

FREE PRO-PLAN! | **BMAC EASY GLIDER**
CLUB CHALLENGE DESIGN

VOL. 68 NO. 9 SEPTEMBER 2025

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RCM&E

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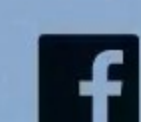


SPECIFICATION

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
Rec'd motor:	Radiant 3548 790KV outrunner
Rec'd ESC:	Radiant G2 60A
Rec'd battery:	Radiant 4S 4000mAh 30-50C LiPo
Radio:	4-channel / 4-5 servos

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Welcome

Welcome to the September 2025 issue of RCM&E.

I hope our UK readers have been able to make good use of all the wall to wall sunshine that we've been enjoying lately. Mind you, sometimes it was a bit overwhelming and sent us scuttling for shade and a long, cold drink! A few days of such heat gives us a taste of what our continental readers must endure on a regular basis, especially those close to the Mediterranean, not to mention modellers who live and fly in places such as the southern and western states of the USA, as well as Australia and other hotspots. I won't place check you all but no doubt you'll be unimpressed by reports of us basking in 30 degree C plus heat for a few days. Still, it's a rare (if becoming less so) treat for us, so you'll forgive me, being a typical Brit, while I finally stop moaning about the weather for a while...

One thing the hot weather does, especially for those of us who fly from land used for grazing, is to bring out large numbers of insects with pretty nasty bites. Several of my flying buddies have suffered from bites and subsequent infections this year, in some cases requiring treatment with antibiotics. This happened to me a few years ago whilst wearing a T-shirt and shorts, with the resulting bulls-eye wounds swelling up by horrendous amounts. Since then, I always wear trousers when going flying, no matter how hot, and when I get to the flying field I try to slip a long sleeve shirt over whatever clothing I am already wearing, with the cuffs rolled back. This not only helps stop any nasty bugs from having easy access to any exposed skin but also has the secondary benefit of providing some protection against the sun, although it's important to apply sun cream too.

Now for a quick look at the main articles in this month's magazine. This time we are joining in with celebrations for the 50th Anniversary of J Perkins Distribution. JP have been long term supporters and advertisers in RCM&E, and we are very pleased to celebrate their 'Big Birthday' with them. To kick things off we take a close look at the eye-catching JP 50th Anniversary edition of the .50 size Challenger low wing aerobat. We'll also be popping in to see their marketing and sales teams in action as they present their products to model shop owners at their recent Trade Day held at BMFA Buckminster.



Shaun Garrity (Retro Ramblings) is just back from another well attended Single Channel & Retro fly-in held at Pontefract Racecourse and then your editor puts XFly's eye-catching quad EDF powered C-17 Globemaster cargo plane through its paces. This month's Model Magic feature is supplied by David Ashby who examines a lovely example of a third scale Sopwith Camel before handing over to Roy Thompson whose simple to build BMAC Easy Glider is the subject of this month's pull-out Pro-Plan.

Amongst the tales from Dave Goodenough's workshop (One Man & His Shed) is his restoration of a Kingcat glow engine and then it's back to yours truly for another episode of 'Read The Flippin' Manual' in which I unbox another Seagull model, this time the V2 version of the Swift high wing trainer. There will also be a report from an international F5J gliding event before Keith Jackson (Aerobatic Scene) wraps things up with a look at the latest contra drive set for F3A models as well as some on-board hardware to improve your aerobatic scores.

I hope you enjoy reading it all.
Happy Flying!

Kevin Crozier

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On the cover

Photo: David Ashby

Hailing from East Kent, Kevin Wesley has been building and flying models since the age of nine. Always preferring scale models, he's built several from kits and plans over the years. So why the Sopwith Camel? Aside from its pugnacious looks and the obvious challenge, Sopwith's Pup replacement was chosen mainly for the amount of one-off metal parts that would have to be fabricated to make the model a true museum-scale interpretation of the real thing. The Mick Reeves 1/3rd scale plans were the starting point of a project that would take two years to complete.



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Free Pro-Plan

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Roy Thompson introduces an easy to assemble 1.6 metre span electric glider specially designed as a club group build



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SLINGSBY SKYLARK SHRINKS!

Our thanks go to the folks at Sarik Hobbies who, when preparing laser cut short kits and other parts for anyone wishing to build the Chris Williams Slingsby Skylark 1, as featured in the July and August issues, spotted that some of the sizes described did not match the 1:6 scale model shown on the plan.

We unintentionally let slip by some instances where the model is described as 1:5

scale and not 1:6 scale, which would make it a much larger model.

We apologise for any problems this might cause however the drawings have been checked by Chris so you will end up with a 1:6 scale Skylark of close to 90-inch wingspan by building from our Pro-Plan.

Just to be sure, here is an amended Datafile, again which has been checked by Chris:

DATAFILE

Name:	Slingsby Skylark 1
Model type:	Scale glider
Scale:	1:6
Designed by:	Chris Williams
Wingspan:	2.28 m (89.8")
Weight:	3.5 lbs (1.6 kg)
Wing section:	HQ35/14 centre section, outer panels transitioning to HQ35/12
Functions (servos):	Ailerons (2), rudder (1), elevator (1), tow release (1)
Glide path control:	Via up-lifting ailerons



PPMFC PEGLER PRIZE

Andy Pegler was a long-standing and immensely popular member of Prestbury Park Model Flying club (Cheltenham). Sadly, Andy passed away in 2023, just as he was approaching retirement. In his memory the committee came up with the idea of the Pegler Prize, awarded to a member who has shown exceptional attainment in his/her discipline over the course of the year.

Paddy Mace became the very first recipient of the award, seen here accepting his trophy from Greg Fitzpatrick (Hon. Treasurer) and Eric Sutton (Hon. Secretary) at the club's annual BBQ in July.

Paddy - still only fifteen years of age - took up R/C flying during lockdown and made phenomenal progress, thanks largely to the encouragement and advice offered by a team of experienced flyers in the club. He is now equally at home flying aerobats, warbirds or pylon racers - both IC and electric - and is currently working towards his 'B' test.

He is interested in all things aeronautical, be they model or full-size. He attends the local high school, playing both rugby and football for local teams. Like many R/C flyers, engineering is a great interest of his and something Paddy hopes to pursue as a career when he gets older.



Jez Carter, PPMFC Chairman

COMETS LARGE & SMALL



Tail end of the Comtesse. Covering is burgundy tissue on the fuselage and vertical tail, cream tissue over Doculam on the tailplane, with doped-on tissue decoration.



Bare Comtesse airframe showing airbrakes and ailerons. Non-aileron tips laid out in front.

Keith Thomas, the designer of many R/C gliders, including the Peccadillo delta which featured as the Pro-Plan in the May 2022 issue, has sent details of some Keil Kraft R/C conversions that he has been working on:

A few months ago, you published a picture of my TopperToo, a twice-size KK Topper, (see All Write, February 2025) and I thought you might be interested in my latest developments along similar lines.

In a mad moment a couple of years ago I decided to build an R/C version of the KK Comet chuck glider. It had a solid balsa wing and tail (as the original), but the thin fuselage had to be widened a bit to accommodate the radio gear. The only real problem in construction was the tail-end linkages, all of which I had to make from scratch, including a minute elevator joiner/horn assembly. Tissue covering, of course, and a one-piece airframe. Despite its small size (22 inches / 56 cm span) the model flew surprisingly well from the slope. Rudder and elevator response was excellent and it was fun watching it bounce around in the breeze. I was so pleased with the little thing that I decided to build a twice-size version. Oh dear - another mad moment!

The wing of this model also looks like solid balsa but in fact it's a fully sheeted built-up structure which screws onto the fuselage. Once again, the latter is slightly fatter than 'scale', but not much else has changed. This version flew even better. The larger size made it much more tolerant of gusts and offered the great advantage that, unlike its little brother, it remained visible at a sensible distance.

The original daft idea no longer seemed quite so silly and after a while I found myself toying with the notion of making a super-Comet to complete the set. This was basically a four-times enlargement but, as



Comet, Comet X2 and Comtesse, the latter with its alternative outboard panels.

you would expect when converting a chuck glider into a grown-up thermal soarer, it incorporated many changes. The fuselage is slightly shorter, the fin and rudder are smaller, and the tailplane is much smaller. It features all-built-up flying surfaces, airbrakes, ailerons and plug-in outboard wing panels. I increased the aspect ratio by 50% to produce a 120" / 3 metre span wing.

The thinking behind the removable tip panels was that they allowed me to play around with two wing configurations, with little dihedral and ailerons with one set and more dihedral and no ailerons with the second in case rudder response proved to be

inadequate. To my mind the model still clearly shows its parentage but with so many changes I decided not to append the revered Comet name, hence Comtesse. But it still has all the Comet letters in it!

As it turned out the rudder is so powerful that the ailerons are largely superfluous, but the glider is a great flyer in both configurations. It has lots of area for its weight (sub-8 oz. loading), stays up very well, but has a decent turn of speed with its modern aerofoil. Despite all the changes, to my mind it still looks convincingly Cometesque in the air with that distinctive fuselage shape, fin outline and elliptical wing planform.

When flying the aileron version, I have ailerons on the right stick and rudder on the left (conventional Mode 2). To convert to the non-aileron wing all I have to do is operate the CAR switch, which transfers rudder control to the aileron stick, so no jiggery-pokery at the receiver is required.

Incidentally, covering is coloured tissue on the fuselage and white tissue with trim over Doculam on all flying surfaces.

Thank you, Keith. What a lovely trio of gliders they make, all based on a classic Keil Kraft design. Hands up all those who had a Comet - we certainly did!



Front fuselage of the original Comet of 22" span. Single LiPo cell, Emax 9251 servos, Multiplex five channel receiver and a small switch. Available internal depth is only about 7 mm.



JP CHALLENGER 50 SUPER SPORT 50th Anniversary Edition

Frank Skilbeck assembles a gold & black liveried version of a popular .50 size kit

Words: **Frank Skilbeck**

Photos: **Frank Skilbeck, Barry Atkinson, Kevin Crozier**

So, it's J. Perkins 50th Anniversary this year and to celebrate they have produced an Anniversary Edition of the evergreen Challenger low wing sports model in a striking gold, black and white colour scheme with matching logos. The Challenger is a well-known and proven design, suitable as a first low wing aeroplane after a pilot has become competent on a high wing trainer. It's very similar to the Bowman 53" Sportster which I had as a follow-on model not quite 50 years ago, although somewhat more up to date and configurable for either IC or electric power. The Challenger has a wingspan of 52.8 inches and JP suggest a .46 to .55 two stroke glow or a .52 to .62 four stroke, with the option of a 4S LiPo electric set up for which JP recommend the Radiant 3548 790 kV brushless motor, plus the 60 amp ESC and 4S 4000 mAh LiPo from the same brand.



Challenger on a Farnborough style pass to show off the JP 50th Anniversary decals.



Model components are well protected in a stout box.



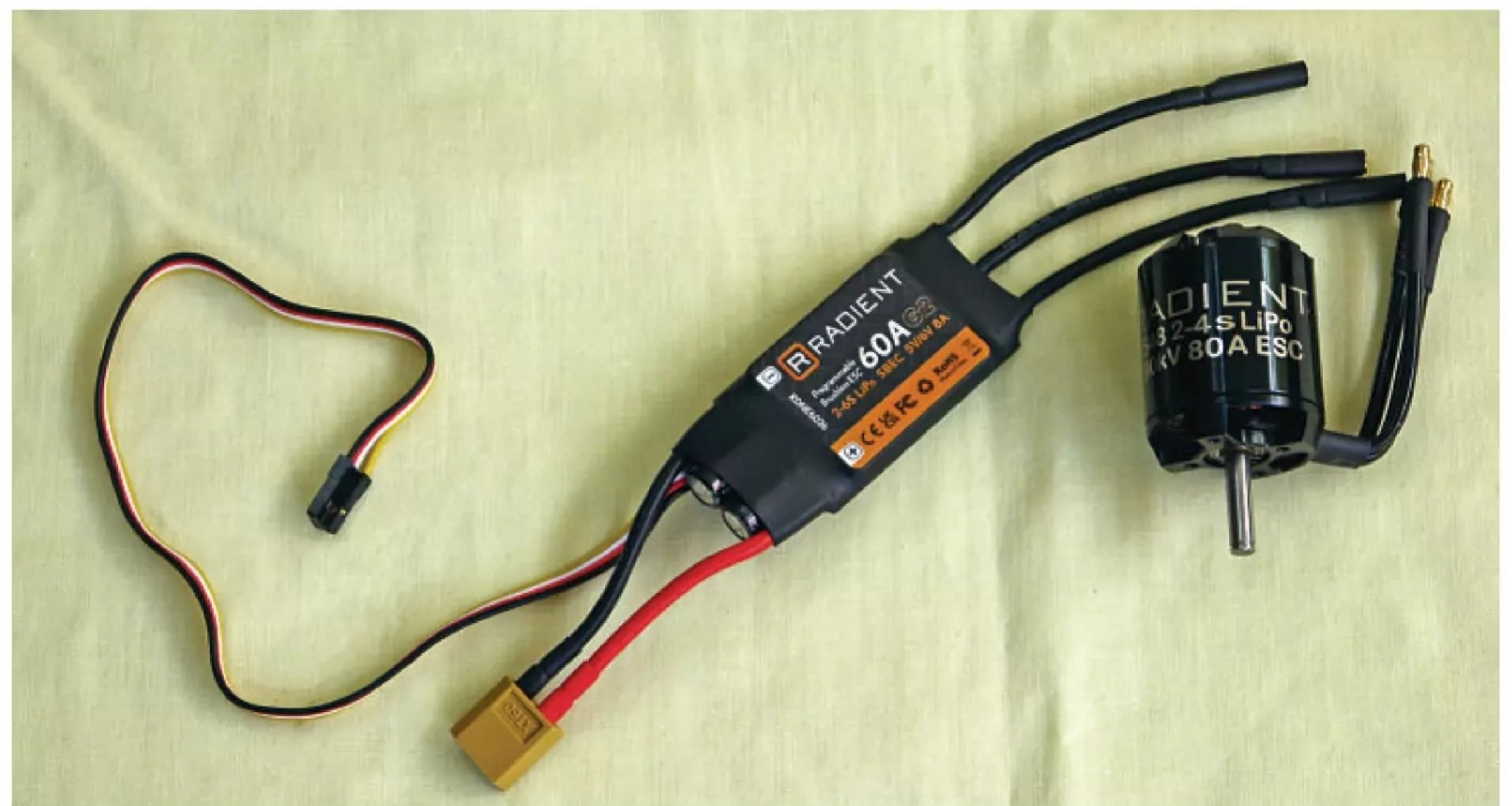
Parts for both IC and electric versions are provided.

ON WITH THE 'BUILD'

The kit comes very well packed with all components in their own packaging and protected against shipping damage. Initial inspection showed that the fuselage and flying surfaces were all very well built and tidily covered. A fuel tank, tubing, engine mount and throttle linkage are provided to complete the model with an IC engine and the firewall is pre-drilled with captive nuts for the supplied engine mount, the engine being installed in an upright position. The manual is for the standard Challenger, plus a supplement for the anniversary edition. While a cowl is provided, the instructions for the standard Challenger don't show this fitted on the IC version, but the fuselage sides do extend alongside the engine; this would make access to the engine very easy. Perkins sensibly recommend that if building the IC version then the whole of the engine and tank bay are well fuel proofed and point to a recommended product for doing this.

As J Perkins had kindly supplied the recommended electric motor and ESC for the model and I had some 4S 3330 mAh packs, this was the chosen route for the review model. The electric conversion kit includes an adjustable spacer box which bolts on the firewall using the IC engine mount holes and is adjustable to suit different motor lengths. For the IC option the manual recommends positioning the engine so the propeller driver is 110 mm from the firewall, but with the supplied motor the maximum that could be achieved was just over 100 mm. Before I started to fabricate an additional spacer, I checked the cowl fitting and found that it wasn't necessary to move the motor any further forward. As per the instructions, I fitted the motor first; this is good practice as the tail surfaces are less likely to get damaged when bolting the motor in place. The cowl slides into place and is secured with four self-tapping screws after checking that there is adequate spinner clearance.

The tailplane is epoxied in place and this required removing some of the covering from the horizontal stabiliser. It's a case of 'measure twice and cut once', taking care not to cut into the underlying wood and weakening



Recommended Radiant 3548 790 kV motor and G2 60A ESC are perfect for the Challenger.

the structure, doing a dry fit to make sure the lower rudder hinge slotted into place before securing with 30-minute epoxy. Apart from the lower rudder hinge all the other surfaces were securely hinged and all control horns pre-fitted, with foam protection to prevent shipping damage.

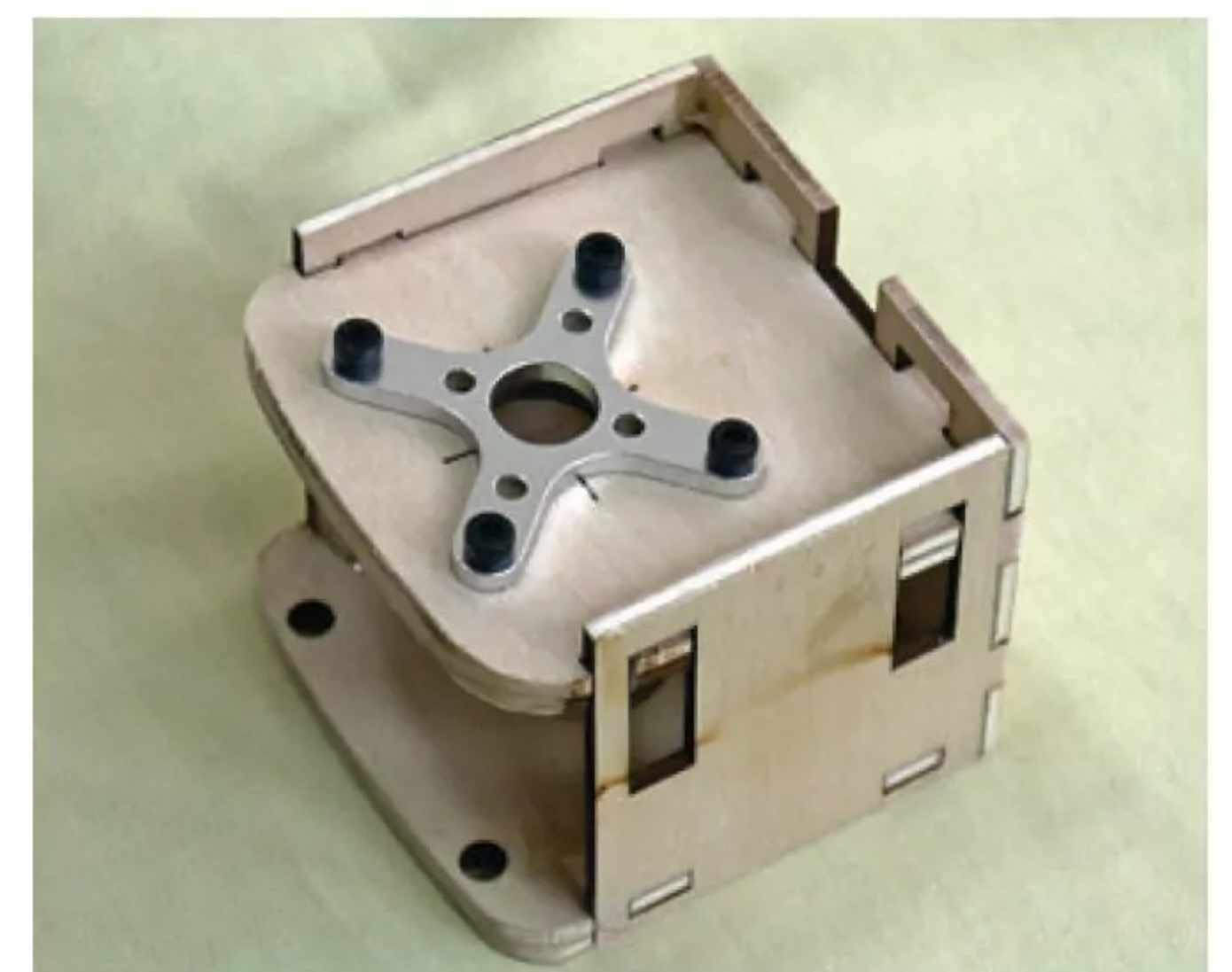
Once the epoxy had set, I installed the servos and control rods. JP provide pre-installed tubes to thread the elevator and rudder control rods into, with Z-bends at the servo end and threaded clevises at the control surface. Futaba S-U400 servos were used and the installed apertures for them needed a couple of minutes with a Perma-Grit file to open them up by less than 0.5 mm.

A quick word on the servos. These are one of the new universal servos from Futaba and as well as being S.BUS 2 compatible they run on up to 8.4V so are suitable for 2S LiPo power. They are very smooth in operation and much more powerful, up to 7.9 kg/cm torque, than the previous 3003 type, which is the 'go to' servo for many modellers.

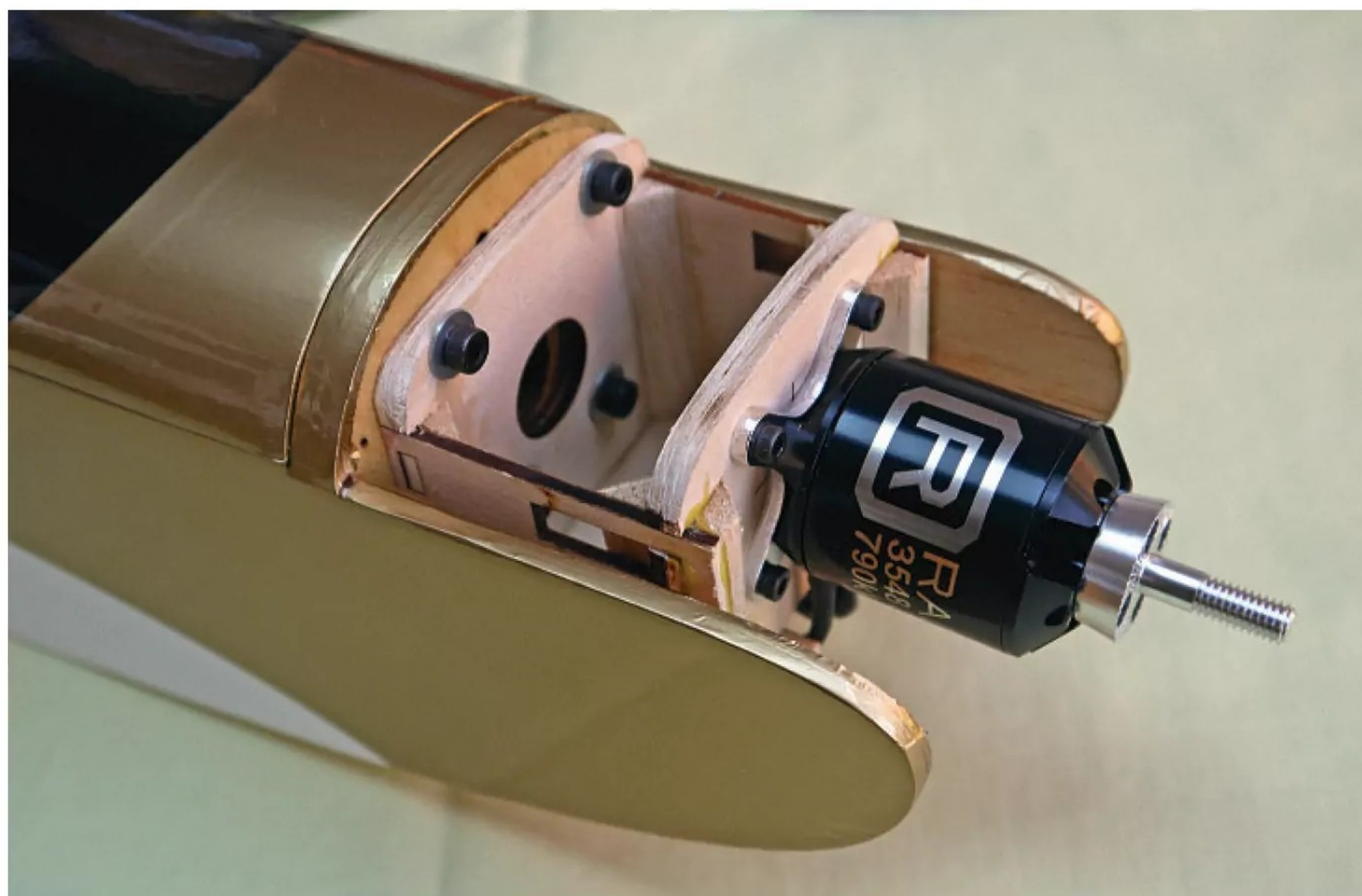
The steerable tailwheel is screwed into place and connected to the rudder by a sliding support. The main undercarriage, which bolts into pre-installed captive nuts, includes two

very nicely painted black and gold wheel spats that finish the undercarriage off nicely. Make sure these are well secured and check on a periodic basis.

Access to the servos, receiver and flight battery are via a canopy which extends from the firewall to just aft of the rudder/elevator servos. A rather jaunty pilot is supplied, along with a pre-trimmed clear canopy. I secured the pilot with a both a screw and adhesive before gluing the canopy into place. I used UHU- 



Electric motor spacer box. The motor's cross mount was used as a template for drilling the mounting bolt holes.



Electric motor spacer box bolts to the firewall using holes provided for the IC engine mount.



Futaba S-U400 servo and accessories. A perfect choice for controlling the JP Challenger.



Aileron control linkages are short and straight.



Spinner clearance needs to be checked before fixing the cowl in position.



A pin drill was used to drill pilot holes for the tail servo mounting screws.



The steerable tailwheel gives good ground handling.

Por, but any suitable canopy glue would suffice.

The main wings are attached to the fuselage with an aluminium wing joiner tube, along with alignment dowels and a couple of wing retaining ply/epoxy plate tabs. First off, the wing servos were fitted and again each mounting needed a couple of minutes with a Perma-Grit file to allow the Futaba S-U400 servos to slide into position. The instructions recommend using some string and a weight to drop the servo leads through, but I didn't find this necessary, the rib cut outs being such that it's easy just to shake the leads down.

When sliding the wings into position I ran into a couple of minor issues. On the port wing the hole in the retaining tab bolt hole didn't fully align with the captive nut in the fuselage so it had to be opened up slightly, and on the starboard wing the glass plate/ply tab was around 0.5 mm thicker than the port wing and wouldn't slide through the slot in the fuselage, which I corrected with some careful sanding. J Perkins were made aware of these issues and have addressed them with the factory.



Classy colour scheme is finished off with JP 50th Anniversary decals

FINAL ASSEMBLY

Final assembly was to fit the ESC, propeller and spinner. Unfortunately, the motor connectors were a different size than those on the ESC. We advised Perkins and they said that they were aware of this and all future Radiant 3548 motors would be fitted with connectors compatible with those on the G2 60A ESC. As I had some connectors that fitted the motor connectors, I just changed out the ones on the ESC.

Once assembled it was time to check the Centre of Gravity. Here the original IC nature of the model is apparent as I had to add 280 grams of lead sheet, secured with captive nuts, underneath the electric motor adapter mount, to bring the CG to just aft of the recommended 60 mm from the leading edge. 280 grams is around the weight difference between the electric motor and the recommended glow motors, so going the IC route would probably not require any additional nose weight. I wasn't concerned about the slightly aft C of G as the instructions do state that this is a starting point and plus or minus 10 mm is fine to suit your flying preference. I did run the model dimensions through an online CG calculator and that gave a range of 65 mm to 90 mm, with 15% to 5% stability, from the leading edge.

Once the control throws were set up as per the manual, I installed an inline watt meter to check the power. This showed, on my batteries, 52 amps at 15.4 volts, some 800 watts, which is more than adequate for a model weighing less than 2.7 kg (6 lbs).

The instructions gave no recommendations for cooling the motor or ESC, and the cowl doesn't have any air inlets, nor the fuselage any outlets. Rather than start modifying the model I decided to do the test flights using telemetry



Challenger has a nice sit on the ground.

to monitor the temperature of the ESC and battery. Test flights took place during the early July heatwave where the air temperature was above 25°C. I'd set a telemetry alarm for 60°C but in flight the ESC just reached 50°C and the battery 35°C, showing that the Radiant ESC is pretty efficient. If you are concerned about heat build-up then it wouldn't be too difficult to put some air inlets in the cowl cheeks and an outlet on the bottom of the fuselage just aft of the servos. But I do note that the J Perkins display team models don't seem to have any additional cooling.

FLIGHT TESTING

After taking the obligatory ground shots, it was time to get airborne. Take off was stress free

and the Challenger tracked straight, climbing away on 70% throttle stick. It was immediately apparent that this is a sweet handling model. A couple of circuits followed to get the feel of the model, then a few low passes for photos before some rolls, loops and stall turns were performed to check out the aerobatic prowess. The Challenger accomplished these with aplomb. It's no F3A model but loops can be as large as you like, rolls are reasonably axial, and stall turns easy with the large rudder. After about eight minutes my LiPo capacity alarm, set for 2200 mAh, went off and it was time to land during which the Challenger came in very smoothly.

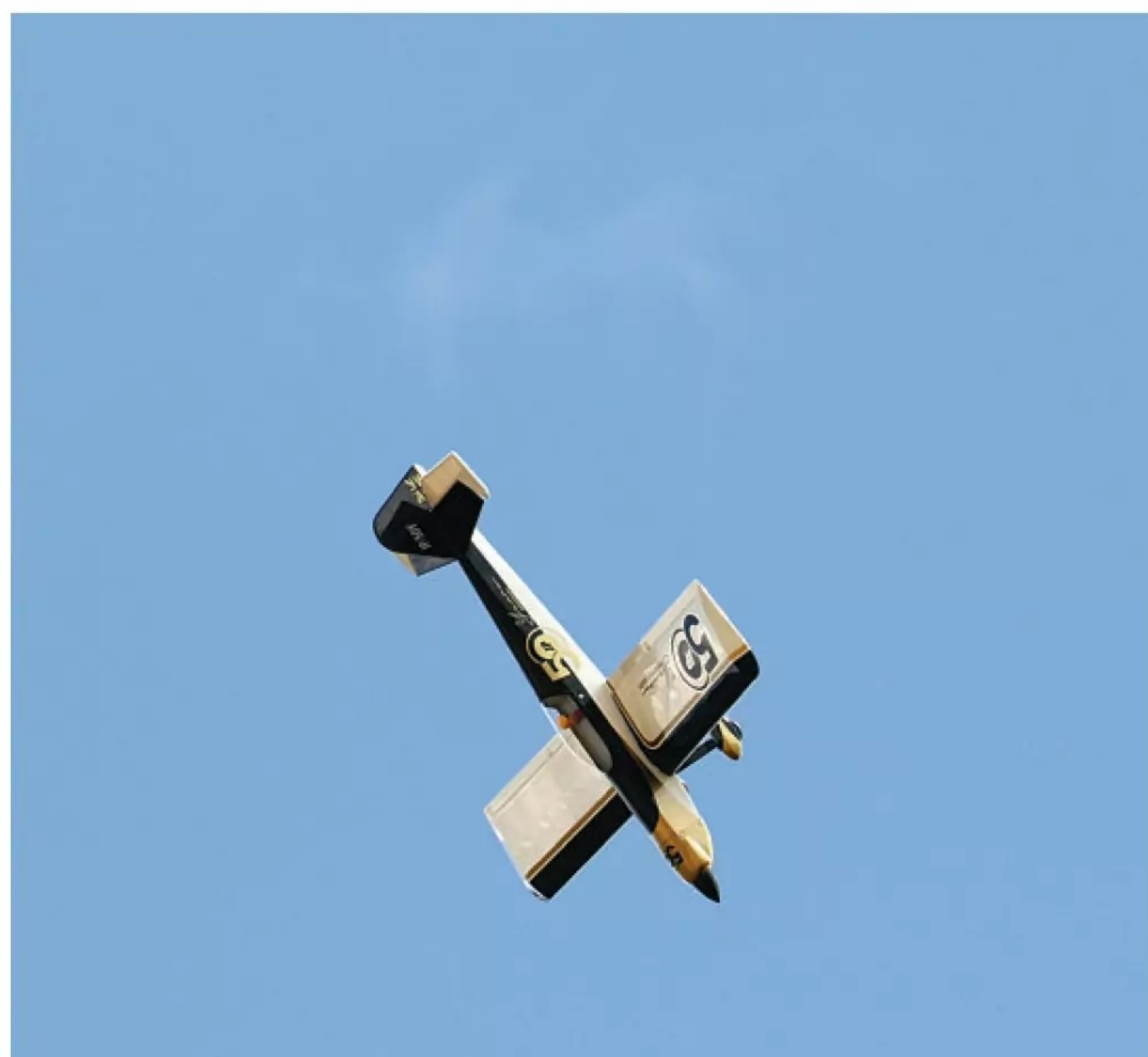
On subsequent flights I checked the stall, which produces a gentle wing drop at very low speed. ✈



Take-offs are effortless. There's plenty of power on tap to climb out.



Simple underwing stripes aid orientation.



Large loops look great. No, that's not IC exhaust smoke, just a passing wispy cloud!



She's easy to bring in for a 3-point landing.



Author with the JP 50th Anniversary Challenger, ready for its maiden flight

A GREAT FOLLOW-ON

As I noted in the introduction, my first low wing model was a Bowman 53" Sportster, initially under powered with a worn-out Enya 29 and then a Webra Speed 40. I learnt a lot with that model and the Challenger is a bang up to date modern equivalent, being better in every way.

It's a great follow-on model for the pilot who has mastered his trainer or an everyday sports model for an experienced pilot. It's also a perfect model to practise and gain the BMFA 'B' schedule with.

The electric power train suggested by J Perkins is well matched and the IC versions should fly equally well. The large, removable canopy gives easy access to the flight battery and all radio gear (and the fuel tank in the IC version), making operation at the field pretty stress free. The removable wings make transportation easy in just about any car.

My Challenger has made a few flights now and the only issue I've had was a wheel spat coming off on our bumpy strip. This has now been secured with some thread lock and will be part of the model's pre-flight checks.

Some models are just right and the JP Challenger falls into this category. The 50th Anniversary Special Edition livery makes it even more attractive. ■

DATAFILE

Model:	JP Challenger 50 Super Sport
	50th Anniversary edition
Model type:	ARTF aerobat
Manufactured by:	Seagull Models
Distributed by:	J Perkins Distribution
	https://www.jperkins.com/products/JPDA1975
RRP:	£239.99
Wingspan:	1340 mm (53 in)
Length:	1160 mm (45.7 in)
All-up weight (kg/lb):	2.5 kg (5.5 lb)
Functions:	Ailerons, Elevator, Rudder, Throttle
IC Power:	40-.52 cu.in 2-stroke, .52-.70 cu.in 4-stroke
Electric Power:	790 kV (Radiant 3548 900 kV rec.)
LiPo:	4S 4000 mAh



Challenger is fitted with a sturdy undercarriage with painted spats. Keep a check on the wheel retaining bolts. One of mine came loose and the spat came off.

Rudder is required to enter a spin and centralising the controls stops it within half a turn. Knife edge flight is possible, inverted needs only slight down elevator and touch & goes can be set up just to skim the grass. My inline telemetry voltage and current sensor showed that the maximum current drawn after flight was typically 35 to 40 amps, much less than the 52 amps recorded at full throttle. So if you have a slightly lower kV motor to hand this could be put into service.

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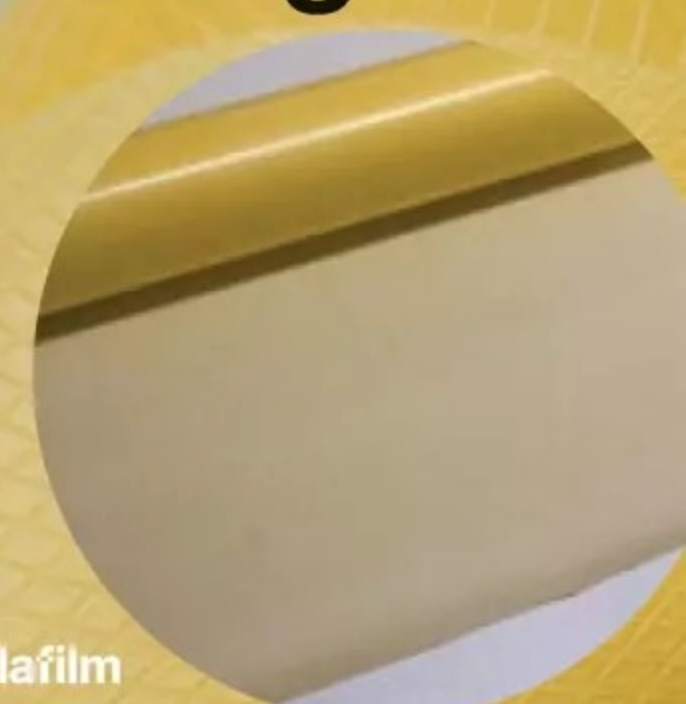
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PONTEFRACT - LUCKY THIRTEEN!

*This time Shaun Garrity files his annual report from
the Ponte Single Channel & Retro Fly-in*

Words: **Shaun Garrity**, Photos: **Shaun Garrity, Beryl Gooch**



Definitely the most unusual model of the event. Built by Colin Baxter the original featured in the 1965/66 Aeromodeller Annual.

It's hard to believe we've hit our thirteenth event and fortunately Helios, Ra, Zeus, Anemoi and all the other meteorological gods smiled kindly on us - the weather was brilliant! However, some modellers (fortunately just a few) are funny onions and we can't seem to win because it was apparently too sunny on Saturday and too windy (a gentle breeze) on the Sunday for them. Anyway, for the masses who are not afflicted with modelling apathy we had a fantastic weekend of retro revelling, banter and fun.

Saturday was most definitely a hat and factor 50 sunscreen day. The first day of the weekend is a general fly-in for all model types and open to any BMFA club. It's the precursor to the Sunday retro event, making the long journey that some have to travel worth it by having two days to play.

Sunday was a little overcast at times but made it easier standing on the flightline. The slight breeze was generally fine but



A classic Mercury Matador. Its airborne manners are great but to many it has looks only its mother could love.

occasionally it swung around, making some take offs and landings a little more interesting.

RETRO DATING

As always, the whole gamut of retro and vintage models arrived. I had an interesting discussion with a fellow modeller regarding the cut-off date for designs suitable for the event. We suggest the late 1970s as a guide

and realised that the universally acclaimed and still 'go to' sportster today, the Wot 4 was designed in 1976. The passage of time is a little frightening, eh? I can remember ordering one when it was first released.

It was wonderful to see an increasing number of retro transmitters, both single channel, reeds and proportional, converted to 2.4 GHz and constructed to a high standard, ✈

One of the model pits awash with aeromodelling magnificence, backed by a large marquee belonging to Retro Modeller, a regular and welcome visitor with a very well stocked mobile model shop.



being flown. Lemonrxeurope (you can find them on eBay) now offer a combined encoder and RF module pack to make this task much easier. Single channel and Reed emulation encoders are available from Phil Green: philg@talk21.com

MODELS NEW & OLD

Flying was continuous throughout the day. Some of the models were truly outstanding examples of what can be achieved by

aeromodellers, being museum quality, concours aircraft traditionally built from balsa and ply, while others were decades old, battle scarred and still being enjoyed by their owners.

A true classic that made an appearance was Mike Birch's original Capricorn, as featured on the cover of Radio Modeller in July 1973. Stuart Mackay managed to buy this a few months ago and, even better, he's got it back in the air where it belongs and so it's not another hangar queen.

What's interesting to see is that several



Wes Denton's well-seasoned Minnow. The Cox needed some persuasion to burst back into life after not been used for many years, but persistence paid off in the end.



Graham Gooch's superbly built Shrimpo put in many great flights over the weekend.



My next plan feature for RCM&E is the Mite from Radio Modeller in the 1970s. A great 37" span sportster updated for e-power and modern gear.



Seagull Models latest Kwik Fly 3 is an easy and relatively inexpensive way to get into the retro aerobatic scene.

ARTF manufacturers are getting on the retro train. Seagull Models, for example, have just released their version of Phil Kraft's Kwik Fly 3. One appeared at the event and if you don't have time to build, what a great way to get into the retro aerobatic scene with minimum effort. Graupner released an ARTF version many years ago, along with another classic, the Caravelle, and both were very popular at the time.

Let's hope Seagull and others start offering more of these excellent old classics.

Wes Denton of SAM 35 ran his ever-popular spot landing competition for rudder and throttle only. I never cease to be amazed by the skill of pilots who can land four paces away from the spot with just rudder only control.

SWEDISH DELIGHTS

As always, Tobe Kallner from Sweden brought many examples of his 3D printed own designed transmitters, servos (all the PCBs are designed by him using a heavily modified nRF system).

His latest MiTo transmitter (a joint project with Mike Kitchen) is outstanding. The stick action feels spot on and the case design feels right. It's a masterclass in 3D printing and all done at home in Sweden; it's a commercial quality product.

Along with the electronics was a carload of traditionally built airframes for his friends. The Grokker was the theme model this year and he had built about five of them in the few weeks prior to the event. If you fancy one have a look on our forum: www.Mode-Zero.uk

For very little money and time you can have a fun model that's mildly aerobatic, a good trainer and very quickly built using traditional



Mark Deans always turns up with a mini marvel. This year it was his 75% Grokker. In the past he's brought a 25% Gyron and R/C versions of the KK Phantom, Veron Bee Bug and a Concorde. The list goes on.



Neil Turnbull and his Junior 60. Neil recently found his passion for retro models, scale having been his thing for many years. The quality of the build and finish must be seen to be believed.

modelling skills. As a bonus, no covering is required. You could even just spray the balsa wood with hairspray or use a water-based floor varnish to keep it from getting grubby.

POWER & SAILPLANES INTERNATIONAL

More good news. As many modellers are now aware, kits from that famous brand of aircraft manufactured by Power & Sailplanes International are being reproduced and their first model, the Secret Weapon V2, an excellent aerobatic slope soarer, has been released, with the Sitar Special and Osprey arriving soon.

Check out their website for more details: www.powerandsailplanesinternational.co.uk

MODEL FLIGHT ACCESSORIES

Another classic British manufacturer that was instrumental in introducing electric flight to the UK, Model Flight Accessories is back. MFA was purchased by the Component Shop (www.componentshop.co.uk) and with their kind permission Angelwing Designs (www.angelwingdesigns.co.uk) will be remanufacturing some of their classic models, such as the Magic Fly (due late Autumn), then the Hummingbird, Britten-Norman Islander twin, Yamamoto (balsa version) and the Piranha model boat. The Yamamoto will also be available at a reduced size as a true trainer to suit the popular 3S 2200 mAh size batteries.

Just to be clear, there are no kits available yet, but check out their website and Facebook page for updates. If you've bought one of



A flock of Grokkers. Cheap, quick to build and a load of fun to fly.

Jonathan Turner's modified take on Ben Buckle's low wing Junior 60, with tricycle undercarriage and design tweaks inspired by Dave Boddo's Mini Super.



I've never seen this model before, but it flew with purpose and would make an excellent trainer.



Remember these classic electric models by MFA. Angelwing Designs will be remanufacturing them very soon.



Paul Jeffries used to fly commercial airliners for a living. A change of pace now in retirement, he's a dedicated button pusher and very adept.

Angelwing Designs models previously you know they won't disappoint. They are superbly cut and great value for money.

For those of you who are unaware, MFA was established back in 1967. Based in Deal,



Andrew Boddington (son of Dave) on the left and **Phil Green** (co-organiser of the event) spent the day chatting, snapping, flying and having a good time.

Kent they provided a wide range of products for modellers and, as mentioned above, were one of the first UK companies to get involved in electric flight, carrying a wide range of brushed motors, gear boxes, pulleys, gears, shafts, motor mounts, etc., along with motors and accessories for the boat modeller.

Another tremendously popular product line were their aircraft and boats kits, with a number of planes designed specifically for electric power. Back then the Hummingbird, to be fair, didn't light any fires in the air with its heavy NiCad payload and direct drive motor, but it flew well considering.

Magicfly featured MFA's Olympus gearbox, which was a belt driven 2.3:1 unit. With a standard Speed 550/600 motor it could easily turn a 10 x 6 to 11 x 6 prop and knocked out a lot of useable draught. In its day the Magicfly was one of the better aerobatic electric models.

Back then every gram of weight saved improved flight performance as the available power from these very heavy electric set ups was pitiful - and that's being kind. Using a gearbox was a way to squeeze out the best performance. ESCs were not required as you either wanted full power or zilch, so a servo operated switch would suffice. Or if you were



Dave Kaye's Gooney Bird just wanted to go skyward and never come down. Unusual looking but awesome performance on the glide.

feeling particularly flush, a relay operated switch. The Olympus drive unit was also sold adapted for model cars and boats.

However, this won't be the case for the new models as Angelwing are tweaking them for modern servos, brushless motors and LiPo packs, so power will definitely not be an issue. Also, because of the reduction in overall weight the flight performance will be significantly improved, so the true ability of these models can be appreciated.

Great models of the past, made even better in the future. And it's good to see modellers are still wanting to build and fly aeroplanes made from trees!

DAVE HARDAKER UPDATE

Last time I did a piece on Dave Hardaker, his models and achievements, but I got something



One of **Paul Jeffries** many converted 2.4 g single channel transmitters. I believe the number is in the high 40s now and he flies them all. Apparently, he's decided to stop at 50. 'That's enough!', he told me with a smile.



Stuart Mackay now owns **Mike Birch's** original Capricorn as featured on the cover of *Radio Modeller*, July 1973.



Tobe Kallner's latest 3D masterpiece. Totally home designed, including stick units, servos, PCBs etc and built in his shed.



OHM 8 was designed by Vic Smeed in 1964. Extremely robust, it was intended for rudder, elevator and throttle. The original, I believe, used a system by REP called the Twin Triple. It employed three escapements to achieve it and multiple push buttons on the transmitter. Very odd!

wrong. Fortunately, I received an email from Iris Stevens to set things straight:

"Phil was scanning through the July 2025 issue of RCM&E and reading the Ramblings section, and especially the part about Dave Hardaker. It shows the RCM&E front cover for June 1979, with Dave being one of the members of that year's GB team. In fact, Dave didn't go to that competition, but my husband, Phil Stevens, did."

Phil spent the day with Ken Binks (designer of the excellent Suzi Que) at the recent Weston Park show swapping memories and generally catching up. They flew in three GB Teams at World Champs together. We contacted Ken yesterday about this front cover and neither can remember why Dave didn't go to South Africa.

Both Phil and Ken talk about Dave as being a great mentor to the flyers of the time and someone they tried to emulate.

This is just for info, but I thought it may be of interest to you."

It certainly is Iris. Thanks for the update and if anybody knows why Dave couldn't make it, please email me.

And another Dave related email from Bob Holroyd:

"So sorry to hear of Dave's passing in your latest column. I flew slope soarers on Baildon Moor in the early 70s and mid 80s and was one of the recipients of his Kwiksilver plan. Up to then I'd been flying Impalas and the Kwiksilver was a revelation as my first aileron model. I also remember Andy Brewster and his beautifully finished gliders."

Dave was a really great guy and, on many occasions, I'd be flying on the West Slope (with the dreaded wires) and a voice would say in my ear, 'Give us a go!' I'd just give him the transmitter and let him get on with it.

The character sat down in the photo behind Dave is Eric Rhodes. He once managed to strap a joke shop laughing box to his Kwiksilver fuselage and just fly up and down the slope until the clockwork stopped."

Well, that's it for this time. Keep sending in your retro pictures and missives to aeromodeller@gmail.com and please keep enjoying this great hobby. ■



Graham Gooch won the 'Champion of Champions' Cup this year. He never stopped flying throughout the weekend with a range of models. Well-deserved and I'm glad I don't have to polish it.

Happy wife, happy life! Neil Turnbull built this pink Popsie for his good lady.



This 72" American gull-wing design dates back to the 1940s and has been available in a range of wingspans over the years.



C-17 GLOBEMASTER

Kevin Crozier assembles XFly-Model's 1.2 metre span, quad EDF powered model of the mighty US transport aircraft

Words: Kevin Crozier
photos: Kevin Crozier, Barry Atkinson

The C-17 Globemaster is a large military transport aircraft developed for the United States Air Force (USAF). It is also operated by other air forces, including the RAF who use it for the rapid delivery of troops and cargo to bases across the world. Globemasters can carry large and complex items of equipment, including Chinook helicopters and military vehicles.

Such an aircraft may seem a strange choice for a model company to take the time and expense to replicate, but XFly apparently did very well with their Twinliner airliner model, which was a taste of things to come from this forward-thinking manufacturer. We've also seen models of other large military transport planes before, such as the Lockheed Hercules, so perhaps there's a bigger audience for such machines than is immediately obvious. Indeed, if you live in an area where such aircraft regularly fly overhead, as I do, then the chance to fly your very own 'heavy lifter' is very welcome. Fingers crossed XFly do well with this



Although a relatively small model XFly's C-17 is still an imposing sight when flying overhead, just like the real thing.



The chunky one-piece fuselage is an impressive piece of moulded foam.



Hardware and instruction manual, all neatly presented in a zip lock plastic bag.



Twin nose wheels are linked to the rudder servo for steering.



There is a bogie of two pairs of wheels on each side.



A 20-amp ESC snuggles neatly inside each of the four EDF pylons.



Close ups of a wing root and fuselage wing mount showing the XT60 power connectors and the green six-pin servo connectors. The connector block in each fuselage side needs pulling out slightly and pushing firmly in place at the wing root before pushing the wing into position.

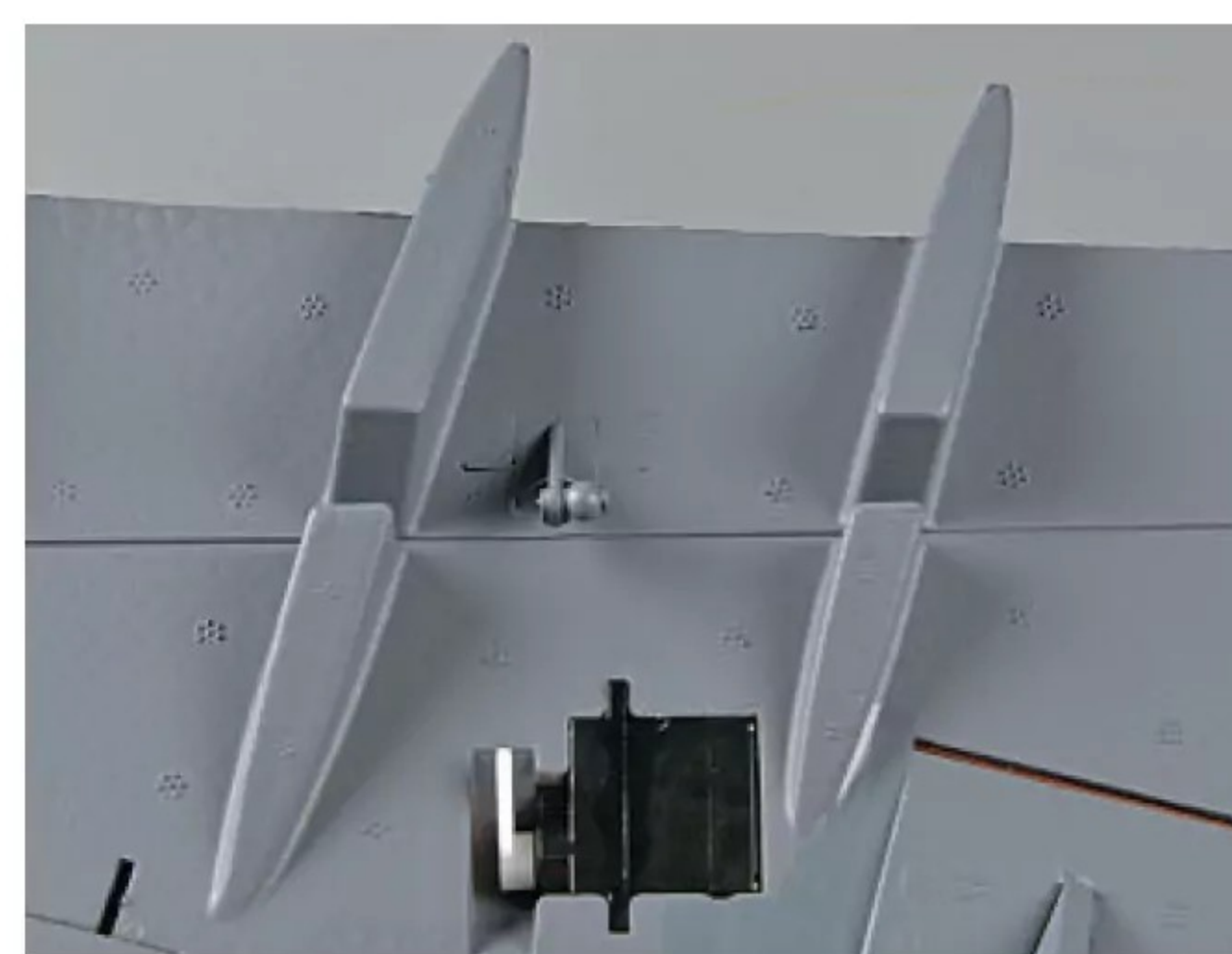
one, so we get the chance to fly an RAF Atlas (A400M) next!

UNBOXING

You're probably bored with me waxing lyrical about XFly-Model's mastery of moulded

packaging from previous reviews, so I won't dwell on that subject again. Suffice to say that you are unlikely to unbox a C-17 and discover that something has been damaged in transit.

Once again it is a kit of very few parts, although one can't fail to be impressed by the



Flap linkages are wisely left to the builder to connect. On this side the ball link was fitted facing the wrong way but was easily reversed.

"It's best to start with the flap servos having low movements and gradually increase their throws until you achieve the rates required"

two wing panels, each sporting a pair of 40 mm EDF power units, and also the chunky one-piece fuselage with its tall fin and pre-fitted undercarriage. There are a total of ten wheels fitted to this model, a pair at the front attached to the steerable nose leg and eight in the main landing gear bays, with a pair of four-wheel bogies on each side.

Each 12 blade 40 mm fan unit replicates the type's Pratt & Whitney F117-PW-100 turbofans in convincing style. Well, the outer engine casings and mounting pylons at least, if not quite being in the same league thrust wise! A 20-amp ESC is slotted sideways into the underside of each fan mounting pylon.

The one-piece T-mounted tailplane, two winglets and a selection of socket head countersunk screws complete the kit. As usual XFly also supply a well-illustrated manual, Allen keys to match the supplied fixing screws, a strip of wide hook & loop tape for attaching a 4S LiPo and two short pushrods to actuate the flaps.

The flaps are not hooked up at the factory, unlike the ailerons and rudder, as default flap settings and directions on transmitters can vary and it's easy to find the flap servos being overdriven if not turned well down beforehand. It's best to start with the flap servos having very low movements and gradually increase their throws until you achieve the rates required. There's a note to this effect prominently displayed on the edge of the inner box so it's wise to heed the warning it gives.

ASSEMBLY

Construction of the C-17 starts by attaching the wing panels. Each has a square carbon joiner fitted towards the rear of its wing root.



Upper and lower views of one wing panel. The P&W turbofan casings are neatly replicated.



The elevator servo connector is mounted inside the tail mount on top of the fin.



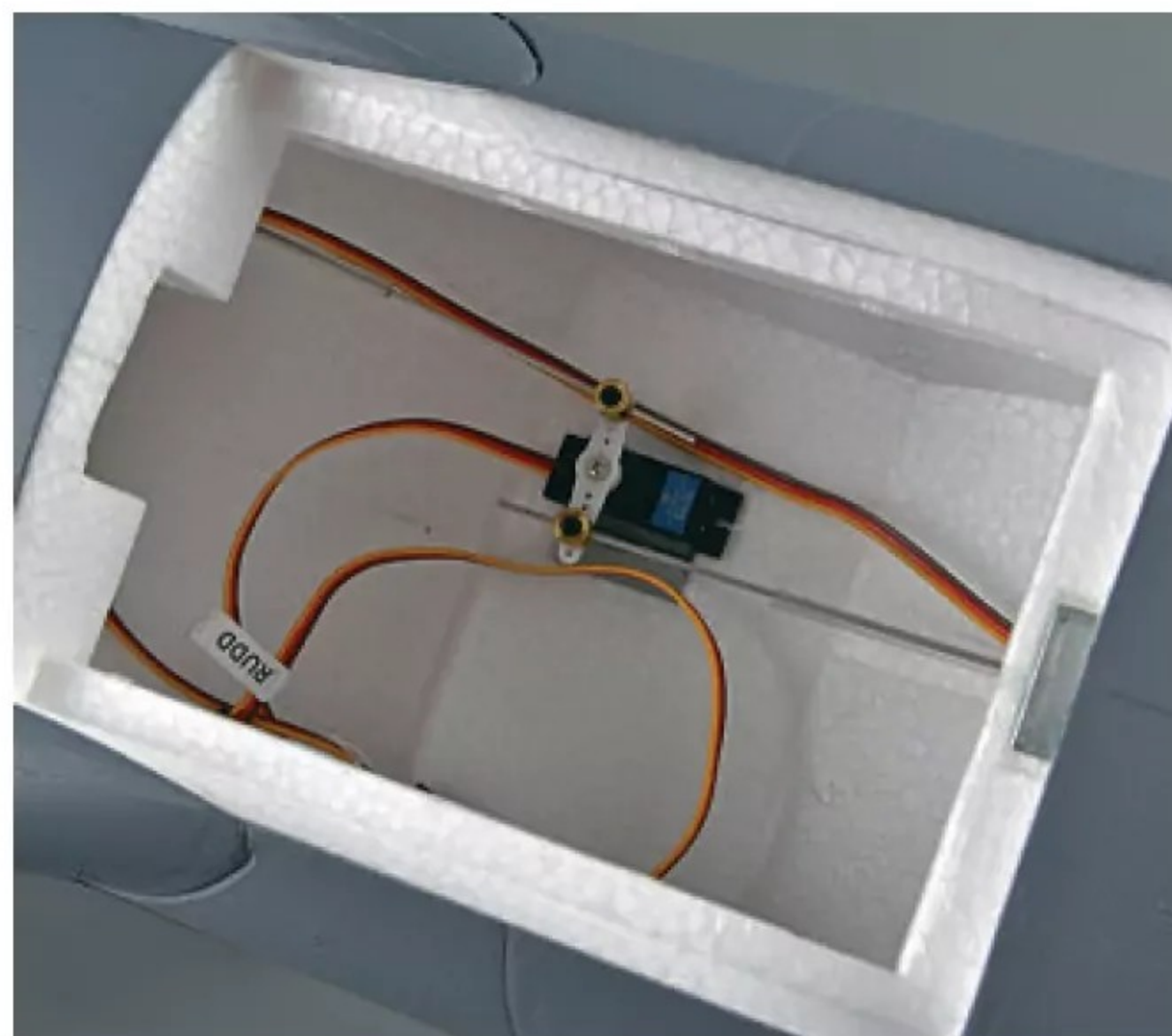
Elevators are controlled by a pair of 9 g servos.



There's oodles of space in the battery bay for a large 4S LiPo, with a receiver mounted at the rear. Servo leads are all neatly labelled according to their functions.

These fit into corresponding boxes on either side of the fuselage wing mounts. The mounts also have two lugs protruding on each side that slot into matching apertures in each wing root. A 3 x 12 mm countersunk hex head screw is screwed into each lug to fix the wings firmly in place.

Situated between the two lugs is a yellow XT60 connector to hook the two motors on each side up to the wiring loom installed inside the fuselage. Next to this is a green Multiplex style six-pin connector which connects the aileron and flap servos to pre-installed extension leads inside the fuselage.



A removable rear 'cargo door' allows access to the rudder/nosewheel linkages. This has started to show signs of gravel rash during take-off so will be covered in wide transparent tape to protect the paint.

At first glance it looks like these connector blocks will automatically push together when each wing panel is slid into place. But while this did occur on one side, it didn't mate up fully on the other. A quick glance at the instructions showed that the connector blocks are meant to be pulled gently out of their housings a short way (they come out as a pair) and then be pushed firmly into place on the matching connectors at each wing root. When the wing panels are slid back into place the connector blocks will push back into each side of the fuselage, allowing the wings to butt up close to the fuselage.



Gluing a winglet in place using a lolly stick to spread the pressure applied by the clothes pegs.

TALL TAIL

The tailplane is mounted on top of the tall fin. The elevators are operated by individual 9 g servos which are hooked up internally with a short Y-lead. This lead needs connecting to the matching extension lead located inside the top of the fin. The tailplane can then be dropped into its housing inside the fin and secured with two countersunk screws.

A T-tail can be prone to a bit of misalignment with the wings at the best of times, even with a hand-built model. But with a foam ARTF there's no leeway and you have to keep your fingers crossed that all is square. Unfortunately, there was a small bit of tailplane tilt with the review model, slightly to the right, but it's ever so small and was easily trimmed out.

WINGLETS

As with many modern large aircraft, be they airliners or transport jets, the C-17 sports a large winglet on each wing tip. XFly usually use their nifty hex head screws to attach things like this but, in this case, they simply recommend gluing them on. I guess the reason is that if a wingtip hits the ground, then it should just shear off and be easy to reattach.

SETTING UP

This model requires a 4S LiPo to power the four EDF units and quite a wide range of sizes can be accommodated, from 2600 to 4000 mAh capacities. Even my largest 4S pack, at 4200 mAh, sits comfortably in the large battery bay located between the main wheels. A hook & loop strap helps keep the pack in place but it's wise to use some of the wide Velcro style tape supplied between the LiPo and the mounting tray to double up and keep the battery well secured.

In our instruction manual the recommended CG has been stickered over and a new position of 145 mm indicated from the point where the leading edge of the wing meets the fuselage. With such a large battery bay within which to move the LiPo fore or aft this was easily achieved.



Taxying on tarmac is great fun thanks to the steerable nose wheels.



Globemaster shows off its distinctive anhedral on the main wings.

After dialling in control movements, and high and low rates as per the manual, the C-17 was ready for its maiden flight.

MAIDEN MISSION

I selected high rates for the first flight as the wind was strong and gusting, and I wanted immediate recourse to full movements if required. As usual this summer we had been waiting weeks for suitable calm conditions to coincide with a little bit of sun and some free time for myself and my photographer and flying buddy, Baz. An extra pressure was

the desire to fly the C-17 from tarmac for the maiden flights, due to the small wheels fitted to this model. Suffice to say, none of that came together as planned so I gave up and practically forced Baz to turn up with his camera at a not so local club whose members fly from an ex-RAF airfield with a well-weeded tarmac area at the top half of a disused runway.

With the strong wing catching the tall fin, causing it to weathercock, I picked the model up and placed her into wind for a cross runway take off. With smooth application of power, the Globemaster required little of the

available tarmac and was soon airborne at around half throttle. In fact, this power setting proved just about right for scale looking passes and I quickly settled her down in the bouncy conditions for Baz's camera. Very little trim was required, just a couple of clicks of aileron to hold her straight and level.

One characteristic did rear its ugly head and that was a touch of Dutch Roll, no doubt exaggerated by the gusting air surrounding the model. This is when the tail wags from side to side and an aircraft oscillates in roll at the same time. Whilst the roll component of this was not bad, probably caused in large part by the wind conditions, she did wag her tail from time to time. The full-size C-17 is not known to do this, but all the same it is fitted with yaw dampers (gyros) on the rudder to help smooth things out for the pilots. The design also has some features, like a high mounted, swept wing which can exacerbate this issue, so without any electronic aids to help fly the model (which the real thing has in abundance) perhaps it's understandable if it complains a bit if flown in tricky conditions.

Other than the occasional wayward yaw movement the Globemaster was easy to fly. Those four 40 mm EDFs provide more than enough power and as I mentioned before I spent most of my flights that day cruising her around at half throttle. In this configuration she really looks the part, cruising majestically overhead, just like the RAF transport aircraft which regularly pass over my house.

With the throttle firewalled, combined with more than adequate control throws at high rates, I should imagine that the C-17 would be more than capable of performing some simple aerobatics – starting suitably high, just in case. But the jury is still out on whether anyone should do this as they will look plain ✈️



Taking off with plenty of power to spare.



On high rates the Globemaster proved highly manoeuvrable.



Cruising overhead the C-17 looks just like the real thing.

daft when flown with a chunky cargo plane! However, I'll have to try aeros on another day as the evening was coming to a close and both Baz and I needed to head for home.

One thing I did check was the application of half flap, which resulted a slight nose up attitude, but this was easily kept in check with the elevator. Coming in over the boundary fence, I kept some respectable height between the model and the top of the fence posts. Some power was also maintained to punch through the wind, but the C-17 took it all in her stride and my landings with her on such a windy day were very pleasing.

FINE TUNING

To sum up, the XFly-Model C-17 Globemaster is a fine-looking replica of the mammoth cargo plane. This one's a bit of a tiddler though in comparison, at just 1.2 metres span. Equipped with four 40 mm EDF fans she's no slouch and there's plenty of room in the cargo bay to maximise the battery size for good duration. I flew her with 4S 4200 and 3300 mAh packs and got an easy six minutes from each, with just under half capacity left 'in the tank' from the smaller pack.

When flown from a smooth surface the steerable nosewheel adds a bit of extra fun and it was enjoyable to trundle her around the apron on a tickle of throttle.

It's a shame that we had to test fly her in such difficult conditions. With this in mind, I am looking forward to putting the Globemaster through her paces on a calmer day. There are some models, especially scale types, where fitting a gyro would definitely help, so I have requested an XFly gyro from XFly's UK distributor, CML, to help smooth things out should the tail wagging persist. Finally, I also need to try flying her from grass as not many modellers here in the UK will have access to



Settling in for a half flap landing.



We've unfinished business with this good looking model, needing to try taking off from grass and fitting a gyro to help stabilise the tail.

a tarmac runway. Now I have her trimmed I am happy that I should be able to fend off any premature lurches into the air should those small wheels hit any bumps. Failing that she can be hand launched; there's more than enough power to do that, although it will need two hands and a firm push to see her safely away.

Stay tuned and I will report back with more flying fun from the XFly-Model C-17 Globemaster in one of my future 'Read The Flippin' Manual' articles. ■

DATAFILE

Model	Globemaster C-17
Model type:	Quad EDF jet
Manufacturer:	XFly-Model
Distributor:	CML Distribution
https://www.cmldistribution.co.uk	
RRP:	£309.99
Length:	1150 mm (45.3")
Wingspan:	1200 mm (47.2")
Flying weight:	1560 g
Motors:	1413-KV5000 x 4
ESCs:	20A x 4
EDF size:	40 mm 12-blade x 4
Servos:	9 g x 7
Functions (servos):	Ailerons (2), Elevator (2), Flaps (2), Rudder & Nosewheel (1), Throttle (ESCs)
LiPo:	4S 2600 - 4000 mAh (review model Voltz 4S 4200 mAh)

Top letter

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



VENN DIAGRAMS

Do you remember Venn diagrams at school? If there was a group titled 'flew models as a kid' and another group 'want to return to the hobby many years later', I'd be right there in the middle!

In the early 1970s I'd catch a bus into Nottingham and visit GeeDee Models, first of all buying Airfix kits, then came a KeilKraft 'Crusader' and eventually a KeilKraft control line Hurricane with a glow plug engine. Dad and I rarely managed more than a few circuits and when it crashed it would break the fuel tank, which doubled up as an engine mount. More bus trips to town!

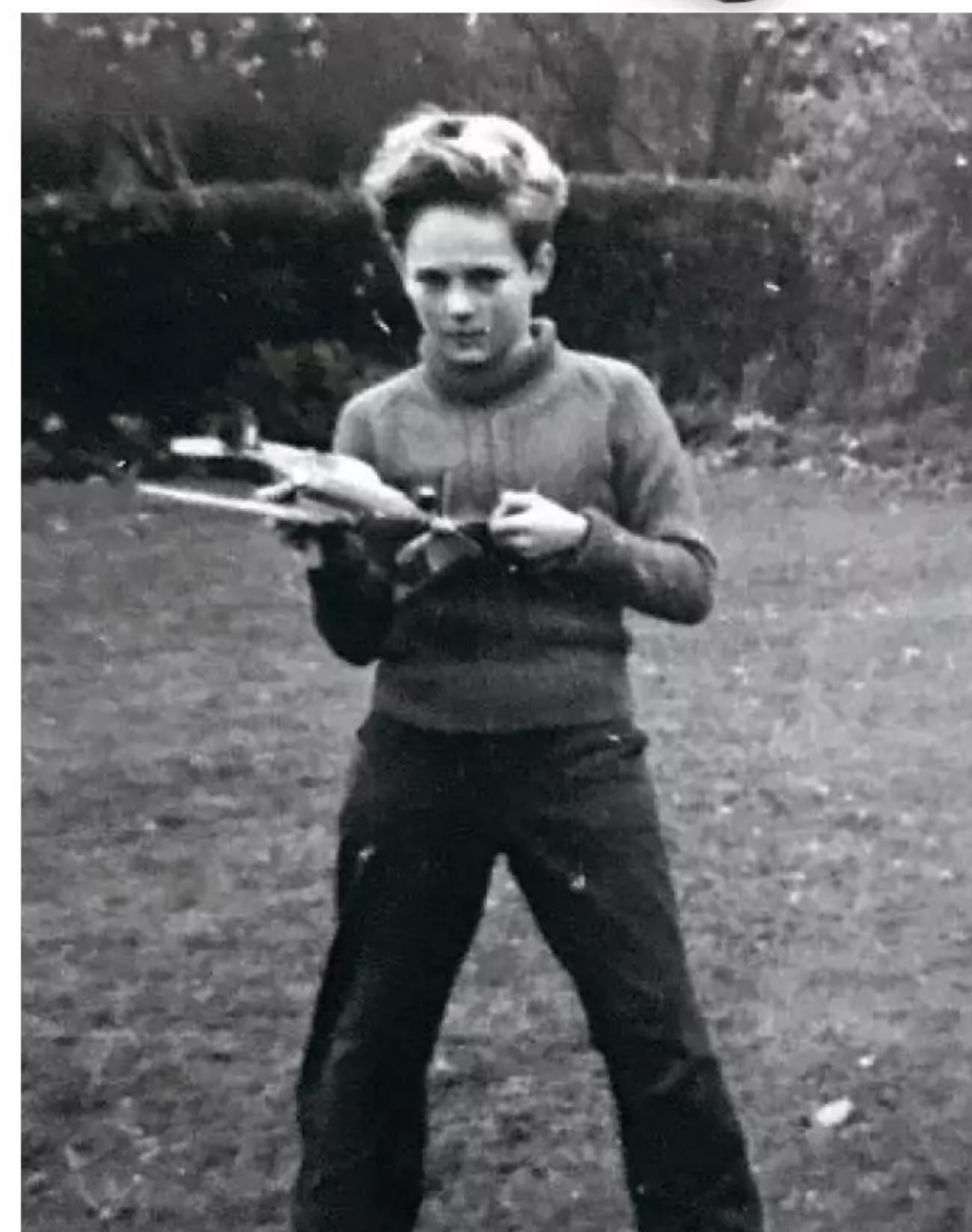
Scroll through 50 years and the itch still needed scratching! Like many I returned to the hobby and with the wisdom of age avoided buying some hot jet, instead buying a second-hand Piper Cub from a club member. Having learnt to fly on a Jet Provost in the RAF before transferring to helicopters, how hard could it be? Answer: VERY!

I couldn't believe how much harder it was to fly from outside the cockpit - muscle memory and all that. Thanks to some kind club members I got there in the end (actually, you never 'get there' as you never stop learning) but I progressed to a



Timber and a Conscendo, and now I have an E-flite Commander (pictured) in the fold as well. I did my 'A' Certificate a month ago and, believe me, it was as nerve-wracking as my first jet solo!

I've had a few crashes but as in the real world there are old pilots and bold pilots, but



few old bold pilots, so I've learnt to proceed with caution!

Anyway, that's a bit from me. Loving the magazine and all the great people I've met along the way.

Stephen Godber



ANOTHER STEAM PIGEON

I've just received the July edition of RCME and in Pilots' Pictorial is a photo of a lovely Supermarine Walrus submitted by Keith Whitfield.

The Walrus is a 'Marmite' aircraft, but I like

it and built a 40-inch span one from a plan during Covid. I couldn't make much of it; it was terrible to get it in the air and difficult to fly straight and level. I attach a photo of one of its rare landings on our flying field.

I am interested to know if Keith's Walrus has flown and how easy it is to control in the air.

James Wilson

IN THE SWIM

I was recently doing the maiden flight of my F-14 Tomcat down at my Hastings Club site. The aircraft took off completely normally but just after lift-off and gear retraction all power was lost. Luckily the elevators were in the up position, so the aircraft drifted down just out of sight. As you can see it

ended up floating in one piece in a drainage channel and I had to swim to rescue it. On inspection it was totally dry inside. After a very careful look at home, it appears both ESCs had failed.

Gregory J Cassar



3D UPDATES

Thank you for publishing my article 'Experiments in 3D' in the August 2025 issue.

The Bobber eventually did fly but was never a success. It was too heavy, didn't have enough power, was difficult to improve and had undercarriage issues. We still have the P-47 but that needs a very careful hand launch.

As an aside, fellow club members in the Ipswich Radio Control Model Club I fly with have had good success with modern materials and 3D printing. The planes, however, don't like the heat and tend to be easily damaged if the grass is not smooth and lush, or they get ground away on hard, abrasive tarmac.

I have just finished off a couple of long-term models and I am now halfway through a very nice 1/4 scale Hangar 9 Piper Super Cub for son, Jack. However, I have just flown, on a beautiful calm evening, my diesel Cardinal. This has prompted me to put my DC Spitfire diesel, which started first flick after an overhaul, in a Frog Tutor kit that I have just purchased from The Vintage Model Company. I have never seen such a well-presented kit in such a strong cardboard box!

David Jowers

RC FLYING BOOTCAMP

My friend and I have been avid builders and flyers (although not so much flying of late, and especially since having kids). Where have we heard that before? And this is the essence – our kids. To keep the joys of flying alive and to pass it on, now that the children are old enough.

Our main problem has been finding a suitable club, the nearest being in a most fortunate position of being heavily oversubscribed. Another we tried, that was vaguely within reach, seemed like it was fading and had no-one on hand to take the kids up and get their wings! All that remained was to sneak onto a local farmer's field to fly, pray and hope for the best. Not ideal.

Thus, it is with great enthusiasm that I write to you about the RC Flying Bootcamp. The volunteers and folk at RC Flying Bootcamp have their hearts in the right place and a desire to promote the hobby. To keep it alive and enthuse young and new blood. We booked a session for our children recently, with smiles all around.

The difference between the virtual world (crash as much as you like on a simulator), which the youth of today are so drawn to, and the reality of light touches on the stick, and composure and confidence in a sticky



stall, are what make the budding R/C flyer. And this is what was delivered. I cannot praise the idea, philosophy and enthusiasm of the concept enough, particularly in light of our most unfortunate situation of being 'club-less' and having to go it alone to get decent airtime for our kids.

My wee lad, pictured with his Bootcamp instructor, George Napper, is now asking for his own foamie trainer for Christmas, something he has never had on his radar before. As such, I had better book another session at the RC Flying Bootcamp!

Rory Reid



Two years in the making, Kevin Wesley's 1/3-scale Sopwith Camel is a masterclass in scale modelling.

SOPWITH CAMEL

Sometimes a scale model comes along that stops you in your tracks and, as **David Ashby** discovered, Kevin Wesley's fabulous WW1 fighter is one of them

Word & Photos: **David Ashby**

Apart from that no-nonsense appearance several things have always struck me as extraordinary when it comes to Sopwith's Camel. First, the fact that the rotary Gnome engine operated on a total oil loss system, depositing about 12 pints of spent lubricant an hour on anything behind it, mainly the pilot. Proof that those silk scarves modellers like to see fluttering in the slipstream were anything but decoration for those who flew the full-size machine - pilots had to clean their goggles with something. Then there's the throttle which to all intents and purposes was an on/off switch (sample a few Camel start up videos and you'll see what I mean) and not forgetting the impressively lethal torque effect those spinning cylinders had on the airframe. The more you read about the type, the more you appreciate the skill and bravery of anyone who flew it, let alone fought with it.



No detail has been spared.

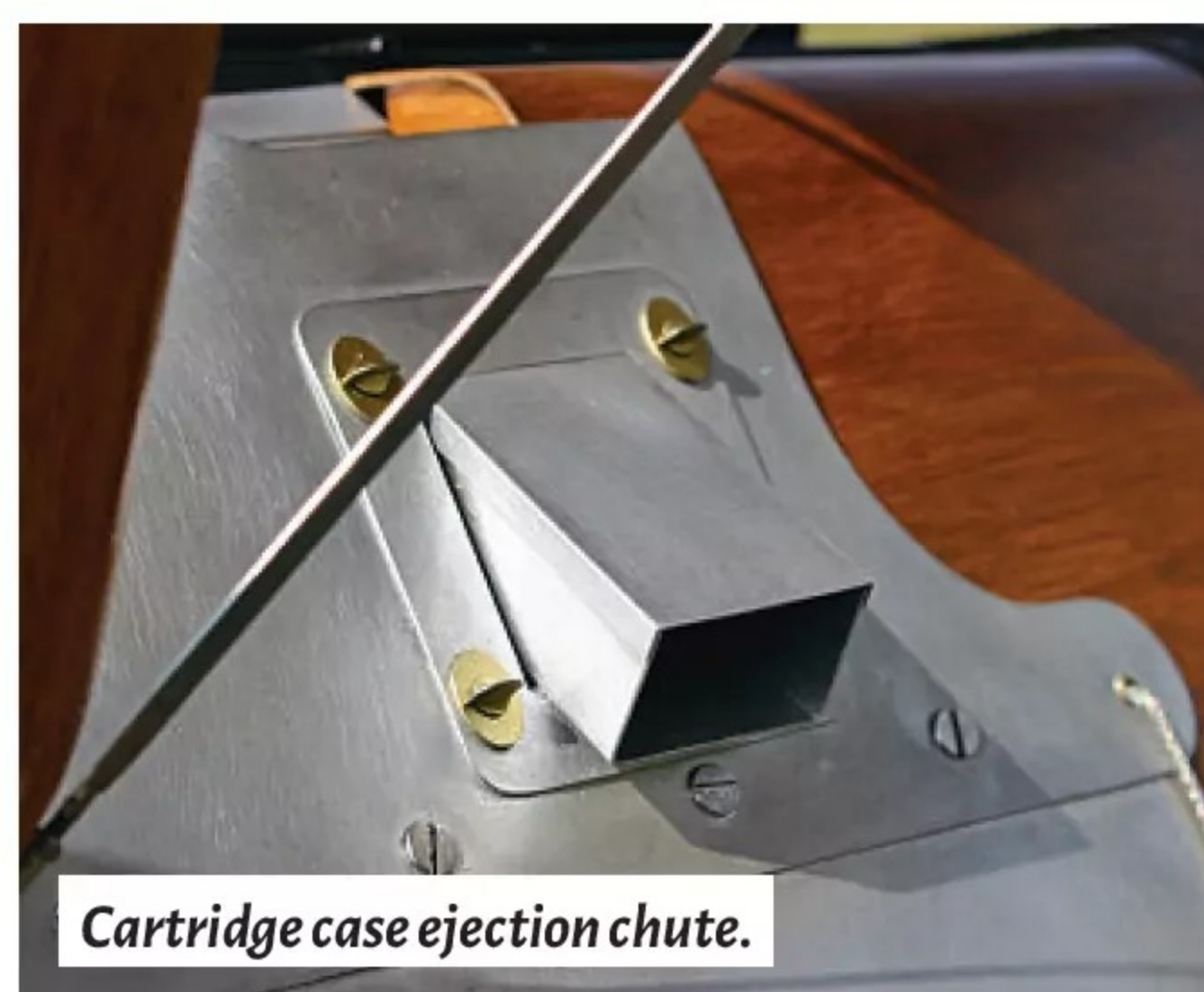
THE MODELLER

Hailing from East Kent and a member of the Thanet MFC for 30 years on and off, Kevin has been building and flying since the age of 9. He took an extended journey through the free flight and control line genres before buying his first set of R/C gear at the grand old age of 27. Always preferring scale models, he's built



The metalwork is superbly done throughout.

several from kits and plans over the years. One, a 1/3-scale Neuport 24 featured on the cover of RCM&E in 1990, then there was a 1/3-scale DH2 of his own design, which he since regrets selling before flying it, a President Stampe and, recently, a Balsa USA 1/3-scale Boeing Stearman, not forgetting hundreds of sport scale models in between.



Cartridge case ejection chute.



All marking were added by hand, including this drunken Camel logo.



Needless to say, much of what's inside is placed as far forward as possible.

"Always preferring scale models, he's built several from kits and plans over the years"

THE MODEL

So why the Camel? Aside from its pugnacious looks and the obvious challenge, Sopwith's Pup replacement was chosen mainly for the amount of one-off metal parts that would have to be fabricated to make the model a true museum-scale interpretation of the real thing. As Kevin says, "I think a scale model is like a voyage of discovery. The more you look at one, the more you discover."

The Mick Reeves 1/3-scale plans were the starting point of a project that would take two years to complete. As you look around it's important to remember that Kevin has never owned a bandsaw, lathe or CNC cutter so, quite literally, everything was made using a junior hacksaw and handheld drill and files.

CONSTRUCTION

Balsa and lite-ply were used with spruce longerons. The pilot, fuel tank, engine and guns all sat within the first seven feet of the full-size aircraft, so everything had to be mounted as far forward as possible in the model. NiMH batteries are on a strong shelf over the engine, with room to mount extra weight if needs be. A receiver and servos for elevator and rudder are situated on a ply plate under the cockpit floor and accessible via a removable cover under the fuselage. The wheels are modified Mick Reeves items, with plastic covers and Kevin's own lite-ply backs. He up-scaled them with his own Solartex edges and PVA glue stitches, plus spokes and a small valve.



Sprayed 'Guild Materials' paint no. PC10 provided the main colour, sealed with a semi-matt coat of polyurethane varnish.

COVERING & STITCHING

Solartex covering was used throughout. "I begged, borrowed and paid a premium for every last millimetre of the stuff. It's so sad that it's just not available anymore." The wing rib stitching is purely cosmetic and made up of button thread cyano'd across the chord of the wing with PVA 'stitches' across the thread and the usual torn Solartex rib tapes ironed over the top. Which is easy to say before you realise that each wing has at least a thousand 'stitches'. Kevin covered the wing underside first, running cyano down each individual rib to secure the covering to the airframe.

The fuselage stitching was completed with Mick Reeves eyelets hammered through small holes in a folded Solartex hem. It's functional too, so undoing it provides access to the fuselage woodwork.

PAINT & FINISH

The scheme is based on the aircraft flown by Captain Henry Winslow Woollett, who was credited with 35 victories, including 11 balloons, in WW1. The brown/green main colour is Guild PC10 aerosol spray paint. Unfortunately, this dries matt so a semi-matt final coat of Plastikote clear polyurethane varnish sealed the colour and, in Kevin's opinion, just looks right.

All the ply and woodwork was stained with Antique pine Ronseal, except the fuselage ply which is a mixture of the pine and teak stain.

Markings, including the drunken camel badge, were hand drawn and painted using a mixture of Humbrol enamels and acrylic paints. A little weathering was added using an airbrush.



No Camel would be complete without a whicker seat and Kevin's uses a ply base with BBQ skewers as uprights. The woven part is made using string that, once varnished and airbrushed, is solid as a rock and indistinguishable from the real thing.

GUNS

Mick Reeves kits provided the starting point, although Kevin thought they left a little to be desired, being too flexible and fragile. So, he wrapped the moulded water jackets in the kits around a plastic overflow pipe, then constructed his own breeches out of a ply and plasticard mix. PVA screw and rivet detail added the finishing touch.



The twin Vickers guns started with two lengths of waste water pipe.

The gunsight is stainless steel formed into a circle, silver soldered to another circle, with the crosshairs soldered through tiny holes into a piece of 15 mm copper tube, then cleaned up and sprayed satin black. The completed sight then clamps onto the barrel, just like the full size.

COCKPIT

Cockpit detail was made using aluminium, brass and thin copper pipe. The instrument panel is ply with a veneer over the top. Mick Reeves dial faces were used but once again were altered with the addition of separate needles and more realistic bezels with non-

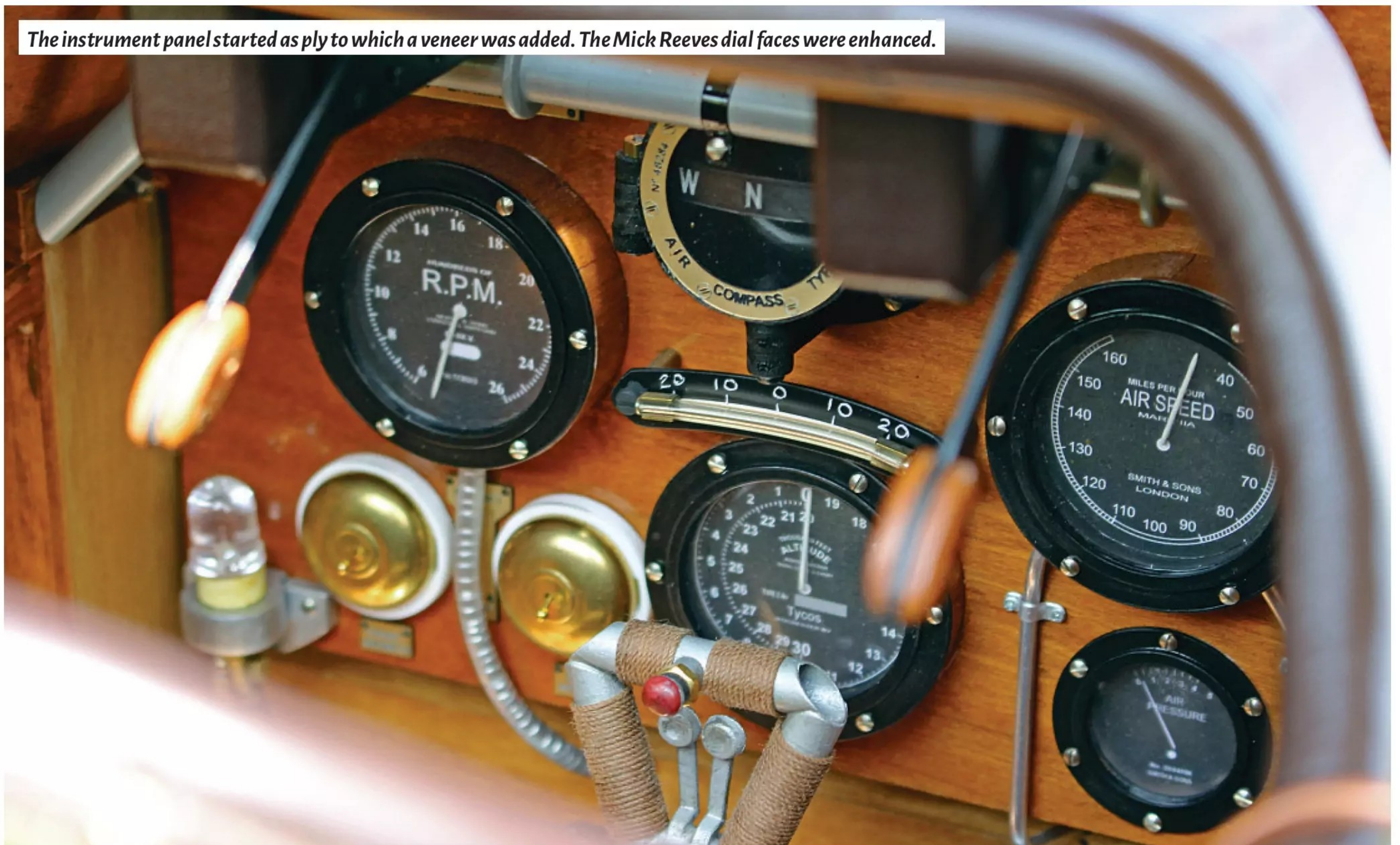
Phillips screws. The rudder bar was copied from pictures in the Haynes Owners Workshop Manual, a book Kevin describes as a godsend.

ROTTERHAM PUMP

This wind driven petrol pump, clearly visible on the rear cabane strut, was very much a separate challenge in itself. "I do not possess a lathe, so constructing this essential detail proved a bit of a headache."

First, he found a large plastic spacer for the main crankcase, then glued a length of brass tubing through the centre. Several different diameter brass and aluminium tubes made

The instrument panel started as ply to which a veneer was added. The Mick Reeves dial faces were enhanced.



“...brackets to hold the pump were made out of ali’ sheet that, like everything else, was drilled and cut using hand tools”

up the rest of the pump. A very thin strip of brass was soldered around a hand cut brass lid for the top of the oil reservoir, followed by a bracket to hold the retaining chain. Spruce

wood was hand carved to form the pump propeller and brackets to hold the pump to the cabane strut were made out of thin 1 mm ali’ sheet that, like everything else, was drilled and cut using hand tools.

PILOT

The pilot is a Warbirds.com item but, again, modified with airbrushed hands and face, painted goggles with a new strap with a small aluminium buckle. His coat and boots were way too doll-like so were attacked with Humbrol enamel wiped on with a sponge.

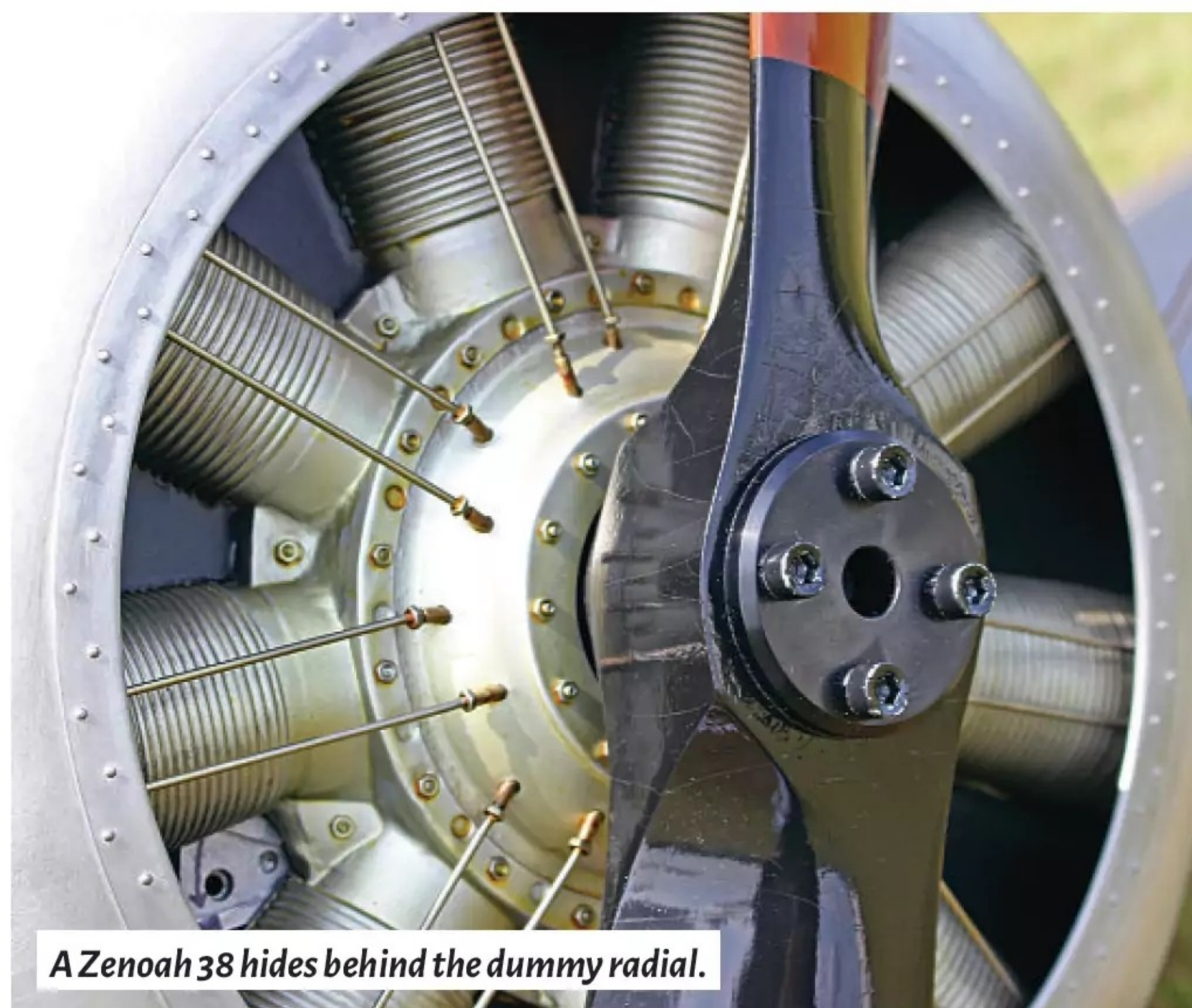
Incidentally, the pilot’s body holds a servo and circuit board that combine to slowly turn the head from side to side. Power comes from an 800 mAh NiMH battery in the torso via a switch epoxied into his shoulder.

MAIDEN AHEAD

I asked Kevin about the project’s trickier moments. “There were so many of them! But the wing aileron pulleys and covers were an ordeal. There are five of these on the model, but I actually made fourteen as I just couldn’t get them quite right.” They’re made by annealing lithoplate, ✈



Every detail is there and it’s all beautifully worked.



A Zenoah 38 hides behind the dummy radial.



Very much a project in itself, the wind driven fuel pump.

then cutting the aperture before sandwiching them between two pieces of ply cut so that when hammered flat it produces the step for the clear lens to go through.

The Camel's first flight will be soon although Kevin is already thinking about what to do next, "I quite like the idea of a WW1 Albatros, 1/3-scale of course!" ■

DATAFILE

Name:	Sopwith Camel F.1
Model type:	1/3 scale flying replica
Built by:	Kevin Wesley
Plans used:	Mick Reeves
Wingspan:	112" (2.84 m)
Length:	75" (190.5 cm)
Height:	35" (88.9 cm)
All-up weight:	35 – 40 lbs approx.
Radio:	Futaba with Hitec servos. Savox 1258TG for rudder/ steerable tailskid
Battery:	2 x Overlander 3300 mAh NiMH
Engine:	Zenoah G38 with modified silencer, Tony Clarke reduction drive and Tx controlled engine kill switch
Propeller:	Menz 32 x 18" wooden, stained with Ronseal teak, painted & varnished to look scale



One of the model's five cable pulley inspection apertures.

The first flight awaits...



MODERN VINTAGE MODELS



Fully designed & manufactured in England.

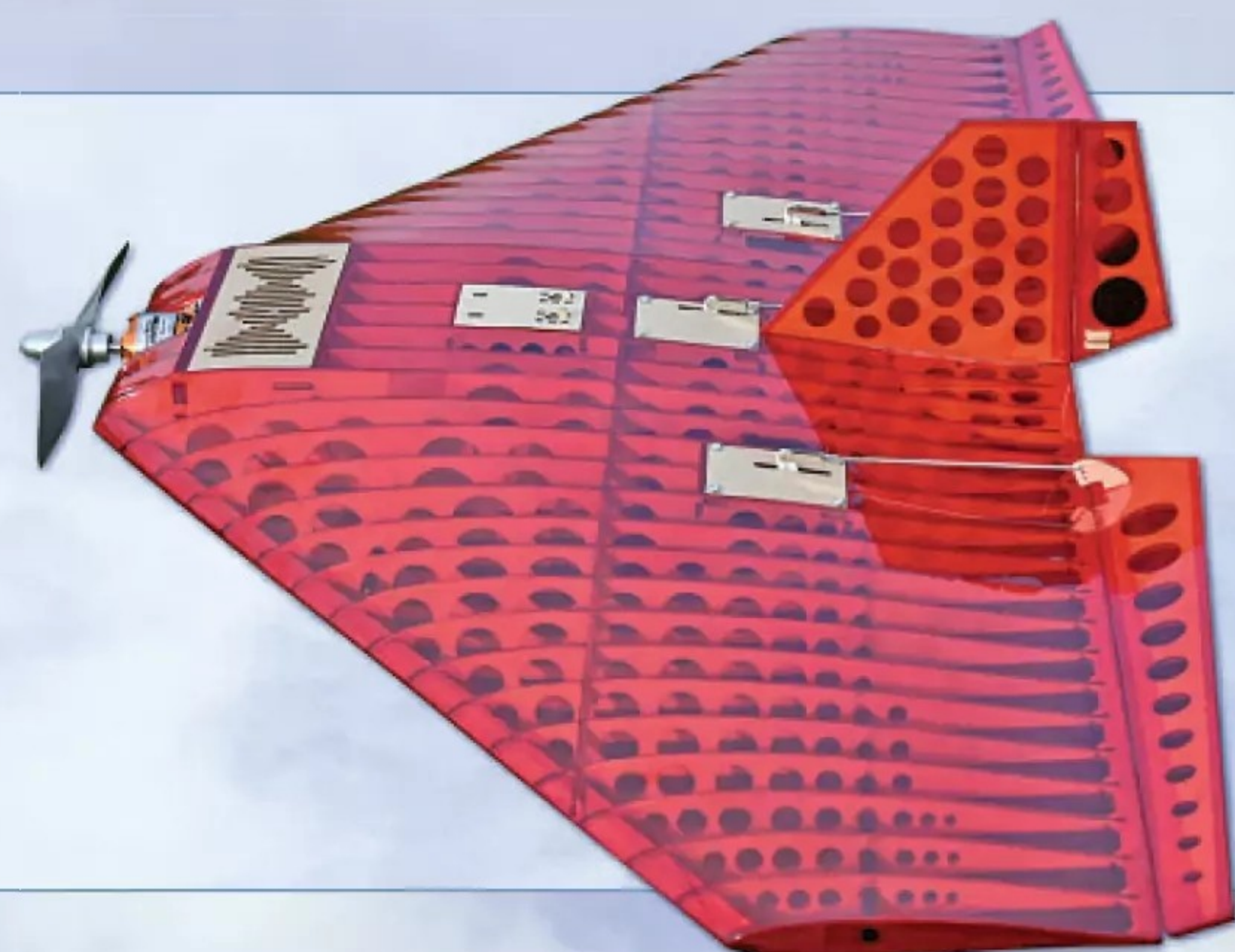
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Full Wood pack, carbon and Spinner.
Requires hardware, electronics and covering etc to finish

This is MVM's first foray into a scale model, and we are more than a bit proud of this elegant model.

- Wingspan 40"
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Full wood pack and carbon pack
Requires hardware, electronics and coverings etc. to finish

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- Wingspan 38"
- 3-4 Channel – Elevons, Rudder, Throttle

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Full wood pack and carbon pack

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- Wingspan 94"
- 3-4 Channel – Elevons, Rudder, Throttle



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ROADSHOW RETURN

Graham Ashby goes behind the scenes for a peek at what goes on in the model trade to seal the deals and oil the wheels

Words & Photos: **Graham Ashby**



Buckminster is a well-maintained and well-appointed credit to our governing body. It's also a fabulous place to fly.

In this, its 50th year of trading, J Perkin's took the plunge once again and commandeered the BMFA's Buckminster HQ for a weekend of gentle product promotion, chilled flying, eating, drinking and socialising. And what's not to like about all of that?

Well, from Joe Public's point of view, perhaps the fact that they weren't invited? Mind you, in truth, no-one that arrived in error was turned away and those who played their cards and mingled with the crowd were probably fed too! To be fair, the focus of the event on the 31st May and 1st June was on team building and

promotion to the trade. You see, JP has a very comprehensive array of major R/C brands within its product portfolio, indeed with everything from Futaba, Hitec and Seagull, to Arrows, Stinger, Swiwin, FMS, Traxxas, TopRC, Radiant, Zenoah, ZAP, SC, Oracover, Evergreen and K&S (plus many others), it's got much to shout about.

To set the scene, then, Buckminster was booked, caterers hired - not forgetting the BMFA's own well-run, on-site eatery - and selected products set up and displayed in a large marquee. Incidentally, it must be said that the BMFA's 'full English' is a force to be reckoned with, tasty by any standards and a complete

no-brainer if you're camping on site, which many were. Invited guests included the firm's own trade customers, along with team pilots and families.

The brief for the weekend? Simple. Pop along, check out all the new kits, engines and radio gear, eat, fly, swap stories, reminisce, tell tall tales of derring-do, exchange experiences, impart knowledge and come away feeling good... It worked!

For those who chose to bring models, 'off the peg' flying proliferated, albeit interspersed with a few demonstration sorties and the chance to view chosen products from JP's air range,



The RJ Aeroteam are a top bunch of lads who fly the shows throughout the season campaigning everything from sport models to jets. Top pilots each and everyone. L-R: Matt Dorgan, Sam Bates, Riley Howe and James Lancaster. Nic Ashe is conspicuous by his absence!

Given my renewed enthusiasm for helicopter flying, the large-scale choppers stole the show for me, indeed up there with the best of them was this utterly gorgeous Vario turbine Lama. It could have been real. Beautiful.



Geoff White's 110" span, 1/4-scale F4U Corsair. Sounding truly sublime on its Moki 250cc 5-cylinder radial, Geoff flew it beautifully, as ever.



The foamie jet slot produced a few near misses and some giggles but all done in the best possible taste. In the most part, Arrows Marlins and Hawks.



Put through its paces in fine style, young YouTuber 'Finn' seemed totally at ease with his Futaba-equipped RC Skywing Extra NG. 74" span / 35cc.

"...there's no better backdrop than Buckminster's beautifully manicured flying site with its vista of lush green countryside"

in action. For its own part, the team at Perks also used the event as an opportunity to shoot images and video for marketing and promotion purposes, and there's no better backdrop than Buckminster's beautifully manicured flying site with its vista of lush green countryside. Add a sunny summer day and you couldn't ask for more. And guess what? JP lucked out and got the lot, the only fly in the ointment being a brisk wind which increased in strength over the weekend and partly curtailed flying on the Sunday afternoon. It didn't matter.

JP SPECIAL

Of the new products on display, perhaps the most appealing to me was JP's take on a discontinued classic Seagull low winger. Celebrating the company's 50th anniversary of service to the model industry, the Challenger 50 Super Sport will appeal to just about anyone who's learned to fly and gone solo. It's a versatile Gangsteresque design that in previous guise ✈



Finn, pictured here driving that Extra NG hard and fast. Don't be surprised to see this talented young chap flying more shows and events in the future.



After all the 3D thrashery Mark Leavesley and Geoff Wallace brought a bit of scale decorum to the party with some tidy formation flying. Seagull P-51 and B-25.



Seagull's new 71" P-51 ARTF is a well-appointed model by any standards. Who doesn't love a sliding canopy and a bit of cockpit detail to ogle?



Seagull's 71" P-51 really is a cracking flyer. Ask Mark Leavesley, he genuinely loves it. Mind you, I'm not aware of a P-51 that doesn't fly well.



Hitec servos are one of JP's long-standing brands. The range is huge, the coverage vast and the quality superb.



The Radiant range continues to expand and now includes a selection of 28 motors and matching ESCs to accompany the existing batteries, servos, connectors, leads and accessories.

looked a little bland but that now benefits from a striking anniversary colour scheme created by the JP team. Redolent of the iconic black and gold John Player Special Formula 1 car of the '70s and '80s the scheme has received much applause and interest, to the point that Seagull is now offering it to its world-wide customer base. You can see why, although allied to that, of course, is the practicality of the design. With a .40 up front it's a perfect, lightly loaded, follow-on trainer that'll teach gentle aerobatics and tail-dragger handling. "Fit a fifty," says JP's marketing blurb, "up the rates and you'll immediately unleash a performance that'll keep you on your toes and raise a smile. With versatility at its heart, the 50 SS is an aeroplane that'll take any number of two- or four-stroke engine combinations whilst satisfying an eclectic choice of 4S electric set-ups." I love it, not least because it helps to fill a void in the market for good 40-size balsa-built club aerobats. And boy, don't we need more of those.

WHO'S WHO

JP's promotion of the Futaba brand goes from strength to strength, not least for the work that the company's National Sales Manager, Paul Bardoe, has put in to assembling a team



I sat in on an interview with Nathan Attridge and came away utterly amazed at the personal ingenuity, skill and dedication that goes hand-in-hand with becoming a top level pylon race pilot. That's a new SC 25 up front, available (once again) from JP.

of accomplished and respected pilots, drivers and sailors. The list reads like a Who's Who of the UK's R/C elite, rising stars and recognised legends. Ken Binks, Steve Elias, Mark Leavesley, Dan Gallo, Barrie Lever, Nathan Attridge, Kevin Caton, Geoff White, the lads of the RJ Aeroteam and many, many more. Week in, week out these Futaba ambassadors are active in the field (quite literally) flying Futaba at the highest level, promoting the range, offering advice and assistance and, crucially, performing, competing, winning and, thus, developing a renewed interest in the brand - a brand that so many of us adopted at the start of our R/C journey. For me it began with a humble FP-T2GS brown two-channel Medallion style set that controlled many a boat and Tamiya car.

JP's Arrows and Seagull team pilots were present in the form of Team Renegade and the RJ Aeroteam whilst solo Futaba-sponsored pilots were many and varied. Legends old, new and in the making were seen milling around and chewing the fat, and every so often proceedings were halted for a display slot where we got to see how the top pilots earned their status. From ✈



Mike Pattison with his gorgeous petrol-powered Vario Bell 47. He flew it beautifully and I want one.



The pilot in Mike's '47 is fully articulated and lifelike. Amazing attention to detail all round.



The RJ lads (minus Nic Ashe) again, this time with their Seagull Challenger 50SS JP Anniversary sportsters (see review in this issue).



Steve Plummer's Ultimate settles in for landing. Flown with 'ultimate' precision too.



The interviews were fascinating. What Ken Binks had to say about his early days, his involvement in film and television and his F3A life is pure gold.



18 year-old Joe Hampson just gets better and better. He flies his Pilot Edge 540 on Futaba and as far as his hardware is concerned – aeroplane, engine and radio – he doesn't take prisoners. I watched his thumbs darting about the gimbals and I couldn't keep up.

out-and-out 3D freestyle thrashery, through calm and collected precision aerobatic mastery, to mesmerising scale performances, the likes of young Joe Hampson and Finn Hennessy mixed it with R/C legends such as Mark Leavesley, Geoff White and Dan Gallo.



Adorned with kits from a bygone era, the BMFA's reception area is a real trip down memory lane for many. Wonderful to see.

As if that wasn't enough to inspire a more disciplined practice session of your own on a Sunday morning, you needed to see the beautiful selection of large-scale turbine and petrol-powered helicopters doing their thing. These sublime, eye-wateringly expensive

machines are practically the real deal with a presence that can only be described as awesome. Assembled almost exclusively from a boxful of Jesus bolts, the sheer skill and confidence needed to pilot one of these things is impressive enough, let alone doing it on a



Saturday's pilots' briefing with the BMFA's Manny Williams front and centre. The site has rules (as do they all) but all are common sense and it's a fabulous place to fly.



Colin Straus' Fouga Magister from the RBC kit is a true stick-n-tissue build. With a wingspan of 1990 mm and a 90 mm fan it's a smooth-flying pussycat of a jet.



Snapped chatting to Martin Little of Ace Jets, Ken Binks (left) has Futaba running through him like a stick of rock. Such a wealth of experience at the highest level of both R/C flying and sailing.

windy day in front of such a discerning, skill-polished audience. As a very average helicopter pilot, I took my hat off to these guys more than once over the course of the weekend and spent some considerable time on the drive home contemplating how I might repurpose the kids' inheritance.

DOING DEALS & OILING WHEELS

As the weekend progressed, the JP team was beaver away in the background, meeting customers, doing deals, oiling wheels and, interestingly, recording video content in the form of some pre-arranged interviews. Undertaken in the BMFA's evocatively adorned Buckminster reception area and with an underlying Futaba theme driving the narrative, the plan was to interview notable stars, past ✈



Sublime!



At the heart of Lee's Mil-24 is a Futaba DLPH-1 Intelligent Power Hub and twin R7108SB receivers. Oh, and a Pahl Taurus 12KW turbine.



Turbine powered, beautifully detailed and utterly awesome, Lee Cheesman's Futaba-driven HeliClassics Mil-24 attack helicopter (Czech Air Force). If you have to ask the price, you can't afford it.



JP's new Top RCPNPS Cub is a true all-weather all-rounder for 4S 2200mAh packs. Love the low bounce pneumatic tyres. Nice touch.



Blast from the past. Adam Birmingham loves a retro build and his original Cambrian Mooney 201 (in classic retro scheme) really appealed to me, not least with a period Futaba FF7 Super thrown in for good measure.



Flown in fine style by Geoff Wallace, Seagull's 95" span B-25 is a beauty. This one's electric and all the better for it. Says Geoff: "From the moment the B-25 took to the air I've been hooked on its docile flying characteristics, benign handling and scale appearance."

"What Ken Binks had to say about his early days, his involvement in film and television and his F3A successes is pure gold"

and present and tap into both the psyche, the skill and the drive of the individual, along with the personal and technological challenges that go hand-in-hand with becoming a champion. I sat in on a few of these interviews and to say they were fascinating (and humbling) is something of an understatement. I'm truly looking forward to seeing the final cuts.

What Ken Binks had to say about his early days, his involvement in film and television and his F3A successes is pure gold. Equally, the hour spent listening to Nathan Attridge explain what it takes to become a pylon racing champion, not least the hands-on ingenuity required, was a true eye-opener.

OVER & OUT

What a fabulous weekend. Great flying, great company, fabulous food and, wind aside, wonderful weather. Fortunately, stills photography isn't affected by gusty conditions and on the whole the light for photography was superb. The event shone as a result.

BMFA Buckminster is a fabulous facility, beautifully kept, well run, superbly catered and a joy to visit. If you've never been, you really should put that right. Finally, if anything you see here catches your eye, you're likely to find it over at www.jperkins.com or on www.futaba.uk ■

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The idea was to design a simple to build electric glider that would fly nicely with a reasonable glide. Photo by Mike Freeman.



BMAC EASY GLIDER

Roy Thompson introduces an easy to assemble 1.6 metre span electric glider specially designed as a club model build

Words: **Roy Thompson**

Photos: **Roy Thompson, Mike Freeman, Tony Lee**

Well, I never thought that my first plan would be a plane made from flooring underlay, but necessity is the mother of invention.

Our club holds an annual Fun Challenge Day with a different event each year. The intent is to involve as many of the club members as possible in the day's activities, regardless of flying skill. 2023's event featured a mass build of Spitty models made from 6 mm Depron for Spitty Combat. This proved a big hit and even featured in this publication. Many Spitty models are still being flown regularly today.

Building on that success, in 2024 we decided to have another single model type contest. As interest in gliding has grown in the club, I proposed a glider challenge. The idea was to design a simple to build electric glider that would fly nicely with a reasonable glide, using leftover Spitty parts. They would then be used to fly several tasks such as an All Up, Last Down,



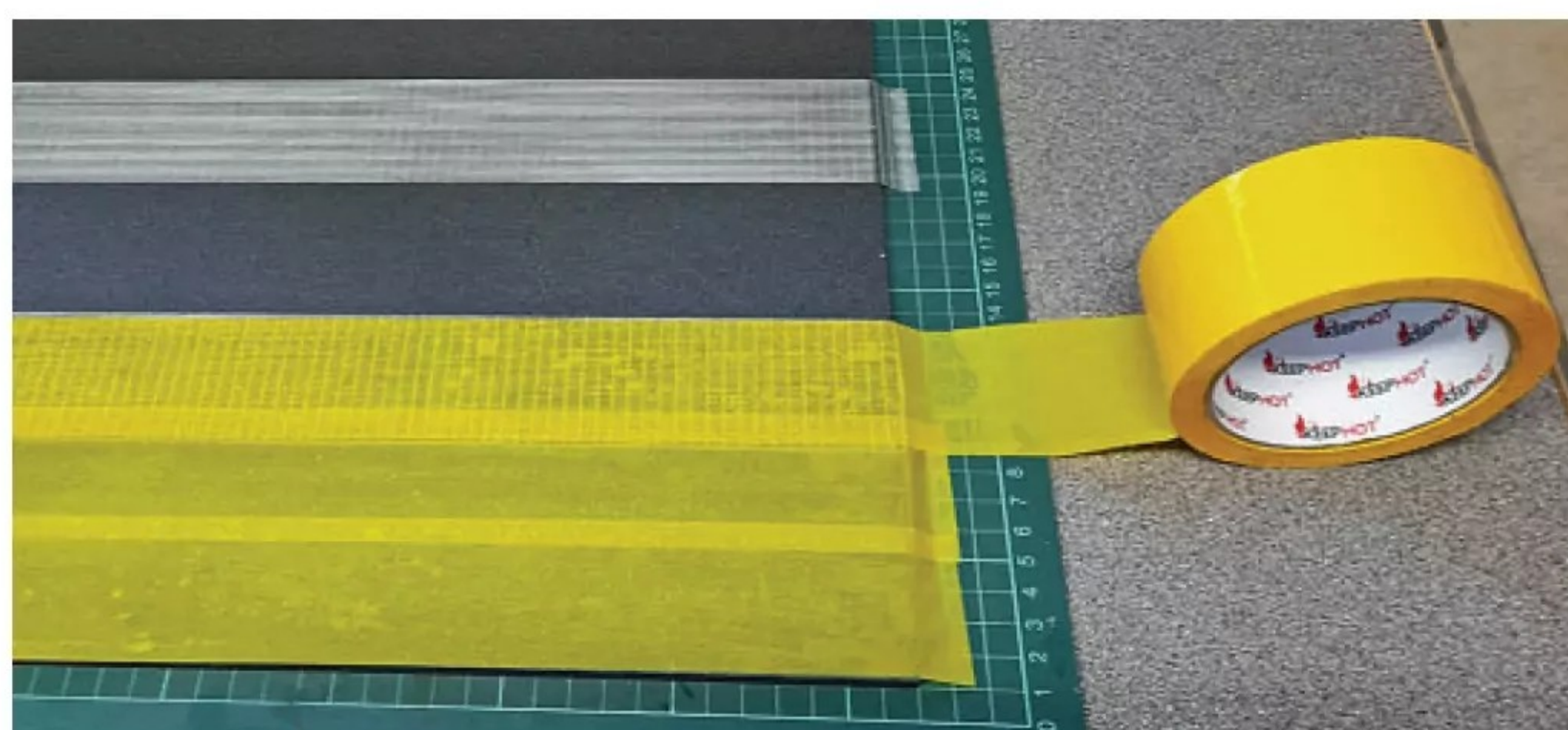
Easy Glider came about partly to use up bits from Spitty combat models flown at a previous BMAC Fun Challenge Day



Electrics supplied by 4-Max include a 2212 1000 kV motor, a 20A ESC with brake, a 10 x 6 folding prop and four SG90 servos.



Main material is 5 mm Vitrex foam underlay, with fibreglass cross-weave tape and packing tape added for strength and colour. Fresh knife blades are a must! Mark out with a white gel pen.



Apply strips of fibre glass cross-weave tape along each spar line. Then completely cover with coloured packing tape applied lengthways.



Scoring a fold line to crush the foam. Try not to split the foam surface.

a Timed Duration with spot landing and Loop the Loop contests. Coming up with the idea was the easy bit. Now we needed a design...

After searching for suitable plans, the closest I found was the Experimental Airlines 'Photon' foamboard motor glider on YouTube using an Armin wing design. This model is larger and more complex than we were after, but the wing design was easily modified for our needs. This gave me the basis to start drawing the plan for the BMAC Easy Glider.

Our model is constructed from 5 mm Vitrex premium foam underlay. A pack of 19 sheets, 600 x 856 mm, costs about £25 from most DIY stores and is enough for eight or nine gliders. Fibreglass cross-weave tape and packing tape is added for strength and colour, reminiscent of the Zagi and other foam slope soarers. It has a 1.6 metre span Armin wing and the fuselage is basically a long foam box to hold all the parts together.

The electrics were provided by 4-Max. This included a 2212 1000 kV motor and 20A ESC with brake, a 10 x 6 folding prop and four SG90 servos. You will also need four servo lead extensions, control horns, push rods and elastic bands. The model can be flown using any 1000 to 1500 mAh 3S LiPo battery. The AUW should come out under 600 grams.

The first prototype, despite some unflattering but good-hearted comments about its underlay and sticking tape construction, showed better than expected performance. Ultimately, with a few tweaks it has proved to be a half decent little glider with a good number being built for our club event. A 30 second motor run will see you over 400 feet up and with a bit of thermal luck a six-minute flight is doable. It's never going to challenge the likes of the F5J boys but for a bit of simple fun it's proven itself a worthy introduction to gliding.

GENERAL CONSTRUCTION

A few words about general construction. Two sheets of foam board, if careful, should be enough for one glider. As for glues, use a good contact glue like Deluxe Materials Foam 2 Foam or UHU-POR and use Hot Glue for butt joining the wing panels together. The hot glue has better gap filling properties but will add noticeable weight if used for general construction.

The standard wing spar is made from two strips of foam and relies upon the cross-weave tape stuck top and bottom for strength. For the most part this is strong enough but with over exuberance it can fold! If you're intending to do lots of aerobatics, I would recommend an additional flat strip of carbon or 1/16th ply glued vertically to the foam spar, going out at least half to third span.

As mentioned, the fuselage is a simple box construction. The first prototype had



Hold a flat edge along the fold line, then carefully bend the sheet up to 90 degrees.



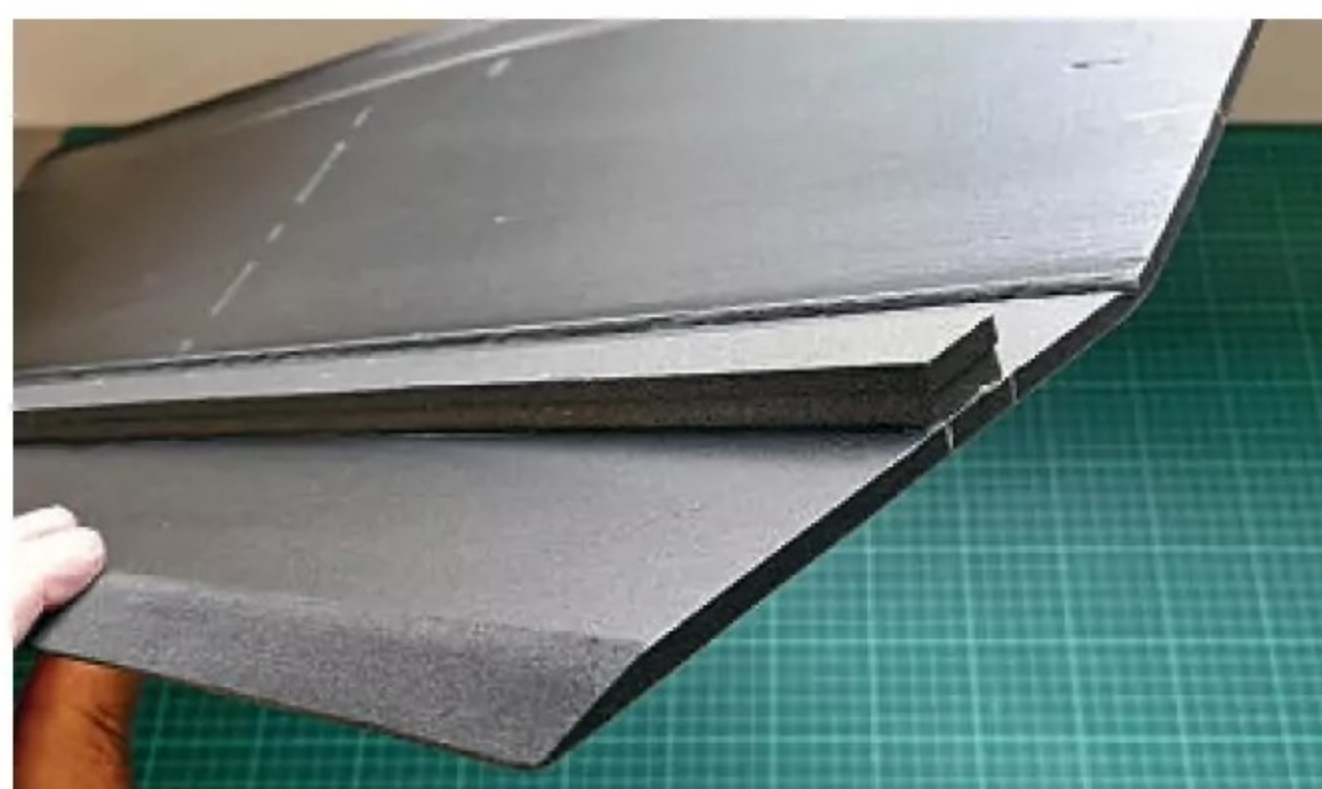
Remove the flat edge and fold the sheet back on itself and release.



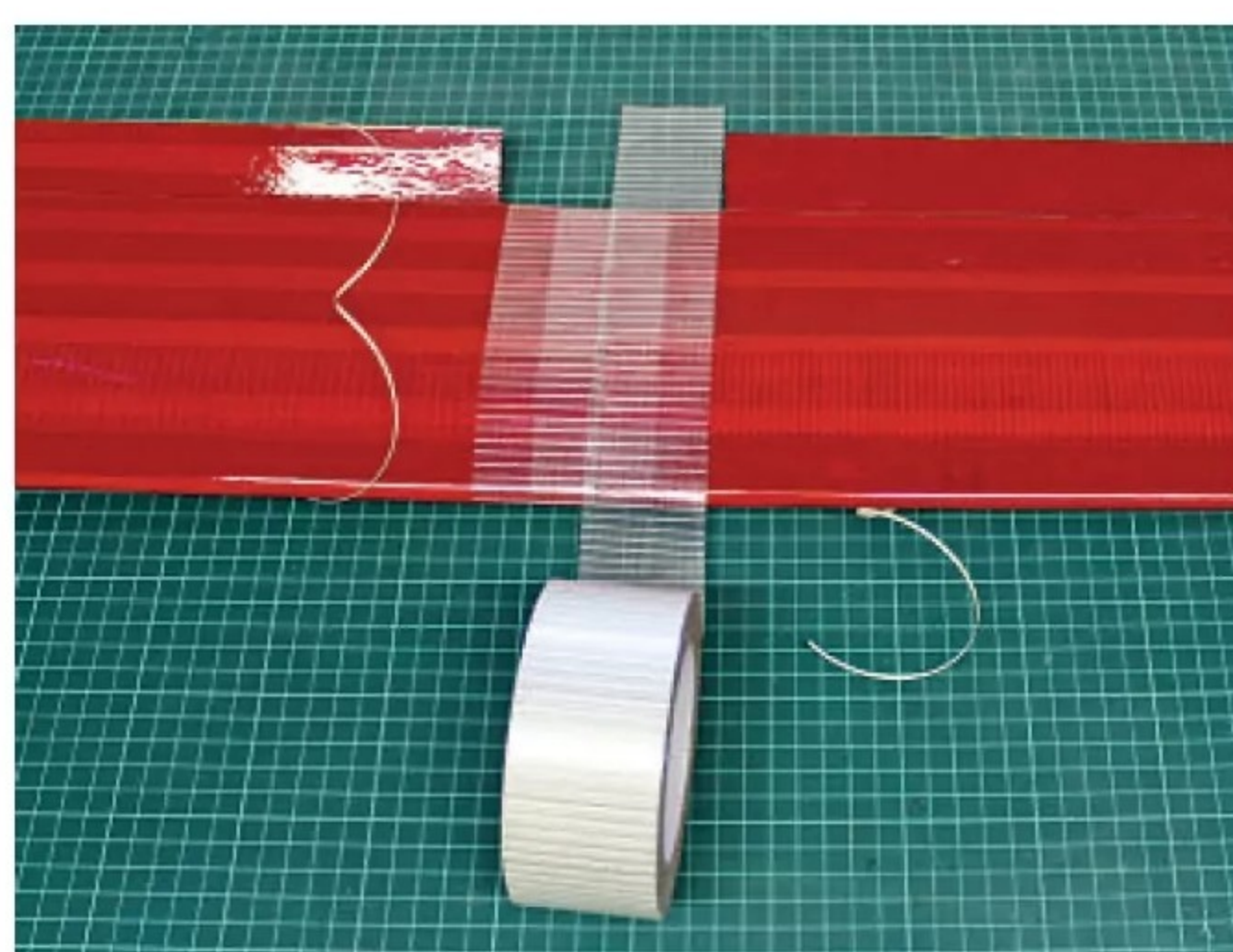
Sand or cut the bottom skin, inside the trailing edge, to a 20 mm wide taper. This blends the two skins together without a step. Clean dust off the parts with a damp cloth before you start to apply glue.



This is how a finished wing cross section should look.



Wing spar relies on the cross-weave tape for strength. Taper the trailing edge to blend the two skins together without a step.



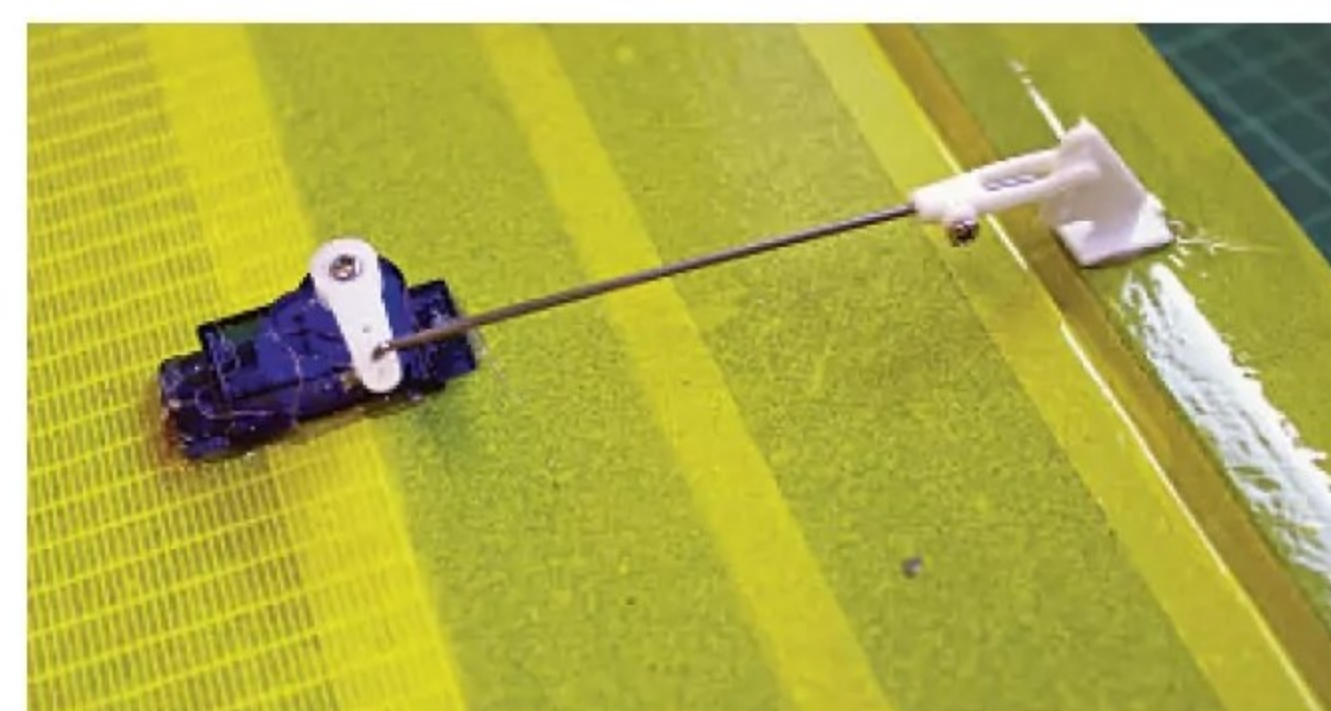
Butt join the two panels using hot glue. Cover the joint with three wraps of fibreglass reinforced tape, overlapping by 50%.



Lay the aileron flat on the top surface and cut or sand the hinge angle.



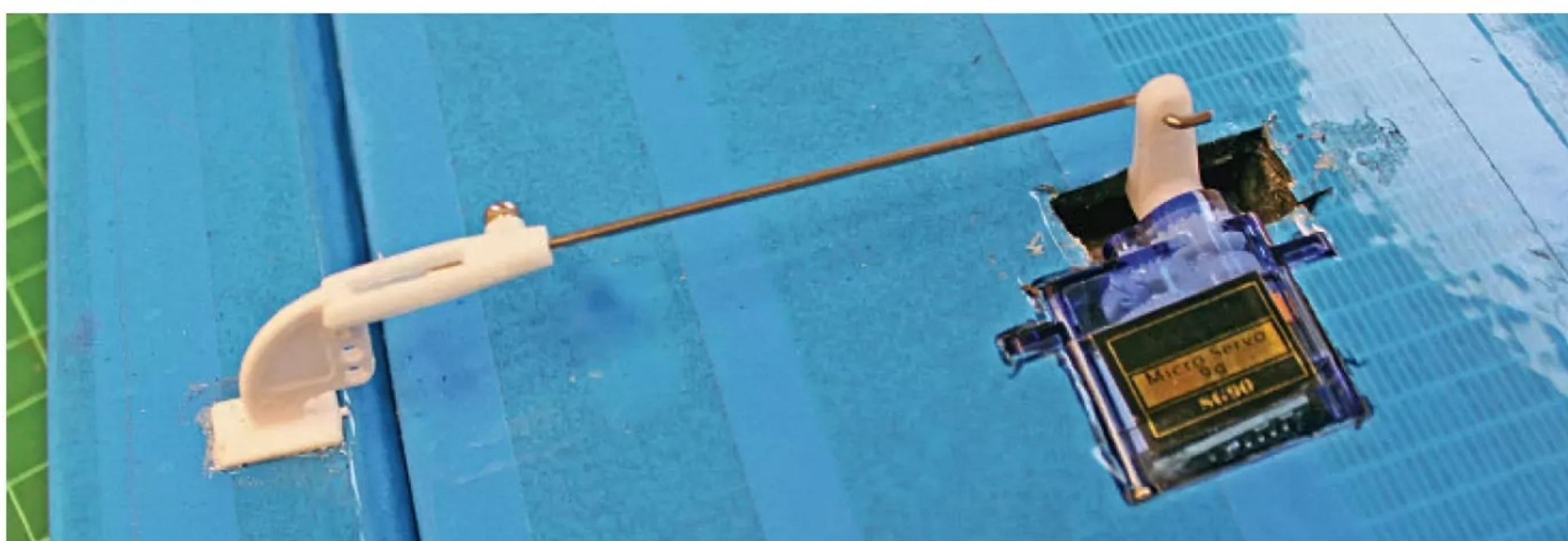
Cut the foam along the aileron hinge line part way through and the foam should snap cleanly along the fold line.



Fit aileron servos and control horns and install servo links to the wing.

the rudder and elevator servos fitted inside under the wings, with long pushrods running to the control surfaces. This was changed for simplicity to where they are now shown. The same with the wing servos; some like to fit them flat, concealed within the wing. Each has its pros and cons. Please feel free to change up the design however you like. For example, I think a V-tail would look good.

Now is the time to decide on these changes before you start cutting. If you make a mistake, no worries. You can always say that it was intended or, if worst comes to worst, simply re-do it. ✈️

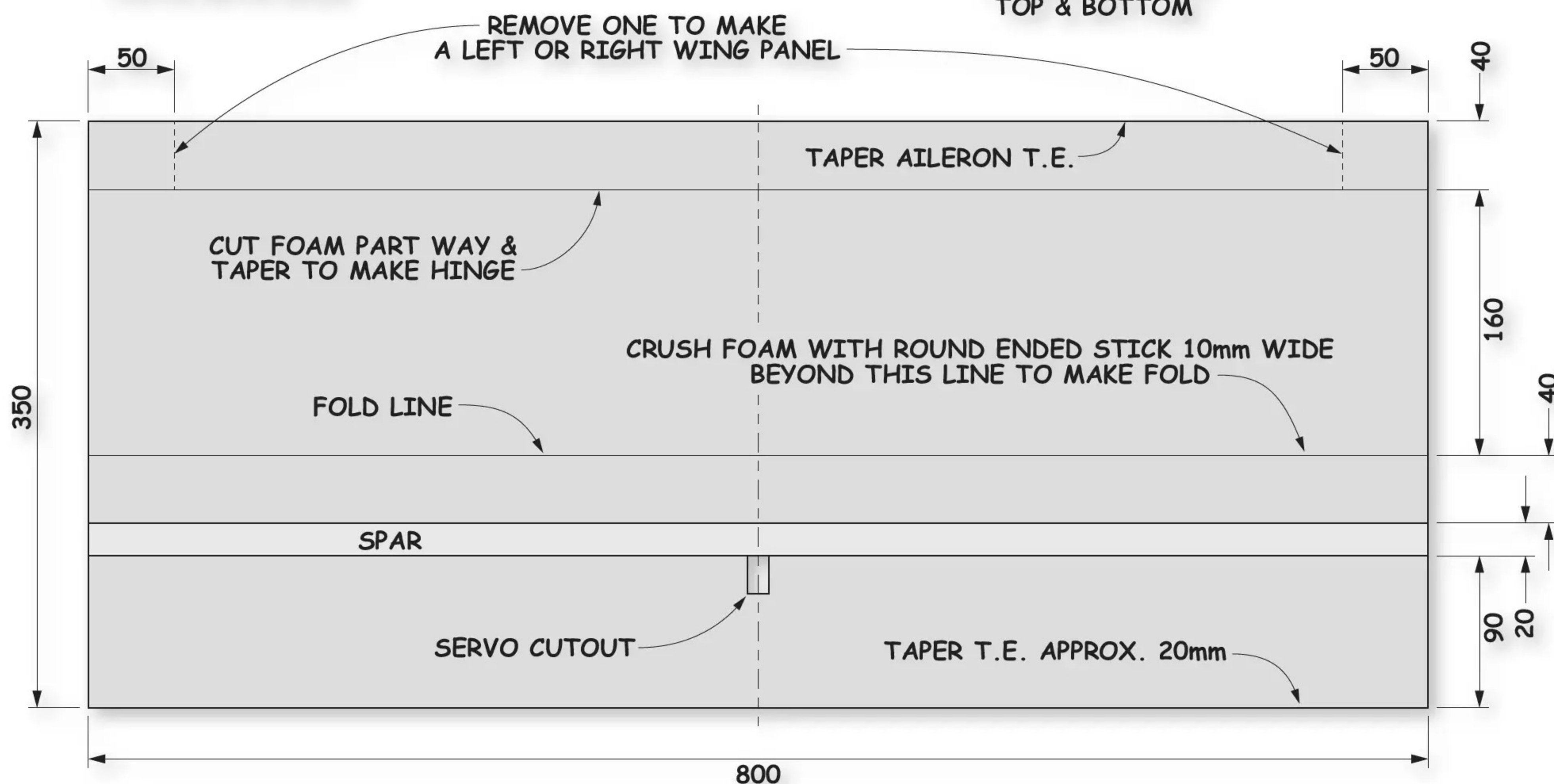
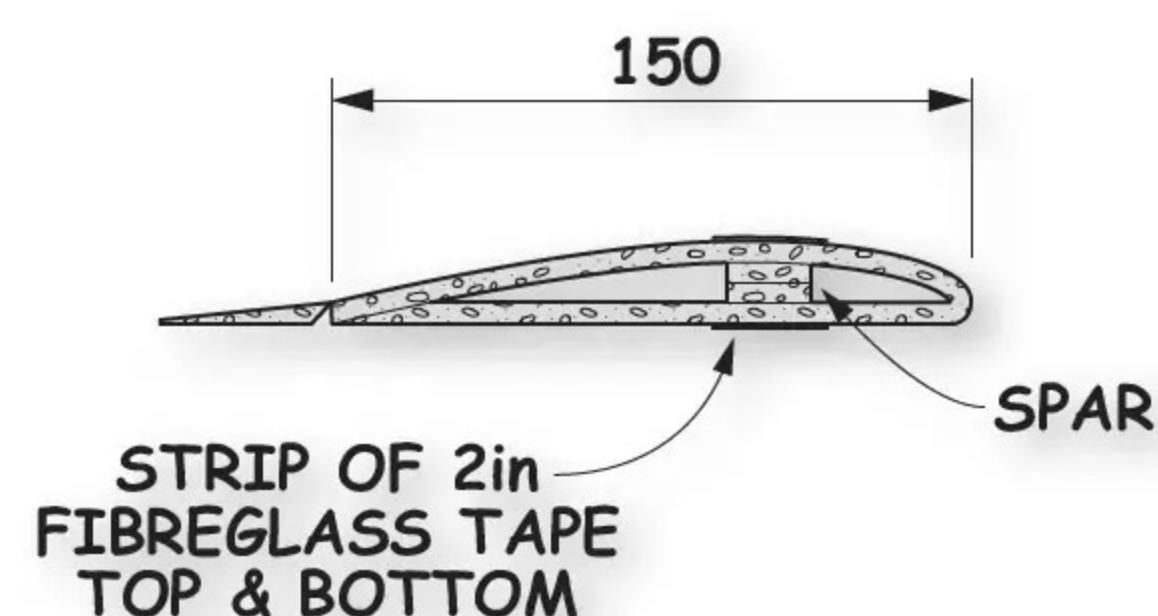


Some like to fit servos flat to conceal them within the wing.

ARMIN WING

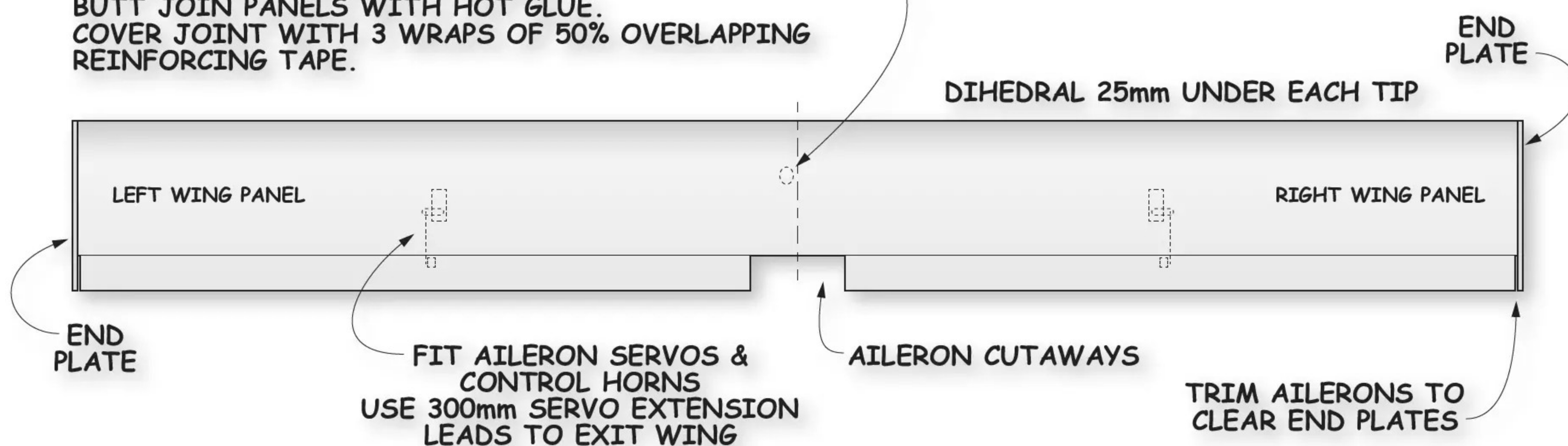
FOR BUILD VIDEOS SEARCH YT FOR THE FOLLOWING:

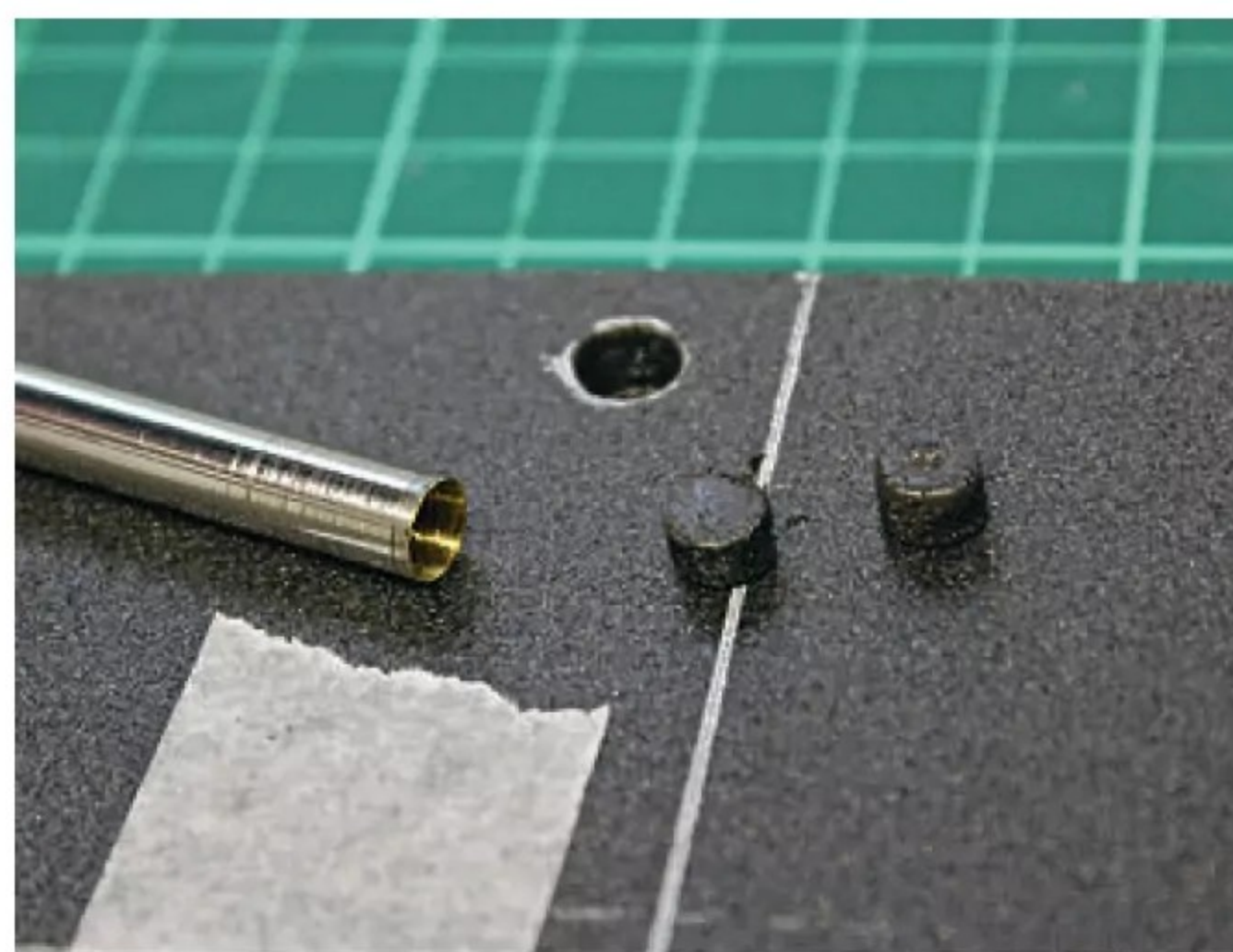
- EXPERIMENTAL AIRLINES YT CHANNEL
- ARMIN WING CONSTRUCTION
- PHOTON MOTOR GLIDER



1. CUT 2 PANELS 350mm x 800mm. MARK SPAR POS'N FOR TOP & BOTTOM OUTSIDE SKIN.
2. ON ONE SIDE OF EACH PANEL APPLY 2 STRIPS OF 50mm FIBREGLASS REINFORCED TAPE ALONG THE TOP & BOTTOM SPAR LINE. THEN COMPLETELY COVER THE SAME SIDE WITH COLOURED PACKING TAPE, WITH AN OVERLAP OF APPROX. 10mm BETWEEN STRIPS. THIS WILL BE THE OUTSIDE SKIN.
3. TURN PANELS OVER & MARK LINES FOR SPAR, FOLD LINE, AILERONS & SERVO CUTOUT.
4. PLACE & HOLD FLAT EDGE ALONG FOLD LINE & SCORE FOAM. BEND SHEET TO 90°. REMOVE FLAT EDGE & FOLD SHEET BACK ON ITSELF & RELEASE, PRE-CREASING L.E. AREA BEYOND FOLD LINE TO HELP FORM CURVED L.E. TOP SKIN.
5. CUT OUT SERVO & SERVO LEAD EXIT HOLES.
6. GLUE SPAR IN PLACE & ROUND OFF TOP CORNERS. WHEN SET, GLUE ALONG FOLD, TOP OF SPAR & T.E. FOLD WING OVER ALONG FOLD LINE, PRESSING DOWN ALONG SPAR & T.E. HOLD IN PLACE UNTIL GLUE IS SET.
7. CUT & MAKE AILERON HINGE, & COVER WITH TAPE TO FINISH.

CUT HOLES FOR SERVO LEADS TO EXIT ON UNDERSIDE. INSTALL PULL THROUGH STRINGS. BUTT JOIN PANELS WITH HOT GLUE. COVER JOINT WITH 3 WRAPS OF 50% OVERLAPPING REINFORCING TAPE.





Make holes for wing dowels using a piece of sharpened brass tubing.

WING CONSTRUCTION

Using a fresh knife blade cut two 350 x 800 mm wing halves. Mark the positions for the spar, leading edge fold line, ailerons and aileron servo cut outs. I find a white gel pen is best for this. Once that's done turn the panel over and lightly mark the spar position on what will become the top and bottom outside skins. Then apply a strip of 50 mm fibreglass cross-weave tape along each spar line; this is the reinforcement for the spar. Then completely cover this side with coloured packing tape **lengthways** with an overlap of about 1 cm between strips; this will be the wing covering. Try to avoid, if possible, having a tape joint running right along the leading edge as the joint could pull apart without a good overlap when you fold the foam.

Now turn the panel back over and hold a flat edge along one side of the 10 mm wide fold line. Repeatedly score and crush the foam with a round ended stick; the end of some marker pens works well. Then slowly and carefully bend the sheet up to 90 degrees. Remove the flat edge and fold the sheet back on itself and release. If there is a lot of resistance score the foam some more until it bends without breaking.

Pre-form the top leading edge skin up to 40 mm beyond the fold line to help it form a curved leading edge top. Try rolling the foam around a round tube if you have one to hand or just bend it in small increments, a little at a time, to give the curve.

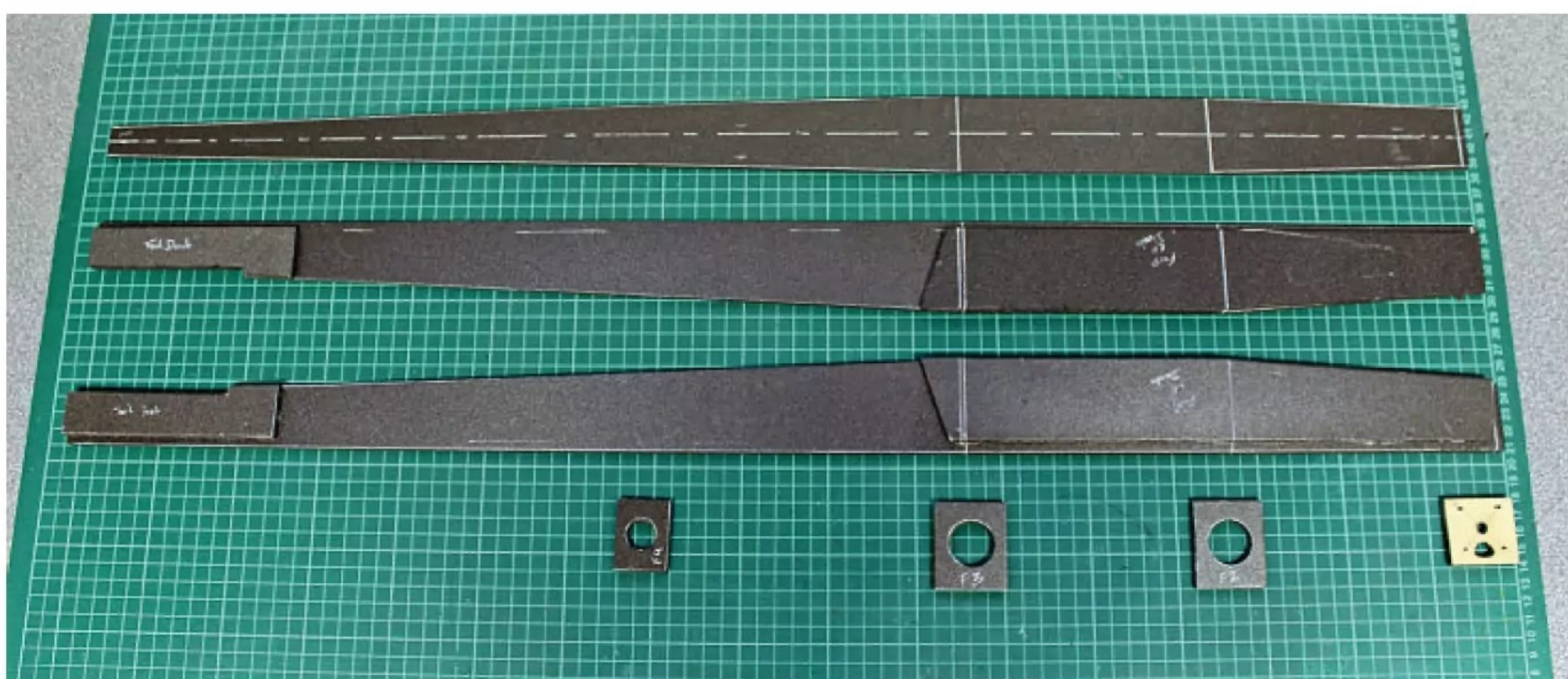
Sand or cut the bottom skin, inside trailing edge, to a 20 mm wide taper. This blends the two skins together without a step when bonded together. Repeat this at the other end to give a tapered aileron. Also cut out the holes for the 9 g servos and servo lead exits as shown on the plan. Clean the dust and dirt off the parts with a damp paper towel before you start to glue.

Cut and glue the two 20 x 800 mm spar parts together, then glue them in place on the wing bottom. When set round off the spar top corners. Run foam glue along the fold line, the top of the spar and the trailing edge. Fold the wing skin over along the fold line, always keeping the wing bottom flat on the building board, and then press it down along the spar and the trailing edge. Hold in place until the glue has set.

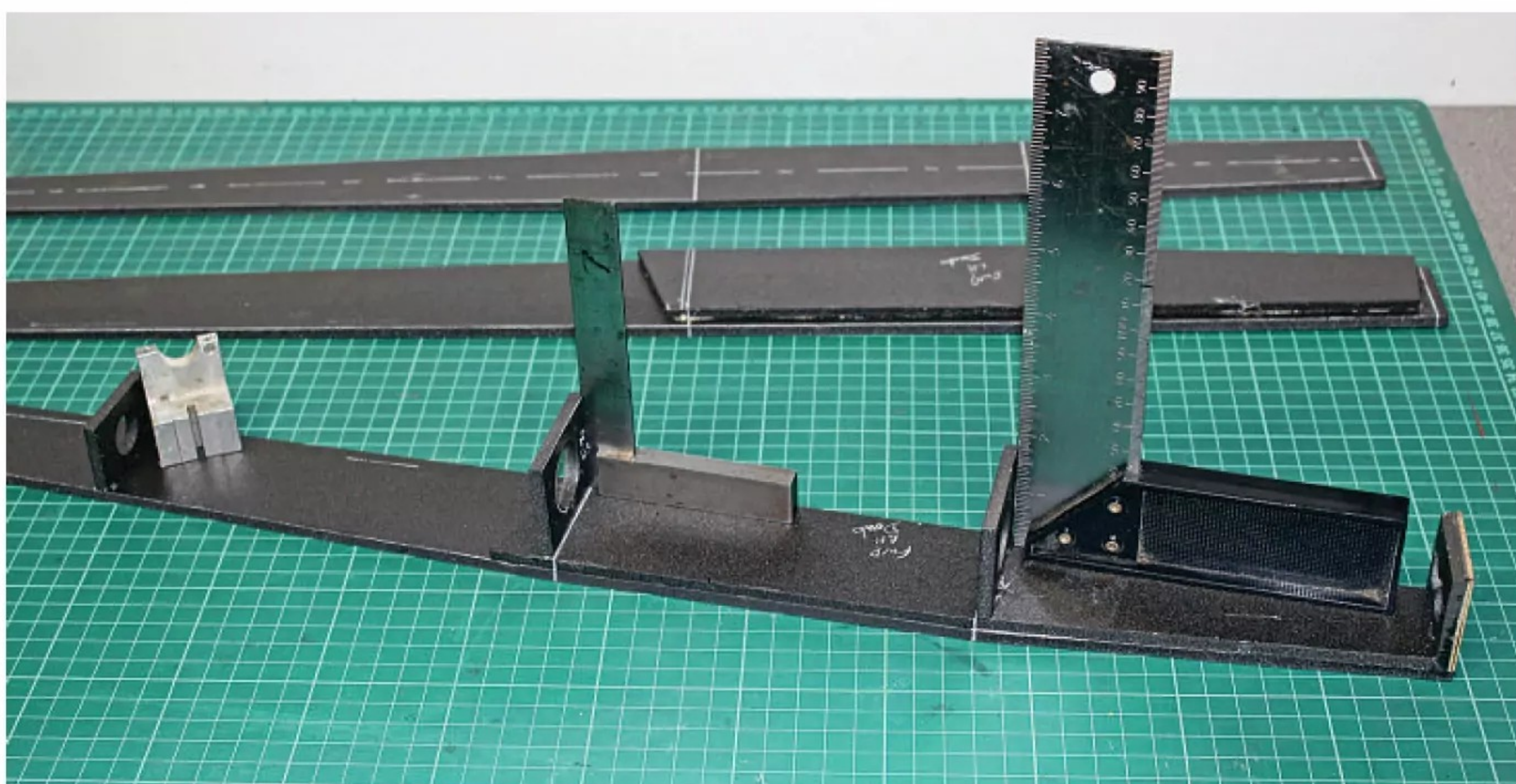
Turn the wing upside down and part cut the foam along the aileron hinge line but **do not** go all the way through or cut the tape. If you leave about 1 mm the foam will snap cleanly along the fold line. Fold the aileron back on itself, laying it



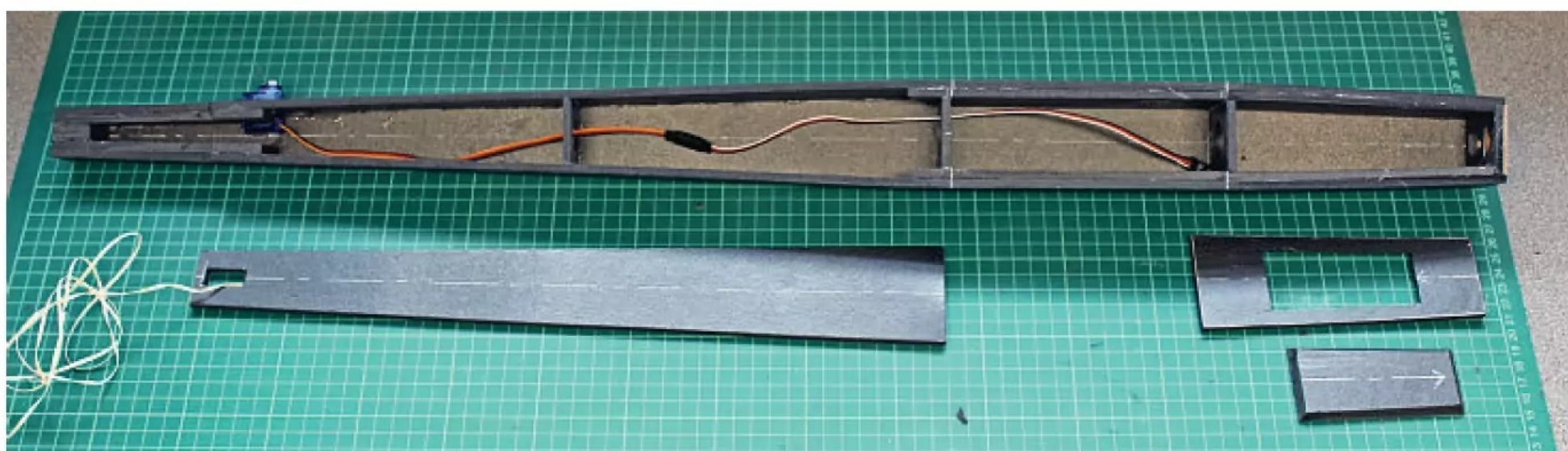
Start the fuselage and tail by cutting a kit of parts from Vitrex premium foam underlay sheet.



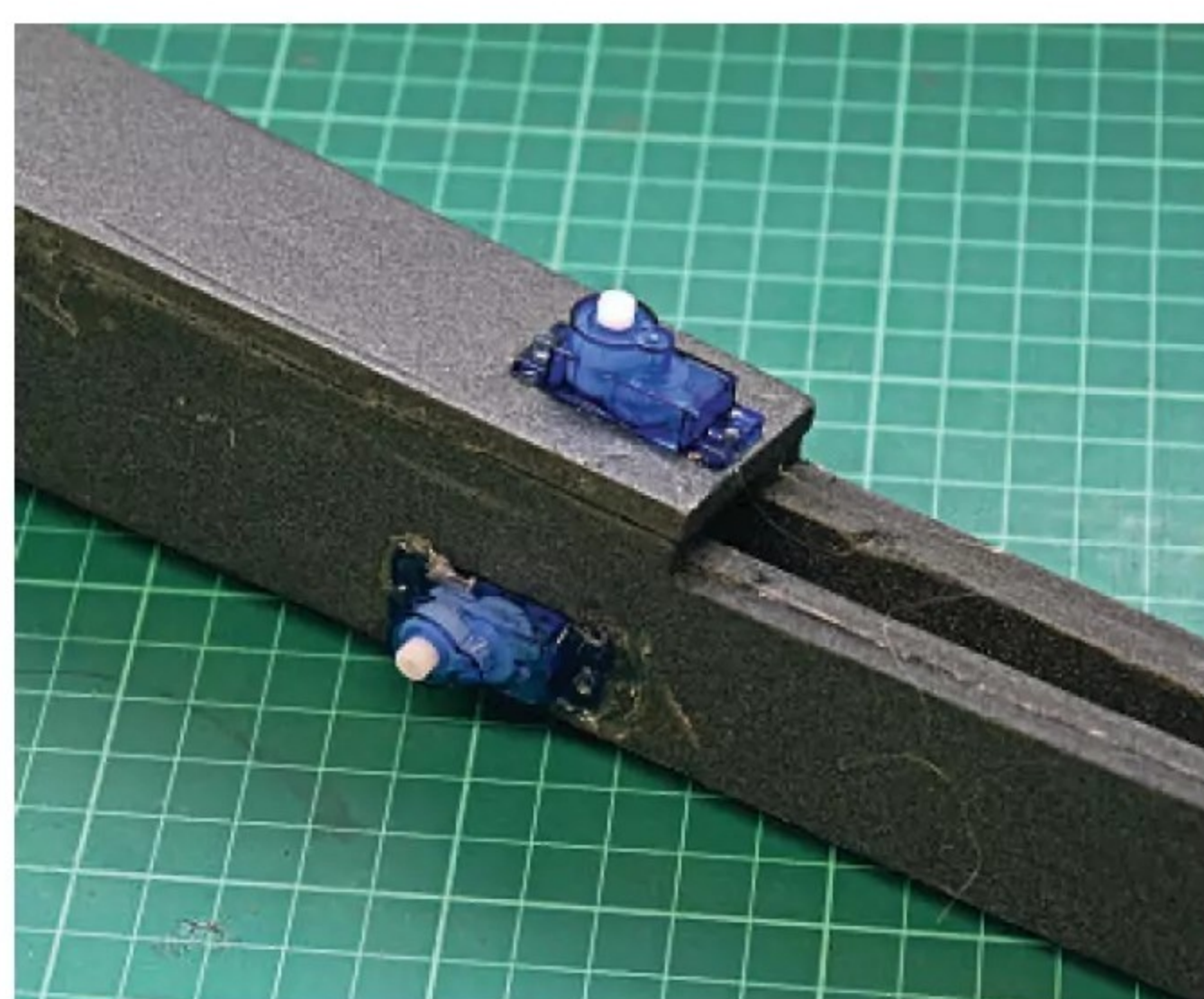
Fix forward and aft doublers, making a left and a right-hand side. Mark the position of the formers.



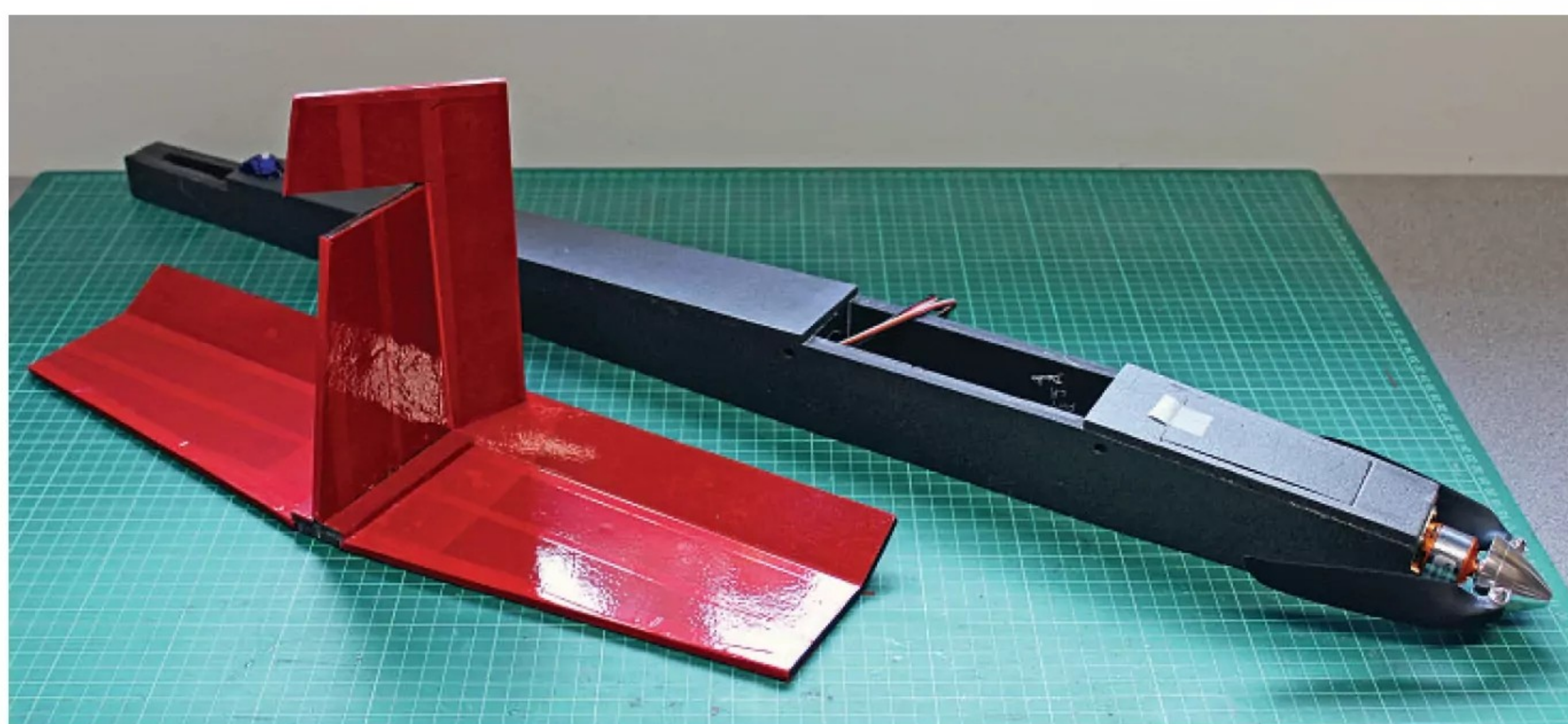
Mark the position of the formers on both fuselage sides and glue formers F1, F2 and F3, to one fuselage side, making sure they are square.



Fuselage ready for fitting the top decks. I find it easier to fit the tail servos now, when there is access.



First prototype had the tail servos fitted under the wing with pushrods to the control surfaces. This was changed on the second for simplicity to servos mounted at the tail, as shown on the plan.



Assemble the fin and stab. The tail can then be fitted to the fuselage, making sure all is square. Fit the control horns and connect the servos.

flat on the top surface and sand or cut the hinge edge to a 45 degree angle. Cover the underside hinge line with tape, then remove a 50 mm length from one end of the aileron for fuselage clearance, remembering to remove the 50 mm length from the opposite end on the other panel.

Install pull through strings for servo leads from the servo cut-out to the exit. Then repeat for the second panel.

This next step is optional. Pack the wing tips up by 25 mm on the building board and sand the root end vertically to give the dihedral angle. This helps the two ends to come together with a minimal gap with the dihedral set. The prototype had no dihedral and the glider flew well with a flat wing, although on the ground, especially on warm days, there was noticeable anhedral. This corrected itself once airborne. Adding 25 mm (or more if you like) under each wing tip will help improve directional stability and stops that droopy wing look on the ground.

Butt join the two wing panels using hot glue and then cover the joint with three overlapping wraps of fibreglass reinforced tape, overlapping by 50%.

Fit the aileron servos and control horns to the wing. You may want to crush the foam on the inside top skin to help sit the servo down into the wing. Use the pull through strings and 300 mm servo extension leads to bring the servo leads to the exit point. Centre the servos and ailerons and install servo links to the ailerons. Make up two wing end plates from scrap foam and cover with tape. Trim the aileron ends and fit the end plates to the wing.

FUSELAGE & TAIL

Start by marking out and cutting a kit of parts from the sheets. Take the two fuselage sides, lay them together and cut the holes for the wing dowels. I use a piece of sharpened brass tubing for this. Now add the forward and tail doublers to make a left and a right-hand side.

Cut and drill the motor mount F1 from 1/16th ply, with a foam doubler added to the back to give more surface area for bonding later. A mount could also be made by 3D printing if you have access to a printer. When installed the mount should have five degrees of downthrust as shown.

Mark the position of the formers on both fuselage sides and glue formers F1, F2 & F3 to

one fuselage side, making sure they are square. When set add the other side, again making sure it's all square. Add the bottom piece, pulling the fuselage sides together at the tail, making sure the joints are all flush along the bottom and the fuselage is straight. Now add F4 and the fore and aft top decks.

For the tail, start by marking out and include a centre line on the stabiliser. Cut out the parts including the two tail in-fills, keeping the fin and rudder, stabiliser and elevator as single parts. Cover one side of both with packing tape. Turn over and cut the hinge line, leaving the tape to become the hinge. Fold the rudder back on the fin and the elevator on the stab and cut the hinge edge to a 45° angle on the rudder and elevator, then cover the second side with tape. Leave the centre of the horizontal stabiliser uncovered where the vertical fin and fuselage will be glued.

Assemble the fin and stab using the two in-fills for added strength. The tail can then be fitted to the fuselage, making sure all is square.

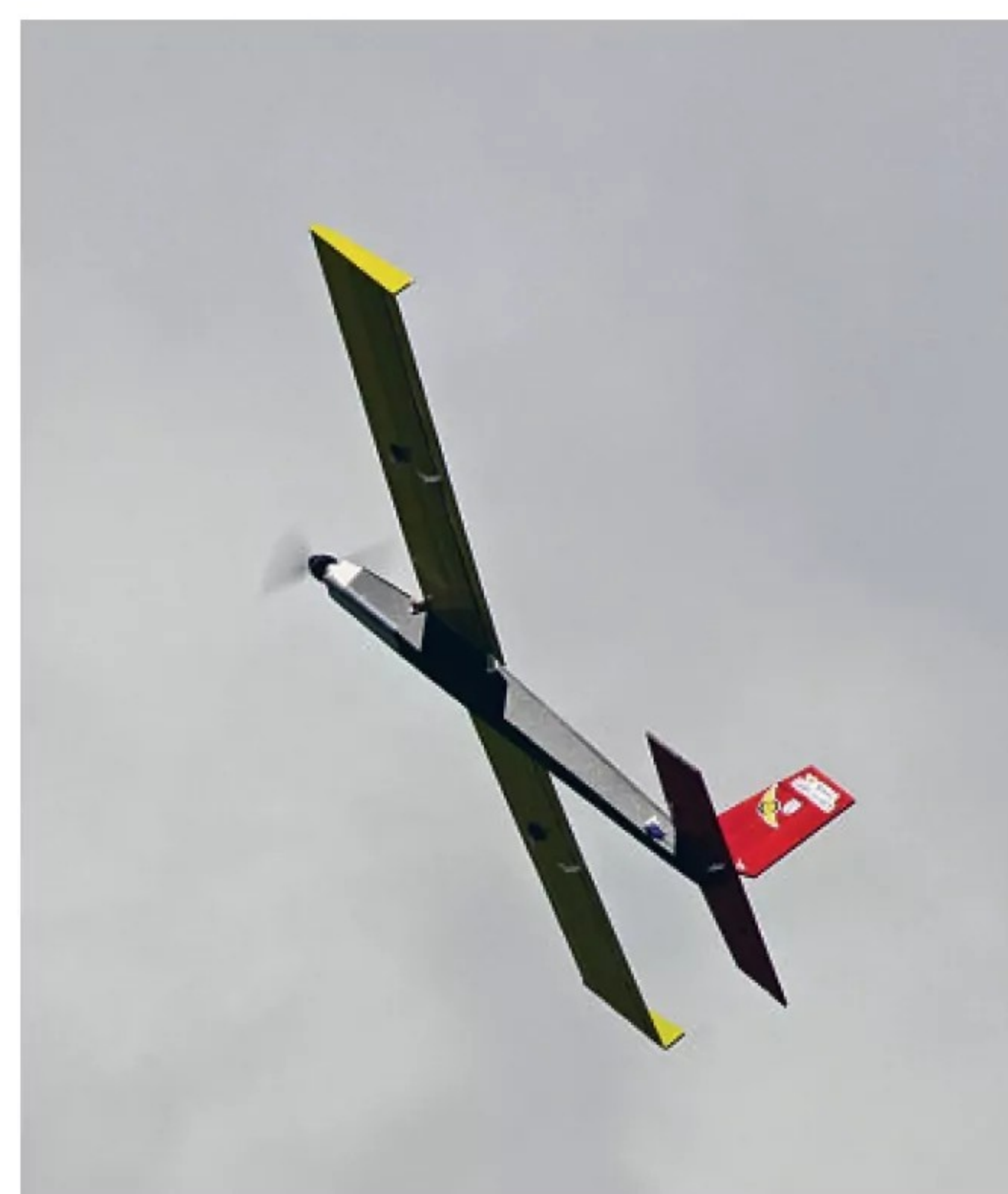
All that's left is to fit the control horns, glue in the servos fitted with extensions leads and fit the linkages - that's the tail done! ✈



Easy Glider prototype had no dihedral and flew well, but on the ground there was noticeable anhedral. This corrected itself once airborne. Adding 25 mm under each wing tip will stop the wings drooping whilst on the ground.



Standard wing spar is strong enough for gliding but for aerobatics glue an additional flat strip of carbon or 1/16th ply vertically to the foam spar for at least half to third span.



For the first flight take off in Neutral mode, climb to height and check out the trims.



BMAC Chairman Bob McAlpine, fresh from running the BBQ, tries his hand. Apparently, he doesn't like gliding - that was until he came second! Photo by Tony Lee.

Next add a six-channel receiver in the wing bay, an ESC in the battery bay and fix the motor to F1. Wing retaining dowels are cut from 6 mm dowel and slid into the holes cut earlier. Adding small cardboard reinforcement around the holes is an option here; also adding some cross-weave tape under the nose will help with the inevitable scuffing from landings.

SETTING UP

You could use a four-channel receiver with standard ailerons, but I would recommend a six-channel Rx with flaperons and operate the flaps using a three-position switch. This then gives you the option for three basic flight modes: Launch/Thermal, Neutral and a Spoiler/Speed mode, with Thermal and Spoiler giving +/- 10 mm of flaps respectively. If you are new to gliding this gets you into the mind set of using simple flight modes.

The remaining starting throws are: Ailerons +/-12 mm, Elevator +/-10 mm and Rudder as much as possible. Finally, make sure your CG is in the range of 50 to 60 mm back from the leading edge and that the ESC brake mode is on.

You are now ready for the fun bit...

FLYING

For the first flight I would take off in Neutral mode, climb to height and check out the trim and experiment with the flight modes until you are comfortable with each. It maybe that you'll want to adjust them up or down. You'll have plenty of power to do repeated climbs and glides even with a 1000 mAh pack.

If you have a timer on your Tx set it for 30 seconds and set the flight mode to Launch. Hand launch at full power for 30 seconds and just see how far you can climb. This is our standard starting point for each of our glider contests.

All Up, Last Down is self-explanatory. The only stipulation we had was that the model must land back on the patch. Easy enough, you just don't want the ignominy of being the first to land!

The Duration challenge took an average time from the A.U.L.D. including a 30 second climb. Each pilot who lands at the nominated



Alex launches his BMAC Easy Glider for a timed challenge. Chaki starts the clock. Photo by Tony Lee.



Easy Glider mass launch for the All Up, Last Down challenge. Photo by Tony Lee.



What do with the leftovers? Why not build a FoamBat. Roy has promised the plan in due course.



Basingstoke Model Aero Club photo call. Photo by Tony Lee.

duration, +/- 5 seconds, scores 10 points, with a one point penalty being deducted for every 5 seconds under or over the nominated duration. An extra 10 points was won by landing within a 30-foot landing circle.

Our last event, and the one that probably generates the most excitement, is Driving Yourself Loopy. Again, from a 30 second motor run, see how many loops can you fly before landing safely back on the patch. The trick is to be brave on the last few loops, keeping the model directly over the patch. The winning score on the day was 17 loops.

LAMINATING FILM

One final note. I've been playing with A4 laminating film for covering parts like the tail and it has worked well as an alternative to packing tape, providing excellent additional stiffness and strength. If you want to try it, just pull the pouches apart and lay the film flat over the foam and iron it on with a covering iron at around 140 to 150 degrees. This is hot enough to make it stick without damaging the foam. You can then add trim or paint over it.

LEFTOVERS

So, there you have it - the BMAC (Basingstoke Model Aero Club) Easy Glider. I hope if you build one that you get a lot of pleasure from it.

Lastly, as the BMAC Easy Glider came about partly to use up bits from the Spittys, this begs the question: what will use the leftovers from the Easy Gliders? ■

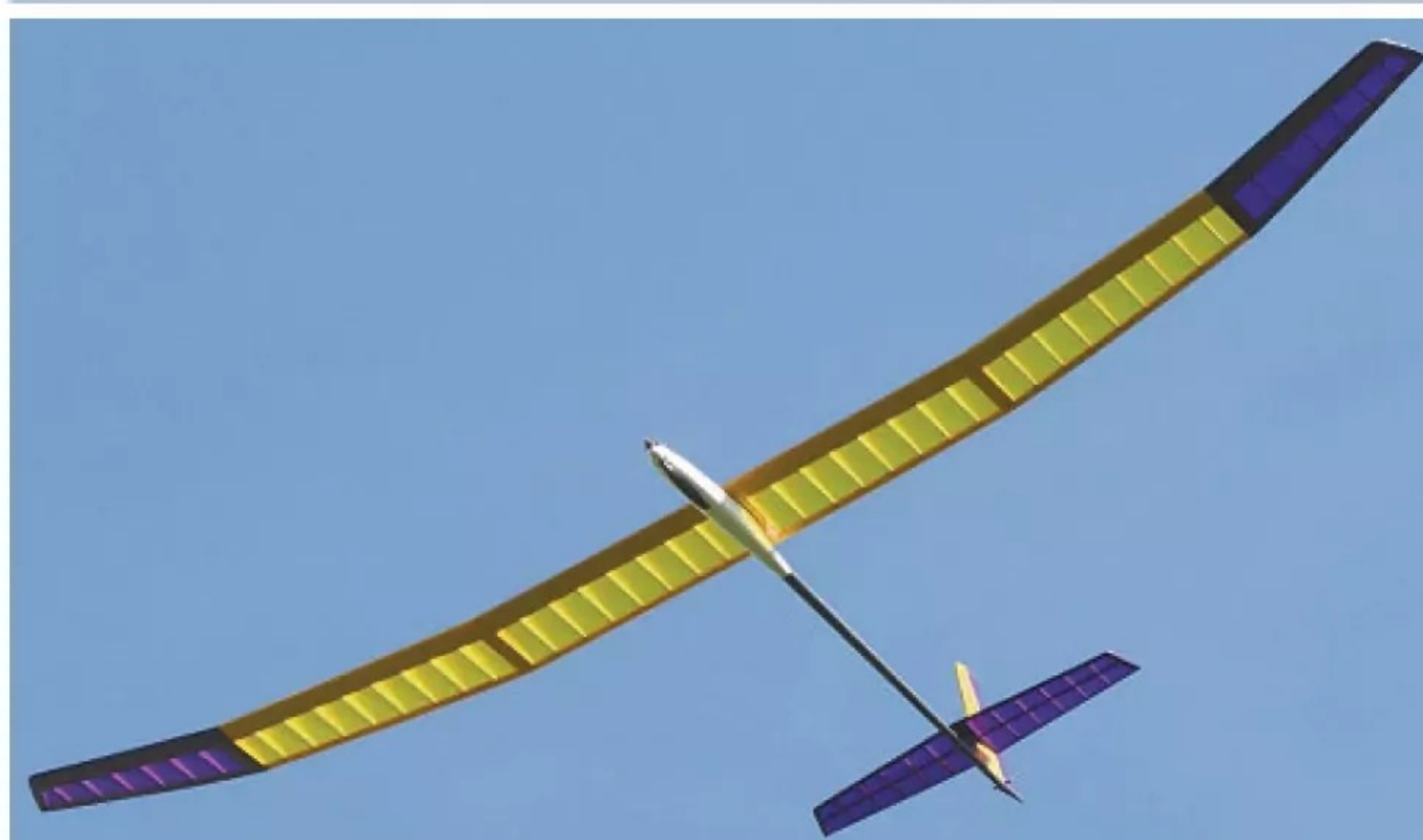
DATAFILE

Name:	BMAC Easy Glider
Model type:	Electric glider
Designed by:	Roy Thompson
Wingspan:	1600 mm (63")
Fuselage length:	850 mm (33.5")
Flying weight:	570 g (20.1 oz)
Functions (servos):	Ailerons (2), Elevator (1), Rudder (1), Throttle (ESC)
Motor:	4-Max 2212 1000 kV
ESC:	20A
Propeller:	10 x 6 folding
Battery:	3S 1000 - 1500 mAh LiPo

Value Planes VP2600 Thermal Glider Kit or ARTF

www.4-max.co.uk/aircraft-vp-VP2600-ARTF.htm

www.4-max.co.uk/aircraft-vp-VP2600.htm

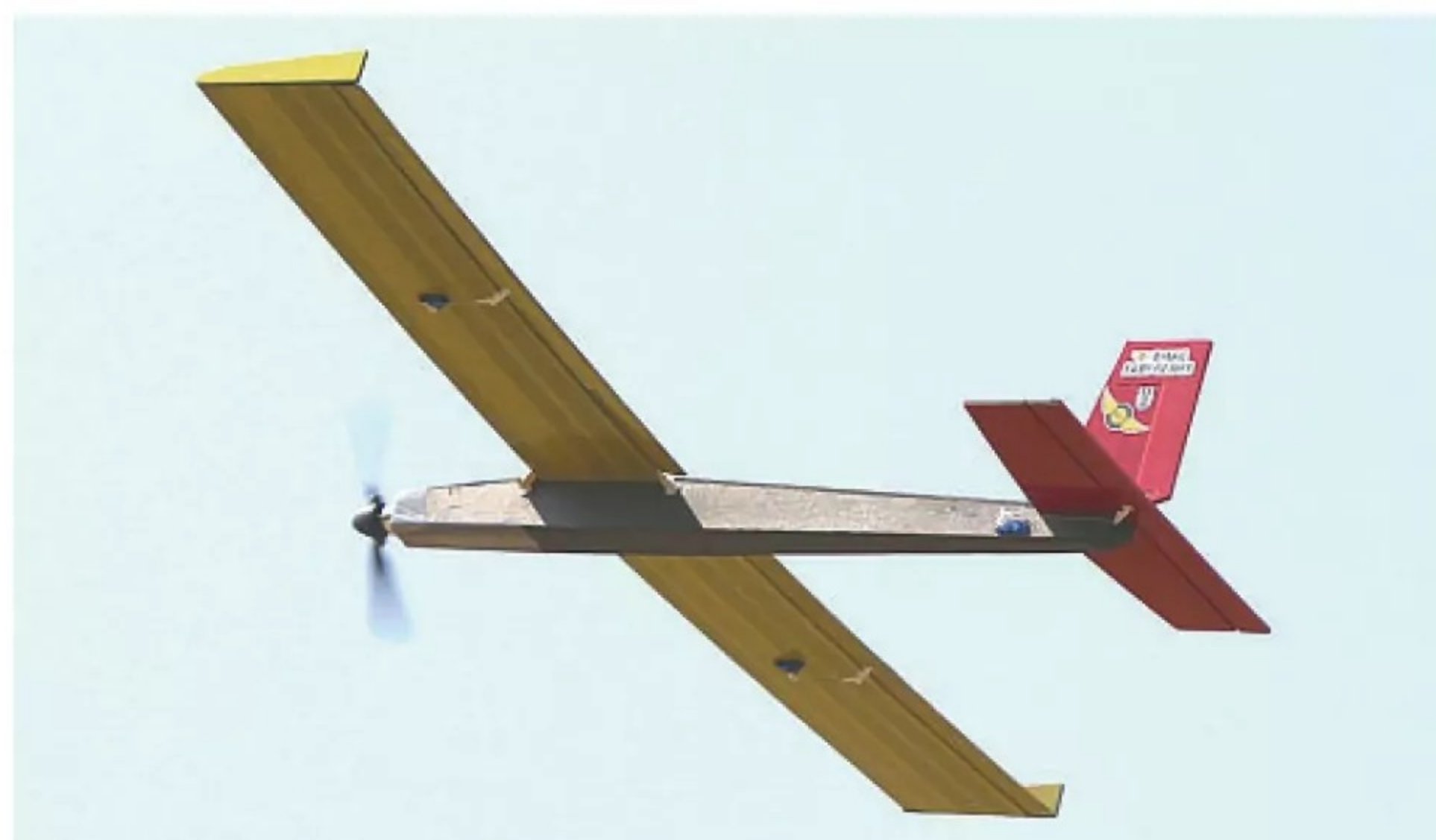


Description	RRP
Value Planes VP2600 Glider - Kit only	£169.99
Value Planes VP2600 Glider - ARTF (includes Spinner, prop and Pre Installed SunnySky Brushless Motor)	£299.99
4-Max PO-2834-910 Brushless Motor (needed for kit version)	£27.49
33mm Diameter Aluminium Folding Spinner Assembly (needed for kit version)	£10.49
Pair of 10x6 Folding Prop Blades (needed for kit version)	£4.99
30A Brushless ESC with XT60 connector fitted and Programming Box (needed for kit and ARTF version)	£33.98
1x 4M-100AMG-022 and 1x ES3301 Servos (needed for kit and ARTF version)	£16.28
3S, 11.1V, 1300mAh LiPo Battery with XT60 Connector Fitted (needed for kit and ARTF version)	£17.00

Complete Electrical Setup For EasyGlider by Roy Thompson



www.4-max.co.uk/customermodels164.htm



Description	RRP
A2212-1000kv Brushless Motor	£15.49
4M-HESC20AV2 Brushless ESC and Programming Card	£31.98
4pcs of Tower Pro SG90 Servos and 4pcs of 300mm Servo Extensions	£19.56
3S, 11.1V, 60C, 1,300mAh LiPo Battery	£17.00
1.2mm Z-Bend Kit (4pcs) inc. Linkage Stoppers	£3.99
Surface Horn -Small 13.5x16mm (5pcs)	£1.10
Folding Prop (pair of blades) 10" x 6"	£4.99
Folding Spinner 33mm Diameter for 3.175mm Shaft	£10.49

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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
PPL-60C4S-5000	60C/120C, 4S (14.8V) 5000mAh	£78.50
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
PPL-60C5S-4500	60C/120C, 5S (18.5V) 4500mAh	£86.50
PPL-60C5S-5000	60C/120C, 5S (18.5V) 5000mAh	£96.00
PPL-60C5S-6000	60C/120C, 5S (18.5V) 6000mAh	£118.00

PPL-60C6S-3300	60C/120C, 6S (22.2V) 3300mAh	£79.00
PPL-60C6S-3700	60C/120C, 6S (22.2V) 3700mAh	£85.00
PPL-60C6S-4500	60C/120C, 6S (22.2V) 4500mAh	£103.00
PPL-60C6S-5000	60C/120C, 6S (22.2V) 5000mAh	£115.00
PPL-60C6S-6000	60C/120C, 6S (22.2V) 6000mAh	£139.00

Prop Drivers/Adapters

PP-PDRV20-30	For 2.0mm shafts	£3.49
PP-PDRV23-47	For 2.3mm shafts	£2.50
PP-PDRV30-50	For 3.0mm shafts	£2.75
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
PP-PDRV80-12	For 8.0mm shafts	£5.95
PP-PDRV10-12	For 10.0mm shafts	£7.95



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4M-HESC15AV2*	15A, Burst 20A, 5V 2A BEC	£17.99
4M-HESC20AV2*	20A, Burst 30A, 5V 1A BEC	£19.99
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-7A	7A UBEC, 7.5A Peak, 6-29.4V I/P	£19.99
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

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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
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
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
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
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
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
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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

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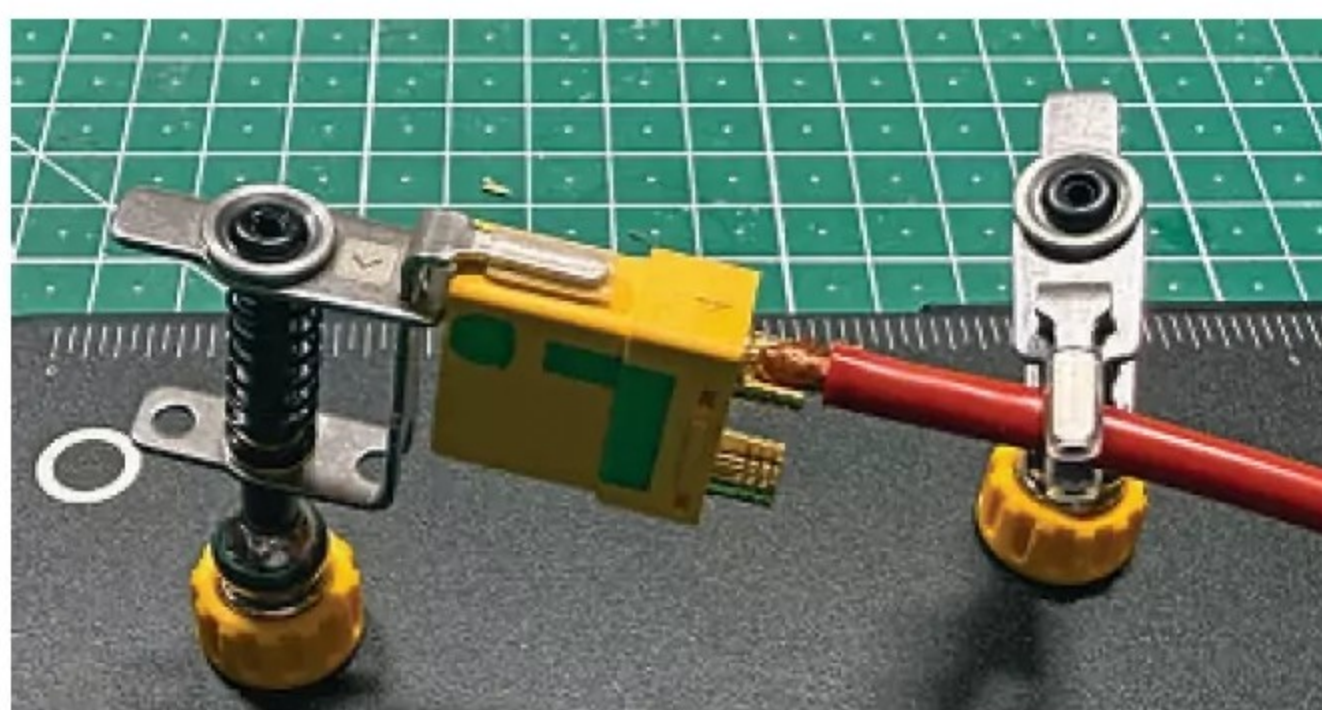
quality ARTF that oozes quality and is sure to whet the appetite of any red-blooded R/C aerobatic pilot. Manufactured by Pilot-RC, the airframe is a hybrid wood/composite affair adorned in an attractive film covering over an Oracover base. The wings are removable, as are the stabilisers, which feature a no fuss, quick release system. Other features include pre-installed hinges (glued and pinned), carbon fibre main U/C, wheels and spats, axles, tailwheel assembly, wing tubes, pre-mounted canopy, pre-prepared pushrods with ball links and a 3.5" diameter carbon spinner. There's also a transparent lower section cowl that can be used to mark the required apertures for cutting the cowl itself for a perfect fit. Requires a 30 to 40 cc IC motor or electric equivalent, 4-channel R/C (aileron, elevator, rudder, throttle) and 5 x high torque servos (plus one standard servo for throttle if using IC power).

Since the company's establishment in 1980, Extra Aircraft continue to design and develop world beating, high performance aerobatic aircraft. From the 230 to today's NG and 330, the Extra continues to garner success at the highest level in both full-size and R/C arenas. New from MacGregor, this 1.9m span Extra 330SX is a high

OMNIFIXO CLAMPS

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Designed as a helpful 'third hand' in the workshop these clever, new generation clamp stations are equipped with magnetic ball joint feet and spring mechanisms that combine to allow the clamps to be positioned easily and remain stable when in the desired position. Ideal for general use - gluing, painting, soldering etc. - removing the silicone protection from the clamps allows them to be used as electronic conductors for testing circuits. Available in two sizes: the S2 is supplied with a 90 mm x 90 mm base plate, 2 x



feet and clamps; the M4 with a 90 mm x 160 mm base plate, 4 x feet and clamps, and a box.



RADIOLINK T16D COMBO

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An embellished version of the popular AT10II, the T16D, 2.4 GHz upper mid-range telemetry capable transmitter has 16 fully proportional channels and, like its predecessor, has been designed with a future proof feature set to suit everyone from fixed wing enthusiasts to multirotor pilots, helicopter flyers, truck and track drivers, and even bait boat fishermen. Equipped with FHSS (Frequency Hopping Spread Spectrum) protocol, it provides enhanced interference rejection and the peace of mind that comes with a rock solid, full range transmission rate. Supplied with an R16F 16-channel S-Bus receiver, check out the T16D on the J. Perkins website where you'll find the full feature list, which includes intuitive programming, colour LCD, telemetry features, and wireless trainer link option.

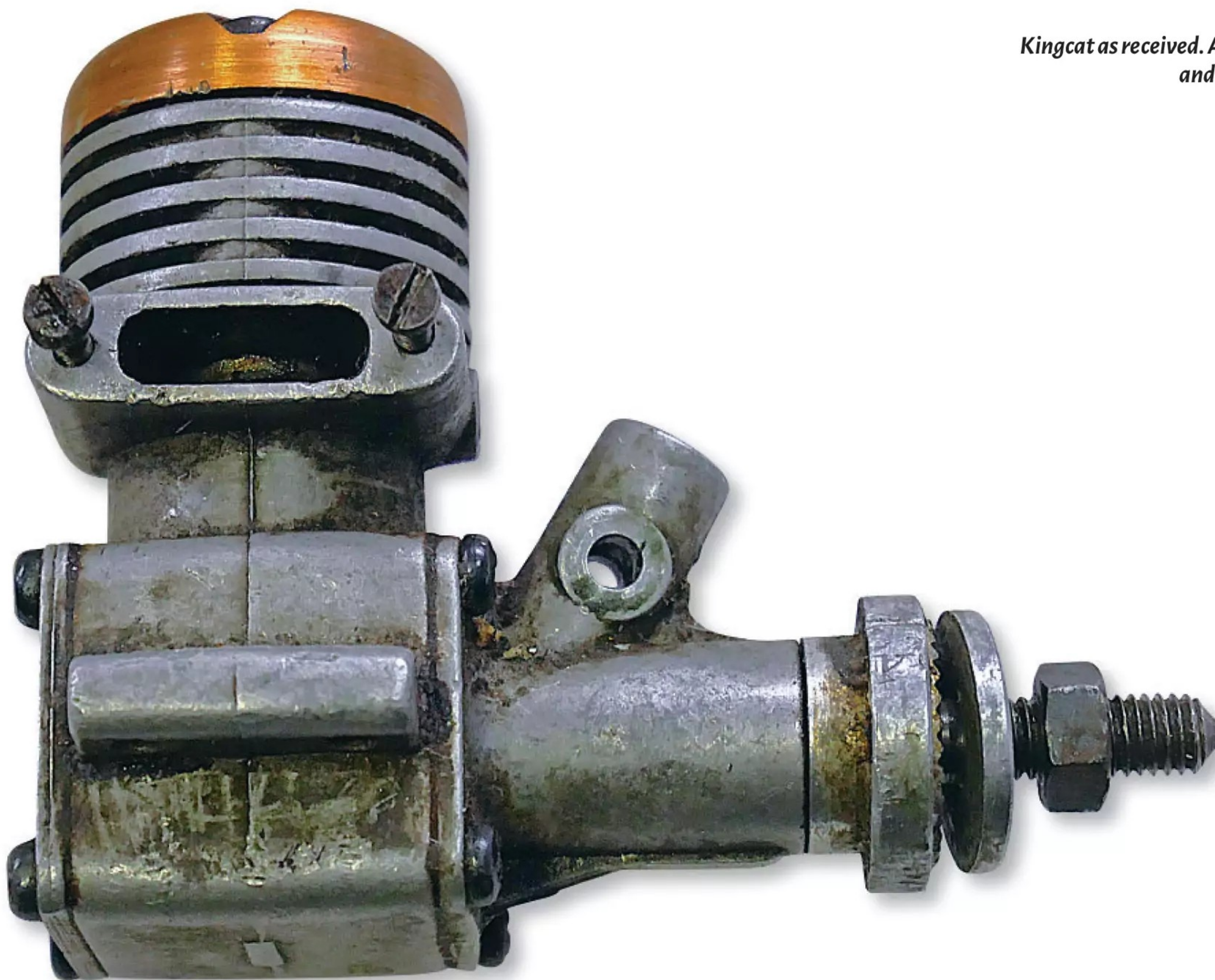
SECRET WEAPON V2

£199.99 | www.powerandsailplanesinternational.co.uk

This year sees the welcome return of Power & Sailplanes International and some of their much-loved classic models, staying as close as possible to the original Clifford Nancarrow designs with some sympathetic modern-day improvements. There's also the prospect of some new, innovative designs in the future, so be sure to check out www.powerandsailplanesinternational.co.uk or their Facebook page for the latest news.

One of the first models to be relaunched is the Secret Weapon aerobatic slope soarer. Redesigned as a laser cut 'click and build' quick assembly kit, this elegant ship retains all the great looks and performance of the original model with the added advantage of being e-power capable, opening the door to flat-field flying. The two piece, 1.8 metre span wing makes for easy transport in most cars.





Kingcat as received. A bit forlorn and scrofulous.

GRATIFYING GLOW

Dave Goodenough starts work on restoring some old engines and begins to pass on tips concerning ailerons and their hinges

Words & Photos: **Dave Goodenough**

In the last 'One Man...' I'd mentioned that my Kentish mate Glyn had presented me with a batch of older and 'small' IC engines and, as a lifelong engineer and fondler of things mechanical, it was obvious that they needed some TLC to return them to service. With some naff weather preventing model playtime I began to rummage amongst the motors, starting with the relatively rare Kingcat of what looked like around 1.5 cc (.09 cu. in.). Although it turned over freely the report that *'it didn't run well'* prompted a twitch towards the toolbox. Dismantling a well-running engine is rarely necessary and I won't usually do it, but motors reported as poor running or showing crash damage are fair game.

OOPS!

Let me digress for a moment and appeal to your sensible side. If you work on dismantling anything, use the right tools! Knackered and



If your Allen or Torx keys look like this hang your head in shame! Simply file/grind the ruined end back to undamaged metal and it'll be as good as new.



All five tips (left) are worn beyond reasonable use. Don't keep struggling and making do. New tips are cheap and won't slip if used correctly.



Ten driver tips and a holder for just a handful of coins. You know it makes sense!



Oh, dear! The piston baffle is on the wrong side. No wonder the piston has a large carbon deposit on it.



Each brush material has a specific task, whilst the plastic picks won't damage aluminium parts.

"The stainless brush can be used on the steel crankshaft threads and assembly screws too"

wrongly sized screwdrivers, hex and Torx keys will ruin the head of a tight screw. Similarly, badly used, poorly sized and worn Allen keys will quickly chew the socket in a hex socket head screw.

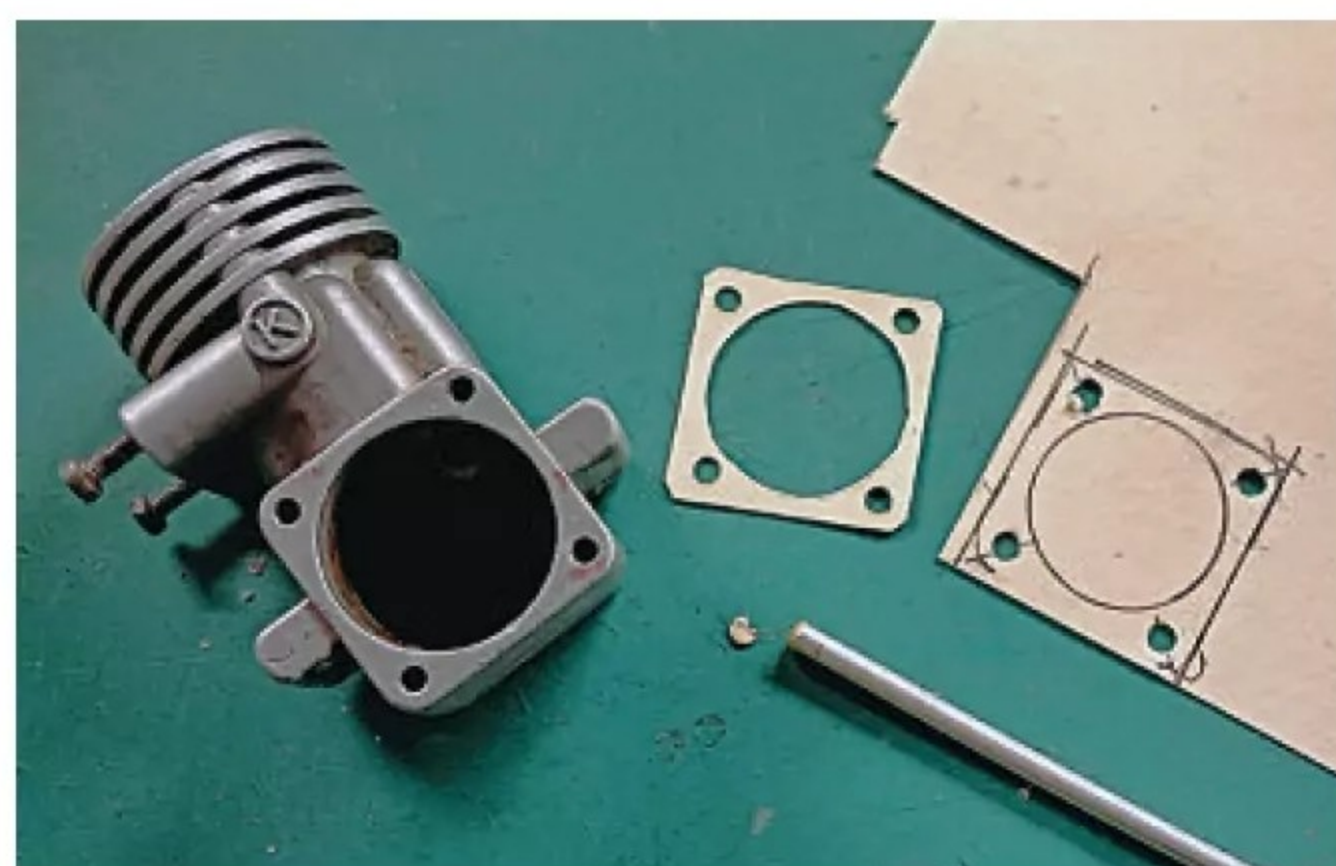
Remember, cheap tools give cheap results and worn tools damage fixings and lead to butchery; it's one of the truisms that apprentices learn early in their careers. Good quality driver tips, or sets of them, are relatively cheap and easy to source so always have them available. Okay, minor rant now over, back to the engine!

With the cylinder head removed and eyebrows raised, the Kingcat revealed its secret. It's an older 'crossflow' engine with its baffled piston and shaped recess head interior on display. This type of internal construction is no longer used as Schnuerle porting in two-stroke engines gives more power and fuel efficiency. Crossflow engines run 'wet' in my experience, casting out more exhaust residue than a modern engine. I like their torquey nature, despite the mess. It was immediately obvious that in this little engine the piston baffle was in the wrong place; it had been 'got at' before and the piston refitted the wrong way round. It couldn't possibly have run well, and the carbon build up was witness to poor internal scavenging and combustion. It had been running, but dreadfully badly, and no doubt with much reduced power.

SCRUB THAT

Heat was needed to release the cylinder liner from the crankcase because it was 'gummed' with old fuel residue. After soaking in solvent, it was time to clean it, using tools I had just found on that 'strong and ancient women' website - a set of small double-ended wire brushes and plastic picks.

You don't attack dismantled engines with an ordinary 'sheddy' wire brush unless



Replacing the Kingcat crankcase gaskets with hard card. Fiddly, but it gives a good seal. A section of sharpened aerial tube cuts the screw holes.

you intend to score, scratch and knacker it. It's 'horses for courses' so pick the right tool for the job. Older engines like this have a Meehanite (fine cast iron) piston inside a steel cylinder liner. Later engines opted for high silicon aluminium, often within a chrome-plated brass liner, aka ABC construction. I used the stainless-steel wire brush from my new set to clean the crown of the iron piston after first removing most of the carbon deposit with one of the plastic picks, then I used an offcut of plywood as a scraper, finally giving a scrub over the surface of the crown ONLY to finish cleaning. The stainless brush can be used on the steel crankshaft threads and assembly screws too. This little engine was going to be used again, not be a showpiece, so surface staining of the iron/steel parts was left 'as was'.

The crankcase and cylinder head were boiled in water, then scrubbed with the nylon brush. The soft copper brush was used with care on the stubborn aluminium staining but **not** the red anodised cylinder head; you don't want to damage the surface finish. The raked spray-bar drilling was carefully cleared with a 'sized' drill to remove some previous bruising and all parts were cleaned again.

PASSING GAS

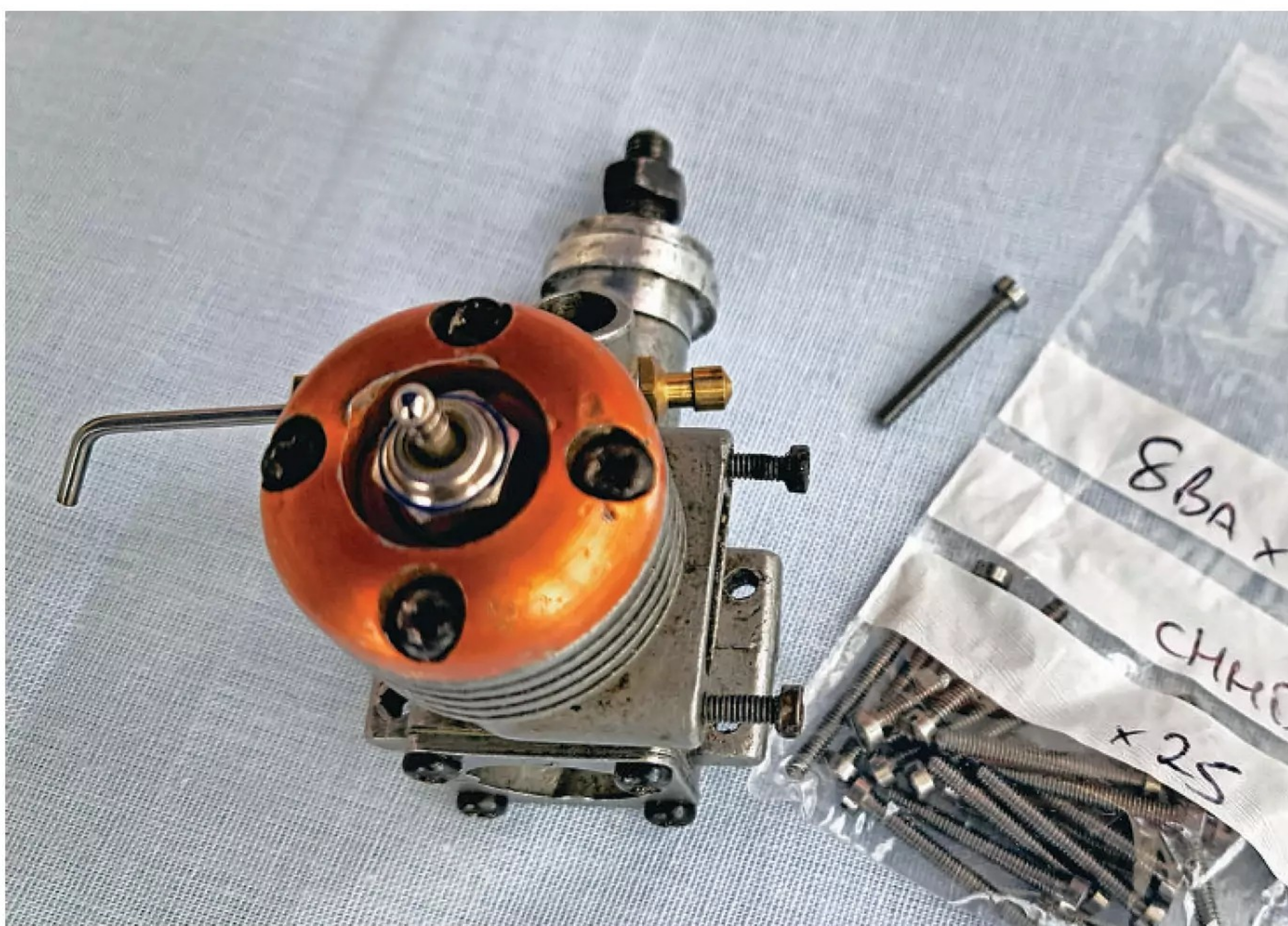
Two stroke engines rely on their transfer chamber, the crankcase, being airtight. On the Kingcat both crankshaft housing and backplate gaskets were crumbling and beyond further use. The mating surfaces were carefully cleaned and two new gaskets made from 160 gsm card, around 0.010" (0.25 mm) thick. The gaskets are needed to both seal and provide the correct fitting tolerances to the engine. No sealant is necessary as it just makes a mess.

Engine assembly is quick and simple, the reverse of dismantling, with a light oiling of all moving parts as they are fitted. The piston was replaced the correct way round, the head aligned with its baffle then clamped down. A new medium heat short reach glow plug was screwed in place and a standard small PAW needle valve assembly fitted as it was perfectly sized for the job.

Bolted to my engine test stand, another new purchase, then piped into a fuel tank, the motor was primed and flicked over a few times before the glow plug was energised. A couple more flicks had the wee beastie running a tad rich (needle valve open too far) but adjustment



Almost there! Kingcat is cleaned, oiled and has a new plug and PAW needle valve assembly.



Those 8 BA (British Association) screws in the exhaust outlet are too short for a silencer.

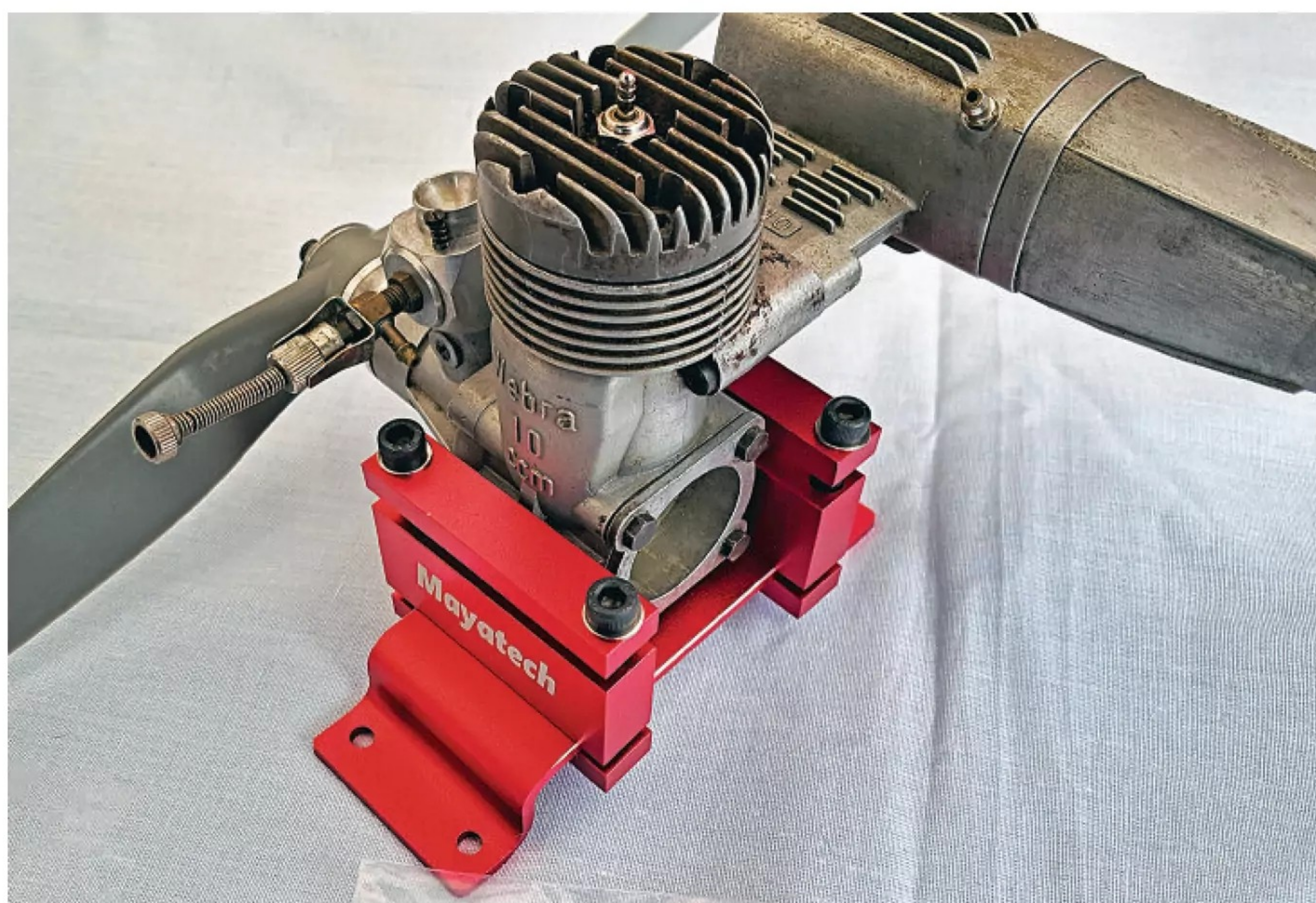
to the needle quickly 'leaned out' the fuel mixture and had the motor running sweetly, if a bit noisy and oily, as expected.

Open exhaust Infernal Confusion engines are somewhat antisocial these days and after all these years since their manufacture no silencer is available 'off the shelf' so some form of muffler/silencer needs adapting or

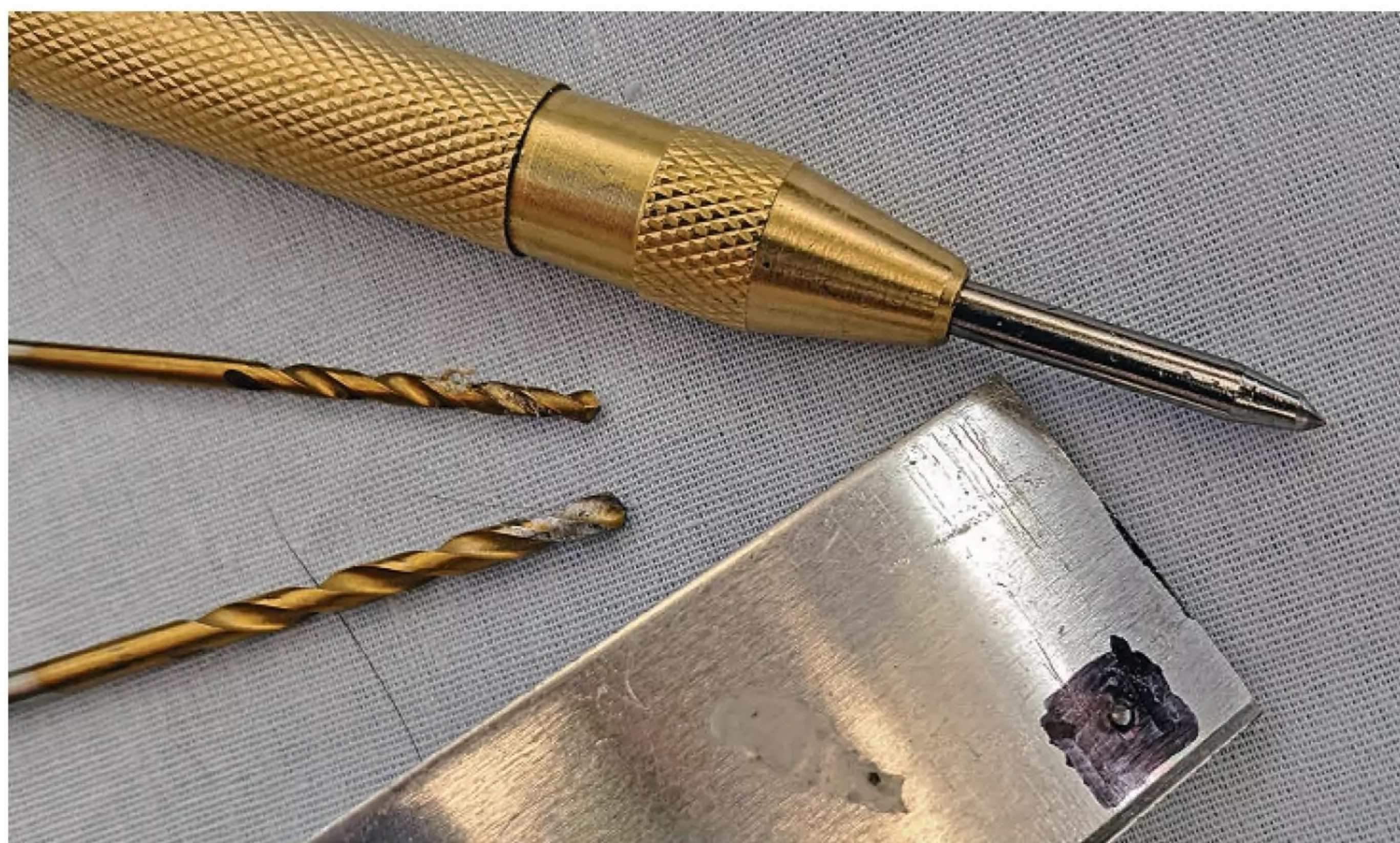
constructing to quieten this moggie. I'll have snout around and see what can be done. You'll probably see the result here in the future.

STAND READY

When I wanted to test the cleaned/renovated engine and dug in my engine 'Zin' box (Zin there somewhere?) to find my 60 plus year



My new engine test mount sports a future refurbishment project - a mighty 1960s 10cc Webra Blackhead 61 powerhouse.



Don't let your drills wander! A cheap automatic centre punch leaves a 'dot' for the drill to centre in. See middle of the square black mark.



'Over & under' film hinging for thin wings. Fold the aileron back 180 degrees flat on the wing top surface and iron on the underside strip of film. See 'Top Hinging' overleaf.



The simplest hinge material for thin wing trailing edges in small models is Blenderm tape. Almost invisible in use, can you see it? This is a 2 mm thick Jedelsky wing/aileron. See 'Top Hinging' overleaf.

old Mercury engine test mount, it wasn't there. I last saw it on a test table back in France, checking out a mate's engine, and much as I wanted to get it back, it wasn't worth the exorbitant postal cost levied by 'La Poste'. A quick snout around eBay found lots of the Mayatech engine test mounts available for a sniff over £20, so I ordered one. Just unwrapped, it looks well 'fit for purpose' but might need some fettling to fit smaller engines. Being as the side pillars are solid aluminium, clamping smaller engines may involve drilling and tapping the supports and removing the top clamp plates. Whatever happens, you'll see the results here.

But whilst on that subject...

DOT THE I'S

A centre pop or punch, in the engineering vernacular, is a small, pointed tool that you strike with a hammer to leave a centre dot, that little indentation you use to stop your drill from wandering when attempting to drill metal workpieces.

What's that, you don't use one? Shame on you and don't blame your drill when it wanders off and knackers your job!

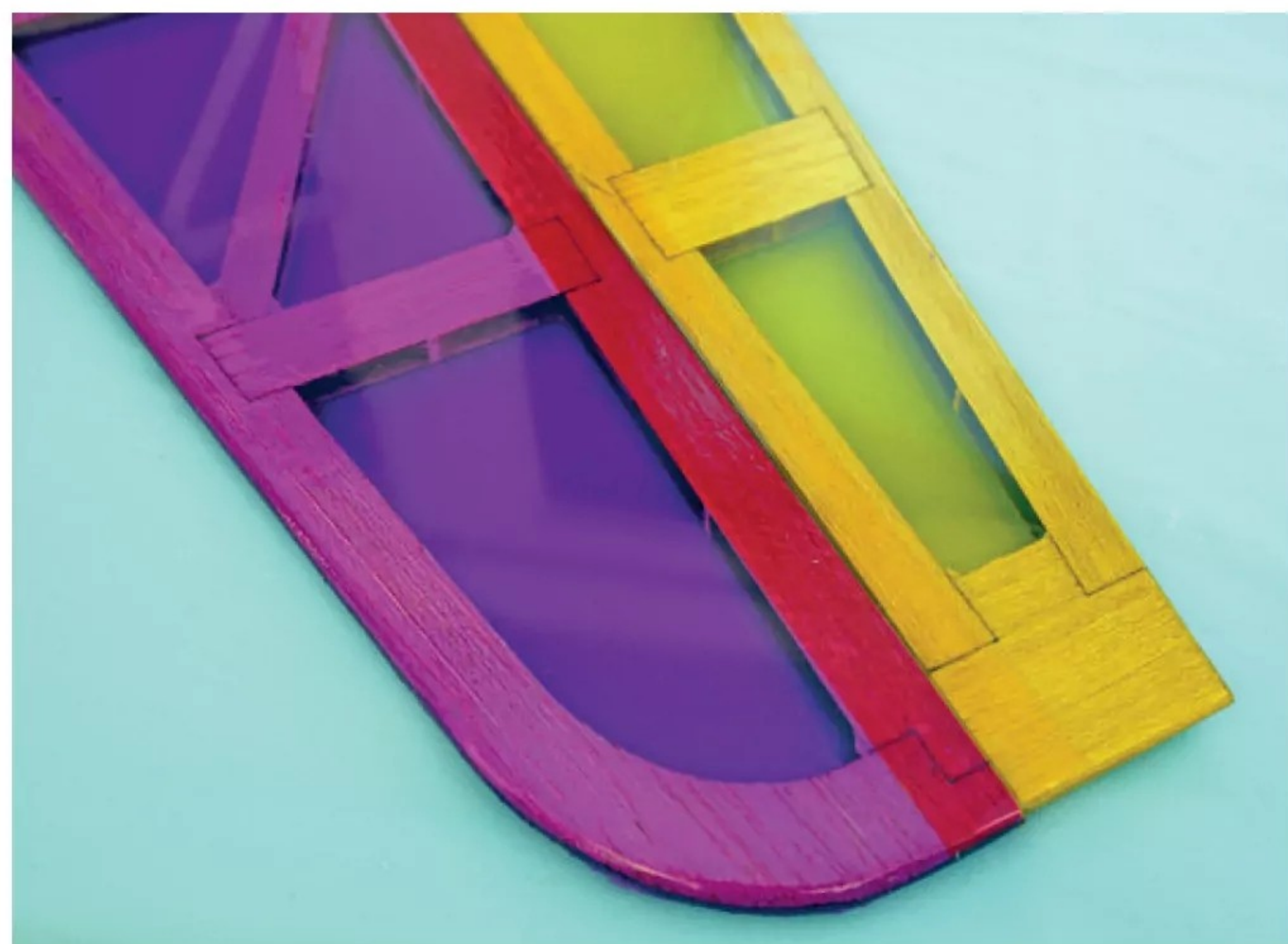
The simple centre punch is a very useful tool but if you want to be flash about it use an automatic centre punch - no hammer needed. Simply align the fine tip with the point you wish to mark, push down and - clunk - as if by magic, the dimple is made. No more excuses for wandering drill tips and scored metal. Found on eBay for a smidge over a fiver, it's a 'that'll be handy' tool to join your arsenal and keep your drills sharp.

SOFT BALSA

I mentioned before that I wanted to do a conversion on a 30" rubber powered model of the Aeronca Champion from Dumas Models. I began to delve into the kit and found the wood selection used very soft balsa laser-cut parts ✈



This the 'over' strip of film, ironed on whilst the wing and aileron are flat.



Finish covering the wing top surface, overlapping the hinge strip of film. Done properly it will only let go if you destroy the model.

that needed tissue reinforcing (as detailed in a previous article). Further attempts at starting the build were awful, with friable and fragile balsa strip, so I gave up.

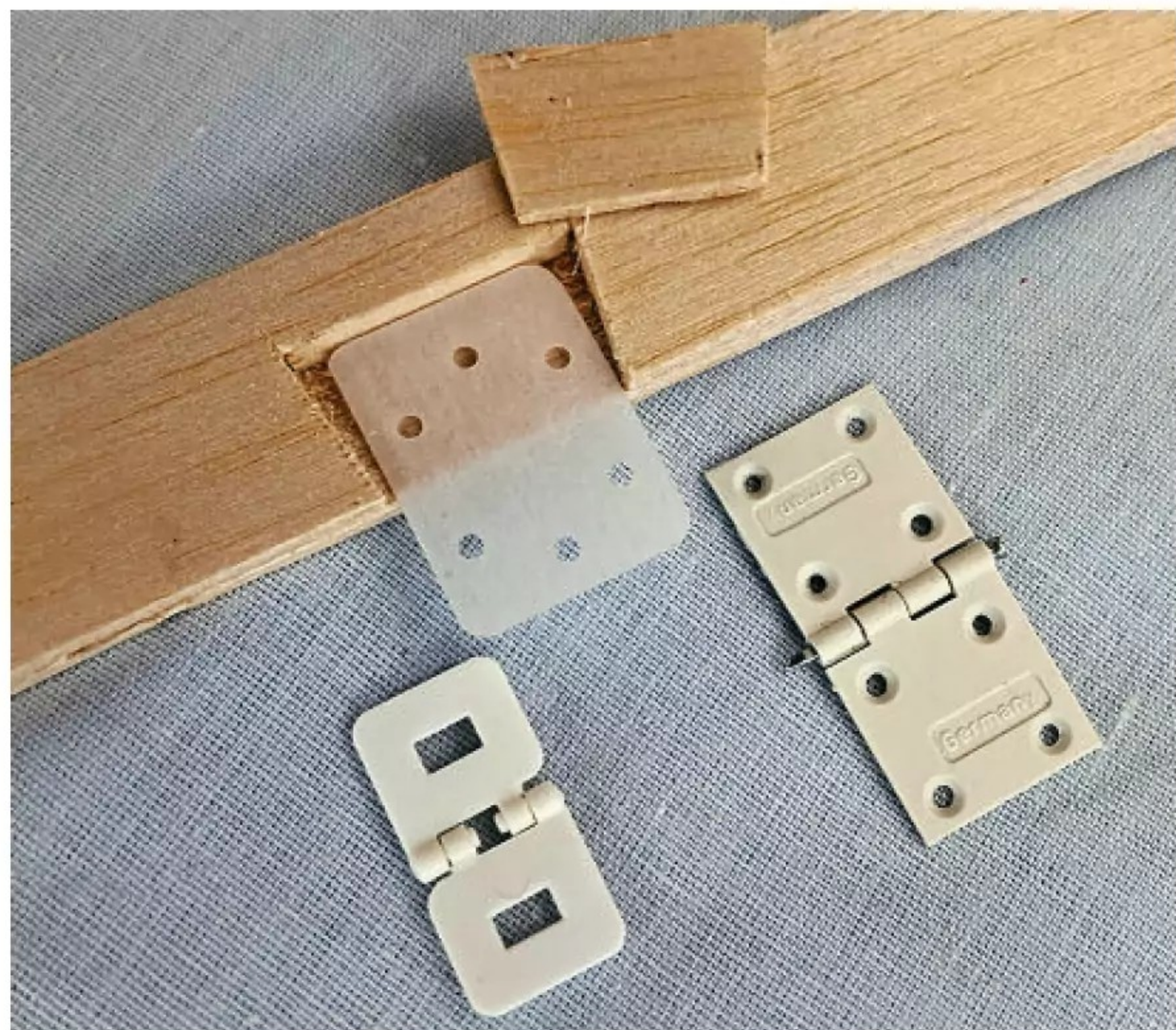
Following an e-chat with Hadi Kanan, the chap that runs The Vintage Model Company close to where I live, he joined my local gliding club, the Leek and Moorlands Model Gliding Association. For a short time, Hadi's company was producing 150% versions of several older scale rubber model kits but a bit of a problem with accurate laser cutting saw the models withdrawn. There may be a bit of a rethink on the horizon and I for one will be in the queue for at least one of the kits if/when they become available. I know for a fact that the VMC wood selection has been reported as 'superb', so I'll keep my micro radio gear ready and waiting for a future release.

ROLL CONTROL

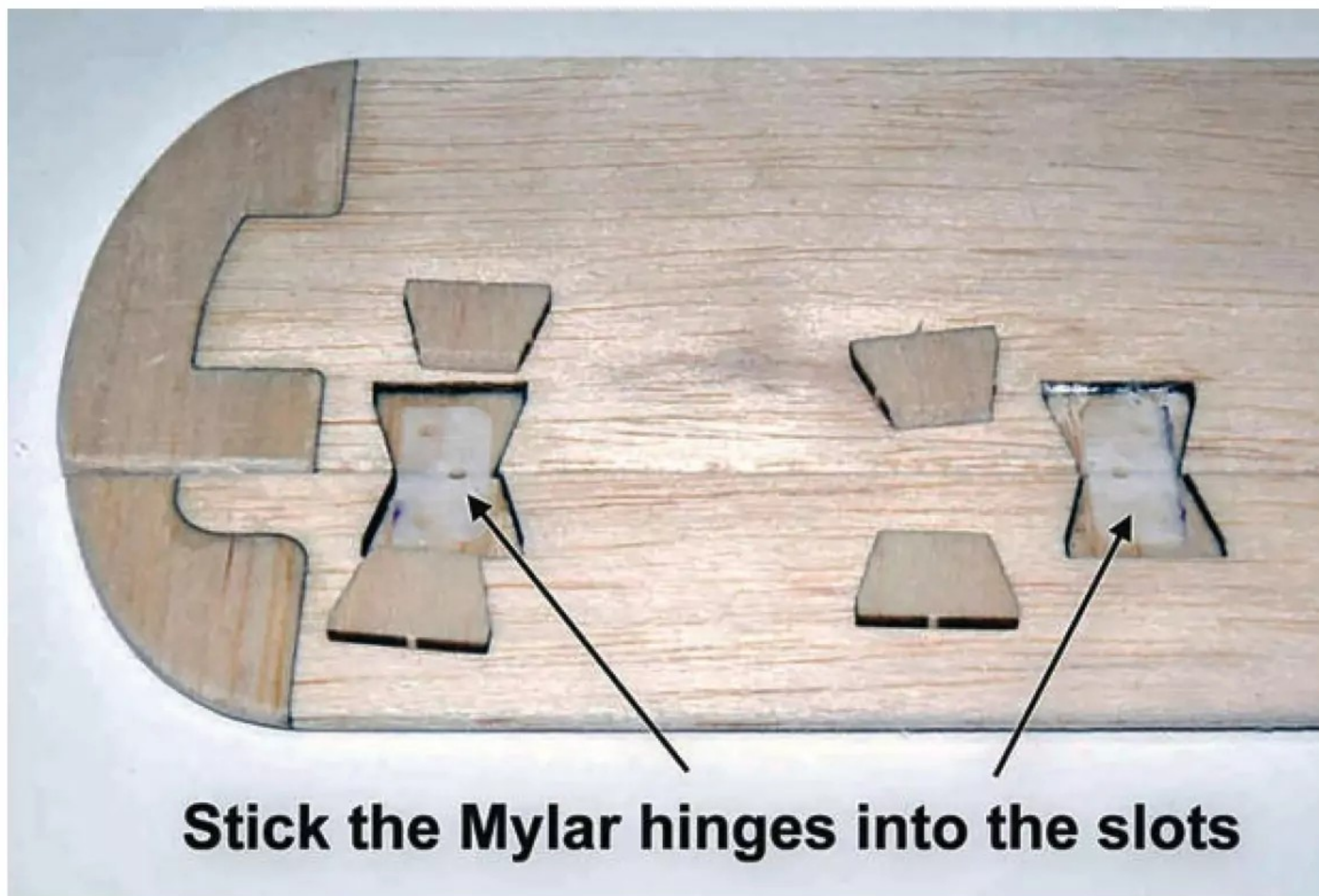
In the last 'One Man...' I rambled on about aileron sizes, shapes and positions, plus 'suitability for task', that sometimes hard to define flying response you're searching for. If you've designed



My Du-Bro hinge slotting kit can prepare two widths of slot in various thicknesses of wing trailing edge and aileron. Fixing strength of the hinge depends on a well-prepared recess and thorough gluing.



The VMC method of fitting flat hinges (with annotation) features laser cut recesses. My adaptation is to cut a recess, place the hinge and thoroughly glue in the filler piece. Done properly it's a solid fixing.



Stick the Mylar hinges into the slots



No wings on this! My Thames Lighter 'Lune'. Yes, it's a mostly scale model.

your own models or modified existing kits you will have already found what size and deflection works for you. For others just dipping their toes in the water for the first time, I hope that the previous blather on sizing has helped some of you to make a decision on what to do for your intended needs and requirements from a model.

It's one thing to decide on the size and position of ailerons but how are you going to hinge the things and where do you put said flexi-bits? Once again, you must imagine the flight envelope of the model; is it a lightweight floater of a model or, at the other extreme, are you intending to fly your craft at the *'thrash the living daylight out of it and tie it in knots'* end of model aviation? There are so many variables in hinging and model construction it's impossible to say what is the 'right' method and only a sound assessment of each specific installation will lead you to a preferred option.

But first...

DEFLECTION

If you look at the ailerons on several 'general use' plans and kits, you'll soon note that the up and down deflections rarely stray outside of

20 degrees in either direction. Generally, only aerobatic/3D/Fun Fly models demand greater movement. Some models will fly under full roll control with far less deflection; my 1923 Peyret Avionette scale model has large area strip ailerons that give excellent control at a maximum of around 10 degrees of movement.

Once again, it's horses for courses. You decide what flight response you need and adjust accordingly.

TOP HINGING

Top hinging is the favoured hinge line for most older aircraft and the preferred position for almost all models. I rarely see any other type used and prefer it for my own designs.

Choosing the 'right' hinge comes down to experience, intended use and, of course, model construction. Hinges vary from the very thinnest iron on film to the strongest metal 'pin & knuckle' types. Thin wings can usually only accommodate adhesive tape, film or slotted-in Mylar strip or moulded flat types with metal or plastic pins. Adhesive tape is usually 'Blenderm' for the smallest/lightest models or 3M 'Crystal' or other tapes which are sold specifically

"...too often a bodged and poorly adhered hinge is an accident waiting to happen"

for the job. Film hinging is quick and simple using the 'over and under' method covered here previously.

Fitting Mylar strip, hairy hinge and flat-with-pin types means cutting a slot into both wing and aileron. It's quite doable but takes some care and thought; they are used more for simple mid-hinging. Done carefully, it can result in a very tidy, effective and durable job, but too often a bodged and poorly adhered hinge is an accident waiting to happen. If you can find it, a hinge slotting kit makes the job much simpler and leads to a well adhered hinge. Some builders pin their flat hinges in place, a *'belt and braces'* installation that will only pull out if the model is in a soul-crushing crash.

The new VMC 'Cinnabar' glider uses a different approach that others could emulate. The control surfaces have a recess formed in the shape of the flat strip hinge. With an infill section shaped to fit, the hinge is glued, set in place and the infill glued over it - see the image nearby. It cannot fail to be a securely held hinge if glued in properly. A great piece of lateral thinking that can be used on flat plate/thin wings to advantage.

OH, DEAR!

I had hoped to wander further into the whys and wherefores of aileron hinges and positions, but I've run out of ramble room. I'll head into the subject again in the next article.

As a last mention, I must admit that I don't only build model aircraft. I also indulge in the occasional *'wetwun'* - model boats, that is. Having an old model tug, I cast my mind back to my days working in London, down near Thames dockland, and my fancy brought forth a 'Lighter', one of those barges that have been lugged about for the last 100 years or so. A bit of wood butchery, some playing with plastic model kit leftovers and - Voila! - I had something a bit different.

When you reflect on the pleasure this hobby brings, Charles Spurgeon seems to have got it right: *"It is not how much we have, but how much we enjoy, that makes happiness."*

Send me an email: coetquidan@yahoo.com ■

USEFUL LINKS

Vintage Model Company:

www.vintagemodelcompany.com

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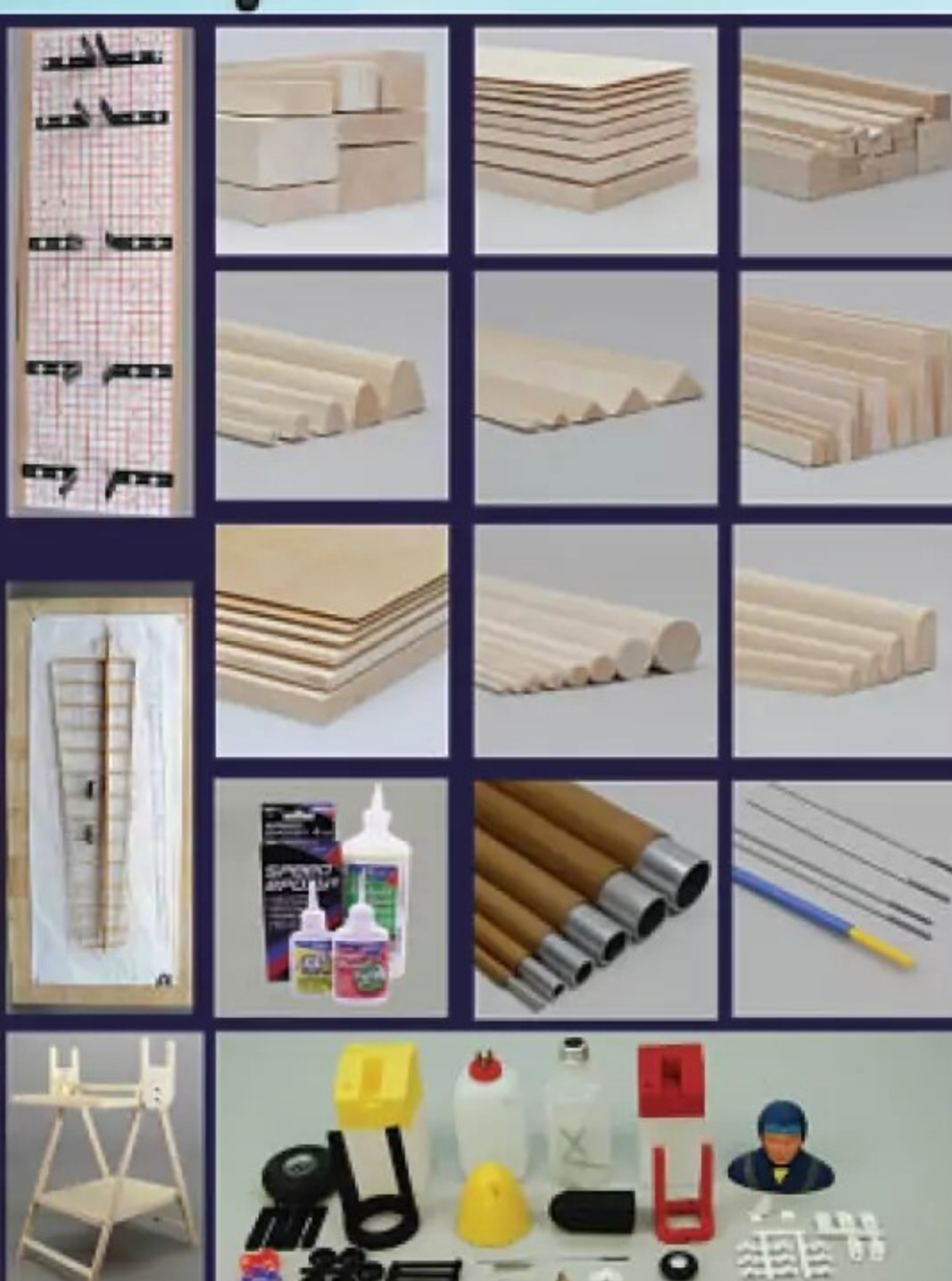
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BELL 206

The Editor assesses one of a new breed of GPS model helicopters

Words: **Kevin Crozier**

Photos: **Kevin Crozier, Barry Atkinson**

I have been flying model helicopters on and off for the past 30 or so years, although more off than on recently I must admit! Each time there has been a major development with these fascinating flying machines I have been a bit slow to adopt the new technology, preferring to update my model aeroplanes first. So, it took a while for me to convert my first heli to 2.4 GHz, then a wee bit more time to discover the nimbleness of flybarless machines. But I did catch on fairly early to electric power and so have mostly enjoyed fuss free helicopter flying ever since.

Having taken my eye off the ball recently regarding the latest developments in R/C helicopters, which mostly seem to me to be about developing some seriously ugly 3D machines, I was a bit taken aback to be offered a GPS model helicopter to review. What's one of those, I thought...



The Bell 206 body is moulded in glass fibre and is very nicely finished, being spray painted to represent a now retired aircraft flown by the Los Angeles Fire Department.



Inside the plain brown box the fully finished model is swaddled in copious quantities of thick foam padding.



A modern, minimalist style transmitter is supplied, pre-programmed to fly the Bell as Fly Wing intended. Fiddle with it at your peril!



Everything about this kit suggests good quality, all except the stickers next to the switches which look a bit like an afterthought, especially the skew-whiff one on the right!

“A quick search online revealed the development of several GPS helicopters in recent years, mostly by a manufacturer called Fly Wing”

FLY WING

A quick search online revealed the development of several GPS helicopters in recent years, mostly by a manufacturer called Fly Wing, the same company that had contacted me. Fly Wing produce GPS helicopters in scale and 3D guises. Now, I'm more than happy performing low-level (make that scruffy!) versions of mild helicopter aerobatics with my small collection of electric sport helicopters but I don't currently own a flyable scale machine. So, my attention was immediately drawn to Fly Wing's scale offerings which promised a quick fix to fill the blank space in my heli fleet.

Perusing <https://www.flywingrc.com> I was tempted by their Airwolf and BO-105, but I already have small indoor versions of both of those. So that left the UH-1 'Huey' in US Army colours and a very sweet-looking Bell 206 in the red, white and black livery of the Los Angeles Fire Department. The JetRanger looked very nice indeed, so I placed my order for one of those.

OFF TOPIC

Fine and dandy, KC, but what about answering the question about GPS helicopters? Well, this basically describes an R/C helicopter that is highly stabilised courtesy of the latest gyro technology, combined with knowing exactly where it is in the world thanks to being



Accessories include a 4-cell mains charger/discharger, a set of Allen keys, a USB computer lead and a bind lead. The manual is a must read to get the model safely started.



A 4S 3000mAh brick style LiPo is supplied, complete with a hook and loop hold down strap.

fitted with an M10N GPS system. An M10N is a multi-constellation GNSS (Global Navigation Satellite System) and that's where I'm going to stop. Look it up if you want to know more as I need to get back to the Bell helicopter!

It also has a high precision IMU (Inertial Measurement Unit), fitted with a barometer to measure acceleration, angular rate and magnetic field. The barometer measures atmospheric pressure to determine altitude. Here I go again, so Google is your friend if you want to know more!

This all means that for all intents and purposes a GPS model helicopter is more than capable of flying itself, which the Bell does with amazing accuracy, even in the strong and gusty winds that we have been having here in the UK lately. Many of our readers will have enjoyed flying a modern camera drone, as typified by DJI devices, or will have seen one of those being flown at their local model club.

So, think of one of those quadcopters but with just a single main and tail rotor and you'll get the idea.

Traditionally R/C model helicopters have had the reputation of being difficult to learn to fly, although it's really not that difficult if you build up your flying skill levels in small steps. A good R/C simulator helps too! However, a GPS helicopter circumvents all the prolonged learning angst (and the inevitable drain of buying spare parts on your wallet!) as once the main rotor has spun up to flying speed all you need to do is to advance the throttle stick and it will lift into the air all by itself. In fact, as an experienced heli pilot the worst thing you can do is try to intervene on the controls as that is likely to upset proceedings and things go wobbly very quickly! So just relax, trust all those clever electronic aids and let the model rise off the ground - which it does very quickly, so

“The transmitter is of good quality with simple, clean lines. It is pre-set to suit the helicopter so doesn't need programming”

stand well back. By default, it's a Mode 2 set up so just keep your fingers away from the right hand (aileron/elevator) stick. (It can be changed to Mode 1 if that's your preference.) You can then explore each of the individual 'cyclic' controls, using 'elevator' to move the helicopter forwards, then back, and the 'aileron' control to move it sideways to the left and right. The rudder stick will yaw the helicopter to the left and right. That's all simple enough when the model is facing away from you and you are giving gentle nudges on the sticks, but things can get a lot hairier when a helicopter is facing you, nose in, and the lateral and yaw controls are reversed. It's probably in those situations where most accidents with conventional R/C helicopters occur and things can rapidly go from bad to worse as you start stirring the sticks in a vain attempt to restore control. But with a GPS helicopter, like the Bell-206, all you need to do is to let the sticks go and the model will quickly resume hovering all by itself. Magic!

That's not to say you'll be immune from crashing a GPS helicopter, especially if manoeuvring close to the ground, but the chances are far lower than with a conventional machine. On the other hand, it won't really teach you much about flying a traditional R/C helicopter either, so you'll have to start from scratch if you want to learn to fly one of those. However, it may help with any orientation and reverse control issues, such as when learning to fly nose-in, so in that respect a newbie helicopter pilot who has learnt to fly a GPS model and wants to transition to a 'normal' heli may well have a head start on anyone starting to fly traditionally from scratch.

Learning to fly with a scale R/C helicopter in the past was really asking for trouble and a big repair bill. Scale body sets are not cheap! I would still recommend starting with a sport machine if you decide to learn to fly with a GPS helicopter as you may still have orientation and control reversal issues when close to the ground, even though the risks are greatly reduced, which would likely damage one of Fly Wing's nice scale body sets. Don't be put off by the 3D moniker that Fly Wing use for their sport aircraft as those models have all the same GPS functions too but would be less expensive to repair in the rare event of a crash.

Of course, Fly Wing would argue that it's perfectly possible to learn to fly one of their scale helicopters when in GPS mode and it's difficult to argue with that, with the Bell 206



Rivet details, engine mesh covers and transparent cockpit windows all add to the pleasing scale effect.



Close up on the flybarless main rotor.

having proved so stable and easy to fly. So, the above is just my recommendation.

BELL, WHERE ARE YOU!

Crickey, I've been blown off course again! Let's get back to the Bell JetRanger and see what's supplied.

Our sample arrived in a plain brown cardboard box with line drawings of a Fly Wing helicopter on the side. The helicopter is supplied fully assembled except for the rotor blades and is well protected by close fitting, deep foam padding.

The transmitter is of good quality with simple, clean lines. It is pre-set to suit the helicopter so doesn't need programming. Only three of the four shoulder mounted switches are used, with their functions being indicated by stuck on labels. These labels, whilst clearly showing the switch functions, are the only area that let the quality of the whole package down a little bit as they look just what they are - stickers! In fact, one was applied slightly skew-whiff, which doesn't help with the transmitter's otherwise stylish look.

Accessories supplied include a simple to use 4S charger/storage discharger complete with a UK style 3-pin plug. There's also a USB lead for connecting the helicopter to a computer (after downloading software from the Fly Wing website) so that you can alter the set-up to suit your personal preference. But the Bell flies so nicely I doubt if you'll need to do that. There's also a bind plug but as the model and transmitter are paired at the factory you shouldn't need to use that either. A very nice set of fold-away Allen keys is provided, which is a nice touch, as really you only need just one to nip up the main rotor bolts. Finally, there's a useful manual which is well worth reading, especially the section on powering up the Tx and helicopter, searching for satellites and setting the main and tail rotors running.

Wrapping up the kit contents is a 4S 3000 mAh brick style LiPo fitted with an XH balance lead and an XT60 power connector.

LOVELY BODY

The JetRanger body fitted to our sample is very nicely finished and is 760 mm long. It is

moulded in glass fibre and spray painted to represent an aircraft flown by the Los Angeles Fire Department. Copious moulded rivets, black engine mesh covers and transparent cabin windows add to the scale effect. It's not a 100% scale body but is certainly realistic enough to pass muster as a JetRanger with all but die-hard full-size helicopter enthusiasts. The obvious points of difference are the tail rotor, which is on the right-hand side instead of the left, and the absence of vertical fins on the horizontal stabiliser. (Also worth noting is that the LAFD have now retired Bell 206 'Fire 6' and those markings are now carried by a Bell 505.)

This flybarless model is controlled by three 4 kg metal geared high speed servos connected to the swashplate.

NEXT TIME

In the next issue I will give you my first impressions of my first sorties with a GPS helicopter as the Bell 206 lifts off for its maiden flights. ■



Join KC next time as he powers up the Fly Wing Bell 206 for its maiden flight.

TESTING, TESTING

Kevin Crozier starts to look at some of the review models being worked on for future issues

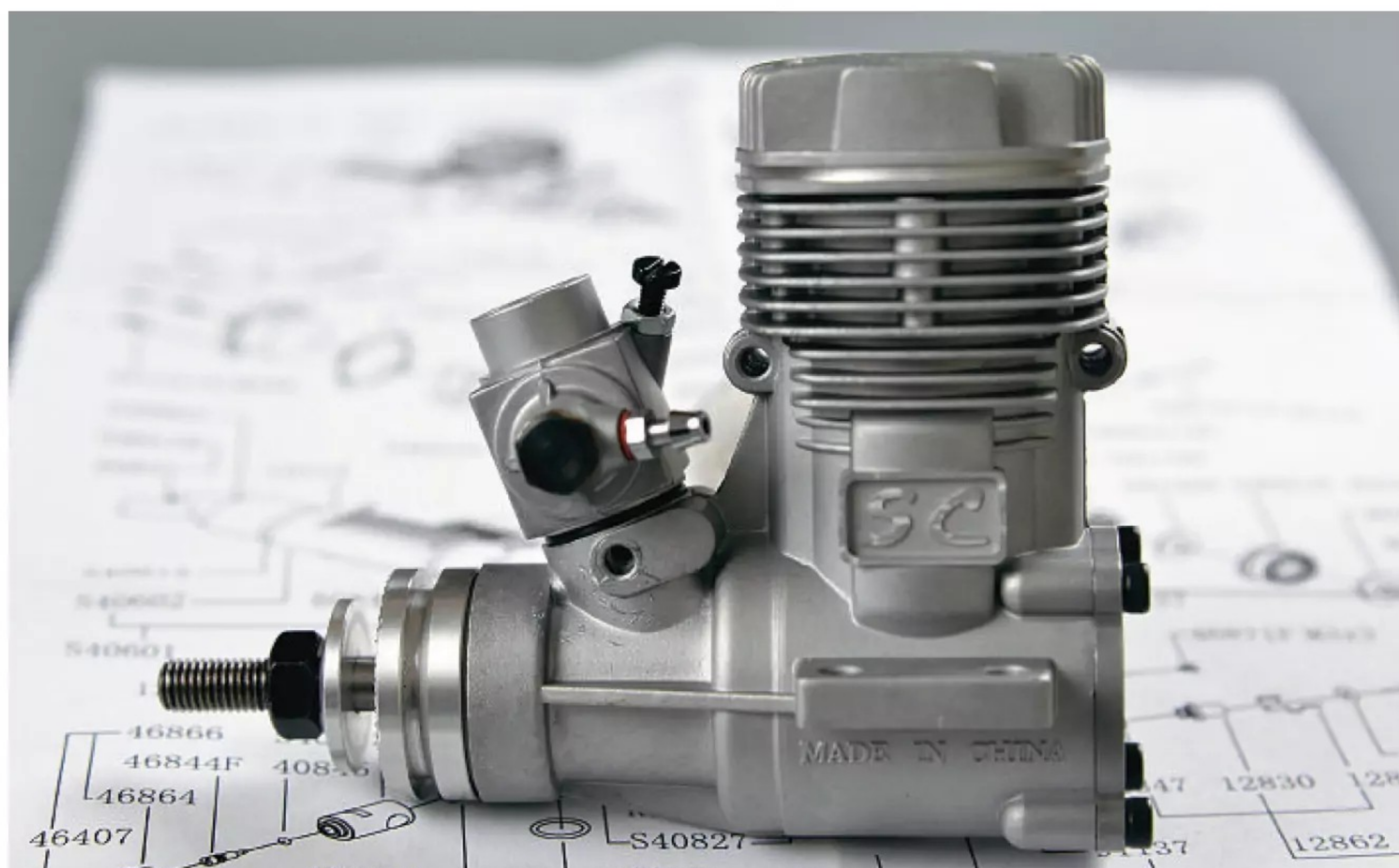
Words & Photos: **Kevin Crozier**

One of the things I intend to do with my articles from the editor's chair is to give some early exposure to some of the model kits and related products that pass through my office on their way to being reviewed. One of the drawbacks of a printed magazine is that it can take several weeks, indeed sometimes months if the weather is bad, before we can bring you fully completed reviews. So, I thought it would be a nice idea to give you a preview of some of the aeroplanes and products that we have lined up for you in future issues as soon as possible after photographing the kit boxes and contents in the studio.

The models can then be put back in their packaging and passed over to members of the RCM&E review team to assemble, fly and write a full review.

THANKS, BUT NO THANKS

A review slot in the magazine is a valuable thing and quite often the value of the five or six pages that we dedicate to each model is worth far more than the cost of the kit, compared to the rate card for the same number of full-page



A shiny new SC46A-S should give the Swift a sparkling performance.

advertisements. So, we make no apologies for mostly reserving these sought after areas of each issue for companies that regularly

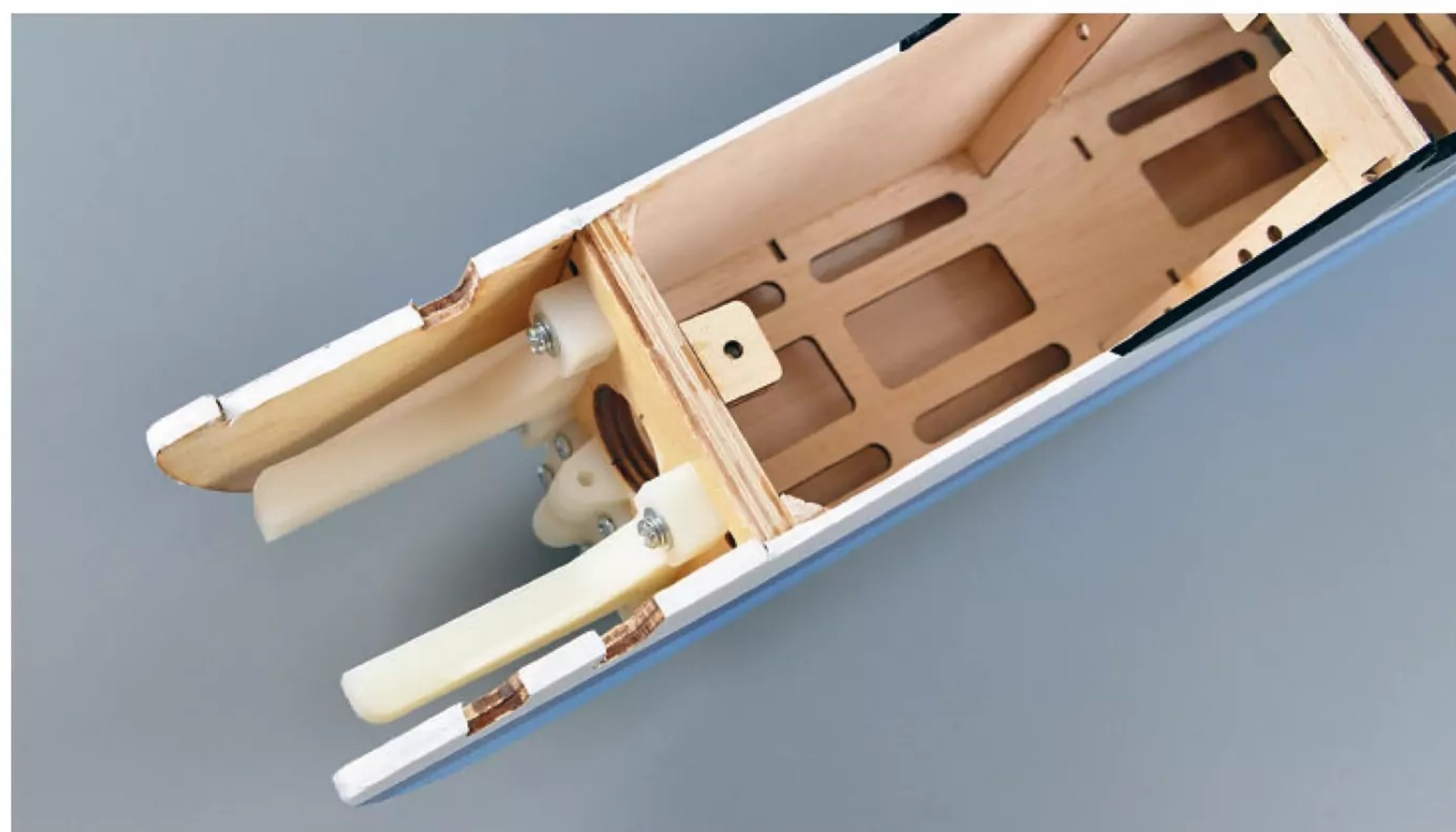
advertise with us. That's not to say that we won't publish reviews from model manufacturers and distributors who decide not to advertise for



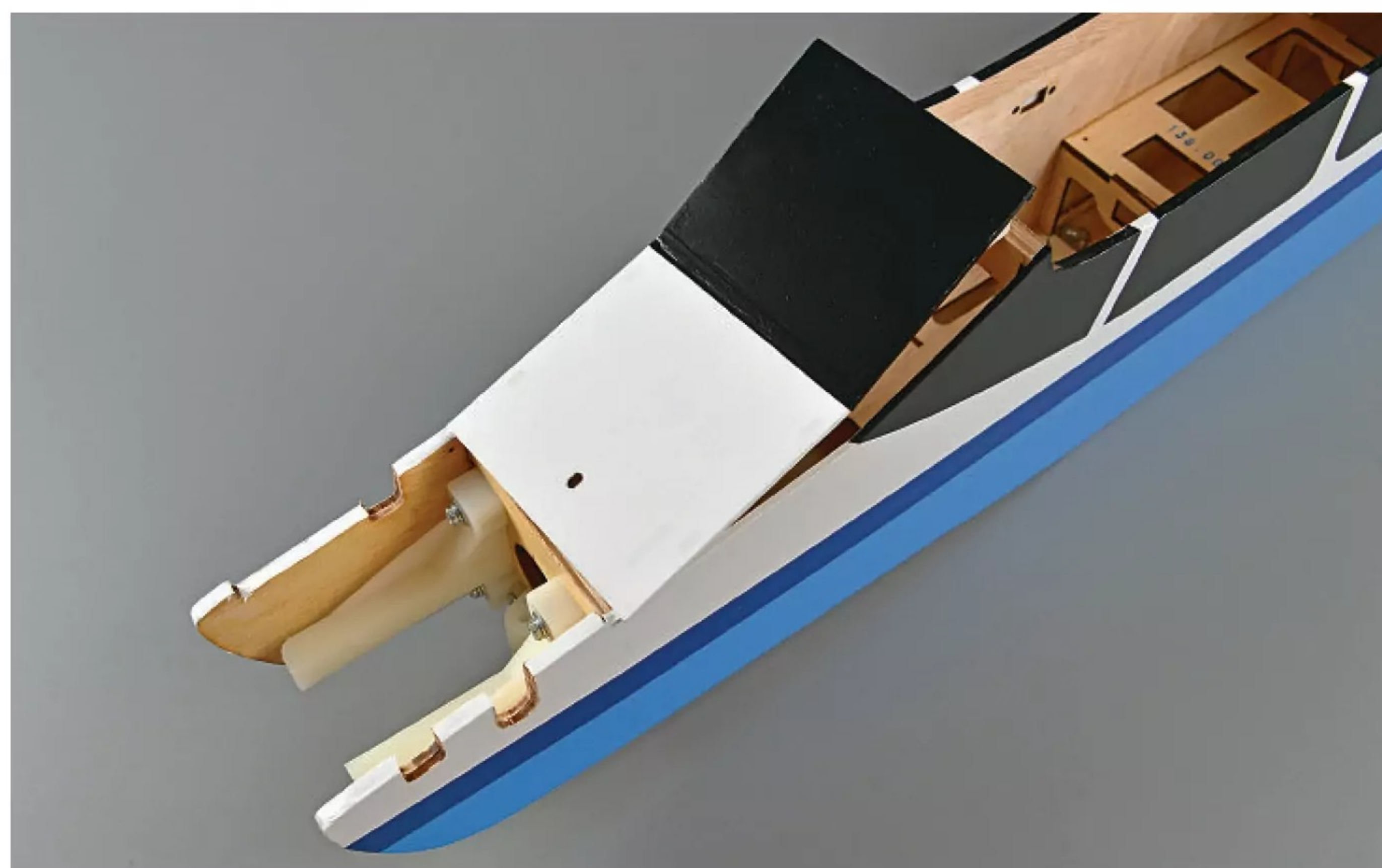
This image of the Swift V2, taken from the box top artwork, shows it to be a classic high wing trainer.



No need to complain about the instructions for this one! The manual clearly shows the steps required to put it together.



Fuselage is pre-fitted with plastic T-mounts for fitting an IC engine.



Top hatch is easily removed to provide access to the fuel tank or LiPo battery, depending on which power source you choose.



Parts spread of the EP conversion kit supplied.

“JP recommend an SC40A-S for training or the SC46A-S for sport flying. Both are front induction, Schnuerle ported, ABC R/C aero engines”

whatever reason, but our regular advertisers do to take preference, especially as there are only one or two review slots in each issue. (The low availability of review pages is another reason why it can take some while for a kit to filter through to being published.)

You might think that we would welcome kind offers of model reviews from our readers to widen the scope of the types and makes of aircraft we feature. But mostly, and for the reasons mentioned above, we usually decline as by the time we would be able to fit such a model in it could well be out of stock or production, such is the limited lifespan of models on sale these days. When I started flying R/C models in the 1970s a popular model kit could stay in production for years, if not decades. But in recent times model designs turn over ever so quickly and their shelf life can often be measured in months rather than years.

Also, sometimes a distributor, importer or manufacturer simply cannot bring sufficient stock to the market to satisfy the extra demand that a review in RCM&E is likely to bring them.

I could go on, but the basic message is to say to any kind folk who may be thinking of offering us a review of a favourite model is please not to worry. So, I hope you won't take offence when I say, 'Thanks, but no thanks.'

SEAGULL SWIFT

For the first of my previews, I am going to look at the Swift V2 trainer from Seagull Models, ✈

“First released in 2011 the Swift can now be built as a tail dragger or with a tricycle undercarriage”

distributed to model shops in the UK by J. Perkins Distribution. This kit builds into a good looking, old fashioned, high wing trainer and is suitable for either IC or electric power. A 10 cc petrol engine, a .40 - .46 cu. in. two stroke or a .50 size four stroke glow will all do the honours when fitted upright in the engine bay. Or you can fit a 4S electric motor set using the EP conversion kit supplied, as detailed on pages 12 and 13 of the well-illustrated instruction manual. However, it's fairly obvious from both the rearward position of the EP conversion in the instructions and JP's own website that a two-stroke glow engine is the preferred choice. JP recommend an SC40A-S for training or the SC46A-S for sport flying. Both are front induction, Schnuerle ported, ABC R/C aero engines fitted with rear needle assemblies.

We chose the SC .46 for our review model as no doubt we'll be wanting to throw it around a bit!

WHY A WOODEN TRAINER?

Good question. Simply put, we don't get to see many of them at flying fields these days. Most people seem to be told to buy a 3S foam sport electric model, hopefully with the controls turned down to allow the student a chance to keep up with things whilst in the air.

But in truth, I really wanted to get a model like this back into the RCM&E flying fleet in order to participate in the current resurgence of IC powered models seen at flying fields up and down the land. The joy of using glow engines is apparent every time I see my clubmate Neil Hall fly. Neil is the author of the recent 'Golden Glow' articles in RCM&E and his enthusiasm for IC powered planes is addictive.

I personally have several IC powered models that I could have brought out of hibernation for this purpose, but my engines haven't turned over for a few years and they were put away without much forethought about protecting them from corrosion etc. whilst detained in my storage unit. So, I expect that some remedial work will be required to de-gunk them and possibly replace corroded parts, especially bearings. However, I always run my engines dry before putting them away so maybe I am being over pessimistic.

Most of my IC models are also aerobatic planes with either inverted or sidewinder mounted engines so they might prove problematic to start and keep running after being kept in the dark for so long. I have visions of long and frustrating periods flicking away trying to breathe life into a recalcitrant motor, so I decided to take the easy way out and restart my glow adventures with fresh fuel and a brand-new glow engine.



All of the hardware looks to be of a decent standard.



One wing panel showing the neatly applied covering and trim. As this is a glow powered model, we must remember to seal the edges to prevent ingress of fuel and exhaust residue.



The fuselage is neatly covered in the same style. It's even more important to fuel proof the covering here, especially at the front and also any exposed wood inside the fuselage.



Pushrods and wing joiner tube. Nice to see the keepers (blue rings) ready for use around each of the clevises.

BATTLE IN THE SKY

I have long harboured the notion that many model pilots give up on their trainers far too early and move on to more agile aircraft that they struggle to keep up with. And at the more experienced end of the piloting spectrum, with our aging modelling population, I see many pilots struggling to fly models that are simply far too sensitive on the controls. Why continue to do battle with something like an Extra scale aerobat or a tricky WW2 warbird when you could revert to a statelier model and put the fun back into your flying?



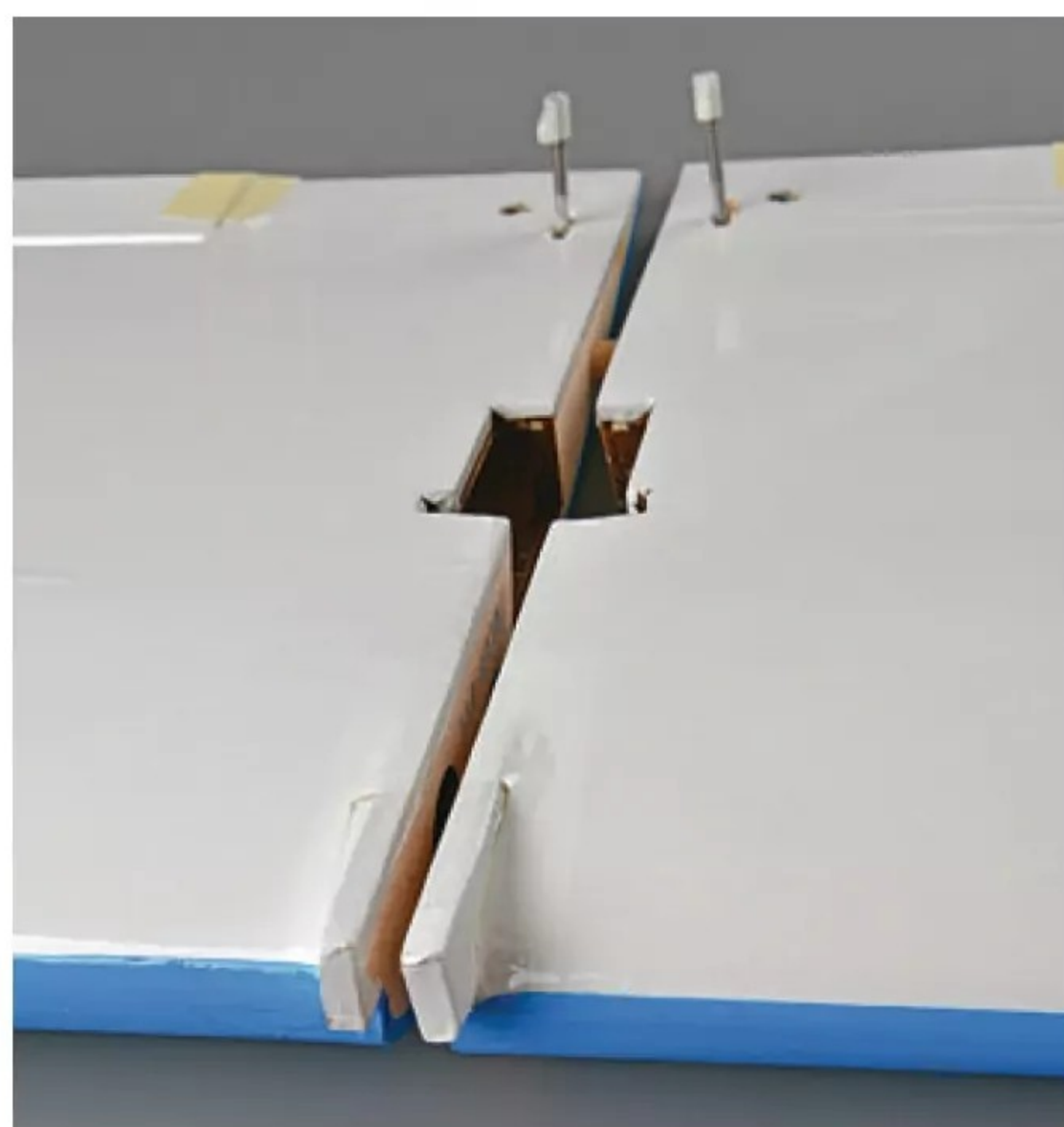
Undercarriage parts. Choose either a tricycle or a tail dragger set up. A tailwheel is included for the latter.

Now approaching my mid-60s, even I have to acknowledge that my flying skills are not quite so sharp as they used to be and my preferred aerobatic mounts occasionally end up in peculiar attitudes which I sometimes struggle to get them out of safely. So, I thought it would be a good idea to test my theory of winding back the clock to a more sedate model and see if it still

offered some fun flying for someone with over four decades of model flying experience.

POINTING UPWARDS

Perhaps the choice of a high wing trainer is taking a step too far backwards in this respect, but there's another aspect of the Swift's design that appealed to me and that is its upright 



No glue required! Wing panels are joined using a sturdy metal tube and fixed together by the central servo plate (not shown).



Wing centre rib. No fancy wing section used here!



Front wing retaining lug. When paired up with the other wing this makes for a robust wing fixing. Two plastic bolts are used to secure the back of the wing.



Remember these? Ailerons are moved via torque rods controlled by a centrally mounted servo.



The tailplane is sandwiched between the base of the fin and the rear fuselage, pinned in place by two long studs.



Tailplane mount.

engine installation. As I mentioned previously, I want to keep my return to IC flying as fuss free as possible and the best way to ensure easy starts is by using an upright installation, preferably started by hand. I'll also dig out my starter just in case, complete with its two banks of NiMH sticks, as well as my single cell NiMH glow sticks. As with my engines, I put them all away without thinking my conversion to electric power would be so Damascene, so the poor batteries may be in a poor state of charge and may not offer sufficient puff to start the SC 46. Time will tell!

SWIFTLY BACK

Okay, let's return to the model in question. This one is being put together by my gliding buddy Steve Hannon. He's had it a few weeks and hasn't complained so fingers crossed it is going together well. That's probably torn it!

First released in 2011 the Swift can now be built as a tail dragger or with a tricycle undercarriage. Tail dragger please, Steve!

Despite its high lift, parallel chord Clark-Y wing section the Swift V2 is claimed to be mildly aerobatic so hopefully both Steve and I won't get too bored when flying it. The laser-cut balsa and ply airframe is very neatly finished in an easy to see multi-coloured scheme which JP say is suitable for year-round flying in all weather conditions.

Construction looks to be swift (sorry, I couldn't resist!) and easy. Indeed, I was able to loosely assemble it in just a few minutes. I was especially intrigued by the two-piece wing which slots together over a robust metal wing joining tube. Unfortunately, the ailerons are operated via torque rods from a singular centre mounted servo rather than small servos mounted in each wing. The aileron servo mount doubles as the

wing joining plate so while no glue is required to keep the wing panels secured together, this does mean that it would be a bit of a faff to separate the wings for transit and storage.

The wing is held in place with two white nylon bolts which, for training, should shear cleanly if the wing inadvertently strikes the ground or an obstacle, such as a fence post. But for a basic trainer, where a bit of rough and tumble is to be expected, I would have preferred to have seen the use of a banded-on wing as that would be more damage resistant. At least the wing bolts are made from plastic so they should break away before the mounting plate inside the fuselage is pulled out, likely causing a big repair job in that area.

The tailplane is held securely to the fuselage by two long through studs built into the base of the fin, all being nipped up tight by nuts and washers on the underside of the rear fuselage. This gives a bit of leeway to add some thin packing pieces inside the tail mount should the tailplane need raising on one side to make it level with the wing. But hopefully that won't be necessary and the Swift will go together nice and square.

I'll leave it there and we'll be back with a full Swift review when it has been built and flown.

VINTAGE OR RETRO

I was tempted to attend the recent Chedworth Retro meet, as featured in the August issue. Anything pre-1980s was the guidance so whilst interested I put it on the back burner as I didn't have a suitable airframe in flyable condition from before that time.

Many moons ago I did own a secondhand Junior 60 but I sold it as being a bit staid in comparison to my more aerobatic steeds. It's probably a rose-tinted thing but I really did enjoy flying that model, overpowered though it was by an R/C carb equipped PAW 19 diesel, on which it rarely needed more than tick-over to sustain flight. Soon after selling it I regretted my decision and I have hankered for a similar model ever since. I did buy a Ben Buckle J60 kit, which I still have and hope to build one day, but there was no way that I was going to have it ready for the Chedworth do.

As luck would have it, just before the event, I was informed that one of my clubmates at the Newent club was selling off his models before downsizing to a new home and Roger owned a very nice secondhand KK Falcon that I could purchase. It sounded just the kind of model I was after and I was soon the proud new owner of another of Keil Kraft's famous high wing designs. At 96" inches it's a fair bit bigger than the 63" Junior 60 but it still oozes all those delightful KK curves. (I believe the Falcon is based on Ben Sheresshaw's 1937 design, the Cloud Cruiser, but space is short so the history of these designs will have to wait for another time.)

I was told that the model was flight ready and it probably was. But I'm a fusspot and after a good look over I decided it needed a bit of TLC. I'll get into the finer details next time, but the list of jobs gradually grew longer and so I decided to abandon trying to have her ready for Chedworth. As luck (or rather bad luck!) would



Servo tray has plenty of room for two standard rudder and elevator servos side by side, with the throttle servo mounted transversely in front.



The J Perkins website offers recommendations on which servos and R/C accessories to use. We settled on Hitec HS-425BB units all round.

have it, that was a wise move as not only was it a very gusty day and not remotely suitable for flying the Falcon, but I had a nasty tummy bug so I couldn't go anyway!

From Dick Spreadbury's report I could see that the Falcon would have been a bit out of place as most of the models were low wing aerobats from the 1960s and 1970s. Which makes them, according to my sage on such matters, Shaun Garrity, truly retro whilst my lovely old Falcon is from earlier, pre-1960, times and hence is more correctly known as a vintage model. Not that it really matters as I'm sure that a few 'vintage' models would have been welcomed at Chedworth if the wind had calmed down.

Not to worry, maybe she'll fly there next year, fingers crossed! ■



The full Seagull Swift V2 box artwork.



A KK Falcon shows off its curvaceous lines at last year's Best of British gathering at BMFA Buckminster. Photo by Danny Fenton.

F5J CONTEST EUROTOUR

Mike van Erp attends the first leg of the F5J Eurotour 2025 held in Larissa, Greece in late March

Words & Photos: **Mike van Erp**

I was keen to get some early flying in this year as the weather in spring 2024 was awful for F5J gliding. I figured it would be a good plan to make the most of this trip and go out a week or ten days early and then spend all that time practicing. This was to prove decisive for me in the Greek leg of the F5J Eurotour competition.

TRAVELLING OUT

In December I received two more Eternity gliders, bought from Infinity Models' UK dealer, Flightech. My first order of action was to build these soarers and then I needed to build a flight case so that I could take my gliders to comps. This all took a surprising amount of time and preparation. I used Aaro's Correx flight box design on RCC as a guide to making my own: <https://www.rcgroups.com/forums/showthread.php?3337037-Pike-Prestige-2PK/page44#post53112059>

I was quite nervous about flying with the gliders, travel insurance, LiPos, etc. and so I spent a fair amount

of time talking to people who've done this before. In the end it all proved easy enough:

- I booked a 'hang glider' onto my easyJet flight for an extra £50 each way.
- I added a suitcase in the hold to carry my clothes and camping gear. I decided to camp to save money and asked if I could stay on the airfield. The Greek contingent was so friendly and helpful, and welcomed me with open arms!
- I added a hire car to the flight booking with added car insurance.
- I purchased BMFA insurance for the trip.
- I found that you can take any number of batteries, but they must be taken in your hand luggage. No single battery can have more than 100 Wh capacity. Even your transmitter batteries must be put in hand luggage.

AN AMAZING WELCOME

My first choice of hire car was a bit too small to easily take my glider box, so I upgraded. Oops! That was



My luggage and model box at Victoria Station, waiting to board the Gatwick Express.

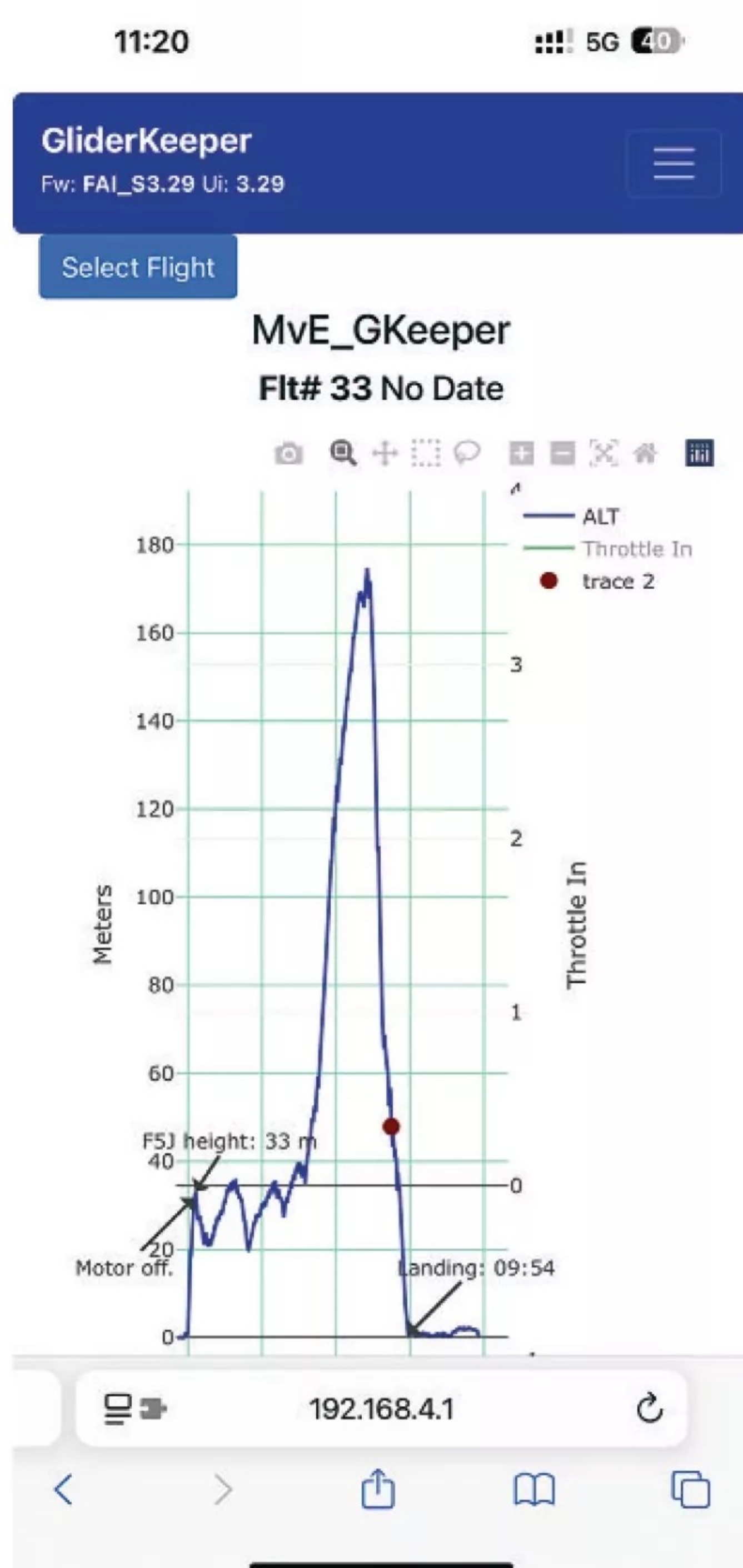




Pantelis Danavaris and his two sons, Christos (with Tx) and Nikos.



Having just arrived at Larissa Aero Club in my hire car. That snow-capped mountain on the horizon is Mount Olympus at 2,917 metres high.



Altitude trace from my AMRT (Altitude Motor Run Time) that stops motor cheating and records launch heights in F5J competitions. Here it shows one of my lowest launch heights in practice and how amazing Greek thermal conditions can be. At the time it was my lowest ever full F5J flight, but recently I managed a 19.8 metre launch in the UK. I'm relatively new to F5J so for me this is very advanced flying.

more expensive than doing it through the online booking. Driving in Greece was fine, with drivers being rather more friendly and patient than the London drivers I'm used to driving and cycling amongst.

I got to the airfield and Pantelis Danavaris and his son Christos turned up almost immediately. I got a great welcome and was shown the airfield and where to pitch my tent. I was also given access to the club facilities, including the clubhouse, which was in the process of being rebuilt, but had a working fridge and freezer, and a toilet. Crucially, there was no potable drinking water and no shower, but I had prepared for this, buying some bottled water and I brought a solar camping shower with me.

A day or so later the Aero Club chairman, Stelios Kontopoulos, gave me another warm welcome and offered to let me to sleep in the control tower. I didn't end up doing that as I like the outdoors and a camping mattress tends to be a little more comfortable on grass than on a hard floor! But I certainly enjoyed sitting

up there in the evenings and watching videos in comfort.

PRACTICE

I flew every day I was there. I alternated between low level thermal practice, landing practice and doing full ten-minute flights. I'm not sure how many flights I did the week before the competition, but I flew perhaps 200 to 300 times.

I have a timer set for 1m 15s for landing practice and I would repeatedly launch and then try to land on the spot with the timer. I feel that you learn far more from any thermalling that you do close to the ground and close to yourself, so I would catch a thermal, then once my glider was above 100 metres I'd come down and look for another low thermal.

I found landing at Larissa to be hard, despite the low altitude of about 70 metres ASL. I think it was mostly because of the lack of wind and the harder ground on the airfield, making the gliders slide a lot further than I'm used to.

I also spent time paying attention to what sort of thermals we would have during



My Infinity Models 'Eternity' gliders, supplied by Flighttech in the UK.



A large developing Cu-Nim dominated the fly-offs on Sunday.

the day, when they got stronger and changed nature, and trying to discover the regular triggers of thermals on the airfield. I invested time in just feeling the air on my skin, watching my windicator and seeing how often thermals would trigger. This all helped me greatly in the competition as I had a good general idea of what to expect when thermalling from this field.

LARISSA AIR

The air in Larissa was very different to that in the UK, with multiple thermals present on the field within F5J range, as many as four or five at a time. In the UK it's rare to have more than two usable ones. The thermals also started much lower and I had many getaways from 10 to 20 metres. My lowest full 10-minute F5J style flight was from a launch height of 33 metres. That's not impressive but they were personal bests for me, so I was chuffed.

I like watching birds thermal and the large quantity present helped me understand the Larissa air a little better too. I discovered that thermals would let you climb for a while and would then change position in the sky (perhaps my thermal centring wasn't as good as

I thought). It was important to go on the hunt again as soon as the model stopped climbing. In the UK thermals tend not to move around as much. A lot of the time the next core would be upwind, but not always. The week's practice really helped me in recognising this quickly and then finding new lift. I found out that I had been straightening out my thermal turn slightly too late when trying to centre, so changing this improved my centring. Wind speed was very low almost all the time, bar the few flights when gusts from a storm front came through.

I assembled and practiced with all three of my gliders. I spent time making sure each glider and both transmitters all worked with each other, were properly bound and the gliders trimmed so that I would be able to swap models in a hurry.

COMPETITION DAY ONE

I have a new sense of strength and focus this year as I'm trying quite hard to do well. During the comp this, and all the months of preparation I've been doing, let me have a calm and focused mind, with a view of the big picture as much as of each individual flight. The result of this was that I flew better than I ever have before.



Nikolay Peychev, a firm friend of many UK F5J flyers. He coached me in the fly-offs, for which I was very grateful.



Mike and Vasile-Petre Pop from Romania. Pop is an inspiration and trains loads of youngsters. In Greece, he brought only Matei and Teo, but in Bulgaria he brought along another four teenagers. This dedication to the next generation is something that our sport often lacks. Pop and his youngsters were inspiring, being kind and well-mannered. I'm honoured to have met them.

All the practice also helped lower my cognitive load when flying so that I still had some spare mental capacity for a tactical overview. We flew four rounds on the first day, interrupted by a big storm after some of round three. That storm almost proved a huge disaster for me as the combined humidity and intensity of the rain got my main glider's ESC wet and it failed. I was so lucky to have drawn an early group in round three and a late one in round four, which gave me the time to fix this. But I was stressed and damaged a second ESC I took from one of my spare gliders. Doh! I then got a spare ESC out and used that, but it was fitted with an XT-60 connector; luckily the Romanians helped me out with an adapter for my usual XT-30. I love the sense of camaraderie that you get at competitions. Helping each other out is fantastic and you make fast friends this way.

During each round I tried to get a different pilot to come and coach me so that I had a chance to learn from as many people as possible. My F5J experience is a little limited and I know I have a lot of catching up to do.



Fly-off pilots and their final positions, right to left:
 7th Vladimir Kostadinchev, BUL
 6th Nikos Ntanavaras, GRE
 5th Dobri Marivov, BUL
 4th Petar Valev, BUL
 3rd Christos Ntanavaras, GRE
 1st Dragan Cvetanovski, MK
 2nd Mike van Erp, GB



North Macedonian contingent with Mike. Left to right: Goce, Naste, Mike and Dragan. Dragan Cvetanovski was the winner.



George Skargiotis, one of the hosts and organisers of the competition.



Giannis, a member of the Larissa Aero Club. He was a Presidential Guard at one time. Yes, the famous Greek guards of the Tomb of the Unknown Soldier.

COMPETITION DAY TWO

I was being 'watched' online by friends in the UK and getting useful tactical advice from them. Thus, I flew the last three rounds conservatively, aiming for decent scores rather than group wins.

The first two rounds were classic early mornings at Larissa with light or no lift at first and then thermals appearing gradually and getting stronger. I took no risks and launched high and tried to land as best I could.



Left to right: Angel Karadinev, Nikolay Peychev and Dimitar Dimitrov, all from Bulgaria.

I think perhaps round seven showed the huge strength of the Eternity as a competition glider. My model was in a very weak thermal that three of us were hanging in but gradually sinking as it was more just reduced sink. But then I saw a thermal 'tell' so I left our first thermal and headed off to the tell. By tell I mean an indication of a thermal, such as a puff of wind, birds circling, tree movement, etc. The other two, I think flying Explorers, didn't manage the necessary glide angle to make it to my new thermal. But I did thanks to the very high aspect ratio of the Eternity wing and the excellent glide angle it has, so I got away to make my time.

I honestly hadn't expected to make the fly-offs. I've only ever done fly-offs once before, at InterGlide 2024. Making the fly-offs was the cherry on the cake of my whole trip to Greece!

I also want to mention the junior pilots and particularly Matei, one of the Romanian juniors. The youngsters were nice, well-mannered and a delight to see flying, notably Christos (who also flew as a senior), Matei, Teo and Antoinetta. I enjoyed Matei's excitement perhaps the most, particularly his landing concentration dance. To see such excitement and joy when flying is awesome and I only wish I'd caught him doing this on video. I'm aware that I also get a bit carried away with my landing poses - ha, ha!

THE FLY-OFFS

Suddenly things felt a bit more serious. I got my 'heavy' glider ready in case the wind came up but chose to fly my FAI 'light' glider, which I'd been flying all weekend. My Light Eternity was not an option as I'd stripped the ESC out of it the day ✈️



Nikolay Tsantsarov, Bulgaria.



Giannis Kourbanis, aka Johnny Drama!

before. There was a storm brewing around 10 km away to the NE which blew a steady strong wind at us during all three flights. I am not sure what the windspeed was, but it was enough to concern me. Certainly, a lot of the thermals were torn apart and those people that did catch one were drifting downwind fast.

I asked my friend Nikolay Peychev to coach me in the fly-offs as he has a fantastic calm manner and he did an excellent job. I was very grateful. That second place is not mine but ours together.

The first flight was a tough one, starting with a relaunch after just a minute or two due to a wrong setting on the clock. Christos Ntanavaras outflowed me, but I only lost seven points to him. The second flight I don't remember so well, but I failed to launch as high as I had planned and did not make the time. Dragan Cvetanovski managed to crush the rest of us and this won him the competition, deservedly so.

The third flight was very memorable and showed why the Eternity is perhaps the best of the current crop of F5J gliders. I launched high, wanting to be sure to make my time. I did get a thermal tell but couldn't find it at first, probably because it was a bit early in development. I



Third place Junior, Teodor Vasile from Romania, collects his prize from Pantelis Danavaris.



Your author, Mike van Erp, collects the second-place trophy.

spent ages and ages quartering the sky where I thought it would end up and finally caught it. It was a difficult thermal, occasionally very strong. It drifted downwind at quite a rate and by the time I had to leave it, this might be the highest and furthest away I've ever flown in

a comp. This thermal was so difficult and so rewarding, by far the best thermal of the year. I did have to keep repositioning upwind and then turning again to stay in lift.

I came back upwind, mostly in speed mode, and had quite a lot of height to spare when I got



The excellent bright LED timing board was visible everywhere on the flying field.



The Monastery of Varlaam in Meteora has an impressive wine cellar and is well worth a visit.

back. Unfortunately, I had more time left to the buzzer and was going to land perhaps a minute short. As I started to think about landing, I caught a little bubble at perhaps 20 metres and managed to eke out a good climb. This is another strength of the Eternity—tight, low level thermalling. It's certainly a much better glider than I am a pilot. Nevertheless, I enjoyed the round of applause as I landed, albeit a bit sloppy at three metres from the spot and five to ten seconds early. Everyone seemed to think I had won because of this, but I was less convinced as I remembered landing a long time before Dragan in flight two.

I believe Christos changed to his heavier Challenger, but that's only a guess as I only saw the glider change and don't know the weights. I did briefly consider changing to my heavy model, but I didn't, and it ended up being the right choice. By this point I was exhausted from the mental workload. Those longer 15-minute fly-off rounds were hard work on top of the difficult conditions.

A GREAT VENUE

I'm super impressed with Larissa as a club and as a Eurotour venue. The competition was very well organised and any issues were dealt with quickly without any fuss. They had the best timing

board I've yet seen, being bright and visible from any angle, with a second LED board showing the Round and Group currently flying which was extremely useful. The spot landing tapes just looked so professional. Round results were usually out within five minutes of the round being finished and I've never seen that before.

THE DAY AFTER

I had an extra day after, so I went to spend Monday at Meteora, a bucket list tourist attraction in my opinion. That evening I packed up and got ready to leave for the airport on Tuesday morning.

I hope that more UK pilots will go to the Larissa competition next year. I felt a little disappointed that none of my UK friends were able to come this year.

THINGS I LEARNED

I make a list of things I do well and things I need to fix and/or improve on at every competition I fly at, to help me do better next time.

In this competition it was mostly a series of things that I needed to add to the spares and tools that I carry in my flight box, plus renewed determination to spend more time



Spot landing tapes were sponsored by F5JPro.com, the Danavaras family business.

practicing as that was by far the most effective thing I did. Last of all, it was the small change to when I straighten up to core a thermal, making that a little earlier in the turn than I had been doing.

In conclusion, if you want to have a fantastic time socially and learn a lot, go to these bigger Eurotour events and other competitions. The fun and atmosphere are fantastic, and you'll develop as a pilot in a way that you never can when flying for fun. It's relaxed and it doesn't really matter how good you are (or not). This was my sixth Eurotour comp. ■



Fourteenth century Monastery of Varlaam in Meteora.

AKB AIRCRAFT CONTRA DRIVE

In this issue Keith Jackson looks at a new version of the Akiba contra drive, the CA Models 'Manta' biplane kit and tries the FCScore online software which offers a new way to assess your aerobatic flights

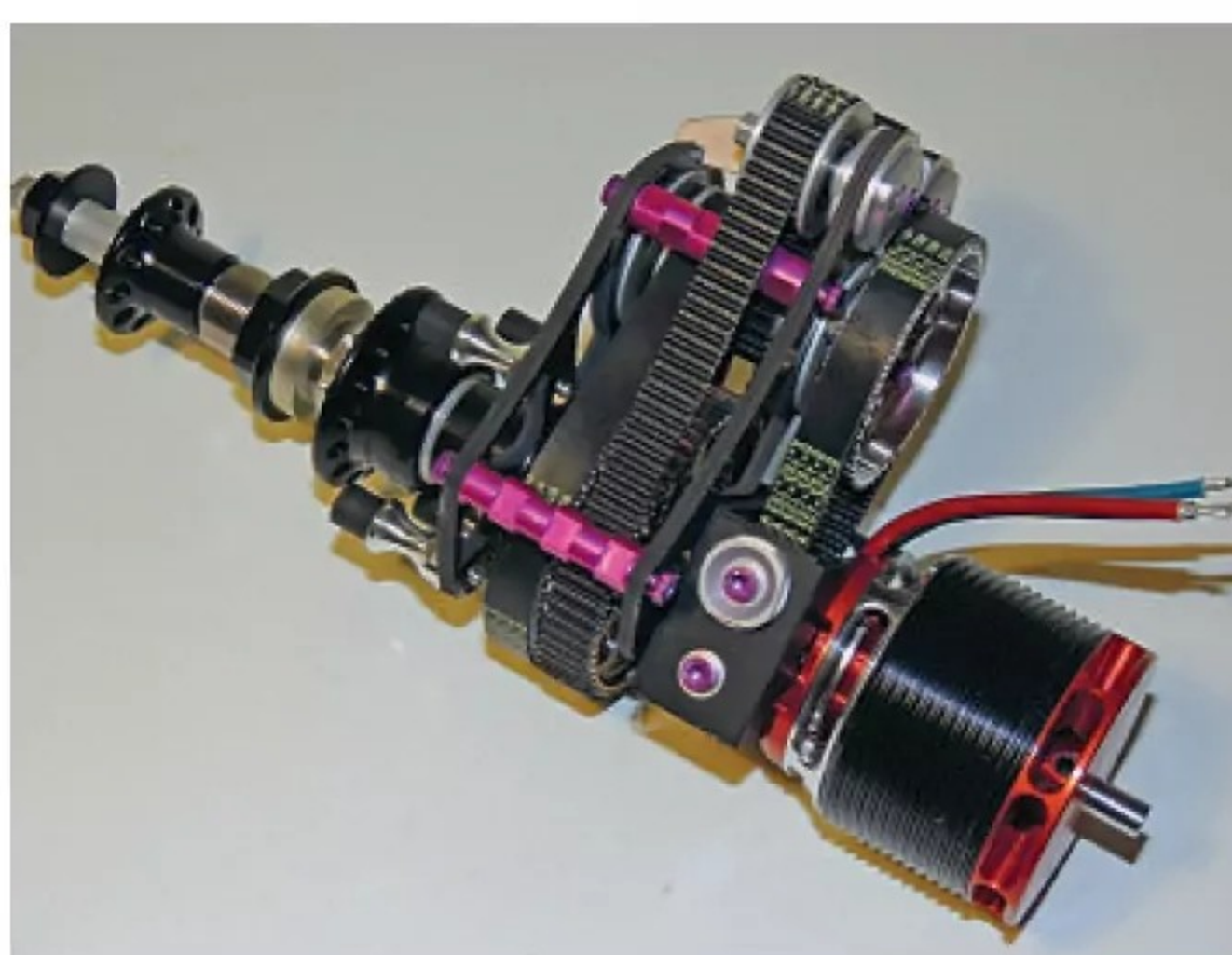
Words: **Keith Jackson**

Photos: **Keith Jackson, Mariano Gostanain, Beryll Gooch, Yoichiro Akiba**

Readers of this column will know that I have campaigned contra drives made by the famed Japanese pilot Yoichiro Akiba for many years.

These drives are well made, robust and are still near the top of the tree in terms of power delivery. My own two units are now turning Falcon 23 x 20 propellers without any issues at all which, considering they were built in 2017, shows the durability of the design.

Akiba san has released a new design recently and is quite a departure from the original concept. It differs markedly from the current convention of using a front mounted single gear and belt to achieve the counter rotation. Instead, the new drive utilises both sides of the motor shaft and from an engineering perspective this makes perfect sense and avoids most of the load being placed on a single motor bearing. Moreover, the motor shaft is supported at both sides where the belt gearing is arranged, further



Original Akiba contra drive. Brilliant design but not the easiest to mount!

preventing excessive bending loads on the motor.

There are significantly fewer components to this design than the original, although those included are well optimised. Evidence of this is seen in the details such as W shaped

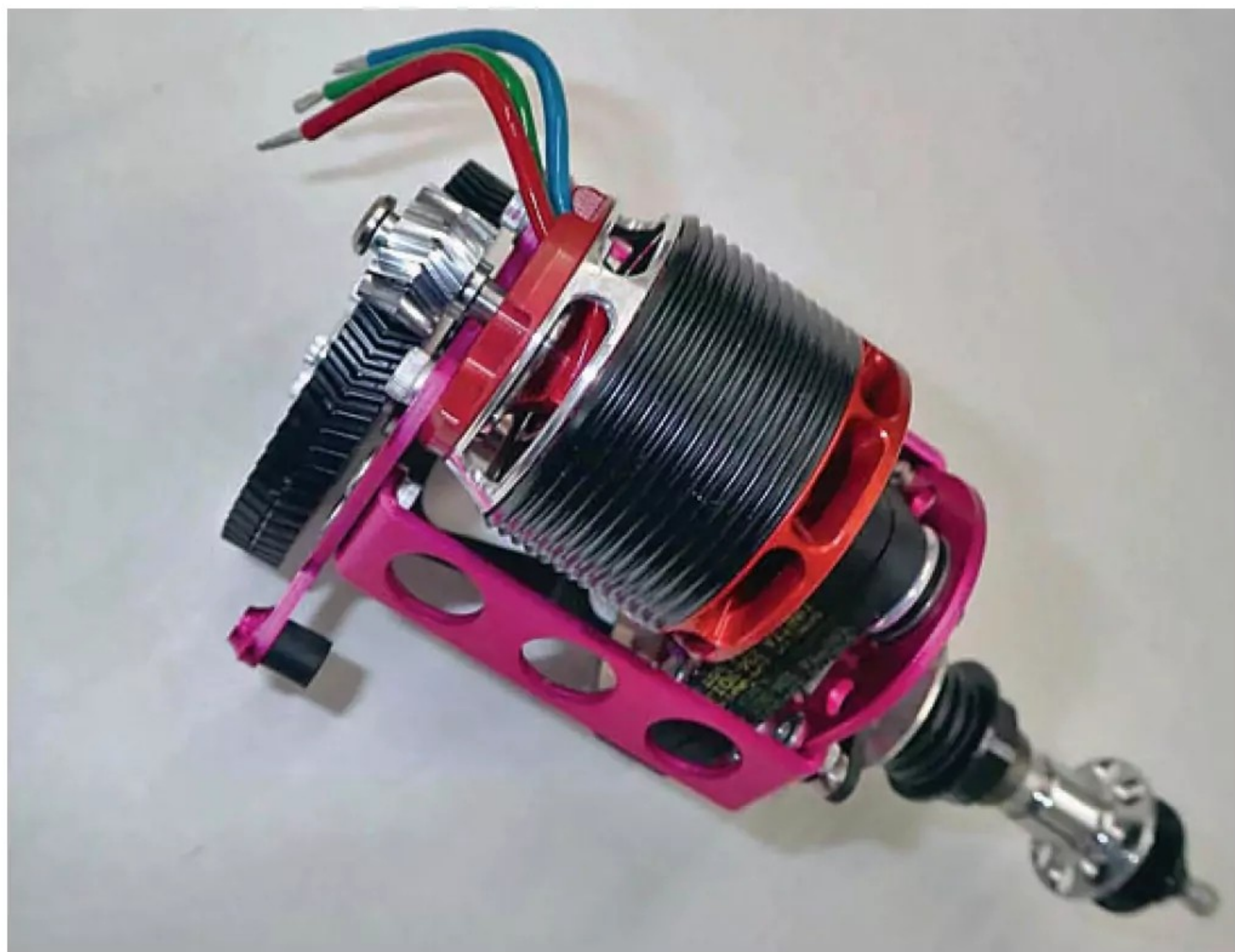


New contra drive unit from AKB aircraft.

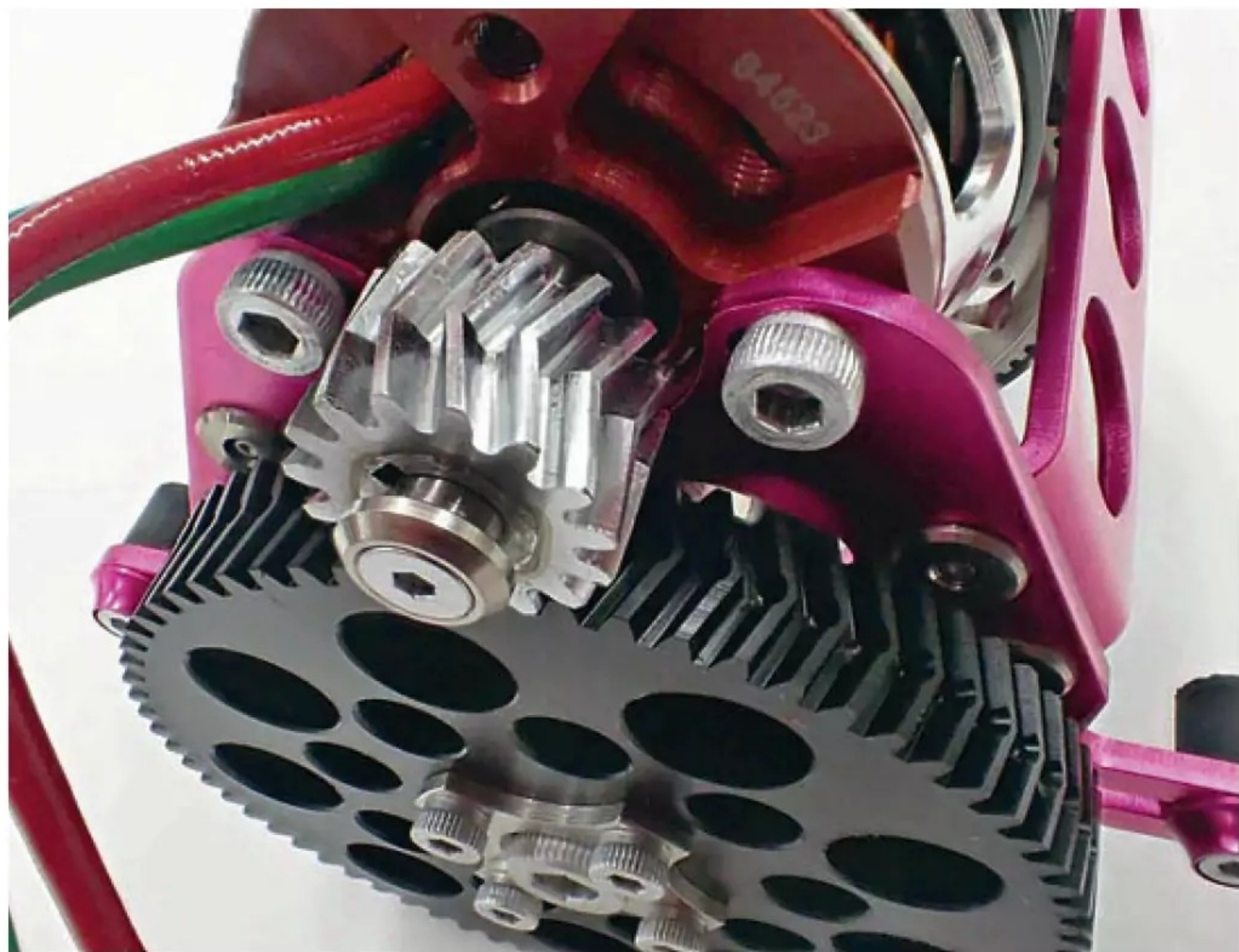
helical gears which spread the load provided by the Kontronik Pyro 650 - 65 motor more evenly into the contra gears. This reduced loading also means the vibration and hence radiated noise is lower. In addition, the use of two narrow belts rather than a single

Pilots and models at the UKF3A Sudbery National League competition, June 2025.





Both sides of the motor shaft are well supported.



W shaped gears for extra load handling and lower noise.

“A soft mounting scheme at the front uses Akiba’s typical approach of many soft rubber mounts rather than a few harder mounts”

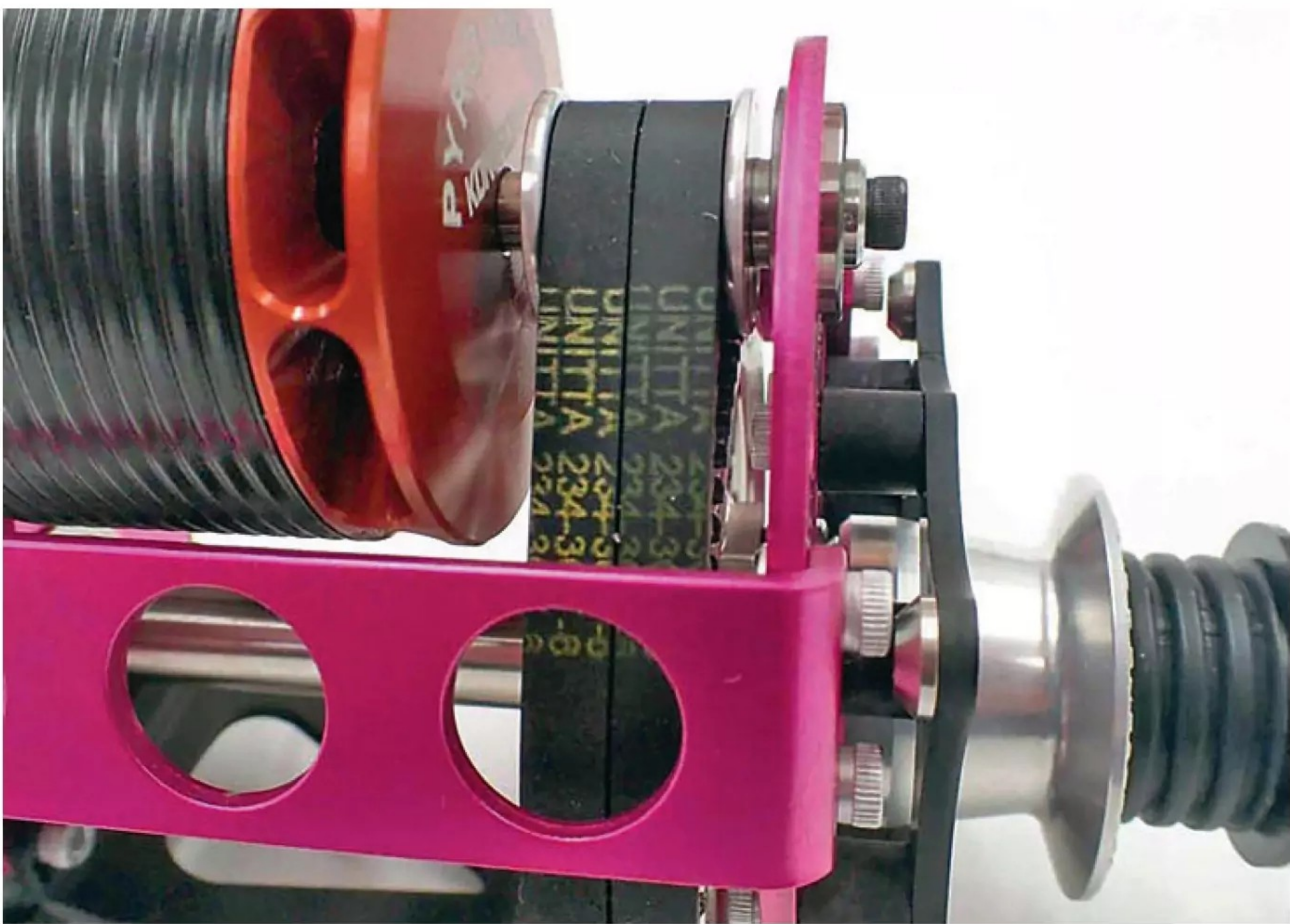
wide belt further reduces noise generation. The drive frame is aluminium alloy which provides a stiff but light structure to hold the various components in position and helps to conduct heat away from the motor. The mounting profile of the drive unit is also much reduced from the original, thereby allowing an easier installation into the model. A soft mounting scheme at the front uses Akiba’s typical approach of many soft rubber mounts rather than a few harder mounts and this provides greater stability in all directions rather than the usual orthogonal approach. The unit features rear soft mounts which can be reversed depending on the user’s mounting strategy.

Performance details from Akiba state a maximum rotational speed of 4050 rpm when using Falcon 23 x 20 propellers, generating 3.8 kW of power and 150 N of thrust. That last figure may need some clarification; effectively this is equivalent to nearly 15 kg which is nearly three times the weight of a typical F3A model!

This drive is available for mail order from Japan and further details can be found at <https://akibarc.main.jp/mtr.html>

CA MODELS MANTRA

This model, designed by Argentinian pilot Mariano Costanain, is the latest of a series of models which have been kitted by CA models, also based in Argentina. The models designed by Mariano include:



Twin belts for reduced noise.

2008	Lithium
2010	Austral
2011	Cation
2013	Austral Bipe
2016	Zonda
2018	Andes bipe
2019	Cuantic
2020	Andes bipe V2
2021	Cuantic v2
2021	Quarks prototype
2022	Karma
2023	Mantra
2024	Mantra Wc

Most recently the Mantra has emerged as a swept wing biplane version of the Karma and looks the business!

The basic shape of all these models is quite similar, having a huge ‘Orca’ shaped fuselage to maximise side area whilst also being quite streamlined. The Mantra features relatively short wings, recognising that as snaps are an integral part of modern F3A then a lower wing

area is desirable, along with a low build weight (typically less than 5 kg with flight batteries), compensating for reduced lift force. The wings often feature low profile wing fences along their span and this aerodynamic feature is known to help models in windy and turbulent conditions, such as those encountered when flying in the South Atlantic. Another handy feature is the splayed rudder trailing edge which helps increase tail end drag and improves lateral stability. The wings and tailplanes are plug in and their incidences are fully adjustable.

Construction follows the well proven formula of a very light weight composite glass/Kevlar fibre structure with local carbon reinforcement. Wings, tailplanes and rudder are supplied as built-up components, fully sheeted and covered in plastic film to produce super lightweight structures.

The Mantra, being the latest model in these designs, adopts some of the current

conventions with swept wings featuring elliptical leading edges. A novel feature is that the wing mounting scheme is plug in rather than the conventional one-piece affairs and this definitely helps with transportation issues, though adds to the assembly time. The rudder is now also composite and features a moulded hinge line, shrouded to maintain the aerofoil profile of the fuselage.

FCSCORE

Pilots in the F3A community will have heard of the FlightCoach software that has been in use for several years now. This is a free suite of software (www.flightcoach.org) that allows the track of your model to be displayed on screen post flight and compared to template schematics of whatever schedule you happen to be flying. Many schedules are represented, from the UK Entry level schedule all the way up to this year's FAI P-25 and F-25 routines and beyond. Other disciplines such as IMAC, F3S, F2B and more are also catered for with the only requirement being that your model is fitted with a suitable tracker. This small device uses GPS tracking to record the trajectory and position of your model and stores it as a .BIN file on a microSD card mounted within the tracking unit. There are several commercial tracking units now available to pilots such as the Black Box from Precision Aero Products (<https://precisionaeroproducts.com.au> and search for Black Box) or the SkyTracker from



The Zonda, first released in 2016 and still flown today.



Andes biplane, developed from the Zonda.



Ace designer Mariano Gostanain with his enigmatic Cuantic design.



Subtle design changes resulted in the Karma, shown with Mariano's seven-year-old son Valentino.

Rombaut RC (<https://www.rombautrc.com/product-page/flight-coach-gps>).

Once fitted, the combination of the tracking device data and FlightCoach software can provide highly detailed information on your flights, allowing you to see where you might deviate from the ideal and hopefully allow you to see how to fix the problems.

I have been using FlightCoach for several years now and the feedback it can give is really beneficial, especially where problem

trends exist. A simple example of this is the positioning of a roll in a line, e.g. consistently being off centre and positioned either too early or late.

The FAI rules provide the following guidance for the scoring of rolls within lines as follows:

"Whenever a continuous roll, part-roll, snap roll, or a consecutive combination of these is placed on a line, the length of the line before and after the roll or the combination of consecutive rolls must be equal. 0.5 point is subtracted for a minor difference, and



Super clean radio installation is characteristic of all Mariano's designs.

1 or more points for a major difference. If there is a complete absence of a line before or after the roll, 3 points are subtracted".

Scoring a deviation such as this is normally the responsibility of the judge at whatever competition you attend. However, how do you get feedback prior to events? Clearly, FlightCoach can provide a visual aide to help the pilot rate ✈



Enter the Mantra! Valentino provides a sense of scale. More Mantra pictures overleaf.



Lovely, moulded rudder detail.



Servo cover detail.

their flight, but how does that translate to actual scores you might achieve in competition?

The missing link in this scenario is an automated scoring system, now provided in the FlightCoach suite of software, referred to as FCScore, (see www.flightcoach.org/fcscoreapp). This software, developed by UK F3A pilot, Thomas David, takes the flight data generated by the tracking device and splits the flight into individual manoeuvres. The code then rates different aspects of each manoeuvre to provide a final score. These categories of scoring are lumped into the following groups:

Intra - these are downgrades relating to the execution of a single element (deviations in roll angle, track, loop curvature, etc.)

Inter - downgrades for errors in the relationships between elements, such as when two lines should have the same length or two loops the same radius.

Positioning - (referred to as Box in FCScore). Downgrades for positioning the manoeuvre, so box infringements and centring.

Links on the results page take the user to the individual manoeuvres and graphics are presented showing how the individual downgrades are formed. Further detail may be obtained by selecting the various geometrical categories, such as Radius in the Intra tab, as shown in the nearby example. This particular group looks at the major radii within a manoeuvre and shows where differences occur and the consequent downgrade.

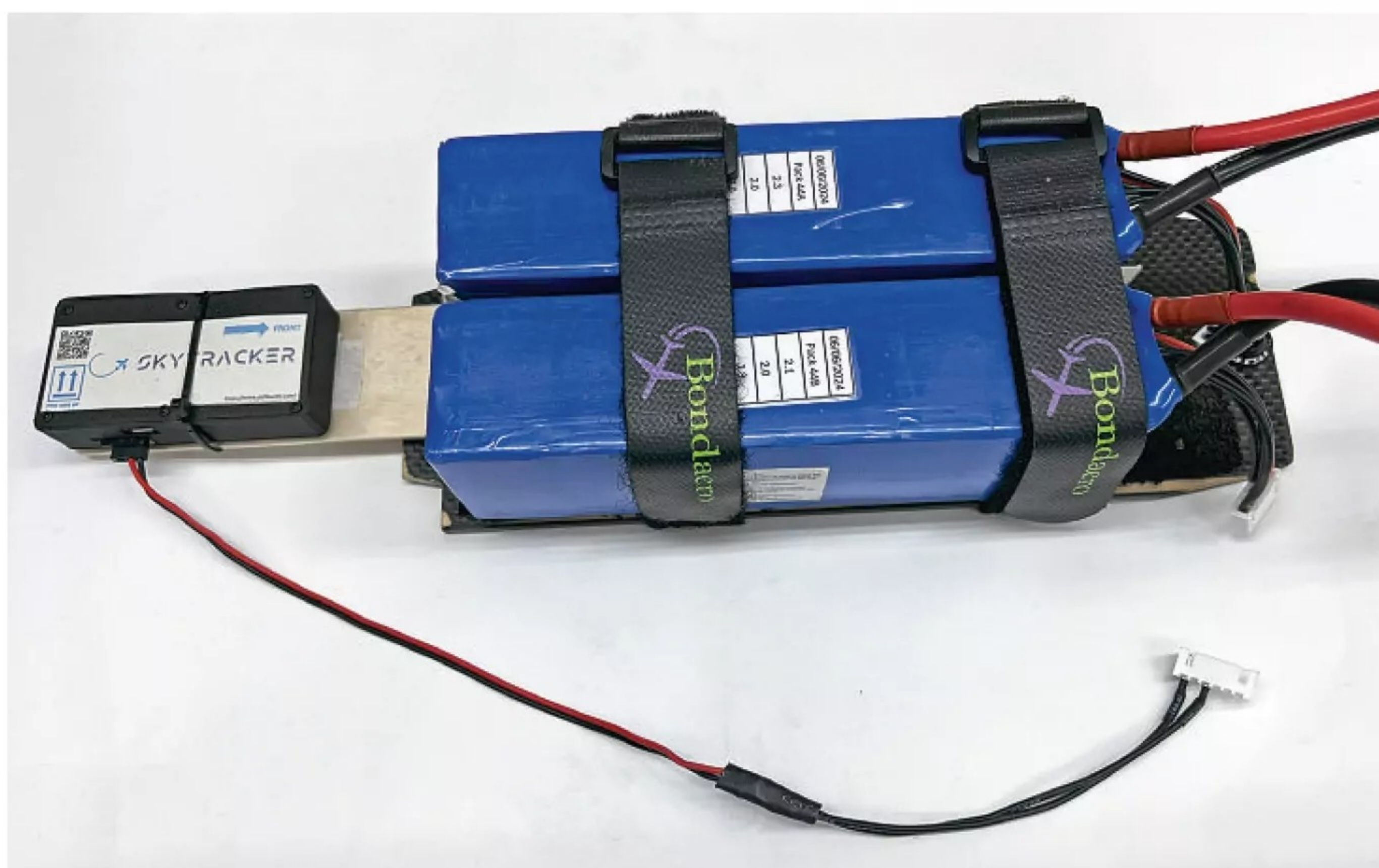
The sum of these downgrades on the Results page are then subtracted from the perfect score (i.e. 10) and the results multiplied by the manoeuvre's 'K factor' to give the manoeuvre score. The final score is then the sum of the individual manoeuvre scores. An example of results from one of my flights is shown nearby.

It is worth mentioning a few points:

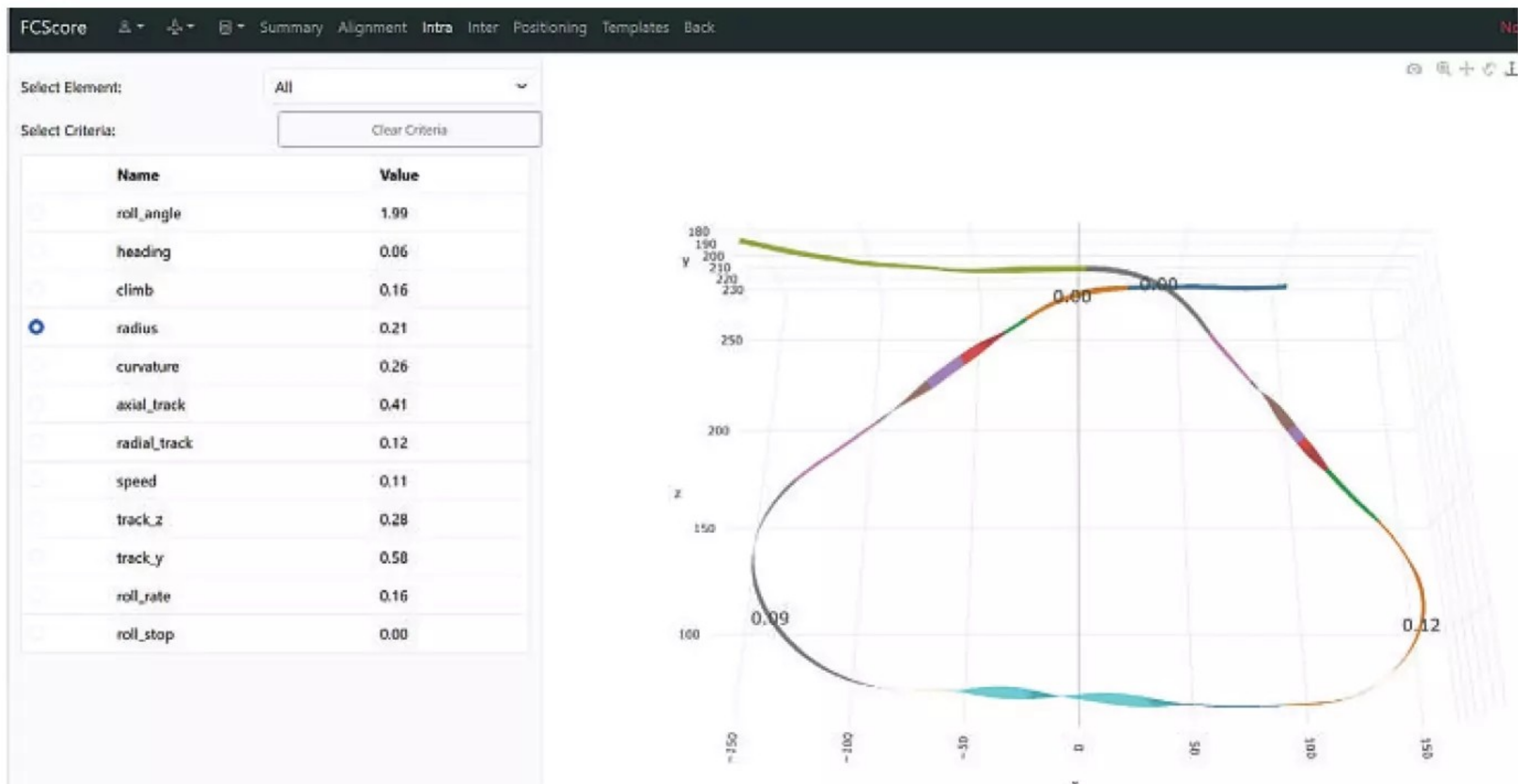
- FCScore is completely objective and no points are awarded for gracefulness or style. The rating is purely about geometry, positioning and speed consistency within a manoeuvre.
- The rating can be adjusted between Easy, Medium or Hard and points can be truncated to 0.5 point increments or just added as fractions of a point. In general, the latter method results in the lowest score. The various combinations for the flight shown can lead to a score ranging



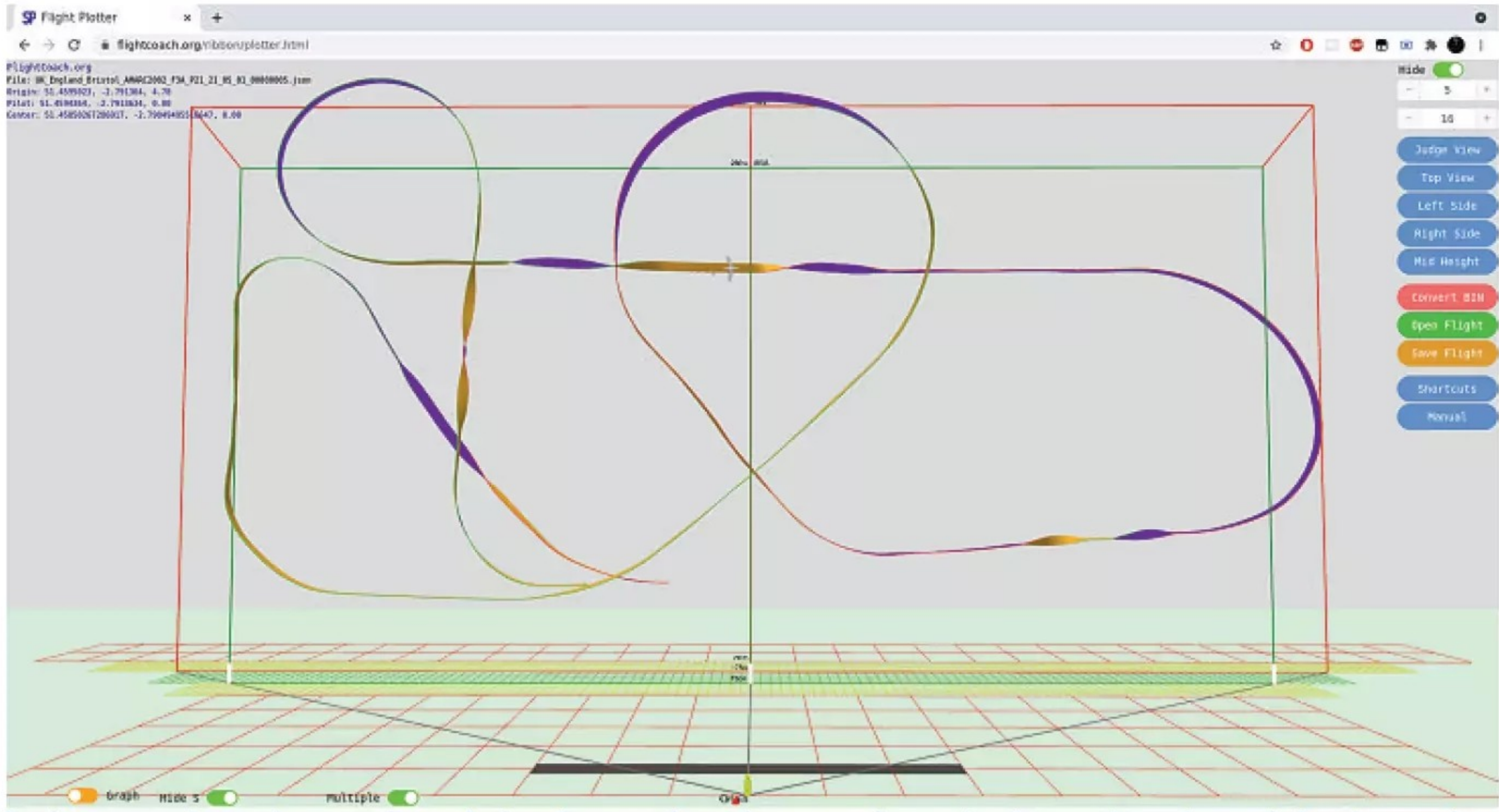
UKF3A Chiefjudge Alan Williams with his contra powered Mantra biplane. It is fitted out with a VLV contra and a VLV governor ESC, along with Futaba servos all round.



SkyTracker from Rombaut RC, mounted on the removable battery tray in my Glacial.



Downgrade detail! Errors in radii are highlighted in this selection, as shown on this triangular loop.

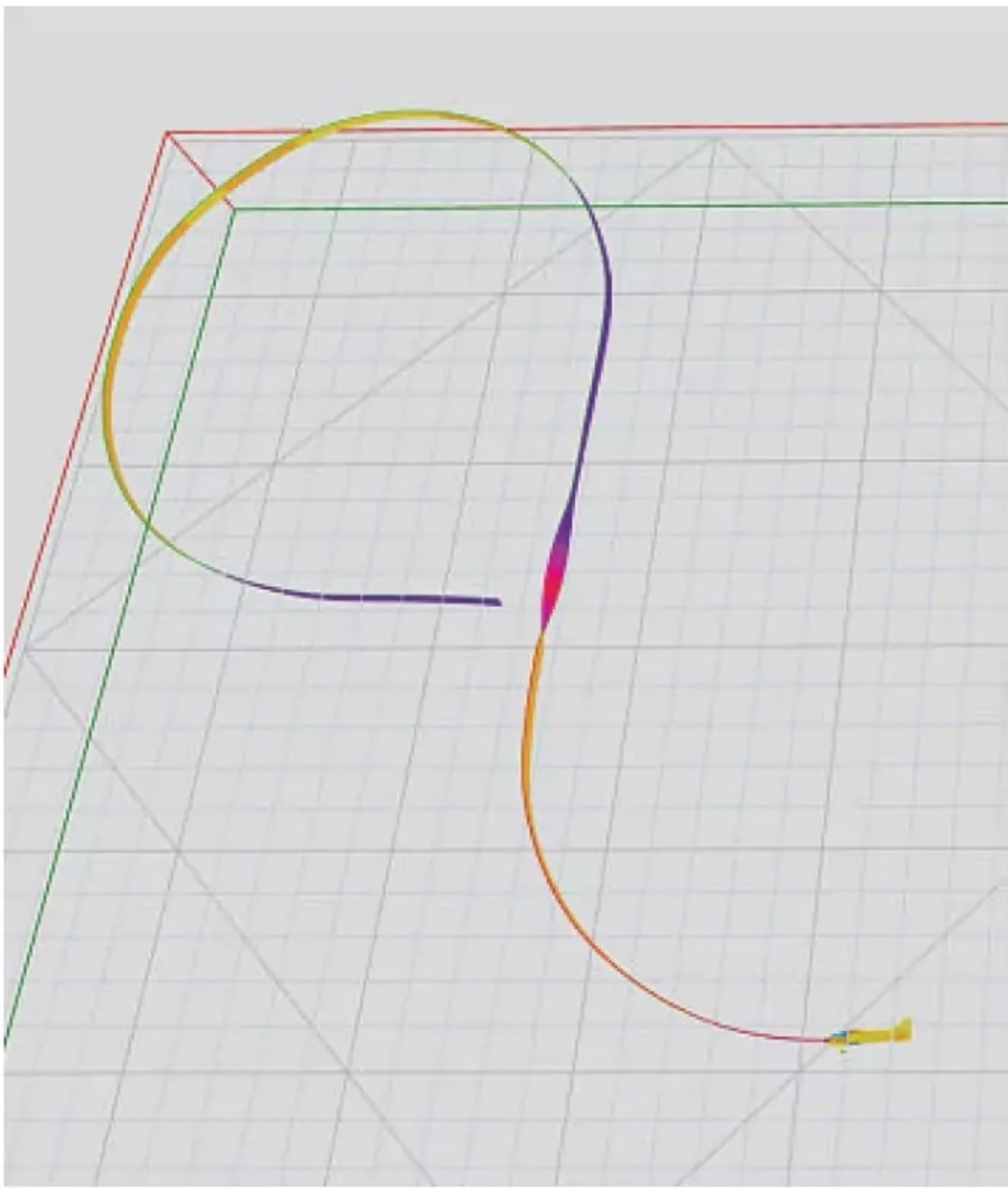


Typical flight trace generated using a GPS tracking unit and FlightCoach software. Careful scrutiny will show where the errors are and how to fix them!

from 381 to 581 depending on how you want to view it. The question is how relevant the rating is to what you want to achieve.

- At the time of writing, I understand that FCScore is still being developed and calibrated. Currently there are no plans to integrate this within FAI competitions. An online competition between enthusiasts is currently ongoing, with the current World Champion Nurila Lassi leading the pack! To participate, the user must register on the FCScore webpage.

The open question is how close to human type judging can FCScore operate and, indeed, if the ultimate objective is precision, should the F3A community look to this kind of approach in the future. ■



Typical error of a roll being positioned incorrectly, shown in the vertical line of this Figure 9.

FCScore									
Showing results for your flight imported from a fcj file.									
Analysis Version		0.4.3							
Difficulty		Hard							
☐ Truncate									
Privacy		view analysis							
Comments									
Log in to upload									
#	Name	K	Intra	Inter	Box	Score	Run All	Status	
1	trgle	3	4.34	2.58	0.62	2.5	Run	Analysis Finished at 17:20:52	
2	hSql	2	1.46	0.23	0.00	8.3	Run	Analysis Finished at 17:20:25	
3	sql	5	3.00	1.25	0.53	5.2	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
4	fig9	3	2.35	0.25	0.32	7.1	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
5	rollC	4	1.99	0.11	0.42	7.5	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
6	stall	3	3.62	0.21	0.01	6.2	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
7	dlimm	4	3.07	0.09	0.34	6.5	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
8	hB	3	2.17	0.43	0.14	7.3	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
9	loop	5	5.67	0.00	0.56	3.8	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
10	hSql2	2	1.17	0.30	0.01	8.5	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
11	hClov	5	4.40	0.93	0.29	4.4	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
12	rEt	4	1.82	0.38	0.40	7.4	Run	Analysis Finished at 17:21:13	
13	iSpin	3	1.81	0.03	0.62	7.5	Run	Analysis Finished at 17:21:05	
14	tHat	3	1.86	0.15	0.06	7.9	Run	FCScore expects a logging rate of 25Hz, but the data provided is at 22Hz	
15	Z	4	1.80	0.03	0.36	7.8	Run	Analysis Finished at 17:21:14	
16	Com	3	3.68	1.33	0.56	4.4	Run	Analysis Finished at 17:21:31	
17	figS	5	2.22	0.22	0.52	7.0	Run	Analysis Finished at 17:22:45	

Total Score = 381.14

Example of results generated by FCScore. Try not to be too downhearted!

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.

AUGUST

Aug 17

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>.

Aug 16-17

Fun Fly Nationals at BMFA Buckminster. This is the formal British National Championship event for all the BFFA Classes, including the Foamy Class. First timers and novices are still most welcome. As this event will be held at BMFA Buckminster with camping available via manny@bmfa.org. Rules and general info at www.funfly.bmfa.org or via the Fun Fly Group Facebook page. Note that there is an A cert requirement for this event. If you would like to enter, please contact James Gordon, jamesrrg@hotmail.com or tel 07966 439835.

Aug 16-17

PSSA Fly-In at The Bwlch, Nant-y-Moel, Bridgend, South Wales

Kindly supported by the SWSA - <http://a470soaring.blogspot.co.uk/>. Meet at the 'Ice-Cream' car park for 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/>

Aug 23-24

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

Aug 24

UKCAA @ East Cheshire MFC at Bollington, Macclesfield, Cheshire, SK10 5AJ. 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. 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

SEPTEMBER

Sept 5

UKCAA @ Buckminster, BMFA NFC, Lincolnshire, NG33 5RW. 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. 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

Sept 7

Basingstoke Model Aero Club's 20th Electric Fly-In at Deane, Basingstoke, Hampshire. Please make a note in the diary and come along to our 20th annual 'Electric Fly-In'. Take part in some great flying, view and discuss all things electric. In the past there have been some stunning models. Relaxed flying from 10:00, briefing 9:45. Prize giving and raffle at 16:00. Fee barbecue, soft drinks, tea and coffee. Prizes for best model and a raffle so please bring some change. Toilet on site. Obviously, the event is weather dependent so on the day go to the club website or FB page and there will be a message confirming if it's on or off. Location and full details <http://bmac.bmfa.club/events> or @basingstokemac on Facebook

Sept 7

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 28th. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>

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 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.

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 <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 Lley 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 lleymac.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 10

UKCAA @ North Berks RMAS at NBRMAS, Landmead Farm, Garford, Oxfordshire, OX13 5PA. Classic Aerobatics. This is a Fly-in with 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, 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 7 pm to 9 pm,

doors open for table holders at 6:30 pm. 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. Table set up from 8:45 till 9:30 am. Tables supplied. Pre-booked tables £7 on the day £8. Admission £3 Door 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 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.

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

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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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 (Cambs).

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 FRISKY 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).

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

BRIT PACK KIT, Ambassador Products 'Musketeeer'. 40 size aerobatic airframe built during lockdown, brand new and unflown. Fitted with an O.S. 40 Surpass 4-stroke, four servos and Rx battery. Fit your Rx and fly - £80. Buyer to collect. Call Ian on 01460 394579 (Somerset).

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).

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

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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 unbuilt 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 edgemark@googlemail.com

ALL R/C MODELS WANTED, new or old, planes, gliders, kits, engines, boats, cars, radios, complete collections or job lots, countrywide collection. No hassle, cash buyer. Call David on 07940 791959 or email deserteagle357@hotmail.com (Clevedon).

ALL R/C MODELS, planes, boats, cars, kits, engines, radios etc. Complete collections wanted. Cash buyer, will collect countrywide. Email dorsetmodel@aol.com or call Michael on 01747 229725 (Dorset).

ALL UNMADE plastic aircraft kits; Frog, Airfix, Revell etc. Also aviation and military books, diecast aircraft etc. Please call 07973 885754 (Kent).



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Next issue

GLOSTER JAVELIN

Tony Nijhuis is back with the first of three new models to be published in forthcoming issues of RCM&E. First up is the Gloster Javelin, a particular favourite of Tony's. His new Javelin has been in the pipeline for a couple of years and started off as a 38" span model for a pair of 50 mm 4S fan units. But having had so much success with the recent 70 mm 4S Powerfun unit, he decided to ditch the twin EDF design, make it slightly larger at 40" span and then squeeze in a Power Fun 70 mm fan. This single EDF gives a much easier launch through better static thrust, more duration and it's 40% cheaper than the twin fan option! The original model had elevators, but Tony soon realised that elevons would be far easier and simpler to fit. Just think of it as a Vulcan with a T-tail!



MODEL MAGIC

Our latest Model Magic subject, pored over by Stuart Mackay, is Colin Enk's Stearman (Boeing) Model 75 which is based on the old Flair Products kit. It is 1:4.3 scale, with a wingspan of 89 inches. 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. He made the nose cowl to replicate the Super Stearman arrangement and made epoxy glass copies of the original kit's ABS parts.

TOP RC 1500mm S CUB

This model represents a modern aeroplane based on the famous Piper Cub. We 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.

Flight ready in 30-minutes, says the J Perkins webpage for the model. Andrew James timed the assembly of our review sample and found it pretty much spot on. Other features include glue free assembly, a factory fitted 3720-900 kV brushless motor, 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.



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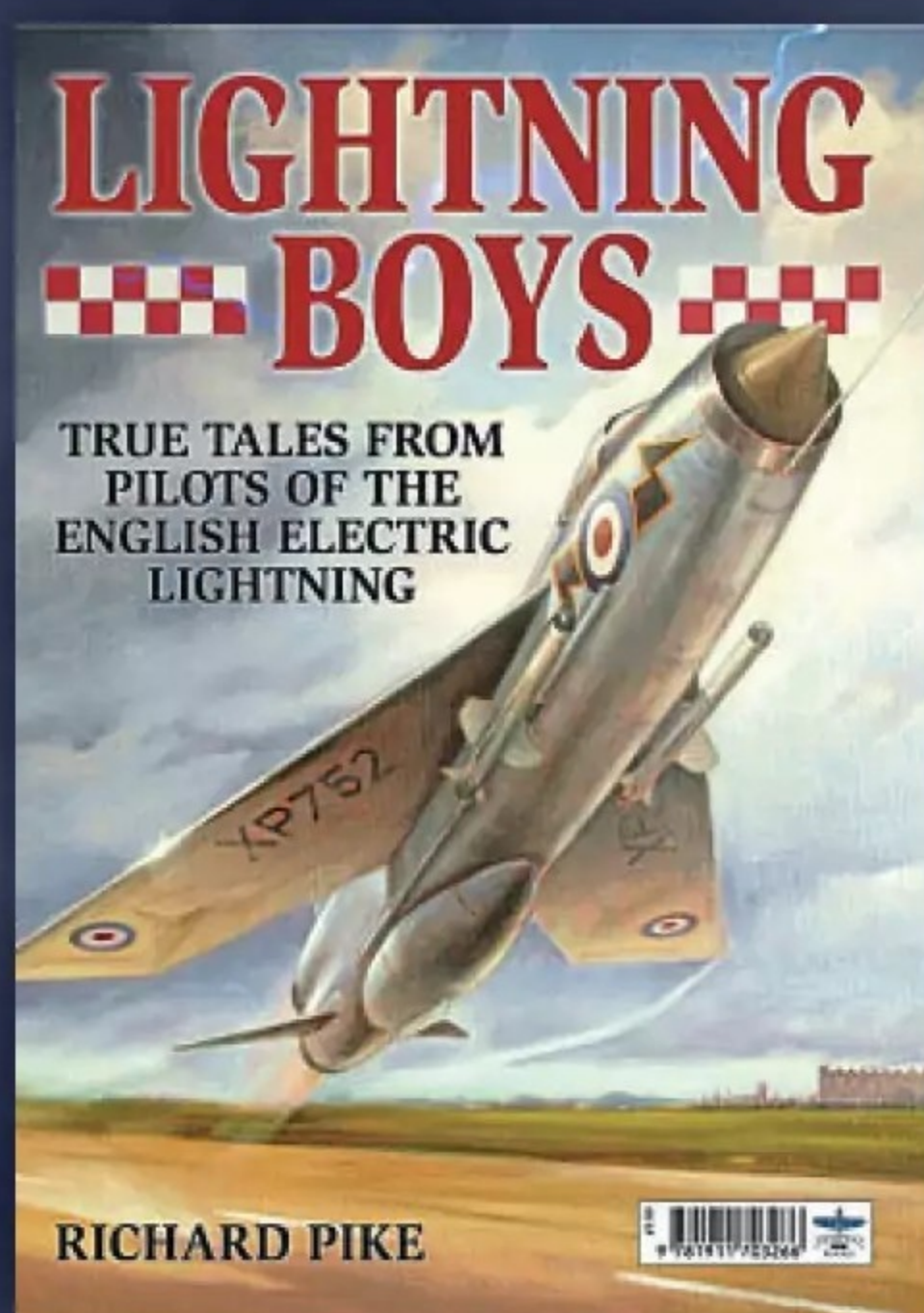
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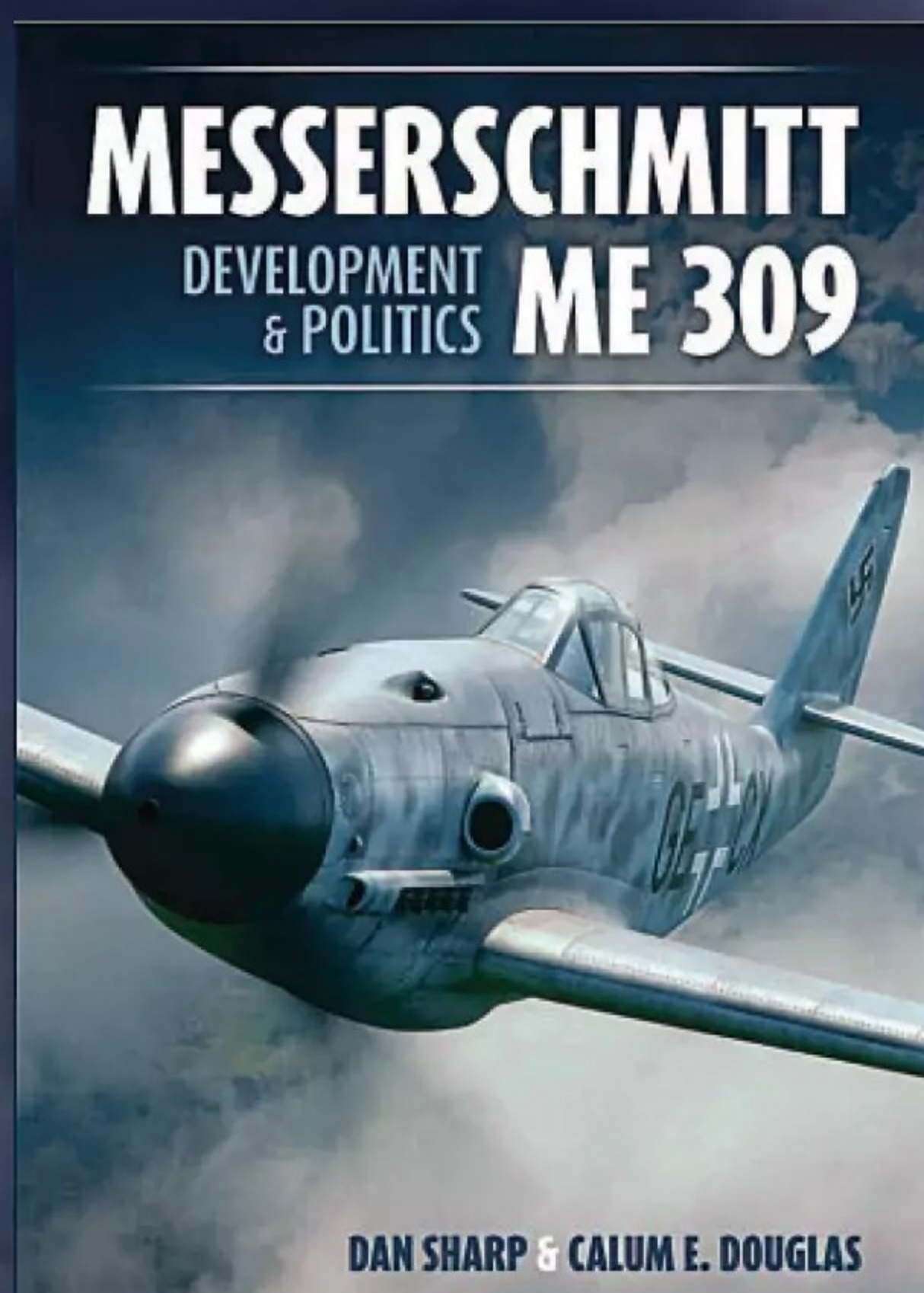
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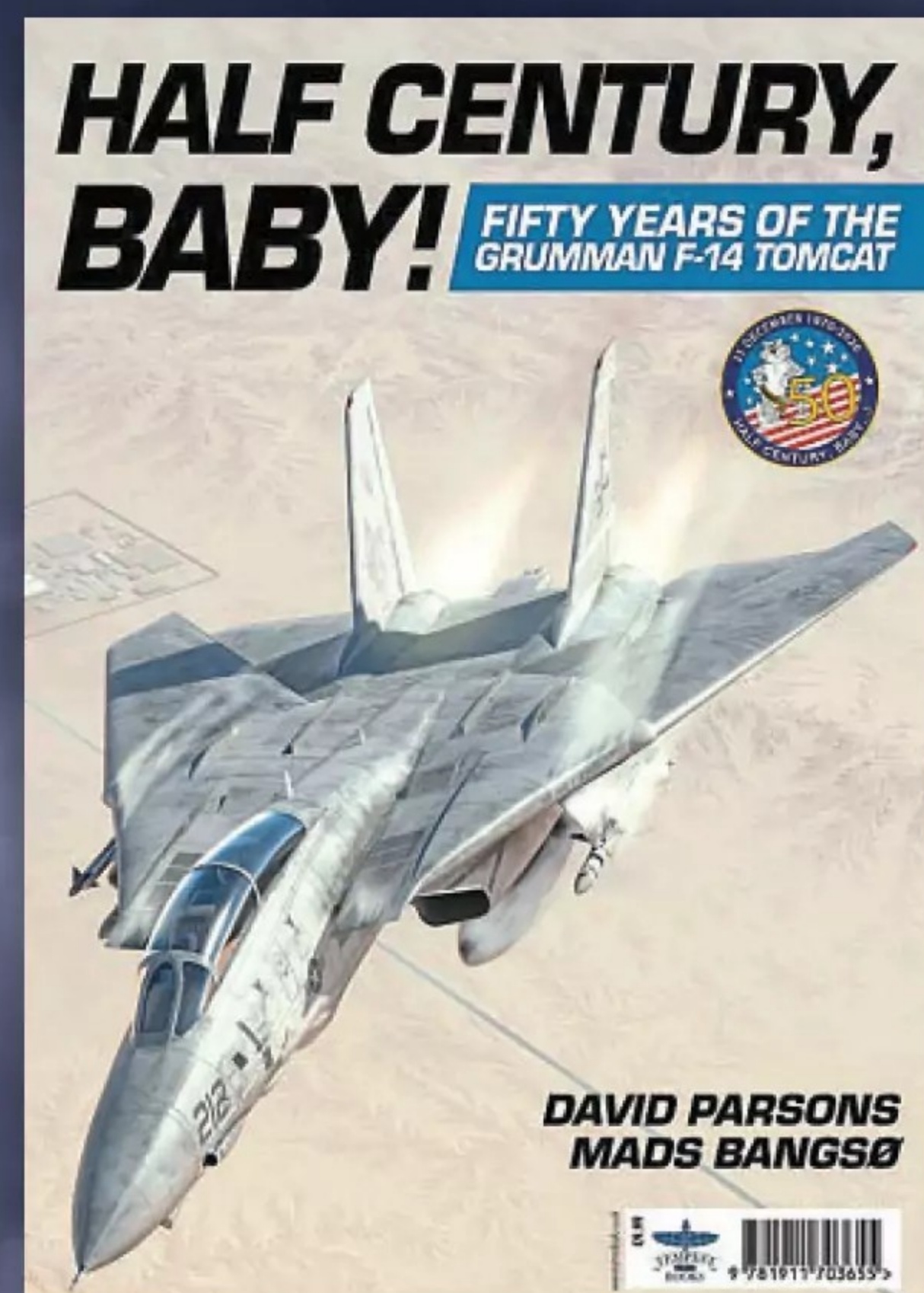
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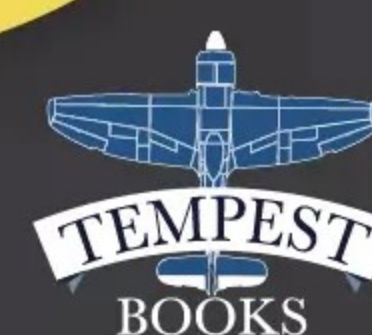
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Orange - (Scheme 08)



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Red/Silver - (Scheme 04)

PIL841



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Green/White/Red - (Scheme 04)



PIL762

Wingspan: 67in (1.7m)

£479.95

Red/White/Yellow - (Scheme 05)



PIL763

Wingspan: 67in (1.7m)

£479.95

DECATHLON

Black/Red/White - (Scheme 09)



PIL003

Wingspan: 107in (2.7m)

£1149.95

Yellow/Black/Red - (Scheme 10)



PIL786

Wingspan: 107in (2.7m)

£1149.95

EDGE-540V3

Red/White/Black - (Scheme 01)



PIL824

Wingspan: 67in (1.7m)

£479.95

Yellow/Blue/White - (Scheme 02)



PIL825

Wingspan: 67in (1.7m)

£479.95

Red/White/Black - (Scheme 01)



PIL797

Wingspan: 103in (2.6m)

£1449.95

SKYWOLF V2

Orange/White - (Scheme 05)



PIL796

Wingspan: 67in (1.7m)

£479.95

Green/Blue - (Scheme 04)



PIL746

Wingspan: 73in (1.85m)

£599.95

Orange/White - (Scheme 05)



PIL747

Wingspan: 73in (1.85m)

£599.95

STORAGE RACKS



PIL802 - RC Airplane Storage Rack
18 x 32 x 71in

PIL803 - RC Airplane Storage Rack
33.5 x 32 x 71in

£189.95

POWER PACKS



PIL435 - Power Pack for 60in Aerobatic Aircraft

£269.95



PIL406 - Power Pack for 67in Aerobatic Aircraft

£299.95

FUSELAGE BAGS



Sport/3D Jet Fuselage Bags

From: **£74.95**

WING BAGS



Wing Bags in Various Sizes

From: **£54.95**

**MACGREGOR INDUSTRIES OFFICIAL SOLE
UK DISTRIBUTOR OF PILOT-RC**

TOMCAT

XFly Model is excited to bring the F-14 Tomcat, one of the most iconic jets in history, to market in a twin 40mm EDF size. Featuring functional variable-swept wings, full-flying stabilizers and a livery based on the Jolly Roger F-14, the XFly F-14 is designed for RC enthusiasts seeking an authentic and engaging flying experience.

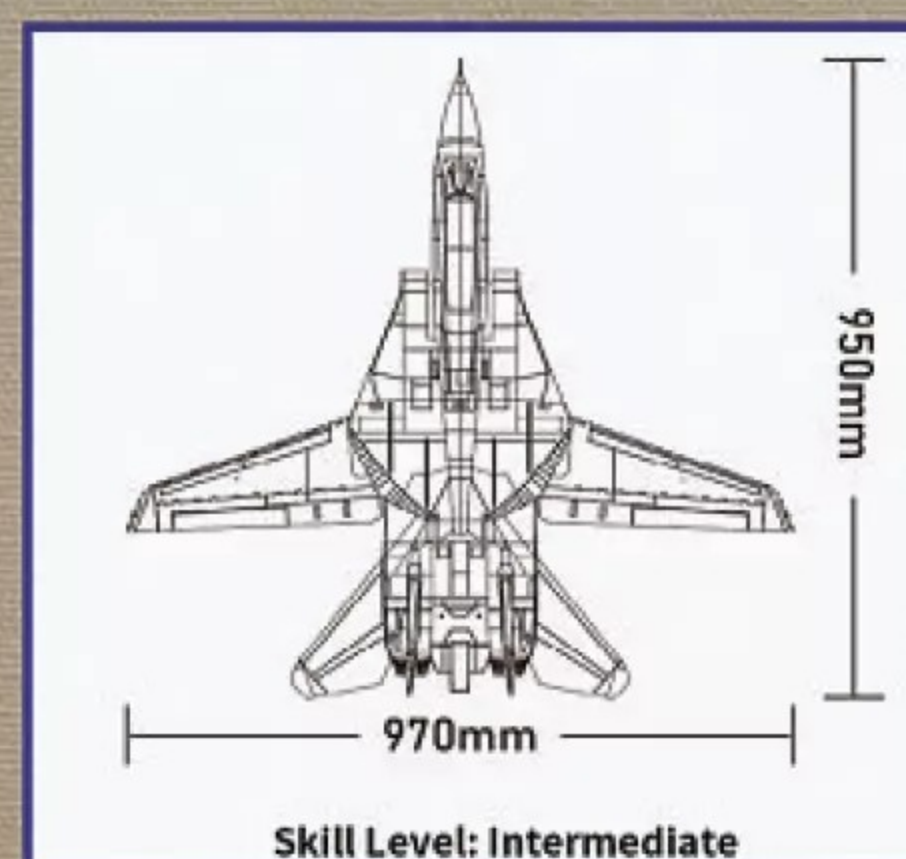


FEATURES:

- Efficient twin power system setup delivers plenty of power to perform fast climbs and loops
- High-torque efficient servos deliver crisp and precise control to the variable-sweep wings
- Functional variable-sweep wings and full-flying stabilizers
- A classic livery based on the Jolly Rogers F-14's
- Fixed landing gear with steerable nose wheel
- Extended flight time of 3-6 mins when using recommended 4S 1300-2200mAh LiPo battery
- Quick assembly with no glue required

SPECIFICATIONS:

- **WINGSPAN:** 970mm/38.2in (extended)
- **RECOMMENDED BATTERY:** 4S 1300 - 2200mAh
- **EDF SIZE:** 40MM EDF 12-Blade x2
- **OVERALL LENGTH:** 950mm/37.4in
- **WING AREA/LOAD:** 10dm² / 115g/dm²
- **FLYING WEIGHT:** 1150g
- **SKILL LEVEL:** Intermediate
- **MOTOR SIZE:** 1413 - KV5500 x2
- **ESC:** 20A x2
- **SERVOs:** 4.3g servo x2, 9g servo x3, 13g servo x2
- **RADIO:** 5CH - aileron, elevator, throttle, steering, sweep wing
- **APPROX. FLYING TIME:** 3 - 6 MINS
- **ASSEMBLY TIME:** 15 MINS



Part Number: XF122P XFLY TWIN 40MM
F-14 TOMCAT EDF 700MM JET WITHOUT
TX/RX/BATTERY RRP £239.99



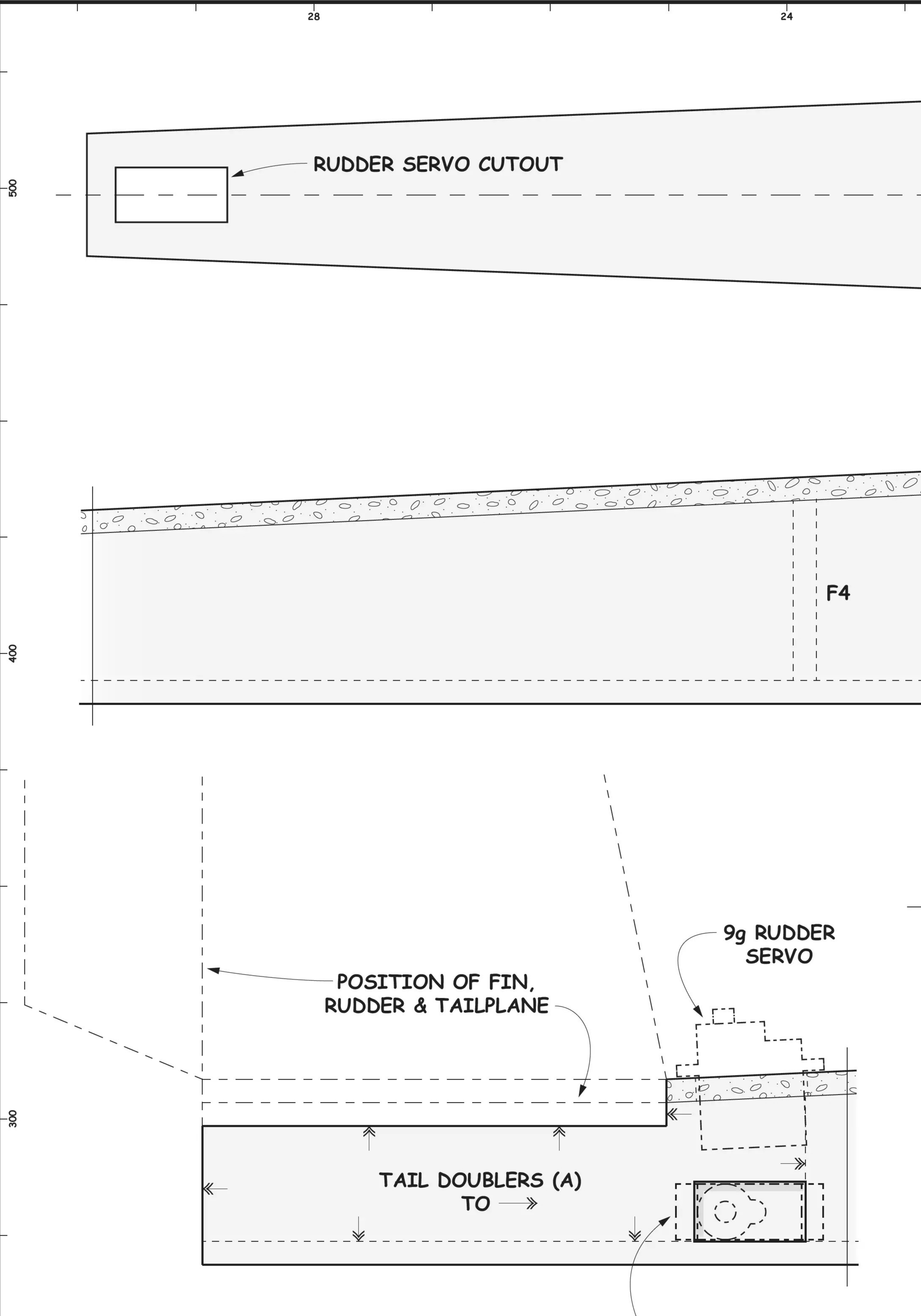
E&OE.

XFLY-MODEL

CML

CML PRODUCTS ARE AVAILABLE IN ALL GOOD MODEL & HOBBY SHOPS. CHECK OUR WEBSITE FOR FULL DETAILS
WWW.CMLDISTRIBUTION.CO.UK





TOP AFT DECK

TOP FRONT DECK

BATTERY HATCH CUTOUT

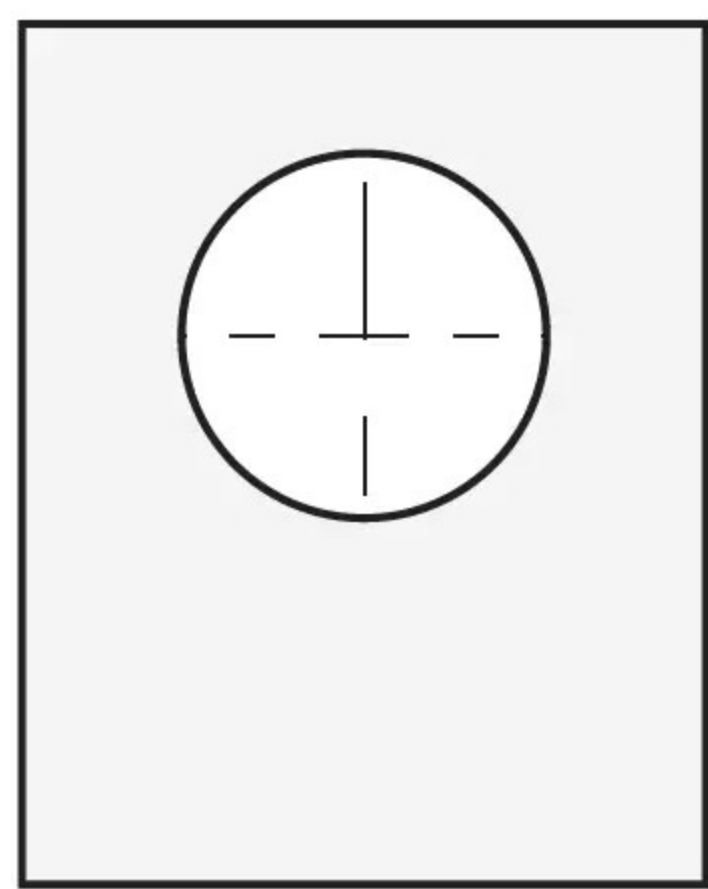
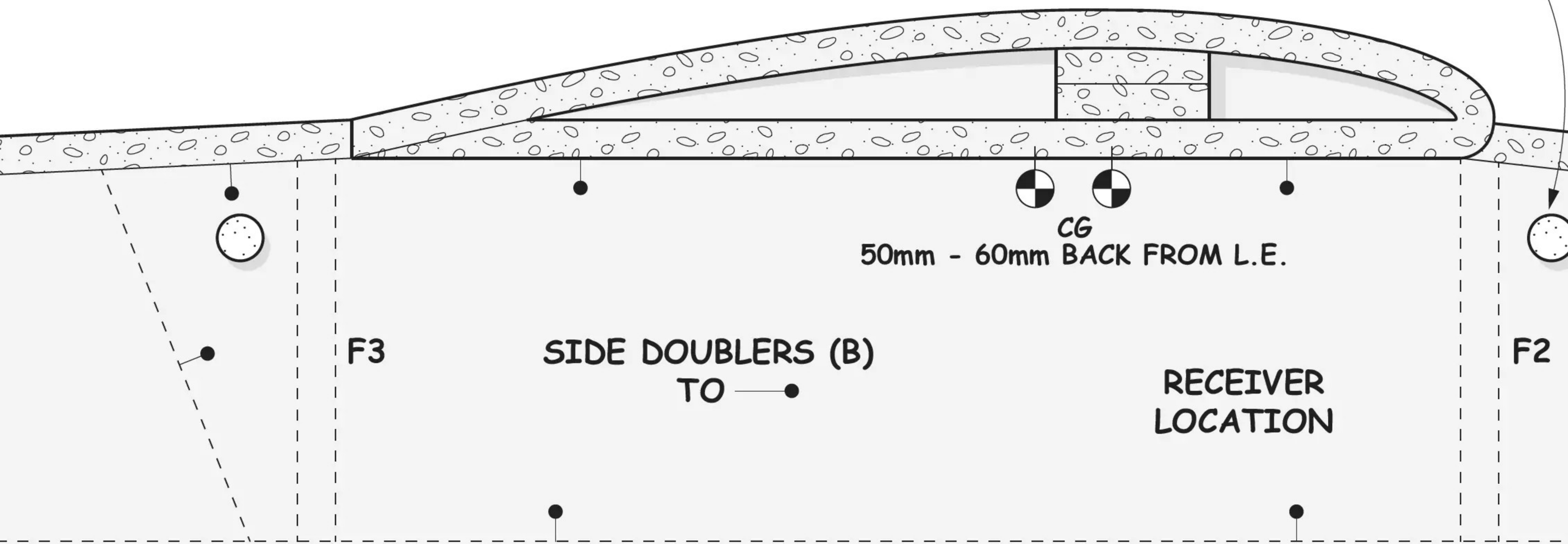
TAIL DOUBLER (A)
2 REQ'D

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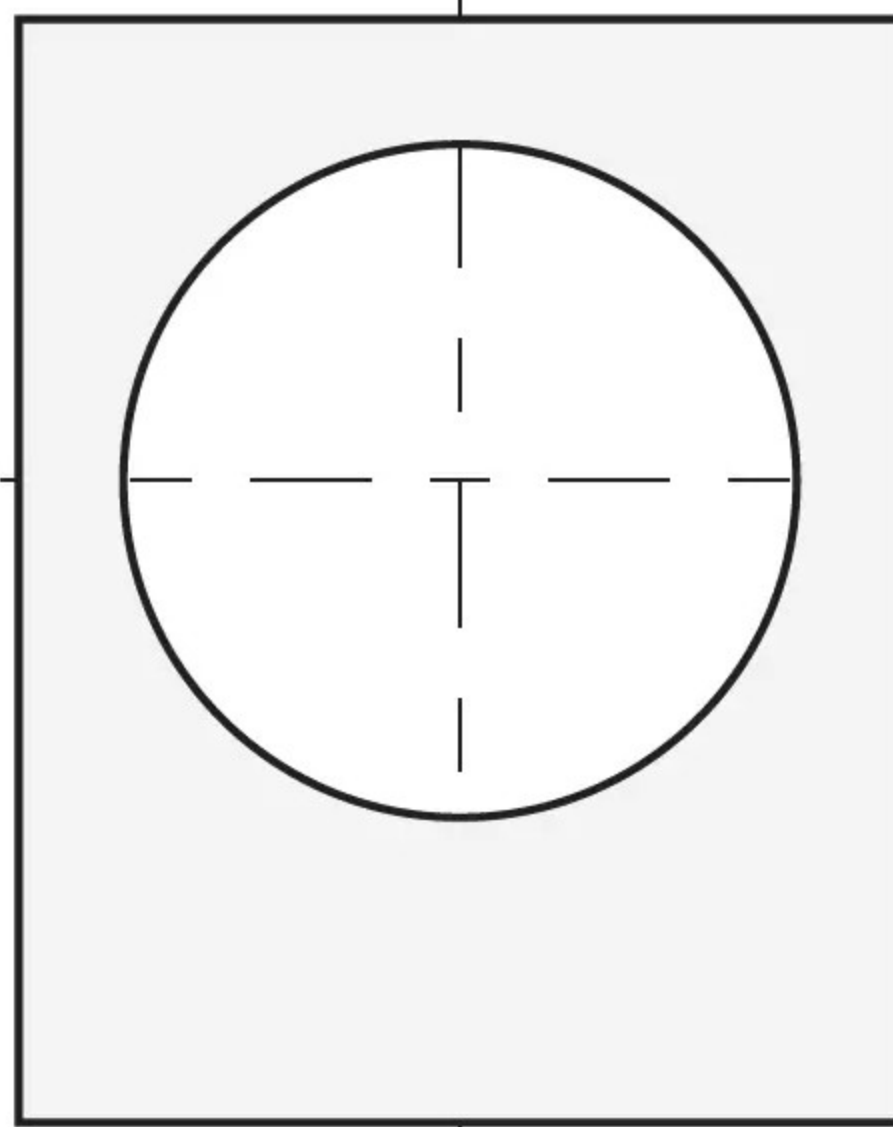
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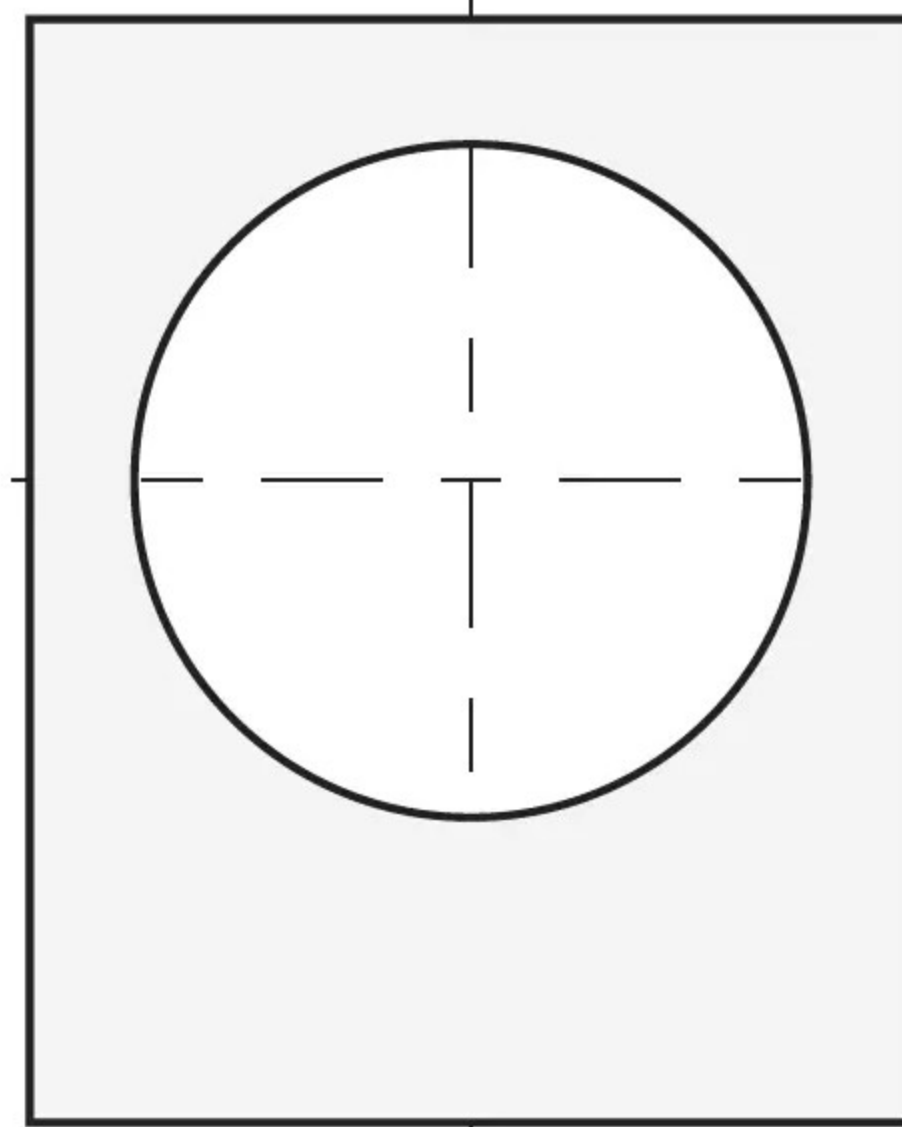
6mm x 100mm WING DOWELS (D)
2 REQ'D



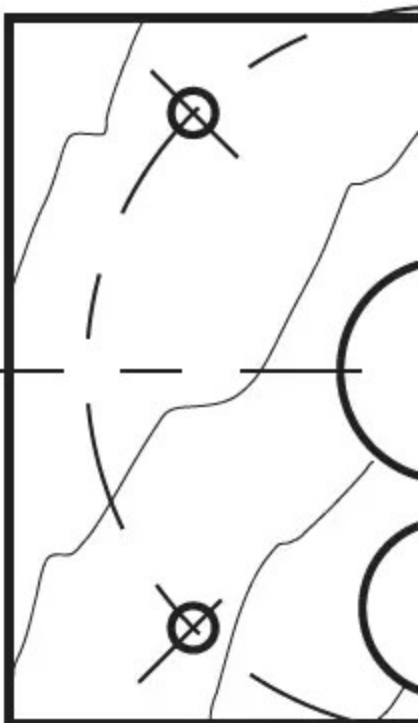
F4



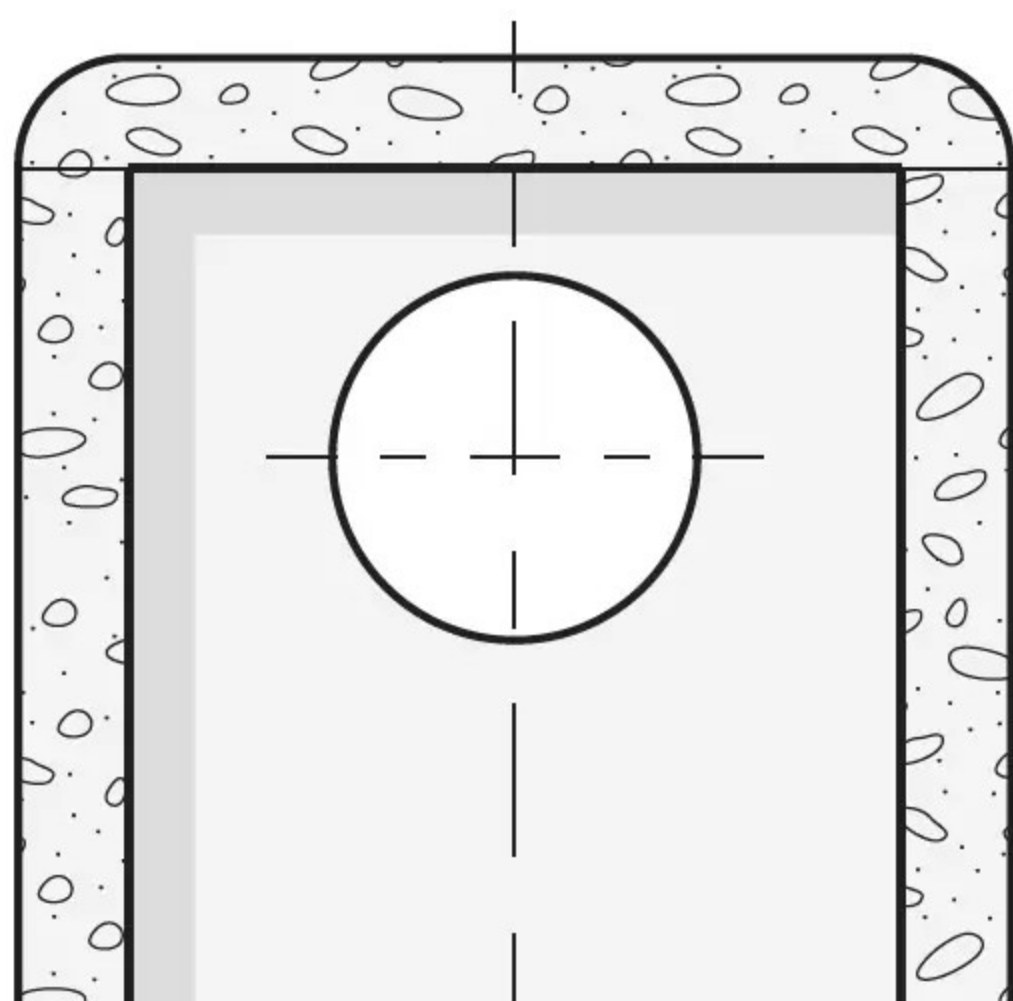
F3



F2



2.5mm F
WITH 5mm F
ANGLE FOR 5°



WINGSPAN
FUSELAGE LENGTH
FLYING WEIGHT
FUNCTIONS (SERVOS)

1600mm (63in)
850mm (33.5in)
570g (20.1oz)
AILERONS (2),
RUDDER (1), TH

PLANS

MEANS,
ON STORAGE
ER.

RCM&E

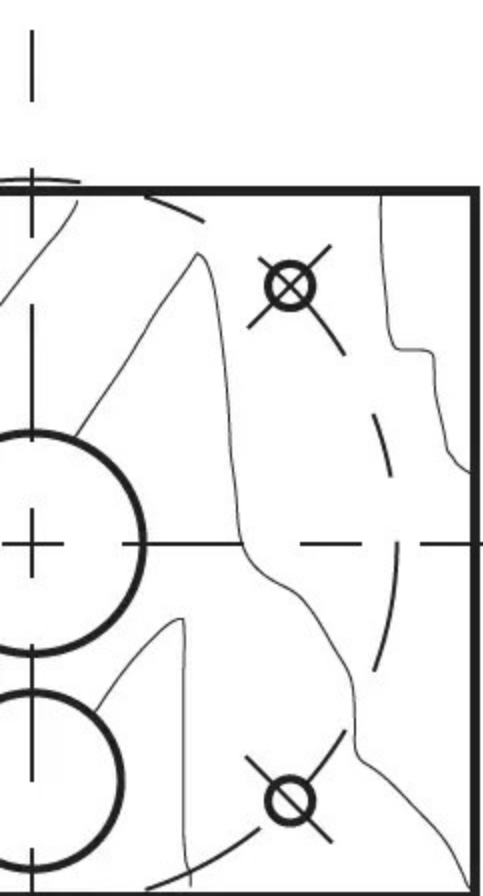
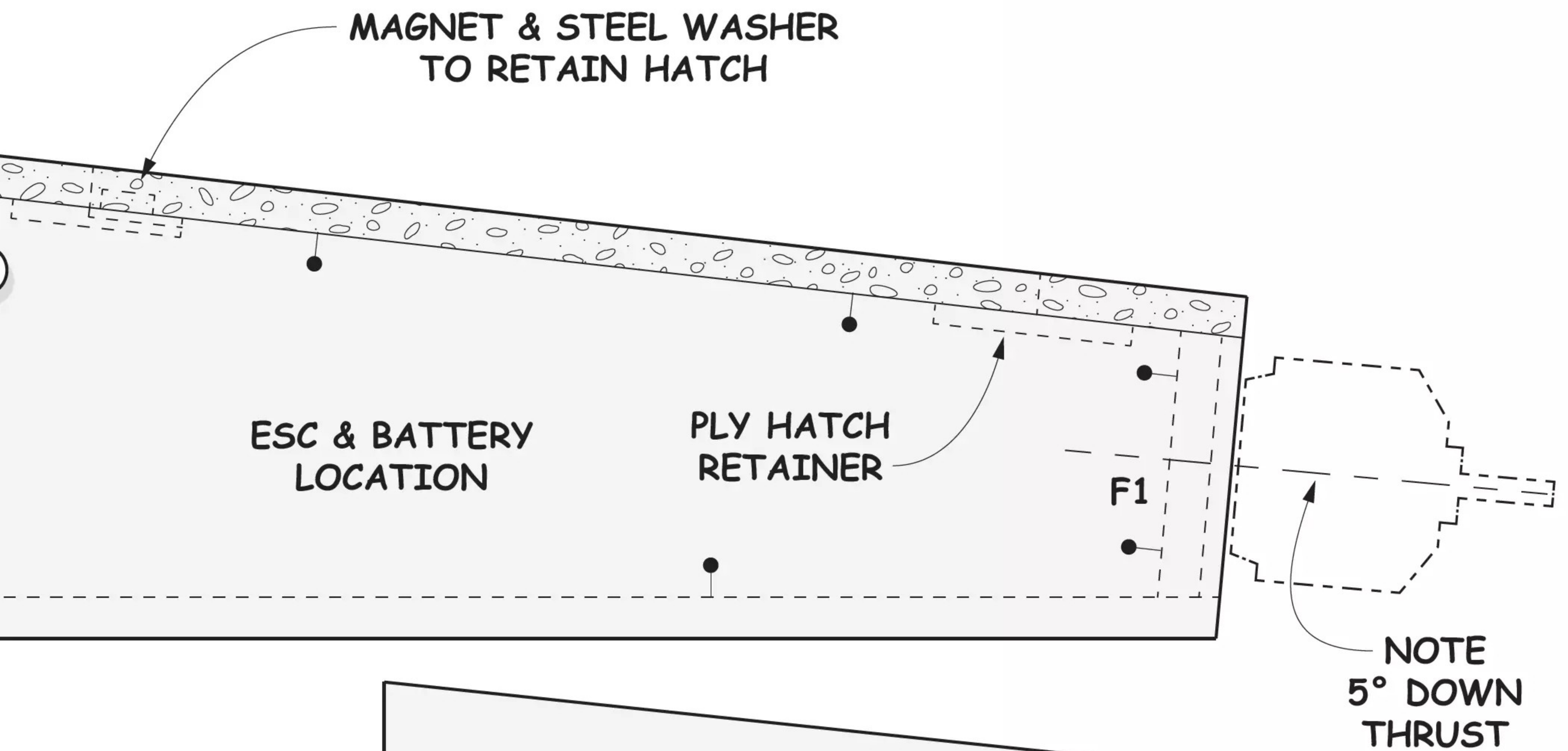
BMAC EASY GLIDER 1.6m

BY ROY THOMPSON

PLAN No RC2275

No. OF SHEETS: 1 OF 2

First published in
RCM&E September 2025

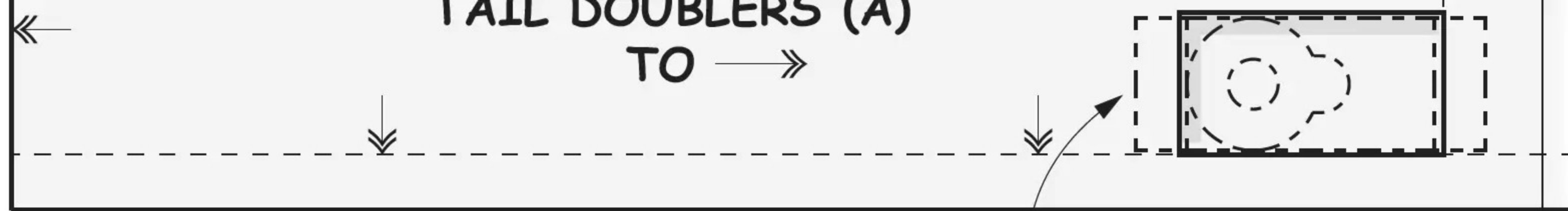


F1
PLY FACE
OAM DOUBLER
DOWNTHRUST

ELEVATOR (1)
HROTTLE (ESC)

RUDDER
5mm FOAM

FIN (F)
5mm FOAM



9g ELEVATOR
SERVO

(A)

(A)

9g RUDDER
SERVO

200

F4

100

SCALE
MM

100



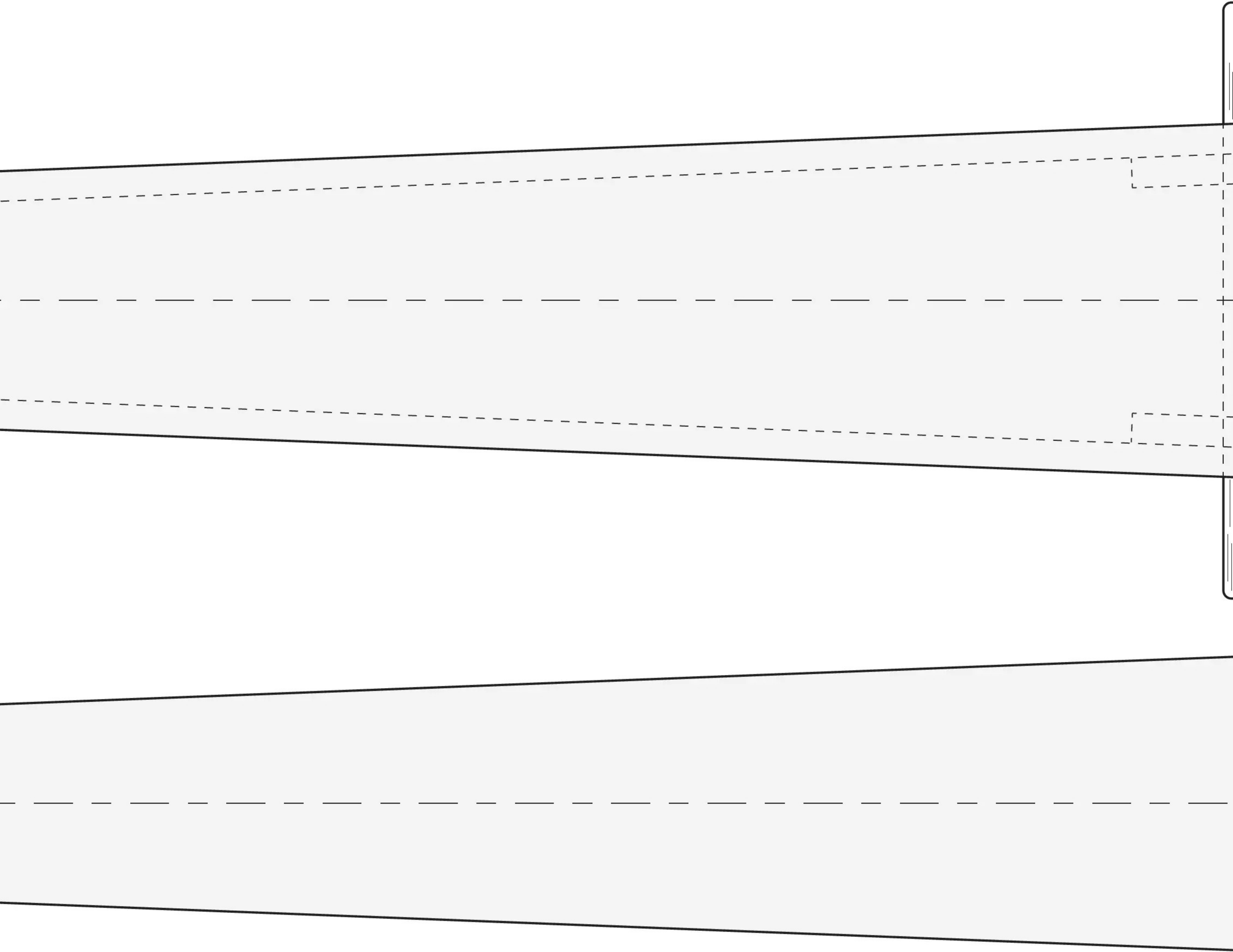
2 REQ'D

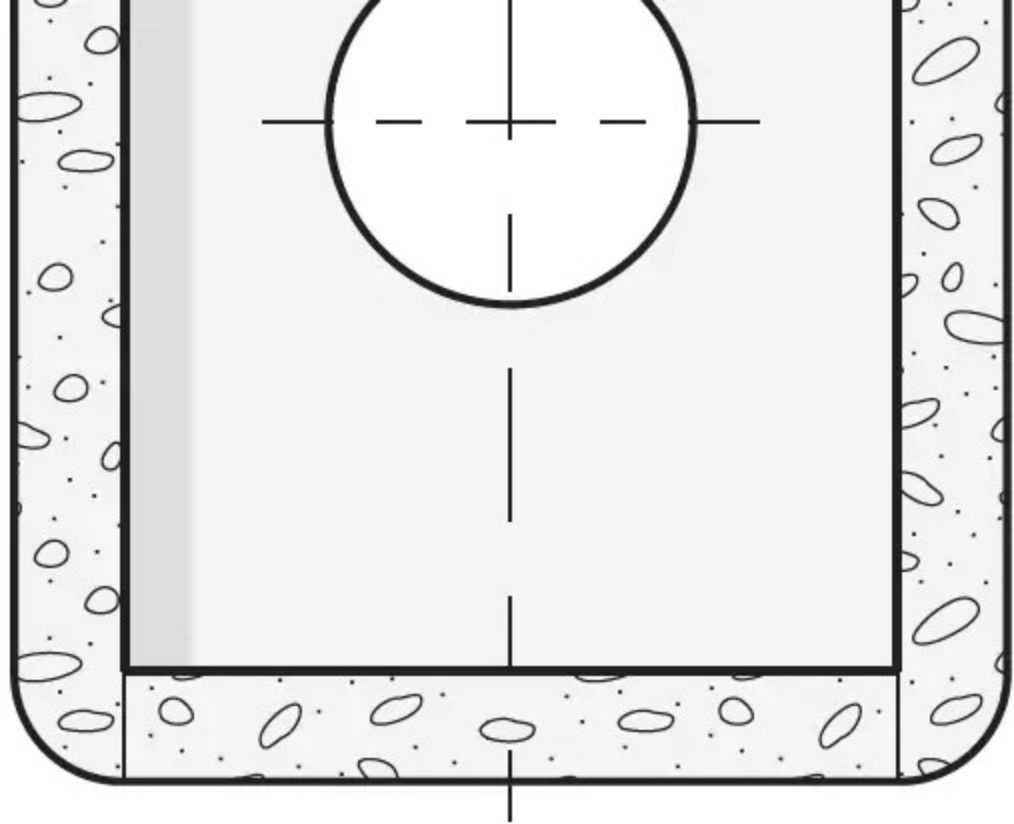


TAIL IN-FILLS (E)
2 REQ'D



SIDE DOUBLER (B)
2 REQ'D





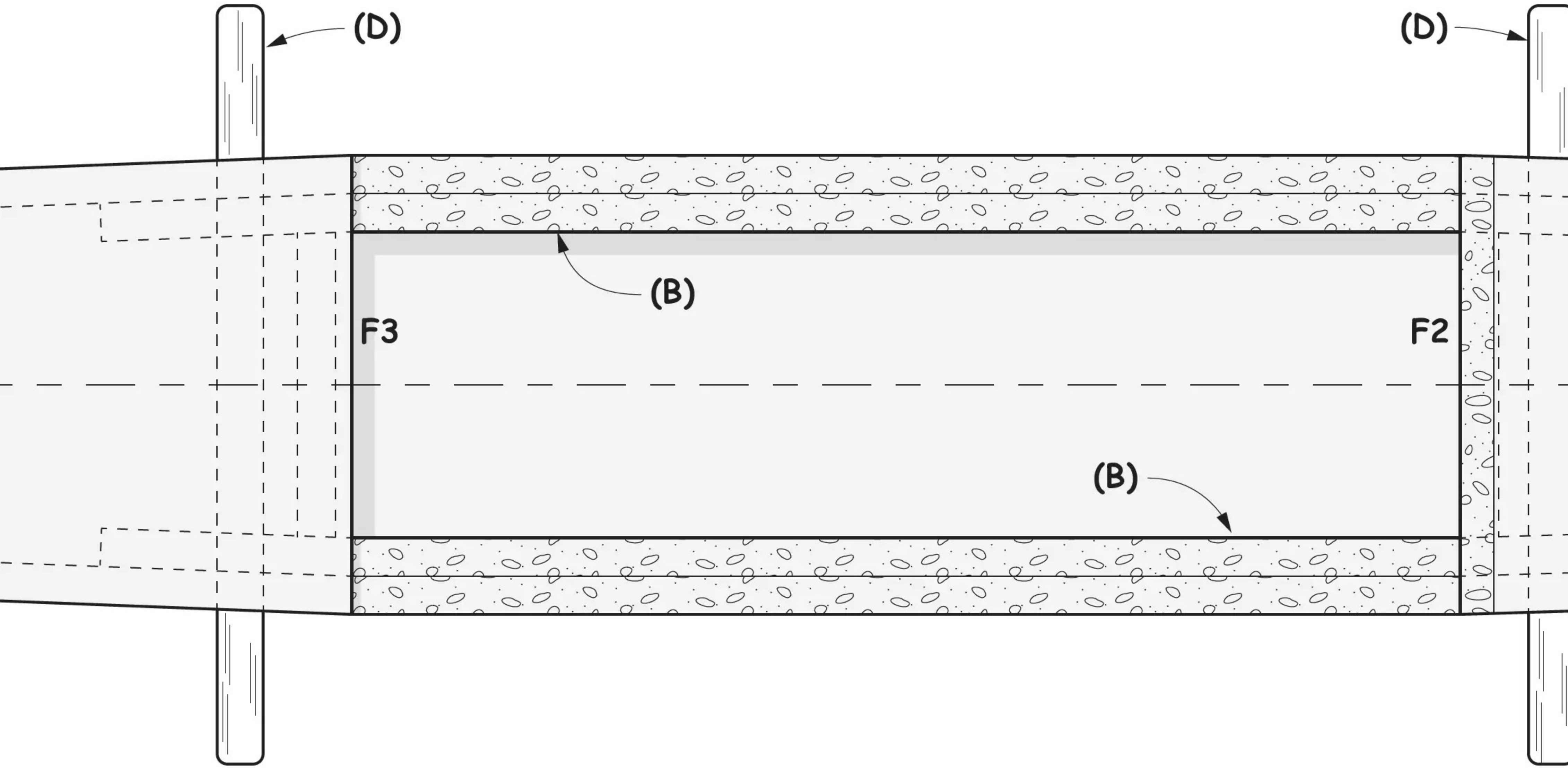
SECTION THROUGH
FUSELAGE AT F4

WINGSPAN
FUSELAGE LENGTH
FLYING WEIGHT
FUNCTIONS (SERVOS)

1600mm (63in)
850mm (33.5in)
570g (20.1oz)
AILERONS (2),
RUDDER (1), THROTTLE (1)
4-MAX 2212 10T
20A
10 x 6 FOLDING
3S 1000-1500mAh

MOTOR
ESC
PROPELLER
BATTERY

R (B)

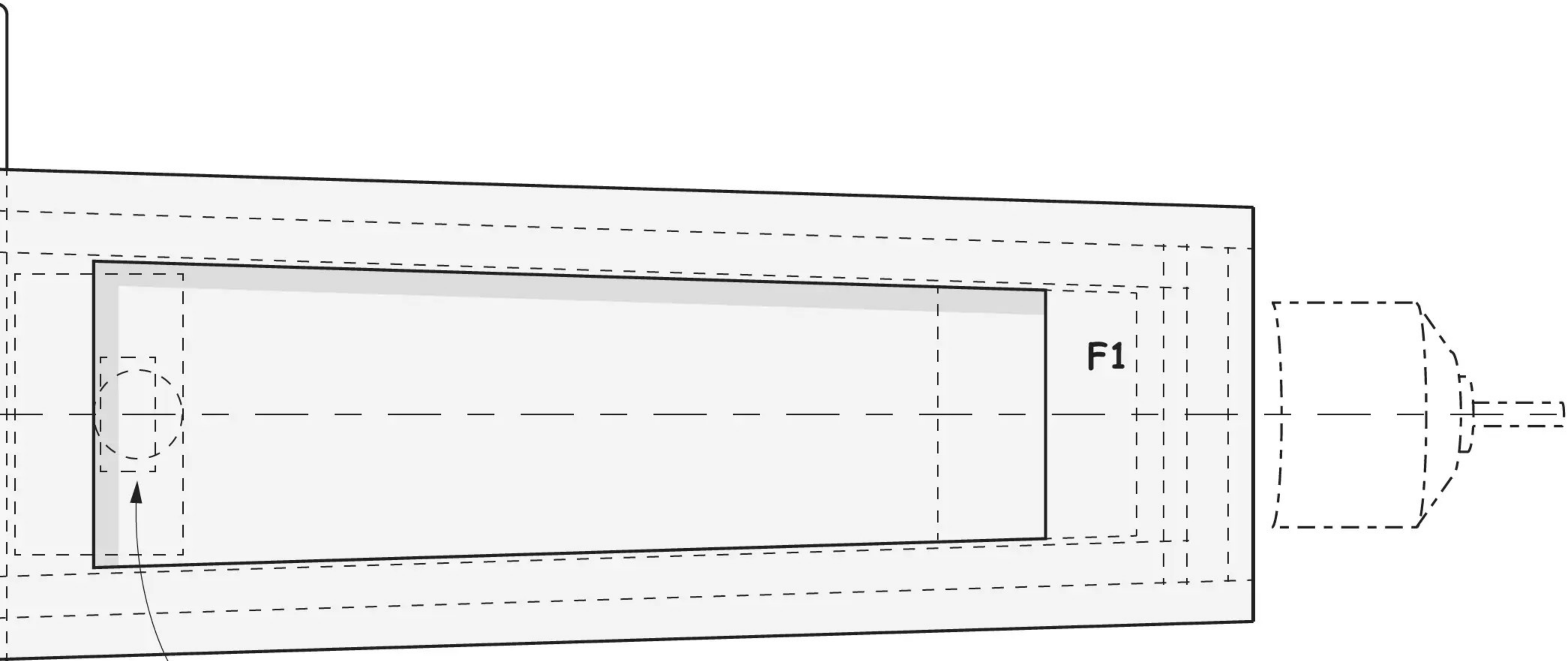


FUSELAGE BOTTOM

ELEVATOR (1)
THROTTLE (ESC)
1000 KV
1G
2200mAh Li-Po

FIN (F)
5mm FOAM

12



16

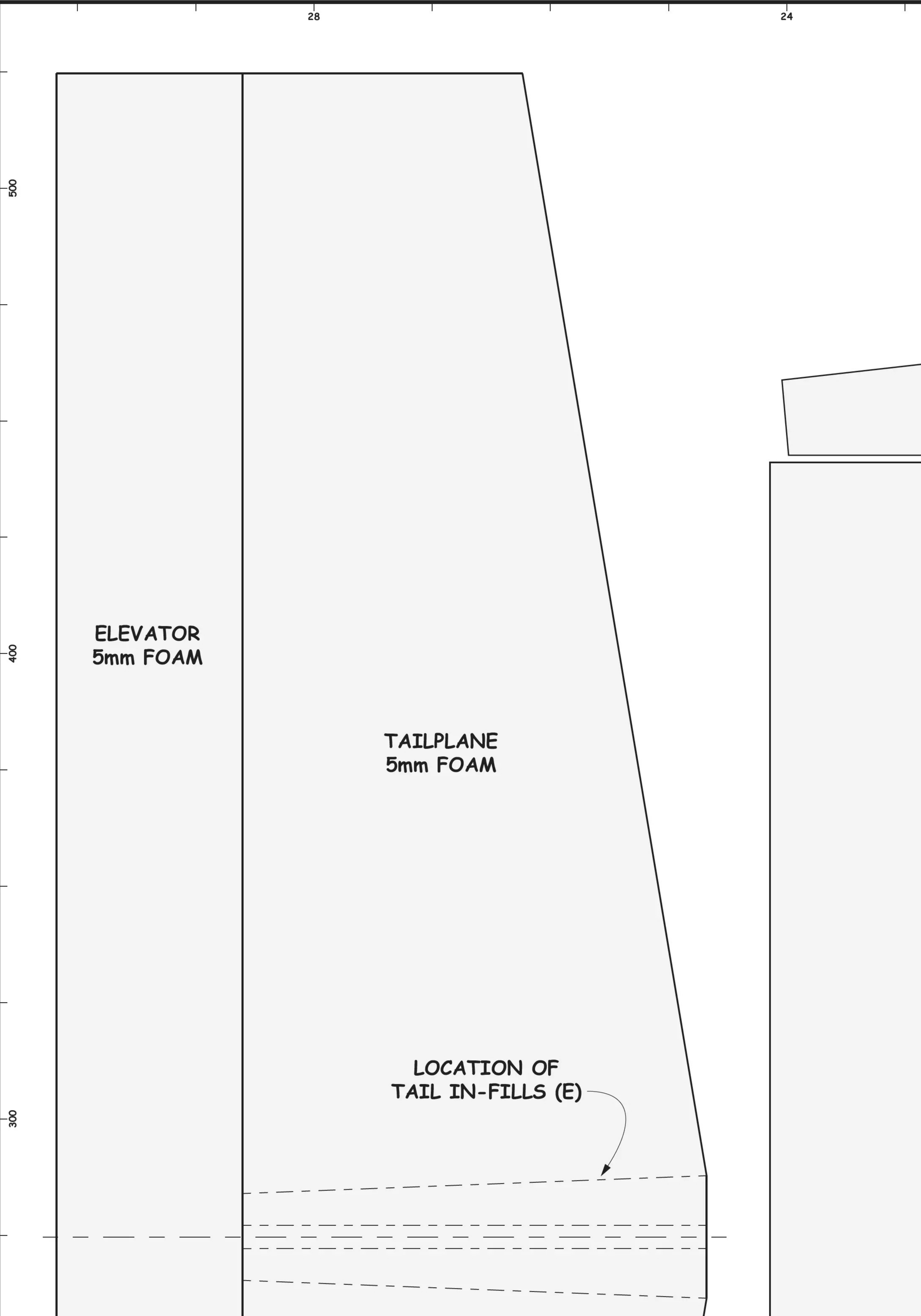
MAGNET & STEEL WASHER
TO RETAIN HATCH

2212-1000kV MOTOR
10 x 6 FOLDING PROP
1000 - 2200mAh 3S

20

600

700

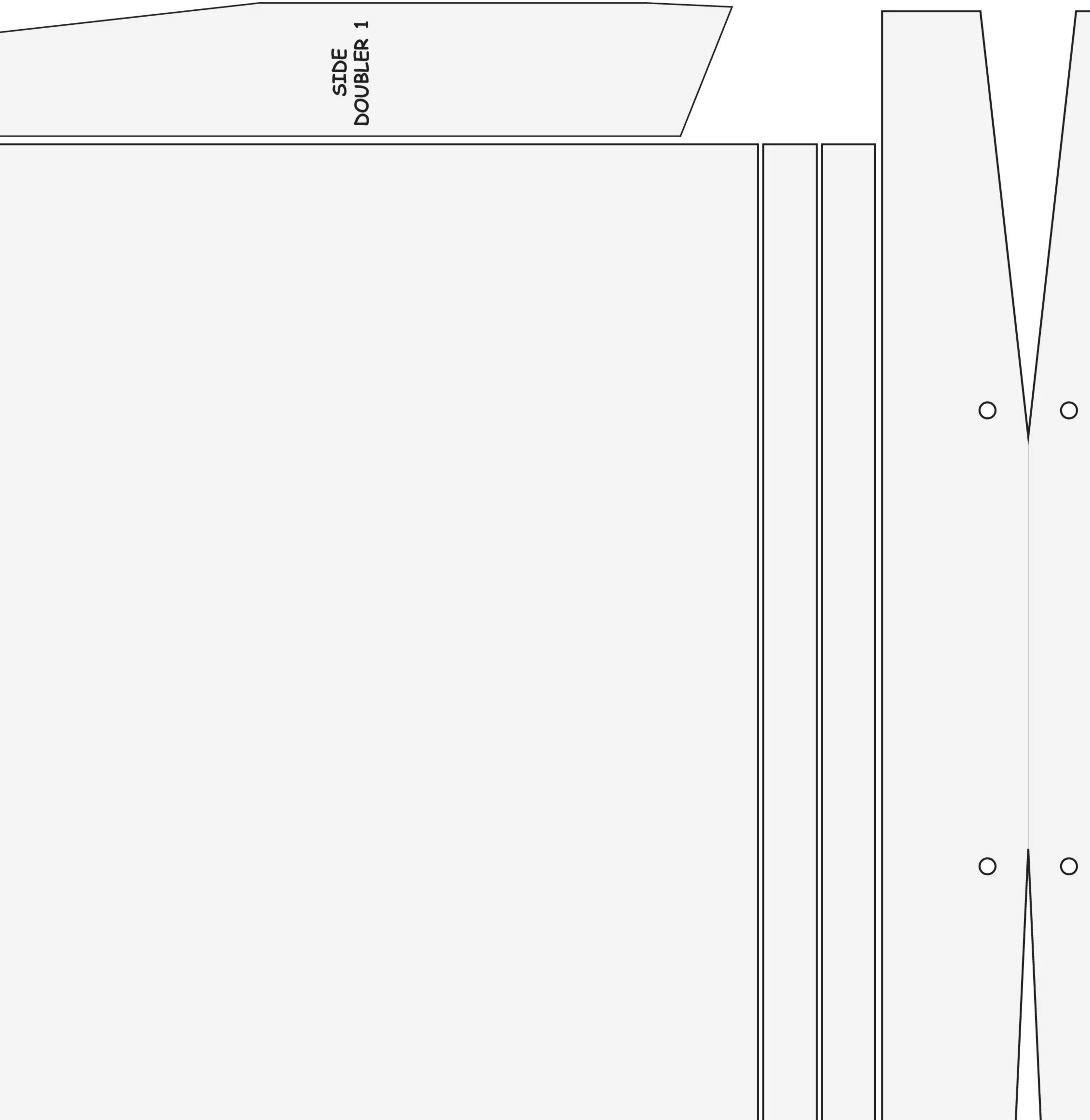


ELEVATOR
5mm FOAM

TAILPLANE
5mm FOAM

LOCATION OF
TAIL IN-FILLS (E)

WINGSPAN	1600mm (63in)
FUSELAGE LENGTH	850mm (33.5in)
FLYING WEIGHT	570g (20.1oz)
FUNCTIONS (SERVOS)	AILERONS (2), ELEVATOR (1)
	RUDDER (1), THROTTLE (ESC)
MOTOR	4-MAX 2212 1000 KV
ESC	20A
PROPELLER	10 x 6 FOLDING
BATTERY	3S 1000-1500mAh Li-Po



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SIDE
DOUBLER 2

RCM&E

BMAC EASY GLIDER 1.6m

BY ROY THOMPSON

PLAN No

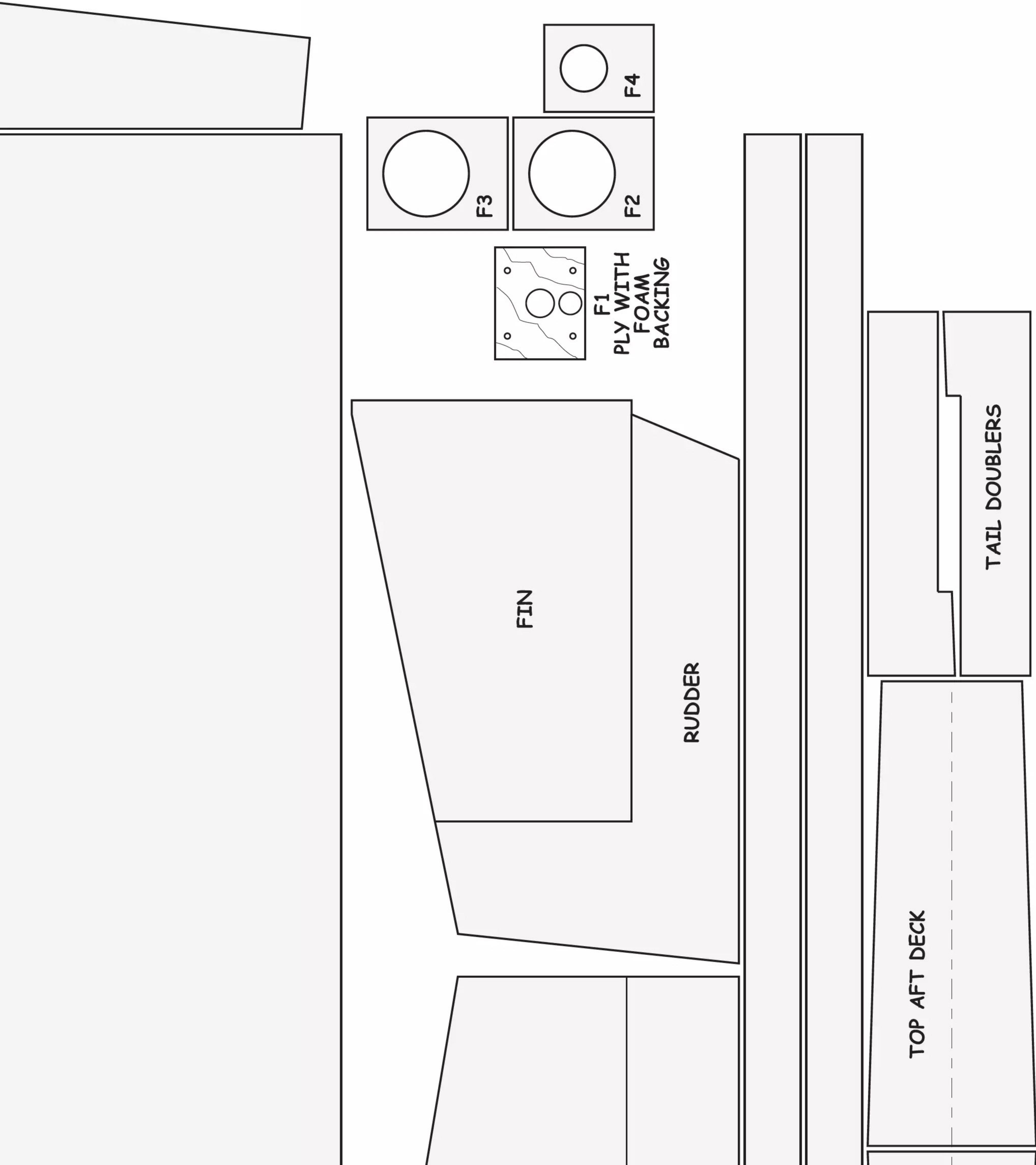
RC2275

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1 OF 2

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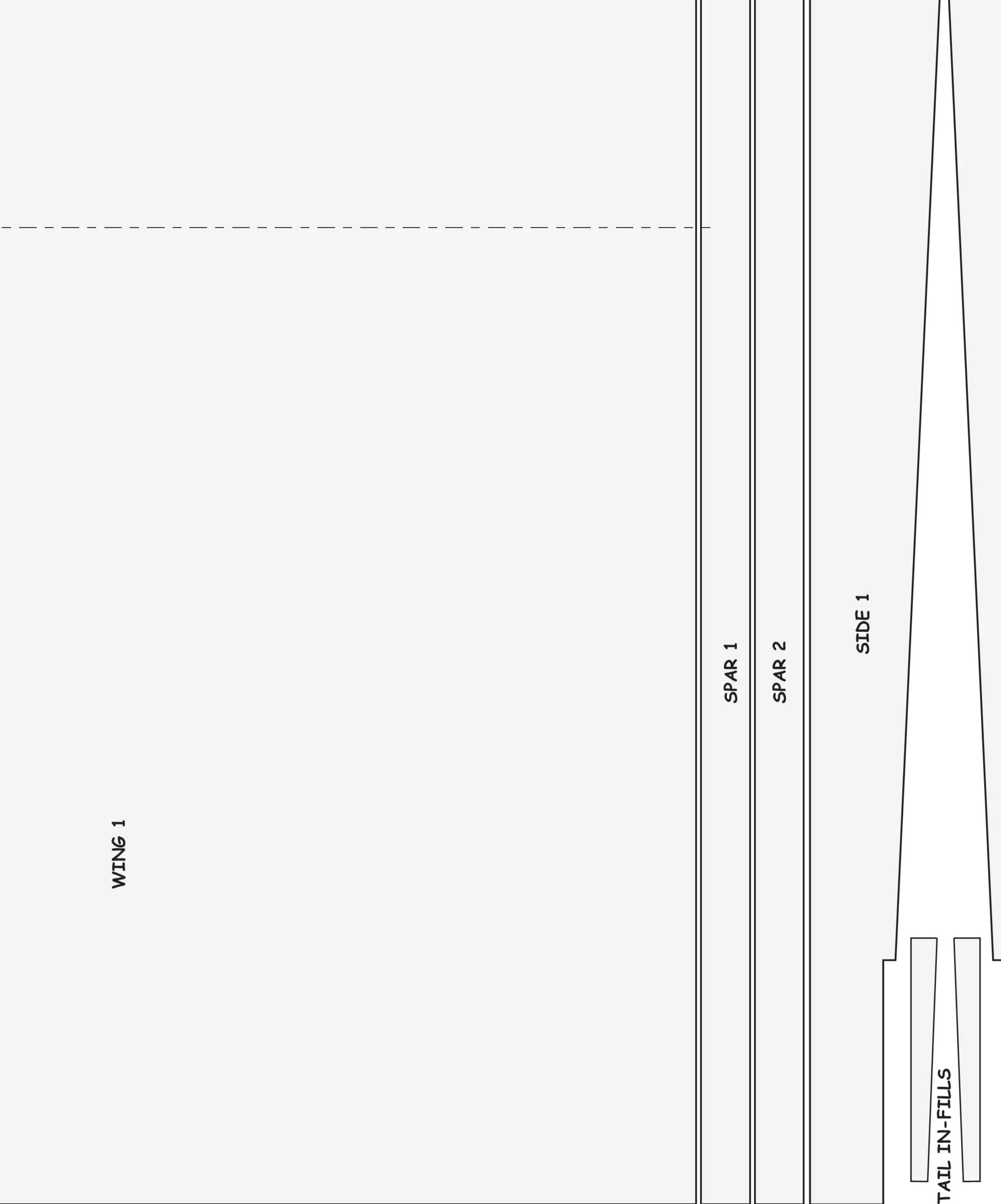


TAIL PARTS ARE COVERED WITH
PACKING TAPE ON BOTH SIDES

LAYOUT SHEET 1

SCALE
MM

100



MATERIAL: VITREX PREMIER UN

NOTE:
AT HALF SCALE



PREMIER UNDERLAY BOARD, 5mm x 600mm x 856mm FOAM SHEETS

NOTE: LAYOUT SHEETS ARE DRAWN
AT HALF SCALE, ENLARGE BY 200% FOR FULL SIZE



