments took over. But you can never hold a good modeller back and Colin re-entered the sport, joining the Watton Radio Model Club, flying on the then RAF Watton and RAF Shipdham airfields, now sadly both no more. Colin resumed R/C modelling with a Kamco Kadet and numerous sports models, such as the Pegasus Models (Galaxy) Mystic and having his first contacts with SLEC in Watton with the purchase of a Precedent Bi-Fly.

In the ensuing years, Colin proceeded to hone his aerobatic skills with many .60 glow powered aerobatic aircraft and is now one of the most senior members of the Watton Radio Model Club, where he can boast of a



Colin spends several hours each week at SLEC operating their vac-forming and 3D printing machinery, plus test building and developing new models.

membership span of over 30 years. He ran the BMFA training programme within the club for 15 years and many local modellers have benefitted from Colin's tutelage. When Ripmax acquired SLEC and it became Balsacraft in the late 1990s, Colin's close relationship with the company deepened. He produced the moulds and fibreglass components for all the SLEC models, such as the Stampe, T180 and T240 sports models, and this continues to this day. Due to his extensive and varied modelling experience, Colin was asked by SLEC's then owner, Ian Hull, to start test building their range of CNC cut models, which explains

why they build in such an easy manner. This is partly down to Colin's skills as an aeromodeller and the way that SLEC engineers listen to Colin!

Since his retirement a few years ago Colin now spends much of his time building and flying established designs. He has recently made the jump to large models, aerotowing gliders and jets. He also manages to spend several hours each week at SLEC operating their vac-forming and 3D printing machinery, plus test building and developing new models.

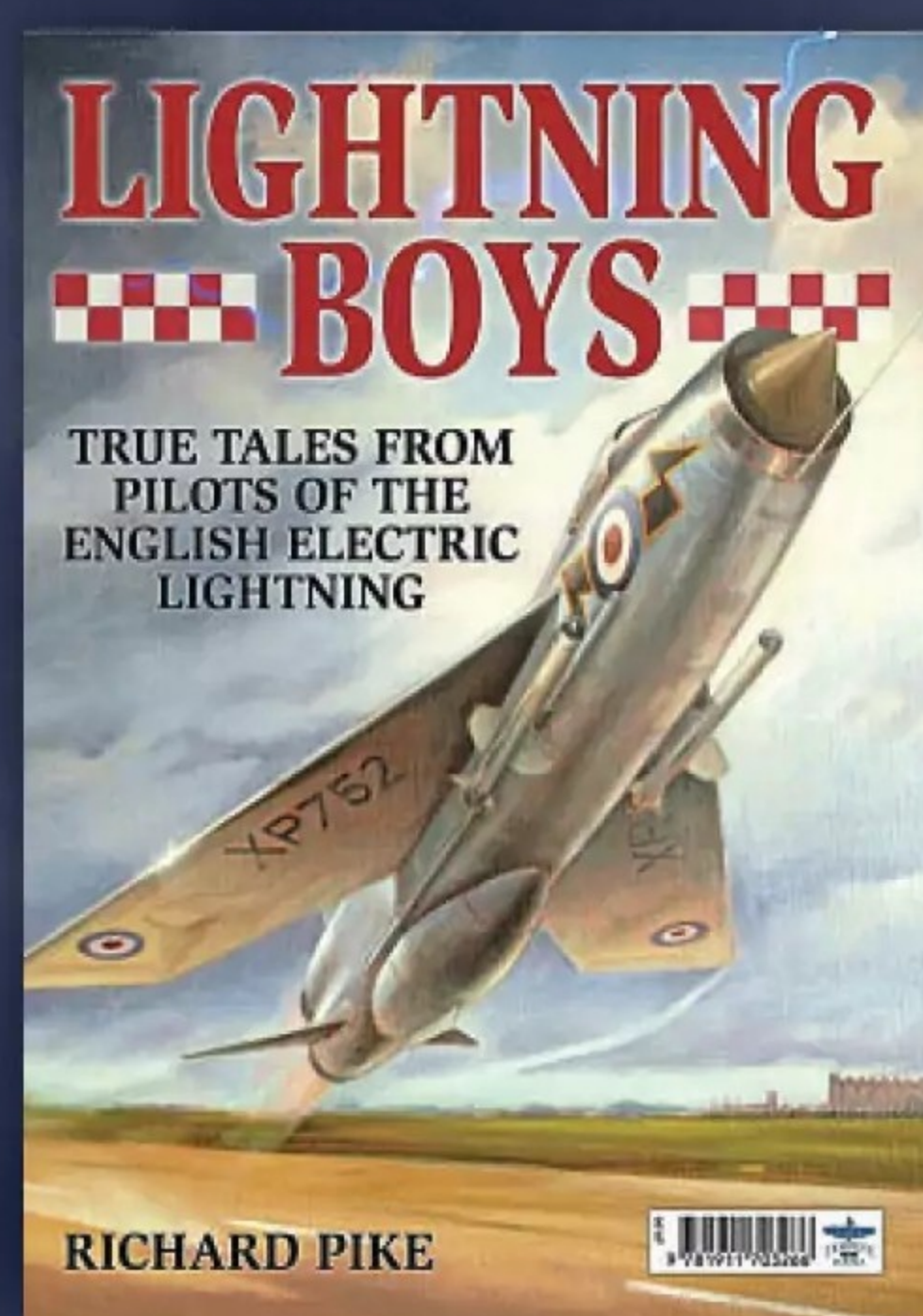
So, watch this space for more models that have the Enk Touch!

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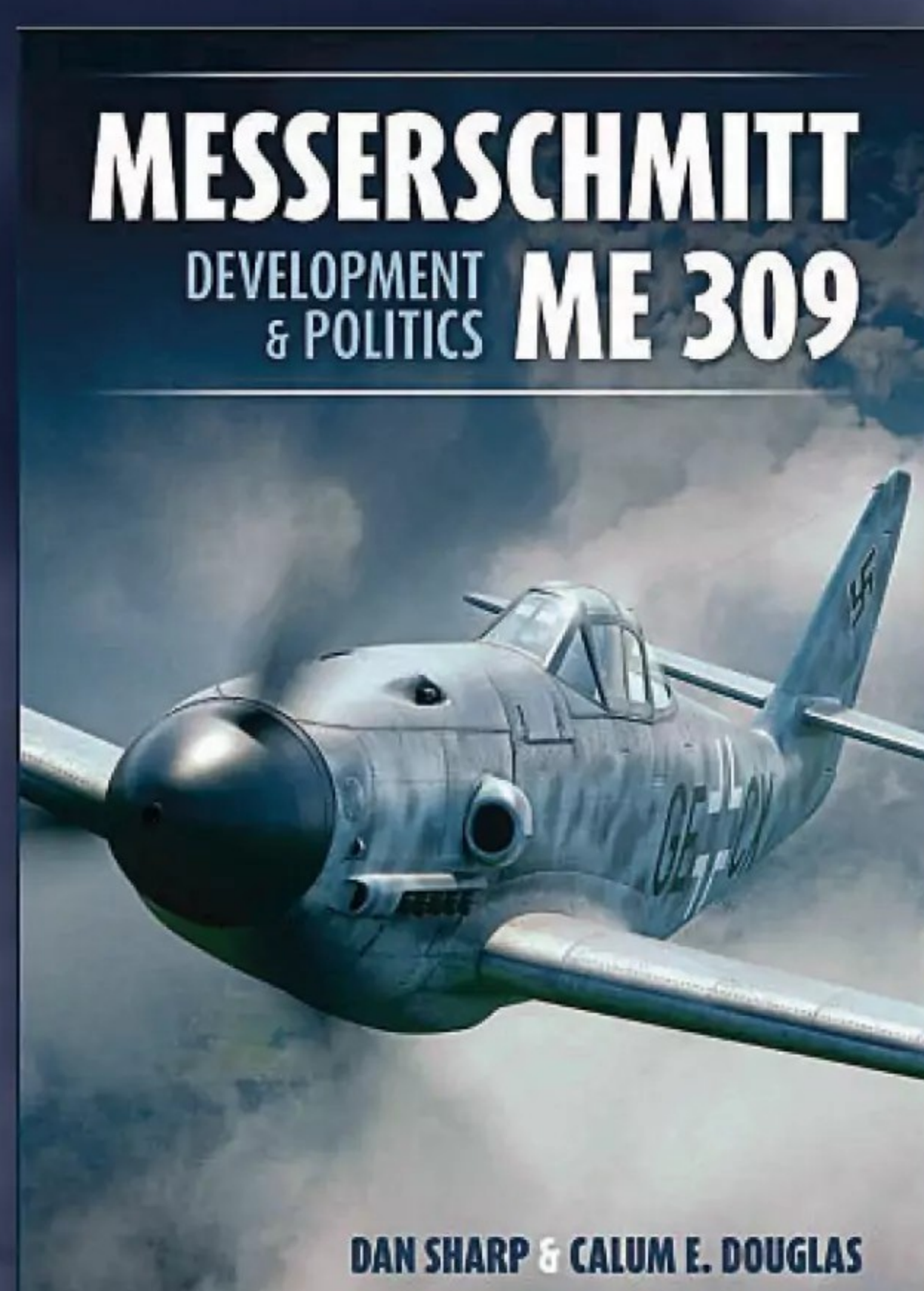
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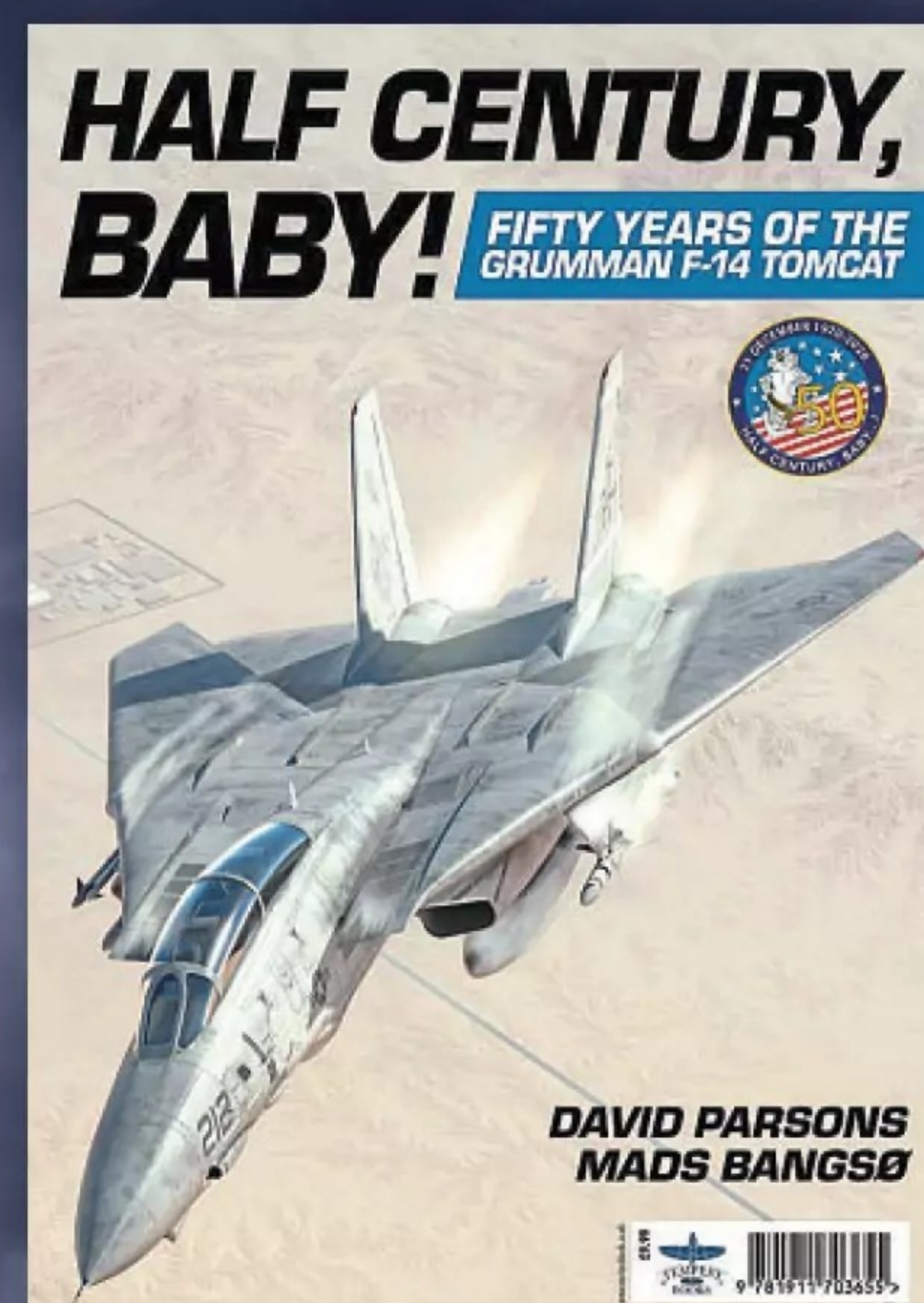
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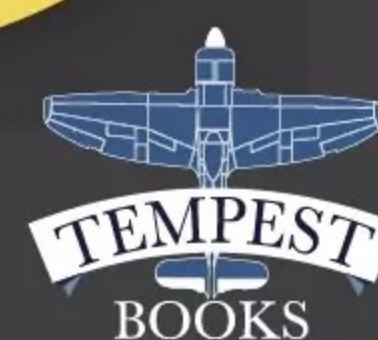
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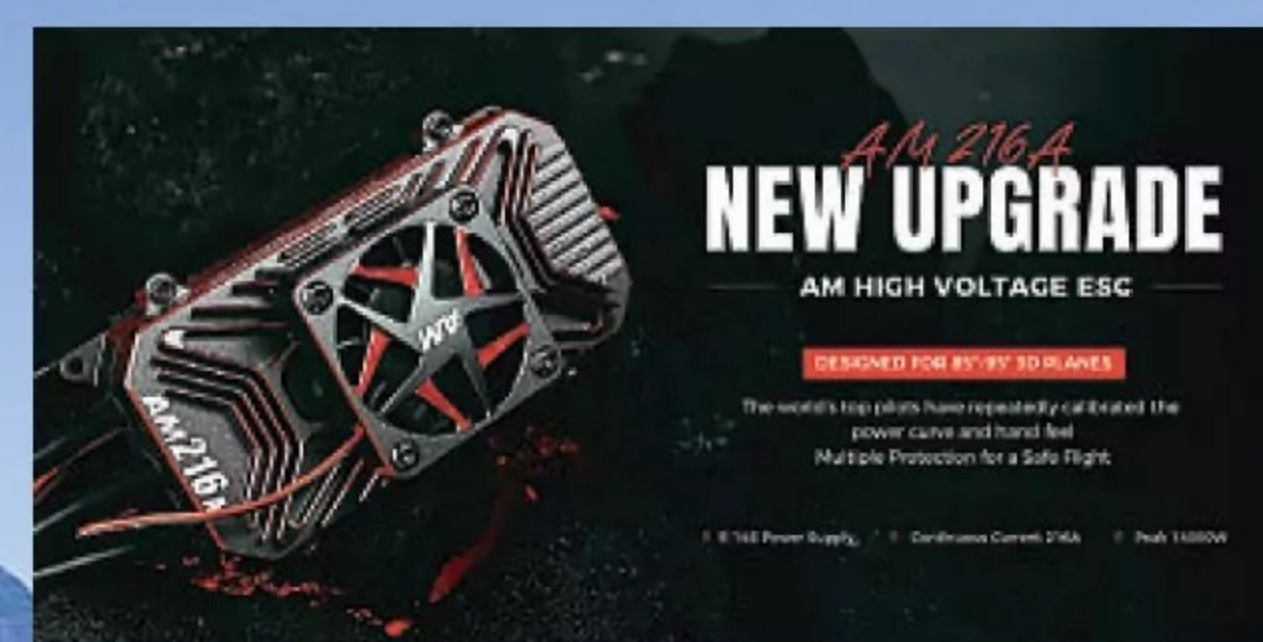
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SCub's huge pneumatic tyres cannot fail to catch the eye!



TOP RC 1500MM S CUB

Andrew James barely draws breath before completing Top RC's very quick build Super Cub

Words: **Andrew James, Kevin Crozier**

Photos: **Kevin Crozier, Barry Atkinson**

Flight ready in 30-minutes says the J Perkins webpage for the Top RC S Cub 1500 mm. I timed the assembly of our review sample and that's pretty much spot on.

Other key features listed are glue free assembly, a factory fitted 3720-900 kV brushless motor, a pre-installed aerotow release, metal geared elevator, rudder and tow release servos, 17 g flap servos, an oversize battery bay suitable for 4S 2200 to 2700 mAh LiPo packs and - most eye-catching of all - a pair of large pneumatic tyres with air valves.

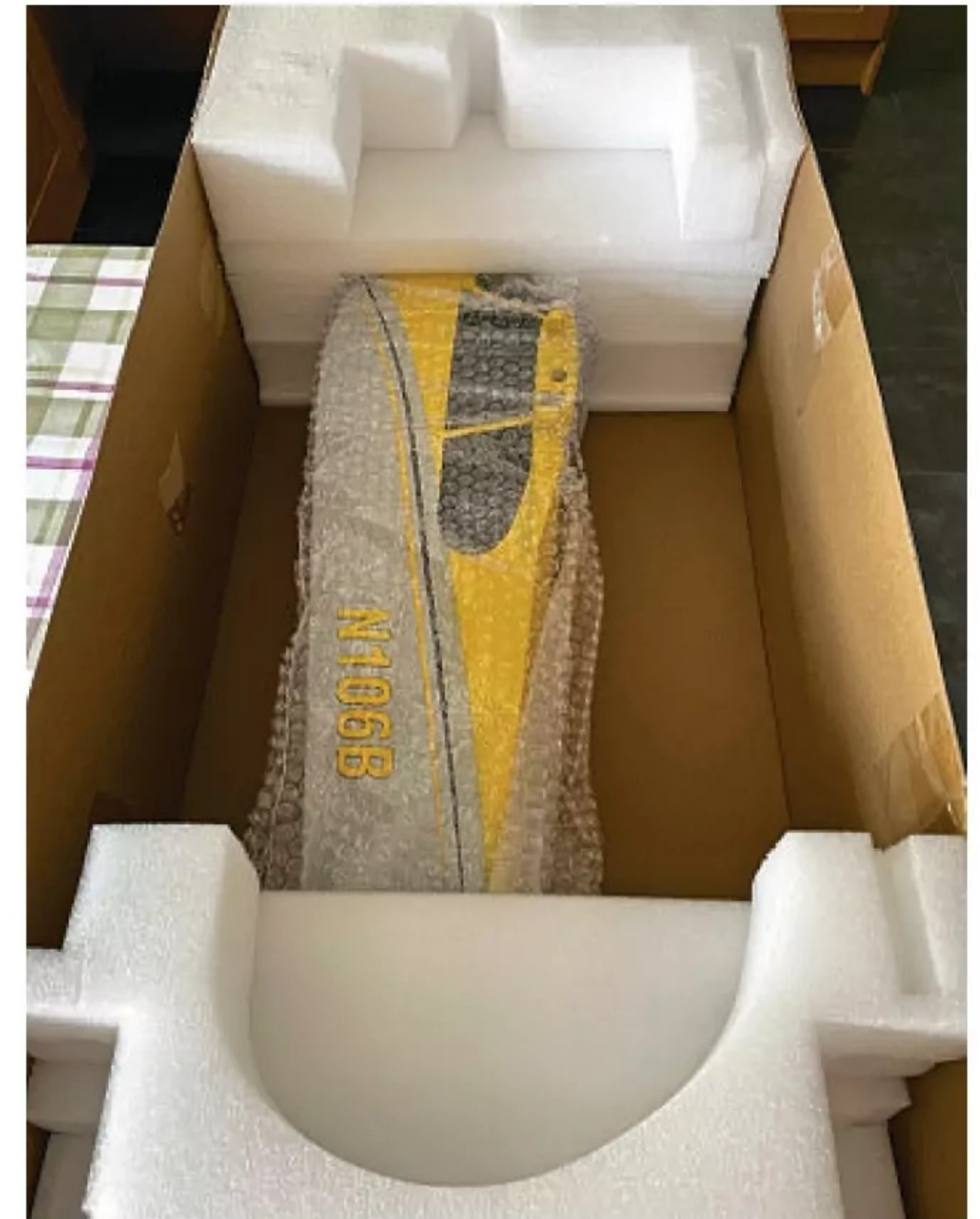
UNBOXING

Lifting the lid on the white cardboard kit box reveals a set of few airframe parts wrapped in individual bubble wrap bags, comfortably suspended at each end by two towers of firm but flexible foam. The wing panels lie on top with the one-piece fuselage ensconced below. Suffice to say that it survived its long journey

It is super quick to build and very easy to fly.



Just half an hour on the kitchen table should see the SCub fully assembled.



Inside the kit box airframe parts are suspended in two towers of supportive foam.



Follow the manual! It's best to attach the undercarriage after installing the wings to get unimpeded access to the wing fixing screws.



Annotating the carbon wing joiner with a permanent marker helps make sure that it supports the wings equally on either side of the fuselage.

“The screws are worthy of note as they are supplied in small zip-lock bags, each clearly labelled with their functions”

from China in very good condition and the parts were soon laid out on the kitchen table ready for assembly.

Apart from the wings, fuselage and tailplane you'll find those big airwheels ready fitted to the metal undercarriage, and a 600 mm long carbon wing joiner. A bag of good quality hardware includes Y-leads for the aileron and flap servos, a selection of fixing screws, a length of self-adhesive hook & loop tape and two pre-made elevator and rudder pushrods. The screws are worthy of note as they are supplied in small zip-lock bags, each clearly labelled with their functions.

ASSEMBLY PROCESS

The well-illustrated 16-page instruction booklet, all in English, was opened and turned to the first stage of the Assembly Process. This should be the installation of the main wing panels, but I chose to fit the main undercarriage first, followed by inserting the tailplane in its slot. I did this because I didn't want to risk damaging the wings by swinging them about whilst screwing on the wheels and the tail. But Top RC really do know best as doing it my way means that the front wing fixing screws are partially obscured by the undercarriage legs. You can still get a screwdriver to reach those screws, but at an angle, when it would have been easier to screw them down without the wheels in place. ✈️



Tailplane is attached with a small screw dropped into the deep hole just forward of the tailwheel. Elevator and rudder pushrods are close to the correct length.



Tall rudder is simply clipped into place.



With Radiant's 4S 2200 mAh LiPo relocated as far forward as possible a new battery seat was glued in for extra support. The LiPo strap was brought forward too.

When the time came to slide the wings onto the carbon joiner I couldn't feel a stop at the end of the wing tubes. Worried that I was possibly using the carbon tube to ream even deeper holes in each panel I withdrew the tube and measured the width of the wing mount on top of the fuselage. This was 120 mm wide, leaving 240 mm of joiner on each side to slide into each wing. Using a permanent marker, I drew circles around the tube 240 millimetres in from each end to show me when they were at the correct depth.

The wing panels are secured with 3 x 10 mm screws, driven into threaded inserts within a pair of mounting stubs on each side of the fuselage and are easily taken apart if you need to take the wings off. However, the wing struts are fixed to the fuselage with self-tapping screws. This is fine if you leave the S Cub fully assembled but the plastic the self-tappers screw into may not be so durable if, like me, you need to take it apart for storage. Time will tell, I guess.

TAIL SCREW

The tailplane slides into its slot at the rear of the fuselage where it is secured with a small 3 x 10 mm screw. The screw hole is deep and try as I might, I couldn't get the screw to engage in its fixing within the fuselage. Peering down the hole with a small torch I could see that the hole and fixing were



Prop and spinner come factory fitted but it's worth taking the spinner off to check that the prop nut is nipped up tight. Ours was just fine.

slightly misaligned, even with the tailplane firmly pushed as far as it would go in its slot. The only way I could get them lined up was to put the nose of the model on the hard kitchen floor and push down on the back of the tailplane, which provided just enough give to line up the holes and allow the screw thread to engage.

I wouldn't recommend doing this unless you run out of options for fear of applying too much pressure to the spinner and motor shaft, but our motor didn't show any sign of distress and spun up straight and true when first tested. Phew!

After nipping the fixing screw up tight it was time to pop on the pre-assembled elevator pushrod which has a Z-bend at the servo end and a ball link at the control surface. Only minimal adjustment was necessary to set the elevator to neutral.

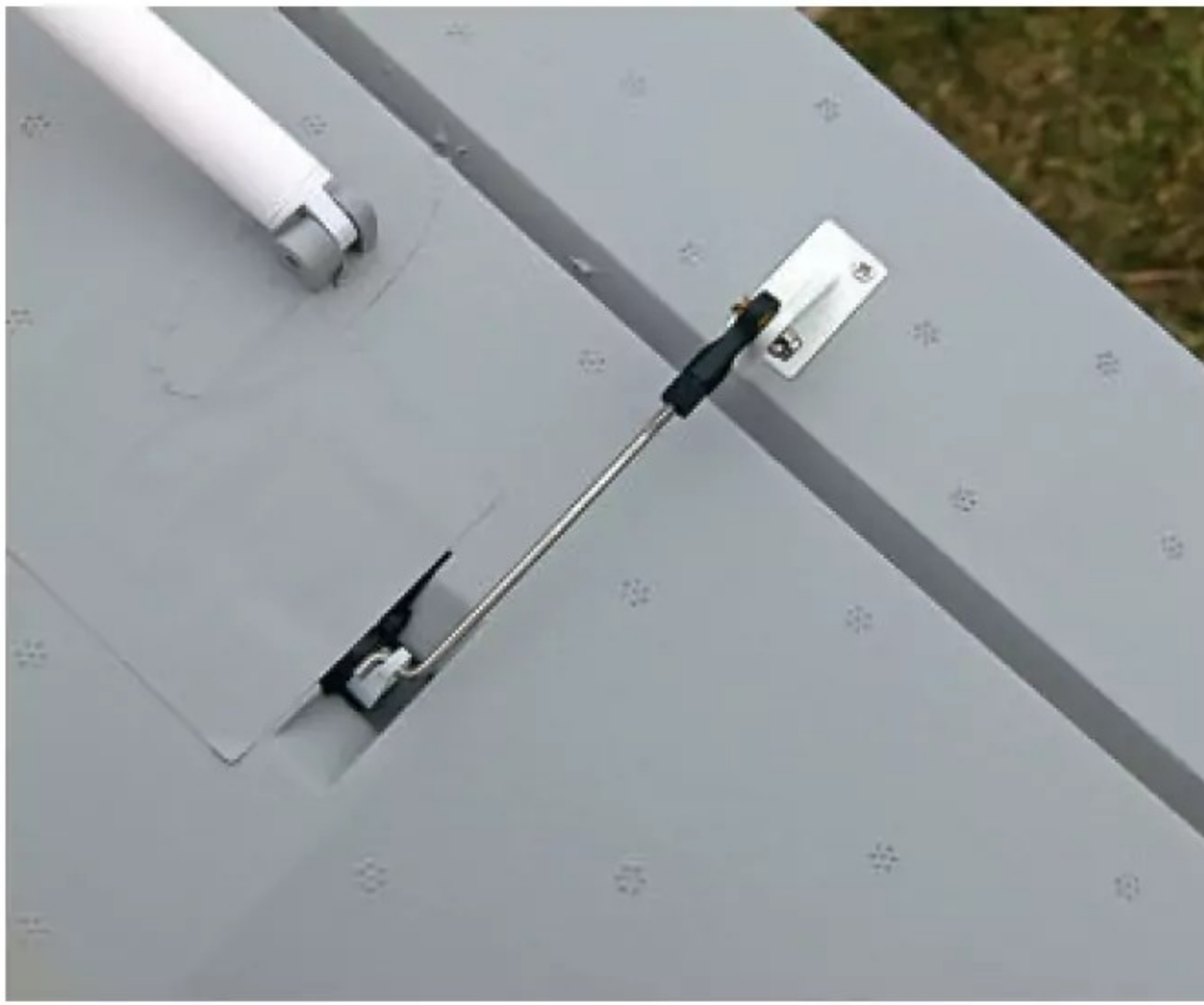
CLIP ON RUDDER

The rudder is simply clipped into place, the plastic clips acting as free moving hinge points. Before doing so you need to angle the end of the steerable tailwheel into its hole in the base of the rudder but although awkward this went together okay. The rudder pushrod can then be fitted. As with the elevator the ready-made linkage was very close to neutral.

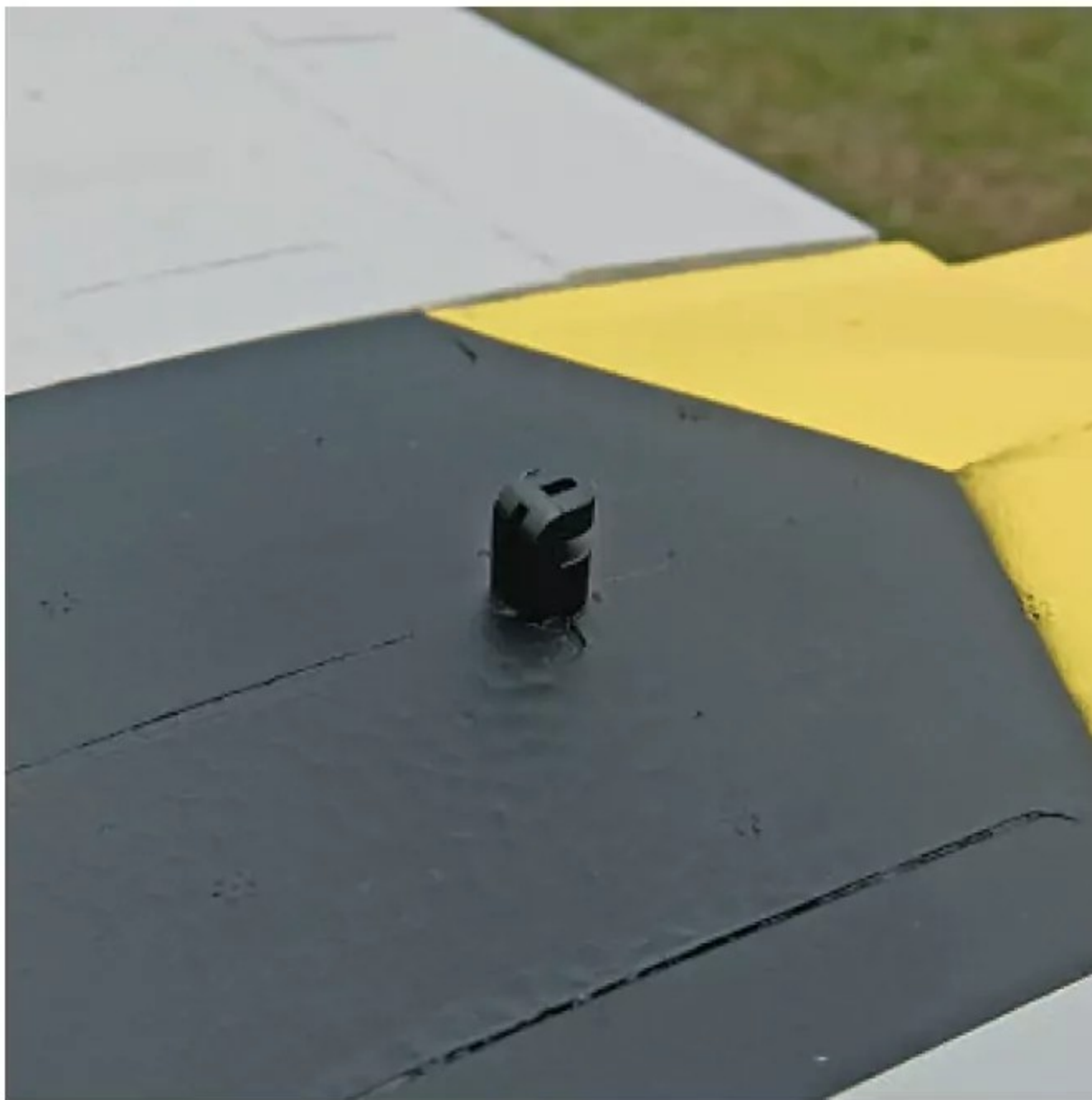
PROP & CG CHECKS

The next step in the manual shows the propeller and spinner being assembled but both items are factory fitted.

The manual indicates a Centre of Gravity position of 60 to 65 mm back from the straight leading edge of the wing, at just under a third of wing chord, so representing a safe starting point. JP recommend using one of their Radiant 4S 2200mAh 50C XT60 LiPo packs to



Both ailerons and flaps are factory fitted with short, direct pushrods. Before powering up the flaps it's worth disconnecting the pushrods at one end to make sure the servos don't overdrive the control surfaces.



To be continued... Further flight tests are planned to hopefully put the aerotow release to good use!

power this model and since I had one to hand, I used it to balance the model. The large battery bay is fitted with a hook & loop strap to secure the battery. A strip of self-adhesive hook & loop tape is also supplied to further secure the LiPo. To help it adhere better I skimmed the surface of the bare ply with 5-minute epoxy. I fitted another thin piece of hook tape to the rear of the battery mount, this time to secure a small six-channel receiver.

With the LiPo strapped in I found that the model was tilting to the rear and I had to move the pack as far forward as it would go in the battery bay to get close to balance. Even then it was slightly rearward, so I added a small piece of lead to bring the model level. I also glued in an additional piece of thin ply to help firm up the battery plate, which had been cut out, leaving just a thin X-shaped piece of ply at the front of the plate. The ESC is mounted under the plate at this point, so the X cut-outs are no doubt there to aid cooling so when gluing my support plate in place I made sure not to cover the cut-outs entirely. The remaining cut-outs also provided some handy 'slots' into which to thread the battery strap in a more forward position.

After all this I realised that the easiest way to achieve balance would simply have been to have fitted a bigger, longer 4S LiPo. There's plenty of room. Doh! ✈



S Cub is fitted with very effective flaps.

WHAT'S AN S CUB?

This model represents a modern aeroplane based on the famous Piper Cub. After some online sleuthing I believe that it shows an XCub, a sister aircraft to the Carbon Cub, which has also been reproduced as an R/C kit by several model companies. Both aeroplanes are produced by CubCrafters, based in Washington State, USA.

The XCub has a distinctive lower cowl, which is neatly replicated on the Top RC model, as is the extended dorsal fin which provides enhanced directional stability at the high speeds this aircraft is capable of.



Under cowlings fitted to full-size XCubs are very distinctive and well replicated with the TOP RC model.



As supplied the impressive pneumatic tyres are quite firm, leading to bouncy landings on dry summer turf. Experimentation with tyre pressures will be needed to find the low bounce sweet spot. Tyre inflation tools are supplied.





We found that full rate elevator gave the most pleasing flare when landing but the controls needed reducing for take-off or things could get a little exciting!

After an easy half an hour putting the S Cub together, plus a little bit more time setting it up with the full and half rate settings quoted in the manual, this good-looking high winger was ready to hand over to KC for pictures and to make her maiden flights. Kevin has access to better flying sites and his friend Barry also has a top-notch camera with a suitably long lens.

FIRST FLIGHTS

After copying Andrew's settings across to my DX6 transmitter and performing range and failsafe checks the S Cub was ready to fly.

Lined up into the stiff breeze she was soon rolling across the short grass on her huge wheels, but not for long as she quickly lifted off into a brisk climb out, the throttle barely reaching half stick thanks to the generous amount of power available from the 4S set up.

A couple of clicks of right aileron trim was all that was needed for straight and level flight when cruising around at half throttle, which became my default power setting for nearly all subsequent sorties. It's great to have an excess of juice available for climbing vertically into stall turns, wingovers and humpty-bumps, but otherwise the S-Cub looks much more scale like at reduced power settings, floating calmly over the patch. That's not to say that she can't get a move on when necessary and she has plenty of power on tap for some very pleasing aerobatics, taking my usual repertoire of loops, rolls and inverted in her stride. What's more she will do all this on low rates, only needing a little more rudder when cranked over for knife edge. Backing off rudder a touch results in some glorious Farnborough style passes which look much more in keeping with this kind of aeroplane.

Taken up high on low rates, power was gradually reduced and up elevator fed in to test



An enlarged front dorsal fin is another notable feature of the real XCub, also faithfully modelled on the S Cub.



There's lots of fun to be had with this 1.5 metre span semi-scaler. Flap assisted touch & goes are a firm favourite.



She's surprising agile on low rates, only needing high rates to get more rudder for knife edge, Farnborough passes and stall turns.

"...she has plenty of power on tap for some very pleasing aerobatics, taking the usual repertoire of loops, rolls and inverted in her stride"

the stall, which merely results in a gentle nod and mushy controls. Things get a little more exciting on high rates, causing a wing to drop, but control is easily restored after just a short loss of height.

However, for me, high wing models like this, fitted with flaps, are at their best when practicing short landings and STOL touch & goes. Even at their half setting the flaps are very effective. Although I backed off the throttle, the S Cub's airspeed on my first attempt with half flap was too high and she showed her disdain by dramatically raising her nose, despite having a few percent of down elevator programmed in via my transmitter's Flap System menu. Back on the ground I upped the mix, eventually settling on 20% which, provided I selected flap at a sensibly low speed, provided a seamless transition whenever flaps were selected.

As for those big, pumped-up wheels, which are such a feature of this good-looking model, I think some extra time playing around with tyre pressures will pay dividends. As supplied, they are relatively firm, so when used on the hard turf at my local flying strips this summer they have tended to propel the model back into the air, resulting in some rather bouncy landings, even at low speed and half flap. But that will no doubt change in winter conditions, when they will surely prove their worth flown from



Happy chappy! KC strides back to the pits after another sortie with the S Cub.



Keep an eye out on future RTFM articles for updates on the S Cub's aerotowing capabilities and Kevin's experiments with tyre pressures.

long winter grass and even trundling through a muddy patch or two!

I'll hand back to Andrew to finish his review. But I'll be keeping the S Cub for a little while longer, just to perfect the flap settings and to play with the tyre pressures. I'm also intrigued by the model's potential as a glider tug, thanks to its built-in glider release, so I'll be roping in (sorry!) a couple of local glider pilots to help test that aspect of flying the S Cub.

Well, that's my excuse for a delayed handover. I'm sure Andrew won't mind...

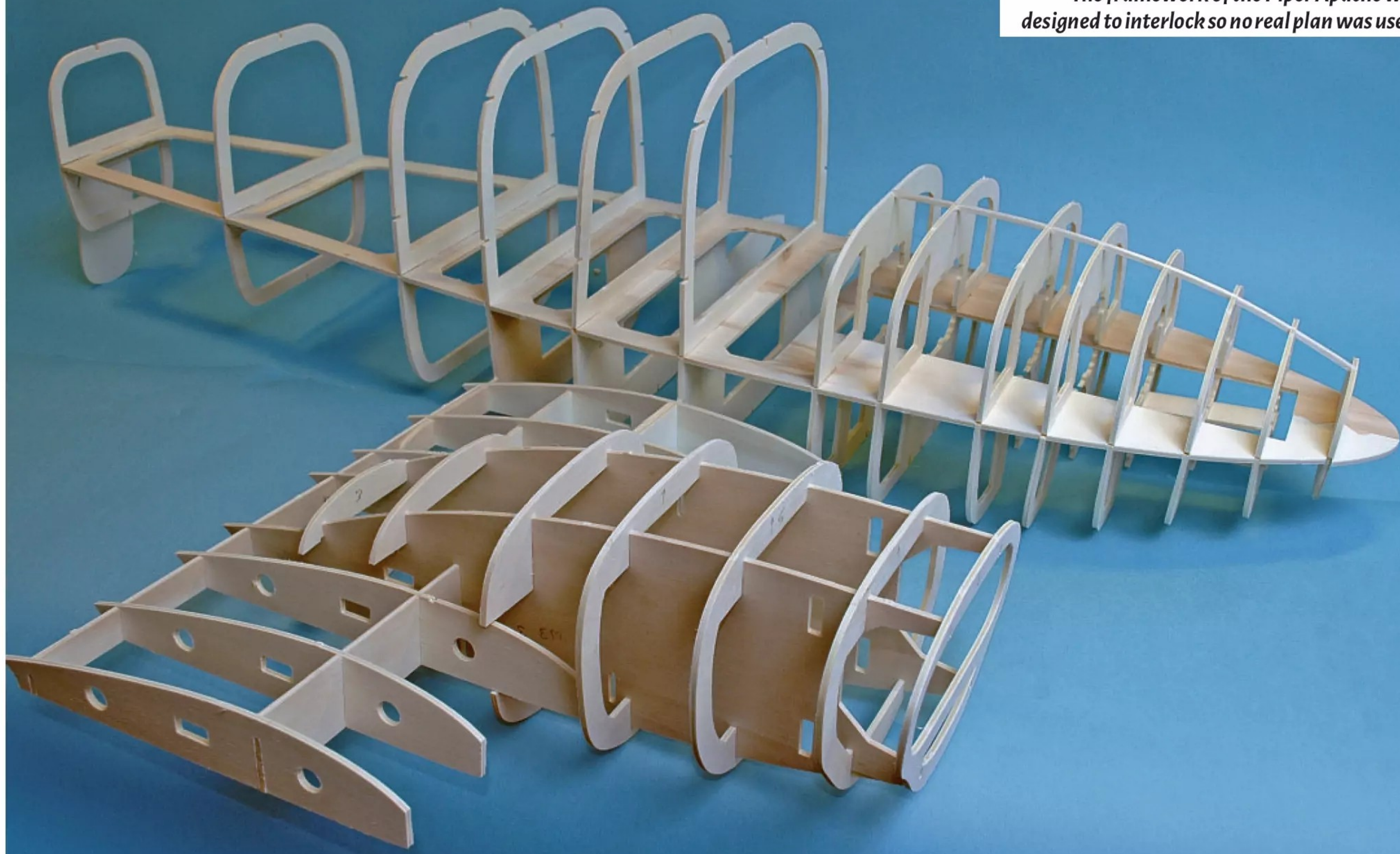
CUB CONCLUSIONS

What a treat the Top RC S Cub has proven to be, being quick and easy to assemble and with a great all round flying performance to boot. I have flown it a couple of times, but I've got it earmarked for use in soggy ground conditions in late winter, so for now I'm happy to let Kevin keep it and carry on perfecting the tyre settings and flap mixes which I'll carry over to my own Tx. I might even get involved with some aerotowing when KC has developed a reliable set up. As and when he does, I'm sure he will let you know! ■

DATAFILE

Model:	1500mm S Cub
Model type:	Semi-scale
Manufacturer:	Top RC
Distributor:	J Perkins https://www.jperkins.com/products/TOP126B
RRP:	£249.99
Length:	995 mm (39.2")
Wingspan:	1500 mm (59.1")
Flying weight:	1500 g
Motor:	3720-900 kV
Propeller:	11 x 7
Servos:	9 g metal gear x 3, 9 g plastic gear x 2, 17 g plastic gear x 2
Functions (servos):	Ailerons (2), Elevator (1), Flaps (2), Rudder & Tailwheel (1), Throttle (ESC), Tow release (1)
LiPo:	4S 2200 - 2700 mAh (review model Radiant 4S 2200 mAh)

The framework of the Piper Apache was designed to interlock so no real plan was used.



RADIO CONTROL WITH A TWIST

Danny Fenton finishes off a Piper twin project

Words & Photos: **Danny Fenton**

I am showing the nearby excerpt from April 2012 RCM&E because the project never was concluded and I do get asked what happened to the Piper Apache. Well, the truth is the model is too small for serious scale competition in my opinion and even though the model was ready to fly (apart from paint) I moved onto other things, as we often do. I am pleased to say that the model has now flown and apart from C of G issues it went very well.

But a bit more of that shortly...

GRAVINER FOUND

In my last column I chatted about the very successful Indoor Nationals and part of that was a very pleasant Friday spent at the RAF Museum Midlands (RAF Cosford). Brian Hunt and the team made us very welcome and we

got to spend time in areas of the museum not usually open to the public, supervised of course. A big thank you for that!

Brian did ask, tongue-in-cheek, for a favour in return, if you recall. In the article Brian said that the museum was looking for some Gravinier fire extinguishers for the Nimrod. I am pleased to say Bruce from Northampton dropped me an email saying he had a Gravinier loitering in his garage and he really liked the idea of it going to the museum. I put Bruce in touch with Brian and the nearby picture shows Brian with Bruce's extinguisher after the hand-over.

Anybody else got one?

BACK TO THE APACHE

The sixth scale model was designed with the help of my friend Ton in the Netherlands. Ton took my 2D CAD drawings, corrected any

shape issues and created a 3D version. Cut files were sent to Rob Bulk at RBC Models to produce a set of parts. Over the course of a few years the model took shape. The parts just slotted together and apart from a few bits that were the wrong shape, and some that had to be split to allow assembly, everything went well.

The fuselage was built in two halves, an upper and lower. The radio gear and control runs were all laid out in the lower half. I went for snakes, something I would regret later. I will stick to pushrods in the future as snakes suffer from expansion/contraction depending on the weather. They are also not as free moving as a pushrod set up.

The Apache is possibly a love-hate design, with its very rounded fuselage and nacelles. Having effectively a Piper Cub wing (albeit in metal)

MAKE IT SCALE | Column

Project Apache

FROM PAPER TO PIPER – DANNY FENTON DESCRIBES THE DRAUGHTING PROCESS OF HIS PA-23

Ton's CAD work is second to none! This is one of the final renderings of the Apache.

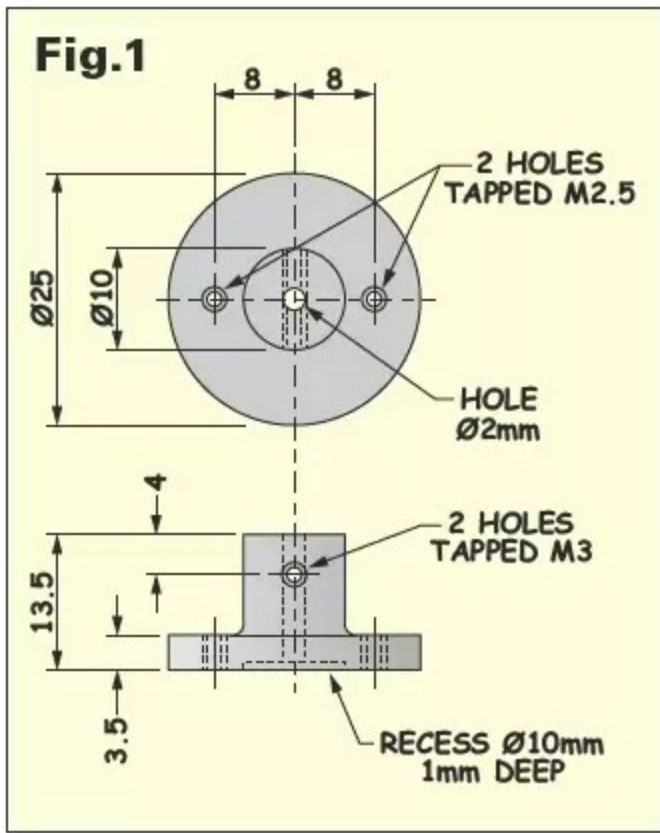
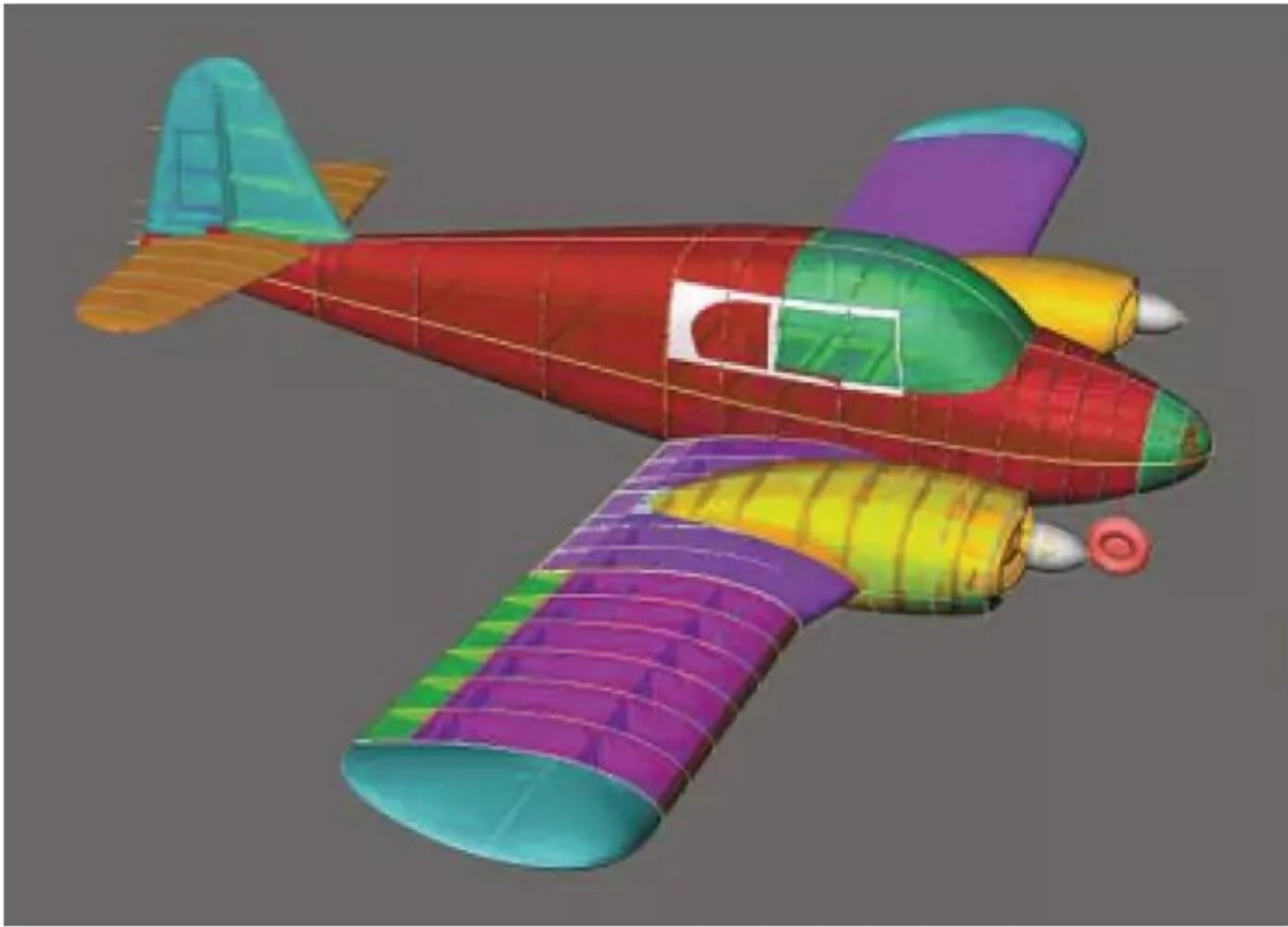
Well, that was a result. Several weeks have passed and I haven't had too many threatening letters regarding my new column. Note to self: ask Graham if the magazine has a legal department!

Now then my muddling chums, I promised to give you the lowdown on the Piper Apache that Ton van Munsteren and I are working on. Actually, Ton is doing most of the work at the moment, I'm just claiming the credit.

The project started as a means to sharpen my dulled CAD skills, my thoughts being that I could do the odd bit here and there while minding my four-year-old daughter. With this, my introduction to CAD came via a kindly chap called Gary Hethcoat who asked, on a US modelling forum, if anybody would like to participate in an online TurboCad training course, aimed specifically at us modellers. Several of us thought this a wonderful idea and expressed an interest, in fact, there was so much interest that Gary had to set up two sessions. Students came from all around the globe and the sessions were interesting and fun on several levels, not least because, whilst we spoke the same language, often we didn't understand each other. Most bizarre.

The late afternoon / early evening session was run in the States but, of course, in Australia it was early morning and in the UK we were preparing to turn in. The course lasted several weeks and I really enjoyed myself, so much so that designing could easily take over as a hobby in its own right, if I let it. The class project that I was involved in centred around the design of a Klemm 35, though

John Ranson made these first top hats for me, and a fine job he did.



Unfortunately the scale chosen meant that I knew I would never build it. Nevertheless, it was really good fun and whilst I did mess with scaling the model to something bigger, ultimately I have to really like an aircraft before devoting my soul to it. After all, it can take several years to bring a project to fruition. Anyway, if you're interested, Gary still has the audio / video recordings available online for a small fee. Visit www.wingsontheweb.com and click on the CAD tab. Oh, and if you do listen / watch, I'm the Brit. asking all the dumb questions.

All this was back in 2009 and, like most of us, I forget things I don't use,

so when the opportunity to get involved in some designing recently presented itself I was more than a little rusty. Last year, then, while t'internet grazing, I stumbled across some pictures of the Piper Apache PA-23, an aeroplane that I used to see when I was a lad. Back then, my dad owned a light aircraft maintenance business based at Sherburn-in-Elmet, Yorkshire, and at weekends I'd often man the fuel pump for him. Many's the time I've refilled a PA-23, though not the more recent angular version. Oh no, I speak, of the lovely curvaceous Stinson design from the early '50s.

The Apache was derived from the Twin Stinson an aeroplane inherited when Piper bought the Stinson division of the Consolidated Vultee Aircraft Corporation. Performance of the twin Stinson wasn't good and so it was redesigned with a single vertical fin and more powerful 150 hp engines. Two prototypes, named Apache, were built in 1953 and entered production in 1954. Ultimately, over 1,000 aircraft were built.

Searching the web for three-views I soon discovered that there was very little out there, although I did manage to secure some plans for a 37" control liner, this designed by J. Stivala, published in *Aero Modeller* in May 1960, and sourced from Bob Banka at Bobsairdoc. In addition to



A grateful Brian Hunt clutching the donated Graviner fire extinguisher. The museum is still two short of the four that should be fitted to the Nimrod.



With a classic aircraft like this you really have to love planking!

there are few straight lines so your sheeting and planking skills get a serious work out. As a modeller you will know the finished planking looks as rough as nails, however after a few wafts with the sanding block a lovely shape emerges and the edges all blend together. Real magic!

The decision was made to use a single 5S 5000 mAh LiPo pack in the fuselage, accessed through a detachable nose cone. The two motors (Turnigy 4240s with 530 kV) are fed with individual ESCs, with a separate BEC used to feed the Jeti receiver. The props are of scale size, being 12 x 8 Master Airscrews.

The ESCs are over specified. The idea is that hopefully they will be reliable as they are awkward to replace, but not impossible. There is some airflow from the nose wheel bay, through the wing to the nacelles and out through the functional exhausts. We will see how that decision pans out.

The cowls are basically just nose pieces. To avoid making two I made the first from foam. A silicone mould was then made and the final parts were cast in a styrene resin; this meant that they could be made hollow to save weight. As it turns out I needed some nose weight so maybe I will cast some in solid resin. We will see. Just the front two cylinders are visible and will be attached to the removable cowl pieces.

The model was glassed with 25 gsm cloth and was ready to fly. But that's where I lost interest. This was maybe five years ago...

An excerpt from my second column back in April 2012. How time flies.



The lower fuselage was assembled first and sheeted up to the datum.

“Having effectively a Piper Cub wing there are few straight lines so your sheeting and planking skills get a serious work out”

A MONOPLANE TWIN

So why am I revisiting this ‘old’ story? Well, as you will all know, (and if we stood talking, I would bore you with the story!), I went to the World Scale Championships in Romania last year. I was flying for Team GB in F4B (control line scale). What an eye opener that was!

What did become apparent from that competition was that to do well you need to select your model with care. The new FAI sporting code has redefined the F4B class and made the static portion simpler, in line with F4H. The FAI also decided to weight the flying portion higher than the static, which was weighted 50:50. But now the flying accounts for two thirds of the final score.

My Chipmunk was too light and did not benefit from good model selection; a tail dragger is more difficult to trim for a good crosswind/downwind taxi, but I was lucky with the Chipmunk that it tracked well.

In my opinion you need to be looking at a monoplane with twin engines, a fixed tricycle undercarriage and, preferably, flaps. The winner in Romania was Peter Bauer flying an Islander. A multi engine almost guarantees a maximum score as it is classed as a manoeuvre.

The culmination of all this head scratching is that I am re-working my Apache to fly in control line scale. It will still be both R/C and C/L, simply by removing the tip weight and moving the linkage on the elevator from the bellcrank to the servo. For control line the ailerons and rudder are disabled but the throttle, flaps, nosewheel and undercarriage are still controlled via R/C. This will give me manoeuvres to choose from such as multi engine, retract demo, flap demo and even asymmetric flight - if I have the nerve to fly on one engine!

A friend who flies for the USA scale team, as well as being a full-size jet pilot, told me he did some of his multi rating in a Piper Apache. Part of his training involved shutting down one engine, cruising around, then restarting the engine and landing. But the engine would not start, so Ben just landed with the one engine and, of course, the engine restarted immediately once back on the ground! He said the Apache was like flying a fast Piper Cub.

TALL BELLCRANK

To make the Apache work in control line I needed to fit a bellcrank. This is not as simple as you would think as there are issues with the



Nacelles were just as challenging as the fuselage. Worse in a way because there are two!



This picture shows one of the ESCs located in the leading edge. Also visible is the flap servo with internal linkages.



Cowl nose bowls were made in blue foam, then silicone moulds were made to create the final pair. It turns out the shape is slightly wrong so I will have to add some material.



The nose piece simply mounts on screw heads in slots and a slight twist secures it.



Peter Bauer flying his Islander with Kathy Bauer calling for him. I learned a lot from both and really look forward to spending time with them next year at the World Championships at Buckminster.



First, I hacked the roof and front canopy away. A painful thing to do.

lead-out angles. For the lines to clear the nacelle and meet the wing tips the bellcrank needed mounting quite high, in fact just under the lower line of the side windows. The output from the

bellcrank needed to be at the bottom of the fuselage to meet those snakes - a pushrod would have been easier! So, a bit more head scratching was done to make a tall bellcrank.

“To make the Apache work in control line I needed to fit a bellcrank”

The whole bellcrank assembly was based around a maple block, shaped to minimise weight without reducing strength. A 6 mm ground steel shaft runs in an upper and lower ball-race. The top has a circular bellcrank with a notch to trap the lead-out lines. An aluminium adapter was turned on the lathe to attach the bellcrank to the shaft.

This assembly may seem overkill, however the model, at four kilograms, will be subject to a 20 kg (five times model weight) line test. With the large moment arm the maple block was my solution and the bearings make it work smoothly even while under a 20 kg pull.

I spent a long time trying to create a lead-out guide that was unobtrusive and removable but, in the end, I couldn't crack that nut completely. However, the solution is tidy and works well.

As I said at the top of the column the model has flown and flies well. The tracking took work to get right but having a steerable



A maple block with a twin bearing 6 mm ground steel shaft running top to bottom, allowing the anulus bellcrank to transfer the torque to a nylon arm at the bottom.

nose wheel meant I could adjust it until it was tracking true, both upwind and downwind.

NOT SO CLOSE

The cockpit glazing was re-done and the cabin roof re-fitted. I had to raise the floor of the cabin to hide the anulus bellcrank but as the static requirements have been simplified the cockpit is no longer judged. In fact, the judges cannot get closer than five metres. A shame as the detailing is my favourite bit!

Hopefully in the next column we will be looking at adding paint and some detailing.

I think that just about wraps it up from me for today. As always if you want to drop me an e-mail, I can be reached at:

cammnut@gmail.com ■



Using my mill, I made an adjustable lead-out guide. I run both lines through the one hole.



Piper Apache cockpit nearly restored. Just some tidying to finish off.



Autumn at the BMFA National Centre Grantham NG33 5RW

- **20th - 21st September**
Scale Helicopter Fly-in

Beautiful scale heli's up close and personal.

- **27th - 28th September**
Aerotow with the Ghost Squadron

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- **3rd - 5th October**
Jet Modellers Association fly-in

JMA membership required to fly - non-member spectators welcome.

- **11th - 12th October**
SAM35 Autumn Gala

Fly-in for all things retro and vintage hosted by SAM35, Control Line, Free Flight and Radio Assist.

- **12th October**
National Centre Swapmeet

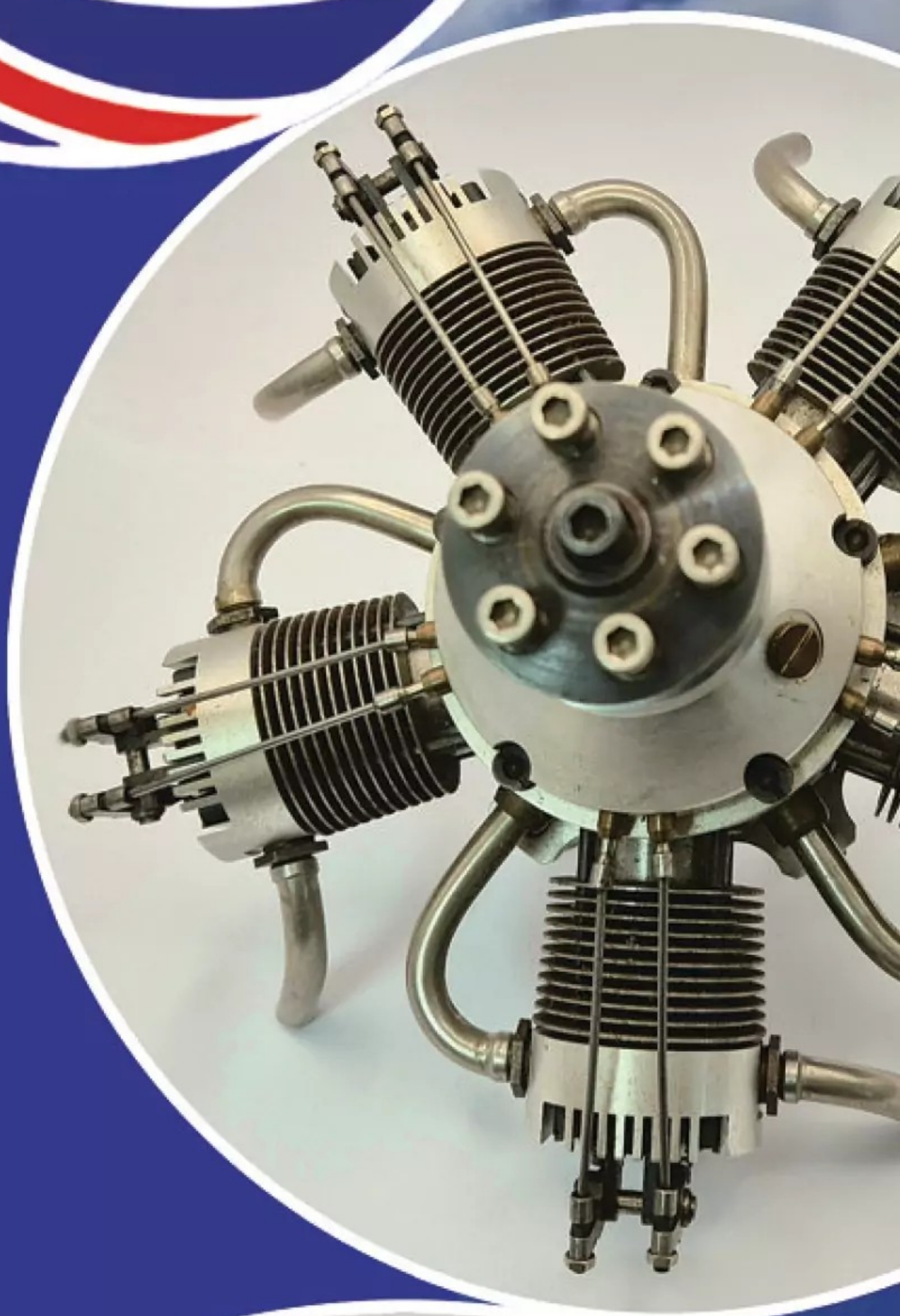
Final swapmeet of 2025, indoor traders in the Goldsmith Hangar and outdoor traders around the courtyard and carpark, its already promising to be our biggest ever!

- **18th - 19th October**
Short Course Pylon Nationals

E2K and C32 action all weekend for the British National Champs.

- **7th - 9th November**
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The now famous National Centre Auctions. Almost 1000 lots of engine loveliness. Live in the Goldsmith Hangar and broadcast live on line for remote bidding.



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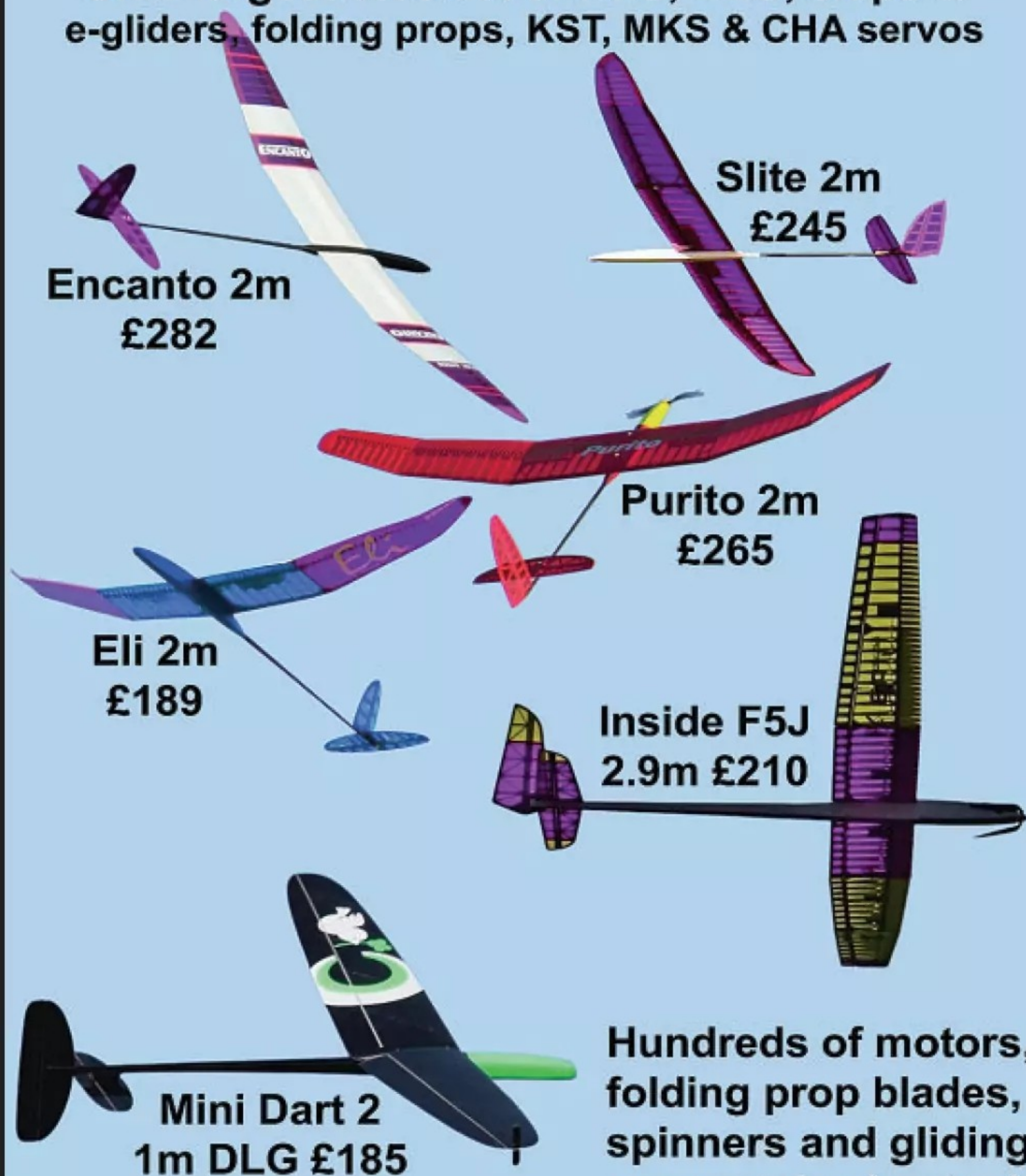
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Motley Crew displays the completed Bergfalke 4. See 'Repetitive Plane Syndrome'.

SPLICE THE MAINBRACE

Chris Williams shows how to splice together the long lengths of spruce needed for wing spars when building a scale glider

Words & Photos: **Chris Williams**

It used to be that when it came to sourcing the spruce spars for my wings I was able to get hold of six-foot lengths, thus obviating the need to join separate shorter lengths to get the job done. Now though, postal rates have become so prohibitive for anything over four feet in length that, added to the sky-high costs of materials generally, it has become necessary to consider the unsavoury possibility of some old-fashioned splicing, or scarfing if you prefer. The concept is simple enough: make the angle of the splice acute enough to give the maximum gluing area. But the process can be complicated. This was not my first dance with the process, so I wasn't going in cold, but I thought it might be a good idea to up my game.

(Spoiler alert: this will involve the use of a disc sander, so if your workshop doesn't have one... well, why not?)



These 5 mm square spars show a join ratio of 10:1.

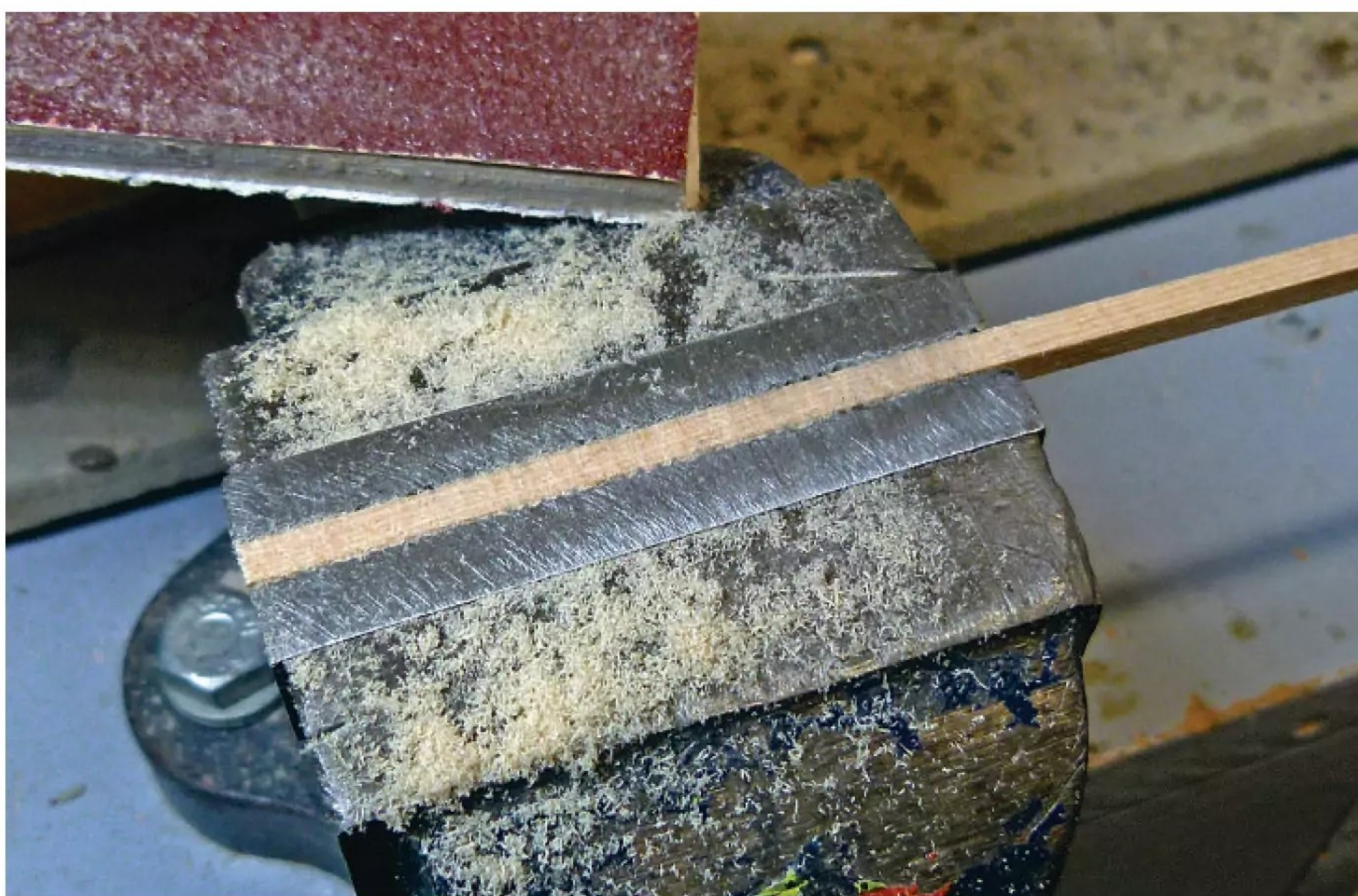


Conventional full-size wisdom is that a splice joint should have a minimum ratio of 16:1, although that would be beyond the scope of my six-inch disc, but it looked as though 10:1 should be a distinct possibility. The first job was to hack off the ends of the two lengths of spruce with a Stanley knife at a rough angle. Then, the two pieces were carefully (and sparingly) spot-glued together side by side ready for action. Laying the composite pieces against the rotating disc at an acute angle as possible, the excess was ground off. The result was a good 10:1, but the bevels weren't entirely flat. The cure for this, as it turned out, was to replace the old disc with a nice, crisp new 40 grit specimen, after which the results were well up to expectation. For the record, the spruce was 5 mm square which is as large a dimension as I use these days.

This isn't quite the end of the story, of course, as the position of the spliced joint in the wing needs to be considered and a bit of further reinforcement might be wise. The general principle is that all joints should be as far out towards the wing tip as possible and that between the upper and lower spars they should be staggered to avoid a weak spot. The first job then is to trim the spar such that the joint sits nicely between two wing ribs, thus allowing a web plate of 0.8 mm ply to be glued on either side. Or one side if a sub spar is later to be retrofitted in front of it.



As close to perfection as your author will ever get!



The mini-vice method.

We can only hope that the postal services don't eventually make three foot the limit before a surcharge is levied or we'll be forced to splice the other mainbrace!

SPLICE THE MAINBRACE, PART 2

The foregoing was all well and good until it became necessary to splice two pieces of 3 mm square spruce together. Unfortunately, the gap between the worktable and the disc was such that the spruce would suddenly disappear into the gap, so another solution was going to be required. As it turned out this was going to be a simple solution indeed, needing only the services of a small vice and a sanding block.

Initially, two strips of 3 mm square spruce were clamped in place, side by side, with one end flush one side of the vice and the other end raised to the full depth of the wood. It was then a simple matter to attack the protruding wood with a flat sanding block, the strips thus becoming flush with the straight edges of the vice. Such was the accuracy of this method that it became simpler to scarf one piece at a time, knowing that the two ends would nicely match up.



The disc sander method.



Initial fuselage construction on the 'Bridson' jig. See Scale Soaring UK website for jig details.



Bergfalke 4 airframe, ready for filming.



Three 4.7 scale Bergfalke 4s are now in the Posse's fleet.

Gluing together the two parts is simple enough. A piece of polythene sheet under the joint prevents permanent adhesion to the bench, whilst two clamps hold the joint tightly and weights placed on either side of the joint ensure that the pieces are flat and in alignment with each other.

REPETITIVE PLANE SYNDROME

It was some time ago that I designed and built a Bergfalke 4 to 1:4.7 scale, to have a FES for those light days on the hill. This turned out to be doubly successful as it was relatively easy to launch and fly from the flat as well. So nicely did it fly that for a long time the thought persisted that it would be a good idea to build another one, this time in pure glider form with a standard canopy. (Motley liked the original so much that he went on to build one too!)

So, the fuselage jig was dragged out of storage, dusted off and the job began. Progress was swift, given that the drawing already existed and the parts were ready to print out. The only modification lay in changing from the cabriolet to the more recognisable normal canopy. Luckily, once again the canopy from the quarter scale version could be suitably cut down to do the job. The airframe was once more covered with heat shrink film which accomplished an AUW of nine pounds, somewhat lighter than the original version with its Solartex-clad fuselage.

The maiden flight via aerotow was a non-adventure with the Bergfalke exhibiting all the docile qualities of the original. And then it was time to look for another project...

AND NOW FOR SOMETHING NEW

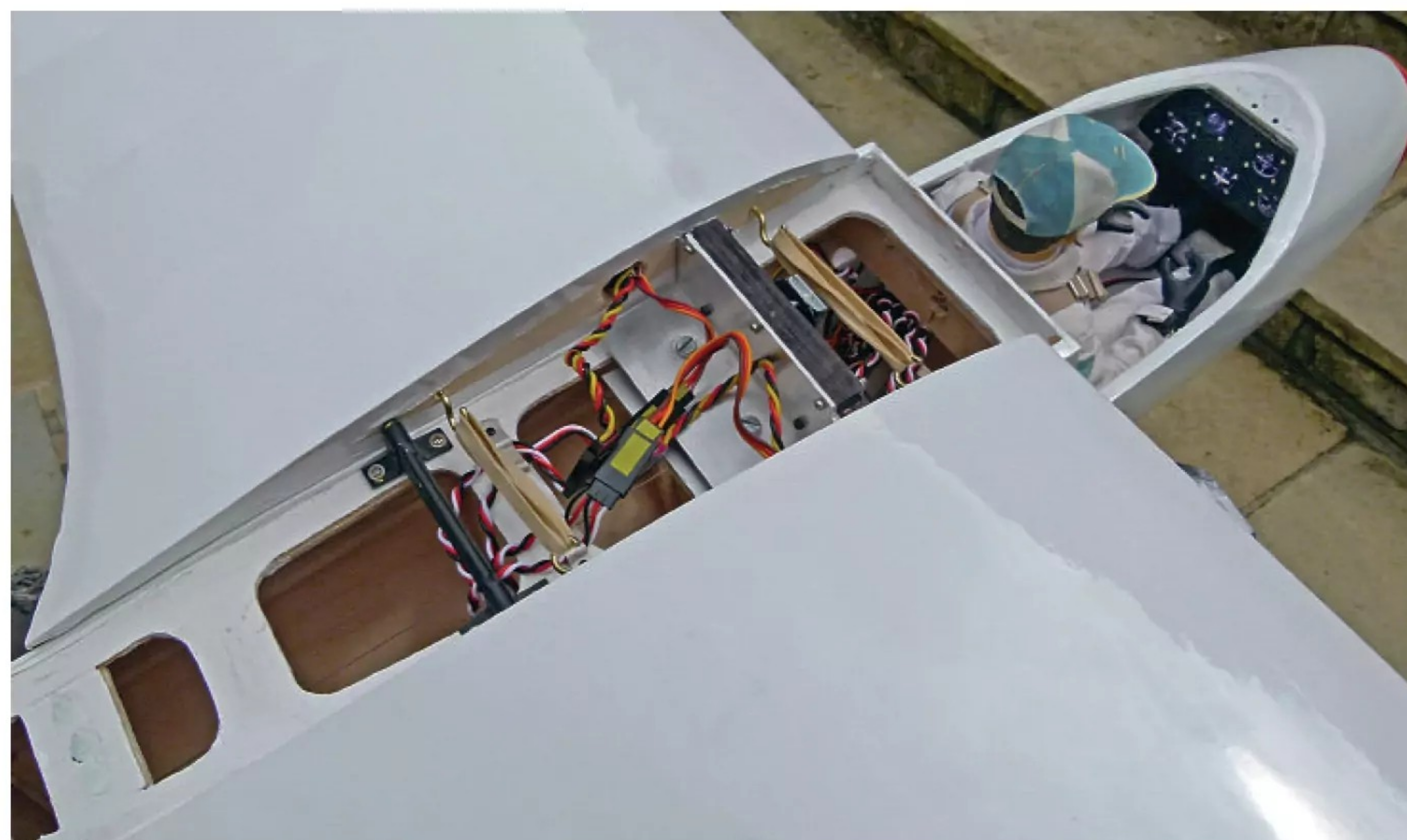
Thinking that perhaps I had been overdoing all the scaling up and down of original models lately, my eye settled on the Ka6, a glider much modelled from the Cliff Charlesworth plan, but yet to suffer the attentions of my mouse. Things took a little longer this time as the 3-view had to be turned into a working drawing but in a reasonably short length of time the Ka6 was complete, built to 1:4.5 scale.



Bergfalke slope soaring action shots.



Bill Ebdon prepares to launch



Wing joining arrangement on the Ka6.

SCHEIBE BERGFALKE IV

Scale: 1/4.7
Span: 3.7 m
Length: 1.67 m
A.U.W. 8.5 lbs
Wing Section: HQ 35/12
Five Function R/C: Ailerons, Rudder, Elevator, Airbrakes, Tow Release

Before you could say 'Look out, here comes the Chairman' the model was being assembled one fine day at CMFC, our home patch. If you believe in omens then the fact that I had forgotten to pack the cameras should have been a warning, but I obviously continued, unaware of the unseen machinations of Fate. The maiden aerotow went smoothly enough and within a minute or two the Ka6 was smoothly ascending in the grip of a convenient thermal. Satisfaction abounded, then, until



Ka6 airframe ready to cover.

it didn't... the model was not responding to the controls. What followed was an agonising downward spiral to a distant resting place, from whence the wreckage was eventually recovered.

I suppose she could have been repaired, eventually, but I gave it up as a bad job and fell to pondering what had happened. I shall never know for sure, but suspicion fell on the 6-volt NiMh battery which upon later inspection seemed to have developed the ability to self-discharge overnight. This means that the confidence of a recent charge cannot be relied on without some further investigation and testing of my remaining stock of batteries weeded out another rascal displaying the same tendency.

Ah well, I've built something else now, so the memory is fading. But I see that I've run out of space, so more of that next time around...

c_williams30@sky.com ■

Author displays the pre-maiden model.





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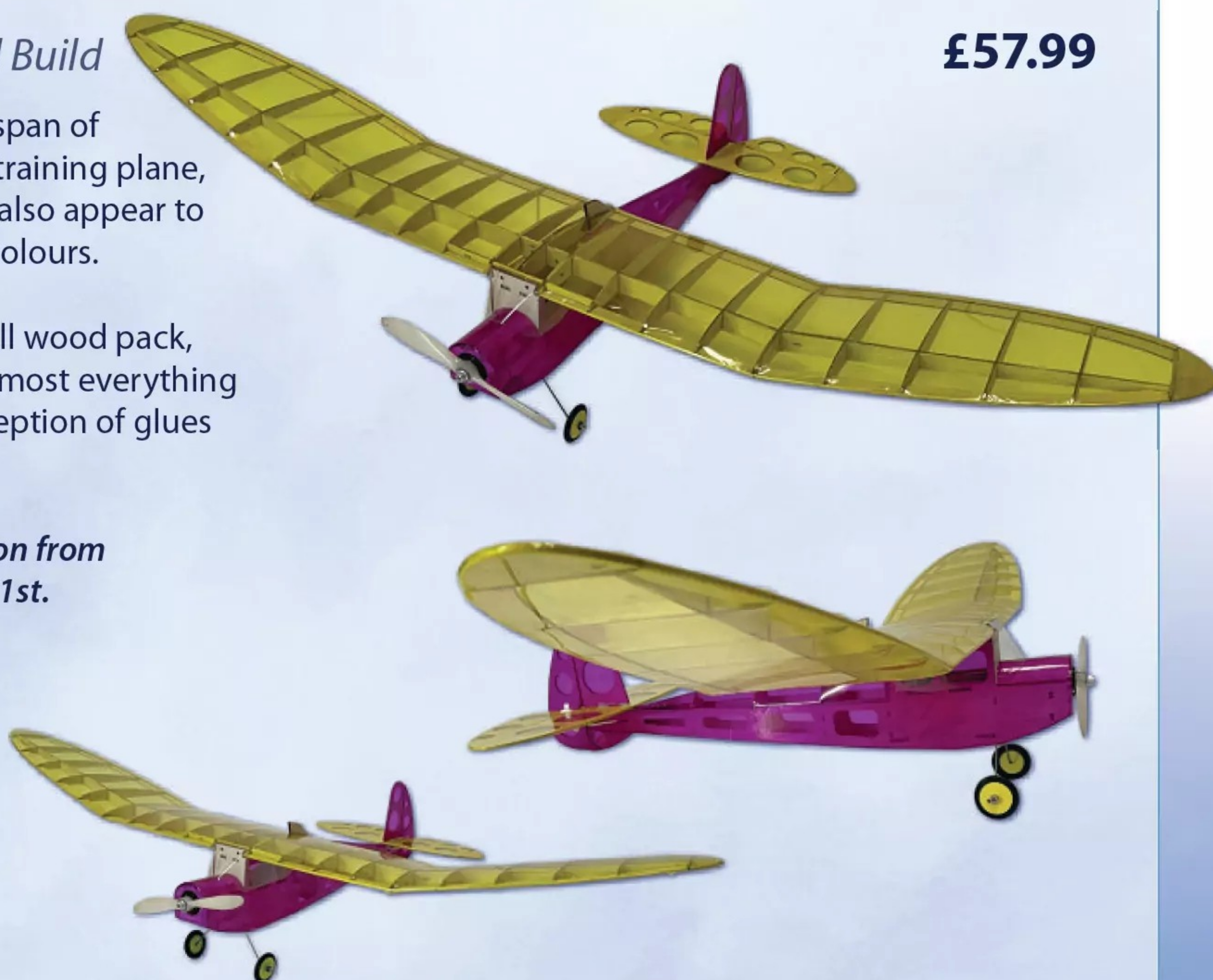
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MVM's mission is to breathe new life into some fascinating vintage models, redesigning them to better accommodate modern building techniques, materials and electronics while still maintaining the characteristics of these original models.



WOODSPRING WINGS 2025

Mike Freeman reports from a premier model show in the South West which continues to attract many beautiful models and talented pilots

Words & Photos: **Mike Freeman**

Woodspring Wings MAC is located on the North Somerset Levels, just off the M5 at J20. The club has been holding its annual model show since the early 1990s.

The 2025 show happened to coincide with the hottest weekend of the year so far with temperatures well into the 30°Cs. I popped along on the Sunday, which was the cooler of the two days, with more of a breeze, albeit rather gusty and variable thanks to the thermal activity about. Plenty of pilots braved the conditions though, giving the crowd an exciting and varied display throughout the day under the supervision of Flight Line Director, Steve Holland and commentators Sharon Holland and Brett Houghton.

TRIBUTE

I love the distinctive lines of early Y2K turboprop planes and was excited to see Steve Kilbon's lovely quarter scale Tucano in the pits. Steve lives in Lincolnshire but has a close connection with the Woodspring Wings club and crosses the country each year to attend the show. Steve's Tucano was built by the late



Steve Holland opened the show with his banner towing Everest-B, a scaled-up version of his own design Hilly-B which we'll see later.

David James, who was the club President until he sadly died. Steve was determined to buy the model from David's estate and makes sure he flies it at the show each year in tribute to David. What a lovely gesture to David and the club!

The gorgeous curves of a Tucano, or the similar Pilatus PC-21, normally mean that models are made from composite materials,

but Steve's Tucano is a lovely wooden example from the Phoenix Models ARTF kit. Power is from a rather small Wren 44N Turboprop turbine, but the model is so light at around 12 kg that it is ample power for the model. Steve told me it's a very sedate flier and a joy to fly. He certainly gave us a memorable display.



The Tucano looked fabulous beating up and down the strip, being flown in memory of the late David James who was the model's original builder and previous Woodspring Wings MFC President.



Steve Kilbon and his 2.6 metre span Phoenix Models ARTF Tucano.



Steve Kilbon also bought along his 1/3rd scale Gloster E.28/39.



The Woodspring Wings showsite is well laid out with spectators having easy access to view the pits area and flying, with a backdrop of trade tents and food outlets.



Steve says, 'The model is so ugly it's beautiful, but is a joy to fly!'



Underneath the canopy of Steve Kilbon's ARTF Tucano showing all the paraphernalia required for the Wren 44N Turboprop turbine and radio control. That one litre fuel tank gives it around eight minutes of flight time.

Steve also flew his 1/3rd scale Gloster E.28/39 jet which was the first British jet turbine plane to fly, designed by the brilliant engineer and inventor, Frank Whittle. Steve told me the model is so ugly it's beautiful but it's an absolute joy to fly! ✈️



I'd seen photos of Steve Holland's 1/3rd scale DH.89 Dragon Rapide but it was lovely to see it first-hand. A smashing looking model from any angle.



It takes Steve around an hour to assemble the DH.89 but the effort is well worth it.



Those gorgeous elliptical wings on the Dragon Rapide must have taken some building but look sublime.

NOSTALGIA

I'd seen photos of Steve Holland's distinctive DH.89 Dragon Rapide but it was great to see it first-hand. The model was designed and built by the late Ted Allison and Steve took ownership of it some 18 months ago. At 1/3rd scale it has a wingspan of 4.9 metres and a flying weight of 45 kg. It is finished in the livery of a BEA passenger and mail delivery service between the Scottish mainland and islands in the late 1940s. Twin DLE 55 cc engines and 24 x 8 wooden props provide the power and a 1.5 litre fuel tank gives Steve enough fuel for three 10-minute slots. The model is very photogenic and a credit to Ted's building and Steve's flying skills.

ICONIC CONCORDE

Andy Johnson is the President of the LMA and he had brought an eclectic mix of models to the show including no less than three model Concorde, the most impressive of which was his two-metre span 1/15th scale version which



Here we see Steve bringing his lovely Dragon Rapide in for a textbook landing after a stunning display.



Built by the late Ted Allison, close-up you can really appreciate the workmanship. The fuselage is assembled from several sections. Look carefully between the S&H of the registration letters and you can see one of the joints.



Lots of panel beating was required to produce the exquisite engine nacelles and wheel spats. Minimal ground clearance didn't seem to affect ground handling on the grass.



Andy Johnson gives some scale to his imposing 1/15th scale Concorde.



Concorde gets away easily thanks to its cleverly hidden single Wren 70N turbine. Those red cylinders in the intakes are two of the three one litre fuel tanks, giving around eight minutes of flight time.



Andy's iconic Concorde looked superb carving up the sky over the Woodspring Wings flight line.



Underside view showing the single Wren 70N turbine nestled between the two flap servos. It looks rather small but powered the Concorde admirably!



Andy Johnson is the Chairman of the LMA and had brought along an eclectic mix of models to the show including three Concorde's, a Sopwith Pup, a turbine powered glider and a Hilly-B dressed up as a Fokker-B.

is built mainly from foam and veneer. It is powered by a single Wren 70N turbine cleverly hidden under the fuselage at the rear of the wing. There are three one litre fuel tanks built into the model, two of which are hidden in the scale engine nacelles.



Andy Johnson gives some scale to his 1/3rd scale Sopwith Pup.

WARBIRDS

There were several warbirds displaying at the show, but I particularly enjoyed Andy Johnson's 1/3rd scale Sopwith Pup display. Andy's model is from the Balsa USA kit and is powered by a 3W 80cc engine. Andy said flying the Pup is quite a contrast to the Concorde and he treated us to several touch & goes during his display which made for some great photo opportunities.



Andy loves doing low passes and touch & goes with his Sopwith Pup. It looked and sounded fabulous with its 3W 80 cc twin purring away nicely.



Henry Fray's 88" span, 1/5th scale Grumman F8F Bearcat was built from the Zirol plan and is powered by a 80 cc Zenoah twin. Henry says it is very docile to fly but lets his friend Keith Barnes fly the model at shows.



Jeff Fraser's 88" span, 1/5th scale Top Flite F4U Corsair is amply pulled along by its DLE55 engine and 22 x 10 prop.



Laura Rowe's 134" span TN Lancaster Bomber looked and sounded superb with its four 4-Max PO-5055-500kV motors on full song. Sadly, the retracts weren't working this time out.



Father and son team Simon and Tom Wood brought several models to the show. Here's Tom's 86" span 1/3rd scale Jungmeister which was built from the Gary Allen kit and powered by a Saito FG-90R3.



Jamie Cuff standing proudly alongside his lovely 1/4 scale Flair Models DH Tiger Moth powered by a Laser 150SV engine and 20 x 6 prop.



The Tiger Moth has three separate closed loop systems for the rudder and each elevator half. I bet that lot took some setting up!

Photos of other examples of the warbird era on show have the model's details in their captions.

BIPLANES

Scale biplanes are another popular genre at model shows and Woodspring Wings was no exception, with some lovely examples on show. The Woodspring Wings flying field has a lovely 110-metre tarmac runway but most bipe



Jamie's Flair Tiger Moth on a low pass. The model is 89" wingspan.



Simon Wood's Stampe SV-4B from the Svenson kit is finished in the livery of a Belgian aerobatic team called 'The Penguins'. Rigging wires are fully functional and it takes a while to assemble, but it's worth the effort as it looked great in the air.



Neil Toyne launches Joe Smith's Barbie inspired Cambria Funfighter BD-5 into the multi model mayhem slot. OS 35AX power.

pilots chose to take off across the runway or from the grass surround into the ever-changing wind direction.

MODEL MAYHEM

The multi model mayhem slots, with lots of similar models in the air at the same time, are always a crowd pleaser. Cambria Funfighters were out in force with a squadron of their little BD-5's buzzing around flying formation manoeuvres. I liked Joe Smith's brightly coloured 'Barbie' inspired version which won Joe 'Model of the Year' at his local club, Wessex MFC.

Members of the Meteor MFC and North Berks Radio Model Aircraft Society like to meet up to fly their Panic biplanes in traditional streamer cutting combat style. Each Panic took off with a rolled-up streamer on the top wing, held by a rubber band, released at the flick of a switch to allow the streamer to unroll and enter the combat arena. Surprisingly, there was only one minor mid-air collision.



The Panic pilots were supposed to just try and trim each other's streamers, but they sometimes got too close for comfort! Surprisingly, there was only one minor mid-air.



Kyle Millet flew his Farmyard in the 'Dusty Crophopper' colour scheme from the Planes film. 96-inch span and powered by a Zenoah 38 cc petrol engine.



Members of the Meteor MFC and North Berks RMAS like to get together to fly their 48" span Panic biplanes.



Each Panic had a coiled-up streamer on the top wing ready to be released for combat!



Simon Wood and his son's double sized Chunkie, the original of which is available from Sarik Hobbies (MW2939). 48" wingspan running off a brushless outrunner, 40A ESC and 3S 2200mAh LiPo.

CARTOON FLIERS

I love the fun fly feel of these smaller shows where club models are mixed in with the more exotic scale jobs. There were some amusing examples at this year's show as can be seen from the photos.

CREDITS

Show Organiser, Chris Armitage, along with Flight Line Director, Steve Holland and the rest of the Woodspring Wings team put on a splendid show and were perfect hosts too, providing plenty of water to keep the folks on the flight line hydrated and even ice creams and lollies to keep us cool. A thoroughly enjoyable day. Thank you! ■



Andy Johnson shows off his Hilly-B dressed up as a Fokker-B. Cheap electrics and a standard 3S 2200mAh LiPo pack give fabulous value for money.



Final slot of the day was the Hilly-B 'All Up Together' slot. Steve Holland on the left designed the original as a Christmas present for his wife, Sharon who is standing next to him. Model is now kitted by RC World. Other Hilly-B pilots (L-R) are Laura Rowe, Graham Webb, Andy Johnson, Simon Wood, Stu Harris and Steve Thorne.

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Plans	£25.00
VAC Set	£35.00
CNC Pack	£86.00
Wood Pack	£107.00
Complete Pack	£243.00



GLOSTER JAVELIN

Tony Nijhuis is back with his latest series of EDF jets, starting with Gloster's mighty T-tail delta

Words: **Tony Nijhuis**

Photos: **Tony Nijhuis, David Ashby**

The Gloster Javelin is the first of three new models I will be revealing as pull-out Pro-Plans in RCM&E over the next few months. The Javelin will be followed by the Jaguar GR.1 and then the Tornado GR4.

All three models continue to follow my recent theme of post war jets, particularly classic aircraft of the 1960s to 1970s era. The Javelin has always been a favourite of mine and is a subject that is rarely modelled. This model, along with the Jaguar and Tornado, have been flying as bare wood prototypes for some years now, simply because I don't like covering models. But also, if I ever wished to make any modifications, it is much easier done on an uncovered model than ruining a covered, finished model. Well, that's my excuse!

The first Javelin prototype was built around four years ago and started life as a 38" span jet powered by two 50 mm 4S FMS units. The model featured a conventional elevator and ailerons. I flew this model for several years and was more than happy with the way it performed. The only element I didn't like was the elevator and



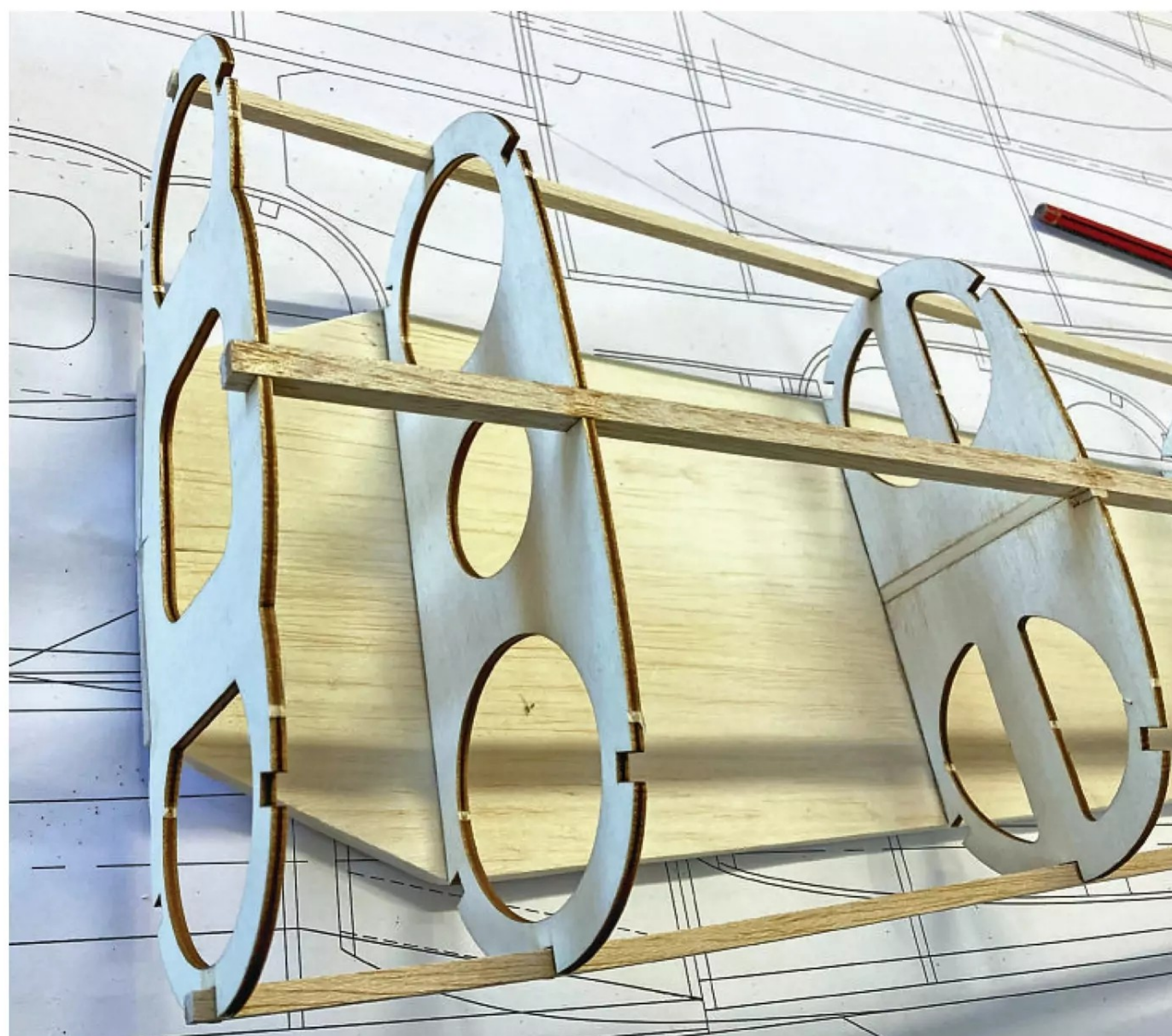
Rarely modelled, the Gloster Javelin has always been a favourite aircraft of the designer.

the complexity of embedding a servo into the tailplane. The Javelin did have a known problem of the wing 'blanking' the elevator in certain conditions. I experienced this when bottoming out of loops and it did make me a bit nervous that I wasn't feeling full elevator authority. On speaking to Steve Ricketts, who had a large turbine Javelin, the clear message was to forget about the conventional elevator and go with

elevons. Well, the Javelin is a Vulcan with a tailplane after all...

ONE FAN & ELEVONS

Having recently designed the 37" Harrier and being very impressed with the 4S Powerfun 70 mm fan, I decided to try this option in the second Javelin prototype. The unit does give a very good level of static thrust and launching



Two sheets of 4.5 mm balsa form the bottom of the fuselage onto which are glued formers F4 to F9.



Use the templates shown on the plan to align the formers at their correct angles.



Glue into position the fan mounting plates FM1.

should be so much easier. The cost difference will also save you money as the set-up is 40% cheaper than the twin fan option.

So, prototype number two was duly built with a single 70 mm 4S unit and elevons. I had to increase the size of the model to 40" span and deepen the fuselage to get the EDF to fit. But what a revelation it was! The model, although bigger, felt more powerful and, more importantly, the controls were more precise.

With a prototype that now worked well there was only one thing to do and that was to get it covered, painted and detailed!

PARTS & WOOD PACK

To assist the builder, I have once again made available a vac-formed set and CNC wood pack. These parts will only be available through Tony Nijhuis Designs Ltd (TND) and not via Kelsey Media. The plan will only be available in this edition of the magazine, with future copies only being available through TND Ltd.

The battery used in the prototype was a 4S 4000 mAh 70C LiPo. Elexon servos are metal geared 12g, 2.2 kg/cm torque units. For the ESC a 60-amp 4S controller was used. Make sure you set the timing to High.



Use soft 2.4 mm sheet balsa to sheet the fuselage sides. Wet the outside surface to aid bending.



Use a razor plane and sanding block to shape the fuselage to a smooth profile.

Lastly, and possibly the most important, a photographic build log is available as a free download to print out from www.tonymijhuisdesigns.co.uk. These photos will be invaluable and I would suggest downloading them so you can familiarise yourself with the build before you start.

REAR FUSELAGE

On the assumption that you have bought the CNC pack, number all the parts to avoid any confusion later.

Begin by joining two sheets of 100 mm wide 4.5 mm balsa and make up the bottom of the fuselage. The cut-out line is shown on

the plans. Mark the positions of the fuselage formers F4 to F9 on the bottom sheeting.

On the plan you will notice four angle templates. Use these to align the correct angle of formers F4 to F9. Glue the formers into position, noting that the sheeting will need a longitudinal centre cut in it to allow gluing of the cranked bottom edge of F4. Add the top 6.5 mm sq. stringer to brace the formers.

Add the six remaining 4.5 mm sq. stringers to the fuselage formers and the fin support strips. Glue into position the fan mounting plates, FM1. Mark out the bottom air intake and cut away the bracing strip on F7.

Using soft 2.4 mm sheet balsa begin to sheet the fuselage sides. Wet the outside surface to aid bending. On the underside make up two triangular fillets from 2.4 mm balsa and insert these between F4, the stringer and the under sheeting.

Using a razor plane and sanding block begin to shape the fuselage to a smooth flowing profile.

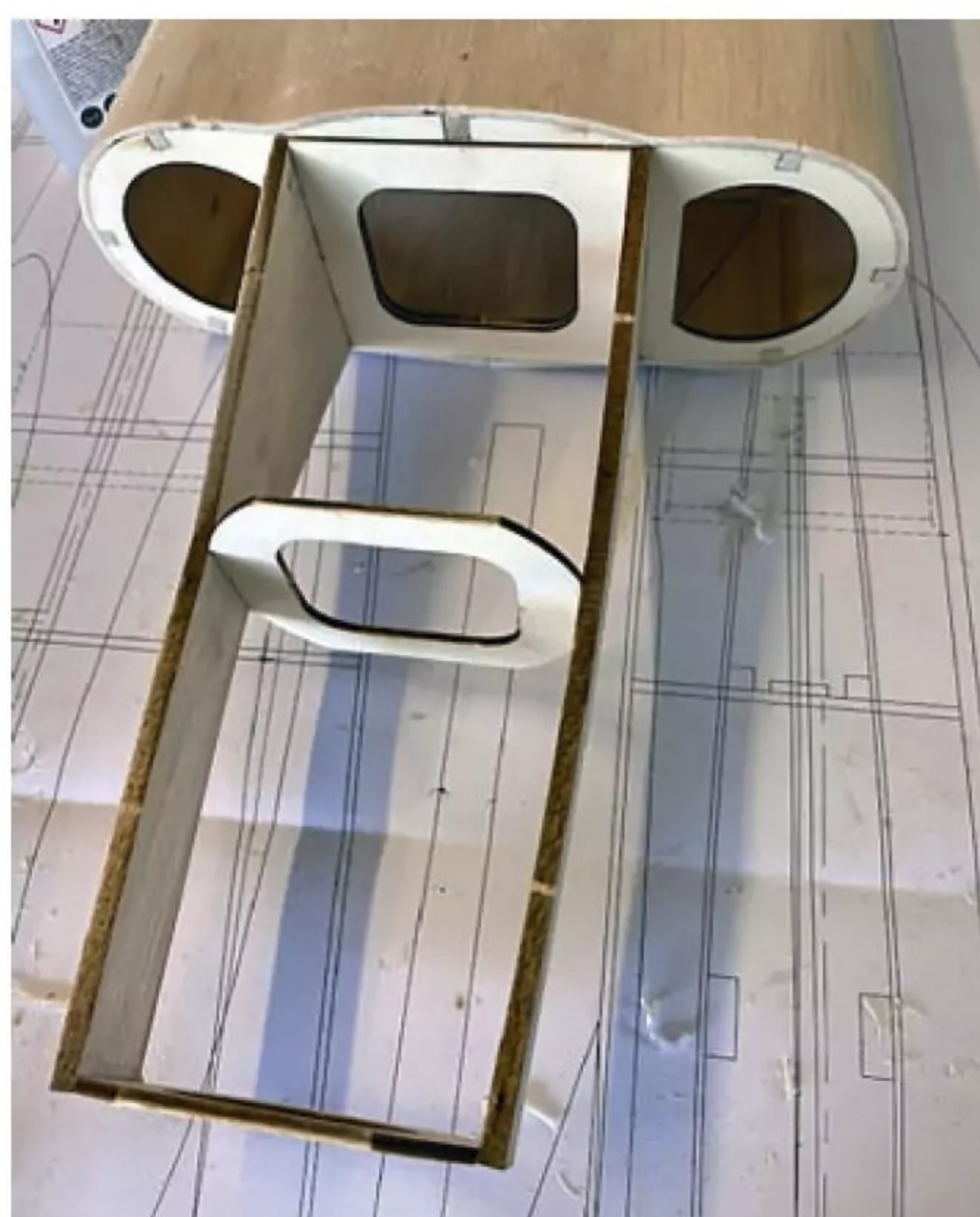
FRONT FUSELAGE

Make up the front fuselage sides FS1 and the fuselage formers F1 to F3.

Using a building jig, such as sold by SLEC, begin assembling the fuselage, adding F2 and F3 first, checking squareness as you proceed, then add F1. Note that FS1 is not symmetrical so note the correct orientation and mark the top of FS1 to avoid build errors. Now align F3 with F4 using the centre hole and glue the front fuselage section onto the rear section.

As access will become more difficult make up the battery support tray using scrap 3 mm lite ply and secure using scraps of 9.5 mm triangle against F4 and F5.

Use four shaped pieces of 2.4 mm sheeting to make the top and bottom sides. Spend a little time getting these right and fettled in. Wet the outside surface of the sheet to assist in bending and glue into position. When dry razor plane and sand the top and bottom edges flush



Make up the front fuselage sides FS1 and the fuselage formers F1 to F3.

with the formers then add the top and bottom sheeting using 9.5 mm balsa.

Using a razor plane and sanding block begin shaping the fuselage to a smooth, round radius.

BACK TO THE REAR FUZ

Install the fan and ESC. Check that the fan rotates in the correct direction. Make up the thrust tube using the template shown on the plan. This is made from an A3 sheet of 140-micron thick acetate available from a stationery supplier or eBay. Roll it round the fan and secure the overlap with a piece of tape. At F9 spread the acetate sheet so it sits snugly against the opening in F9 and then tape the overlap. By squashing the tube, you can pull it out of the end of the model. Apply a seam of tape along the overlap and the tube is done. Reinsert the tube from the rear through F9. The tube can be secured to the fan with blobs of hot glue.

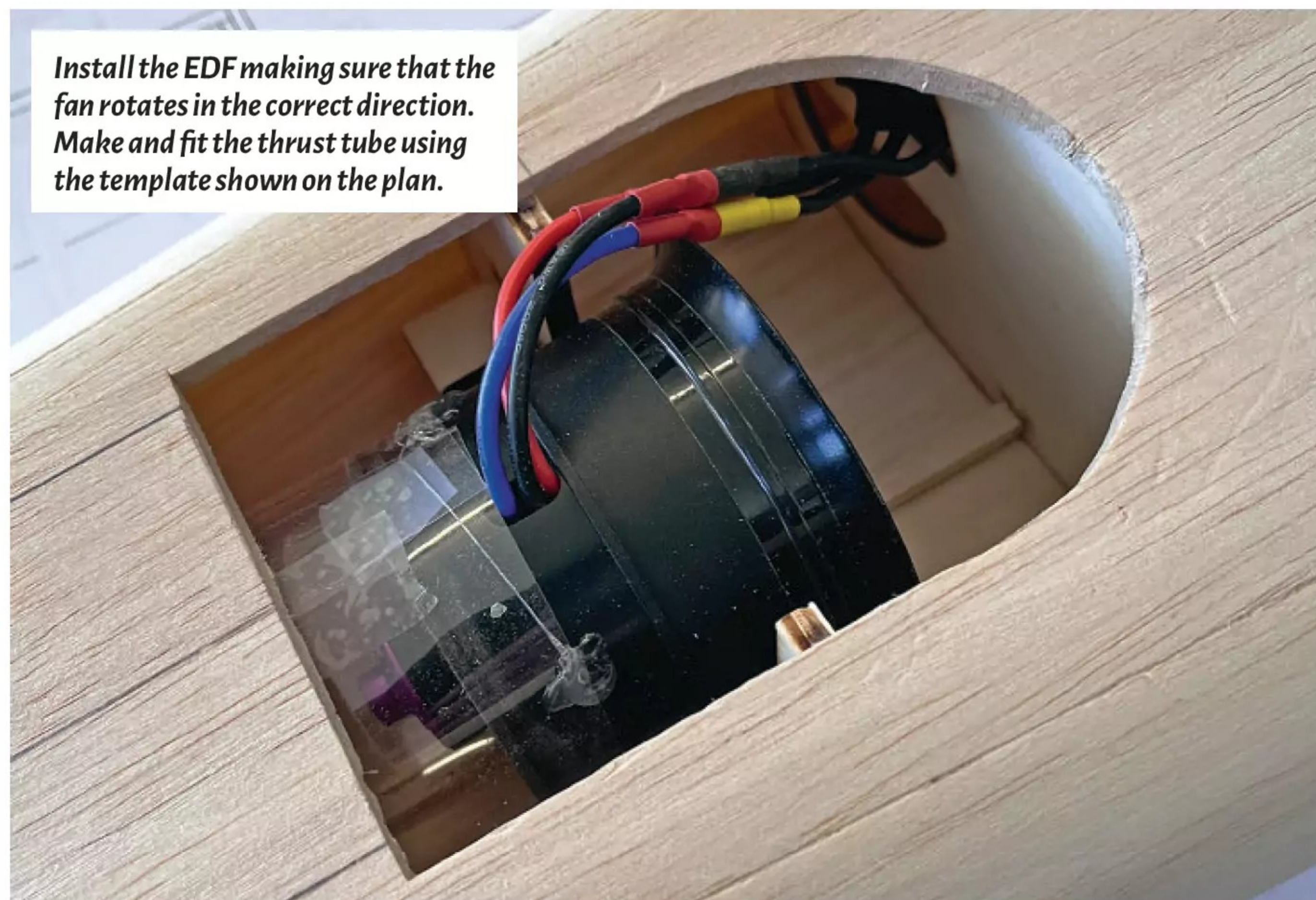


Four pieces of 2.4 mm sheeting form the sides of the front fuselage. Wet the outside surface of the sheet to assist in bending and glue into position.

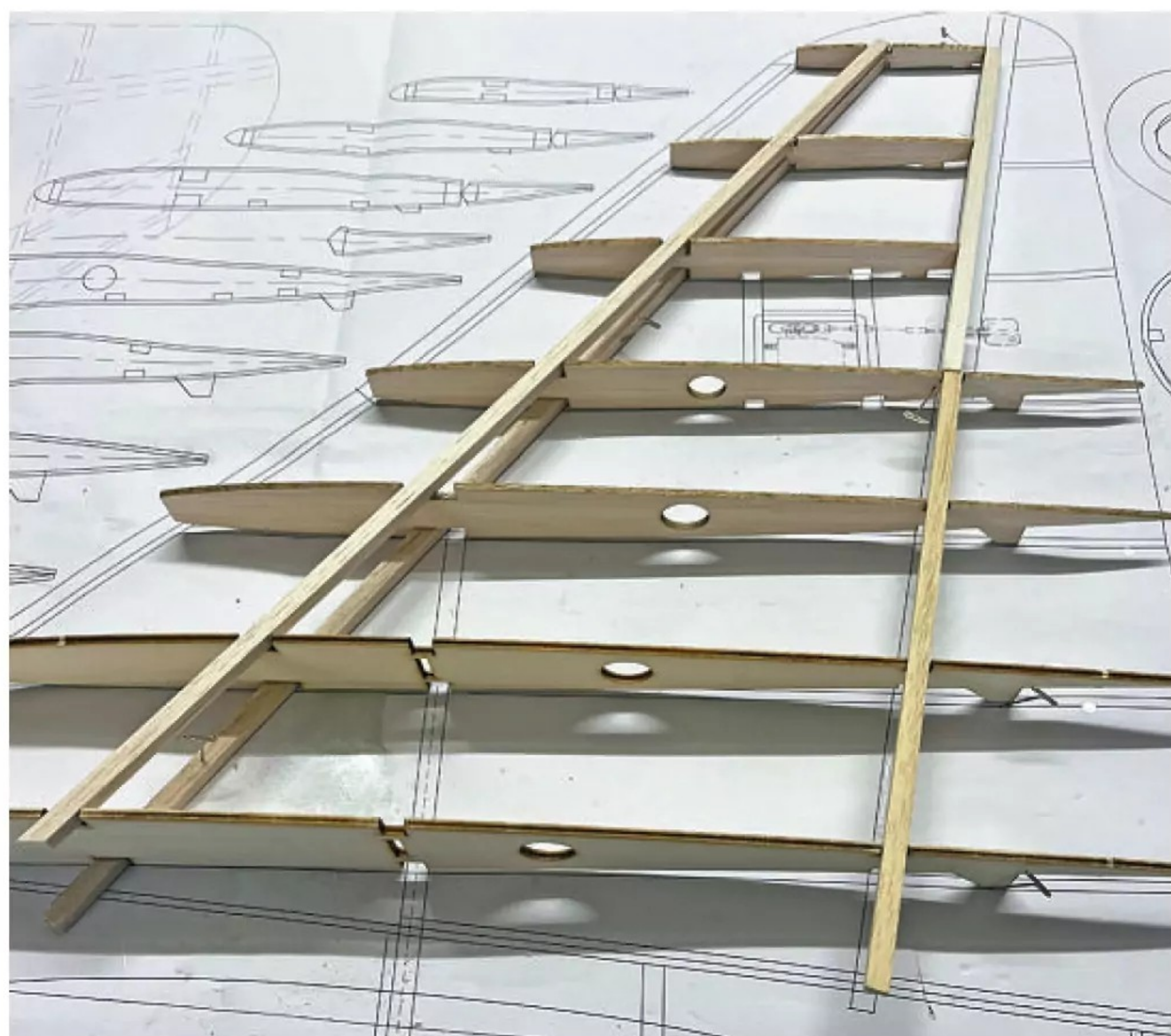


Plane and sand the top and bottom edges flush with the formers then add the top and bottom sheeting using 9.5 mm balsa. When dry shape the fuselage to a smooth, round radius.

Install the EDF making sure that the fan rotates in the correct direction. Make and fit the thrust tube using the template shown on the plan.



Drilling the fan mounting plates.



Wings are of traditional built-up construction and are made over the plan.



Using 1.5 mm balsa sheet the top of the wings from the leading edge back. Trim the sheeting to the finished wing perimeter.

WINGS

The wings are of built-up construction and made over the plan. The sequence detailed below should be followed to avoid construction difficulties.

Begin by taking the 6.5 mm sq. hard balsa lower forward spar and pinning this over the

plan. Note that the spar is notched and tapered slightly between W6 and W7. Fit all wing ribs, remembering to use a set square against them. The top rear obechi spar can now be glued into position. Note that the rear spar fits between W1 and W4.



Where the spars touch the fuselage, mark and cut out the openings for these to pass through.



Make up the trailing edge using 6.5 mm sheet balsa and fit this between W4 and W7. Fit the inner leading edge, made from 3 mm sheet balsa, and the top forward spar. Finally fit the stub spar between W1 and W3, made from hard 6.5 mm sq. balsa. Remove the wing

“The wings are of built-up construction and made over the plan”

from the building board and add all the under spars and servo support rails.

Make up the other wing to the same standard and glue into position the wing spar WS1.

The next sequence can be a little bit tricky so please follow this stage closely.

Using a modelling pin locate the rear edge of former F6 and draw a vertical line. Mark an offset line 3 mm parallel to the first. Using the marked lines cut a vertical slot in the fuselage side at the centre of F6. Now slide WS1 into the fuselage and check this sits flush and aligns with the centre bar of F6. Where the 6.5 mm sq. spars touch the fuselage, mark and cut the opening for these to pass through. Don't be too concerned if these openings are too large; the important element is WS1 lining up against F6. The other important alignment mark is where the bottom of the inner leading-edge butts against the side of the fuselage. There is a note on the plan as to where this should be. Please make sure that both wing leading edges match this dimension.

On the plan, you will notice a spacer template which is designed to fit between W1 and the fuselage side. Use this when gluing the wings into position. This will align the wings square to the fuselage

Apply good quality wood glue to WS1 and slide the wing into position. Clamping WS1 onto F6 can be achieved through the fan intake hole in the underside. Apply glue to all other wing parts that abut or recess into the fuselage, checking alignment as you proceed. Now leave to dry

Using 1.5 mm sheet balsa begin to sheet the top of the wings from the leading edge back. Trim the sheeting to the finished wing perimeter.

Before sheeting the underside remove the jig tabs from the underside of each rib and sand smooth. Make up the servo support mounts and fit the servo wiring. When done the wing sheeting can be applied in the same sequence as the top sheeting. Trim the sheeting flush to the finished wing perimeter. Using 12.5 mm sheet balsa make up the wing tips and glue these into position.

Make each individual aileron. Start by cutting to shape the bottom skin. Trim and fit the leading edges made from 6.5 mm sheet balsa. Fit the riblets and the control horn support blocks. Trim the top of the leading-edge flush with the angle of the riblets. Finally, enclose with the top skin and trim to shape.

Using 22 mm wide strips of 6.5 mm balsa sheet make up the outer leading edge and glue this onto the inner leading edge. This can now be profiled using a razor plane and sanding block to form a smooth flowing curve.



Fan intake vents, decals, canopy, pilots and other parts are available from TND Ltd.

FIN & TAILPLANE

Make up the fin parts. Glue together and profile the fin leading edge. Add two lengths of 9.5 mm triangle to the sides of the top edge. This gives additional support to the tailplane.

Make up the tailplane parts. Round off the tailplane leading edge and glue this to the top of the fin. Add the top fin fairing and with

a round sanding block blend the triangle smoothly into the fin and tailplane.

Put the fin aside and only glue it into position once the model is nearing completion.

FINISHING OFF

Cut out the fin slot in the top of the fuselage. Insert the fin and make sure it fits snugly.



With the fan installed a portion of the removed air intake can be glued back into position behind F7.

With the fan installed a portion of the removed air intake can be glued back into position behind F7.

Cut out the battery access hatch to the dimensions shown. There are a few ways to secure the hatch but as an alternative to that shown on the plan small neodymium magnets and Solarfilm hinges work just as well.

Two dummy under-pods were made from laminates of 12.5 mm balsa. They allow for a good grip when hand launching.

The vac-formed nose cone can be trimmed, F11 inserted and glued into position. Trim any plastic overhang flush with F11 and glue the nose cone centrally onto F1. Blend the fuselage smoothly into the nose cone.

The vac-formed air intakes need to be trimmed and F10 fitted to strengthen the opening edge. These can be glued into position against F4 and blended smoothly into the rear fuselage using a sanding block.

COVERING

The prototype was covered using a neutral Oralite from J Perkins. Overlap any vac-formed joints by 3 mm to allow a smooth contrast between the film and plastic surfaces. The covering was flattened with an abrasive pad and camouflage paint applied with a quality brush. A decal set, fan intake air vents and pilots are available from www.tonymijhuisdesign.co.uk.

Fit all the control surfaces using SLEC flat flock hinges and secure with glue. Fit all servos and control horns. I made horns out of 2 mm birch ply and slotted them into the control surfaces.

The C of G position can be achieved by positioning of a 4S 4000 mAh LiPo secured using self-adhesive Velcro and a strap.

The canopy can either be fitted before or after covering. I prefer to detail the cockpit, fit the canopy and then cover the model around the canopy but it's up to you.



Two dummy under-pods allow for a good grip when hand launching.

FLYING

The first thing to note with the Javelin is the wing loading, which is quite low at only 13 oz / sq. ft., so hand launching is very easy. Using my trusted javelin launch technique the model will get away cleanly but be prepared to add a little elevator when you get back onto the sticks. Once up to speed you can almost let it climb away without any control inputs - it is that steady in the air! However, for its maiden flight you might

want to get a trusted helper to launch the model for you. The Javelin is remarkably strong and if it doesn't get away first time it should survive.

When you get the Javelin airborne you will notice how nippy it is. Once the initial climb out has been executed you can pull back the throttle to around half stick and enjoy what is a very scale flying performance.

You'll find the model simply grooves and flies on rails, especially on a calm day. ✈



After the initial climb out, you can pull back the throttle to half stick and enjoy what is a very scale flying performance.



You'll find that the Javelin grooves and flies on rails, especially on a calm day.



Powerfun's 4S 11 bladed EDF gives a lot of punch and flight times are surprisingly good. Expect a good five minutes depending on throttle use.



Tony lends scale to his latest EDF design, the mighty Gloster Javelin. If you get the chance to see a real one, it's much larger than you might think!

“The 4S 11 bladed Powerfun EDF does give an amazing punch and flight times are surprisingly good”

However, on a windy day the model will rock and waggle a little, especially in cross winds, so be prepared to fly with more throttle. All the classic jet manoeuvres can be performed but you will need full throttle and speed on some as the model doesn't have the momentum to carry through manoeuvres such as big loops etc. Just remember to keep the routine smooth and keep what little momentum it has going. Landings are very straightforward and generally you will run out of elevator before the model will stall. Don't be tempted to adjust the C of G. The model has been thoroughly tested and where it is shown on the plan is exactly where it needs to be! The 4S 11 bladed Powerfun EDF unit does give an amazing punch and flight times are surprisingly good. So, expect a good five minutes depending on throttle use.

JAVELIN JIVE

I have to say that the Gloster Javelin hasn't disappointed and it really looks stunning in the air. It has far outweighed my expectations and is one of the best models in my collection. It's small enough to sit in the back of the car ready to go, but it looks, feels and flies like a turbine model, All in all, this EDF Javelin is a cracking little model and flies incredibly well. I think it will be a popular choice amongst builders out there as it is such an iconic aircraft. Enjoy! ■

TND JAVELIN PARTS

Additional plans, a vac-form set, combined CNC / wood pack, pilots and decal set are available from: www.tonymijhuisdesigns.co.uk
Email: sales@tonymijhuisdesigns.co.uk

DATAFILE	
Name:	Gloster Javelin
Model type:	Hand launch EDF jet
Designed by:	Tony Nijhuis
Wingspan:	40" (1015 mm)
Length;	43" (1096 mm)
Weight:	51 oz (1.45 kg)
Wing loading:	13 oz /sq. ft. (4 kg /sq. m)
Functions (servos):	Elevons (2), Throttle (ESC)
EDF unit:	4S 11-blade PowerFun
ESC:	60A
LiPo:	4S 4000 mAh 70C

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These EDF units are a new generation of performance EDF units at an affordable price.

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The 50mm FMS and 70mm PowerFun fans are those as used in the Tony Nijhuis "Mini and Midi Jet" series, as recently published in the RCM&E.

Diameter	Part Number	Thrust	Price
50mm	FMS 5400kv (3S LiPo)	620g	£41.58
50mm	PowerFun 5400kv (3S LiPo) - HIGH POWER	640g	£37.79
50mm	PowerFun 4300kv (4S LiPo)	765g	£37.79
50mm	FMS 4500kv (4S LiPo)	1,086g	£41.58
64mm	PowerFun 3900kv (3S LiPo)	872g	£39.20
64mm	FMS 3900kv (3S LiPo)	TBA	£53.99
64mm	PowerFun 3500kv (4S LiPo)	1,072g	£39.20
64mm	FMS 3150kv (4S LiPo)	1,162g	£53.99
70mm	FMS 2750kv (4S LiPo)	1,253g	£70.20
70mm	PowerFun 3400kv (4S LiPo)	1,435g	£47.50
70mm	PowerFun 2300kv (6S LiPo)	1,816g	£53.49
70mm	FMS 1900kv (6S LiPo)	TBA	£75.59
80mm	V3 FMS 2000kv (6S LiPo)	TBA	£129.99
90mm	PowerFun 1450kv (6S LiPo)	2,924g	£95.00
90mm	FMS 1850kv (6S LiPo Metal Case, Inrunner)	4,000g	£172.99
90mm	PowerFun 1100kv (8S LiPo)	3,360g	£95.00
90mm	FMS 1500kv (8S LiPo Metal Case, Inrunner)	4,800g	£183.59



Complete Electrical Setup For Gloster Javelin by Tony Nijhuis



www.4-max.co.uk/tn-midi-jet-gloster-javelin.html



Description	RRP
PowerFun 70mm, 4S EDF Unit with motor	£47.50
4M-HESC60A35V2 Brushless ESC and Programming Card	£59.94
Servos	£44.36
PP-HATCH-LATCH-A - Hatch Latch/Catch	£1.99
4S, 14.8V, 60C, 4,500mAh LiPo Battery	£70.00

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PPL-60C2S-0450	60C/120C, 2S (7.4V) 450mAh	£4.70
PPL-60C2S-0800	60C/120C, 2S (7.4V) 800mAh	£8.50
PPL-60C2S-1000	60C/120C, 2S (7.4V) 1000mAh	£9.25
PPL-60C2S-1300	60C/120C, 2S (7.4V) 1300mAh	£11.00
PPL-40C2S-1800	40C/80C, 2S (7.4V) 1800mAh	£14.50
PPL-60C2S-2200	60C/120C, 2S (7.4V) 2200mAh	£18.25
PPL-40C2S-2600	40C/80C, 2S (7.4V) 2600mAh	£20.00
PPL-40C2S-3300	40C/80C, 2S (7.4V) 3300mAh	£25.00

PPL-25C3S-0350	25C/50C, 3S (11.1V) 350mAh	£8.50
PPL-60C3S-0450	60C/120C, 3S (11.1V) 450mAh	£9.50
PPL-60C3S-0800	60C/120C, 3S (11.1V) 800mAh	£12.00
PPL-60C3S-1000	60C/120C, 3S (11.1V) 1000mAh	£15.00
PPL-60C3S-1300	60C/120C, 3S (11.1V) 1300mAh	£17.00
PPL-60C3S-1800	60C/120C, 3S (11.1V) 1800mAh	£21.75
PPL-60C3S-2200	60C/120C, 3S (11.1V) 2200mAh	£24.00
PPL-60C3S-2600	60C/120C, 3S (11.1V) 2600mAh	£30.00
PPL-60C3S-3300	60C/120C, 3S (11.1V) 3300mAh	£38.00
PPL-60C3S-3700	60C/120C, 3S (11.1V) 3700mAh	£43.00
PPL-60C3S-4500	60C/120C, 3S (11.1V) 4500mAh	£55.50
PPL-40C3S-5000	40C/80C, 3S (11.1V) 5000mAh	£56.50
PPL-60C3S-6000	60C/120C, 3S (11.1V) 6000mAh	£70.00

PPL-60C4S-1800	60C/120C, 4S (14.8V) 1800mAh	£30.00
PPL-60C4S-2200	60C/120C, 4S (14.8V) 2200mAh	£33.50
PPL-60C4S-2600	60C/120C, 4S (14.8V) 2600mAh	£39.50
PPL-60C4S-3300	60C/120C, 4S (14.8V) 3300mAh	£49.00
PPL-60C4S-3700	60C/120C, 4S (14.8V) 3700mAh	£55.00
PPL-60C4S-4500	60C/120C, 4S (14.8V) 4500mAh	£70.00
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PPL-60C4S-6000	60C/120C, 4S (14.8V) 6000mAh	£96.00

PPL-60C5S-3300	60C/120C, 5S (18.5V) 3300mAh	£63.00
PPL-60C5S-3700	60C/120C, 5S (18.5V) 3700mAh	£71.00
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PPL-60C5S-5000	60C/120C, 5S (18.5V) 5000mAh	£96.00
PPL-60C5S-6000	60C/120C, 5S (18.5V) 6000mAh	£118.00

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PPL-60C6S-4500	60C/120C, 6S (22.2V) 4500mAh	£103.00
PPL-60C6S-5000	60C/120C, 6S (22.2V) 5000mAh	£115.00
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PP-PDRV32-50	For 3.2mm shafts	£2.75
PP-PDRV40-50	For 4.0mm shafts	£2.95
PP-PDRV50-80	For 5.0mm shafts	£3.95
PP-PDRV60-60	For 6.0mm shafts	£4.75
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4M-HESC30AV2*	30A, Burst 40A, 5V 5A BEC	£22.99
4M-HESC40AV2*	40A, Burst 50A, 5V 5A BEC	£31.95
4M-HESC50AV2*	50A, Burst 70A, 5V 5A BEC	£45.95
4M-HESC60A35V2*	60A, Burst 80A, 5V 7A BEC	£47.95
4M-HESC60A40V2*	60A, Burst 80A, 5V 7A BEC	£47.95
4M-HESC80AV2**	80A, Burst 100A, 5V 5A BEC	£62.00
Fly Fun 110A HV	110A, Burst 140A, OPTO, 6-14 LiPo	£129.99
Fly Fun 130A HV	130A, Burst 160A, OPTO, 6-14 LiPo	£141.99
Fly Fun 160A HV	160A, Burst 200A, OPTO, 6-14 LiPo	£189.99

* XT60, ** XT90 on battery side



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4M-UBEC-15A	15A UBEC, 28A Peak, 9-51V I/P	£29.99
HW-UBEC25A	25A UBEC, 50A Peak, 3-75.6V I/P	£64.99
5A UBEC	With Switch and Digital Display	£16.99
15A UBEC	With Switch and Digital Display	£29.99

Approved by The BMFA
for the Payload and
Egg Challenges

This New Series of Professional Outrunners are of the **highest quality** and are **comparable to the well known quality brands** but at a **fraction of the price** as we get them straight from the factory, **there is no middle man mark up**. All motors are **dynamically balanced** in the factory to ensure **super smooth and vibration free operation**, along with longer bearing life. They also feature larger diameter shafts for superior strength. A standard rear mounting kit comes with all motors which includes the "X" mount and bolt on prop driver and screws.



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Part numbers in **RED** are approved by the BMFA for their Payload and Egg Challenges



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Make	Part Number	Type	Weight	Torque / Speed	Description	Price
EMAX	ES9251 II	Sub Micro	4.0g	0.27Kg @ 4.8V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £8.79ea 5pcs £7.91ea
4-Max	4M-037AH-0045	Sub Micro	3.7g	0.45Kg @ 4.8V - 0.10sec/60° 0.55Kg @ 6.0V - 0.08sec/60°	Analog, Light Weight, High Speed	1pcs £6.84ea 5pcs £6.16ea
4-Max	4M-045DH-005	Sub Micro	4.5g	0.5Kg @ 4.8V - 0.10sec/60° 0.6Kg @ 6.0V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £4.72ea 5pcs £4.25ea
EMAX	ES9051	Sub Micro	4.1g	0.8Kg @ 4.8V - 0.09sec/60°	Digital, High Torque, High Speed	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-056DHVMG-009	Sub Micro	5.6g	0.90Kg @ 4.8V - 0.14sec/60° 1.05Kg @ 6.0V - 0.12sec/60° 1.20Kg @ 7.4V - 0.10sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick	1pcs £9.94ea 5pcs £8.95ea
New 4-Max	4M-053HVDMG-010	Sub Micro	5.3g	1.0Kg @ 4.8V - 0.09sec/60° 1.5Kg @ 6.0V - 0.08sec/60° 1.8Kg @ 7.4V - 0.07sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick, High Speed	1pcs £11.10ea 5pcs £9.99ea
EMAX	ES9052MD	Sub Micro	5.5g	1.1Kg @ 4.8V - 0.11sec/60° 1.3Kg @ 6.0V - 0.09sec/60°	Digital, Metal Geared, Coreless Motor	1pcs £13.83ea 5pcs £12.45ea
4-Max	4M-094DMGB-014	Wing	9.4g	1.4Kg @ 4.8V - 0.12sec/60° 1.9Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, Ball Raced, Wing, 8mm Thick	1pcs £11.54ea 5pcs £10.39ea
EMAX	ES08A II	Micro	8.6g	1.5Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Light Weight, Great Value	1pcs £5.34ea 5pcs £4.81ea
EMAX	ES08MA II	Micro	12g	1.2Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared	1pcs £8.35ea 5pcs £7.52ea
4-Max	4M-090AH-017	Micro	9.0g	1.7Kg @ 4.8V - 0.09sec/60° 1.9Kg @ 6.0V - 0.07sec/60°	Analog, Basic 9g Servo	1pcs £3.99ea 5pcs £3.59ea
EMAX	ES3301	Micro	10.6g	2.0Kg @ 4.8V - 0.12sec/60° 2.2Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, 9mm Thick	1pcs £8.79ea 5pcs £7.91ea
4-Max	4M-100AMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, High Torque	1pcs £7.49ea 5pcs £6.74ea
4-Max	4M-100DMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, High Torque	1pcs £9.05ea 5pcs £8.15ea
New 4-Max	4M-125HVDMG-028	Micro	12.5g	2.8Kg.cm @ 4.8V - 0.144sec/60° 3.4Kg.cm @ 6.0V - 0.111sec/60° 4.5Kg.cm @ 7.4V - 0.105sec/60°	Digital, High Voltage, Metal Geared, High Speed, Dual Ball Raced	1pcs £12.21ea 5pcs £10.99ea
New 4-Max	4M-130HVDMG-040	Micro	13g	3.8Kg.cm @ 5.0V - 0.112sec/60° 4.0Kg.cm @ 6.0V - 0.096sec/60° 4.5Kg.cm @ 7.4V - 0.083sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque, Very Low Play in Gears	1pcs £11.10ea 5pcs £8.15ea
4-Max	4M-094DHVMG-026	Mini	9.4g	2.0Kg @ 6.0V - 0.09sec/60° 2.6Kg @ 7.4V - 0.07sec/60°	Digital, High Voltage, Metal Geared , Ball Raced, 8mm Thick	1pcs £14.99ea 5pcs £14.17ea
4-Max	4M-160AH-027	Mini	16g	2.7Kg @ 4.8V - 0.13sec/60° 3.0Kg @ 6.0V - 0.11sec/60°	Analog, Great Value Mini Servo	1pcs £6.29ea 5pcs £5.66ea
4-Max	4M-175AMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared	1pcs £8.73ea 5pcs £7.86ea
4-Max	4M-175DMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Digital, Metal Geared	1pcs £9.99ea 5pcs £8.99ea
New 4-Max	4M-183HVDMG-044	Mini	18.3g	4.4Kg @ 4.8V - 0.101sec/60° 6.5Kg @ 6.0V - 0.078sec/60° 7.3Kg @ 7.4V - 0.059sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque	1pcs £14.99ea 5pcs £13.49ea
4-Max	4M-253AB-028	Standard/Mini	25.3g	2.8Kg @ 4.8V - 0.12sec/60° 3.3Kg @ 6.0V - 0.10sec/60°	Analog, Ball raced	1pcs £6.79ea 5pcs £6.11ea
EMAX	ES3004	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared, Ball Raced	1pcs £12.09ea 5pcs £10.88ea
EMAX	ES3054	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared, Ball Raced	1pcs £17.59ea 5pcs £15.83ea
4-Max	4M-455AH-033	Standard	45.5g	3.3Kg @ 4.8V - 0.15sec/60° 4.0Kg @ 6.0V - 0.12sec/60°	Analog, Great Value Standard Servo	1pcs £6.99ea 5pcs £6.29ea
EMAX	ES3001	Standard	37g	3.5Kg @ 4.8V - 0.17sec/60° 4.8Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-410ABH-052	Standard	41g	5.2Kg @ 4.8V - 0.20sec/60° 6.5Kg @ 6.0V - 0.16sec/60°	Analog, High Torque	1pcs £4.73ea 5pcs £4.26ea
4-Max	4M-556AMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared	1pcs £12.59ea 5pcs £11.33ea
4-Max	4M-556DMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared	1pcs £15.74ea 5pcs £14.17ea
New 4-Max	4M-490AMG-108	Standard	49g	10.8Kg @ 4.8V - 0.13sec/60° 13.8Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared, Waterproof	1pcs £17.76ea 5pcs £15.98ea
4-Max	4M-620DHVMG-112	Standard	62g	9.35Kg @ 6.0V - 0.15sec/60° 11.2Kg @ 7.4V - 0.13sec/60°	Digital, High Voltage, Metal Geared, Dual Ball Raced	1pcs £18.89ea 5pcs £17.00ea
EMAX	ES3005	Standard	42g	10Kg @ 4.8V - 0.16sec/60° 12Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced, Waterproof	1pcs £27.49ea 5pcs £24.74ea
4-Max	4M-556AMG-118	Standard	55.6g	11.8Kg @ 4.8V - 0.20sec/60° 13.2Kg @ 6.0V - 0.18sec/60°	Analog, Metal Geared	1pcs £14.69ea 5pcs £13.22ea
4-Max	4M-556DMG-173	Standard	55.6g	17.3Kg @ 4.8V - 0.18sec/60° 20.4Kg @ 6.0V - 0.16sec/60°	Digital, Metal Geared	1pcs £17.84ea 5pcs £16.06ea

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HOTA D6 Pro - Dual I/P, Dual O/P 650W Charger



The D6 Pro is a dual I/P (AC & DC) and dual O/P high quality charger with each output capable of charging. It can charge between 2S - 6S LiPo, LiHV, LiFe and Li-ion batteries, Eneloop, Ni-Cd, Ni-MH, Ni-Zn. It also features wireless charging so you can charge your phone at the field. Great Value for just.

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£109.99

HOTA F6+ - Dual I/P, Quad O/P 1000W Charger



The F6+ features dual I/P (100VAC - 240VAC & 6.5VDC - 30VDC) and has 4 high powered outputs each can charge up to 250W. It can charge between 2S - 6S LiPo, LiHV, LiFe and Li-ion batteries, each up to 15A. 1S - 12S Eneloop, Ni-Cd, Ni-MH, Ni-Zn. Brilliant Value for just.

New

£199.99

HOTA H6 Pro - Dual I/P, 700W Charger



The H6 Pro Smart Charger features dual I/P (100VAC - 240VAC & 6.5VDC - 30VDC) and can deliver up to 700W, 200W on AC (max 26A). This is the charger when you need large packs charged quickly. Balance current 2A. Fantastic Value for just.

New

£79.99

HOTA S6 - Dual I/P, Dual O/P 650W Charger



The S6 is a high quality dual I/P (AC & DC) and dual O/P high quality charger with each output capable of charging. It can charge between 2S - 6S LiPo, LiHV, LiFe and Li-ion batteries, Eneloop, Ni-Cd, Ni-MH, Ni-Zn. Outstanding Value for just.

New

£169.99

ToolKitRC Q6AC - 1000W, Dual I/P, Quad O/P



The ToolkitRC Q6AC is a Dual Input, Quad Output Smart Charger. 2-6S LiPo, LiHV, LiFe, Lion and 1-16S NiMH. The charging power output on AC is up to 400W, on DC with a suitable power supply up to 1000W. The high power quad O/P charger.

New

£175.99

ToolKitRC Q4AC - 200W, Dual I/P, Quad O/P



The ToolkitRC Q4AC is a Dual Input, Quad Output Smart Charger. 1-4S LiPo, LiHV, LiFe, Lion and 1-10S NiMH. The charging power output on AC is up to 100W, on DC with a suitable power supply up to 200W. The Q4AC has intuitive menus.

New

£69.99

ToolKitRC M7AC - Multifunctional Dual I/P, 350W Charger



The M7ACs core function is being a single channel battery charger. 100W O/P when powered by AC and 300W when powered by DC. It is compatible with the main battery chemistries and supports direct connection with both XT60 and XT30 batteries.

£84.99

ToolKitRC M7 - is the worlds smallest 200W charger/servo tester/cell checker with a colour screen!



Same size as the popular M6 but with 33% more power! With a 200W, 10A charger at its heart the M7 also has a servo tester, cell checker, a wattmeter, PWM/PPM/Sbus input testers and output generator along with a variable voltage and current DC output control. All of these features at an fantastic low price of

£49.99

ToolKitRC M9 - Dual I/P & Dual O/P, 700W



So many functions in a small charger! Battery internal resistance checker, wattmeter, servo tester, (Can output PWM/PPM/SBUS standard signal, accuracy up to 1µs) LiPo balancer. It also charges all the main types of rechargeable cell up to 25A. USB type A & C outputs

£79.99

ToolKitRC M4Q - 200W Quad Out Charger



The M4Q is a 4 in 1 charger that has 4x 50W charging circuits when powered by DC (4x 25W when powered by AC). Allowing you to balance charge 4 batteries at the same time. It features an internal power supply so you can just plug it into your nearest mains socket. It can also be powered by DC when at the field.

£84.99

ToolKitRC M4 Pocket - 80W O/P Charger



The ToolkitRC M4 Pocket is a small but powerful ~80W charger featuring dual input (USB Type-C / XT60) and dual output (XT60 / XT30). The charger can charge up to 4S LiPo/LiHV/LiFe batteries. It can also be used to charge USB mobile devices with a USB-C socket. It features a 1.54" Wide angle colour display

£24.99

SKY High Power Discharger -



Fed up at how long it takes you to discharge your unused batteries? Then this is the discharger you have been waiting for. This can discharge your batteries up to 35A! (max 250W). Just set the discharge current and the end voltage you require and push the button, simple as that. We recommend that you just finish the storage process off on your charger.

£119.99

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SPARMAX GP-850 AIRBRUSH

£132.00 | www.airbrushes.com

Gravity-fed with a removable 125 cc fluid cup, the dual action Sparmax GP-850 Pistol Trigger airbrush sports a 0.5 mm needle and nozzle combination that provides excellent results for general purpose, high paint flow spraying and wider spray patterns. It features both fan pattern (oval, 25 mm – 63 mm) and round pattern (3 mm – 50 mm) air caps, offering versatile paint deployment. The fan pattern delivers with minimum overspray, which is ideal when dealing with small areas. A pre-set handle makes it easy to control the paint flow, facilitating consistent coverage and prevents accidentally pulling back too far and so flooding the surface being sprayed. Supplied with a 5-year warranty, the GP-850 requires a compressor of at least 1.2 cfm.



STAENDER MODEL STANDS

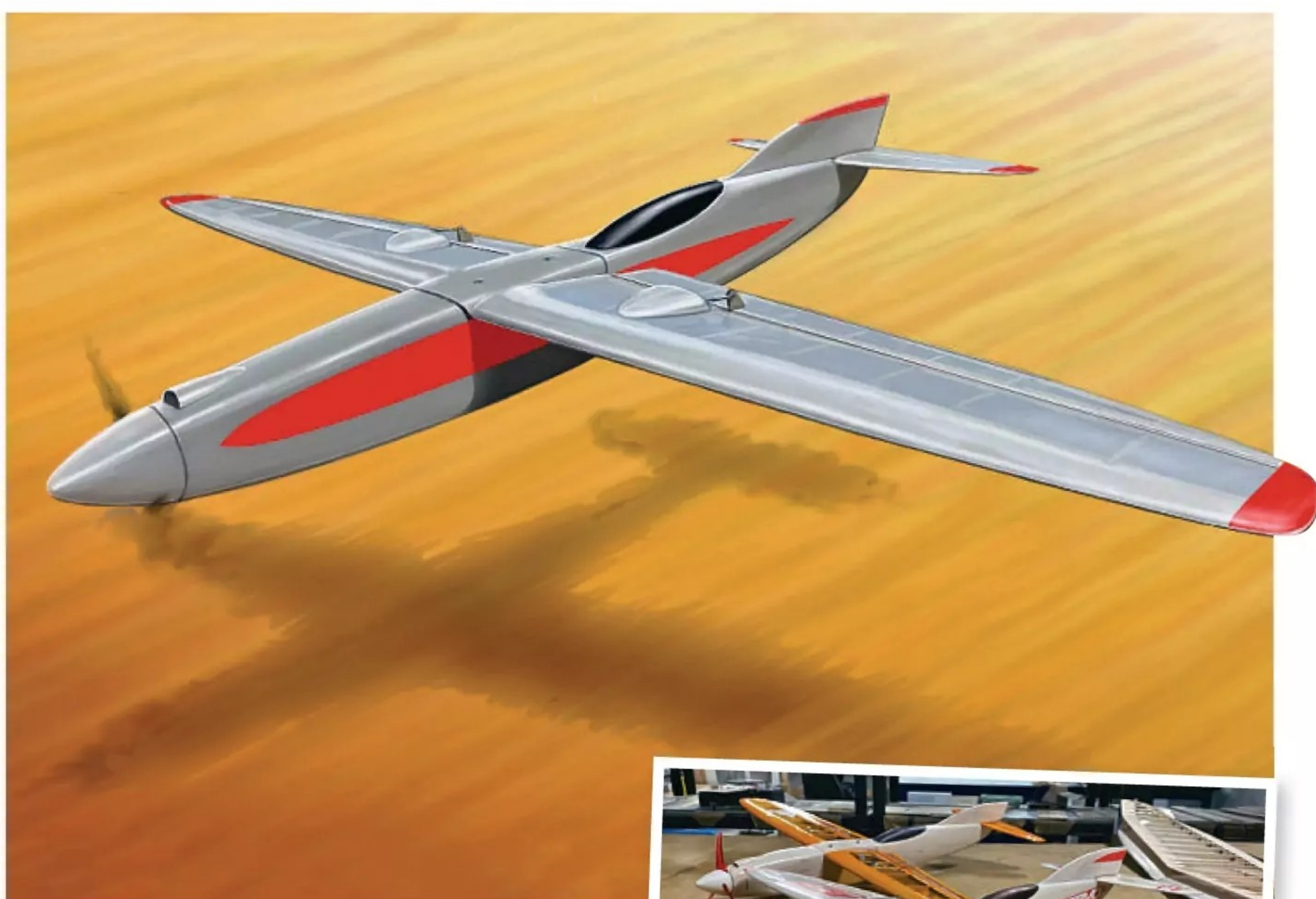
£119 & £129 | www.staender.world

Extremely light, robust and very stable, these stands from Staender are crafted from high-quality 25 mm anodised aluminium and can be easily adjusted to an ergonomic position/height, with a well-padded, non-slip V-holder ensuring that models are held securely. Assembly and disassembly is quick and easy, making transportation very straightforward. Available in two sizes:

Medium (€119) for models up to 10 kg.

Large (€129) for models weighing up to 20 kg.

Further accessories can be ordered from www.staender.world including a table/mounting stand in aluminium or PVC, a jet support, replacement supports as well as sandbags for securing models.



MINI RACER GOGO!

€109.95 | www.aviationtoys.nl

With a wingspan of just 655 mm this small, lightweight (270 – 290 g AUW approx.) racer is attractive, fast, fun - and definitely not for beginners! The all-wood airframe is quick and easy to assemble thanks to high quality laser-cut parts and when fitted with the recommended powertrain (2550 kV motor, 5.5 x 5.5 racing prop, 40A ESC, 4S 550mAh LiPo)



the finished model will deliver an adrenaline-fuelled performance. 3-channel R/C (aileron, elevator, throttle) and three servos are required.



F-35 LIGHTNING

£209.99 & £279.99 | www.cmldistribution.co.uk

Lockheed Martin's F-35 is a true modern-day legend, the lines of which can now be enjoyed first-hand by R/C enthusiasts at the helm of X-Fly Model's 64 mm EDF replica. This stunning, durable 750 mm span PNP features authentic cockpit detail, nozzle, LED lights and an electronic retractable landing gear system manufactured from CNC-machined aluminium for durability and scale fidelity. A high-performance 6S 64 mm EDF system, paired with a 50A ESC with thrust reversing, delivers plenty of power and an impressive

sound. This combines with full flying horizontal stabilisers to equip the model with a sparkling aerobatic performance. The spacious battery bay can accommodate a 6S 3300-5200 mAh LiPo. Should you wish to upgrade to a 70 mm EDF this can be easily accomplished without any airframe modifications. Featuring a no-glue assembly, the model is ready to fly in minutes with just six screws. Available in two versions – £209.99 without retracts, £279.99 with retracts. The aforementioned LiPo plus Tx and Rx are required to complete the model.



Nine models launching simultaneously makes for quite a spectacle.

INTERGLIDE 2025

David Ashby visits a small airfield in Kent to witness UK and International R/C thermal glider pilots battle for some prestigious silverware

Words & Photos: **David Ashby**

“Challenging!”, came the reply with a wide grin. I’d just asked Philip Kolb, the highly respected German flyer and glider designer, what he thought of the conditions. “Typical English [weather]”, said the friendly Frenchman Alex Gouillon. It was Saturday afternoon, Interglide 2025 was in full swing, and it was just a tad windy. At one point the gazebo I’d been sitting under looked like it might take off and put in a respectable score.

A late June weekend saw 41 competitors descend on Hamilton Farm near Ashford. It’s a lovely setting with a small grass airstrip, camping site, fishing pond and cafe. Like many Kentish grass airfields, it’s located near one of the Advance Landing Grounds (ALGs), the temporary airfields built by the USAAF to provide air support for the ground forces in June 1944. The old runways have gone but, like Headcorn Aerodrome nearby, another former ALG and venue for the Southern Model Show,



In the heart of the Kent countryside, Hamilton Farm offers a distinctly sloping runway to full size users like this lovely PA-18 Super Cub.



Mike Van Erp brought everything needed for the weekend - on two wheels!

for a maximum of 30-seconds during launch and only once per flight. Models have a device installed that records the motor cut-off height.

F5J is relatively easy to fly but not so easy to fly well. Like every good game a simple format hides a wealth of strategy and tactics. There are flight options aplenty. Do you cut your motor at a very low height then rely on your skill to find lift and see out the 10 minutes? What if thermals aren't evident or a strong wind has taken hold? Maybe that calls for a higher launch, or a little ballast? Or perhaps you'll be brave and try to create your own thermal? (No, I'm not kidding. Read on...) A caller stands by the pilot to reel off the minutes and seconds, look for signs of lift and, most important of all, keep an eye on what everybody else is up to. Their importance shouldn't be underestimated. As longstanding competitor Ian Nichols put it, "Pilots need confidence, a good caller and a bit of luck!"

It's a fascinating spectator sport, not least thanks to the excitement of mass launches and, as a slot's last few seconds tick away, the sight of several gliders zooming down from height, each pilot willing the other to make the first landing move.

KICK OFF

The comp's initial phase was over three rounds with each pilot having three slots (flights) per round. Initially nine pilots would take off



Mind where you tread! A variety of machines flew including the latest designs, particularly the Prestige 2PK and 3PK models. 'PK' stands for Philip Kolb, the designer.



Here's Philip with his latest design the Prestige 3PK. Nice guy, supremely knowledgeable and an excellent pilot.

Hamilton Farm has retained some full-size aviation and hosted Inter glide for the last few years.

INTER WHAT?

Inter glide is a Contest Euro tour event. Contest Euro tour is a bit like an F1 season for R/C thermal motor gliders with competitions run across the continent between March and November, this BARCS hosted event being the only UK gathering.

F5J is a popular competition class for motor gliders of up to four metre span where pilots aim to maximise flight time within a 10-minute window using the lowest possible launch height. Points are awarded for flight duration, landing accuracy and the launch height itself. The timer starts from the moment the glider is launched, and the motor can only be run



Steve Haley watches Simon Haley take aim at the spot. Both made the fly-off.

The French contingent came from Normandy and just south of Paris. Good pilots all.



together but, by Sunday, technical problems or flying related damage had forced some to retire. Mehmet Tunaboynu had traveled all the way from North Cyprus with just one model but found his flying truncated by radio failure on Saturday. Although the model was low and slow the fence that stopped it was cruelly unforgiving.

An assumption that Saturday would be windy and challenging while Sunday would provide a comfortable breeze and easy-to-find thermals was wide of the mark. The weather had other ideas. All through the weekend competitors in one slot would easily fly out 10 minutes yet the following slot saw everybody on the ground after six minutes. 'Variable' and 'challenging' were the words people were using. 'Ballast' was another.



All landings had to be made within 75m of the spot.



Erel Cankan (Turkey) negotiates Saturday's blustery conditions to land.



Simon Conran a moment before launch.



Saturday's strong winds made it easy to land beyond the line with a zero score for the round resulting.



The heat started to tell as the weekend wore on, so Guillaume Gallet found a seat for his son, Romain. Talented pilots both.



Kent Interclub's Nick Jackson and Terry Letchford took care of the scores all weekend.

R/C glider pilots talk about weight a lot. But it's a mistake to assume that lighter is better. With Saturday's winds gusting to over 16 mph, Philip Kolb told me he'd added 1 kg of ballast to his Prestige 3PK, taking the all-up-weight to 2.5 kg. One of the French competitors had a 2.8 kg model flying. As



From Bulgaria, Nikolay Peychev flew a Challenger, the latest design from NAN Models.

if proof were needed, lighter models were normally the first down. Motor cut-off heights were usually above 100 metres and often over 150 metres. Only the very brave risked cutting the motor below 100 metres and getting away with it.

Philip Kolb gave a talk on Saturday evening outlining technical theory and practice regarding glider set up and performance. It certainly gave the appreciative audience something to go home and think about.

PERSONAL THERMAL

With sunny skies, temperatures close to 30-degrees and windspeeds down to single

figures Sunday promised a more predictable flying environment. Again though 'challenging' was the word I heard most. Philip's 3PK was down to 1.6 kg.

Launching strategies had been fairly similar the day before, when most pilots used a high launch and flew upwind. But with the fly-off stage approaching Sunday was the day of low launches and risk taking.

Young Frenchman, Nicholas Chansard continually drew admiration with his carefree downwind low-level launches and attempts to unstick a thermal. The technique requires flying low and entering a tight high-speed circular pattern in the hope that the vortex



The sky becomes crowded again as the clock ticks down.



Rik and Josh Lloyd travelled down from Glasgow, Josh placing at a very respectable seventh.

PLACINGS

- 1st. Philip Kolb (GER)
- 2nd. Guillaume Gallet (FRA)
- 3rd. Steve Haley (GBR)
- 4th. Nicholas Chansard (FRA)
- 5th. Alex Maxfield (GBR)
- 6th. Simon Haley (GBR)
- 7th. Josh Lloyd (GBR)
- 8th. Peter Allen (GBR)
- 9th. Alex Jeffery (GBR)

created will unstick a lump of rising air from the ground. Occasionally two models work together to the same end. Easy, eh? Then it's just a case of riding your own personal thermal downwind, safe in the knowledge that, whatever happens, you've at least recorded the lowest launch height of the round. Needless to say, a lot can go wrong with the strategy and some models didn't get back from their downwind adventures. Comp CDs always urge pilots to use the motor to rescue models that



An F5J glider's slim profile makes them difficult to see at certain attitudes so the Challenger's reflective trim makes a lot of sense. We caught it glinting at a distance.



Independent timekeepers, volunteers from local Kent clubs, sat in the sun, one to each lane, for long periods over the weekend. The comp' wouldn't have run without them.



Colin Paddon won Intergride five times when F3J was the discipline. Seen here landing his Sensor.



Nicholas Chansard (left) and Romain Gallett. Young they may be, but both have held World Champion titles. Nicholas flew a 3PK model to fourth place.

The nine fly-off contenders.



Well-deserved podium positions.

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won't make it back to the field. Doing so wipes their score but getting £2000+ of motor glider back unscathed takes precedence as crunchy all-carbon models rarely fare well when they disappear behind distant trees.

Landing techniques varied; some were diving down with full crow braking while others adopted a long, smooth approach. With so many models in close proximity during take-off and landing mid-air were mercifully rare. The weekend saw just a single touch when two models bumped on their landing approach.

FLY-OFF

By Sunday afternoon the tension was palpable as an expectant audience settled down to watch the top nine pilots battle it out for the silverware. The fly-off stage required each to make three flights, although the stakes were raised with the working time increased to 15 minutes. Everyone was feeling the heat, literally, as temperatures close to 30-degrees and commensurate humidity added physical demands to the flying.

USEFUL LINKS

www.contest-eurotour.com/category-f5j/
www.interglide.co.uk
www.barcs.co.uk

To their credit no one played safe, risks were taken, mistakes made and zero flights recorded as pilots threw caution to the wind. A clear winner had emerged even before the numbers were crunched though. Over the two days Philip Kolb, returning to F5J after a break, had run out a worthy winner by delivering a soaring masterclass. Guillaume Gallet was second, with Steve Haley taking the third podium spot.

Having already competed in Bulgaria and Turkey this year some of the UK flyers were heading down to France the following week for the next Eurotour event. But this was one to remember, a weekend of keen but very friendly competition and great camaraderie. ■

MARQUART CHARGER

I have drawn up plans and built a one fifth scale model of a 'Marquart Charger MA5', an American home build two seat aerobatic biplane of which there is only one flying example in the UK, G-BHBT, which happens to be owned by my brother! It is very pretty aircraft, although I may be biased, being

similar to a Steen Skybolt. I designed it for 6S electric power, with some input from George Worley at 4-Max! The model is complete and has taxied but not flown. I like to wait a few months until I have forgotten how much work went into a model before flight!

Phil Stevens



ZIG-ZAG

I am writing from Greece. I have been involved in aeromodelling for more than 45 years. Of course, I am an avid reader of RCM&E, as all we old-timers are. I fly all kind of models - R/C, C/L and rubber powered.

I recently designed this little asymmetric biplane, based on another

biplane of my own design that I built a few years back. ZIG-ZAG first flew a week ago, with flying colours. There was nothing unusual in its behaviour. It is made of Depron and balsa.

Alex Dalidis





WILSON'S WALRUS

In the last issue you published a photo of my Supermarine Walrus making one of its rare landings on our flying field. I have included a better static picture of it taken by club mate Derek Robertson.

I modified the plan by including ailerons and reducing the dihedral to more scale like proportions. The undercarriage was detachable so that it could be flown off water but that never happened.

Malcolm James Wilson

WRIGHT FLYER FLIES!

In the April 2024 issue you included a picture of my just completed US Dare/ Brodak kit of the 1903 Wright Flyer. Not having the finest flying ability, I lacked the confidence to attempt flight until May this year. I need not have worried because the Wright flew like a trainer on our field at Nidderdale Model Flying Club. I'm grateful to my club colleagues who watched in wonder and filmed the 'historic' first flight. The kit is still available from the USA. It flies on three cells, driving two E-Flite 250 motors with 8 x 6 props. Orville is controlling the foreplane by a servo in his chest working his left arm. I am now in the process of making a trolley for ground take-offs.

Barry Martin



SKYWAYS MOTH MINOR

I thought your readers may be interested in a very old Skyways model, the 6' 10" wingspan Moth Minor. It was built for me by a talented Warwick Model Flyers builder, the late Doug Seymour, in the very late 1980s. It was originally fitted with an Irvine 40, but this was changed to a Saito 10 cc four stroke after a disastrous first flight.

I left the hobby in the early 1990s and the model rested. Having rejoined Warwick Model Flyers in 2015, after a short time I decided to go 'All Electric'. In late 2023 another club member, Duncan Barker, converted the Moth Minor to electric, using a 4-Max PO3541 - 920kV motor,

a 50A ESC and an Overlander 3350 mAh 4S battery driving a 13 x 6 prop. It was test flown in June by Duncan's son, David, at our field and it flew remarkably well.

The model is showing its age a bit, I admit. It has never been recovered and I don't intend

to do so. It is what it is - a genuine Skyways plan kit from the late 1980s, now converted to electric and it still flies well. I believe the real G-AFPN still exists, albeit flying with a different colour scheme.

Denis Welchman





JETRANGER LIFTS OFF

The Editor flies a semi-scale GPS model helicopter from Fly Wing

Words: **Kevin Crozier**

Photos: **Kevin Crozier, Barry Atkinson**

Last time, due to space limitations, I had to break away from my description of the internal components of this very nicely made model helicopter. So, let's resume with the avionics, including the H1 Flight Controller and M10N GPS unit which are all neatly installed.

The 4S 3000 mAh LiPo and the ply battery mounting tray are fitted with matching pieces of hook and loop tape so the battery can be dropped straight in after charging. A thin hook & loop strap is also supplied to wrap underneath the mount and around the LiPo to keep it well restrained in flight.

Unlike most model helicopters of this size fitted with two individual tail blades the Bell is fitted with a one piece, two-blade tail rotor of 153 mm diameter. This screws directly to the high-speed brushless tail motor. There is no tail rotor shaft to speak of and no mechanical connection between the main and tail rotors



Fly Wing's Bell-206 is truly Almost Ready To Fly, just needing the two main rotor blades to be fitted to the flybarless rotor head.



A spring latch allows for speedy removal of the canopy to give access for quick battery changes.

which should make repair and maintenance a lot easier.

The carbon fibre rotor blades are 370 mm long, giving an overall main rotor diameter of 810 mm after they are bolted to the blade grips. Bolting on the blades is the only assembly task needed with this otherwise completely ready to fly model. This size of rotor usually means that this model will fall between the 450 and 500 size class of R/C model helicopters, perhaps being closest to 450 size.

GET THE ROTOR STARTED

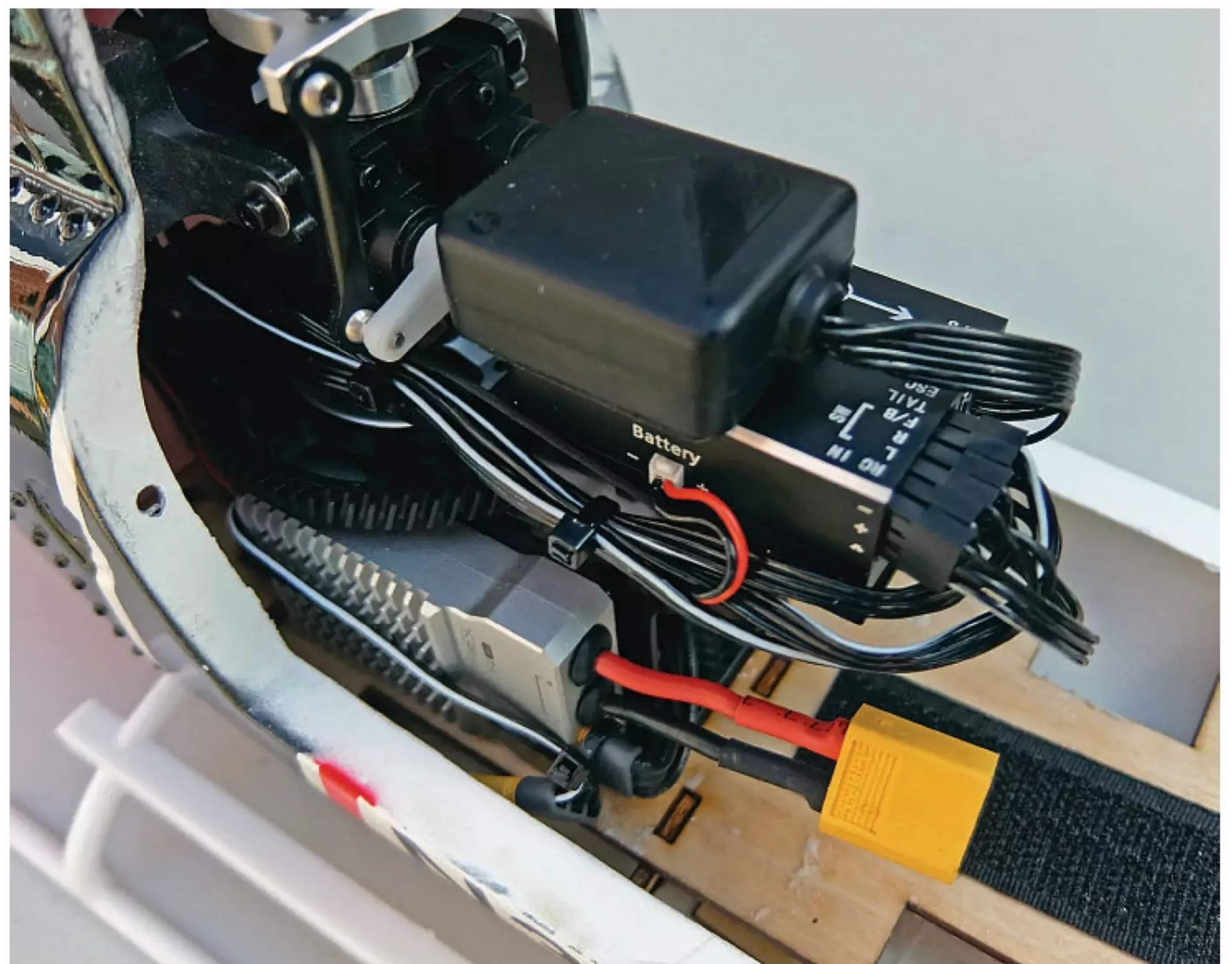
With the battery fully charged using either the 4S charger supplied or, as I did, using my favourite LiPo charger, the pack can be secured in place after lifting off the canopy section of the body. A nifty spring catch holds the canopy in place at the front, used in conjunction with two locating pegs on either side at the rear.

The transmitter is switched on by simultaneously pressing two power buttons, one on either side of the display screen. If any switches are in the wrong position, then the Tx will prompt you to push all of them backwards,



Three 4 kg metal geared high speed servos are used to control the swashplate.

ensuring the motor Run/Stop switch is set to Stop, the Flight Style switch set to Normal and the Home/GPS/3D switch set to Home. After the Tx has been pacified you can flick the switch to GPS and connect the LiPo in the model. The flight controller will then go through its set up routine, moving the swashplate as it does so, after which the M10N GPS system will start searching for satellites. When it has found enough the status LED on the flight controller will turn green and the canopy can be replaced.



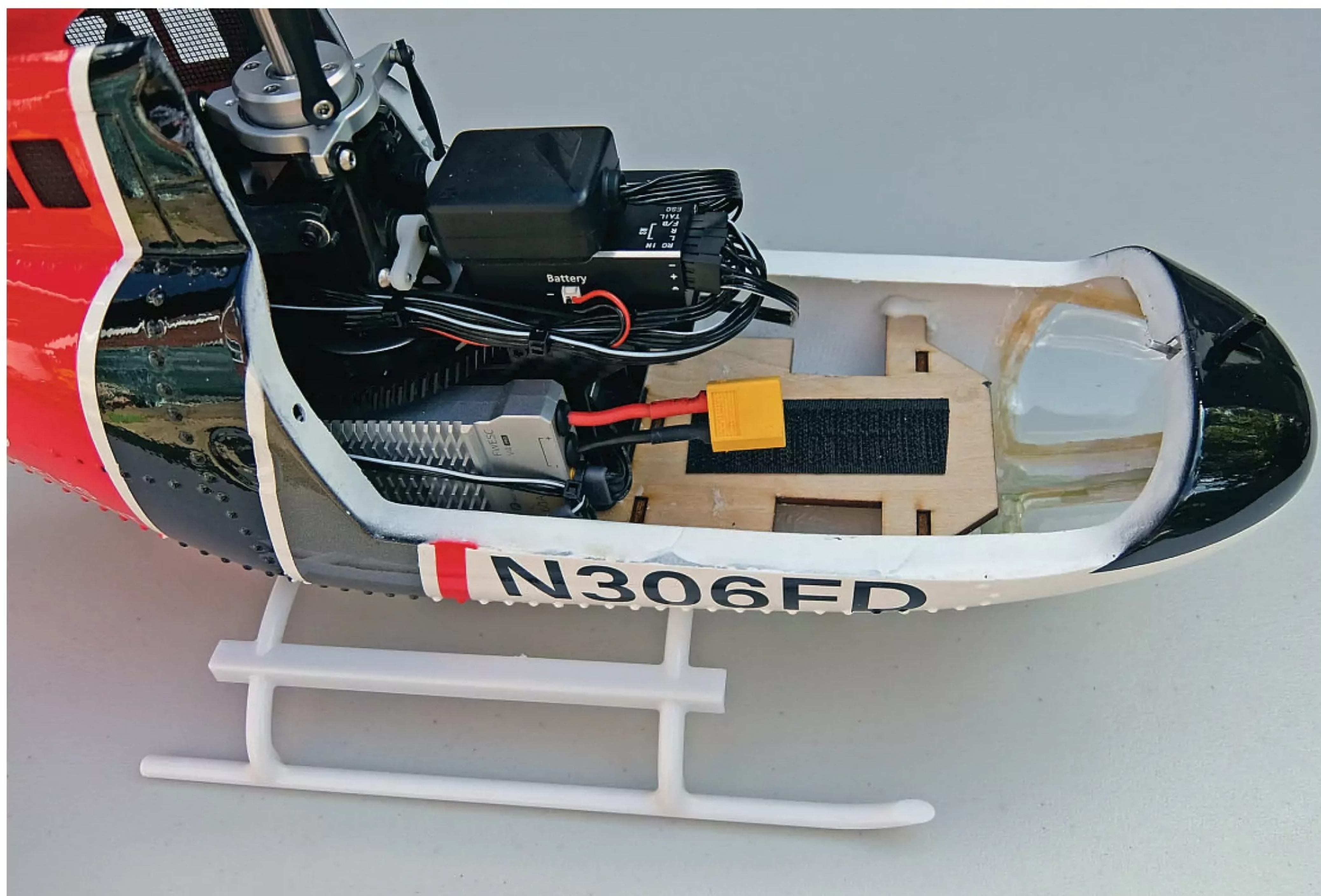
R/C gear and wiring is all very neat and secure.

“The Fly Wing GPS system also has a couple of pre-programmed flight patterns, initiated by flicking a switch”

The next step is crucial to getting the helicopter started and it had me foxed for a while - until I read the manual properly! With those small scale indoor helicopters I mentioned earlier, as well as my camera drones, the rotors are started by pushing the transmitter sticks into their bottom far corners. But on the Fly Wing transmitter this simply unlocks the Tx and it's necessary to switch the Run/Stop switch to Run **after** doing the 'two sticks in the corner' routine. If you flick the switch before doing that then the main and tail rotors will not start and you might find yourself getting a tad frustrated! This happened to me on my second flight and I had to abort that flying session. It was just by chance that I managed to unlock and select Run in the correct order when I first flew the Bell 206!

GPS MODE

After switching the motor switch to the Run position, the main and tail rotors will start to turn. Be sure to straighten out the main blades before doing this. Rotor speed will build rapidly and will soon even out, so apply a little throttle and she will lift off. The pitch of the main blades is set so that hovering will take ✈



Loading the LiPo is easy thanks to the removable canopy. It locates via two short pegs at the rear and a spring latch at the front.



A nicely packaged battery pack with decent connectors adds to the confidence instilled by this high-quality machine.

place at the central throttle stick position, I'm guessing at around plus five or six degrees of pitch, so just allow the stick to gently return to centre and the Bell will hover by itself, requiring no other commands. You can then explore the main flight controls.

I went straight into some nice circuits and figures of eight at a pleasing slow scale like speed. It was immediately obvious that due to the self-levelling nature of this type of flying that it was impossible to fly nicely banked turns. Instead, a GPS helicopter will skid around the turns, which is no problem when flying slow and showing off the scale lines of the Bell 206, but will no doubt raise the ire of



A one-piece, two-blade prop serves as the tail rotor.

any experienced helicopter pilots watching who may question your flying skills and ability to control the tail correctly!

The Fly Wing GPS system also has a couple of pre-programmed flight patterns, initiated by flicking the switch next to the Run/Stop switch from Normal to either the O Fly or 8 Fly settings. O Fly will cause it to fly a neat circle all by itself, while 8 Fly initiates a slow but well executed figure of eight.

As you can see from the in-flight pictures taken by my flying buddy, Baz, the Bell 206 really looks the part, especially when flown low and slow. She can easily be flown in wider, faster circuits but that kind of flying starts to show up the limitations of the GPS control system, especially the lack of banked

“Despite not receiving any GPS information the model now flies pretty much like any small flybarless helicopter”

turns, as described above, usually resulting in fast, parallel tracks up and down the flying strip with pirouette style turns at either end. Banked turns are possible when in 3D mode but that brings its own challenges, as we shall see in a bit...

RETURN TO HOME

As with many GPS equipped models the Fly Wing system has a return to home function. To operate this the Home/GPS/3D switch is simply flicked to the Home setting, at which point the model will rotate to face its home point and will then fly towards it before gently lowering itself to the ground. You can manually intervene during the descent by flicking back to GPS mode, which I did because the field I was



The simple but stylish transmitter is pre-programmed to control the Bell 206.

flying from was quite rough and I wanted to find a smooth area to land upon.

As with all RTH systems it's important to note that the home point will be set wherever the LiPo is plugged in and the model sits scanning for satellites to activate the GPS unit. If that happens to be in the pits or even at the back of your car then that's where the model will try to land, give or take a metre or two. Therefore, if you want to avoid the possibility of the model landing in a crowded area then be sure to power it up in an open, clear space.

3D MODE

The instructions clearly warn that if 3D mode is selected in flight, then the model will drop dramatically. This is because it will have



KC shows off the handy size of the Bell 206. It's the perfect size for bringing to the patch with a couple of fixed wing models.

been programmed to have equal amounts of positive and negative pitch using the throttle/pitch stick. So rather than the 5 or 6 degrees of positive pitch that makes it so easy to hover in GPS mode, pitch at centre stick

will be closer to zero, hence the immediate drop in altitude should the switch be flicked to 3D mode in flight.

Performing 3D stunts with a nice scale bodied heli like this one is not something



Blade tracking and balance were excellent straight from the box, hence causing no visible vibration.



Blade tracking and balance were excellent straight from the box, hence causing no visible vibration.

that I would ever contemplate doing but I was intrigued to try flying her in that mode to see if it improved the forward speed and controllability during turns. I am happy to report that 3D mode does indeed improve performance on both counts; she was flying faster and could be made to sweep around nicely balanced, banked turns, looking far more helicopter like when flown at speed. But this does come at a cost...

Bearing in mind the fact that pitch is reduced when the Home/GPS/3D switch is selected to 3D it makes sense to place it in this position before the Run switch is selected. With zero pitch on the blades, and probably with a higher head speed programmed in when in 3D

mode, the main rotor quickly gets up to high RPM. The throttle stick can be gently raised as before and the Bell will lift off. Despite not receiving any GPS information the model now flies pretty much like any small flybarless helicopter, however as the throttle/pitch stick is not on a ratchet, but instead is sprung to return automatically to centre, you do need to keep positive pressure on this stick during a flight. Failure to do so will mean that the pitch will drop back down towards zero and the Bell will quickly lose altitude. So, whilst I much prefer the handling characteristics of the model in 3D mode it is quite draining to fly, having to keep positive pressure on the throttle stick all the time to counteract the stick's spring.

ALTERNATIVE TRANSMITTERS

The Bell-206 V3 also supports third-party S-Bus protocol for nine channel and above transmitters. In the Flight Tutorial section of the Fly Wing website under the Transmitter Settings menu there are several videos showing several popular transmitters, including a Spektrum DX8 and iX12 as well as a Futaba T14SG being connected to the H1 Flight Controller used in this model. It also shows a Futaba T16IZ, which I currently use for fixed wing flying, so if I get fed up with flying with the transmitter supplied, I might check these videos out and swap over to my usual transmitter.

CONCLUSION

With this fine-looking Bell 206, Fly Wing have put together a high quality Ready To Fly model helicopter wrapped inside a very nicely made and spray-painted scale body set. All components, from the basic but sleek transmitter to the avionics and fittings inside the model, are all of a suitably high standard.

GPS helicopters have the potential to introduce many new pilots to the thrill of flying an R/C helicopter, especially a good-looking scale type like this one. Although 'thrill' is probably too strong a word as this kind of model will practically fly itself when in GPS mode. Nonetheless, each time I have flown the Bell 206 it has attracted very positive comments from fixed wing pilots, many of whom would like to try flying an R/C helicopter.

If you're an experienced heli pilot then you may be a bit frustrated by the tame response, especially the flat turns, but this can be pepped up by flying in 3D mode if you are brave enough and have a strong throttle thumb to counteract the spring trying to recentre the stick. Maybe now's the time for a 'thumbs on top' flyer like me to try holding the throttle stick between my thumb and forefinger! ■



Some heli purists will probably have issues with the flat flying style in GPS mode but this simple to fly scale heli has garnered many admiring glances from wannabe chopper pilots.

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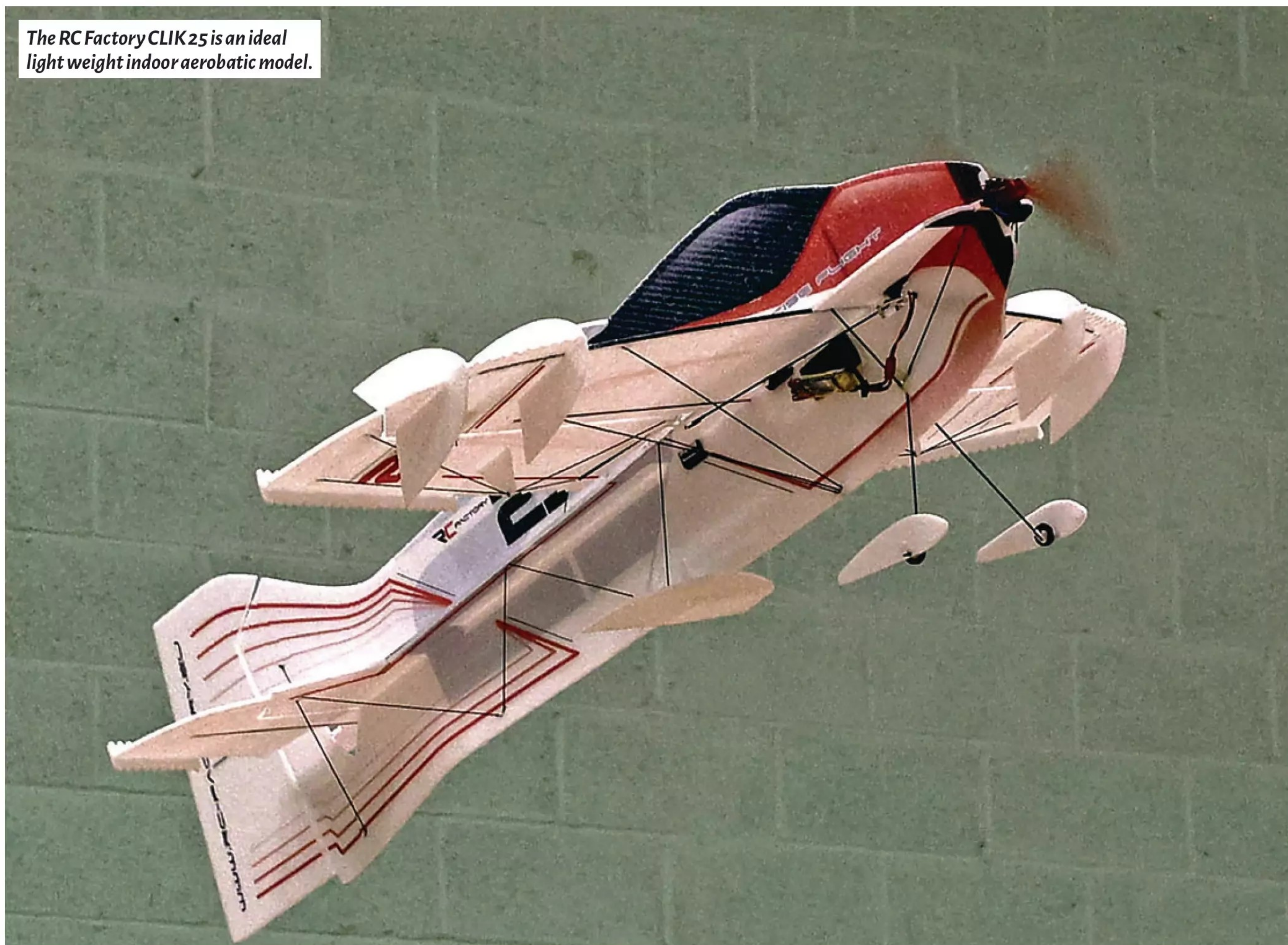
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The RC Factory CLIK25 is an ideal light weight indoor aerobatic model.



JUST A CLIK AWAY

John Stennard builds and flies a new F3P aerobat, buys a new indoor helicopter and converts a micro bomber

Words & Photos: John Stennard

Before building and then flying a lightweight F3P type model, typified by the RC Factory Clik 25, it is sensible to consider a few things.

First, where will you fly it? It's a great model for operating outdoors in calm conditions but it is really intended for indoor use. Do you have a suitable indoor flying area available where models of this type can be flown safely? Second, the build process is quite complicated using 3 mm EPP, lots of carbon fibre (CF) rod and cyanoacrylate (CA) adhesive. Third, are your flying skills up to piloting what is basically a FP3 aerobatic competition type of model? Last, but not least, the R/C gear must be small and light so will you have to buy new items?

I am definitely not trying to put anyone off enjoying the pleasure of both building

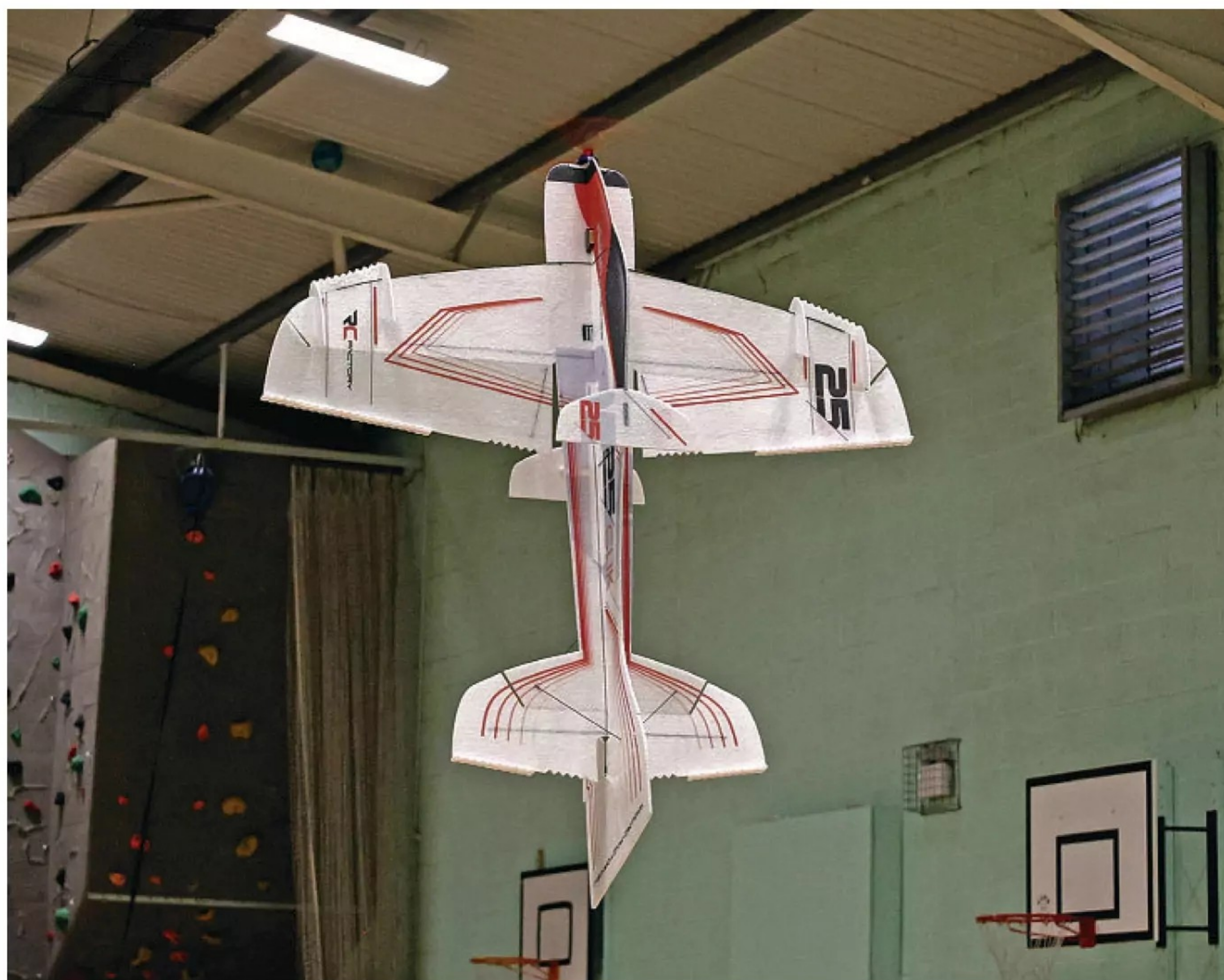
and flying this type of model, but I have seen disappointments at both the building and flying stages. During my six possible indoor sessions per month, I have the opportunity to fly this type of model as much as I like at two of the sessions, and for a limited time during the other four, so there was an incentive to treat myself to the new upgraded Clik 25.

Basically, this is a very similar model to the Clik 21 but with some new refinements. My model came from Aerobatz.co.uk so check their website for stock availability. The foam kit parts are beautifully coloured and cut, and everything you need for construction is included. Regarding instructions there are online videos and pages of instructions available from the RC Factory website. The instructions run to - wait for it - 220 colour

photos! I set up a link on my iPad so each time I wanted to do any building I just called up the instruction file.

With a wingspan of 840 mm and being 950 mm long it very much follows the pattern for a typical FP3 model. A 12/15 g, 2202 type brushless motor, plus suitable 6 - 10A ESC is required, plus three 4.5/6 g servos. A 2S 180/250 LiPo is suggested but I find this gives quite short flights, so I use a 2S 350/450 size. Interestingly a 9 x 2.8, 9 x 3.8 or the more traditional 8 x 4 size of prop are listed. I fitted a low-cost Sunny Sky X2302 1500 kV motor and this has proved ideal, coupled with the Sunny Sky EOLO props. These are available in 8045, 9040 and 9047 sizes. I have tried the larger sizes, but my motor seems happier using the 8 x 4 size.

It's hard to rush building the Clik 25 as lots of lengths of 1 mm CF rod have to be cut



CLIK 25 is such fun to fly. It will hover easily on 2/3rds power.



This low-cost motor proved to have plenty of power. Fitting higher quality ELO eight and nine-inch props have proved worthwhile.

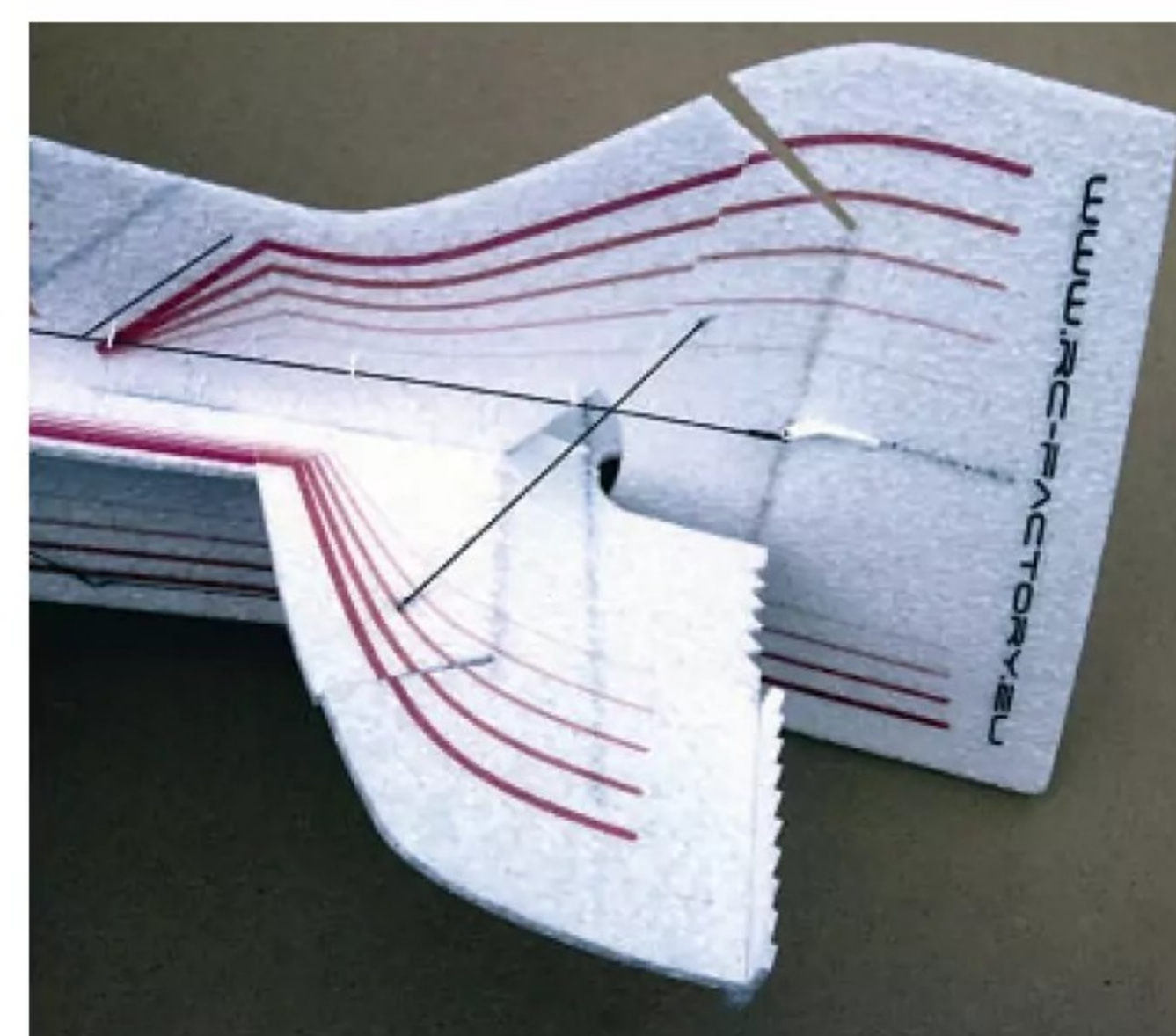
“The finished model looks great and is nicely rigid”



The 3 mm EPP is attractively decorated and resilient.



Lots of CF bracing gives the model its required rigidity.



Big tail surfaces and ailerons provide slow speed control.

to specific lengths and glued accurately in place. The finished model looks great and is nicely rigid and fairly robust. I would qualify ‘robust’ as being okay for self-inflicted, low speed mishaps. But any sort of midair with a faster and more solid model could have dire consequences. The concept is to keep the model as light as possible to enable aerobatics to be flown at low speed and to only fly simultaneously with similar models. To this end the AWW is very important. My Clik 25 weighs 125 g and with a 2S 350 LiPo 147 g. It would be difficult to build a Clik significantly lighter than this and the model at this weight performs extremely well. As you are rarely using full power, even to hover, a five-minute flight is usual. A 2S 450 LiPo will add more duration for a small increase in weight.

SCALE HOVERING

As far as micro scale, and otherwise, helicopters are concerned we have never had it so good. We now have several (younger!) club



K170 Black Hawk is quite feisty and needs a steady hand on the transmitter.



Scale detail is really good on this inexpensive model.

“The Blackhawk, with its four-blade main rotor, really looks the part”

members who fly the larger variety outdoors, but nearly all our indoor fliers also have a helicopter. The helicopter slot on our indoor evenings is very popular. Generally speaking, these pilots are content to hover and fly circuits as in many cases it's likely to be their only time spent in the rotary world. Actually, a couple of our experienced outdoor guys always join in with their micro helicopters. Even in a small space it need not be just basic hovering and forward circuits; progressing to backwards circuits and figure eights is always an option.

As far as scale hovering is concerned the super little BO-105 has appeared in numerous colour schemes from a variety of suppliers, near and far. This model is a delight to fly and is very happy indoors and outdoors. It's a great 'garden flier'. With a push button take-off and landing mode it's super stable but also as nimble as you like.

There are a number of other similarly sized scale models around by different manufacturers, but they can be quite different. Most now have a brushless main motor but the flight pack can vary from hard cased, dedicated, USB charged types to standard basic versions, although these often also have a USB charge lead.

Just as we mostly own more than one model aircraft, owning several micro scale helicopters offers a variety of flying experiences. Looking at the latest to arrive on the marketplace, I was taken with the WLToys K170 Blackhawk. The specs looked good, and it is a similar size and price to the BO-105. The Blackhawk looked very nice and I quickly put the 2S 500 mAh LiPo on charge using the USB charging lead supplied. The system has the usual features: push button takeoff and landing, three levels of control, etc. A five-page instruction leaflet is provided. When I ordered the helicopter, I purchased some extra batteries. I have found in the past that it can be difficult to buy them later.



It's similar in size to the BO-105 but much livelier.



It also flies well outdoors but needs to be kept quite close in.

The Blackhawk, with its four-blade main rotor, really looks the part and I was anticipating a similar performance to the BO-105. In fact, it proved to be quite different. To me it seems more of a 'helicopter flier's' machine as the responses are quite lively, even on the lowest control level setting. The transmitter has a gyro reset function and I decided to always use this pre-flight. Take off can be via the push button or via a 'motor start' using control stick positions. In either case the take-off and climb-out is very fast and, at first, slightly unnerving. Once hovering it holds its position very well and is stable enough for a 'look, no hands demo'. However, once moving it requires careful handling and, I think, a higher skill level than some of this type and size of

helicopter. Flying time is at least 10 minutes which is entirely adequate.

SPACED OUT

Some words from John from the Midlands about what constitutes a flyable indoor space prompted me to write this.

During the dreaded exam season, we are forced (or squashed) into a smaller venue for five essential indoor flying weeks. I say 'essential' as at the time our outdoor field had been partially un-flyable for more than four months. Flooding on part of the flying field and all of the parking area had made things very difficult and, as a consequence, our indoor sessions were very popular. We normally fly in a standard school four-court sports hall.



Our relaxed four-court school gym. This shot was taken by my DJI Nano.



This sort of two-court space is ample for a lot of indoor flying.



Hmm... Not an ideal school demo flying space! I would normally fly my CLIK here!

Apart from the drawn back cricket nets and the model attracting basketball hoops we have no other obstructions. It would be normal to have up to eight 'foamies' in the air and we sometimes have fifteen Vapors. Our temporary base is a school gym of less than half the size and with hanging beams, nets here and there, ropes, lots of gym apparatus and other paraphernalia around the edges. Now this is a minimal problem if you are flying solo but 'en masse' the shortage of flying space becomes an issue. However, it enabled us to continue meeting and flying.

John sent a photo of a two-court hall which he and a colleague have found adequate and quite inexpensive. The lower ceiling height is a disadvantage, but John has found it practical to fly F3P models with their low speed and maneuverability in this space, even two together. I have flown in one-court spaces but for general club flying this size is a bit restricting.

Whilst 'space talking', I've included two very different photos. One is of my additional, local (well, 18 miles away!) but very empty airspace. This is an 'enthusiasts' venue where we pay for a two-hour session and enjoy very relaxed flying. This is a perfect place for me to test fly all my R/C No-Cal models, etc. The other photo is what I met when I arrived to do six talk/demo sessions at a local junior school. Thank heavens for my UMX Vapor!

Vapor experiences can always be made more interesting with table take offs and landings.

This is where micro helicopters, quads and even hovercraft are invaluable. I have flown my Klik in this hall before, but not on this occasion.

CUT PRICE BOMBER

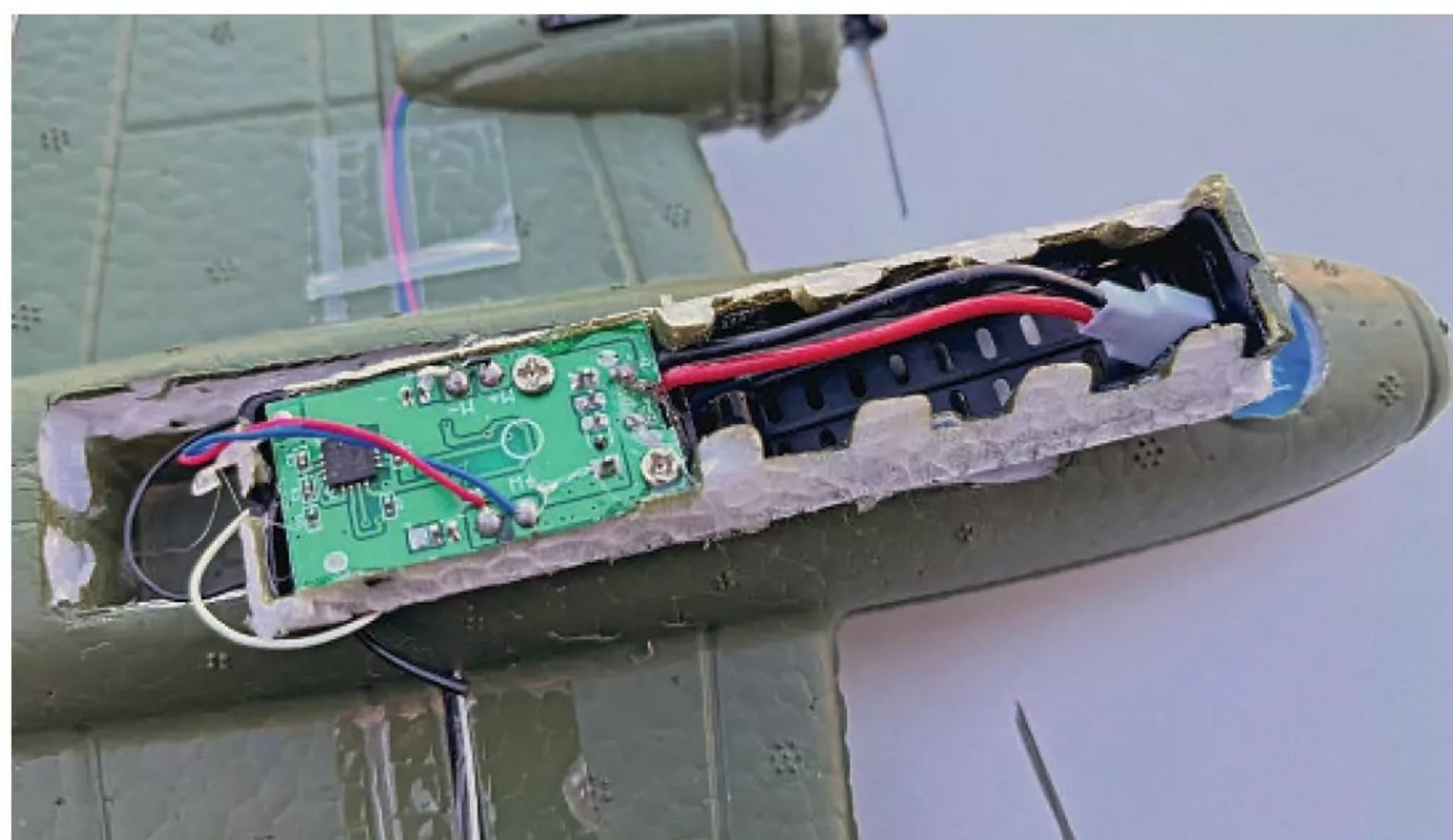
Some while ago I had one of the E-flite B-17 UMX models and it was a great little plane. I flew it both indoors and out and it always performed really well. It was a high-quality model but quite expensive, as were all the delightful UMX micro scale models. When I saw a micro B-17 online I was interested as it relatively inexpensive. Judging by the picture and info I reckoned that it was a proportional motor control model, and I have converted several of this type of model to standard micro gear. Both a C-17 and Airbus 380 of this type flew well when converted to throttle/rudder/elevator control. I anticipated using a standard micro-Rx with an integral 5A ESC, plus two 1.7 g rotary servos. Usually there is plenty of room once the original receiver unit is removed and often the original battery position can be retained.

The model arrived very quickly and although a 'simplified' version compared to the E-flite model it was suitably realistic with a 460 mm wingspan. The E-flite B-17 is quite a bit bigger at 650 mm wingspan, with a flying weight of 95 g. The new B-17 weighs 68 g ready to fly.

While I did not want to fly the model in its original form, I decided to check out the motors using the supplied transmitter. The flight pack is a 1S 500 LiPo with a flat Molex connector. A USB charging lead and spare props are included. I was slightly surprised when I fired it up as it only has two



RTF foam B-17 was an interesting experiment.



Removing the original proportional motor control system.



The replacement micro-Rx and original LiPo fit in with room to spare.



The original E-Flite B-17 is a much better flying machine.

functioning motors. The outer props are freewheeling dummies!

Opening the B-17's belly I was able to remove the receiver without any problems and connect the two motors together. There was ample space for a standard micro-Rx, and I positioned the rudder and elevator 1.7 g rotary servos just behind the wing's trailing edge; I was mindful here of avoiding adding weight towards the tail. The rudder and elevators were cut free, hinged with Blenderm tape and connected to the servos via Z-bends and 1 mm CF rod.

I wondered why there was a blue circular sticker on the underside of the fuselage near the nose. Peeling it off revealed a nose weight, so I reckoned I might have to add to this.

First attempts at flying showed how brilliantly 'bounceable' this model is thanks to

the quite flexible foam. The problem was that I did not seem to have enough rudder authority. Also, attempts to fly the B-17 without the undercarriage resulted in a broken prop. Taking one from an outer motor showed that they are handed so I removed both the outer props and used the correct one to replace the broken one. However, this just resulted in breaking the same prop and having no spares, so my first flight tests were abandoned.

Back home I sorted the props, deciding to leave off the freewheeling ones as I might need them as spares, in addition to those supplied. I also fitted the U/C back in place as this should stop any more prop breakages and I extended the rudder with a piece of clear acetate. The larger rudder with reduced movement enabled me to have some good flights but it proved better to hand launch.

As happens with some models the flight characteristics are such that it is not practical to fly slowly. However, the B-17 looks good in the air and has been interesting to modify and pilot. I will certainly try her outdoors in suitable wind conditions. It is possible, of course, that it would have flown better using the proportional motor control!

GUESS WHO'S COMING TO FLY?

An unexpected email took me back to the 2024 Scale Indoor Nationals. For me a star exponent of R/C scale is Andrew White. I was able to take a close look at his VC10, Vulcan and H.P. 42 airliner both on the ground and, even more impressively, in the air.



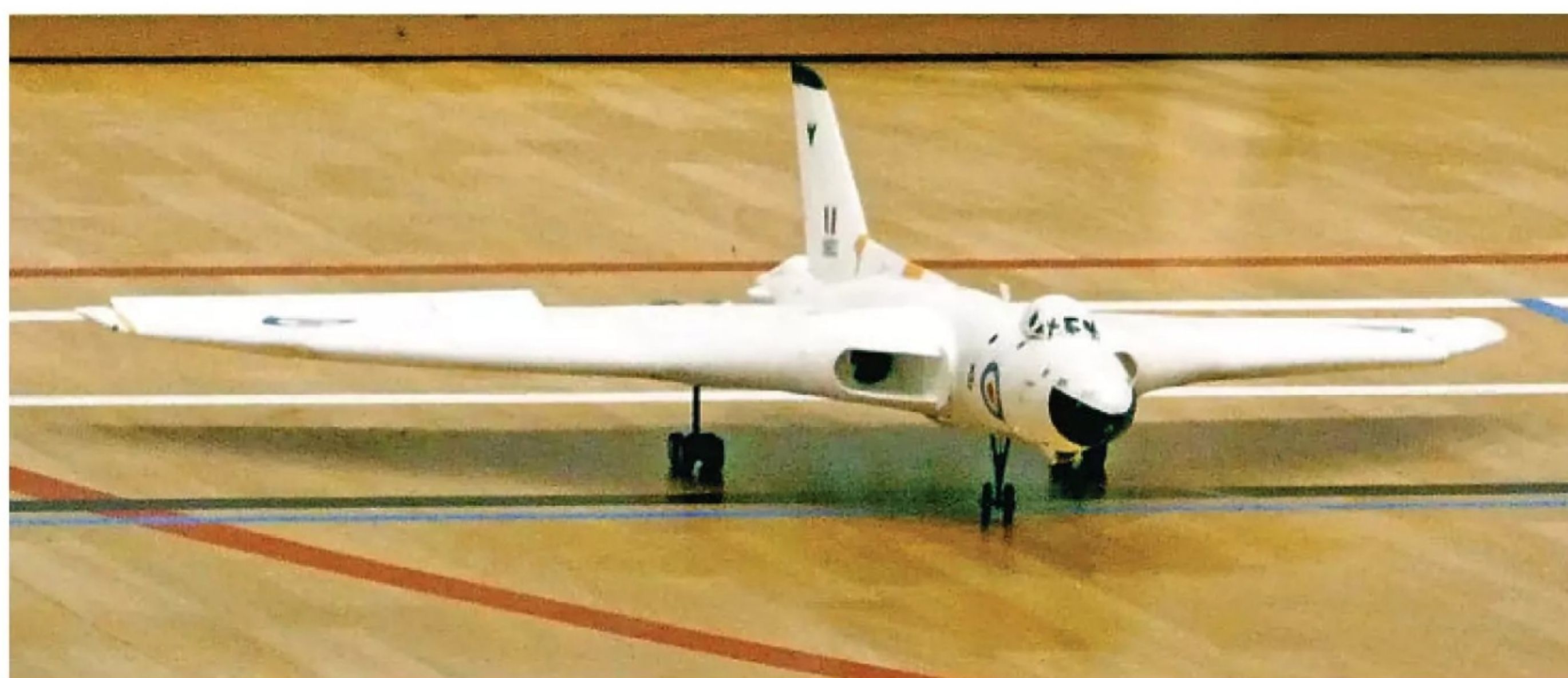
Andrew goes for a hand launch with his Vulcan.



Our four-court hall proved to be ample space and the Vulcan flew beautifully.



QIDI-570 is quite unusual and has proved to be interesting to operate.



Later flights were full house affairs with ROG and retracts. An amazing sight!

Andrew's email told me that he had relocated and was living not too far away, certainly not a bridge too far! He is now flying indoors with us and has shown our guys (with a certain amount of jaw dropping!) a very different approach to indoor flying.

Read about Andrew's 2025 entry in the next issue.

QIDI-570

A dramatic price drop for this unusual flying machine forced me to buy one. Its small size and apparent versatility for indoor/outdoor flying was an attractive proposition. Does it deliver?

Read about it next time. ■



Andrew's VC10 taxied and 'hopped' into the air which is all that Andrew intended.

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VQ TIGER MOTH

Kevin Crozier unboxes a fifty size, almost ready to fly, trad built, semi-scale biplane

Words & Photos: **Kevin Crozier**

For this month's kit preview I'm going to take a look inside the box of the VQ Tiger Moth kit which was sent over by their UK distributor MacGregor Industries.

With a wingspan of 1.4 metres VQ's rendition of the classic British biplane is available in two colours. The yellow version replicates G-AHIZ, as flown by the Cambridge Flying Group, and from a quick look at their website (<https://www.flyvintage.co.uk>) it looks to be a pretty good semi-scale likeness. However, our review model is for a German registered aircraft, a DH 82A Tiger Moth II, D-EHHT which started its career in the Royal Air Force. Postwar it received several German registrations and was displayed at the Deutsches Museum Flugwerft Schleissheim from 1992 to 2014. This is a branch of the German Museum which hosts a large collection of aircraft and aviation exhibits. More recently it has been restored to flying condition and Andreas Hempfer, Kurator at the Deutsches Museum, was kind enough to forward me a Facebook link which shows D-EHHT with its engine running whilst participating at the Take Off Festival held at Flugplatz Marburg-Schönstadt. From pictures taken at the festival the red VQ model, as with the yellow version, appears to be quite accurate

regarding its colour scheme. However, the real machine is carrying a blue logo of some sort on its engine access hatch, plus a Union Jack sticker between the two cockpits. I wonder what that signifies. Maybe she has been flown at a flying meeting here in the UK.

Another thing I noticed from the full-size pictures is that the wheel caps are not fitted. This is a blessing in disguise because although the kit comes with a neat pair of DH wheel caps, they are coloured yellow and would look a bit out of place if fitted to a red and silver model, although a quick waft over with a matching can of red aerosol would soon sort that out.

BAGS GALORE

The kit is supplied in a plain brown box with a label at one end showing the yellow version and listing its specifications and key features. A snapshot of the specs reveals that it is of 1.4 metre wingspan and almost 1.2 metres long. It suits up to a 750-watt electric set up, for which MacGregor have supplied one of their 710W Electrospeed Boost 40 Power Packs, or it can be powered by a .46 two stroke or .70 four stroke glow engine. It requires five channel R/C operating the ailerons (via two servos), elevator, rudder and throttle.

Opening the box reveals large numbers of crystal type plastic bags containing the various airframe parts, separated by a cardboard divider. There's no way that any parts will float around during transit as VQ must have used up an entire roll of (very!) sticky tape to pack the kit. All this tape is a bit of a bind to cut through and ball up but it's worth putting up with to make sure that the neatly made and well covered balsa airframe reaches its end destination in good condition.

Assembly of the model is covered in 21 stages throughout the copiously illustrated English instruction manual, starting by either fitting



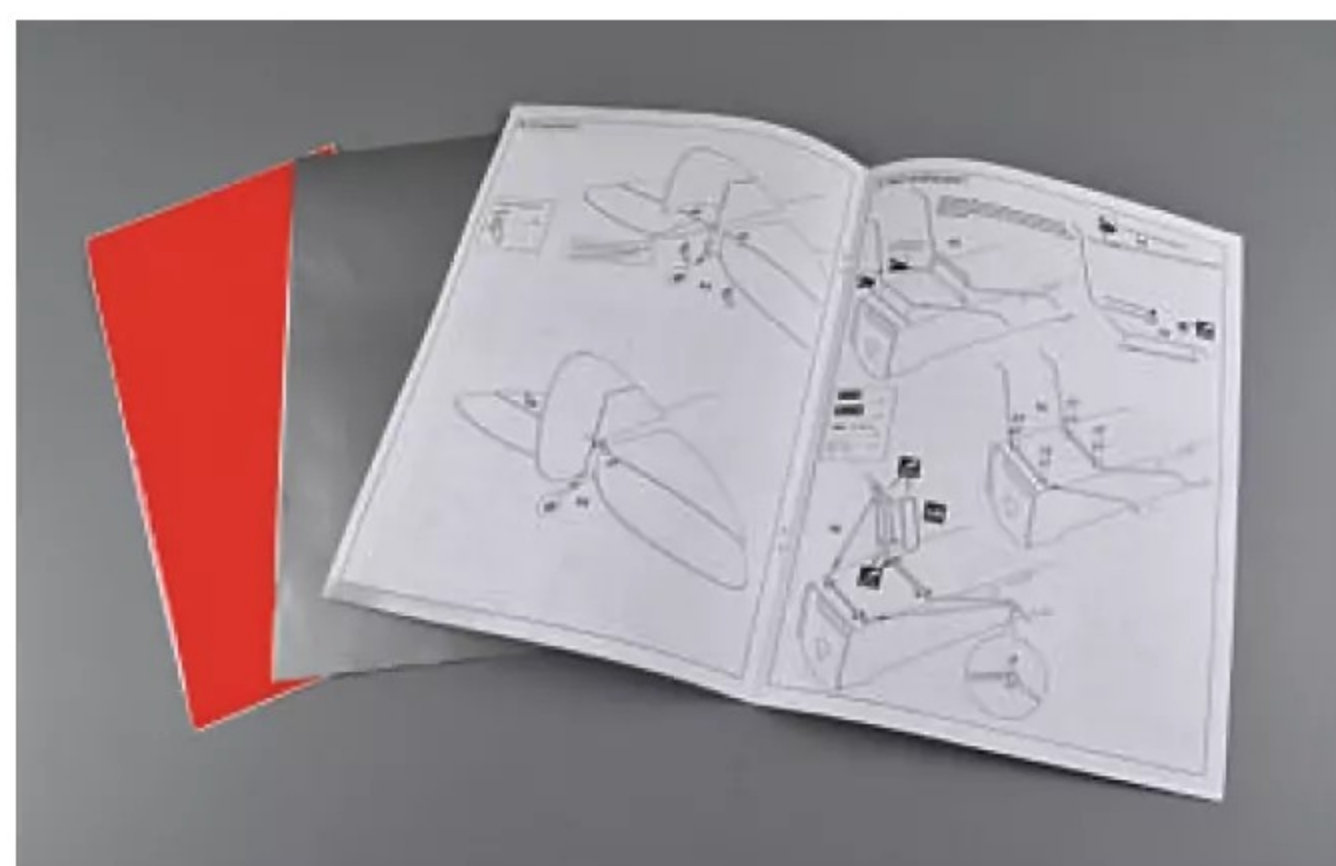
Airframe parts come taped together in large crystal bags and are well secured in the box.



Hardware is supplied to fit both electric and IC motors.



Fixtures and fittings are supplied in decent zip-lock bags. You'd be unlucky to find that an important screw has gone missing.



Besides a well-illustrated manual spare covering film is provided to help to cover any areas needing repair after the model is flown.

“...we are sure it will look and sound fantastic being gently pulled around with a burbling four stroke”

an IC engine on the pair of T-mounts supplied or by using the additional firewall to fit a brushless electric motor. The recommended Electrospeed Boost 40 Power Pack comprises a 3548/05 900kV brushless outrunner motor and an XP2 60A SBEC brushless ESC, as well as a prop adapter and X-mount. A 3S 4500 mAh pack is the suggested size of LiPo.

Our model's reviewer, John Freeman, is going to use the supplied Power Pack to test fly the Tiger Moth. But when the review is complete, we hope to re-engine this model with a Saito .72 as we are sure it will look and sound fantastic being gently pulled around with a burbling four stroke, suitably throttled back, of course!

FUSELAGE

The main body of the Tiger Moth is nicely constructed from laser cut balsa, with ply used in sensible locations such as the engine firewall. Covering is neatly applied too, with



MacGregor's 'Electrospeed Boost 40 Power Pack' comprises a 3548/05 900kV outrunner motor, 60A SBEC brushless ESC, prop adapter and X-mount.

no visible bubbles. The aircraft's registration letters are embedded so there are no stickers to lift if they get oil soaked from any IC exhaust residue. If, however, you do fit an IC engine it is sensible to coat the firewall and fuel tank areas

with a fuel proofer, plus give the edges of the covering film a quick lick too to help prevent them from lifting.

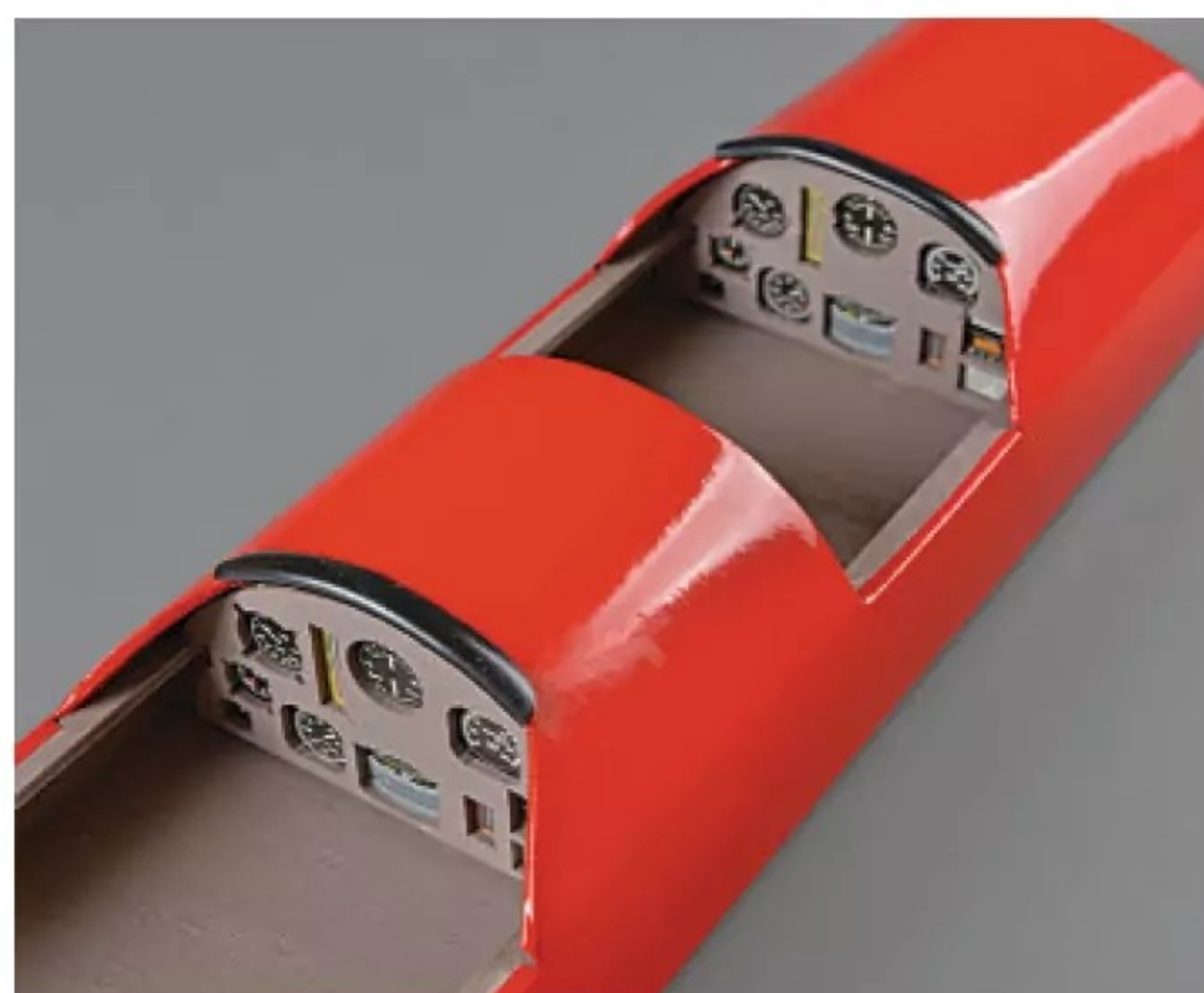
The engine bay is concealed within a nicely moulded cowl, with its front apertures all



The fuselage's red covering is evenly attached and has the registration letters embedded in the film.



Overlapping cuts at the top of the firewall show how evenly the covering film has been applied. If fitting an IC engine this area should be fuel proofed to keep the covering properly adhered.



Both cockpits feature well detailed instrument panels. The dials are heavily recessed so may benefit from having clear plastic discs inserted in front.



MacGregor recommend a pair of their powerful MG5510DS servos to operate the tail surfaces.

neatly cut out. The cowl is evenly sprayed in red to match the covering on the rest of the fuselage.

The kit comes with a single painted pilot bust so be sure to fit it in the rear cockpit unless you obtain another same size figure for the front office. Both cockpits feature instrument panels populated with printed dials. These provide a neat representation of the instruments at a quick glance, but the look could probably be improved by inserting clear disks of appropriately cut plastic in front of each dial as they are set back behind relatively thick wooden facias.

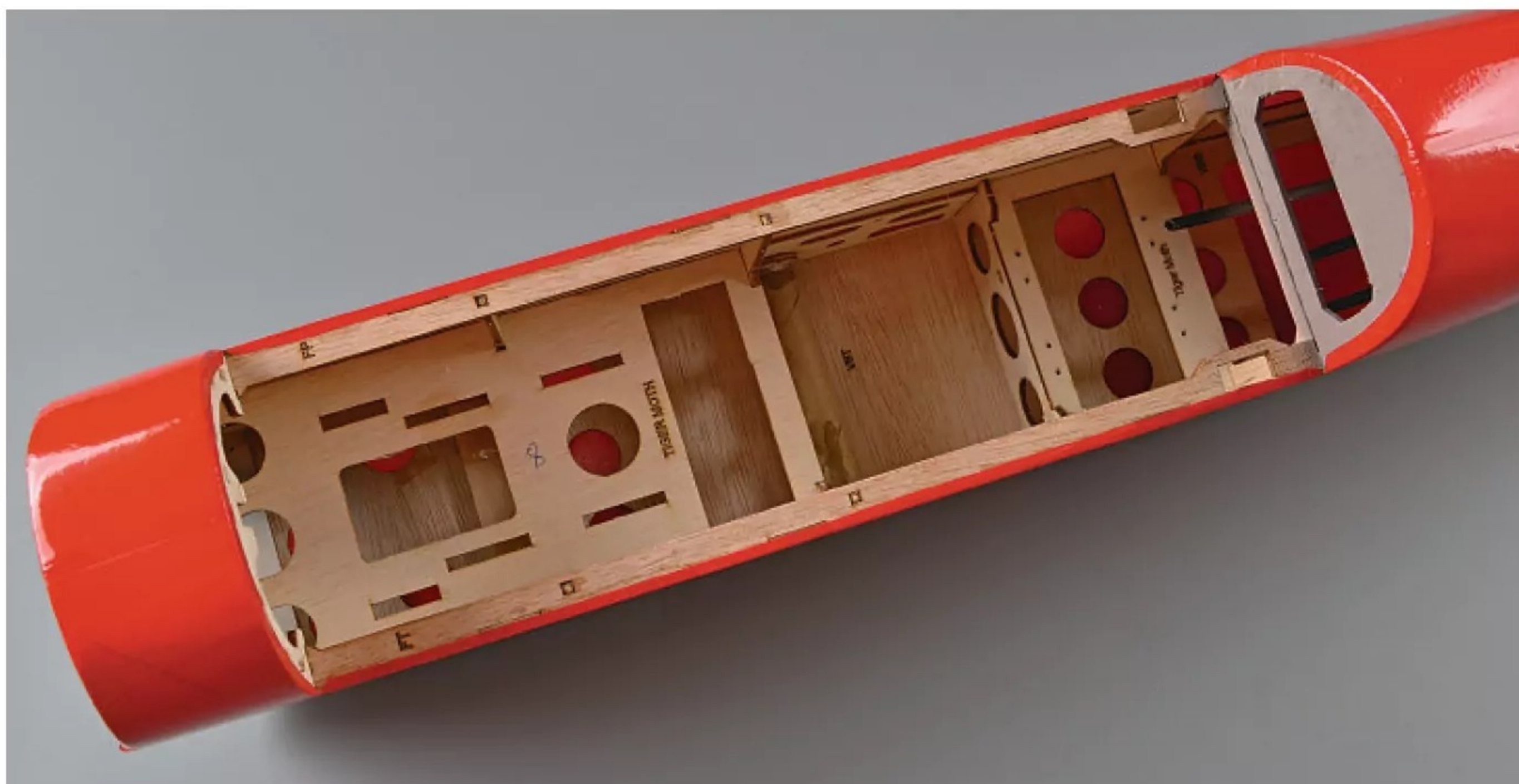
To control the rudder and elevator servos MacGregor recommend fitting their MG5510DS 9.98 kg.cm/0.12s standard digital servos. These are quite impressive beasts and are probably a bit overkill to move the long wire pushrods in their guides down the length of the fuselage. They certainly had both John and I puzzling over the need for such large servos when we



Cowl is of good quality and has ready-made cutouts in scale positions.



A pre-painted pilot bust is supplied. Unless you find a co-pilot make sure this one sits in the rear cockpit!



There's plenty of space in the LiPo/fuel tank and radio bay.

"The wheels have moulded tyres and grey spoked hubs. On their own they convey a reasonable likeness of the full-size wheels"

first extracted one from its box during the handover of the kit. Some enlargements of the pre-cut servo holes at the rear of the radio/fuel tank/LiPo mount will be needed to fit these generously spec'd units.

WINGSET

Just like the real aeroplane the VQ Tiger Moth has ailerons on the bottom wings only. Each control surface is operated by a servo mounted in the underside of each panel, secured to



Upper and lower views of the bottom wing panels. Ailerons are fitted on the lower wings only, as per the full-size.



Aileron servos need to be mounted on the back of the servo hatches.



MacGregor MG1703DS midi servos were supplied to operate the ailerons.

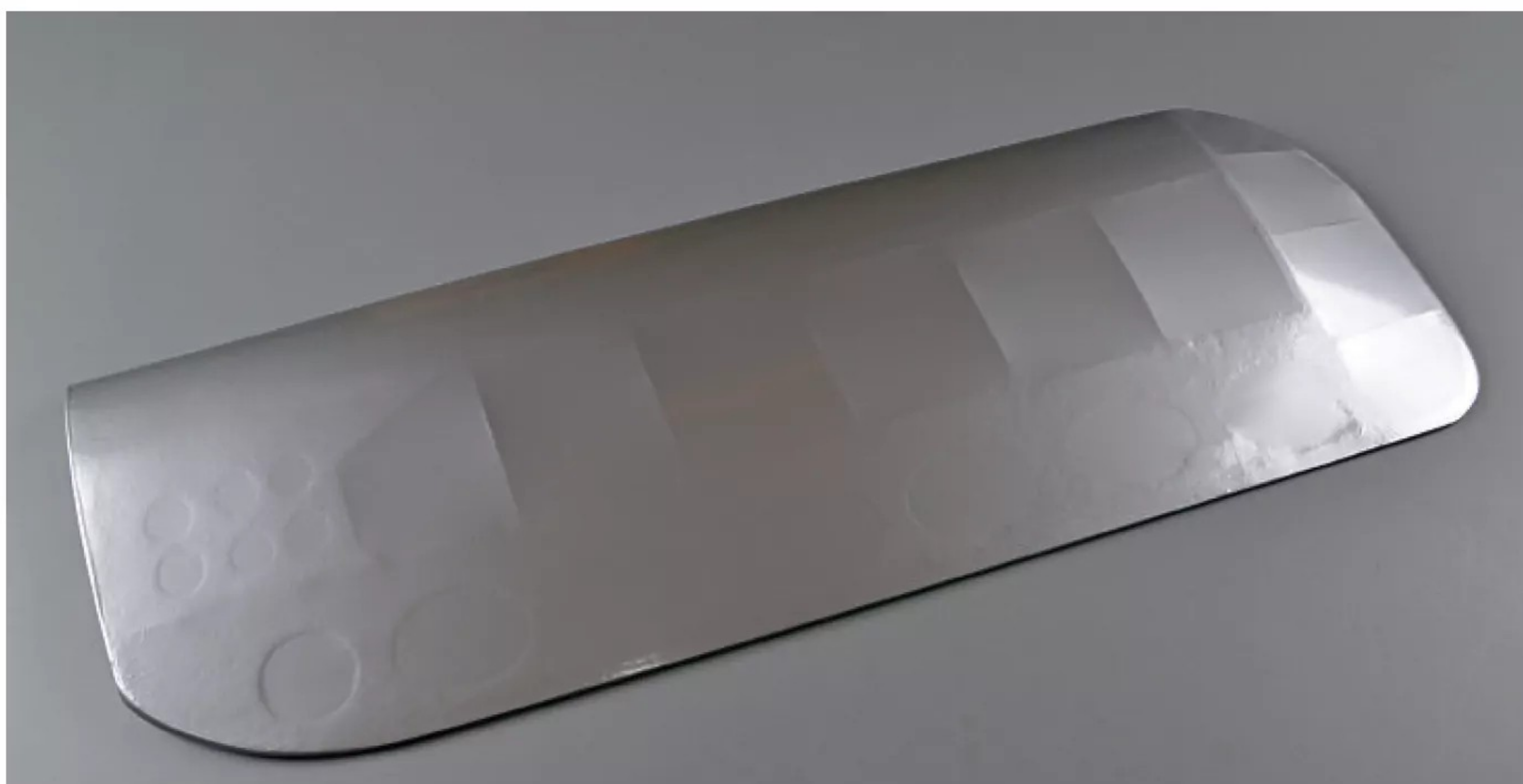
the back of the pre-cut servo hatches. Pull strings are tacked in place with which to pull the servo leads through for connection to the receiver mounted in the fuselage. MacGregor recommend using their own MG1703DS 3.3 kg.cm/0.10s mini digital servo for the ailerons.

The upper and lower wing panels are evenly covered in silver film, again nicely applied with no visible bubbles. However, a downside of such well attached covering is that it does show off any imperfections in the build of the airframe underneath and in the case of the Tiger Moth's wings there are a few lumps and bumps that could have been a bit better prepared. The close-fitting film also reveals a large number of lightening holes in the balsa wing sheeting. The model makes use of quite a lot of sheeting, compared to the more minimal ribs and functional rigging of the full-size aeroplane. Since the model doesn't have working rigging it relies on the panels being nice and stiff, so no complaints here, but that snug fitting film does rather draw your attention to the differences in wing construction between the real D-EHHT and the VQ replica. But hey, it's only intended as a sport scale ship so let's not get too bogged down here. The resulting strong but simple set of wings should serve their purpose well. All this is not to say that no rigging is supplied, there being a couple of lengths of 0.5 mm cabling provided to replicate the Tiger Moth's distinctive flying wires.

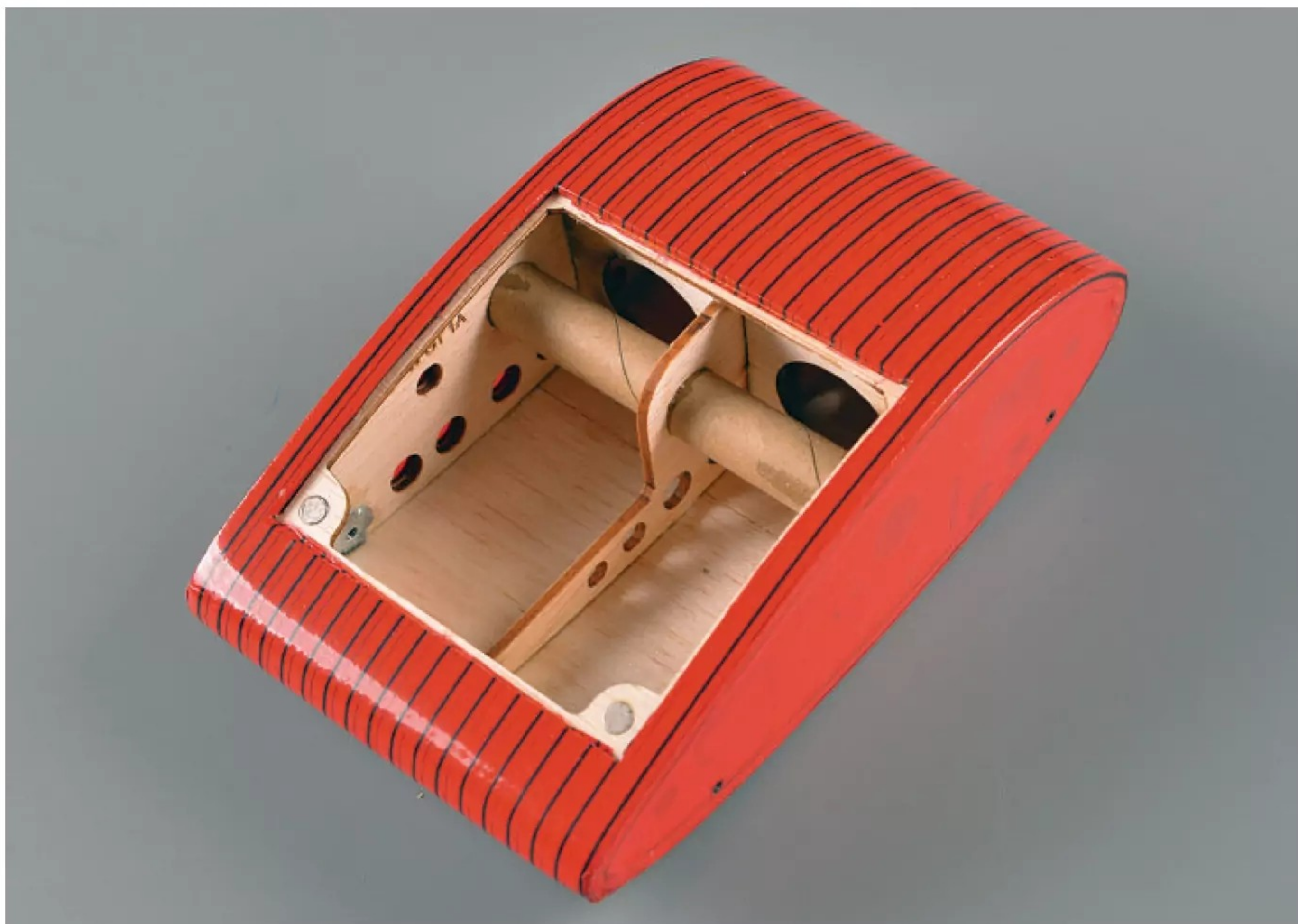
The top wing set is mounted to the dummy gravity fed fuel tank, fitted on top of the cabane struts, by a 12 mm diameter by 318 mm long aluminium tube joiner. A magnetic hatch on top of the dummy tank gives access to two 6 x 25 mm nylon wing bolts. Another set of the



Lower wing root showing neat laser cutting and a repeat of the well-trimmed and folded over edges of the covering seen at the firewall.



There are no ailerons on the top wing panels and the trailing edges curve in at the roots to match the dummy fuel tank.



Dummy fuel tank, to be mounted on top of the cabane struts, has a magnetically attached hatch to allow access for fitting the upper wing bolts.



Distinctive Tiger Moth style tail feathers come fully sheeted but are lightened with many round holes.



Hinges are dry fitted so will need gluing in place, with cyano carefully wicked into the central slots.

same length wing tube and nylon bolts is used to attach the lower wing panels on either side of the fuselage.

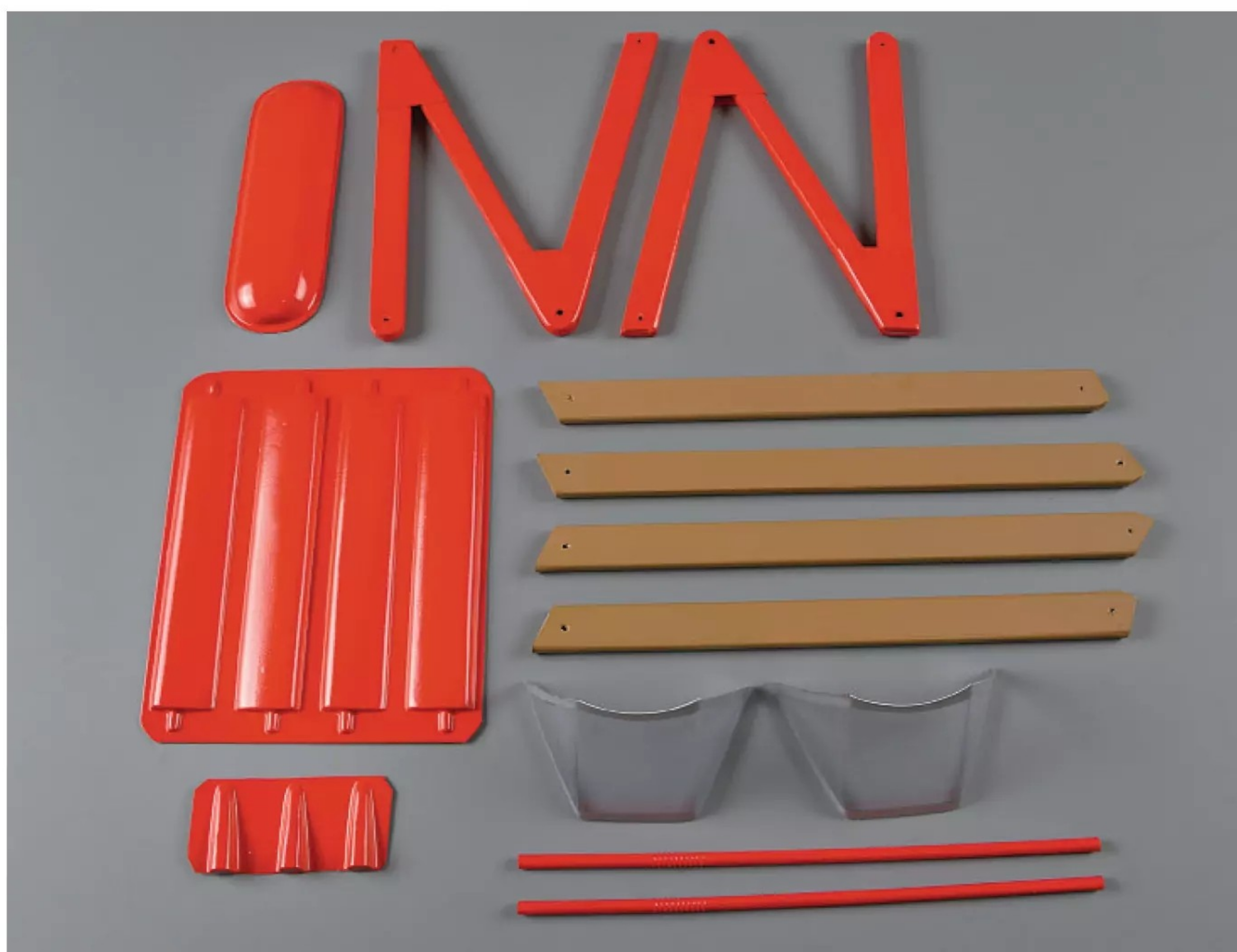
AT THE TAIL

The small fin, large rudder and leaf shaped horizontal tail surfaces are all fully sheeted, again making use of a multitude of lightening holes to pare back any unnecessary weight at the rear end.

A conventional model style steerable tail wheel assembly is provided to allow easy ground movement of the Tiger Moth during taxi, take off and landing.

MAIN UNDERCARRIAGE

Two pre-bent wire undercarriage legs are mounted to the underside of the fuselage using saddle clamps, with a pair of metal connector



Wing and cabane struts, plus windscreens. Undercarriage fairings (left) need cutting away from their master sheet before gluing on to each side of the main legs.



No foamies here! Nicely made wheels even come with DH hub caps, although sadly of the wrong colour for the review model.

blocks pulling them together at the axle ends to form the V-shaped main legs. The rear legs are covered with vac-formed plastic fairings which, although sprayed red to match the rest of the model, will no doubt need their edges touching up with paint of the same hue after being cut out.

The wheels have moulded tyres and grey plastic spoked hubs. On their own they convey a reasonable likeness of the full-size wheels but as mentioned previously a pair of yellow DH wheel caps are supplied should you wish to cover the hubs. But as they are the wrong colour and the real aeroplane doesn't seem to

use them then it is probably okay to take the lazy way out and leave them off.

UNTIL LATER

I hope this gives you some insight over what to expect if you buy either the red or yellow versions of the VQ Tiger Moth. We'll catch up with our review model in a future issue when John has finished assembling her and we get together for a photo session and undertake her first flights. Until then you can find out more about the kit by visiting the Macgregor Industries website:

<https://www.macgregor.co.uk/vqmodel/vqa139r.htm>

ON THE STRAIGHT & LEVEL

Flight testing has continued with XFly's lovely D-Day Spitfire Mk.IX and since my first flight report about it in the June issue I have fitted a gyro. If you are the kind of experienced pilot that the Spitfire is aimed at then it doesn't really need it for most phases of flight and it is perfectly controllable straight out of the box, but when flying from grass I have noticed that an over eager application of throttle, especially if needed to get the wheels rolling on longer grass, can lead to a dramatic swing during take-off.

As luck would have it CML had sent me one of their gyros, available as a separate product, and asked me to assess it when fitted to the Spitfire. Now, as I have said above, when flown by an experienced pilot this fighter offers rewarding warbird like performance without any assistance, but would the gyro help with pacify any swing on take-off? The answer is a resounding yes, so for that use alone it's well worth fitting one of these relatively inexpensive devices (£34.99) to help tame any wayward warbird, whatever the make.

CML have also sent over an XFly-Model Pulsar gyro for us to try with their C-17 quad EDF cargo plane, as reviewed in the September issue. This model, as you may recall, flew well but exhibited some Dutch Roll when flown in strong winds, so I'll be fitting the gyro in the voluminous radio bay, again mostly to help damp down the rudder. I'll report back when the Globemaster has returned to the sky.

If you'd like to find out more about the Pulsar gyro then please visit the CML website at **<https://www.cmldistribution.co.uk>** and search for Pulsar gyro. ■



If your favourite warbird swings on take-off, even with judiciously applied throttle, then a gyro may help tame the tail.

Top letter

For his letter this month John Adams wins a compact e455 multi chemistry AC input charger courtesy of Overlander Batteries:
www.overlander.co.uk



CHEROKEE SURVIVOR



I read Keith Cherrington's letter about the VK Cherokee and it certainly brought back memories. The Cherokee was my first low wing model after learning on a Senior Falcon, initially using 10 channel Orbit reed equipment, then using Kraft equipment. Like Keith's, it was powered by one of Dennis Allen's Twin plug Merco 61's. I noticed Keith's had the 'dustbin' silencer on his engine. The Cherokee was built by my father, which we both flew. As Keith says, it was a delight to fly. This dates to about 1967. The model we built I still have to this day. It is showing its age but probably better than me! I recommissioned it a few years ago and it was still lovely to fly.

I was in the States some years ago and came across a company that was re-kitting the model and bought one. I still have the kit that they produced.

I have attached a few pictures for your interest. The first of these shows our model in 1967 at a show in front of a KK Intruder. Behind the Intruder is a Vertigo by Frank van den Berg. The next picture is of the 1967



Cherokee taken today. The engine is a dummy 3D printed crankcase, not a real one. The last is of the kit I purchased.

I still fly models after a 40-year career flying in the military and with British Airways. I have

recently retired so I might get some time to build some of the kits I have in the loft, mostly 1970s pattern ships.

John Adams

ACRYLIC PANELLING



Here is a quick, easy and satisfying fix to make a foamy look a bit more realistic. Mix one part of acrylic black paint with six parts water. Work on one side at a time, perhaps starting on the underside. Use a detail paint brush to dab the mixture into panel grooves on your model. They are surprisingly easy to fill and if you miss, or make a mess, it's easy to wipe away with a piece

of kitchen roll or similar. Once you are satisfied leave the model to allow the water to evaporate. Admire the result, turn over and do the other side. Here is a picture of my FMS Hawker Typhoon with a few other subtle enhancements such as smoke stains applied with an air brush.

Martin Brown



FIND A MODERN FLINGER

As a subscriber to RCM&E since May 1960, congratulations on keeping this lively and diverse magazine going! Enough of the accolades. The reason for my missive today is to suggest (if you can find a suitable model) a building article on either a glider, or motor glider, similar to the Skyhawk/ Mirai/ Fresh models in your recent issues, as I still like building! In our recent Aberdeen and District Soarers bungee glider comp we found that our ubiquitous Flingers were outperformed by a couple of modern models, a Slite and Magic 11.

They had good pilots, but so did some of the back-riders!

The Flingers, designed by Larry Jolly, started to proliferate in our club, after I built one in 1964, when it was featured in an article in the American Model Builder magazine. It became very popular and is still being built and flown by the guys today! I'm enclosing a picture from a Flinger comp that we held back around 1986 with a young me in the middle. My Flinger is still flying!

Jim Anderson



MISSING MANUALS

I enjoyed your first RTFM feature. I was immediately drawn to it as my first engineering job nearly 50 years ago was writing repair procedures and updating and editing technical manuals. The title was very familiar as it was quoted quite often at work but being a civil service office for the Navy and filled with mostly retired or ex-military the language was a bit more flowery. Ever since then the first thing I look for in any purchase is the manual. I share your disdain for most items that pass for manuals these days. I can't tell you how many times I opened a new box and was thrilled to see a thick manual only to discover there was only one or two pages of actual information, but 50 pages of translations! Thanks for commiserating.

By the way, isn't Furry Mylar the latest 007 femme fatale?

Mike Anderson

If you are planning an aeromodelling event over the next few months, then please send details - up to 100 words maximum - to Beth Ashby at: Beth.Ashby@artichokehq.com

If you intend to visit any events listed, then please check with the organisers before travelling in case of any last-minute changes.

SEPTEMBER

Sept 13

Christchurch & District MFC Open Waterplane event is at Longham Lake on 13 July, 9:00 am to 15:00 pm. For electric power models, no IC or turbines. EDF by arrangement. Longham is a few miles north of Bournemouth. Full details are at www.cdmfc.org and the Longham pages. Parking is 200 m from the flying point and there are toilets on site, but no other facilities so bring your own lunch! There will be a rescue boat for unlucky models. Contact Mike at roachfoxwood@aol.com three days before for weather check.

Sept 13

Tonbridge Cassers and Rubber Fanciers Indoor Flying at Kings Sport Centre, 601 Maidstone Road, Rochester, ME1 3QJ from 6:30 pm until 10:00 pm. Free flight, lightweight R/C and 3D R/C timed flying sessions throughout the evening. Contact Steve on 0208 942 5000 or Eric on 07763 398 416.

Sept 14

Scale Glider Fly-in at the Hole of Horcum, North Yorkshire, YO18 7NR. A fun day for all R/C model scale gliders. BMFA membership required. £5 for non-members. Location on What3Words: snowmen.ordinary.caps. Lat - 54.332235. Lon - -0.690234. Walk to slope by 10:00 am and for more information contact Michael Kitchen on 01347 810685. Due to local MOD restrictions please contact beforehand for details.

Sept 20-21

PSSA 'Fly for Fun' event at The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for pilots

brief 10am each day. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or go to [//www.pssaonline.co.uk/about-us/events/](http://www.pssaonline.co.uk/about-us/events/)

Sept 21

White Sheet RFC Open Slope for Vintage Scale, Modern Scale soarers, F3f and F5j competition models or 'Anything In Between', such as PSS gliders. The scheduled Sundays are preferred but as always Saturdays are an option. The Open Slopes Secretary will analyse the forecast and attempt to choose the most suitable day. The decision is usually made on the Friday before the event, occasionally earlier if conditions are more settled. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

Sept 26-28

Bring & Fly at Pen Y Berth, Pwllheli, Gwynedd. LL53 7HC. Hosted by the Lleyl Model Aero Club. As well as our superb grass strip where our club house is, we have fantastic slope soaring sites nearby. We will be serving refreshments at our club site over the weekend, with a sales tent for selling models and adjacent to the site there are camping/ caravanning facilities available with a café/bar. Public spectators are welcome and flight trials can be arranged. For further details contact Frank Pilling on 07867 361905 or visit lleylmac.org.uk

Sept 28

Marston Green Model Flying Club Swap Meet at the Village Hall at

Nether Whittarce, B46 2EH. Easy access from J9 M42 and M6. From 9 am. Large Hall with 30 tables available (4 x 2). Side unloading access to hall. Hot food and refreshments available. Free parking. Pre Booking highly recommended.

OCTOBER

Oct 5

White Sheet RFC Scale Event. Scale Days could be either Saturday or Sunday, with the preferred day always being a Sunday. After analysing the forecasted conditions, the Scale Secretary will make the final on/off call on. Please note the reserve date of the 12th. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>

Oct 3 – DATE AMENDED

UKCAA @ North Berks

RMAS at NBRMAS, Landmead Farm, Garford, Oxfordshire, OX13 5PA. Classic Aerobatics. This is a fly-in with an informal contest over the lunch break. The contest will be to UKCAA Pick5/Pick7 rules plus a new fixed novice schedule for beginners. Guests and non-members are very welcome so bring along any traditional aerobatic model (e.g. AcroWot) and enjoy the fun. For more information please contact Martyn Kinder on 079890 25198 or email martyn@czd.org.uk

Oct 11

Tonbridge Cassers and Rubber Fanciers Indoor Flying at Kings Sport Centre, 601 Maidstone Road, Rochester, ME1 3QJ from 6:30 pm until 10:00 pm. Free flight, lightweight R/C and 3D R/C timed flying sessions throughout the evening. Contact Steve on 0208 942 5000 or Eric on 07763 398 416.



Oct 14

PMAC Swapmeet at Chelford Village Hall, Knutsford Rd, Chelford, Macclesfield SK11 9AS. This is the very popular Swapmeet that used to be held at the Deanwater. From 7pm to 9pm, doors open for table holders at 6:30pm. Tables £10 each (includes entry for one person). Entry £3 per person. Tables limited to 30 only, table booking required. Vehicles greater than 2.1m tall will need to be advised to the organiser (below) due to parking restrictions. Table bookings required by contacting Tim Cheal. email: tim.cheal@btinternet.com

Oct 18-19

PSSA 'Fly for Fun' event at The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for pilots brief 10am each day. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or go to <http://www.pssaonline.co.uk/about-us/events/>

Oct 19

White Sheet RFC Open Slope for Vintage Scale, Modern Scale soarers, F3f and F5j competition models or 'Anything In Between', such as PSS gliders. The scheduled Sundays are preferred but as always Saturdays are an option. The Open Slopes Secretary will analyse the forecast and attempt to choose the most suitable day. The decision is usually made on the Friday before the event, occasionally earlier if conditions are more settled. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

Oct 26

White Sheet RFC F3F Event. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

NOVEMBER

Nov 2

Retford Winter Swapmeet at Carlton-in-Lindrick Civic Centre, Oakham Drive, Worksop, Notts, S81 9RE. What3words: [blog.otherwise.nurse](https://www.what3words.com/blog/otherwise.nurse). Table set up from 8:45 till 9:30 am. Tables supplied. Pre-booked tables £7, on the day £8. Admission £3. Doors open 9:45 am till 11:45 am. Hot sandwiches and drink available. For further information contact Lee Davies on 07900 156803 or email lee301269@gmail.com or visit www.rmfc.org.uk.

Nov 2

White Sheet RFC Open Slope for Vintage Scale, Modern Scale soarers, F3f and F5j competition models or 'Anything In Between', such as PSS gliders. The scheduled Sundays are preferred but as always Saturdays are an option. The Open Slopes Secretary will analyse the forecast and attempt to choose the most suitable day. The decision is usually made on the Friday before the event, occasionally earlier if conditions are more settled. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

Nov 8

Tonbridge Gassers and Rubber Fanciers Indoor Flying at Kings Sport Centre, 601 Maidstone Road, Rochester, ME1 3QJ from 6:30 pm until 10:00 pm. Free flight, lightweight R/C and 3D R/C timed flying sessions throughout the evening. Contact Steve on 0208 942 5000 or Eric on 07763 398 416.

Nov 9

White Sheet RFC Scale Event. Scale Days could be either Saturday or Sunday, with the preferred day always being a Sunday. After analysing the forecasted conditions, the Scale Secretary will make the final on/off call on. Please note the reserve date of the 30th. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>

Nov 16

Horam Swap Meeting at the Horam Village Hall, A267, Horam East Sussex, TN21 0JE. What3Words: [self.planting.brave](https://www.what3words.com/self.planting.brave). Doors open to sellers 08.00 - 12.00 and buyers 09.00 - 12.00. Tables and one seller £9.00 and buyers £3.00. Refreshments including bacon butties available. For bookings (ESSENTIAL) contact Robert Richardson: rob.richardson@talktalk.net.

Nov 16

Southern Counties

Autumn Swapmeet at Mountbatten School, Romsey, Hampshire, SO51 5SY. One of the largest swapmeets in Southern England with over 50 tables. Sellers with a booking admitted from 8:00 am. Buyers from 8:30 am onwards. Noon finish. Admission only £4, under 16s free. First table costs £10 (including one admission), additional tables cost £6 each. Refreshments will be available. More details at hmfa.bmfa.org/. To pre-book tables only call Mike Stokes on 07702 742647

Nov 23

White Sheet RFC F3F Event. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

DECEMBER

Dec 7

White Sheet RFC Open Slope for Vintage Scale, Modern Scale soarers, F3f and F5j competition models or 'Anything In Between', such as PSS gliders. The scheduled Sundays are preferred but as always Saturdays are an option. The Open Slopes Secretary will analyse the forecast and attempt to choose the most suitable day. The decision is usually made on the Friday before the event, occasionally earlier if conditions are more settled. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>.

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FOR SALE

OS FS 64V four-stroke, new in box - £190. Laser150 plus engine mount, excellent condition and well looked after. Call Garry on 01822 258510 (Devon).

FLYWING FW200 GPS RC Helicopter, as new with two batteries and charger. Also scale Airwolf fuselage with good detail machine guns and nav lights, excellent condition. It can be flown like a drone, cost over £500 – offers around £300? 07415 093543 (Surrey).

LOSI TENACITY 1/10 pro V2 4WD Brushless ready to run smart fox racing. Brand new in box plus Spektrum 35 battery with charger also brand new in box. Cost over £600 new - £400. 07415 093543 (Surrey).

MODELLER giving up due to sight loss. Various scale, vintage, control line, gliders and free flight, engines, retro 2.4 GHz Tx. Rx sets plus lots of bits and pieces – offers? Call John on 07864 297226 (Dorset).

SLOPE SOARERS Phase 2, Gentle Lady, Algebra, Sonny 1500, Quad Copter, Twister – offers? Call Graham on 01453 757904 (Glos).

UNSTARTED SCALE BIPLANE PROJECT, Avro Tutor 68" span, Dennis Bryant Elite plan, Sarik laser cut wood pack, fibre glass cowling, information pack, Avro manual, magazine articles and colour posters - £160. P&P £10.70 extra. Call Martin on 01380 870008 (Wiltshire).

SC52 FOUR STROKE ENGINE in box. Appears new, exhaust port clean - £120. 01407 710312 or email john726robinson@btinternet.com (Anglesey).

SEBART KATANA 30E. Yellow, black and red trim. Turnigy 3542/1000, 60A ESC with fitted pilot, instruments, Hitec servos, 2200/3s. Flies superbly. Will take larger LiPos, in mint condition - £295. Buyer to collect. 01243 514042 (Chichester).

4-CHANNEL EASYSTAR, airworthy. Funboy, just needs trimming. All spares including props, batteries, two Spektrum transmitters, VAR receivers, plus 101 other bits and pieces. All must go as I'm giving up to look after my wife with Dementia – free of charge. But a donation to Alzheimer's Society would be appreciated but not conditional. Delivery at cost, or collection. 01789 721225 or 07929 649808 (Stratford upon Avon).

ENGINE, planes, electric planes, electric glider, flight box, batteries, two transmitters, chargers – offers? 07496 710948 (Cams).

AXMINSTER PERFORM ELECTRIC 400m Fretsaw, good condition, has had little use - £45. Call Tony on 01162 313377 (Leicester).

SEVEN A/C, Solartex covered, flown twice. For trimming with battery, motor, some with FRSKY Rx. Also, two IC models - Pete 68" wingspan, WOT 4 53" wingspan, both with Futaba Rx. RCV91 CD unrun, new and boxed. OS 46 AX run in only and boxed. Flight box, starter – offers? Buyer to collect (Suffolk).

GENTLE LADY GLIDERS, Phase 4, Phase 2 and others – offers? Call Graham on 01453 757904 (Glos).

TEN YEARS OF RCM&E, complete sets – free? Buyer to collect. 07771785505 or email blue.hills@btinternet.com (Battle).

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O.S. FS70 Surpass - £75, O.S.40 Surpass - £50, O.S.40 4 stroke, earlier one - £40, O.S. Max 40 R/C - £25, JBA 61A ABC (Chinese) - £40, Frog 80 - £15, Flexible exhaust extension for FS40 and FS61, brand new unused - £5, Pair of Williams 5W

diameter (5th scale) vintage wheels - £25 brand new, unused. Call Ian on 01460 394579 (Somerset).

FLAIR BRISTOL FLIGHTER KIT NIB - £250. Buyer to collect. 01525 370205 (Bedfordshire).

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EMP ALGEBRA KITS or built-up planes with glass fibre fuselage and with either foam or built-up wings. Call Anthony on 07971 979441 or email anthonytremlett@gmail.com (Oxfordshire).

BUILD GUIDE for OV Modes BD5 circa 2004. Also wanted, a V Pro Verion 43.7" span. 07902 512924 (W.Yorks).

E-FLITE ALUSIVE motor glider in excellent or unbuild condition. Also, Graupner Terry in similar condition. Call David on 07860 312025 (Kent).

RADIO MODELLER No 97 plan of a Bloas slope soarer. 07789 588873

E-FLITE Sky Skooter or Space Skooter, damaged or whatever, or similar small delta foamie (not pusher). Call on Mike 07482 117089 or edgeark@googlemail.com

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Next issue

NIPPON TOMBO

When Dave Goodenough was researching his next own design the Nippon 'Tombo' (Dragonfly) looked almost model-like and whispered, 'build me!' Thankfully, there was a reasonable 3-view of the craft. Tombo was a simply made glider, designed to meet Japan's

need for training whilst readying for war. Easy to assemble, this cheap to build glider, with its viceless flying manner yet aerobatic ability, fitted the bill. With little other information available the wee beastie, presented as November's pull-out Pro-Plan is a best effort, brought forth from that scant documentation.



FOUGA MAGISTER

Dirk Tinck, well known for his Power Scale Soaring versions of Magister jets, has built another CM.170, this time for EDF power. The idea for this project started way back in the early 2000s. At that time Dirk made a foam Fougas Magister spanning just 1.5 m. The model flew really well, rewarding Dirk with hundreds of EDF flights and it was so versatile he even slope soared it! Around this time Dirk also became interested in PSS flying and after a visit to The Great Orme in Wales with the PSSA he decided to make a big PSS Fougas, enlarged to 1:4.5 scale. His first large PSS model was born! After sloping it for a few years Dirk realised that where he lives in Belgium there is no chance of flying it without travelling at least two hours to the nearest suitable slope. So, his article describes how the idea came about to make the same plane, but suitable for flat field flying - a big scale EDF Fougas!



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PARTING SHOT



RAINWATER RUNOFF

Steve Kilbon's slot at the Weston Park 2025 Model Show followed a heavy shower which had just passed through. Steve kept the rain off the electronics during the shower but let the airflow blow the water off the airframe during take-off, resulting in a shower of raindrops running off the back of the model, some of which got vaporised by the turbine's exhaust. Steve went on to treat us to a splendid display. Needless to say, the model was beautifully blow dried as it taxied back to the pits!

The aircraft is a BVM Jets 1:5.5 scale F-18 Hornet of 2.2 metres wingspan, powered by a Spark 260N turbine. It is finished in the RCAF's 2023 display colours.

Mike Freeman

DATAFILE

Photo:	Mike Freeman
Camera:	Nikon D500
Lens:	Nikon VR 70-700mm f/2.8E
Exposure Mode:	Shutter Priority
Aperture:	f/4
Shutter Speed:	1/2000 s
Focal Length:	100 mm
ISO:	500
Metering:	Centre Weighted
Exposure Comp:	0 EV



EXTRA-330SX

Red/Silver/Black -
(Scheme 01)



PIL800

Wingspan: 90in (2.29m)

£989.95

Blue/Orange/White -
(Scheme 02)



PIL801

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Red/Silver/Black -
(Scheme 01)



PIL836

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Blue/Orange/White -
(Scheme 02)



PIL837

Wingspan: 75in (1.9m)

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MATRIX

Orange/Yellow -
(Scheme 02)



PIL783

Matrix 1.8m Sport/3D Jet with Electric Retracts

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Red/Silver - (Scheme 04)



PIL785

EDGE540 V3

Red/White/Black -
(Scheme 01)



PIL824

Wingspan: 67in (1.7m)

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EXTRA NG

Red/Blue/White -
(Scheme 01)



PIL685

Wingspan: 60in (1.52m)

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Green/Black/White -
(Scheme 02)



PIL686

Wingspan: 60in (1.52m)

£399.95

Blue/Orange -
(Scheme 05)



PIL745

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Green/Black/White -
(Scheme 02)



PIL670

Wingspan: 67in (1.7m)

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Red/Silver/Black -
(Scheme 04)



PIL771

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LASER

Orange - (Scheme 08)



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Green - (Scheme 07)



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Orange - (Scheme 08)



PIL694

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Green - (Scheme 07)



PIL712

Wingspan: 73in (1.85m)

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Orange - (Scheme 08)



PIL713

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PITTS S2B

Bulldog (Yellow/Black)



PIL733

Wingspan: 87in (2.2m)

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SLICK

Red/White/Yellow -
(Scheme 05)



PIL761

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Red/Yellow/Black -
(Scheme 01)



PIL665

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Green/White/Red -
(Scheme 04)



PIL762

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Red/White/Yellow -
(Scheme 05)



PIL763

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Green/White/Red -
(Scheme 04)



PIL772

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Red/White/Yellow -
(Scheme 05)



PIL773

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DECATHLON

Black/Red/White -
(Scheme 09)



PIL003

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Yellow/Black/Red -
(Scheme 10)



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Green/Blue -
(Scheme 04)



PIL795

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Orange/White -
(Scheme 05)



PIL796

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Green/Blue -
(Scheme 04)



PIL746

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Orange/White -
(Scheme 05)



PIL747

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28

24

WS1 WING SPAR FROM 3mm
BIRCH PLY

500

F2
3mm LITE PLY

400

F4

F10
3mm LIT

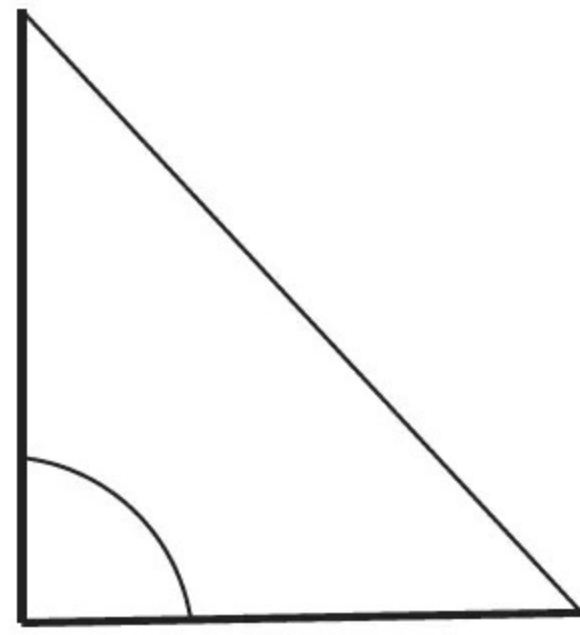
300

F11
NOSE CONE SUPPORT RING
3mm LITE PLY

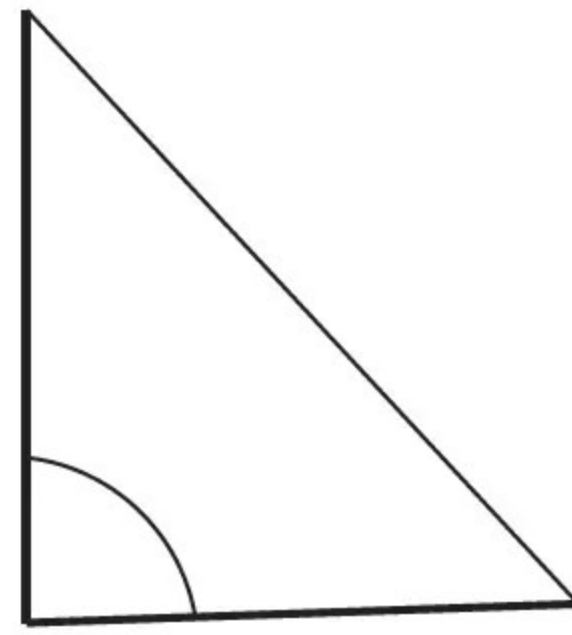
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THE VAC FORMED INTAKES
TO THIS EDGE LINE

TAILPLANE
L.E. PROFILE

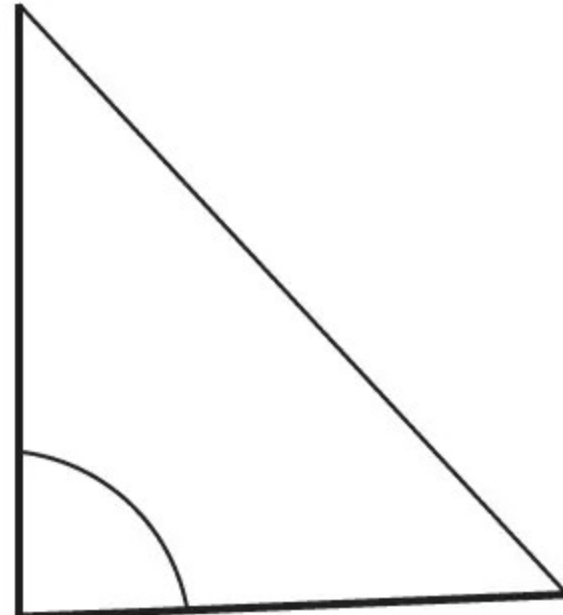
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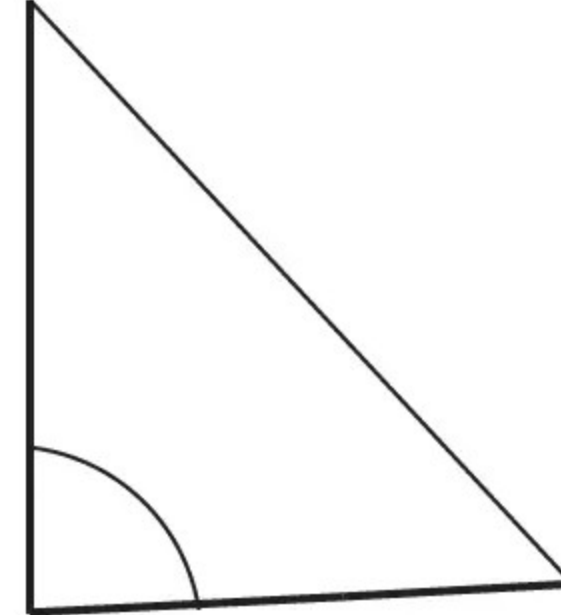
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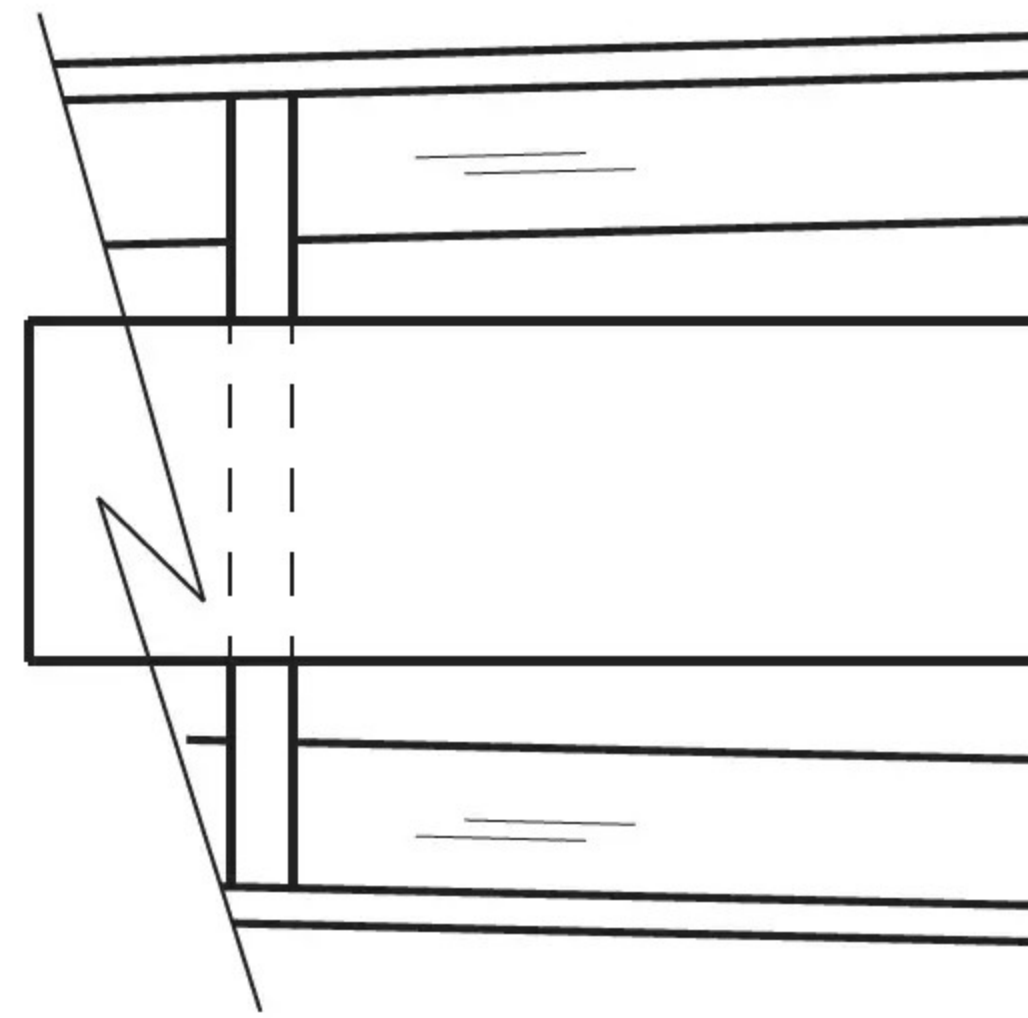
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TEMPLATE



F7 ANGLE
TEMPLATE



F8 & F9 ANGLE
TEMPLATE



9.5mm BALSA TR
BATTERY PLATE S

F4
3mm LITE PLY

F3
3mm LITE PLY

F5
3mm LITE PLY

F1
3mm LITE PLY

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9.5mm BALSA TRIANGLE
BATTERY PLATE SUPPORT

3mm LITE PLY
BATTERY SUPPORT PLATE

F5
3mm LITE PLY

WS1

F6
3mm LITE PLY

6.5mm SHEET
BALSA L.E.

6.5mm x 6.5mm TOP
AND BOTTOM HARD
BALSA SPAR

6mm x 3mm
TRAY S
FRAM

W3

ING SPAR TRIMMING
DETAIL AT W76 & W7

WING TIPS MADE FROM
12.5mm BALSA

W7

1.5mm SOFT/MED
BALSA SHEETING
TOP AND BOTTOM

W6

8mm WIDE FLOCKED MYLAR
HINGES (SLEC)
SECURED WITH CYANO

6.5mm SHEET BALSA
AS TRAILING AND
AILERON LEADING
EDGES

W5

12g 2.2kg/cm
SERVO

W4

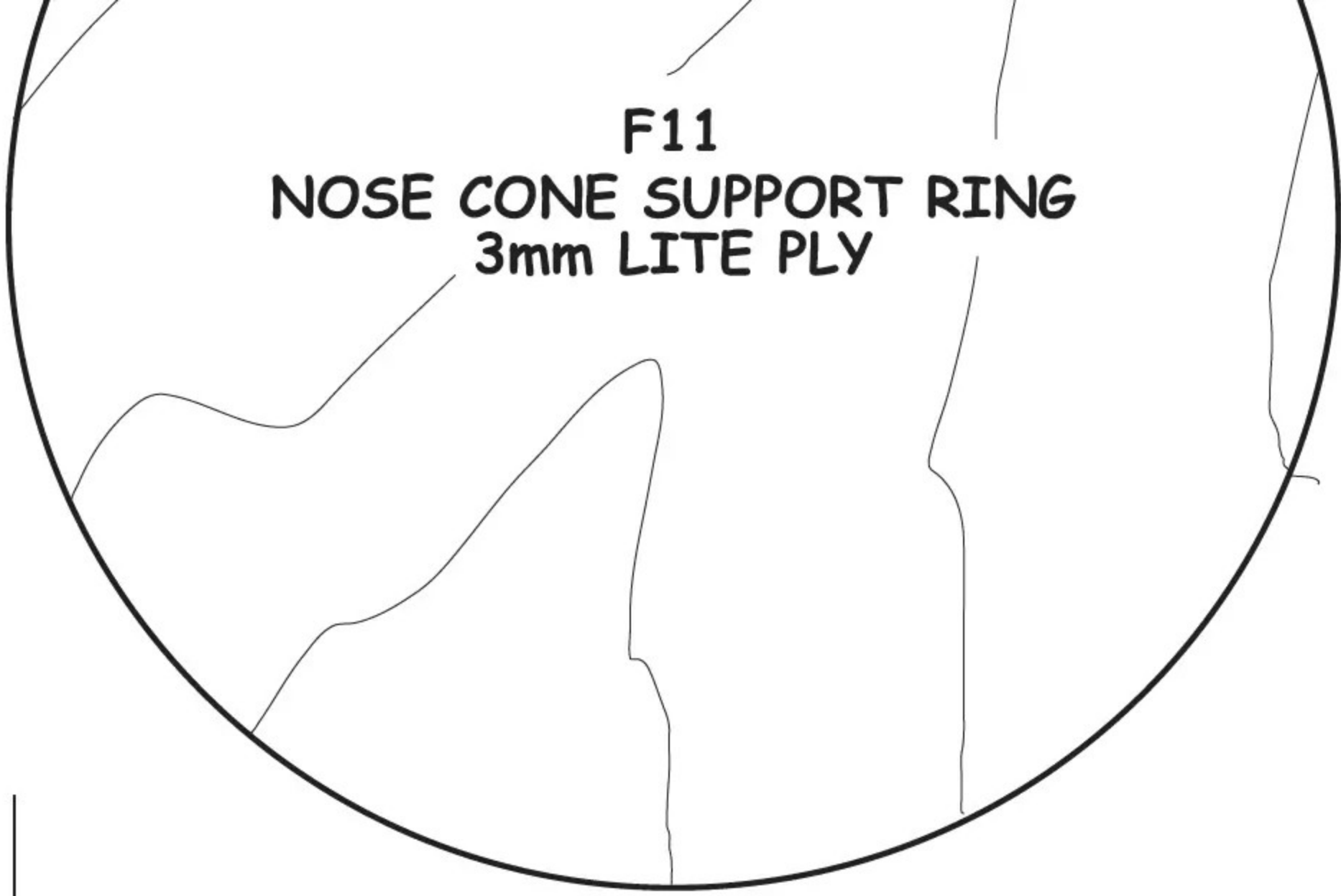
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SUPPORT
WORK

JAVELIN FAW.9

BY TONY NIJHUIS

No. OF SHEETS: 1 OF 2

First published in RCM&E October 2025



F11
NOSE CONE SUPPORT RING
3mm LITE PLY

TAILPLANE
L.E. PROFILE



TAILPLANE FROM 4.5mm
MED BALSA

F9

9.5mm BALSA TRIANGLE
TAILPLANE SUPPORT

FIN3

200

100



AIR IN

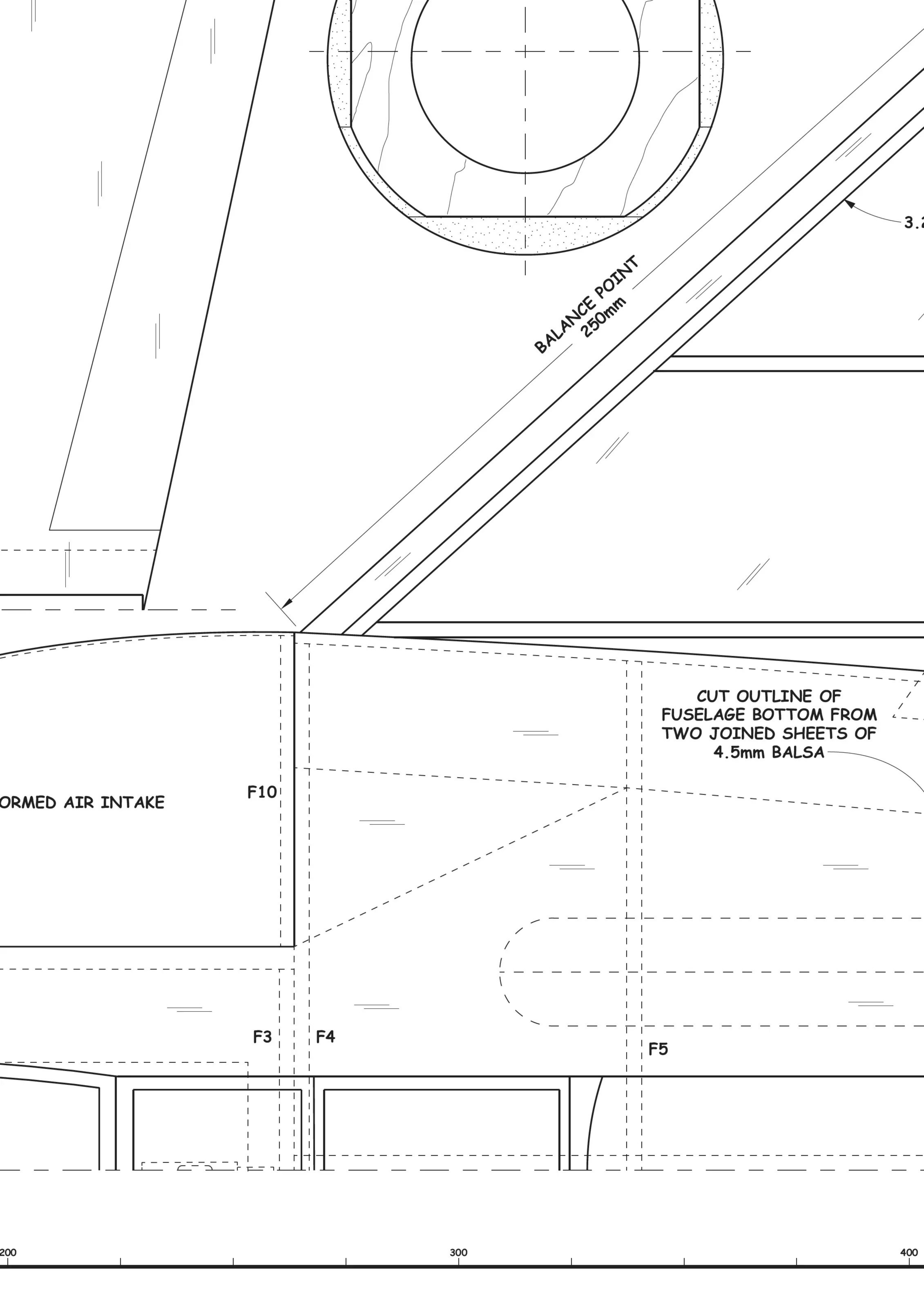
VAC F

F1

F2

SCALE
MM

100



BALANCE POINT
250mm

3.2

CUT OUTLINE OF
FUSELAGE BOTTOM FROM
TWO JOINED SHEETS OF
4.5mm Balsa

FORMED AIR INTAKE

F10

F3

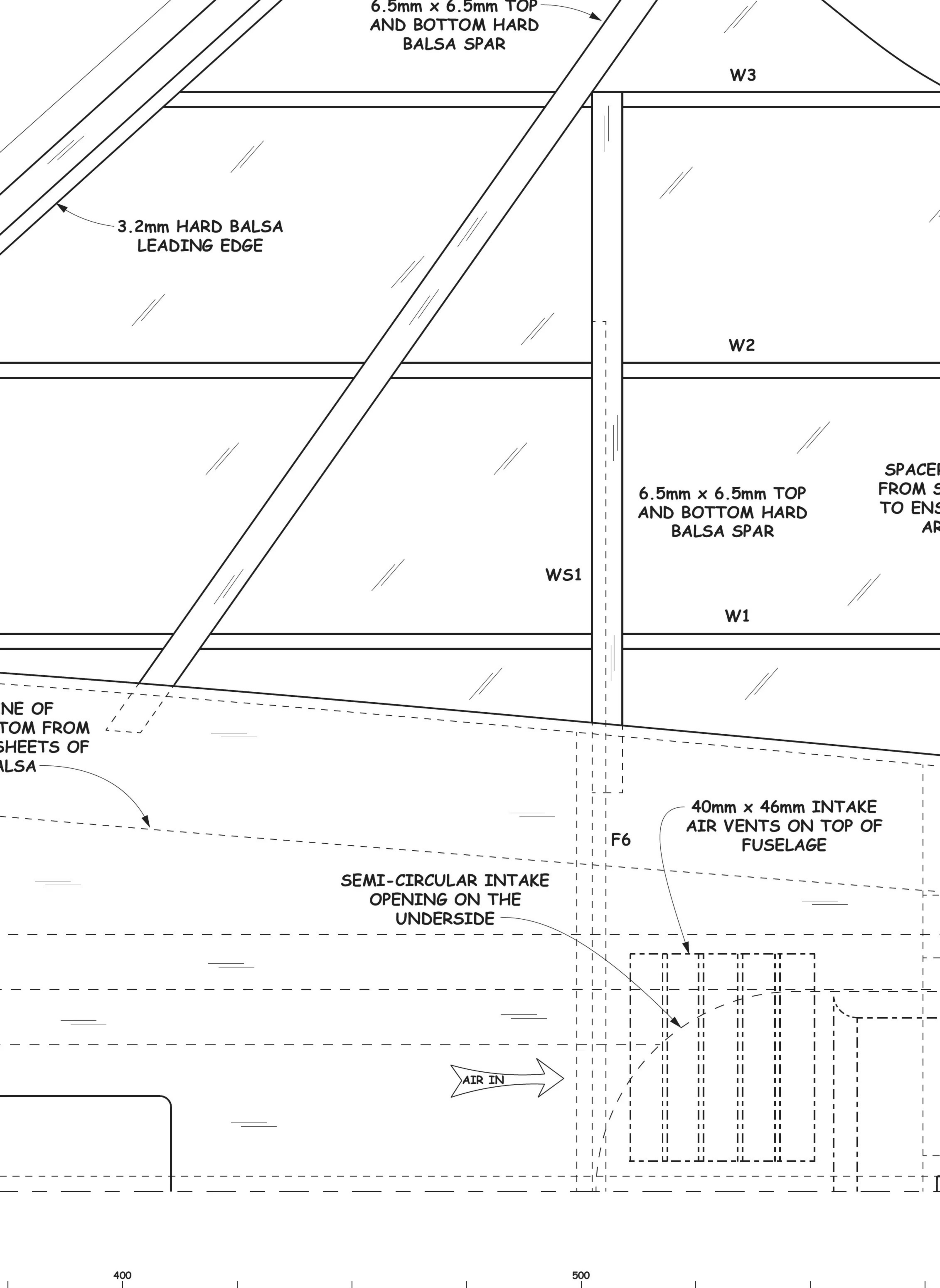
F4

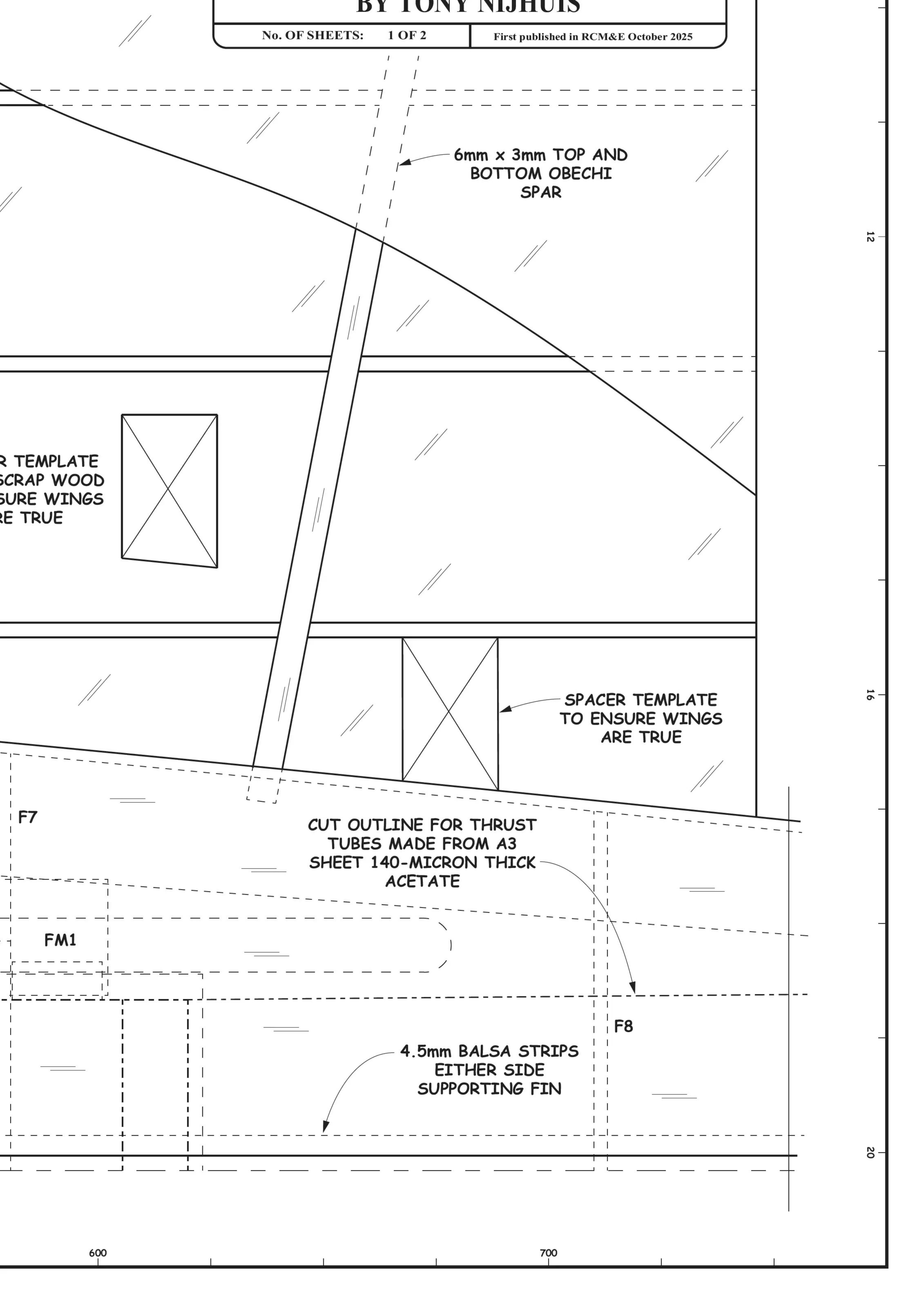
F5

200

300

400



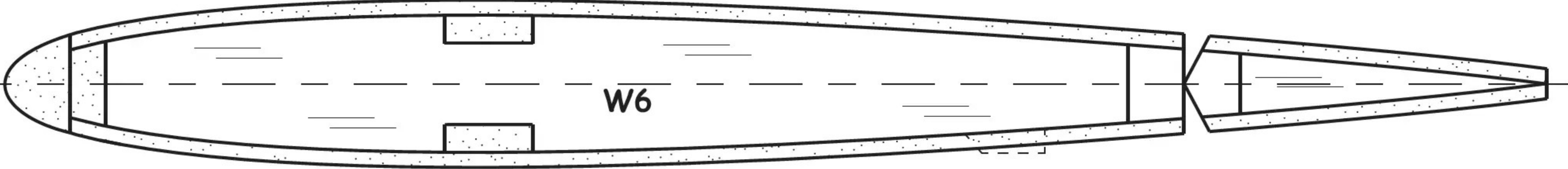


28

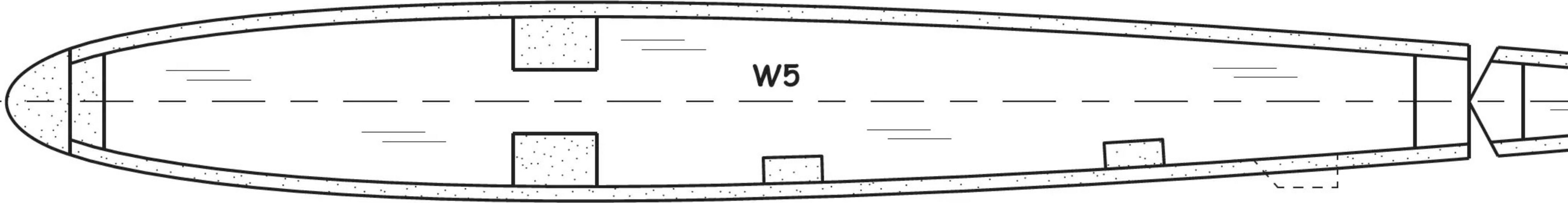
24



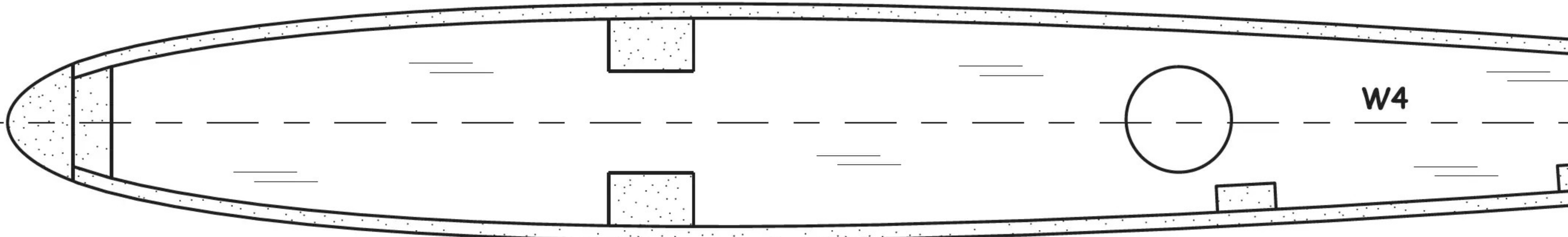
W7



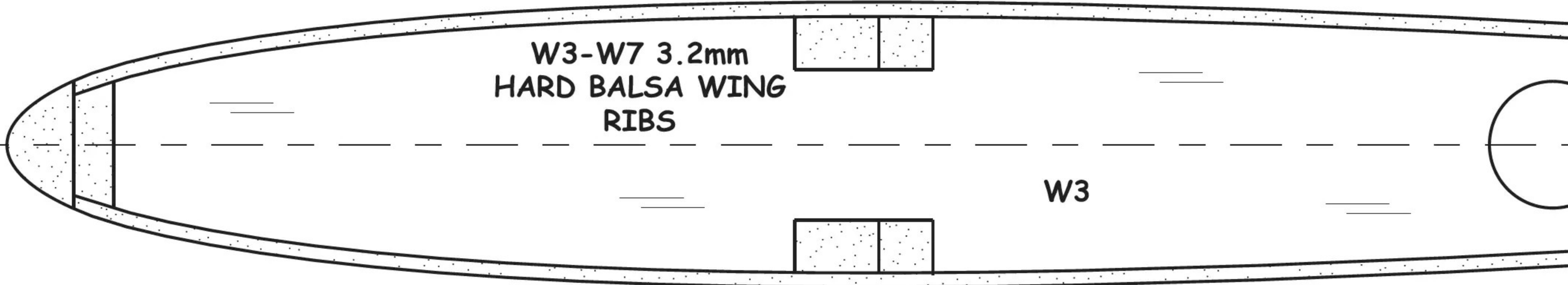
W6



W5

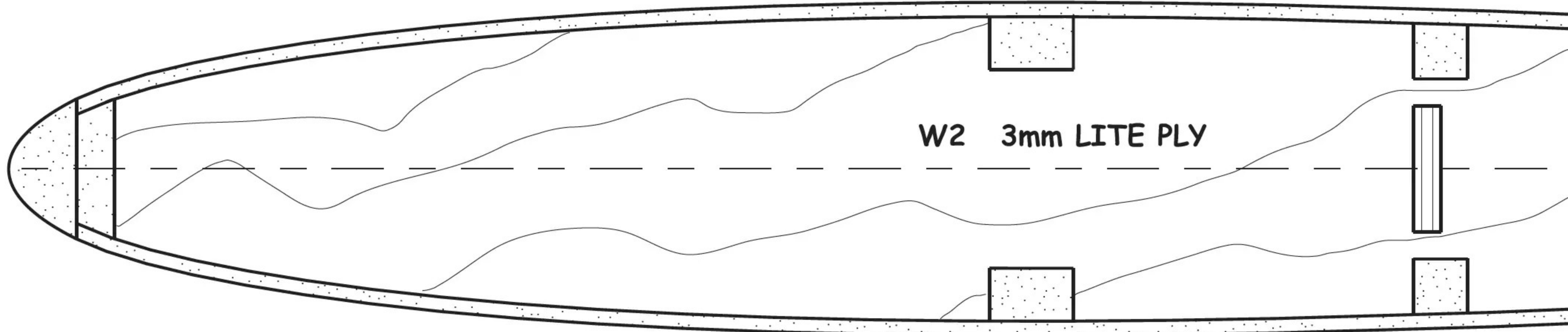


W4



W3-W7 3.2mm
HARD Balsa WING
RIBS

W3



W2 3mm LITE PLY

TOP

TEMPLATE OUTLINE OF FS1
4.5mm MED Balsa
NOTE THIS FORMER IS NOT SYMMETRICAL
SO MARK THE TOP TO AVOID BUILDING ERRORS

500

400

300

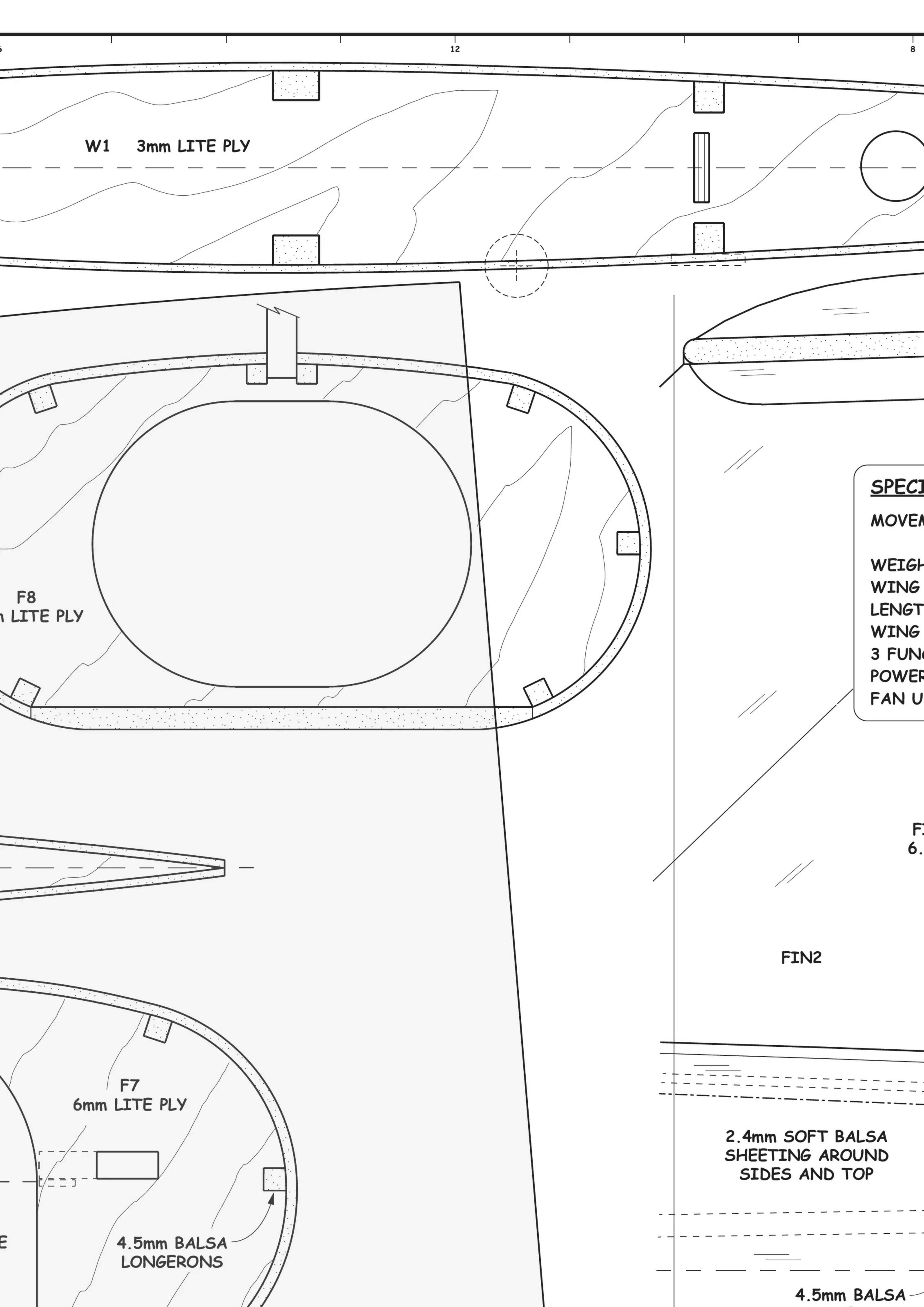
W1

F8
3mm LITE PLY

F7
6mm LI

CROSS BAR CAN BE
REMOVED ONCE
FUSELAGE IS
CONSTRUCTED

4.5
LO



12

8

W1 3mm LITE PLY

F8
3mm LITE PLY

F7
6mm LITE PLY

4.5mm Balsa
LONGERONS

SPEC

MOVEMENT

WEIGHT

WING

LENGTH

WING

3 FUNCTION

POWER

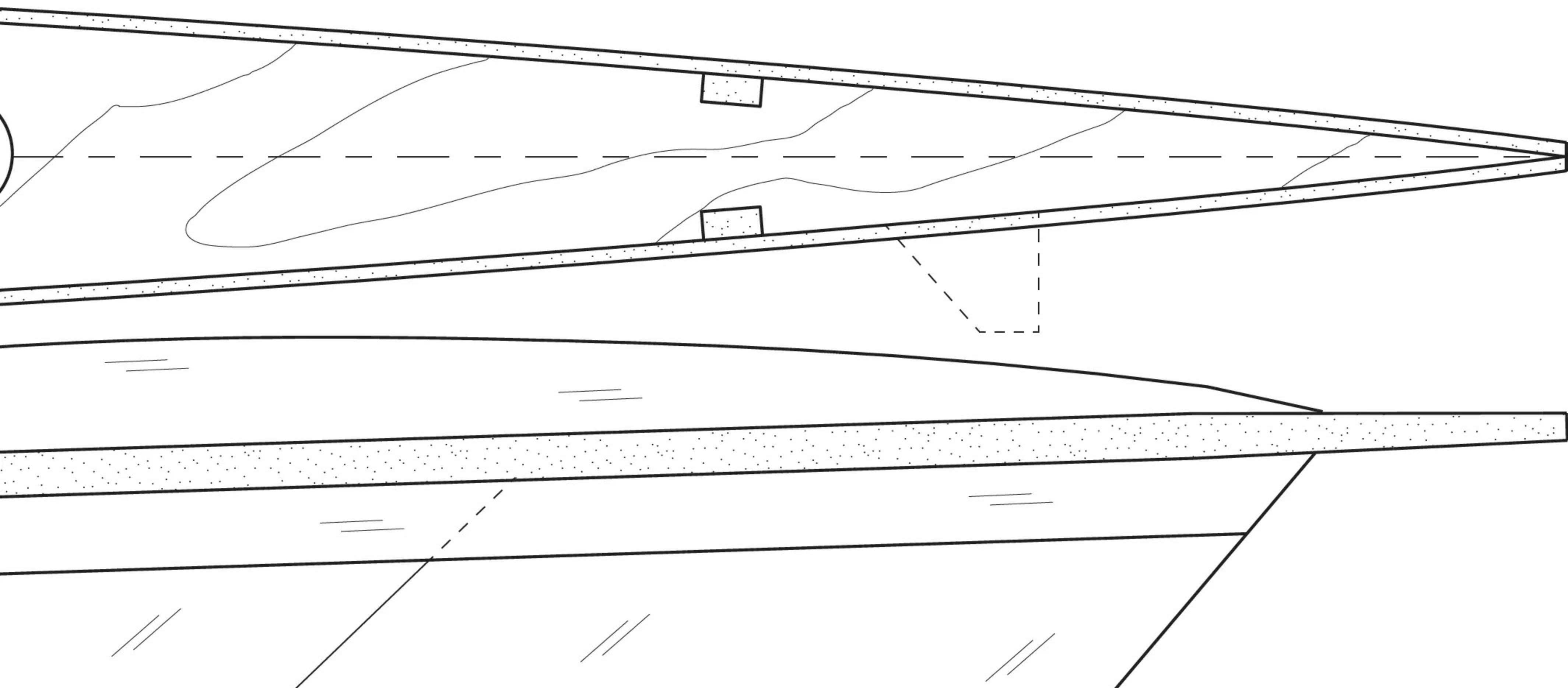
FAN U

F.
6.

FIN2

2.4mm SOFT BALSA
SHEETING AROUND
SIDES AND TOP

4.5mm BALSA



PECIFICATION:

MENTS - ELEVATOR - 16mm, 30% EXPO
AILERON - 18mm, 25%
IT - 51oz (1.45kg)
SPAN - 40" (1015mm)
H - 43" (1096mm)
LOADING - 13oz/ft² (4kg/m²)
CTION MICRO RADIO
R - 4S 4000mAh 60C LI-PO
NIT - 70mm 4S EDF

IN PARTS FROM
5mm MED BALSA

WOOD STOCK

STRIP

9.5mm SOFT BALSA TRIANGLE - 1 OFF
4.5mm HARD SQUARE BALSA - 7 OFF
6.5mm HARD SQUARE BALSA - 4 OFF
6mm x 3mm OBECHI - 1 OFF

SHEET

2.4mm- 100 x 900 SOFT BALSA - 4 OFF
3.2mm- 75 x 600 HARD BALSA - 1 OFF
1.6mm- 100 x 900 SOFT BALSA - 6 OFF
4.5mm - 100 x 900 SOFT BALSA - 2 OFF
6.5mm- 100 x 600 MED BALSA - 1 OFF
9.5mm- 75 x 600 SOFT BALSA - 1 OFF
12.5mm - 100 x 300 SOFT BALSA - 1 OFF

CNC PACK- 1 OFF

JAVELIN FAW.9

BY TONY NIJHUIS

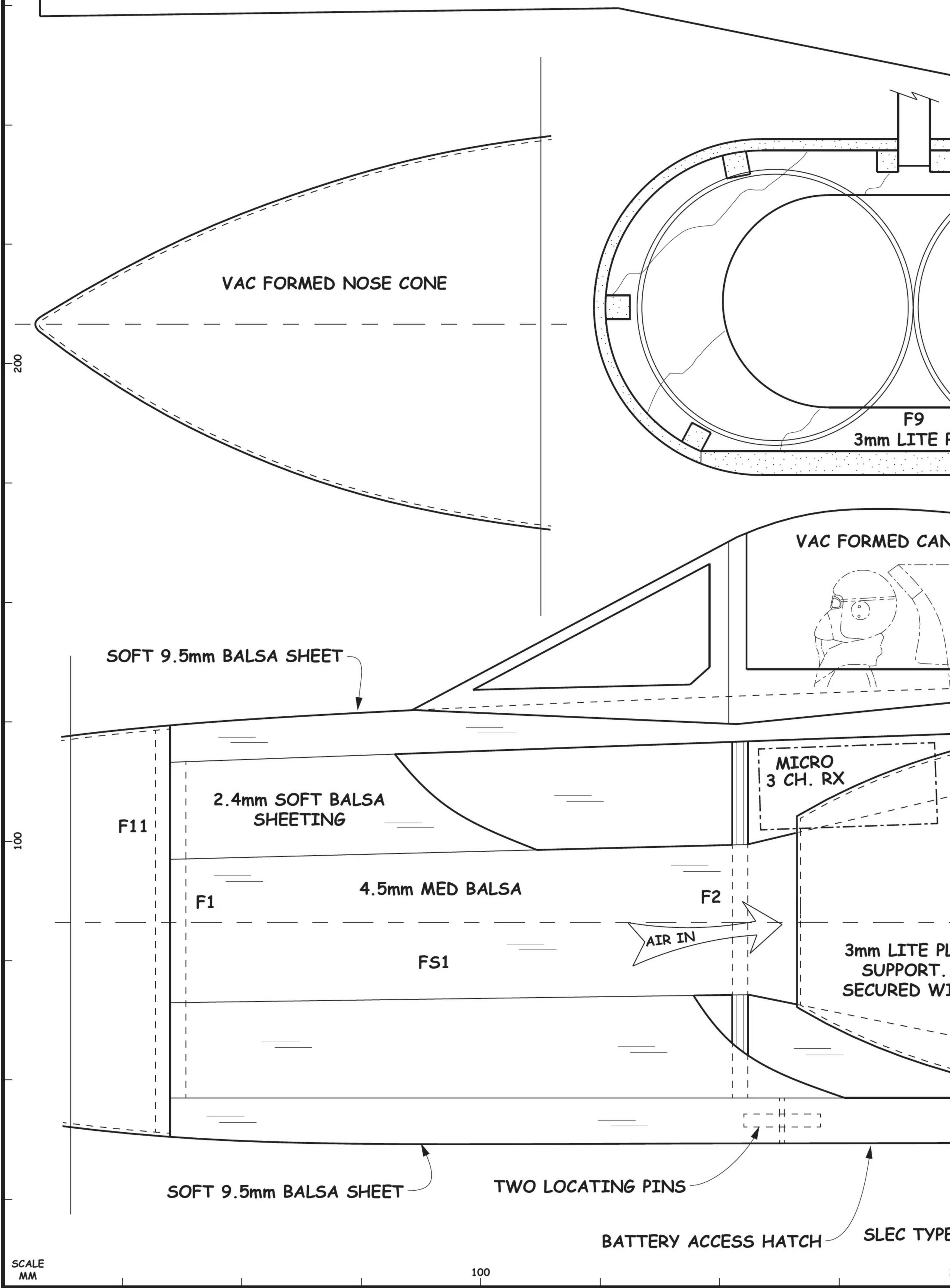
No. OF SHEETS: 2 OF 2

First published in RCM&E October 2025

F9

1mm ROLLED PLASTIC
SHEET AS DUMMY JET
NOZZELS

NOTE THIS FORMER IS NOT SYMMETRICAL
SO MARK THE TOP TO AVOID BUILDING ERRORS



VAC FORMED NOSE CONE

F9
3mm LITE PL

VAC FORMED CAN

SOFT 9.5mm Balsa SHEET

2.4mm SOFT Balsa SHEETING

MICRO
3 CH. RX

4.5mm MED Balsa

3mm LITE PL
SUPPORT.
SECURED WI

AIR IN

SOFT 9.5mm Balsa SHEET

TWO LOCATING PINS

BATTERY ACCESS HATCH

SLEC TYPE

SCALE
MM

100

