

**FREE PRO-PLAN!** | **COSMIC CLOUD 150**  
R/C RETRO GLIDER

VOL. 68 NO. 6 JUNE 2025

www.modelflying.co.uk



# RCME

**RADIO CONTROL MODELS AND ELECTRONICS**

## DEFIANT'S DORSAL DISPLAY

**TURRET FIGHTER SHOWS ITS TEETH**



**SKYHAWK!**  
F5L NATIONALS  
WINNING GLIDER

**GOLDEN  
GLOW**  
MORE GLOW  
ENGINE INSIGHTS



**FUNDROID PRO-PLAN SHEET 3 ARTF REPAIRS FIXING A WOODEN WIPE OUT**





Another great brand from J Perkins





# **D625MW**

## **Standard Digital Cored Servo**

### **D-SERIES SERVOS**

It's all very well us waxing lyrical about Hitec servos and how beautifully engineered, machined and manufactured they are. We could do it till we're blue in the face, but since a photo speaks 1000 words, we'll simply leave you with this D625MW gear set and wish you a pleasant day.

**When it matters, use Hitec inside.**

#### **D-Series**

- 32-bit MCU / 12-bit ADC
- 4096 step resolution
- Programmable (End Point / Direction / Fail-Safe / Dead Band / Speed / Soft Start / Overload protection / Data Save)
- Smart Sense anti flutter technology
- Wide voltage (4.8 / 7.4V)
- Dual ball bearings
- 1M cycle long life potentiometer
- 25 tooth spline

#### **Hitec D625MW**

Weight: **57g**

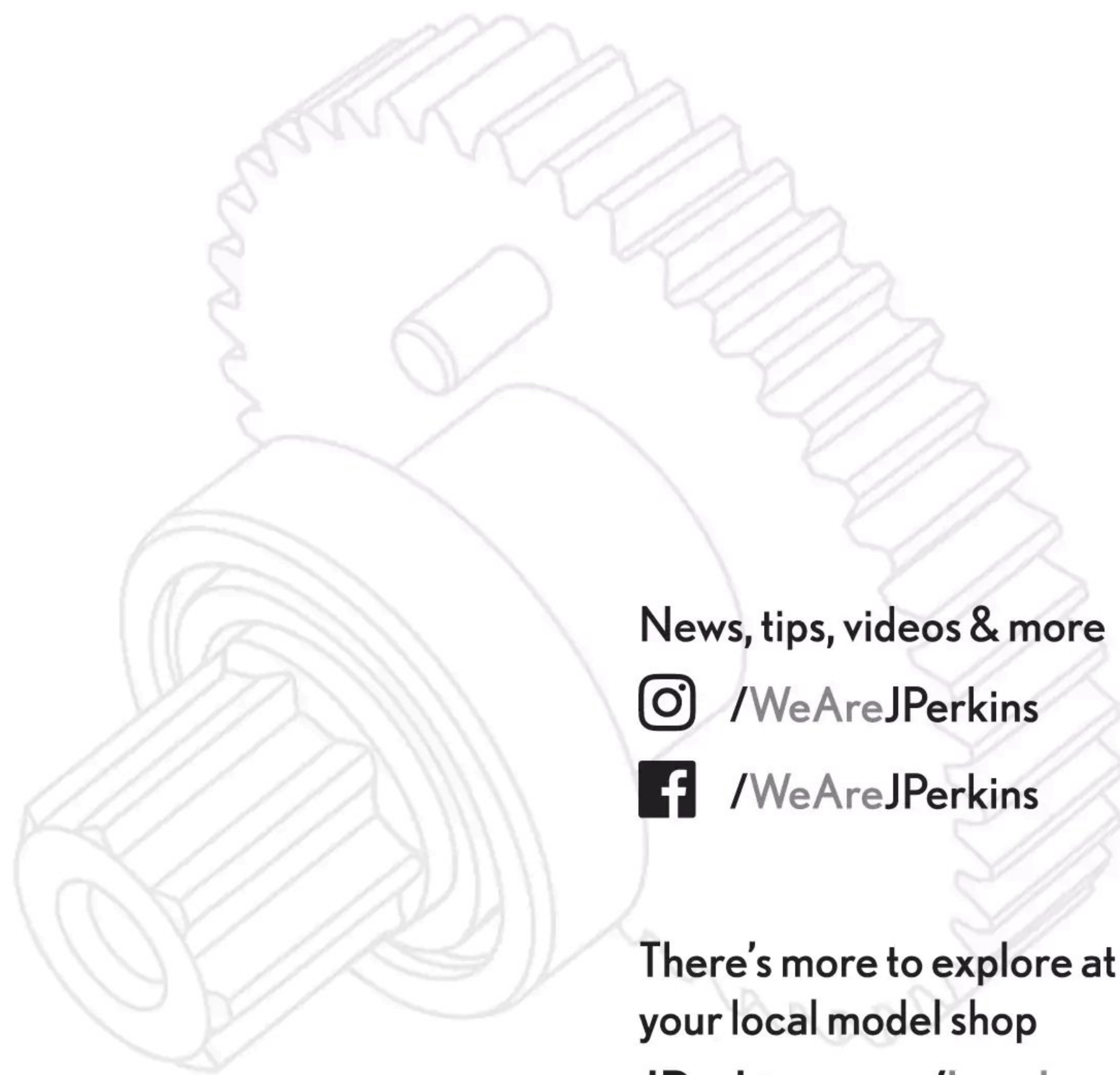
Max torque: **10kg**

Max speed: **0.13s**

Voltage: **4.8 - 7.4V**

Size: **40.6 x 19.8 x 37.8mm**

**£42.50 SRP**



News, tips, videos & more

 /WeAreJPerkins

 /WeAreJPerkins

There's more to explore at  
your local model shop

[JPerkins.com/local](http://JPerkins.com/local)



# Welcome

**W**elcome to the July 2025 issue of RCM&E.

Ever since I took back the reins of editing this magazine in 2019, I have used the same picture of myself on the first page of every issue. But recently, thanks to my friend Barry Atkinson behind the camera, I finally managed to have a replacement taken, showing a new model to go along with all those extra grey hairs! In the original picture I was seen holding my SebArt Wind S 50E, which is still going strong. The 'new' model is my 78-inch Pilot RC Extra NG, which is an equally gorgeous model to fly, suiting my preferred style of relaxed turnaround aerobatics to a tee. Yes, it can perform 3D aerobatics easily enough, but I much prefer to guide it through a series of wide-open loops and slow(ish) rolls.

Recently, I managed to extract another lovely aerobatic ship from her slumbers at the back of my storage lock up. This is similar to the Wind S and is now almost 20 years old. I had fond 'rose tinted' memories of this aircraft as it was my first 'proper' electric model, but I'm ashamed to say that it became a true 'hangar queen', not seeing the light of day for many years. However, I am glad to report that my memory served me well and she can still put a broad smile on my face as I guide her through a set of basic F3A style manoeuvres.

But there are dangers lurking when bringing a long-stored model back into service. Fortunately, I had invested in a high-quality motor and servos when building her, so the avionics still perform well. The airframe is also in good shape but after a couple of flights I started to notice that the covering was starting to break away. It appears to have gone brittle in places and one chunk of green trim departed in flight. On another area I found that the top transparent layer was lifting away, leaving the coloured film still in place underneath. It's a real shame as she sports a stylish multi-coloured livery.

So, despite my best efforts at keeping her pristine by keeping her tucked away, my 'cotton wool' model is now looking a bit weather worn. I guess the moral of this story is 'Beware the Hangar Queen'. Model aeroplanes are meant to be flown, even more so if they are your favourite ones. They will still deteriorate in storage so why not let them out and get some air underneath their wings.

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



begins the June issue with a review of the Skyhawk, a British designed and kitted electric thermal soarer. Martin Hardy returns to finish and fly the SIG Spacewalker EP conversion that he started last time before RCM&E's roving reporter Mike Freeman travels to the Basingstoke All Electric Fly-In. Chris Williams reports from the first White Sheet scale glider meeting of the year before Dick van Mourik takes over to show how to fix a crashed damaged wooden ARF model. Harry Curzon lets us into the secrets behind the moving rear turret on his BP Defiant fighter and then it's over to Dave Goodenough who has resurrected a childhood favourite, the Cosmic Cloud as this month's pull-out Pro-Plan, enlarging it for R/C and electric power. We stay with Dave as he reports from the latest 'Kidz' event, this time an indoor meeting organised for young pilots. Yours truly finally gets to fly the D-Day version of XFly's new Spitfire before John Stennard returns with more indoor flying topics. Mike Bell returns to complete his Fundroid fun fly model, the final drawing for which is on the reverse of the pull-out Pro-Plan sheet. Our final feature this month is by Neil Hall who returns with more Golden Glow musings to warm the hearts of anyone who still enjoys using glow engines to power their model aircraft.

I hope you enjoy reading it all.

Happy Flying!

*Kevin Crozier*

**Editor: Kevin Crozier**

Kelsey Media, Media Centre,  
Morton Way, Horncastle, Lincs LN9 6JR  
kcrozier@mortons.co.uk

## NEVER MISS AN ISSUE

Subscribe to get our best offer



Pre-order your next issue –  
delivered direct to your door

[www.classicmagazines.co.uk/issue/RCM](http://www.classicmagazines.co.uk/issue/RCM)

## SUBSCRIBE



Save over £2.00 per issue –  
delivered direct to your door

[www.classicmagazines.co.uk/subscription/RCM](http://www.classicmagazines.co.uk/subscription/RCM)

## DIGITAL



Get your digital edition for just £3.99 per issue  
[www.classicmagazines.co.uk/subscription/RCM](http://www.classicmagazines.co.uk/subscription/RCM)

## PRINT AND DIGITAL

The whole package – just £5.50 per issue for a  
printed and digital version  
[www.classicmagazines.co.uk/subscription/RCM](http://www.classicmagazines.co.uk/subscription/RCM)



## What's NEW

**35" Non-VTOL Harrier for 70mm 4S EDF.** See web site for further details

Complete Pack- Plan, CNC Pack/Wood Pack and Vac Set **£139.00**



## Our 50-70mm EDF Mini Jet Range



26" Span Sabre



25" & 36" Hunter



23" Span Phantom



28" & 37" Provost



26" Span MiG 15



25" & 33" Gnat



25" Span Hawk



23" Span Lightning



20" Span TSR-2



25" Span Cougar



32" Span Vampire



27" Span Panther

Complete Pack -Plans, CNC/Wood Pack and Vac set Starting at £89.00 Each

## Our EDF /Turbine Range



42" Span BAE Hawk 70mm EDF

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £44.00  |
| CNC Pack      | £62.00  |
| Wood Pack     | £59.00  |
| Complete Pack | £184.00 |



50" Span BAE Hawk 90mm EDF

|               |         |
|---------------|---------|
| Plans         | £40.00  |
| VAC Set       | £55.00  |
| CNC Pack      | £78.00  |
| Wood Pack     | £80.00  |
| Complete Pack | £243.00 |



78" Span Vulcan 2x90mm EDF

|               |         |
|---------------|---------|
| Plans         | £65.00  |
| VAC Set       | £35.00  |
| CNC Pack      | £132.00 |
| Wood Pack     | £245.00 |
| Complete Pack | £467.00 |



32" Concorde 4 x 50mm EDF

|               |         |
|---------------|---------|
| Plans         | £35.00  |
| VAC Set       | £17.00  |
| CNC Pack      | £75.00  |
| Wood Pack     | £72.00  |
| Complete Pack | £184.00 |



98" Span Turbine Vulcan (80-120 size)

|               |         |
|---------------|---------|
| Plans         | £69.00  |
| VAC Set       | £95.00  |
| CNC Pack      | £172.00 |
| Wood Pack     | £311.00 |
| Complete Pack | £627.00 |



49" Span Vulcan 50mm EDF/pusher

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £28.00  |
| CNC Pack      | £83.00  |
| Wood Pack     | £91.00  |
| Complete Pack | £217.00 |



78" Span Turbine Vampire (80 size)

|               |         |
|---------------|---------|
| Plans         | £60.00  |
| VAC Set       | £35.00  |
| CNC Pack      | £198.00 |
| Wood Pack     | £171.00 |
| Complete Pack | £454.00 |



42" Span A10 twin 50mm EDF

|               |         |
|---------------|---------|
| Plans         | £20.00  |
| VAC Set       | £25.00  |
| CNC Pack      | £65.00  |
| Wood Pack     | £55.00  |
| Complete Pack | £160.00 |



72" Span MK.5 Spitfire 1.20 IC or Electric

|               |         |
|---------------|---------|
| Plans         | £35.00  |
| VAC Set       | £35.00  |
| CNC Pack      | £124.00 |
| Wood Pack     | £132.00 |
| Complete Pack | £316.00 |



60" Span FW-190A Electric or 0.75 IC

|               |         |
|---------------|---------|
| Plans         | £30.00  |
| VAC Set       | £47.00  |
| CNC Pack      | £82.00  |
| Wood Pack     | £105.00 |
| Complete Pack | £254.00 |



67" A6M2 Zero Electric or 0.75 IC

|               |         |
|---------------|---------|
| Plans         | £35.00  |
| VAC Set       | £45.00  |
| CNC Pack      | £72.00  |
| Wood Pack     | £94.00  |
| Complete Pack | £236.00 |



62" Span Hurricane Electric or 0.65 IC

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £16.00  |
| CNC Pack      | £80.00  |
| Wood Pack     | £140.00 |
| Complete Pack | £251.00 |



61" Span P-51B & D 900w Electric

|               |         |
|---------------|---------|
| Plans         | £30.00  |
| VAC Set       | £35.00  |
| CNC Pack      | £82.00  |
| Wood Pack     | £108.00 |
| Complete Pack | £245.00 |



62" Span Typhoon Electric or 0.65 IC

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £41.00  |
| CNC Pack      | £80.00  |
| Wood Pack     | £135.00 |
| Complete Pack | £271.00 |



66" Span Lysander 0.52 IC or Electric

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £70.00  |
| CNC Pack      | £86.00  |
| Wood Pack     | £69.00  |
| Complete Pack | £240.00 |



66" Span Harvard 0.65 IC or Electric

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £40.00  |
| CNC Pack      | £81.00  |
| Wood Pack     | £103.00 |
| Complete Pack | £239.00 |



63" Span MK9 Spitfire 0.65 IC or Electric

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £16.00  |
| CNC Pack      | £96.00  |
| Wood Pack     | £98.00  |
| Complete Pack | £228.00 |



72" Span Mosquito 2xElectric

|               |         |
|---------------|---------|
| Plans         | £40.00  |
| VAC Set       | £32.00  |
| CNC Pack      | £142.00 |
| Wood Pack     | £135.00 |
| Complete Pack | £339.00 |



72" Span Dakota 2x 600w Electric

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £40.00  |
| CNC Pack      | £82.00  |
| Wood Pack     | £99.00  |
| Complete Pack | £236.00 |



72" Span Lancaster 4x 200w Electric

|               |         |
|---------------|---------|
| Plans         | £25.00  |
| VAC Set       | £35.00  |
| CNC Pack      | £80.00  |
| Wood Pack     | £125.00 |
| Complete Pack | £255.00 |



72" Span Avro York 4x 200w Electric

|               |         |
|---------------|---------|
| Plans         | £30.00  |
| VAC Set       | £31.00  |
| CNC Pack      | £135.00 |
| Wood Pack     | £107.00 |
| Complete Pack | £293.00 |



103" Span Hurricane 62cc Petrol

|               |         |
|---------------|---------|
| Plans         | £60.00  |
| VAC Set       | £90.00  |
| CNC Pack      | £173.00 |
| Wood Pack     | £296.00 |
| Complete Pack | £609.00 |



72" Span Sunderland 4x 200w Electric

|               |         |
|---------------|---------|
| Plans         | £30.00  |
| VAC Set       | £32.00  |
| CNC Pack      | £85.00  |
| Wood Pack     | £160.00 |
| Complete Pack | £297.00 |



72" Span B-17 4x 200w Electric

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



Check our Web Site for a selective range of Pilots, Decals and Retracts



134" Span Lancaster Electric or 4x0.52IC

|               |         |
|---------------|---------|
| Plans         | £70.00  |
| VAC Set       | £85.00  |
| CNC Pack      | £162.00 |
| Wood Pack     | £349.00 |
| Complete Pack | £646.00 |



Building your very own model from plan is one of the most satisfying achievement any modeller can experience..... so go on, give it a try and don't miss out on this wonderfully therapeutic side to this great hobby...Tony Nijhuis

Tony Nijhuis Designs Ltd  
47 Baldslow Down, St Leonards, TN37 7NJ

For more information on all our products, including free downloads of build articles and construction photos, please visit our web site- [www.tonymijhuisdesigns.co.uk](http://www.tonymijhuisdesigns.co.uk)





10



32



38

## On the cover

**Photo: Kevin Crozier**

Harry Curzon's model of the Boulton Paul Defiant Mk.1 is built from the Chris Golds plan. The working turret is his own design and uses four channels to raise and lower the fairing behind the turret, switch on and off flashing LEDs in the gun muzzles, rotate the turret and, finally, move the guns up and down. It is all controlled by sequencers in Harry's transmitter so just one switch starts and stops the entire display.







# Contents

**RCME**

Volume 68 | Issue 06

## Regulars

### 8 SWITCH ON

Our latest round up of model flying news.

### 72 PILOTS' PICTORIAL

Send us a picture of a new or favourite model and it could appear in our readers' models gallery

### 85 COUNTERPOINT

A selection of new kits, bits and gadgets for you to buy

### 92 GOING PLACES

Our updated list of model events and competitions for you to visit over the next few months

### 94 MARKETPLACE

Sell off your unwanted airframes and engines or maybe buy a few new ones

### 95 NEXT ISSUE

Take a look at what's coming in the July '25 issue of RCM&E

### 98 PARTING SHOT

Arnaldo Correia captures a friend's Eadweard Muybridge moment as he launches a Bird of Time glider

### 24 BASINGSTOKE FLY-IN

Mike Freeman reports from the Basingstoke MAC All Electric Fly-In 2024

### 38 ARF REPAIRS MADE EASY

Dick van Mourik shows how to put back together a crash damaged Almost Ready to Fly aeroplane

### 44 DAFFY'S REAR GUNNER

Harry Curzon's model of the Defiant interceptor has a neat trick centred around its rear gun turret

### 59 USING FOLDING PROPS AS PUSHERS

Mike Freeman offers advice for when using a folding propeller to provide thrust on a pusher model

### 62 BIG UP THE INDOOR

Dave Goodenough reports from an indoor fly-in especially arranged for the 'kidz' - young and old!

### 80 FUNDROID

Continuing from the last issue, Mike Bell finishes and flies his Fun Fly model made from hybrid materials

### 86 GOLDEN GLOW

Neil Hall returns with more advice for wannabe users of glow engines and to gladden the hearts of those already smitten with IC power

## Reviews

### 10 SKYHAWK

Alex Maxfield builds a UK designed and manufactured F5L championship winning glider

### 68 SUPERMARINE SPITFIRE

After flying XFly's prototype desert schemed model Kevin Crozier finally manages to see sky below the D-Day version's wheels!

## Columns

### 32 SCALE GLIDING

Chris Williams shows how to make reinforced butt joints before introducing his latest gull-wing Minimoa

### 74 THE INSIDER

A small and simple model gives John Stennard a surprising amount of satisfaction

## Features

### 18 SPACEWALKER FLIES AGAIN Part 2

Martin Hardy continues his conversion of a quarter scale SIG Spacewalker to electric power



## Free Pro-Plan

### 48 COSMIC CLOUD 150

Dave Goodenough extracts a favourite small glider design from his memory and enlarges it for radio control and electric power



### SUBSCRIBE...

...and receive Modern Aerobatic Teams & Half Century, Baby! bookazines FREE! See page 46 for details





## BECOME AN RCM&E PLAN DESIGNER

We trust you enjoyed Lindsay Todd's short series 'Drawing A Plan' in the March and April issues of RCM&E and we hope it has inspired you to put pencil to paper (or mouse to CAD software!) to draw up your own designs into plans that can be used to build successful R/C aircraft.

For those that intend to do so, as well as those readers who may already have some designs under way, either at the drawing stage or as partially completed aeroplanes, when your models are finished and flight tested then we'd very much like to hear from you with a view to possibly publishing your designs as future Pro-Plans in the centre of RCM&E. Please email the editor with your ideas: [kcrozier@mortons.co.uk](mailto:kcrozier@mortons.co.uk)

We are constantly on the lookout for well proven, fully flight-tested designs. All genres are welcome, so it doesn't matter whether they are sport models, scale types, IC or electric power, gliders or autogyros – or any other model aircraft type for that matter!

All our plans are redrawn using CAD to the same standard by our in-house graphics expert, Grahame Chambers, who also draws a splendid cutaway drawing for each model for us to publish with the accompanying plan feature. Grahame can work from traditional pencil on paper designs right through to fully marked up CAD plans so it doesn't matter which type of drawing method you prefer to use.

However, plans drawn on paper or film are precious, one of a kind, drawings so please don't send them to us by post. By far the safest way is to take the original plan to your local copy shop and have them scan and convert it into a PDF file which you can email to us, thus keeping the original drawing safe in your possession. As for CAD, Grahame can work from most common file types: PDF, EPS, AI, DWG, DXF, JPEG and TIFF.

Grahame is also adept at laying out designs to match the available Pro-Plan paper, but it helps to bear in mind the size, which is 800 x

560 mm for the double-sided sheet. The border on each plan is 775 mm x 535 mm so your plan should fit within that area on each side. However, as regular readers will be aware, we can also work with bigger models too, in which case we simply use two subsequent issues to publish plans for larger aeroplanes.

Of course, to compliment any designs that we publish we will also need a well written plan feature. This will usually be around 2000 to 2500 words and be illustrated with 25 or so pictures. These need to be taken at high resolution and include pictures of important stages of the build (modern smartphones are great for doing this), plus include a few static and flying pictures of the finished model too. In flight pictures are best taken with a good quality DSLR camera and telephoto lens but even if you don't have one of those then you'll often be aware of a clubmate who is suitably equipped. Just look for the chap standing near the flightline with a chunky camera and a long lens!



*Lindsay Todd is the man behind several much-loved RCM&E Pro-Plan designs. This is his parasol wing Kestrel (RC2246). The search is on for more talented plan designers so don't be shy, send us some pictures and details of your own design R/C masterpieces and your models could someday grace the Pro-Plan sheet in the middle of the magazine.*

## INTERGLIDE 2025

The organisers of the well-established Inter Glide F5J soaring event have provided the following details of this year's competition:

Inter Glide is an established Contest Eurotour F5J / FAI World Cup competition. This year it takes place on 28 - 29 June at Hamilton Farm near Ashford in Kent, a private airfield only a few miles from Dover and the Channel Tunnel. EU fliers do not require a visa.

This year, as before, we offer:

- 'InterFeast' – a gourmet BBQ meal.
- Full-size aerobatic display by airfield owner Richard Thomas or guest.
- Tailored booking arrangements to help pilots who may be affected by minimum number requirements for national team selection.

And this time...

- A presentation by the celebrated Philip Kolb, who will also be competing.





Please come and join us. Full details can be found on the event websites:

<https://www.interglide.co.uk/online-entry-form/> (Book here.)

<https://www.interglide.co.uk/pilots/> (Check registrations and historical info.)

The organising body is the British Association of Radio Control Soarers (a Specialist Body of the BMFA). Please contact Nick Jackson on +44 (0)7879 654863 or email [whitstable.nick@outlook.com](mailto:whitstable.nick@outlook.com)

The competition will be run according to the current F5J rules in the FAI Sporting Code. 'Earlybird' reductions are available for those

booking before May. Entries are limited to a maximum of 60 and booking will close before 16th June if the maximum is reached earlier. Any further entries will be kept on a reserve list.

Hamilton Farm Airstrip, Bilsington, Ashford Kent, TN25 7JJ is a wonderful location with a choice of basic or deluxe camping available. For more information visit: <https://www.hamiltonfarm-cl.co.uk/>

Basic facilities will be available on the field in the area outside of the fenced off Caravan Club site but do not include use of the Caravan Club site showers or toilets. Charge for basic

camping is £10 per unit per night for units including motorhomes or caravans, £5 per unit per night for tent and car only.

Since this is a Eurotour / World Cup competition all fliers must have an FAI sporting licence. If you are a UK competitor with no licence, then you'll be contacted by the Interglide organisers and need to submit a short online form. You pay £10 for a one-year licence or £30 for a five year one.

The campsite opens from mid-day Thursday 26th June. No flying on the field is allowed before Friday. The flying schedule is subject to change according to weather conditions and the number of entrants.

- Friday 27 June: Practice Day (frequency control is at your own risk).
- Saturday 28 June: Briefing 09:15, flying starts 09:30 (Rounds 1-6).
- Sunday 29 June: Briefing 09:15, flying starts 09:30 (Rounds 7-9 + 3 Rounds Fly Off).

We've made several improvements over the last few years, many of them in response to feedback from fliers. For example, there will be a full random draw complying with Eurotour requirements, so no teams. The grass will be cut short and cleared, a portable toilet will be available next to the flight-line and a high-quality wireless PA will provide full flight-line and pits coverage. There will be full independent timing for the fly-offs and extensive independent monitoring of scores for the preliminary rounds with real-time results published online at the end of each round.



## WOODSPRING WINGS MODEL AIRCRAFT SHOW

The Woodspring Wings MAC are looking forward once again to opening their club site up to the public, this time on the second weekend in July, the 12th and 13th. There will be lots of traders, models and leading pilots converging on the South West to entertain modellers and the general public alike in the lovely Somerset countryside, with many now camping right next door to make the most of it.

The show's new caterers Farm to Fork will provide great food and drink and the Bring & Buy will be even bigger to cope with all the eager bargain hunters. Advance tickets are now available.

Further details can be found on the show's Facebook page and website: <https://woodspringshow.co.uk>







Alex Maxfield (left) and Steve Haley show the handysize of their 2M Skyhawk F5L gliders.

# SKYHAWK

**Alex Maxfield** builds a UK designed and manufactured F5L championship winning glider

Words: **Alex Maxfield**

Photos: **Alex Maxfield, Steve Haley**

**F**urther to my article on the Encanto F5L competition thermal soarer in the January issue, I planned to review another design for the same class and then later write another article comparing the flight characteristics of the two. Although I write that the Encanto and the Skyhawk are competition models, they are equally suitable for sport flying.

The F5L class allows for a mainly wooden construction, two metre wingspan thermal soarer with an electric motor for launching. The competition rules consider the flight duration within a set time window followed by a precision landing for additional points. The class dictates the models can only be controlled with rudder, elevator and spoilers (air brakes for precision landing) and is



*It's not just for competitions. Skyhawk is an easy to fly glider suitable for a wide range of pilot skill levels.*





*F5L class allows for a mainly wooden 2M thermal soarer using an electric motor for launching.*



*Steve's Skyhawk fleet showing the X-tail and V-tail (middle) options.*

commonly also referred to as RES. As such it is probably the most affordable thermal soaring class, with increasing numbers of pilots competing.

In the UK the British Association of Radio Controlled Soarers (BARCS) is the body that supports this and other silent flight classes, under the watchful eye of the BMFA.

### THE MODEL

The Skyhawk is the brainchild of my friend (and competition field nemesis) Steve Haley. Unarguably one of the very top thermal soarers in the country, Steve is respected by many fellow competitors as a top pilot in multiple FAI classes such as F5L, F5J, F3F and, in the past, F3B. Steve also flew a Skyhawk to win the 2024 UK Nationals for F5L class gliders.

The Skyhawk has taken many months to perfect and is now available in kit form from Sky High RC. Way back in time, Steve was

a toolmaker and, as I'll explain later, that experience really shows in the thought behind the design of the Skyhawk.

Many F5L models do look quite similar and offer similar levels of performance. Perhaps there is nothing truly exotic about the Skyhawk design, with its familiar wing planform and slightly modified AG wing section, available in cross-tail or V-tail configuration. But the main takeaway is that it's designed in the UK, by a UK pilot for UK conditions.

Steve also has available a fuselage without a motor to compete in the similar F3L class for bungee launch.

### UNBOXING

I picked up the Skyhawk kit from Steve's home, however the packaging would be quite safe in the hands of UK mail delivery companies. A nice touch is a personally signed label on the box from the designer.

Lifting the lid, a tissue wrapper keeps everything together - and there's a lot of stuff in the box. Not included with the kit were the necessary glue, servos, motor, prop, speed controller and covering but otherwise the kit was very complete.

The excellent quality wood components are laser cut with great accuracy. Carbon elements for the spars, joiners, leading edge and boom are equally of very high quality. The build is extremely well thought out and delivers a model that is robust and easy to put together. It may not be the lightest airframe, but it will stand the test of time in the hands of most pilots.

Skyhawk's flying weight is around 550 g, ballast-able to around 1000 g, giving a weight range to match most of the UK's flying weather. I have built own design models significantly lighter and most times I have had to leave them in the car due to the wind being too strong.

### POWERTRAIN SELECTION

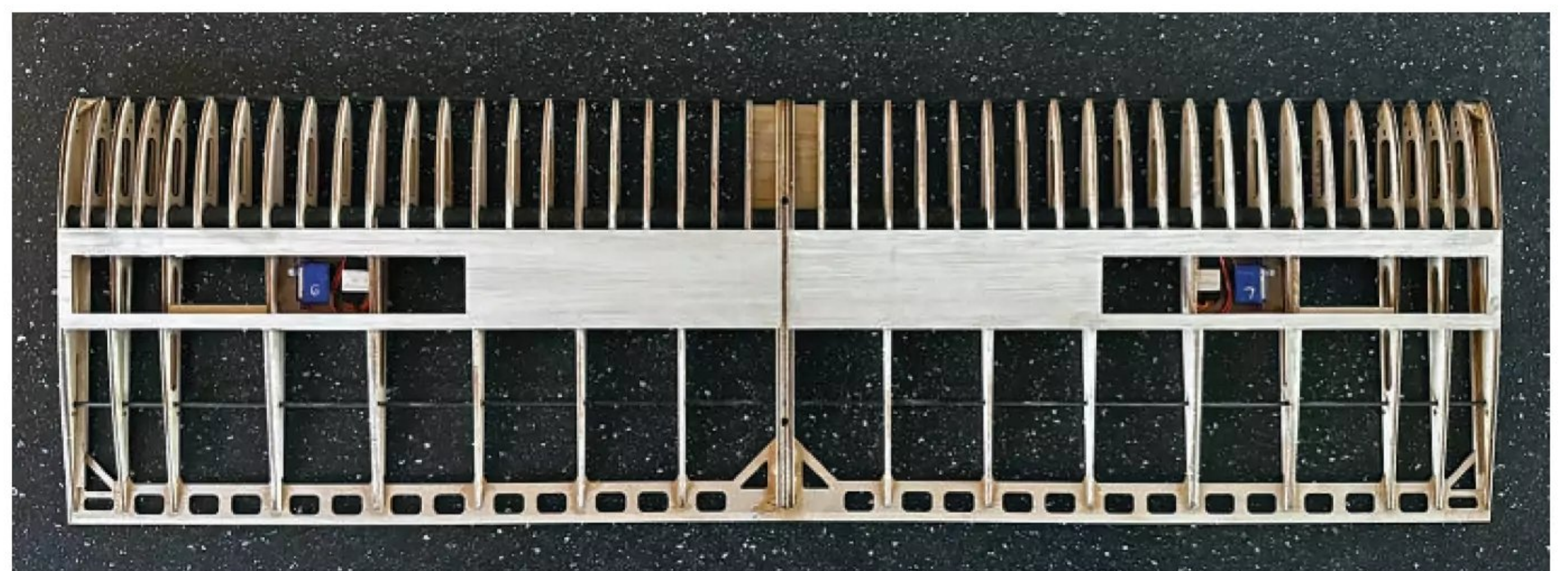
I stuck with my go to powertrain, a Dualsky 2230 motor, 9 x 5 GM prop and Hyperflight 40A ESC/BEC. Together with a GNB 3S 550 mAh LiPo these components are light, reliable and can deliver around 240 W of power to easily and safely haul a 500 to 1000 gram model up to the desired height in the required time.

### THE WINGS

One thing that hits you early on is the lack of full-size plan. Do not let this put you off; the build instructions are superb and there are several jigs to help you get the build right. I'd go as far as saying that the instructions and jigs ✈

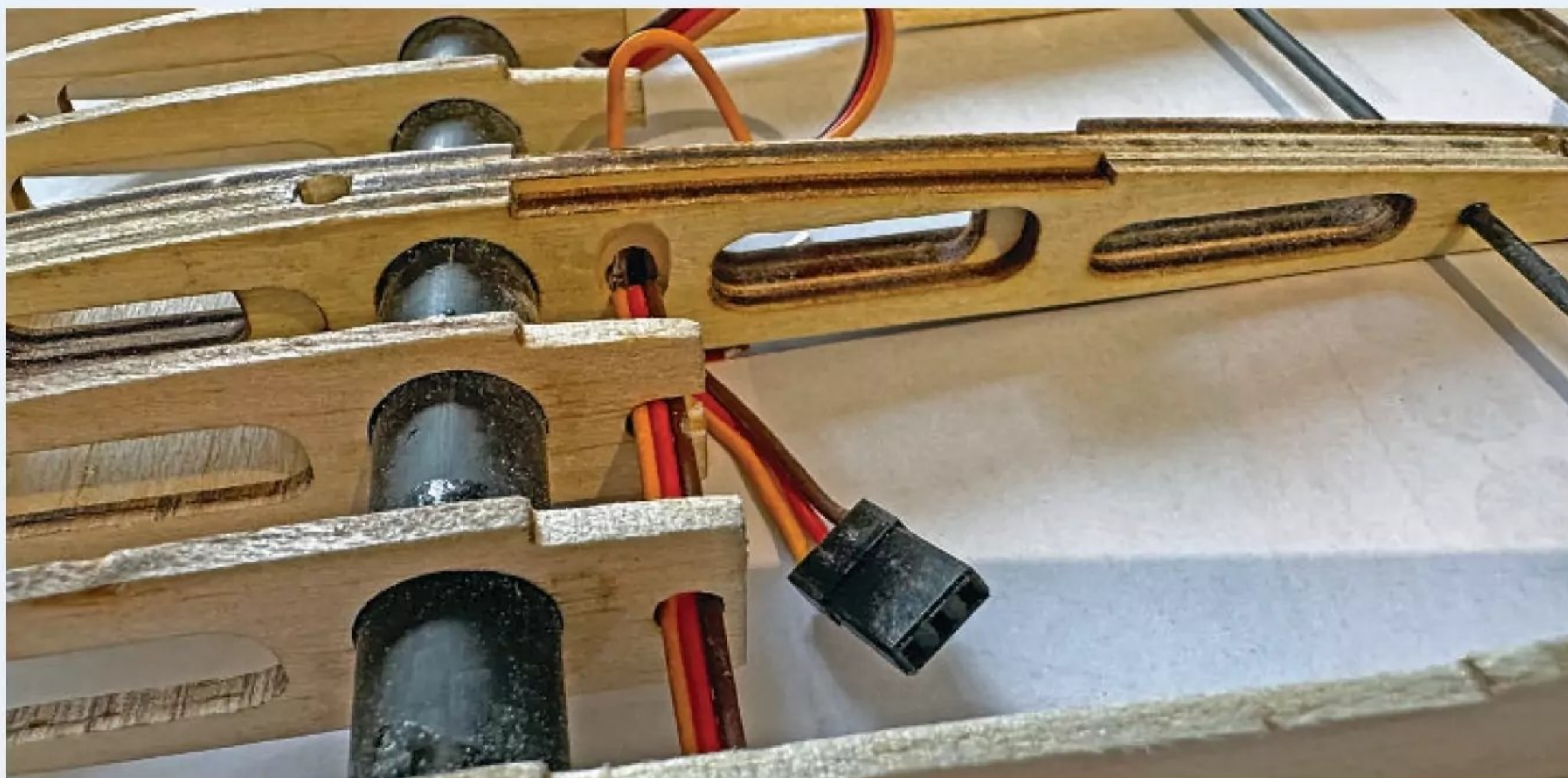


*No plan required. The wing slots together, with the ribs spaced evenly using a ply jig. Spanwise weights hold it flat while the glue sets.*



*Centre panel nearly finished, showing the top sheeting with spoiler openings and servos fitted.*

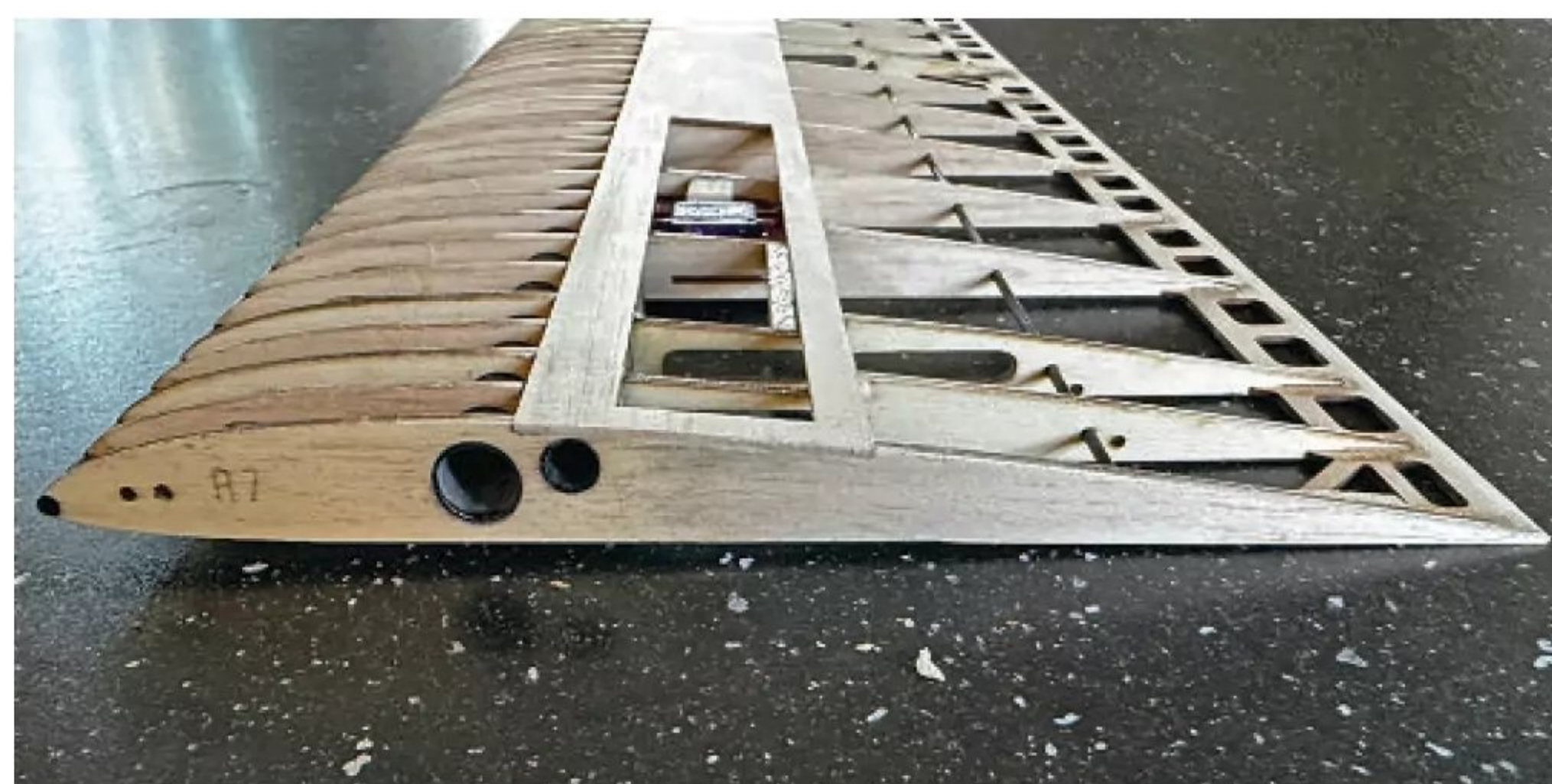




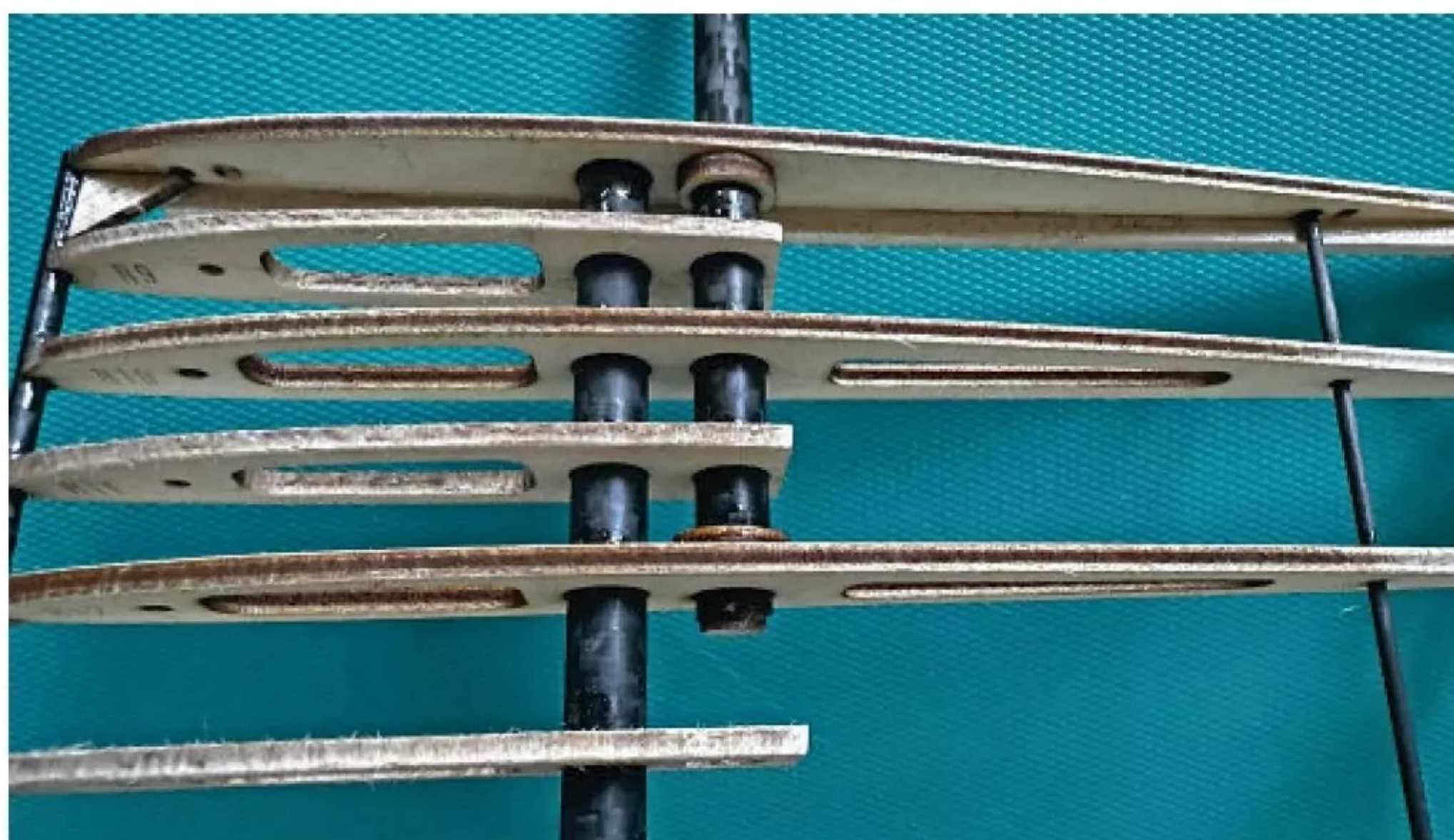
*Spoiler servo plug casings are removed and the extension leads threaded through, leaving the crimps in place. The cases can be refitted afterwards, making sure to get the wires in the correct order.*



*Wrapping the spoiler servo cases in masking tape allows for easy removal if they ever need to be replaced.*



*End of centre wing panel showing the slightly modified AG wing section.*



*End of wing panel showing construction details and carbon tube placements.*



*Wingtips need careful shaping.*

will provide you with a more accurately built model than using a plan alone.

I built the inner panel first, slotting the ribs onto the substantial carbon spar and using the laser cut ply rib guides and slots in the ply trailing edge to space them correctly, not forgetting to angle the outer ribs to accommodate the dihedral angle. I inserted the carbon rod through the pre-cut holes at the rear of the ribs to stabilise the ribs, then I tacked the components using thin CA. After that I added the leading edge carbon tube, taking care to seat it properly on all ribs. The outer wing joiner tubes located well in the outer ribs.

Before adding the part sheeting, on the upper surface of the wing around the spoiler, I installed the two servo extension cables for the spoiler

servos. A bit of careful fettling of the central ply ribs allowed the extension cables to pass through the access holes before refitting the servo plugs.

Steve used some high quality MKS servos on the original build and the supplied ply servo mounts for those servos were replaced with 1/8" balsa sheet to accommodate the Blue Bird servos I used. Next up were the spoiler retention ply hooks (for the rubber band closing mechanism). The spoilers are laser cut from balsa with a ply backing sheet. Their servos were wrapped in masking tape and glued into the servo bays, allowing them to be removed later if needed.

Before lightly sanding the structure I carefully brushed thin epoxy resin into all joints, not being happy to rely on CA alone. I use the technique of

thin CA tacking and thin epoxy on most of my joints, especially the critical ones.

The wing itself is in five parts: a central flat inner panel with the tips made up of two panels each, allowing a gradual dihedral through the panels. The 'mid' and 'tip' panels were built easily using the supplied laser cut ply jigs. The end tips are a bit more delicate, with some shaping of the balsa tip blocks required. When all the five panels were finished, they slotted together using the supplied joiners and incidence pegs. The whole wing was simple to build and a testament to the accuracy of the components and the wing jigs.

Final finishing of the wing included sanding a slight taper at the rear of the ply trailing edge to follow the rib profile.





*Horizontal stabiliser is screwed to a ply mount.*



*Finished cross-tail (aka X-tail) ready for covering.*

## TAIL GROUP

Tail components are from high quality balsa, giving the right blend of strength and weight. It was a bit fiddly to attach and then later shape the cross grain ends to both elevator and rudder, but they do look nice. The elevator sits on a nicely formed mount that is attached to the boom.

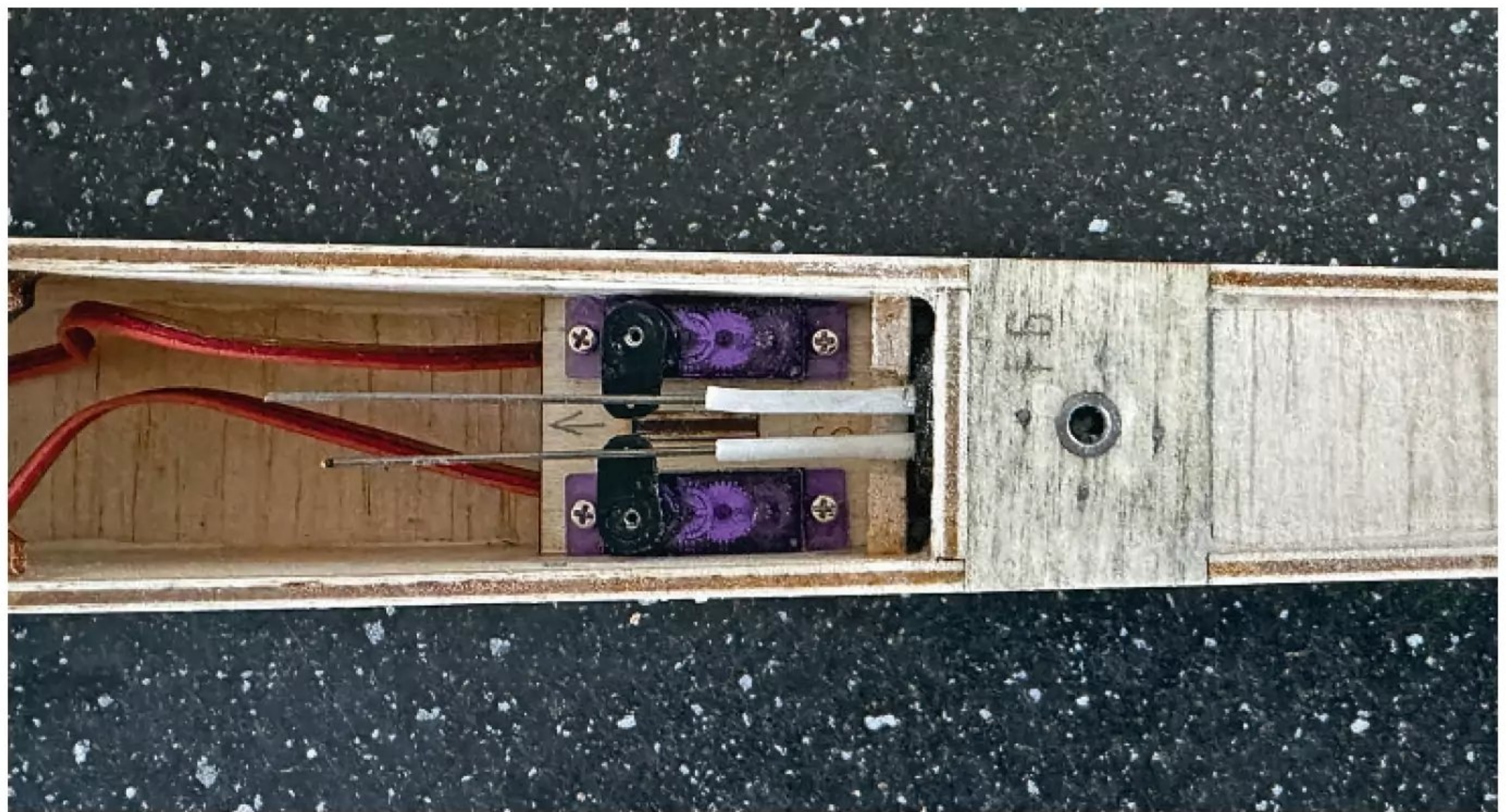
A jig is provided for drilling the back of the boom to accept the elevator and fin. This can be a daunting task, but the jig makes it very straightforward and guarantees good alignment.

## FUSELAGE

The fuselage is a ply pod and carbon boom assembly. The ply is light and accurately cut, the sides and formers slotting nicely into place. The wing bolts are held by ply plates and these are also easy to fit in the right place. Again, a ply jig is provided to ensure the fuselage sides and formers are assembled straight and true. At the motor end I glued in balsa fillets in all four corners in anticipation of rounding the nose to match the spinner radius.

I left the boom unglued in the fuselage formers until I had the elevator mount glued to the boom. With the elevator bolted on and the wing inner panel bolted to the fuselage I aligned the elevator and wing and then glued the boom in place. Later I jiggged the fin at 90 degrees to the elevator.

Servo fitment in the fuselage is quite tight. I used the first hole on the servo arm for both elevator and rudder, but even with the relatively small throws the control movements



*Rear of fuselage pod showing tail servo placements and rear wing bolt attachment point.*



*Another view of the back of the pod, this time showing the laminated boom support.*



*Careful shaping of the nose is needed to blend the ply and balsa parts, allowing the corners to be rounded so that the folding propeller fits snugly along the fuselage to reduce drag.*

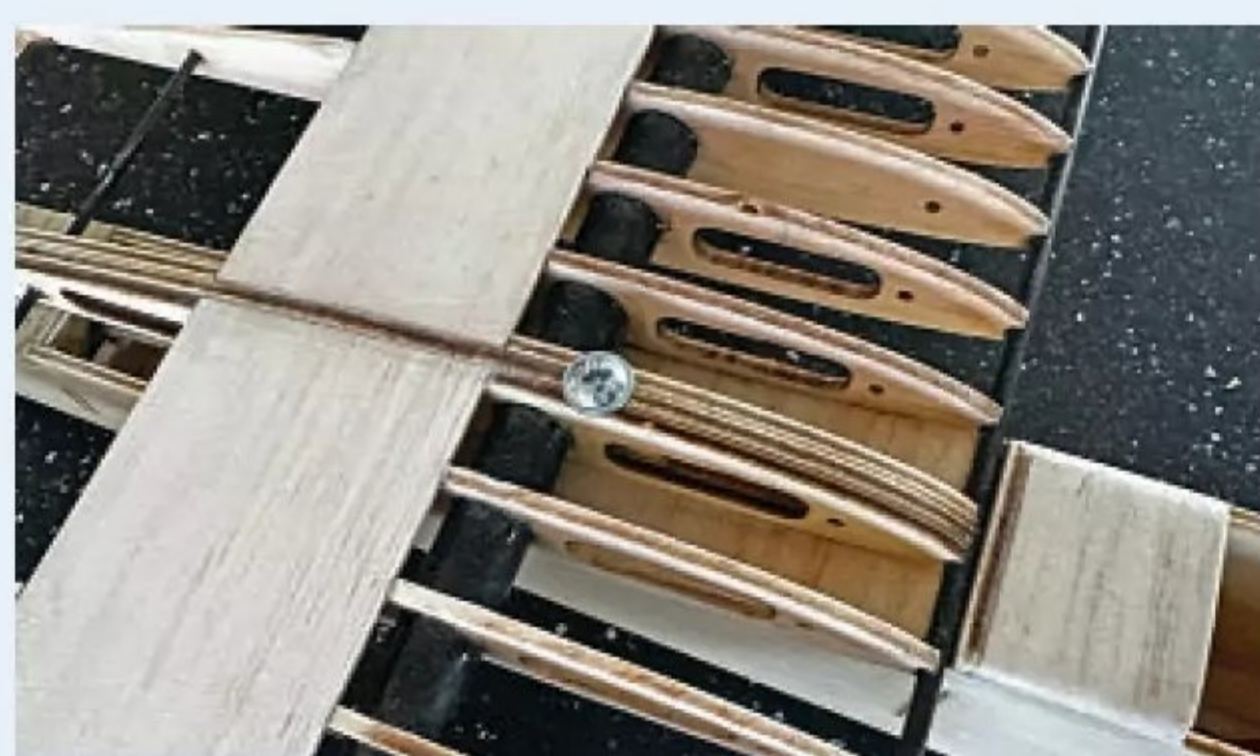
were enough using the supplied rudder and elevator horns. The pushrods and tubes were fed down the boom and exited through slots on either side of the boom at the rear. I carefully dripped thin CA down the inside of the boom to hold the tubes in place.

The ply sides were clad in balsa top and bottom, then the process of shaping the

fuselage could begin. Careful sanding is needed to blend the harder ply to the softer balsa but with some attention the corners can be rounded and a nice cross section achieved. This is necessary to allow the folding propeller to fit snugly along the fuselage to reduce drag.

The canopy is retained by magnets at the rear, but I switched to using a tape band





*Single screws, front and rear, hold the wing to the fuselage.*

or sheath that slides along the fuselage from the nose and securely locates and retains the canopy.

### BALLAST

There is room in the fuselage, under the wing, to hold around 200 g of lead. Additional weight can be slid inside the inner panel spar. For wing ballast, I used steel rods weighing around 300 g in total but cut into shorter lengths so weight can be increased in stages.

Why ballast at all? Why not use some down trim to help the model move forward in wind? It's a common debate. The generally accepted rule is that ballast increases flying speed, so you vary the ballast to match the flying weight with the wind to maintain normal flying speed with no elevator compensation. Down elevator trim alone will adversely affect performance so the model will come down quicker. When it's windy a bit of extra weight also makes landings easier as the model is less likely to be blown off course.

I'm sure that ballast and windspeed do not have a linear relationship but we can approximate a little. At 15 mph (a windy day for F5L models) a flying weight of around 1 kg is about right for the Skyhawk (model plus full ballast). At 10 mph (usual UK weather?) around 700 g feels about right. 700 g can be achieved with just fuselage ballast but sometimes a bit of weight outboard in the wing helps to stabilise the model, especially if the air is turbulent.

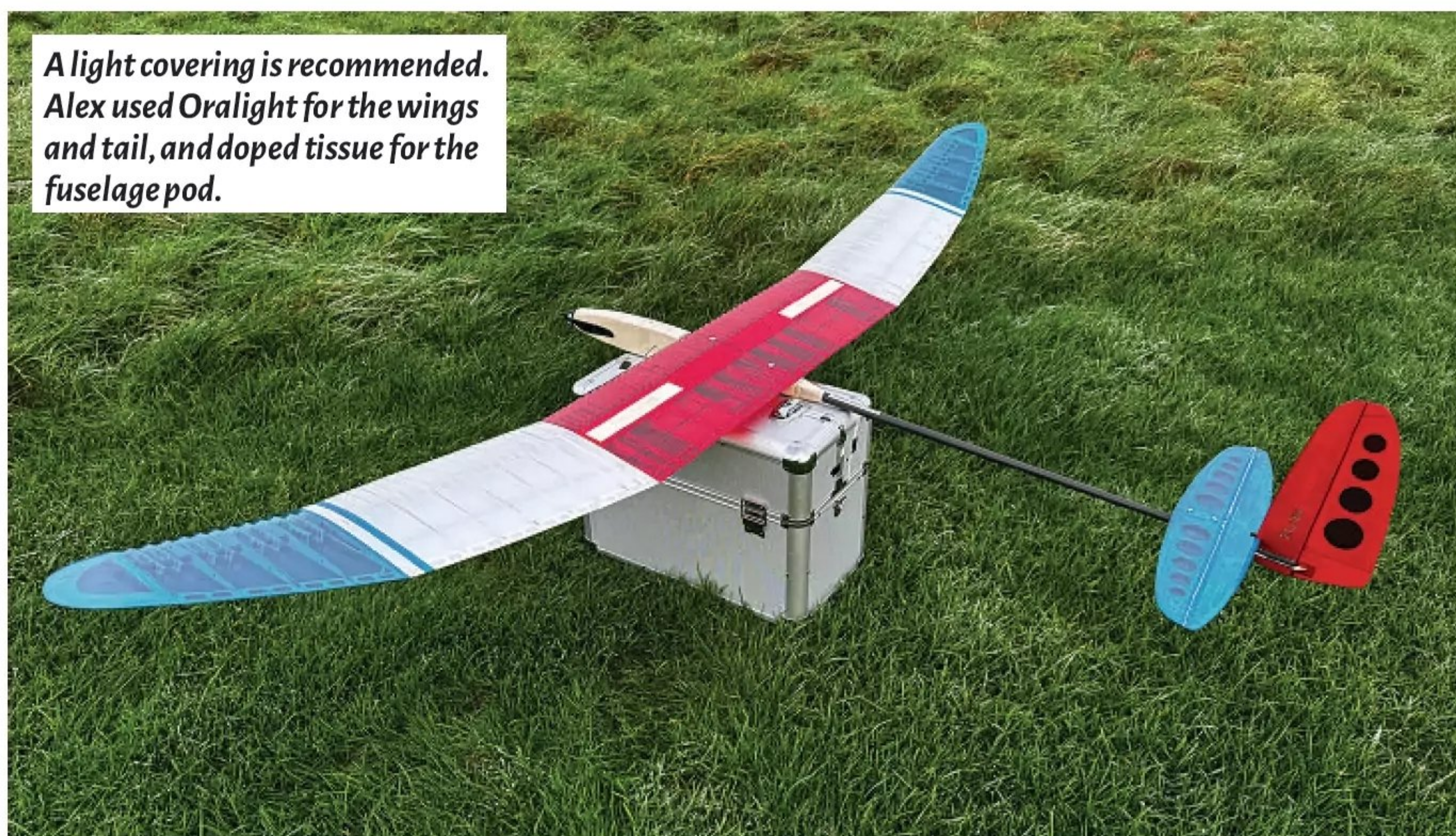
### FINISHING

My covered and finished Skyhawk weighs around 550 grams. I know Steve is working on a lighter version for those days when wind and lift is really light, but I wouldn't get too hung up on the search for ultra-light models. Thermal soaring competitions are rarely won by sitting into wind in 'minimum sink mode'. There is usually some kind of lift somewhere and the ability to move, find and work lift is a much better strategy for success.



*Bare bones of the Skyhawk ready for covering.*

*A light covering is recommended. Alex used Oralight for the wings and tail, and doped tissue for the fuselage pod.*



I used Oralight for the wings and tailplanes, and Jap tissue and dope for the fuselage pod.

### FLYING

Steve provides a guide for surface throws. He also provides a range for the Centre of Gravity, but the final position is usually arrived at by trial and error. Further forward gives a more stable model, so is easier to fly and more predictable. Further back provides a twitchier model, better able to sense lift and to turn tightly when needed. I started at a position at the forward end of the recommended range



*Spoiler detail showing the servo holding it fully extended. Note also the small rubber band that ensures that it snaps fully closed during climb and glide.*





Anyone who has experienced exploiting lift at low level will agree that thermal soaring is addictive.

and then slowly adjusted it rearwards until the model behaved how I like it.

The powertrain provides plenty of thrust, easily achieving the 90-metre launch height in 30 seconds, allowing for some traversing of the sky looking for lift or shooting out left or right or downwind to something indicating lift, such as a gliding bird. When fully ballasted the powertrain also delivers the required height in the required time.

For the maiden flight it was a cold, calm winter day. I launched into wind and Skyhawk climbed steadily on half power. I had disconnected the height limiter to gain more height and have more time to trim the model. A small amount of elevator trim was required.

On the second flight I tried to get a feel for the effect of the spoilers on model pitch. Some elevator mix to spoiler was needed to maintain a slight nose down pitch whatever amount

## DATAFILE

|                      |                                                                           |
|----------------------|---------------------------------------------------------------------------|
| <b>Model:</b>        | Skyhawk X-tail (V-tail also available)                                    |
| <b>Model type:</b>   | F5L/RES electric glider (F3L glider also available)                       |
| <b>Manufacturer:</b> | Sky High RC <a href="https://skyhighrc.co.uk">https://skyhighrc.co.uk</a> |
| <b>RRP:</b>          | £275                                                                      |
| <b>Wingspan:</b>     | 2m (78")                                                                  |
| <b>Wing Area:</b>    | 36 sq.dm.                                                                 |
| <b>Weight:</b>       | From 540 g                                                                |
| <b>Functions:</b>    | Rudder, Elevator, Spoilers, Throttle                                      |
| <b>Power:</b>        | 28 mm brushless outrunner (Dualsky 2826EA)                                |
| <b>ESC:</b>          | 30 A                                                                      |
| <b>LiPo:</b>         | 3S 500 mAh                                                                |
| <b>CG:</b>           | 78 - 80 mm                                                                |

of spoiler deployment was used, so that the spoilers can be opened or closed with very little effect on the model, except, of course, losing height more rapidly when the spoilers were out.

On the third flight, during the launch, the model picked up height with little power, suggesting lift was present. I cut the motor at about 70 metres, circled loosely until I was close to the centre of the thermal, then I tightened the turn and the Skyhawk climbed slowly to about 150 metres. Anyone who has experienced the same will probably agree that thermal soaring is addictive - it still gives me a buzz every time!

Overall, flight characteristics were very predictable. This is an easy to fly glider suitable for a wide range of pilot skill levels. The Skyhawk turns well, senses lift well, climbs well and when the spoilers are out it descends well.

I'll soon start work on the next article, comparing the Encanto and Skyhawk. I need to think carefully about the metrics for use in the comparison and try to be as objective as I can. If you have any ideas, please connect with me through the BARCS portal and send me a message. ■



Alex started at a CG position at the forward end of the recommended range and then slowly moved it rearwards until the model behaved how he likes it.



Alex's next article will compare the Encanto previously reviewed (Jan '25 issue), in his left hand, and the Skyhawk.



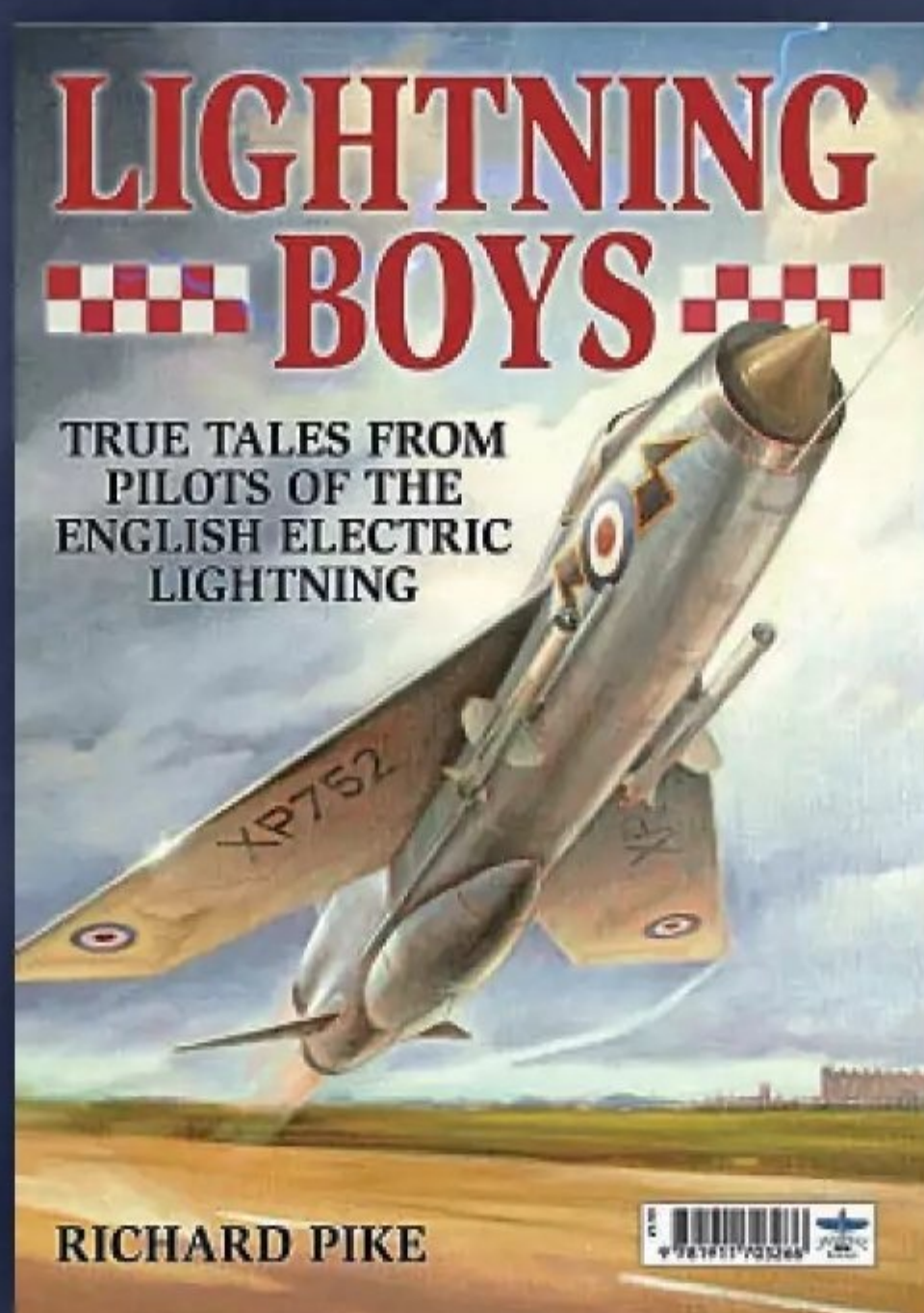
# FLYING INTO HISTORY WITH THESE AVIATION READS

Take your aviation knowledge to new heights with our collection of aviation books! Whether you're interested in World War II aircraft, experimental designs, or modern fighters, we have something for every enthusiast.

 **mortons  
books**



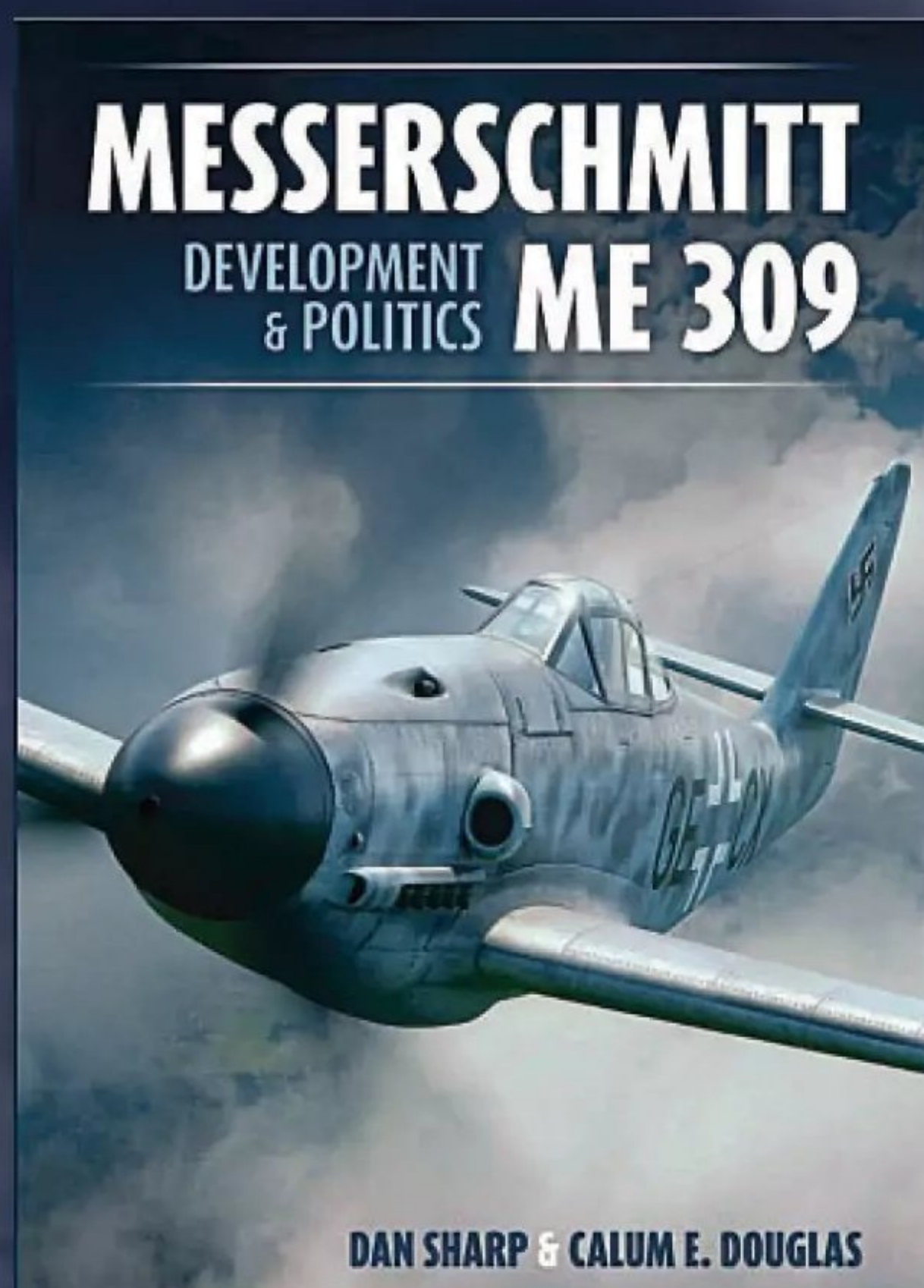
**The Battle of Britain Memorial  
Flight in photos**  
Lisa Harding  
**£39.99**



**Lightning Boys**  
Richard Pike  
**£9.99**



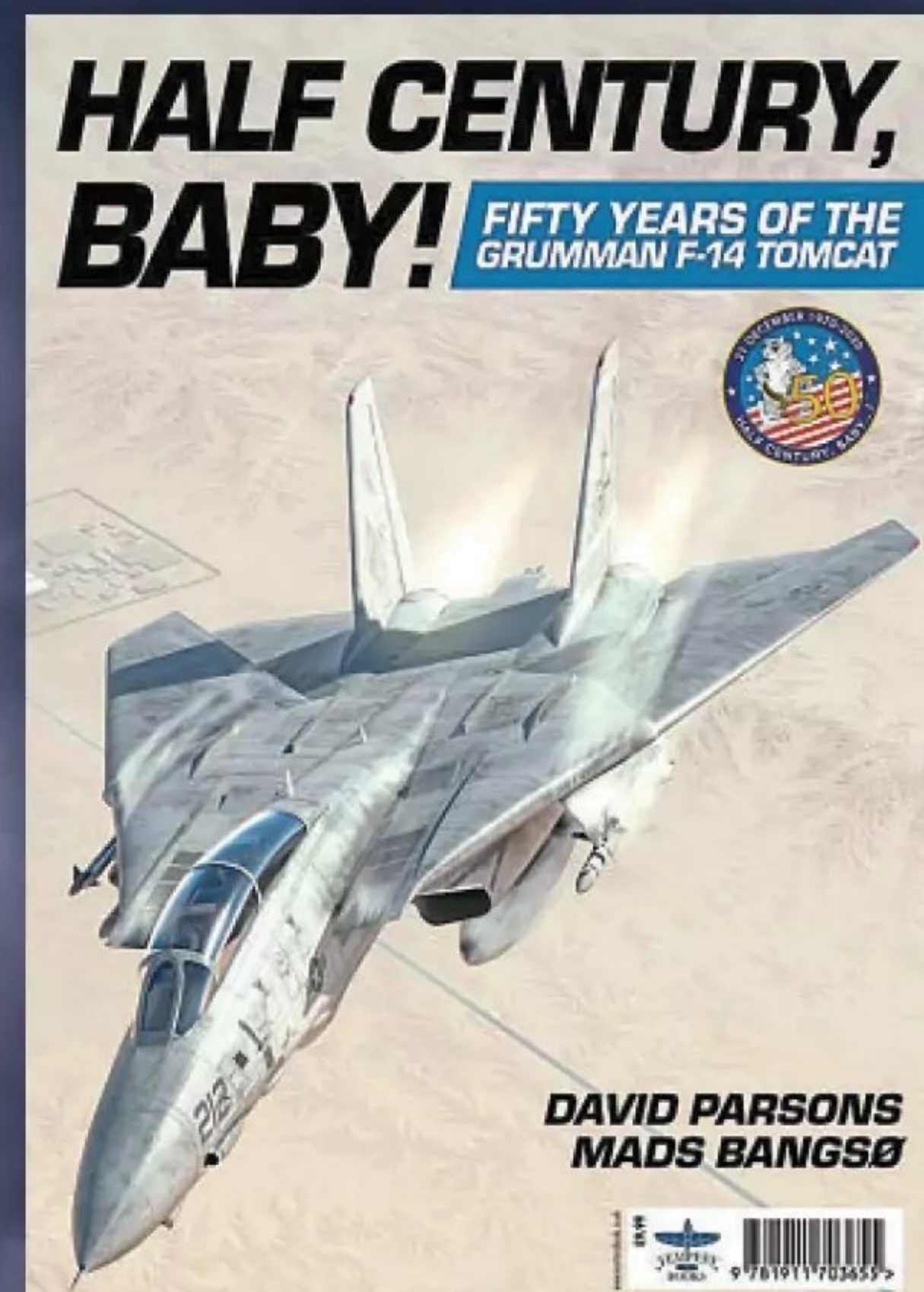
**Snooperbase Waddington**  
Michael Hiley  
**£30**



**Messerschmitt Me 309  
Development & Politics**  
Dan Sharp & Calum E Douglas  
**£35**



**F-16 Fighting Falcon**  
Bertie Simmonds  
**£25**



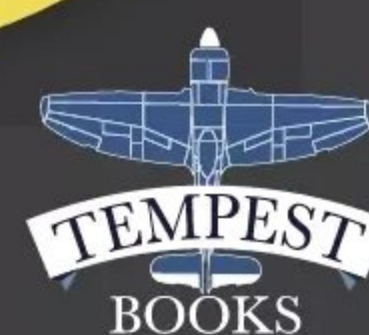
**Half Century Baby  
Volume II**  
David Parsons & Mads Bangso  
**£9.99**

**ORDER TODAY**

**[www.mortonsbooks.co.uk](http://www.mortonsbooks.co.uk)**

To find out more about our latest releases, join our  
book club at [www.mortonsbooks.co.uk/book-club](http://www.mortonsbooks.co.uk/book-club)

**FREE UK  
DELIVERY**





# MODERN VINTAGE MODELS



Fully designed & manufactured in England.

Introducing the first of our new range of kits, Modern Vintage Models Ltd. is excited to bring to you the **Howard DGA-3 "Pete,"** a 4-channel model with a 40-inch wingspan, designed for electric power.

This is one of MVM's Signature Rapid Build models that can be completed in just a few days.

MVM is now taking pre-orders of this fabulous model for the introductory price of just **£159.00** for the first 25 pre-orders.

Order yours today from  
**[www.modernvintagemodels.co.uk](http://www.modernvintagemodels.co.uk)**

*Wood Pack only, requires all electronics, propeller, wheels, and diverse hardware to finish.*

**Last Few Remaining**



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

[www.modernvintagemodels.co.uk](http://www.modernvintagemodels.co.uk)

[info@modernvintagemodels.co.uk](mailto:info@modernvintagemodels.co.uk)

<https://www.facebook.com/groups/modernvintagemodels>





# SPACEWALKER FLIES AGAIN PART 2

*Martin Hardy continues his conversion of a quarter scale SIG Spacewalker to electric power*

Words: **Martin Hardy** Photos: **Martin Hardy, Chris Montague, Chris Williams**

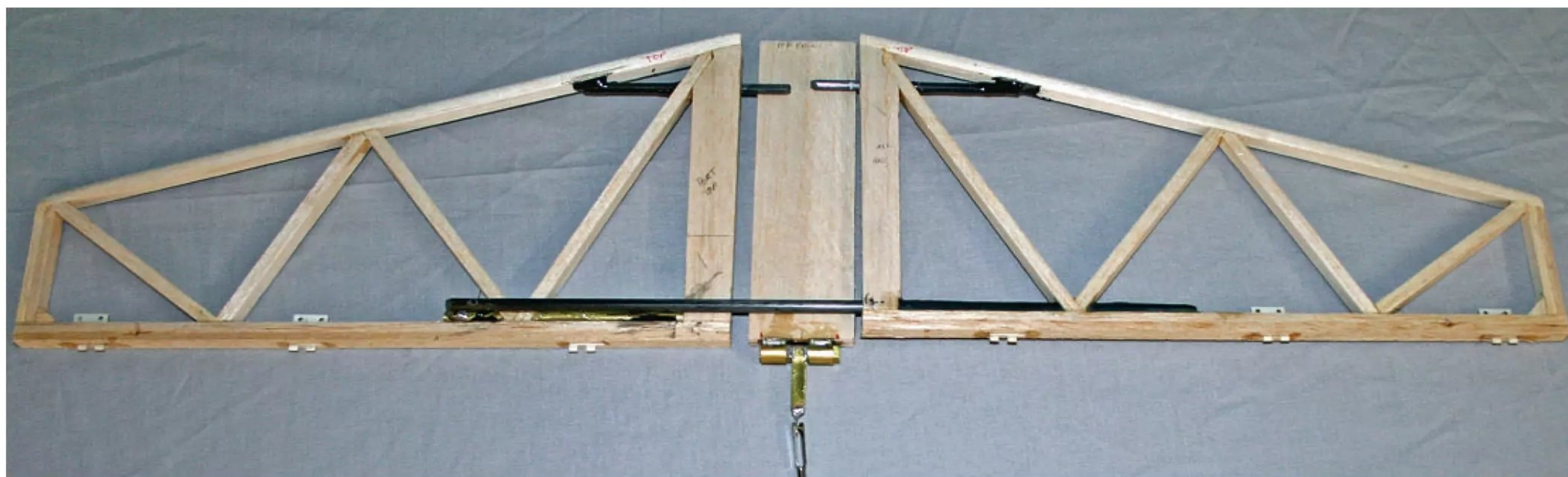
**T**he next jobs involved making and fitting a removable tailplane, aligning the tail feathers and sorting out a steerable tailwheel. The tailwheel would originally have been supplied with the kit but probably found a new home on a different model.

The tailplane was built as a three-piece assembly, with the centre section to be permanently fitted to the fuselage. The outer sections are supported by 6 mm carbon rods fed into brass tubes built into the centre section. The front pair of rods align the LE of the tailplane and each penetrates halfway into the centre tube. The rear carbon rod is bonded onto the wooden tailplane spar on one side. The remaining length feeds through the rear tube in the centre section, then into a second

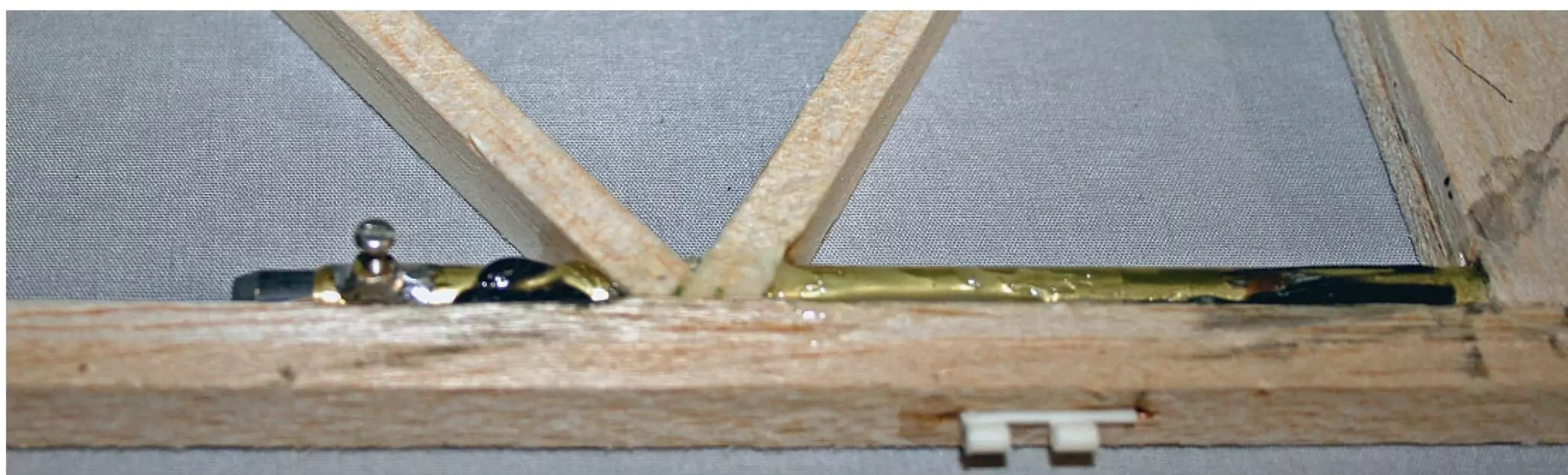


*Spacewalker flies again? There's a slight editorial mishap in the title as this lovely lady was unflown when extracted from a loft!*





*Tailplane was built in three pieces. Outer sections are supported by carbon rods fed into brass tubes built into the fuselage mounted centre section.*



*Tailplane locking screw in position.*



*Elevator connections to the central operating lever.*



*Tailplane fully assembled.*

tube bonded to the spar. The second tube has a 2 mm hole bored about a centimetre from its outer end. A brass M2 nut is aligned with the hole and soft soldered to the outer surface of the tube. When the tailplane is fully assembled an M2 screw is inserted through the soldered captive nut and the hole in the tube to a corresponding hole through the carbon rod. This single screw provides the lock to secure the tailplane outer sections to the centre section and hence to the fuselage.

An assortment of K&S square and round brass tube were used to make up the elevator drive. The system relies on the ability of a tube to slide accurately into a corresponding style tube of the next larger size. Each elevator half has the inner portion of its spar reinforced to support a square brass tube. This tube extends about one centimetre beyond the inboard end of the elevator and is epoxied and screwed to the reinforced portion of the elevator. Alignment of these tubes, both with the

elevator hinges and with each other, is required for correct operation without binding. Both tubes are additionally strengthened against twisting by the insertion of a length of 'next size down' square tube, secured in place with cyano.

Some soft soldering is required to make the centre fitting which transfers the elevator pushrod movement to the square tubes on the elevator halves. In the photo nearby the elevator pushrod connector and the operating lever are shown folded flat for clarity.

The operating lever is brass square tube. The lower end is flattened and drilled to take the pin of the pushrod end fitting. The other end of the tube is cut back and shaped to fit over the sides of another short square brass tube, one size larger than those fitted to the elevators. This joint is soldered to secure the tubes at right angles to each other.

Next, two round brass tubes were produced. These have an inside diameter sufficient to allow the larger square tube (just soldered) to

rotate easily inside it without binding. These two tubes are then soldered to a piece of brass sheet in the positions shown. Once soldered the brass sheet holds the tubes in alignment and is epoxied to the rear face of the tailplane centre section. As each tailplane half is being fitted to the centre section all that is required is to adjust its elevator position to allow its brass tube to slide into the central square tube. This aligns both elevator halves and connects them to the drive from the elevator servo.

Finally, the inboard triangular area of each elevator was skinned top and bottom with 0.4 mm birch ply to further strengthen the vital joint between the elevator drive and the elevator itself.

With the tailplane/elevator assemblies completed they were assembled and checked for full and free movement without lubricant applied to show up any areas of binding. Lubricant was applied later, once covering was completed, and prior to testing of the controls.





**Rudder and steerable tailwheel fitted.**

The tailplane centre section was placed in position on the fuselage, the outer sections fitted and whole assembly checked several times using a spirit level and tape measure to ensure correct alignment. The centre part of the tailplane was then glued to the fuselage frame. A carbon fibre tube, supported mid-way down the fuselage, connected the elevator control arm to its associated servo.

Next the fin and rudder were fitted, with the rudder post extending the full height of the fuselage frame.

#### TAILWHEEL

The hunt was then on through the 'spares' drawer for a suitable tailwheel and a closed loop control arm for the rudder. The result was a tailwheel controlled via springs from the rudder control arm.

Tail ballast, if required, can be fitted in the bottom right-hand corner of the fuselage. The two screws holding the tailwheel bracket to the fuselage would be replaced with longer ones to secure the ballast.

#### AILERON SERVOS

Attention then turned to the wing. The wing needed aileron servos fitting, the wiring being routed to the fuselage via the paper tubes fitted through the wing ribs. Screw-on servo covers had yet to be made and fitted.

#### COVERING THE MODEL

The build proper was now completed, allowing covering to begin.

The full-size aircraft have a steel tube fuselage frame with a fabric covering. In most areas the fabric appears to be unsupported, apart from where it contacts the steel tubes. To emulate this balsa strips are fitted along the fuselage sides and underside. This had a bearing on the type of covering selected for the model as when the model is handled the unsupported areas of covering could be pressed inwards and the covering stretched. The wing, fin and tailplane likewise have areas of unsupported covering.

A textile-based covering was considered to be the best option, preferably already coloured

to avoid the need for a spray-painted finish. The 'covering materials' drawer of my plans' chest produced a selection of Solartex in various colours and sizes, enough for smaller items but not for the two metre span wings or the fuselage. These required the purchase of two rolls of Oratex. As the Spacewalker is intended for year-round use colours were selected for good visibility in poor light conditions.

The tailplane and fin/rudder assemblies were covered first, using some of the long-stored Solartex stock. This was first checked for adhesion and shrinkage on a test piece and found to still be perfectly usable. The fuselage sides and underside were covered next, followed by the turtle deck behind the rear cockpit. The cockpit and top forward fuselage areas were left until the cockpit fit outs were complete and the windscreens ready for fixing.

The ailerons, thoughtfully completed by the previous owner and already fitted with hinges, were covered next. These were followed by the wing underside, before the ailerons were fitted prior to the wing receiving its top surface covering.

#### UNDERCARRIAGE FITTING

The undercarriage assembly was metal primed, then painted using rattle cans. The underside of the wing was already fitted with grooved wooden supports as part of the wing build. These were joined at the centre line of the fuselage but did not take into account the wing dihedral angle. The grooves had to be deepened towards the centre line for the undercarriage to fit snugly.

Saddle clamps, mentioned in the SIG manual, had not materialised with the model from the loft. These were replaced with home-made aluminium plates and servo screws to secure the undercarriage to the wing.

#### ENGINE COWLING

The plastic moulding for the engine cowl was supplied in two halves and required trimming to fit in front of the new battery hatch. This was needed to allow for fixing screws to be positioned around the rear of the cowl into the firewall.



**Aileron servo fitted, with wiring passing through the tube to the fuselage.**



**Shaped cowl showing measurements and cut line.**

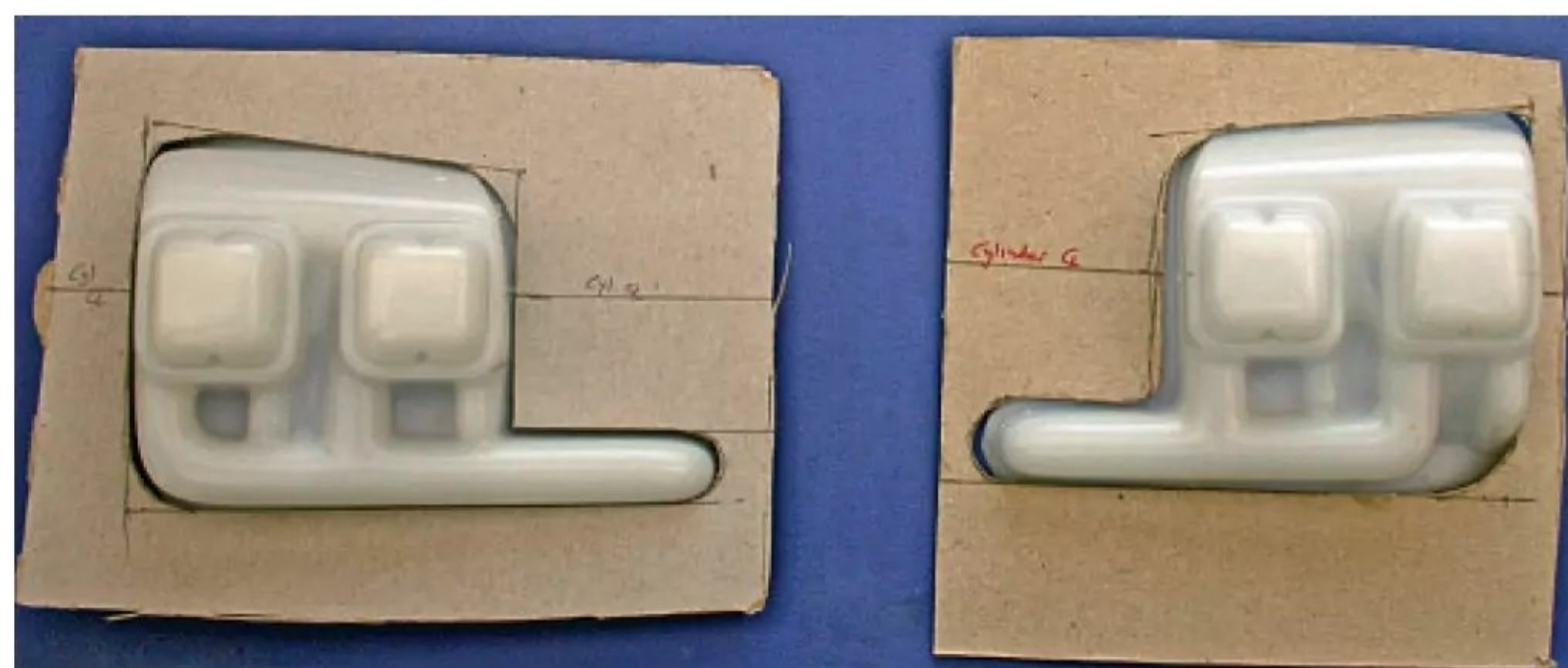
You only get one chance on a job like this! With the uncut cowling slipped into position it obscured the front of the fuselage, even with a strong light source placed inside the cowl. The solution proved to be sticking a length of masking tape behind the cowling, removing the cowling and measuring from the front edge of the tape to the front edge of the firewall. Measurements were taken every two centimetres and written onto the masking tape. The cowl was then taped in position, aligned with the spinner and flush with the fuselage top surface. The measurements were then transferred to the cowl using a fine point marker pen. Another length of masking tape was used, this time with its rear edge 'joining the dots' from the measurements. Slight adjustments were made to keep the edge as straight as possible. This was then used as the cutting line for trimming the plastic moulding. A Dremel, fitted with a cutting disk used at low speed, made easy work of the cuts. Further adjustments were made to enlarge the air vents on the underside of the moulding. On the IC version the exposed cylinder head would have contributed to the overall cooling effect.

As this was to be an electric model consideration was given to making dummy turboprop exhaust outlets, rather than using the supplied engine cylinder head mouldings. This would have been more in keeping with the sound produced by the motor. However, as the Continental O-200 engine is such a feature of the aircraft, the supplied cylinder head mouldings were used. These were offset by the

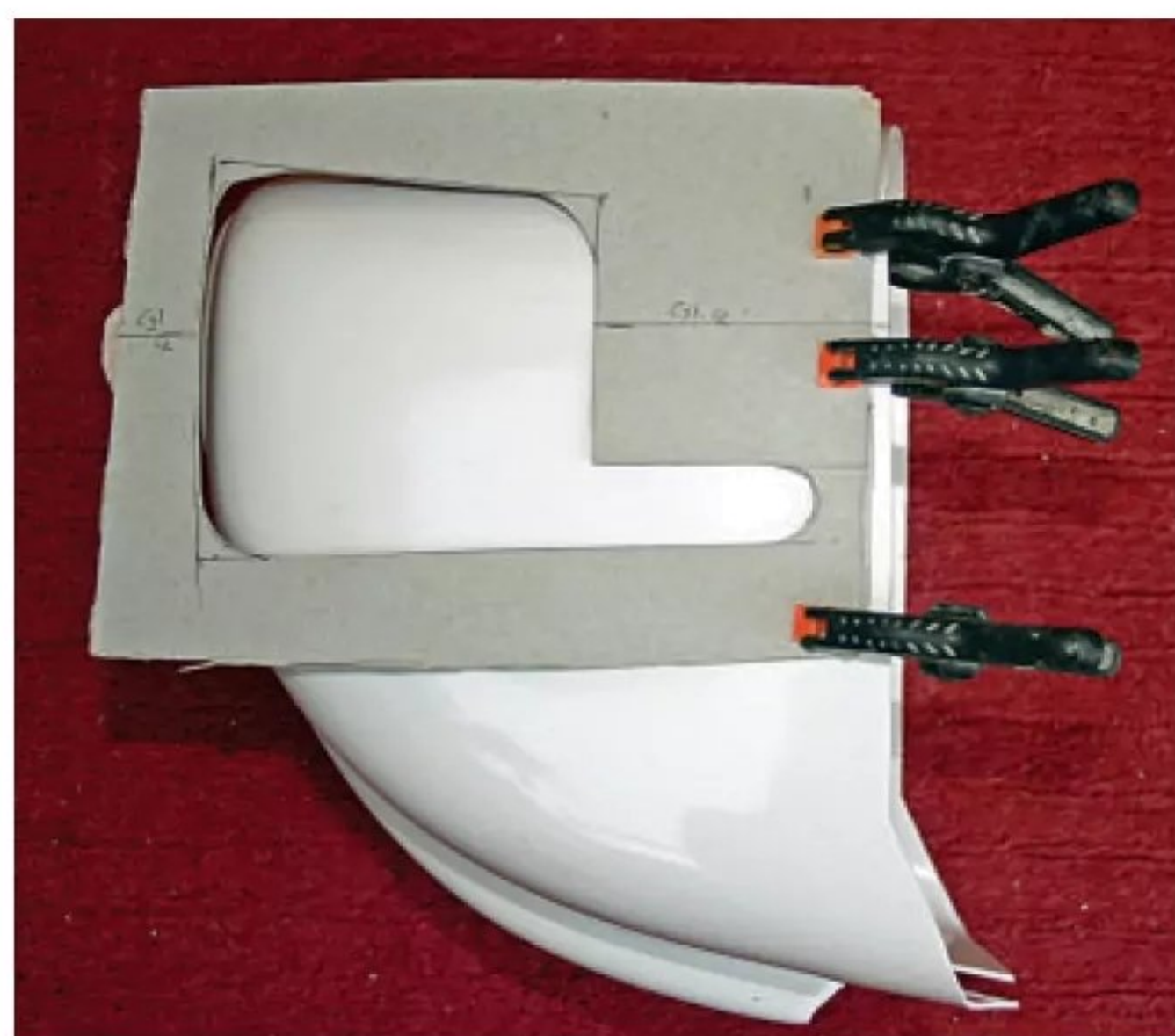




*Cylinder head mouldings after trimming.*



*Cardboard templates were used to transfer the shapes to the main cowl.*



*Template aligned, then drawn around with a soft 4B pencil.*



*Resulting cut line on the cowl.*



*Cowl ready for fixing of the cylinder head mouldings.*



*Completed cowl in position.*

addition of 'Experimental Hybrid Power' signs on the fuselage to explain away the lack of engine sounds!

A 5 mm flange was left around the mouldings to provide a gluing surface to cut-outs in the main cowl. This was an easier job than I expected. The moulding was placed over the cardboard sheet and a ruler slipped between the moulding and the cardboard. Marks were made on the cardboard at the ends of each straight(ish) line, which were then drawn in. The curves were hand drawn to complete the shape, which was then cut out with a scalpel. Note the addition of a centre line through the cylinder heads. The template's centre line shows the position of the cylinder head centres. These are aligned with the centre of the spinner cut-out. The cut-out was made a few millimetres inside the line then opened out using a drum sander.

#### **WINDSCREEN CONSTRUCTION & FITTING**

A template for the windscreen shape was thoughtfully included in the manual, as were

details of the material (originally supplied in the kit, but missing). A pair of new windscreens were cut from a 30 thou (0.75 mm) thick sheet of clear plastic sourced from expotools.com.

Each windscreen was bent to shape and clamped into position on the fuselage. When adjusted to look correct, a line was drawn to mark the position of the glue line between the lower edge of the plastic and the fuselage top deck. The front cockpit area under each windscreen was painted matt black, the remainder of the top deck being film covered.

Deluxe Materials 'Glue 'n' Glaze' was used to glue the windscreens in position, initially with small dots to confirm correct positioning, then with full length gluing along the whole joint. A narrow length of trim material over the joint completed the job.

#### **PAINTING WING TIPS & ENGINE COWLING**

The engine cowling and wing-tip mouldings were keyed with 300 grade sandpaper, followed by two coats of grey body shop primer from a rattle can. A final smoothing with 600 grade sandpaper and a wipe-over with a tack cloth provided the surface for the coloured topcoat.

#### **GILDING THE LILY**

As the decal set was one of the items missing from the kit any such embellishments would have to be home made. The title page of the manual provided the inspiration for a wing 'Spacewalker' graphic, drawn up on the PC, then cut from Oratrim.

With two seemingly huge open cockpits a 'bod for the office' was a must. At quarter scale in an open cockpit, it needed to be both realistic and weatherproof. Real Model Pilots

had provided an excellent female full-length pilot for my Piaggio amphibian, so I chose a bust from their selection for this model. Basic instrument panels were made up from examples provided by an article in RCM&E July 2015 and kept for a rainy day. Cockpit edging was made from leatherette material, secured with contact adhesive.

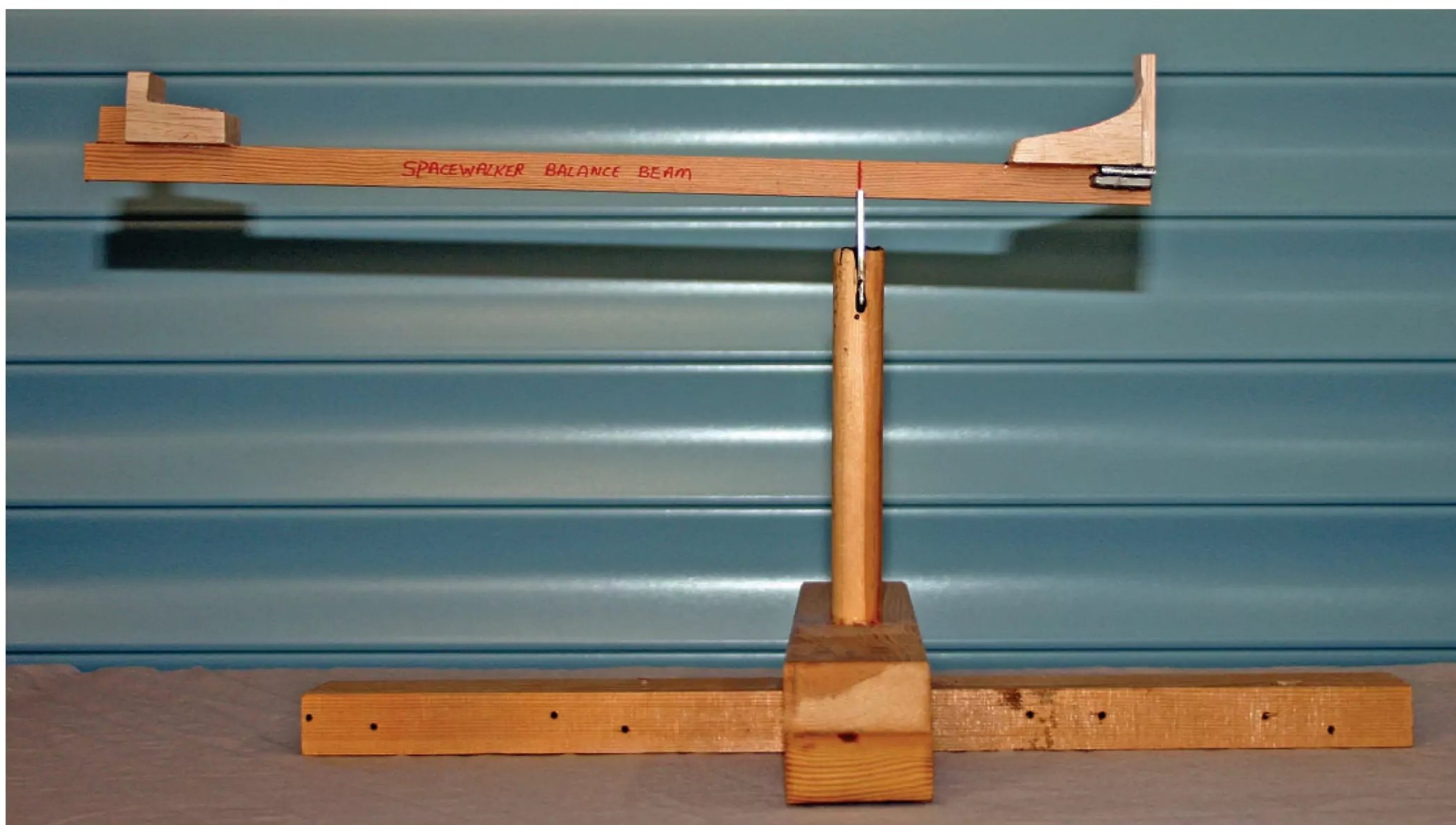
Engine covers were treated to a 'Continental' logo, as a nod to the engine type fitted to the full size. This was inkjet printed onto photo paper, waterproofed with clear spray lacquer and glued in place.

#### **FINAL ASSEMBLY & TESTING**

With the model completed it was time to set up and test the controls and measure the motor current. This was followed by setting the C of G to the mid-point of the recommended range as shown on the plan, which had fortunately been found and supplied by the donor of the model.

The C of G measurement threw up an unexpected curved ball. In virtually all of my other models it had been a case of balancing the model on the main spar at the position specified by the manufacturer or designer. In this case the balance point is well behind the main spar, with the only hard points being wing ribs. The thought of crushing a wing rib or two at this stage caused a rapid re-think. Fortunately, the wing is constant cord so simple balance beams could be constructed, fitting onto the wing at the D-box and at the strong trailing edge. The beams were slotted on the underside at the required balance point and were themselves weighted to balance at this point to eliminate errors. 60 grams (2.1 oz.) of ballast were fitted to the tail to balance the model at midpoint of the recommended range.





*Balance beam and support.*



*SIG Spacewalker in action.*

Static tests showed maximum motor current at 50 amps from a 6S LiPo and an 18" x 8" prop. Maximum power was 1100 W, giving a power to weight ratio of 94 W/lb. There is headroom to increase the power output with a change of prop; 18" x 10" and 18" x 12" sizes are available in both the APC-E range and the IIDJ range of JXF beech high performance props. I would not increase the diameter as the model will be flying from grass. Both motor and ESC are rated at 80 A so an increase in maximum motor current to 70 A, by using a higher pitch

or three bladed prop, would produce a power to weight ratio of 130 W/lb.

#### **FLYING THE LADY**

This was a modified version of a well-known model from a respected manufacturer. The original models have an excellent reputation for their general flying ability and club level aerobatics. Three sizes were available, from 63" span to quarter scale at 84" and third scale at 104". With a pedigree like that any problems encountered during test flying were

likely to be an 'own goal' rather than a fault with the original design.

In the event there was only one 'own goal'. On the maiden flight, into a 10-12 mph breeze, acceleration seemed on the slow side and the climb rate less than hoped for. This was cured before the second flight by re-aligning the ESC maximum and minimum throttle settings on the transmitter. This solved the power problem, with take-off in half the distance and a good climb out. Aileron and elevator trims were adjusted and the rudder throw increased to





Wings and fuselage were covered in Oratex, with bright colours selected for good visibility in poor light conditions.



Both builders enjoying the moment.

provide better taxiing control crosswind. A battery check at the end of the eight-minute flight showed 55% remaining.

For the third flight the timer was set for ten minutes. Loops from horizontal flight showed no shortage of power and rolls were crisp. By this time the wind had increased, with some turbulence adding to the mix. The model handled this very well, giving confidence in its ability to be an all-year model. A climb to height, followed by slow flying, showed that the model could be flown with full up elevator without stalling, if applied gently. At this point the model seemed stationary over the ground. Gentle rudder inputs turned the model but

there was no indication of it wanting to spin. A battery check after the ten-minute flight showed 30% charge remaining.

Landings showed why the SIG manual advised using a three-point landing. The model was prone to bounce, making the arrivals untidy. Scope for pilot training here then!

An owner of the same type and size of model but powered by a 1.20 four stroke glow engine commented that he had to dive his model before doing a loop. This would seem to indicate that the electric power set-up used has achieved its aim of being at least as good as the IC powered version, albeit with probably a shorter duration. ■

## DATAFILE

|                    |                                    |
|--------------------|------------------------------------|
| Model name:        | SIG Spacewalker                    |
| Model type:        | Semi-scale                         |
| Flying weight:     | 5.3 kg. (11 lbs. 11 oz.)           |
| Wing area:         | 7.7 sq. ft.                        |
| Wingspan:          | 84 in. (2134 mm)                   |
| Wing loading:      | 24.3 oz./sq. ft.                   |
| Motor:             | Overlander Tornado Thumper 5605/08 |
| ESC:               | Overlander XP2 80A                 |
| Propeller:         | APC-E 18" x 8"                     |
| Max motor current: | 50 amps (6S LiPo)                  |
| Max power:         | 1100 W                             |
| Power/Weight:      | 94 W/lb.                           |



James Bennet flew this eye-catching 3D printed 1.5 metre span Abrams P-1 Explorer.



# BASINGTOKE FLY-IN

Mike Freeman reports from the Basingstoke MAC All Electric Fly-In 2024

Words & photos: Mike Freeman

**B**asingstoke Model Aero Club (BMAC) have been running their annual All Electric Fly-In since 2004 and it has become something of a mecca for electric flight enthusiasts. The 2024 event was held in mid-September and saw 40 plus pilots turn up with car boots and vans crammed full of models ranging from lovely scale beauties through sports jobs to prototypes being tested. As I perused the pits before the pilots briefing, I could see we were in for a good day!

BMAC have a superb patch. The strip runs west to east with a slight rise at the west end so landing into a prevailing westerly is a doddle. The pits are just 10 paces behind the flight line and run the whole length so there's plenty of space for setting up models. Parking is just another 10 paces further back so it's not far to carry your gear. But best of all the sun is behind the pilots for most of the day - ideal!

## WOODEN WONDERS

It was great to see so many balsa and ply models waiting to take to the air. There were a few ARTF models with their CNC cut wooden

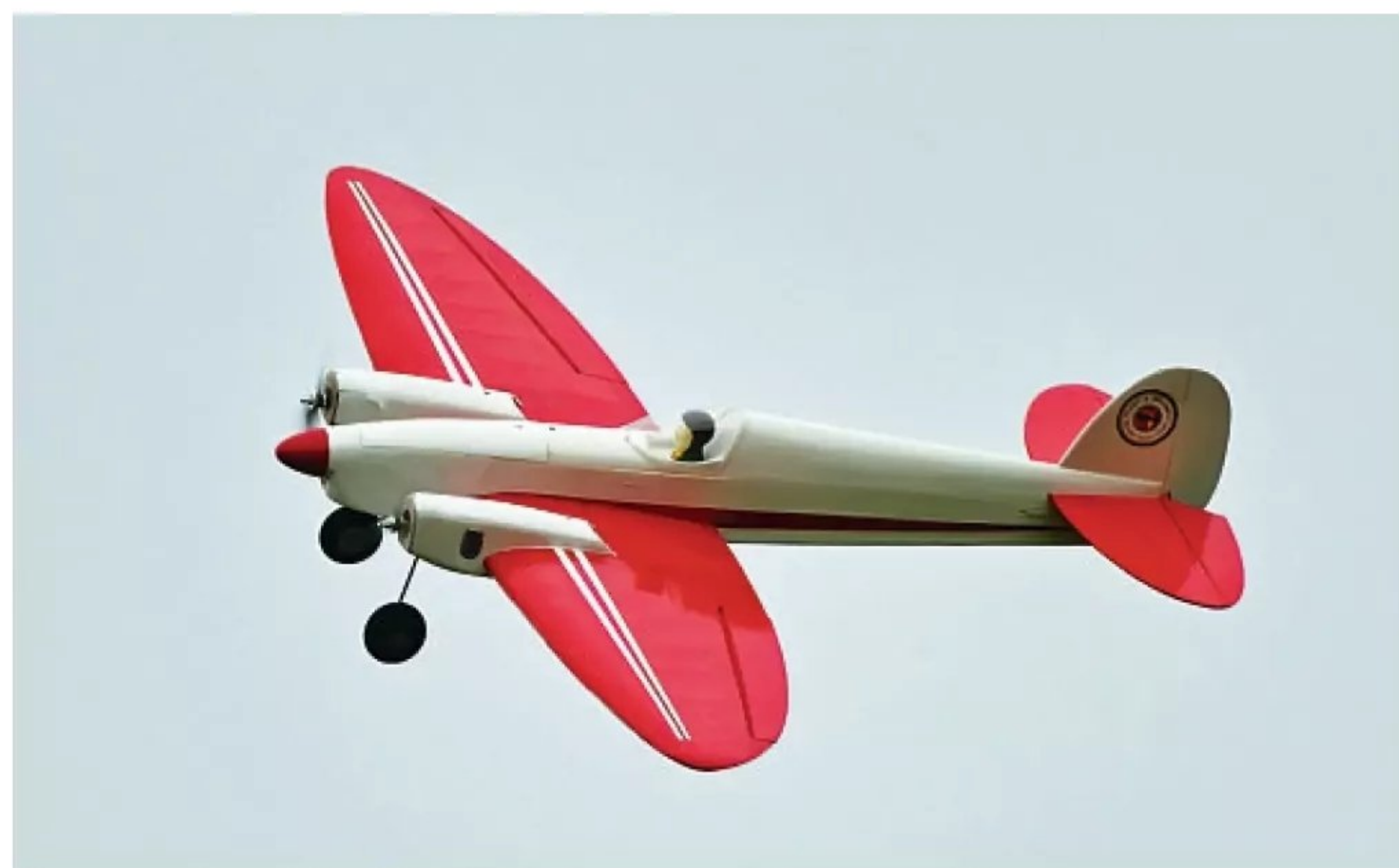


Around 40 pilots turned up to the Fly-In. Most had several models to fly.





Despite the unorthodox wing shape, John Given says his X-29 is a joy to fly, especially now he has sorted the reflex and CG.



Alan Haskell's own designed Elf used to be glow powered but is now converted to an electric twin. It flew and sounded sublime.



Mike Inwood gives some scale to his rescued Percival Mew Gull which the previous owner was going to burn!



Lovingly restored Mew Gull on a low-level fly past.

structures but there were far more traditional kit built and own design models on show.

John Given's futuristic looking Grumman X-29 look-a-like caught my eye. John took his inspiration for this own design from a glider plan designed by Malcolm Saunders. John increased the size to 38" wingspan which results in a 53" long fuselage and beefed up the structure to handle the 4-Max PO-2834-1680 kV brushless motor and 7 x 5 pusher prop. A 40-amp ESC and 3S 2200 mAh LiPo pack complete the electrics. Control is via full span elevons and

canard elevators. John flies at the Chobham Common club which has a slope alongside and he found the extra height it gave him invaluable while setting up the reflex and CG! Now dialled in he says she's a joy to fly.

Another own design model was Alan Haskell's little twin which he calls Elf. The model was originally powered by a single OS 32 engine, but Alan fancied having a go at designing a twin and rather than start from scratch he adapted the original airframe. The wingspan was increased to 1210 mm, a nose

block added and twin Keda TR2826/14-2320 motors each spinning a 6 x 5.5 contra rotating prop were grafted into the wings. A single 3S 3800 mAh LiPo provides the power through a dedicated ESC to each motor. Alan runs the ESCs off different channels to allow him to match the motor speeds. The model had ample power as Alan put her through her paces and who doesn't love the resonant sound of a twin!

Mike Inwood usually flies at the Popham Model Club just down the road and he popped over with three built up models he'd rescued ✈



Mike Inwood's DHC1 Chipmunk on a Farnborough pass. Also flown at BMAC, his TND Spitfire heads off for another sortie.







*Phil Elliot's Flair Baronet has twin 3S 2200 mAh LiPo packs up front for balance, plus additional strips of wheel weights on the firewall.*



*Roy Thompson's lovingly restored 85" Bowman Models Miles Magister looked lovely in the air.*



*Running off cheap electrics, Roy Thompson's cheap 'n' cheerful, own designed, foam built 'BMAC Easy Glider' provides excellent value for money.*

and lovingly restored. Mike was bullied into paying £30 for a wrecked Percival Mew Gull at a swapmeet as the owner was threatening to burn it if he didn't! Mike's done a lovely restoration, choosing to finish it in a rarely modelled colour scheme of a full-size Mew Gull based at Old Warden.

Mike also flew his 80" span Seagull DHC1 Chipmunk and his 63" Spitfire Mk.VIII from the Tony Nijhuis plan which was pulled along admirably by an OS Motors OMA-5025 375 kV outrunner spinning a 14 x 7 prop with a 4S 4500 mAh LiPo.

No respectable fly-in is complete without at least one Flair Models creation and Phil Elliot didn't disappoint with his lovely red Baronet (Dr.1) which runs off a 3536-1270 kV motor and 12 x 4 prop. Phil told me he uses two 3S 2200 mAh packs in parallel located just behind the bulkhead, not for flight longevity but to add weight up front. He still needed a few strips of car wheel weights on the bulkhead to reach the required CG though!

BMAC's Social Secretary and Fly-In lead organiser, Roy Thompson was flying his 85" Bowman Models Miles Magister. Roy rescued this neglected model from ebay and set about restoring it to its current splendour. Roy has done an excellent refurb and you can see his handiwork in his three-part article starting in the December 2024 issue of RCM&E and his [www.modelflying.co.uk](http://www.modelflying.co.uk) thread, both of which are an interesting read. Powered by a Surpass Hobby C5056-07 435 kV motor, 16 x 8 prop and a 6S 6000 mAh LiPo it looked quite at home in the air.

At the opposite end of the modelling spectrum Roy was flying an own designed 1.6 metre span powered glider which he had designed for a club challenge event. He calls this one the 'BMAC Easy Glider' and it's predominantly built from 5 mm Vitrex Premier Foam Underlay. It's powered by one of the excellent 4-Max Models 'Value Packs' which includes a 2212-1000 kV motor, 30A ESC, prop and servos, all for less than £25! Add a 1000 to 1500mAh 3S LiPo and you have a really cheap way to go flying. It flew great, too.

## TALKING OF FOAMIES

If you're not into balsa bashing, ARTF foamies are a quick and easy way to get onto the flight line. Modern examples carry some super scale details and fly well too. There were far too many at the fly-in for me to single out, so I sent a selection in and I'll let Kevin choose which to include. The captions tell the story.

## TONY'S TEASERS

You can always tell when Tony Nijhuis is testing a new model because he flies them in a bare, uncovered state (the models that is, not Tony!) and he had brought along no fewer than three to tease us with.

First up was an impressive Concorde powered by four FMS 70 mm 6S EDFs. Tony built the model four years ago, but he couldn't find any suitable LiPo packs to power it until recently. Battery technology has moved on and Tony was testing some 6S 5200 mAh HV packs. Two packs feed the fans via 80A ESCs and Tony reports they provide ample power; the model



certainly looked impressive in the air. She has a 1.22 metre wingspan and is 2.7 metres long, with a flying weight of 6 kg. There must be an acre of 3/32" balsa sheet in the model's fuselage and wing sheeting! Tony hadn't sorted the droop nose details yet, so the model featured a carefully designed nose made from a sheet of A4 paper rolled up into a suitable cone! It did the job admirably in flight but sadly came a cropper when the nose leg failed on landing.

Tony was testing two new prototypes for his cracking mini EDF range that feature regularly in these pages. Tony reckons both should be available as plans sometime in 2025. The 920 mm span Gloster Javelin uses two FMS 50 mm 4S EDFs, 40A ESCs and a single 4S 3200 mAh LiPo pack. I was impressed with the 960 mm span Tornado with its working swing wing. Tony told me the change in CG as the wings fold back suits the airframe perfectly without any counterbalancing and the model flies well in both guises, making it two models in one. The mechanism is quite straightforward with a single 25 kg servo swinging the wings. A 4-Max PowerFun 70 mm 4S EDF provides plenty of thrust with a 4S 3200 mAh LiPo and 80A ESC providing the electrons.

Tony also flew two of his Harrier projects. Firstly, the one that featured as a free plan in the December '24 issue which flew as good as it looks. I liked the way Tony had integrated the 70 mm EDF efflux tube and outlet into the rear of the fuselage yet keeping the planes distinctive outline looking authentic - very clever.

**Brian Jones and his 1890 mm wingspan HSD Me 262. With its twin 90mm EDFs on full song it sounded like a turbine!**



He also flew his VTOL version with four EDFs emulating the jet nozzles on the full size. What an epic project! Tony has built 12 prototypes of this model over the three years he has been experimenting with it and it is still the only VTOL model Harrier that can truly transition from hover to conventional flight.

The wingspan is 1100 mm and 4 x 62 mm EDFs are gimbaled to provide back, forth and yaw control without adjusting the speed of the fans. There are 4 x 40A ESCs and a single 5S 3200 mAh HV LiPo on board. She needs seven channels and quadcopter stabilisation for control. Simply awesome! ✈️



**Adrian Childs' 980 mm span ROC Hobby P-39 Cobra II about to land. This one was far too fast for any flying shots!**



**Scale detailing on Finn Hennessy's Avios 1600 mm span Super Tucano is outstanding. Modern foamies look really authentic these days.**



**Trevor Hennessy's 1450 mm span HK Yak-11 flies well but it really needs a pilot in the office!**



**Unmistakable shape of the iconic Concorde in the air. Tony Nijhuis' 2.7M long prototype looked awesome with its four 70 mm EDFs on full chat!**





*Tony always tests his new designs before covering them. His new Javelin flies really well!*



*New TND Tornado flies past showing its swing-wing geometries. Photo courtesy of Graham Ashby.*



*Tony with his mini EDF Harrier jet which featured in the Dec '24 issue. I think Tony enjoys flying this one!*



*Tony Nijhuis' epic VTOL Harrier project with four vectored EDFs. Note the cheat holes in the wings to allow air into the fans for hovering.*



*Thankfully, Tony enjoys talking about his creations, which is a good job as he was always surrounded by interested people!*

Tony loves his aeromodelling and is always happy to chat about his projects which is a good job as he regularly had a group of interested modellers around him when he wasn't flying.

#### **PRIZE WINNERS**

As folks arrived they were handed a slip of paper to vote for their favourite 'Model of The Show'. It was no surprise to me that the sheer size and spectacle of Steve Schafer's SZD Kobuz 3 powered glider from Bruckmann Modelbau was the winner. At 1:2.5 scale this model has a wingspan of 5.6 metres and is powered by a Hacker A60 motor, 120A Jeti Mezon ESC and two LiPos connected in series to make a 12S 5000mAh pack. Steve uses a Torcman FES removable prop system with 20 x 13 blades so he can easily remove the prop to fly the model as a pure glider off the slope or at an aerotow meet. I think Steve is a George Russell (F1 driver) fan as the model is finished in George's racing colours and he even has George's name on the side of the cockpit! Steve's model was a worthy winner and he gave us an elegant aerobatic display with wing tip smoke canisters tracing swooping patterns in the sky.





Steve Schafer treated us to an elegant display with his 5.6M span Kobuz, complete with wing tip smoke canisters tracing its flight path across the sky.



James Bennet proudly displays his 3D printed Abrams P-1 Explorer which won the BMAC Committee's choice of 'Model of The Show'.



The 3D printed Abrams P-1 Explorer takes to the air.

The BMAC Committee also chose their own 'Model of The Show' for which they picked James Bennet's interesting 1.5 metre span Abrams P-1 Explorer. Interesting not only because it's an unusual subject but also because the model is totally 3D printed using the STL file (aka 3D printing plan) from [www.planeprint.com/abrams](http://www.planeprint.com/abrams). James' model is powered by a 4-Max PO-3547-960 kV motor and a lovely 12 x 6 JXF wooden prop. The airframe is mostly printed from PLA+ filament with a few parts made from PLA. The surface detail of the model is superb; all those rivet heads would have taken an age for the traditional modeller to achieve! James told me it was a dream to build, the only fiddly bit being cutting and fitting the acetate sheet windows. I wonder if 3D printing will ever provide an answer for that little chore!

There was also a prize for 'Crash of The Day' which went to Dom Mitchell who runs the Essential RC YouTube channel. The incident occurred while flying a duo pair of HobbyKing Viper 64s with club mate Finn Hennessy. Dom was enjoying the fun so much he ran out of juice and couldn't quite make it back to the strip and crashed on the threshold.



Dom Mitchell (left) receiving the 'Crash of The Day' award from BMAC Social Secretary, Roy Thompson.

Finally, there was a traditional raffle draw with lots of goodies up for grabs for the lucky ticket holders.

#### EXCELLENT HOSTS

Roy Thompson and the rest of the BMAC members had put on a superb event. They made all us visitors very welcome with friendly chat and a well-run flight line. They even laid on a complimentary BBQ for the event with



Rachel and Bob McAlpine did an excellent job running the complementary BBQ. And very tasty it was too!

Rachel and Bob McAlpine dishing up very tasty burgers and hot dogs.

As the event was drawing to a close the consensus was that it had been a terrific day. Thank you, BMAC!

You can learn more about Basingstoke Model Aero Club here: <https://www.bmac.club> ■



# A celebration of gardening for all



## 12-13 July 2025

South of England Showground, Ardingly, Sussex



TV star **Charlie Dimmock** will be taking to the stage on the Saturday to do a live Q&A chat

SCAN HERE TO  
PURCHASE YOUR  
ADVANCE TICKETS



- Demos and Q&As from your favourite gardening experts
- Shop plants and gardening products
- English wine tasting experience
- Locally produced artisan food and bar
- Kids' zone
- FREE parking



Visit [www.amateurgardening.com](http://www.amateurgardening.com) for more information

### ADVANCE TICKETS JUST £12.50

Accessibility partner ELITE  Mobility



# WOODSPRING WINGS 2025 MODEL AIR SHOW

**The South West's Premier Model Air Show**  
Saturday 12th & Sunday 13th July 2025, 10am to 4.30pm



- ▶ FREE Car Parking,
- ▶ Trade Stands,
- ▶ Food Court & Bar,
- ▶ Bring & Buy Stand,
- ▶ Fun for ALL the family

Adults £12 in advance, £15 on the gate, accompanied children under 16 FREE  
Camping available (£60 for the w/e in advance, £75 on the gate)  
Claverham Drove, Yatton, Nr Bristol BS21 6TZ  
[woodspringshow.co.uk](http://woodspringshow.co.uk)

Woodspring Show A3 2025 BMFA Spread A.NK.02.4.25



[WWW.RBCKITS.COM](http://WWW.RBCKITS.COM)

Finest wood build kits superb cad design, high precision cnc cut clear cad drawings and download instructions  
Check the shop also , all build and flight proven

F-15E



185.-

P-47 1100



€103.-

P80 Shooting Star



€269.-



Spitfire MKI

€199

T-33 T-Bird



€269

Dh108 Swallow



€269.-

Jet Provost



€269

Hawker Hurricane



€199.-

Bobo Cat



€99

Low shipping cost

shipping worldwide

[www.facebook.com/rbc.kits](http://www.facebook.com/rbc.kits)



Minimoa Mo2a on its slope maiden.



# PINNING IT TOGETHER

**Chris Williams** shows how to make reinforced butt joints before introducing his latest gull-wing Minimoa

Words & photos: **Chris Williams**

**A** simple butt joint is not the strongest of joints in the general lexicon of fitting things together but there are times when there is little in the way of options. I speak specifically of the average canopy frame whereby the side rails have to be attached to the front and rear frames in situ so as to ensure a proper fit.

There is a simple way to reinforce these joints by pinning them together with short lengths of fine piano wire. Here's the trick: cut a short length of the piano wire with your wire cutters, ensuring you do so at an acute angle in order to form a sharp point. Fit the wire, point outwards, into your drill chuck and drill into the framework to create the joint. Now for the good bit: retract the pin slightly, cut it off as close

to the frame as you can, release from the drill and tap the pin back flush with the frame. For extra security a drop or two on thin cyano will definitely seal the deal!

## **TWO-SEAT MINIMO: ROUND 2**

It's hard to believe that it was a decade ago that I embarked on a project to build a version of the two-seat Minimoa, otherwise known as the Mo2a. At 1:3.5 scale and nearly five metres in span it eventually became too large and unwieldy for a coffin-dodger such as myself and so it became time to build a smaller version. One I might still be able to lift off the ground!

Once again, scaling down to automatically adjust the slots in the formers to a standard size resulted in a scale of 1:4.2. This brings

the Minimoa down to a four-metre wingspan and a weight of around 12 lbs (5.4 kg) which is something I can still just about handle! The original was featured in a build thread on the SSUK forum, but the thread was lost during a forum changeover. The new version differs very little from the original in construction other than the reduced size. One main difference, however, is that the reduction of the spruce main spars down to 5 mm square allows for the wing to be built in one piece with a bit of careful steaming. The wing is built over jigs shaped to the correct gull angle and once removed from these jigs it has another 5 mm sq. spar retrofitted at three-quarters span to the front of the ply web plates, themselves fitted to the front of the main spar. This results in a light but





*Gain extra security and peace of mind by pinning the canopy frame together.*



*Withdrawing the drill slightly allows the pin to be knocked back flush after cutting.*

very strong wing which played a part in keeping the AUW down to an OAP-friendly level.

The entire airframe is covered with film and it was here that the limitations of swearing off paint become apparent. To date I have been unable to find a flexible vinyl tape with which to simulate the painted lines on the canopy in white. So I have had to risk rancour from the Scale Police and made the frames blue instead.

The maiden flight was at CMFC, our local power club, and the launch vehicle was Smallpiece's ever-reliable Greenley tug. No

issues revealed themselves and once again I found myself wondering of what use the flaps were on the full-size as they don't seem to be of much use on the model!

There it is then, my 10<sup>th</sup> Minimoa. I wonder if my Minimoalitis is finally cured!

#### **WHITE SHEET SCALE**

*White Sheet Scale Fly-In, Sunday, March 30<sup>th</sup>.*

After the cancellation of the first scale event of the year due to the ever-present easterly winds, it must have come as some considerable relief

to Nick Whittaker, the club's newly minted scale secretary, that a NW breeze prevailed on this, the back-up day. The double whammy of it being the day the clocks went forward, and also Mother's Day probably limited the turn out somewhat, but there was still a pretty robust gang of us ready to get the year off to a good start in the muscular breeze.

It has come to my notice in recent times that the club's F3F contingent have been getting their cheque books out and investing in scale gliders of the carbon and plastic variety. The ✈



*Mo2a airframe ready for film covering.*





*Smallpiece displays the finished product at CMFC.*



*New Mo2a with some Minimoas that were built earlier.*

first thing I noticed upon the posse's arrival was an inverted Swift appearing out of nowhere from the hidden depths of the slope. It would seem that Jerry Stone has torn himself away from his beloved ASW 15 and is exploring pastures new. For those hungry for details, this is the Tomahawk Aviation Swift S-1, the span of which comes in at 3.3 metres.

F3F aficionado Graeme Mahoney was fielding his new GP 14 and it's not difficult, when you see these models in action, to appreciate how much bang you are getting for your bucks! This is a Multiplex GP-14 Velo Carbotec (double carbon version) modelled on the modern high-performance glider from GP Gliders. The scale is 1:3.2, which compared to the original gives a wingspan of 4.2 metres. For

those now rare days when the wind is light it is fitted with a ROXXY FES 4S set up.

I thought it pretty brave of Richard Edmunds to have brought along the third scale Topaze, given the brisk conditions. But once away from the edge of the slope it soared in the superb lift and smooth air very convincingly.

A few months ago, I passed the stewardship of my little 1/7th scale Slingsby Gull 4 over to a fellow member of Mrs. Slocomb's Posse, Bill Ebdon, and he had been waiting patiently all this time for a chance to try her out. 'Don't worry', I told him, 'She won't mind a bit of breeze.' He displayed some evidence of doubt but gave her a go anyway. Since I started down the road of designing smaller gliders, I have been frequently surprised at the wide range



*Mo2a in action over the CMFC patch.*

of conditions in which they will fly and this occasion was to be no different, the little Gull displaying nothing but contempt for the unruly breeze.

Motley and I had similar doubts about flying our new ASK 18s as they have both come out on the light side, weighing in around 8–9 lbs for gliders not much under quarter scale. They too laughed at the conditions and were so delightful to fly that we couldn't resist a couple of stereo launches for the benefit of the camera.





*An eager bunch setting up for the White Sheet scale event.*



*Bill Hosie's ASG 29 S gets away on its maiden flight.*



*Graeme Mahoney with his new GP-14 FES.*



*Tomahawk Aviation Swift S-1 displays its planform.*



*Dave Rivers' RCM&E Flamingo revelled in the conditions.*



*The two ASK18s going all Red Arrows.*



*Tiny Slingsby Gull 4 performed well in the wind*



*ASK18s undergo a 'stereo launch'.*

This was also to be the slope maiden for the two-seat Minimoa which proved to be a stress-free exercise, with plenty of opportunity to practice landings on the superb landing area that is a feature of Morgan's, the White Sheet Club's north-westerly slope.

It's not unusual for Will Hosie to come up with something new and this time around he was campaigning his FW Models fully moulded six metre carbon ASG 29 S at an AUW of 14 kg. There was the usual maiden flight kerfuffle with a makeshift launch committee, but with test pilot Graeme Mahoney at the controls she was soon away into the superb lift. It was only a little later that a distant howl announced the use of a retractable ducted fan, in this instance a Jetex E90 running on 12S batteries.

So, a cracking start to the year and kudos to the Scale Secretary. Let's hope it's not a one-off!

**c\_williams30@sky.com ■**



*Swift S-1, seen on an inverted pass, comes in at 3.3 metres span.*



*Slope maiden of the two-seat Minimoa proved to be a stress-free exercise.*





# sarik hobbies

The store for the model aircraft builder



**SZD FOKA 4**  
3.35M

|                      |           |         |
|----------------------|-----------|---------|
| Plan                 | RC2260    | £17.50  |
| Laser Cut Wood Pack  | WPRC2260  | £124.00 |
| Additional Wood Pack | AWPRC2260 | £157.00 |
| PETG Canopy          | CA3463CY  | £28.00  |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SETRC2260 **£286.00**

Short Kit (Set) Includes: Plan, PETG Canopy, Laser Cut Wood Pack & Additional Wood Pack



**SHORT S.29 STIRLING** 118"

|                       |           |         |
|-----------------------|-----------|---------|
| Plan & Article        | MW3772    | £39.50  |
| Laser Cut Wood Pack   | WP3772    | £279.00 |
| Additional Wood Pack  | AWP3772   | £255.00 |
| PETG Canopy & Turrets | CA3772SET | £35.00  |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SET3772 **£535.00**

Short Kit (Set) Includes: Plan, Articles, Laser Cut Wood Pack, Additional Wood Pack, PETG Canopy & Turrets

## AUTOGYROS



REVOLVER II  
GP-RC2205

ROTO DUO  
GP-RC2207ROTO

PANTHER  
GP-MW3422

RPG V2  
GP-MW3422

GYROO  
GP-RC2238

## BRITTEN NORMAN ISLANDER



84"

|                      |           |         |
|----------------------|-----------|---------|
| Plan                 | RC1255    | £18.50  |
| Laser Cut Wood Pack  | WPRC1255  | £253.00 |
| Additional Wood Pack | AWPRC1255 | £192.00 |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SETRC1255 **£407.00**

Short Kit (Set) Includes: Plan, Article, Laser Cut Wood Pack & Additional Wood Pack



**HAWKER HUNTER FGA.9** 48"

|                        |          |         |
|------------------------|----------|---------|
| Plan, Article & Manual | MW3241   | £29.50  |
| Laser Cut Wood Pack    | WP3241   | £213.00 |
| Additional Wood Pack   | AWP3241  | £123.00 |
| Canopy                 | CA3241CY | £15.00  |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SET3241 **£334.00**

Short Kit (Set) Includes: Plan, Article, Manual, Laser Cut Wood Pack, Additional Wood Pack & Canopy



**DE HAVILLAND TIGER MOTH** 36"

|                            |            |        |
|----------------------------|------------|--------|
| Plan & Article             | MW2675     | £17.50 |
| Laser Cut Wood Pack        | WP2675     | £73.00 |
| Additional Wood Pack       | AWP2675    | £31.00 |
| Focus File Photo CD        | FF07       | £4.99  |
| Airbrushing DVD + Photo CD | DV130+FF07 | £9.00  |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SET2675 **£114.00**

Short Kit (Set) Includes: Plan, Article, DVD, Focus File CD, Laser Cut Wood Pack & Additional Wood Pack



**BAMBINA** 31"

|                      |           |        |
|----------------------|-----------|--------|
| Plan & Article       | RC2171    | £17.50 |
| Laser Cut Wood Pack  | WPRC2171  | £33.00 |
| Additional Wood Pack | AWPRC2171 | £19.00 |
| Canopy               | CANRC2171 | £9.00  |

**SAVE:** Buy the set & save up to 10% on the component parts  
**Short Kit (Set)** SETRC2171 **£68.00**

Short Kit (Set) Includes: Plan, Article, Laser Cut Wood Pack, Additional Wood Pack & Canopy

## P-51D MUSTANG

11 items available



GP-MW3325

## RAF S.E.5A

6 items available



**FREE UK DELIVERY**  
on orders  
over £150

**1000s OF  
MODEL  
PLAN  
DESIGNS**

## EXTENSIVE RANGE

MODEL AIRCRAFT PLANS TO KEEP ANY BUILDER BUSY

|                              |                            |                                      |                                             |
|------------------------------|----------------------------|--------------------------------------|---------------------------------------------|
| Jet<br>R/C Scale<br>Electric | Trainer<br>Glider<br>Sport | Aerobatic<br>AutoGyros<br>Unorthodox | X-List Plans<br>Free Flight<br>Control Line |
|------------------------------|----------------------------|--------------------------------------|---------------------------------------------|

## SAVE

SHORT KITS INCLUDE PLAN, LASER CUT WOOD PACK & PARTS WHERE AVAILABLE

Buy the short kit (set) & save up to 15% on the component parts

|                                                         |                                                       |
|---------------------------------------------------------|-------------------------------------------------------|
| A-4 Skyhawk (36") SET3775 <b>£124.00</b>                | Magneto Grande (56.75") SET3482 <b>£95.00</b>         |
| Airco DH.2 (56") SET3315 <b>£150.00</b>                 | Mini Cab (75") SET2001 <b>£136.00</b>                 |
| Arado 555 (42") SET3504 <b>£110.00</b>                  | Mini Jazz (34.5") SETMAG227 <b>£109.00</b>            |
| Baby Bolt P-47 (35") SETRC2174 <b>£143.00</b>           | Monterey (100") SETRM88 <b>£112.00</b>                |
| Bell XP-59 'Belle' (37") SET3782 <b>£122.00</b>         | O-Four9ier-E (56") SETRC2247 <b>£123.00</b>           |
| Bolt (32") SET3794 <b>£115.00</b>                       | Oodallally (53") SETRC2115 <b>£164.00</b>             |
| Breguet Fauvette (118") SET2214 <b>£173.00</b>          | P-51B Mustang (44.9") SETRC2241 <b>£171.00</b>        |
| Bruha (51") SET3400 <b>£132.00</b>                      | P-51D Mustang (44") SETRC2118 <b>£137.00</b>          |
| Brunswick Zaunkonig LF1 (53") SET3396 <b>£141.00</b>    | Pal Joey (42") SETRC852 <b>£113.00</b>                |
| Cessna Bird Dog (48") SET3592 <b>£135.00</b>            | Panther Autogyro SETRC2114 <b>£138.00</b>             |
| Chapter One Trainer (50") SETRC2138 <b>£141.00</b>      | Peccadillo (44") SETRC2237 <b>£133.00</b>             |
| Chilli Breeze (48") SETRC1749 <b>£169.00</b>            | Phillanderer (42") SET3539 <b>£93.00</b>              |
| Chilli Breeze (Electric) (48") SETRC2259 <b>£175.00</b> | Quickie Ghost (39.25") SETRC2225 <b>£99.00</b>        |
| Citabria Pro (48") SETRC2123 <b>£139.00</b>             | Rafalroo (36") SET3424 <b>£88.00</b>                  |
| Clean Sweep (36") SETRC2131 <b>£110.00</b>              | Rans S-9 Chaos (54") SETRC2224 <b>£163.00</b>         |
| Cliffwhacker (60") SETRC2141 <b>£117.00</b>             | Razor 90 (50") SET3636 <b>£117.00</b>                 |
| Clipped Piper J-3 Club (56") SET3307 <b>£125.00</b>     | Renegade (51") SET3373 <b>£96.00</b>                  |
| Comper CLA7 Swift (54") SET3487 <b>£130.00</b>          | Retro (80") SET3492 <b>£124.00</b>                    |
| Curtiss P-40 Kittyhawk (40") SET3367 <b>£102.00</b>     | Revolver II Autogyro SETRC2205 <b>£105.00</b>         |
| Dawn Flyer (48") SETRC2120 <b>£102.00</b>               | Roto-Duo Autogyro SETRC2207ROTO <b>£92.00</b>         |
| De Havilland DH.34 (41") SET3590 <b>£126.00</b>         | RWD5 (66") SET3812 <b>£198.00</b>                     |
| De Havilland Tiger Moth (36") SET2675 <b>£114.00</b>    | Sandow (54") SETRC2104 <b>£116.00</b>                 |
| Dewoitine D-510 (53") SET3507 <b>£103.00</b>            | Saunders-Roe SR A1 (47") SET3394 <b>£94.00</b>        |
| DH Fox Moth (76") SET3643 <b>£123.00</b>                | Shorts Tucano (45") RC2C009SET <b>£141.00</b>         |
| DH98 Mosquito (36.5") SETRC2084 <b>£163.00</b>          | Size One (51") SET3795 <b>£105.00</b>                 |
| DH98 Mosquito (38") SETRC2023 <b>£124.00</b>            | Slingsby T-41 Skylark 2 (109") SET3274 <b>£103.00</b> |
| Diverson (47") SET3607 <b>£139.00</b>                   | Soarcercer (52") SETRM47 <b>£114.00</b>               |
| Dornier Do.217E-4 (46.5") SET3557 <b>£168.00</b>        | SSSHHWEPT (44") SETRC1030 <b>£121.00</b>              |
| Ellipse (49") SETRC2128 <b>£168.00</b>                  | Super Stik (56") SET3528 <b>£103.00</b>               |
| E.E. Canberra B1 Mk.8 (42") SET3010 <b>£117.00</b>      | Spitfire Mk.IX/MH434 (36") SET3201 <b>£139.00</b>     |
| Fairchild 24W 'Argus' (54") SET3477 <b>£104.00</b>      | Tempest 5 (32.5") SET3656 <b>£105.00</b>              |
| Fieldfare (72") SET3511 <b>£123.00</b>                  | The Ohmen (47.5") SETRC2197 <b>£142.00</b>            |
| Fournier RF4 (74") SETRC2085 <b>£183.00</b>             | Tranquilliser (60") SETRM124 <b>£165.00</b>           |
| Gasser (40") SETRC744 <b>£121.00</b>                    | Vans Aircraft RV-4 (43.25") SETRC2227 <b>£170.00</b>  |
| Hanky Planky (28") SETRC2245 <b>£101.00</b>             | Vans-RV8 (40") SET3734 <b>£84.00</b>                  |
| Hound Dog (50") SETRC2243 <b>£173.00</b>                | Vertigo II (55") SETRM11 <b>£182.00</b>               |
| Howzat II (98") SETRC2191 <b>£175.00</b>                | Very Short Plane (36") SET3431 <b>£101.00</b>         |
| Isaacs Fury Mk.2 (42") SET3538 <b>£111.00</b>           | Wagtail (39") SETRM13 <b>£104.00</b>                  |
| Lapwing 60 (61") SET3418 <b>£135.00</b>                 | Watts Up (100") SET3398 <b>£122.00</b>                |
| Luton Minor (62.5") SET2536 <b>£146.00</b>              | Wittman Tailwind (48") SETRC2075 <b>£115.00</b>       |



Be the first to hear about our special offers  
Sign up to our newsletter or find us on Facebook

www.sarikhobbies.com  
fb.com/modelaircraftbuilder

MODELMAKING TOOLS,  
ACCESSORIES & SUPPLIES

SCREWDRIVERS, HAND FILES,  
SANDING BLOCKS, TOOLS & CLAMPS,  
EPOXY, AEROSOL, & MORE



## BALSA PLY SPRUCE

BALSA & HARDWOOD DOWEL  
BALSA & SPRUCE STRIP  
TRAILING & LEADING EDGE  
TRIANGULAR BALSA  
BALSA SHEET & STRIP  
BIRCH PLY  
SHAPED BALSA LEADING EDGE  
SHAPED BALSA TRAILING EDGE  
SYMMETRICAL LEADING EDGE

**3D PRINTED SCALE  
MACHINE GUNS**  
starting from £12.99

## DIACOV 1000

## Probably the best scale model aircraft covering

- EXTRA-LIGHTWEIGHT
- IRON-ON
- TRANSPARENT POLYESTER
- ADHESIVE FILM

Sold by the metre | Width: 73.5cm (28.93")

'Better & cheaper' alternative to Oratex & Solafilm



VISA MasterCard PayPal Find us on Facebook

info@sarikhobbies.com 01684 311682

All prices exclude P&P/S&H. Prices are subject to change so please check current pricing on website or by phone. E&OE.

## MODEL AIRCRAFT BUILDER

Find us on Facebook

sarik hobbies  
www.sarikhobbies.com

Units 8 - 12, Willow End Park, Blackmore Park Road, Malvern. WR13 6NN. UK





# ARF REPAIRS MADE EASY

**Dick van Mourik** shows how to put back together a crash damaged Almost Ready to Fly aeroplane

Words & photos: **Dick van Mourik**

**M**uch as I enjoy the process of designing and building my own models my busy job leaves me little spare time. This is why, apart from scratch-built models, my fleet also contains several Almost Ready to Fly (ARF or ARTF) aircraft.

In my case all of these are either Extreme Flight or SebArt designs, which are produced by the same factory. When it comes to flying, I find that these models are hard to beat being lightweight, with a good finish and no bad habits. The only thing that I am less keen on is their price tag, but what isn't expensive nowadays?

Some time back, when it was just released, I treated myself to the 73 inch (1854 mm) Extreme Flight Extra. This model only enjoyed a brief life as I crashed it on its fifth flight, having forgotten to connect the aileron servo wires. As faith dictated, the model ended up halfway submerged in one of the ditches surrounding our field. So, there I was, with a model that alone had cost in excess of six hundred pounds, which had only performed four flights and some hairy involuntarily aerobatics before its encounter with terra firma. All bits and pieces were collected from the scene and taken home.

In this article I would like to share the process of repairing the Extra and returning it to flying condition. You will find, though, that the information provided can be used to repair most wooden ARF models currently available.

## **WAIT A FEW DAYS**

First things first. Leave the wreckage to sit for a few days before assessing the damage.

In situations like these putting the remains of what at first glance might seem alike an impossible task aside for a few days is always a good idea as it gives one time to calm down and avoid hastily decisions. Also,





*My pride and joy ended up in the water after a mere four flights.*



*As the wing had taken most of the impact the port fuselage only suffered minor damage. After carefully removing as little of the covering as possible the sides were glued back using PVA and a piece of thick acetate (Plexiglas) on each side of the repair, acting as a jig. To enable the water to evaporate from the PVA leave it in place for at least 24 hours.*

after a few days of quiet contemplation, the situation often looks far less hopeless than immediately after the event.

Contrary to what seems to be popular belief nowadays, it is perfectly possible to repair an ARF. Not only that, there also is a sense of satisfaction to restore a model that seems to

be beyond redemption at first glance. Most damage is superficial and although all that splintered wood may look off putting at first sight, some evenings with a few sheets of balsa and some glue will solve most problems rapidly.

Next, it was time to sit down and carefully consider the damage. The port wing had

escaped with very limited damage and the rear part of the fuselage was also not damaged. I wish the same could be said for the front of the fuselage! The cowling and canopy were damaged beyond repair, the front of the fuselage had split open, and several formers were broken. Also, the wing tube had freed

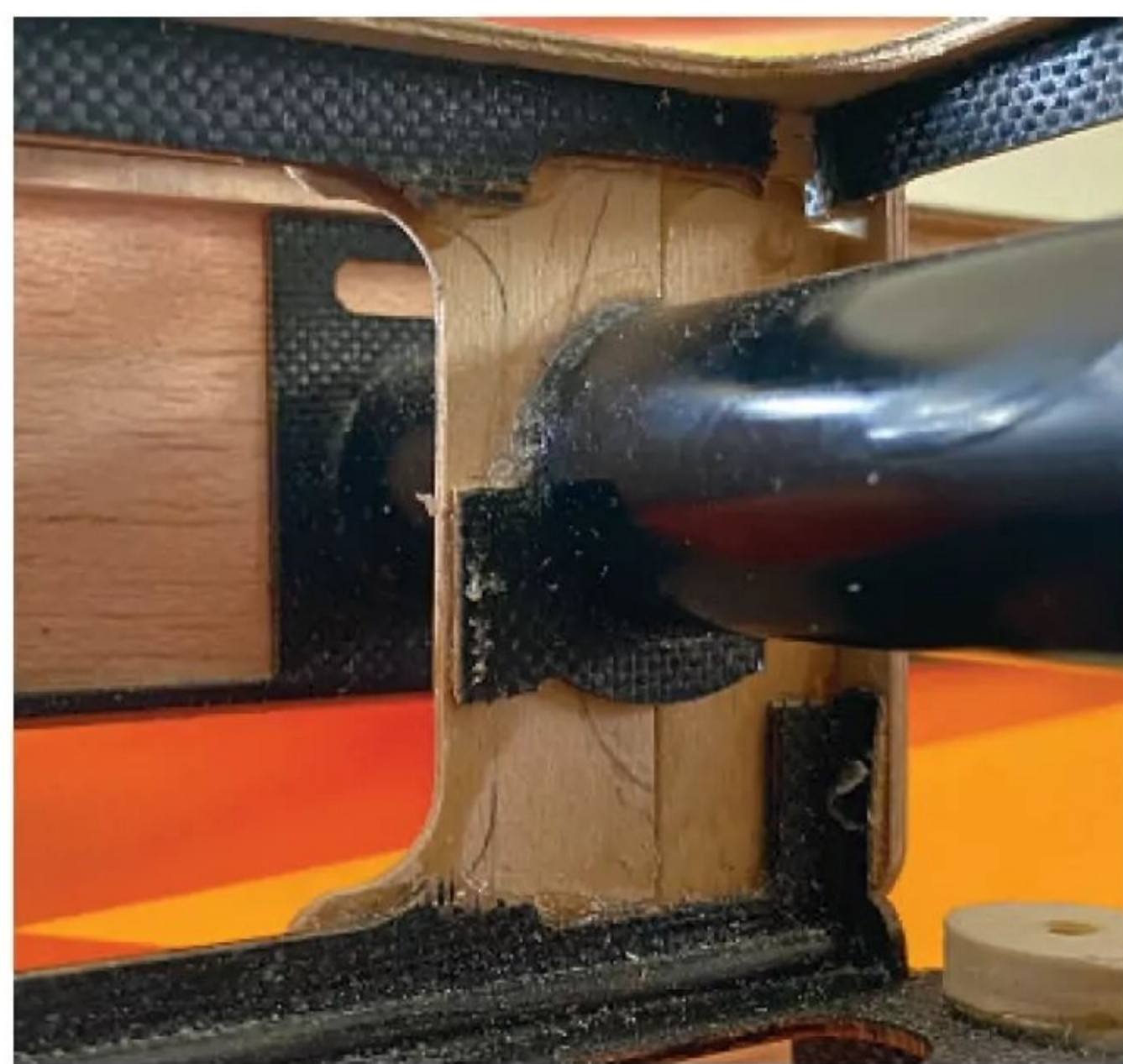




*The former holding the wing tube had been damaged on both sides of the fuselage, which was easily repaired. The first step was to install a strip of 1.5 mm (1/16") aircraft grade plywood to act as a support for the fuselage side, which also required repair. There is no need to beef up the original structure.*



*A simple template was made out of a piece of scrap cardboard. The new side plates were made from 1.5 mm (1/16") aircraft grade plywood. To enable gluing without too much surgery the new plate is split lengthwise. This image shows the rear halves of the former*



*Here, the starboard former is joined and glued in place with slow curing epoxy. Before putting it all together, do ensure that the wing tube is secured in the correct position by trial fitting the wings and taking measurements.*

itself from the starboard wing panel and there was damage to the carbon main spar. Also, several ribs were missing and/or fractured.

#### **NEVER RE-USE ELECTRONICS!**

As the model ended up in the water the first action taken was to remove all batteries, ESC, electronic switch, receiver and several of the servos from the model's fuselage and discard them. We are all in agreement that this is a painful decision, specially financially,



*At first sight the starboard side of the fuselage did not seem to have suffered much. But removing the covering showed several cracks. These can be fixed with sparingly applied thin cyano and sanded smooth afterwards. Here as well, do not be tempted to 'strengthen' the area of repair.*

but please be reassured that this is the only sensible approach.

*Do not, under any circumstances, re-use electronic components which have been in contact*

*with water! Sooner or later, you will lose the model in which they are installed.*

Those servos that remained dry were sent to a Futaba service centre to be checked and, after receiving a clean bill of health, were reinstalled in the model.

#### **GENERAL REPAIR CONSIDERATIONS**

When making any repairs I find it very useful to try and collect any bits and pieces that are found on site, as they often can be used to act as templates for new parts.

A major factor to consider with any repair is increased weight. There is a natural tendency to 'beef up' any areas that have been repaired but it is unnecessary. I can only stress that care is needed here, as speaking from personal experiences, I can confirm that repaired models tend to become very heavy, very quickly.

Make sure to have all possible damage exposed. Large parts of the model will require new covering anyway so do make certain all areas which you suspect to be damaged are opened up. Having said that, I try to remove as much covering as possible in one piece to retain as a reference for the repair. Also, like with this model's fuselage, sometimes it is even possible to reuse the original covering. When in doubt, I would suggest reheating the film to a temperature of about 80 degrees and carefully pull it back instead of simply taking a scalpel and cutting it.





*Damage to the port wing was substantial, although not beyond repair. Careful removal of the covering gives an insight to the damage caused. Two ribs were broken, and two more had gone missing altogether. The sheeting was also damaged. The root rib was torn out, together with most of the wing tube and needed to be replaced. Templates for the replacement rib were made, using the starboard wing and some tracing paper.*



*Structural damage ended at the servo bay. Removing the covering up to the next rib ensured that no hidden damage was missed.*



*Removing the covering also revealed a potential weak spot. Although no problems were encountered during flights, this image shows how little 'meat' there actually is to hold keep those hinges firmly in place. To minimise vortices, I normally seal the hinge line gap with a strip of film in any case. This also acts as a hinge and will help to reduce loads on the hinge pins, which is no luxury with these large ailerons.*



*The inner parts of the wing next to the aileron had also come off. This part contains the rear location pin, making it load bearing. The ribs were reused, as was the plywood longeron, backed with some 0.8 mm (1/32") aircraft grade plywood to strengthen it.*



*The damage on the lower side of the port wing was far less substantial. Broken sheeting is easy to repair or replace once repairs have been made.*

#### **PREPARE BEFORE REPAIR!**

As they say, Proper Preparation Prevents Poor Performance. So before cutting any wood, I sat down and planned which order the repairs would be carried out.

First, I looked at the possible repair of the cowl and canopy. Although feasible, the price of replacement parts was considerably



*A closer look at this image shows that the upper carbon spar had split, as had the plywood doubler. (Note that the wing is upside down.) This was, beyond a doubt, the most serious structural damage.*

less than the price of materials alone would have been. So, these were ordered from the manufacturer and replaced.

To ensure that the wing tube was correctly in place, the first part to be repaired had to be the



*A small 2 mm lite-ply washer was glued in place to keep the retaining pin firmly in place. Jobs like this are best done with the remaining sheeting still in place to avoid distortion of the part.*

damaged fuselage. The damage was not too severe, but the airframe had lost its rigidity, so the first job was to ensure all was made straight again. Removing the covering to reveal all possible damage areas, the sides were glued back, using thick polycarbonate plate as a jig. Details of the repair can be seen in the images nearby. After new formers were glued in place and the wing tube accurately relocated, the original covering could be ironed back on. All done and dusted in two evenings work.

With the fuselage providing a good base to re-rig the wing panels, the next job was dealing with the wings. Without any doubt, the main concern was one of the wing's carbon main spars, which had split. Although it was not broken, this is an area requiring careful attention. Keep in mind, Extreme Flight and similar models can withstand violent manoeuvres and the loads on the main spars are substantial.

Once all the damaged bits and pieces had been removed, the main spar was soaked with thin ZAP. A tip here: only use fresh and high-quality cyano adhesives. This might have been sufficient to





*First, the doubler was repaired by splicing it and reinforcing the joint with a strip of thin carbon sheet, glued with slow-curing epoxy. Note the rounded ends of the carbon to ensure a gradual distribution of forces acting on this part. It was then glued back in place.*



*The split carbon spar was soaked with thin cyano and after this had set the spar was carefully sanded. Always wear PPE as carbon dust is unpleasant stuff! Next, three layers of 2 x 4 mm carbon were added with epoxy and the lot clamped to the already repaired plywood doubler, using thickened epoxy resin. The chamfered shape of the reinforcement aids load distribution. After curing the result is a solid construction which will never break again in flight with only a marginal increase in weight.*



*New webbing was added to the damaged area to strengthen the repair. When in contact with carbon always use slow-drying epoxy, never cyano or PVA.*

ensure a decent repair by itself but as it is better to be safe than sorry, I added several 0.8 mm strips to the underside of the spar, each layer slightly shorter than the previous, like a leaf spring on a carriage. The photos will give a good idea. This way, any forces acting on the spar will be more evenly distributed. These strips were carefully sanded and glued with slow-curing epoxy.

Next, repairs were made to the plywood part of the main spar. With that job also finished new wing ribs, using 2 mm beech ply, were cut and glued in place. Before the new sheeting was added, the wing panels were slid onto the fuselage and their incidences and fitment checked. Only then was new sheeting was added, sanded down and the wing was covered with Oracover film. This concluded the repair which all-in-all took about two weeks of evenings.



*As only the front part of the ribs, where they hold the wing tube were damaged, there was no need to replace entire ribs. Simply add a new front piece and all will be fine. In this case, the cut out for the wing tube was undamaged. If you need to make adjustments it makes sense to enlarge the circular cut out for the wing tube slightly (about half a millimetre or around 1/64" larger than the required diameter) and use a thin plywood washer to secure the tube to the wing ribs.*

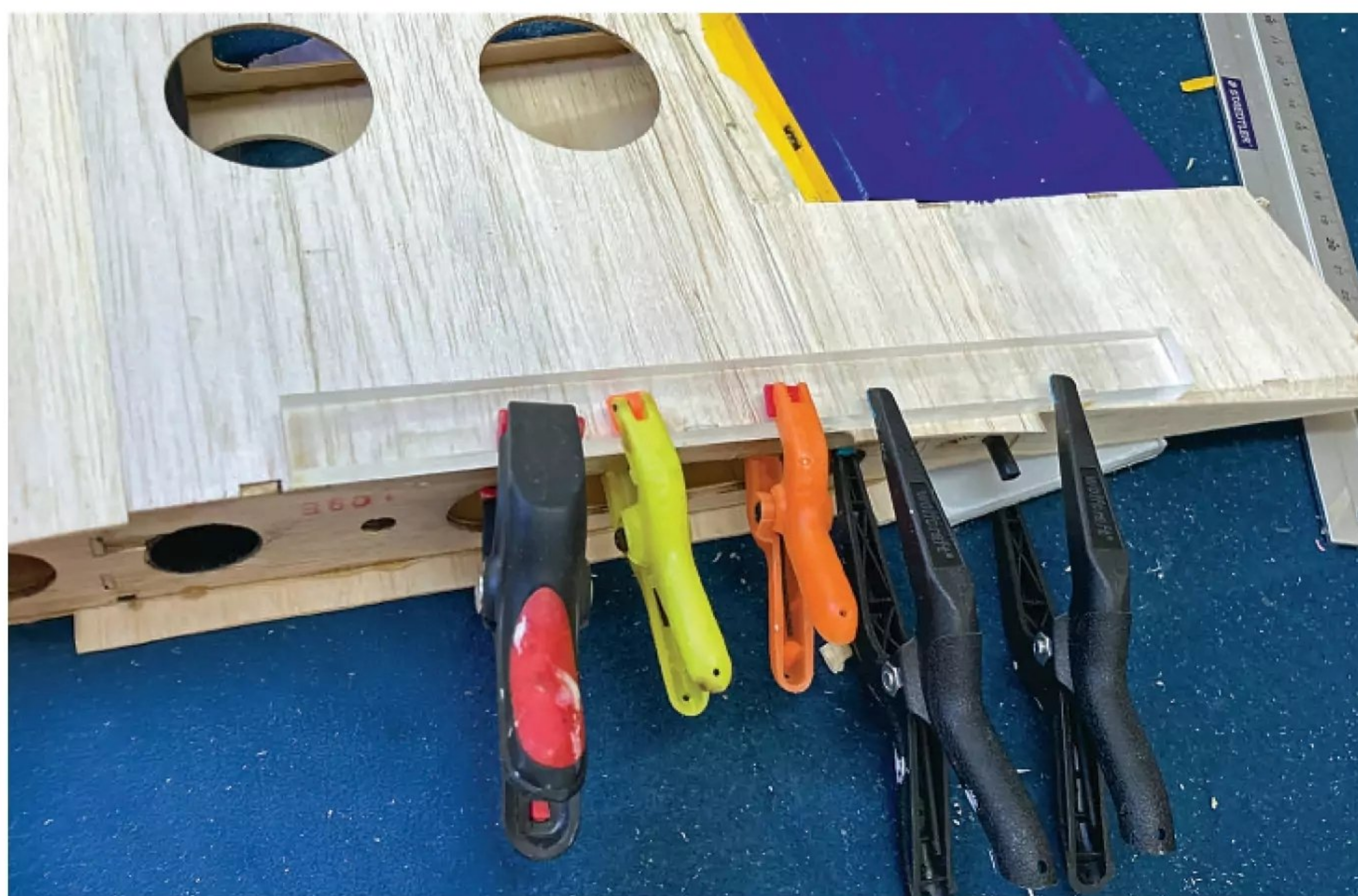


*With the spar repaired and the ribs back in place the wing tube can be glued in place again. It is vital to check the position of the wing panel carefully. Not only does it need to fit flush against the fuselage but also the incidence of both panels needs to be equal. The next step is to repair and/or replace the ribs and glue them back in place, making sure to keep them in line with the undamaged ribs still in the wing.*



*New sheeting was applied using slow-setting PVA and plenty of pins.*





*Small strips of acetate ensure even distribution of clamping forces. With only some minor sanding to do the underside is nearly ready to receive the new covering.*



*With the radio re-installed and new covering added it is hard to believe this model was so severely damaged.*



*Back to its former glory, my Extreme Flight Extra!*

The weight of the new bits and pieces added a total of 51 grammes, which equals just over one percent of the original AUW of the model.

#### **NEW POWER CONSIDERATION**

Although this model was originally powered by a 10-cell pack, driving a Plettenberg Extra

electric motor, the decision was made to save further weight and use a 6-cell pack in the new configuration. In the Extra a Joker 6350-8 V3, 460 kV motor is now used, turning either a 19" x 12" (113 A) APC-E, 20" x 10" (118 A) APC-E or an Elektroline 20" x 10" (106 A) airscrew. In either configuration there is unlimited vertical power available.

Since repairing my Extra it made another 23 flights last year. Believe me, I have seriously tried (and failed!) to break it.

So, there you have it. No black magic to it at all, just a few weeks of enjoyable evenings tinkering and some bits and pieces. Give it a go, you might find how enjoyable it is to construct something with your own hands! ■





# DAFFY'S REAR GUNNER

**Harry Curzon's** model of the Defiant interceptor has a neat trick centred around its rear gun turret

Words: **Harry Curzon**

Photos: **Kevin Crozier, Harry Curzon**

**M**y model of the Boulton Paul Defiant Mk.1 is built from the Chris Golds plan (MW3764), using the laser cut wood pack and canopy set supplied by Sarik Hobbies. It is 72" wingspan, weighs 13 lbs, with a 6S 5000 mAh LiPo driving a Ripmax Quantum II 61 motor.

The working turret is my own design. It uses four channels: the servo that raises and lowers the retractable fairing behind the turret, switching on and off a Dr Mad Thrust gun flicker unit which drives the flashing LEDs in the gun muzzles, a servo to rotate the turret and a servo to move the guns up and down. It is all controlled by sequencers programmed in my Jeti transmitter so just one switch on the transmitter starts and stops the entire display.





*Harry built his distinctive Defiant from the Chris Golds plan sold by Sarik Hobbies. A short kit (SET3764) is available which includes the plan, laser cut wood pack, additional wood pack and canopy set.*

#### **FREE TO ROTATE**

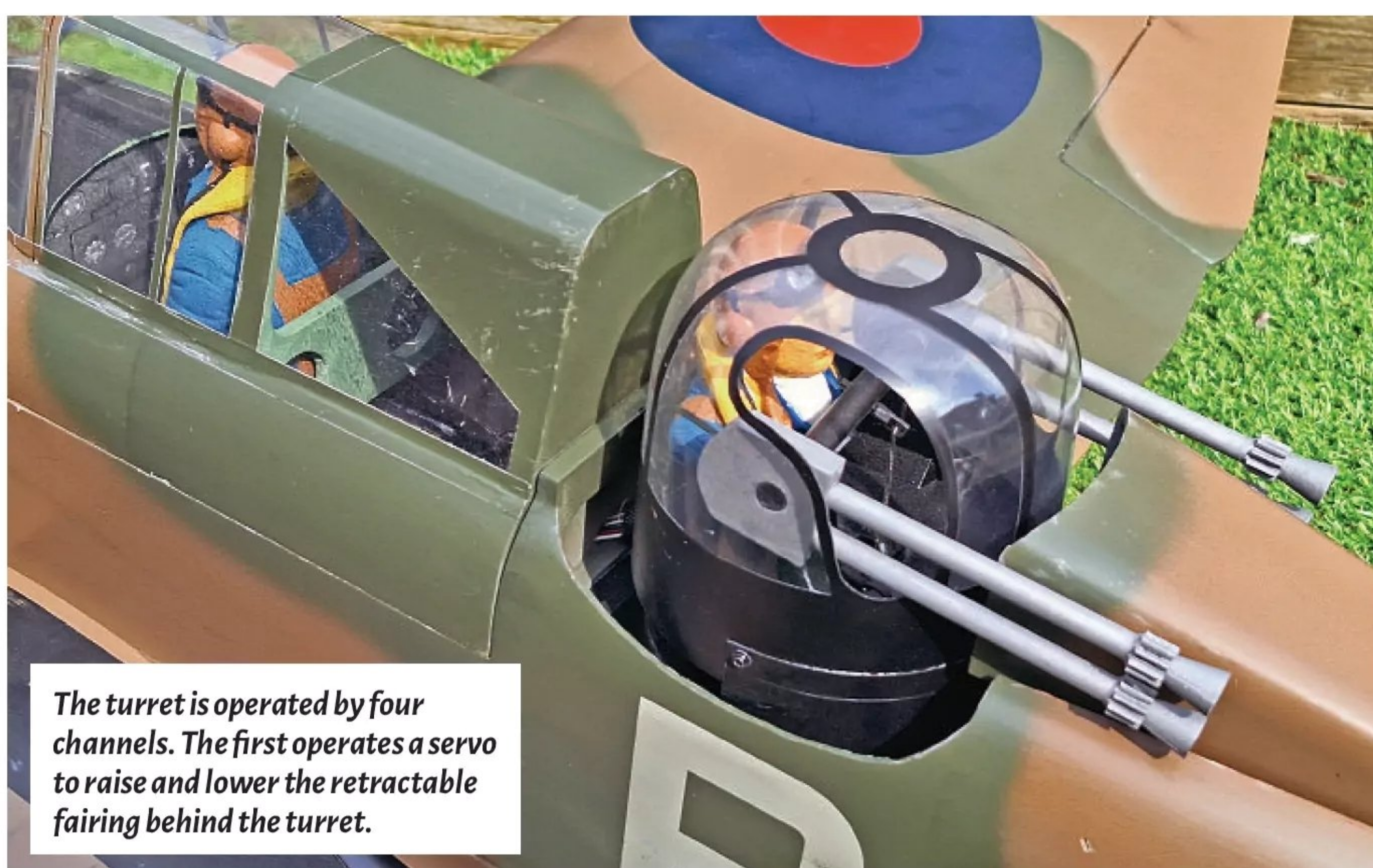
The turret has a large diameter dowel extending beneath it to which are glued two 1/8" ply discs with slightly more than an 1/8" gap between them. In that gap is a free 1/8" ply square larger than the discs, with a hole for the dowel, and the corners of that plate bolt to mountings in the fuselage. Thus, the turret is trapped in place but is free to rotate. To reduce friction the rubbing surfaces of the ply are faced with very thin Pro-Skin from Mick Reeves Models, liberally sprinkled with dry graphite powder.

#### **MODIFIED SERVO**

Below the turret is a Futaba servo that I modified to rotate almost 180 degrees. It was hard to find an old servo with wires between the PCB and pot to which I could add resistors



*On approach with full flaps for landing on PPMFC's immaculate short mown turf.*



*The turret is operated by four channels. The first operates a servo to raise and lower the retractable fairing behind the turret.*



*Two other servos rotate the turret and move the guns up and down. It's all controlled by sequencers programmed in Harry's transmitter and is operated by just one switch.*

to change the rotation as for a long time almost all servos have had the pot soldered onto the PCB.

The servo output disc has two slots cut out and two carbon dowels from the bottom plate of the turret turntable slide through those slots to provide the drive yet allow for any misalignment and make it very easy to remove the turret.



*Function two switches on and off a Dr Mad Thrust gun flicker unit which drives the flashing LEDs in the gun muzzles.*



# RCME &E SUBSCRIBE

Enjoy 12 months for just £54



## THREE GREAT OPTIONS TO CHOOSE FROM...

### Print only

- Quarterly direct debit for £16
- 1 year direct debit for £54
- 1 year credit/debit card for £59

### Print + Digital

- Annual direct debit for £64\*
- 1 year credit/debit card for £67\*

### Digital Only

- 1 year direct debit for £36\*
- 1 year credit/debit card for £39\*

*\*Any digital subscription package includes access to the online archive.*

## Great reasons to subscribe

- Free UK delivery to your door or instant download to your digital device
- Save money on shop prices
- Never miss an issue
- Receive your issue before it goes on sale in the shops



# AND SAVE



[www.classicmagazines.co.uk/rcmedps3](http://www.classicmagazines.co.uk/rcmedps3)



**01507 529529 and quote rcmedps3**

Call 01507 529529, lines open Mon – Fri 8.30am – 5.00pm

TERMS & CONDITIONS: Offer ends 27 June 2025. Subscriptions will start with the next available issue. Direct debit payments will continue on the agreed plan unless you tell us otherwise. To view the privacy policy for MMG Ltd (publisher of RCM&E), please visit [www.mortons.co.uk/privacy](http://www.mortons.co.uk/privacy). Please visit [www.classicmagazines.co.uk/terms](http://www.classicmagazines.co.uk/terms) for full terms and conditions.



# COSMIC CLOUD 150

**Dave Goodenough** extracts a favourite small glider design from his memory and enlarges it for radio control and electric power

Words: **Dave Goodenough**



*Heroic of stance, with knocking of knees, your scribe launches Cosmic Cloud 150 for its first powered flight.*

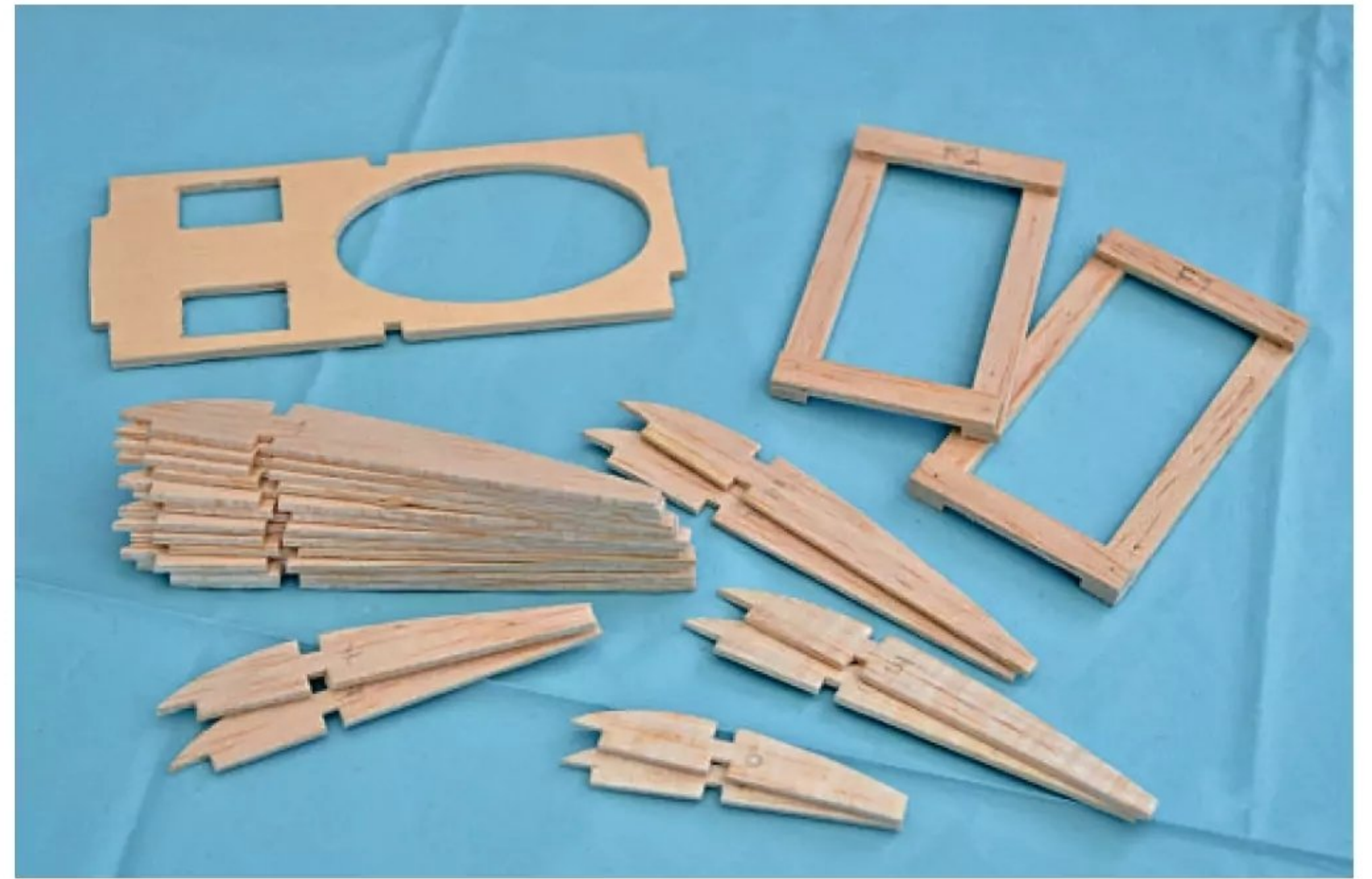


*A lazy low power turn into the breeze shows the Cosmic Cloud 150 in its element. She's light and easy to fly.*





This is what started the new project, an advert found in an old 'Model Aircraft' magazine. All those memories from the 1960s began to wake up.



Not many bits to manufacture. Only the nose in-fill and dihedral braces are missing.

Previously mentioned some while ago in my 'One Man & His Shed' ramblings was a simple beginner's glider that has lived in the peripheral mists of memory for some six decades. Like many of us 'elder practitioners' of modelling mayhem, rampant nostalgia oft leads us back to our formative years and the models that we enjoyed. The simpler designs back then taught us youngsters much about building models and trimming them. Sometimes they even flew well!

Back in 'my' time in the early 60s the larger kit manufacturers in Blighty were Keil Kraft, Veron, Mercury and Frog, but there were many others. One of the best quality producers was Performance Kits, run by OFW 'Peter' Fisher, manufacturer and distributor of decidedly distinctive model designs. Try as I might I've never unearthed a copy of a plan for the Cosmic Cloud, the simple 33-inch span glider of yore. So, with drawing board clear, quill sharpened and inkpot open, it's time to sully the parchment and redraw my obsession as close to the original as I can manage.

#### SIMPLICITY SIMPLIFIED?

Cosmic Cloud was a tiddler and I've decided lately that I prefer my models a tad bigger for ease of construction, handling and flying. Adding minimal radio control and a fan at the front makes life a lot simpler when chasing flyaway models is no longer an option. To that end the Cosmic Cloud has grown up a bit in my eyes and is presented here at 150% size. It's still a small 50-inch lightweight model but more practical and manageable for fumbling fingers. I trust you purists out there will forgive the defiling of this little beastie but if you're that upset then take the plan to a copy shop and have it reduced in size to the original 33-inch wingspan.

Only an all-sheet model would be simpler to build and the construction details are minimal. As you would expect, it's within the scope of a beginner to building from plans; after all, that's what the original was designed for. The wood for construction is balsa of varying strengths and densities.

#### JULIE ANDREWS TIME

'We'll start at the very beginning...'

The fuselage is traditionally the first place to

"As you would expect, it's within the scope of a beginner to building from plans"

start. So, on the plan, pin down the 1/8" hard balsa longerons, plus balsa spacers, infill and uprights. I use aliphatic glue as in a less-than-comfortable arrival (read crash) I find that cyano glue joints crack. Build two sides. The formers F1 and F2 are made from overlapped strip wood; the rear

former has the pushrod snake support attached. When the glue is dry carefully sand the fuselage sides flat, removing glue blobs. Glue in formers F1 and F2, using a small square or playing card to keep them perpendicular. When dry glue the other fuselage side to them, checking that the sides are not twisted.

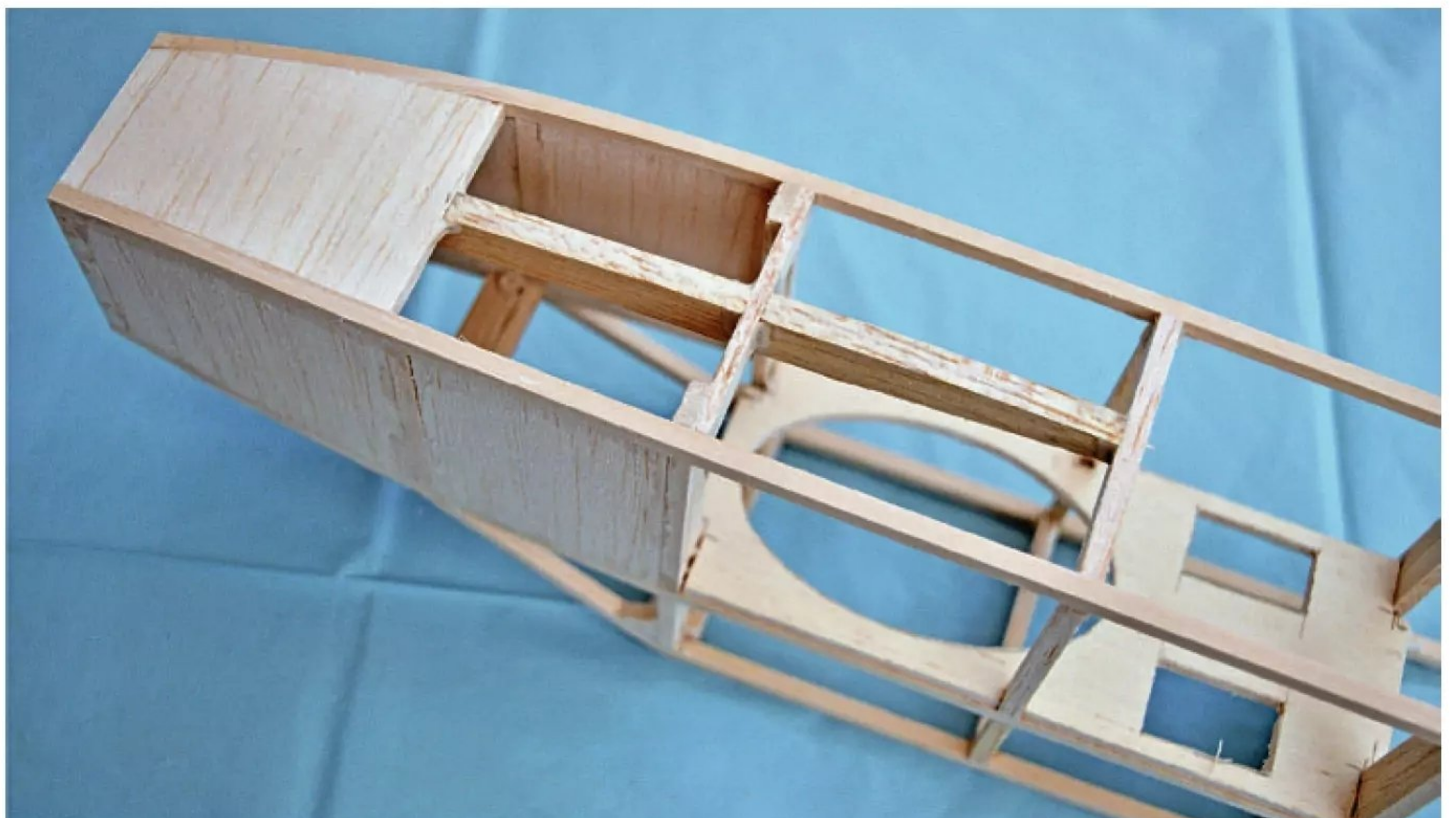
When the glue is dry, add the fuselage cross pieces, half-way between F1 and F2 and, with the cross pieces firmly set, draw in the fuselage rear and glue the tail-posts together. Keep the resultant curves equal and without building a twist in, which is easy to do. Draw in the fuselage side nose sections and fit the motor mount/firewall. This bit is fiddly, as both



Very simple fuselage sides. Use aliphatic glue for preference as it's more resistant in a prang.

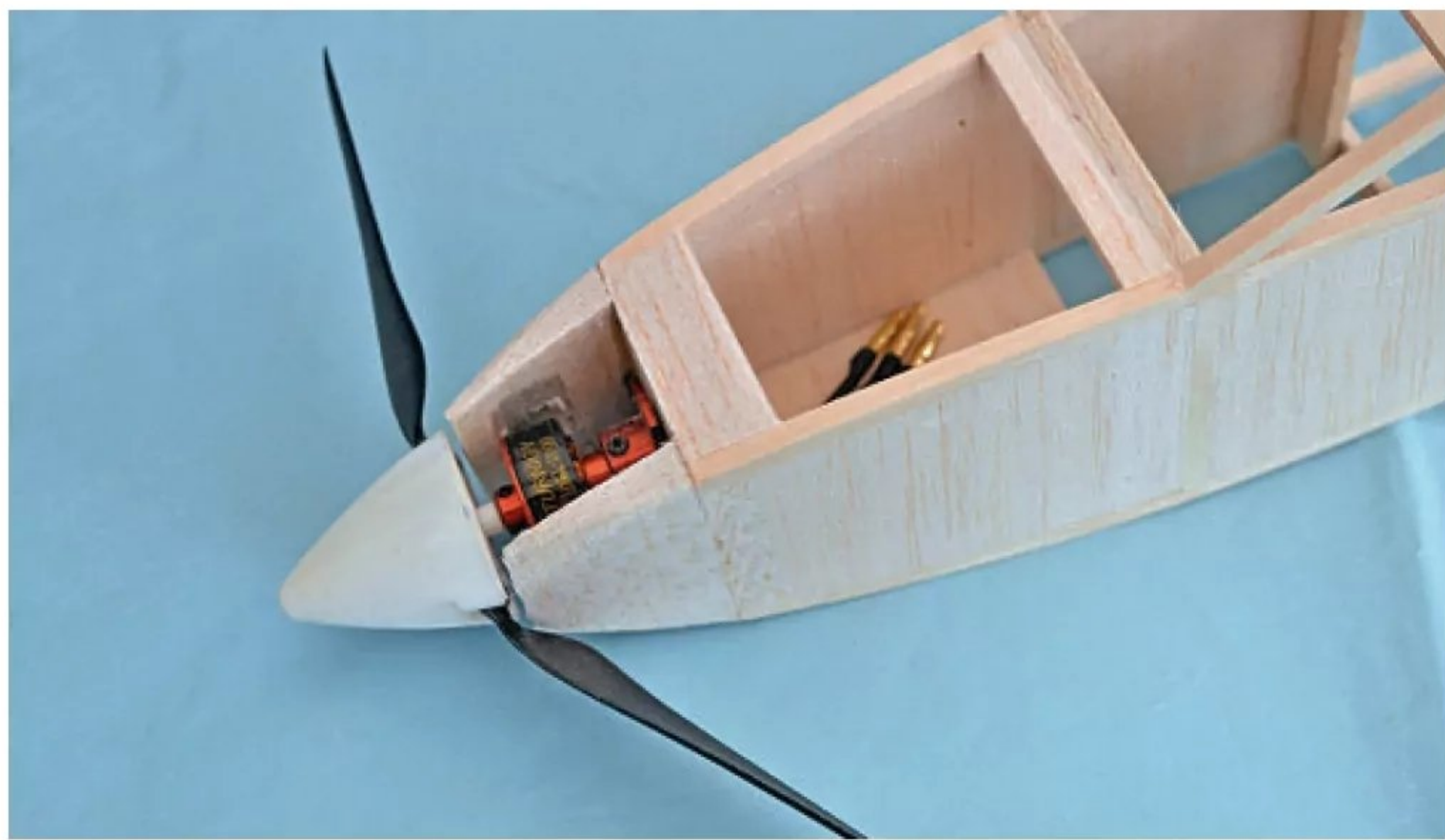


The two fuselage formers and servo tray act as a jig to keep the sides square during assembly.



Nose assembled and the hard balsa tow-hook support glued in place.

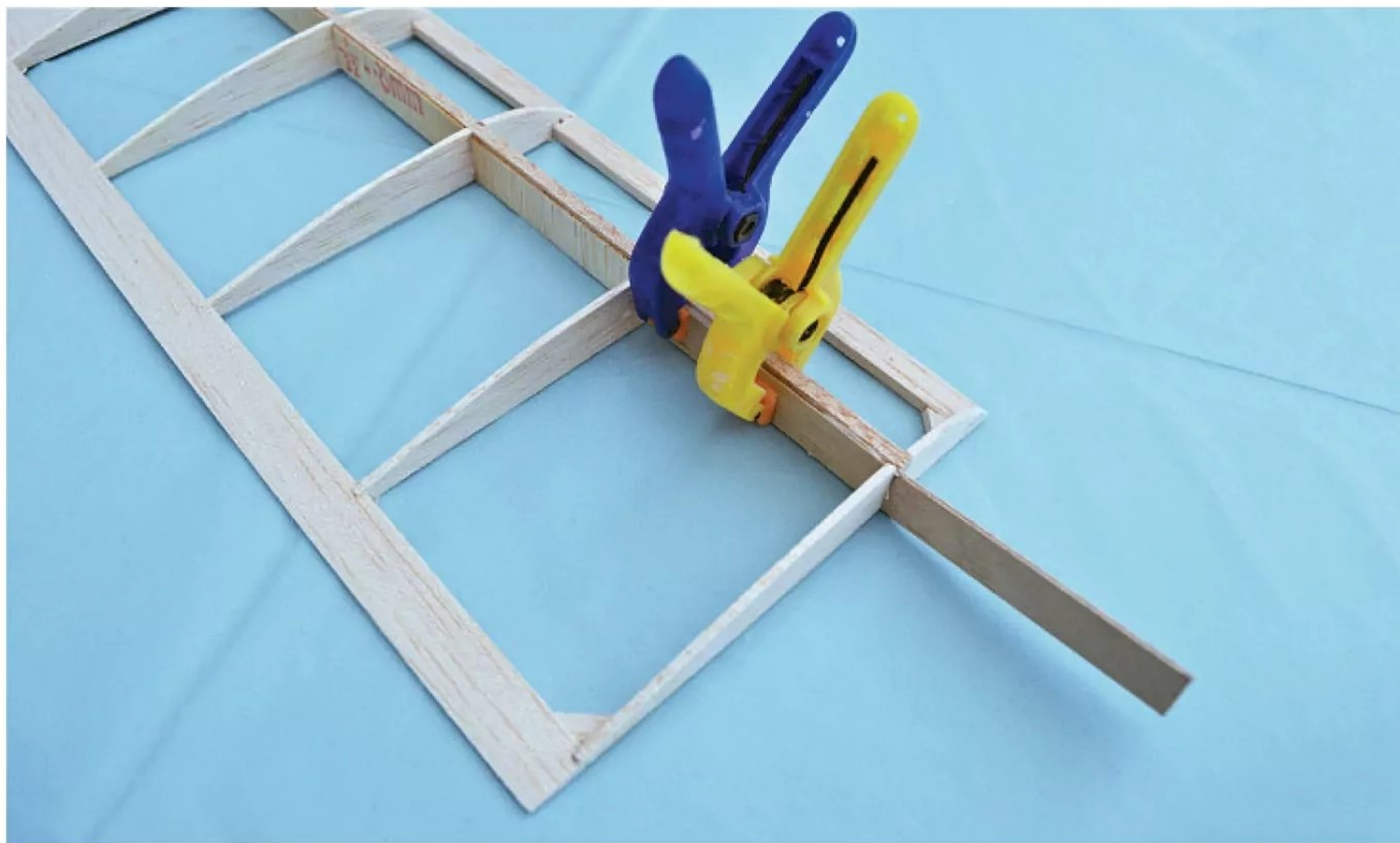




*The original nose and its motor - too light and too short. The successful modification is on the plan.*



*Tailplane is dead simple. I've found that you only need one elevator half for adequate control.*



*Dihedral braces replace the webs at the wing roots. Cut the rib right through.*

side and downthrust should be introduced. If it's too awkward and fumble-fingered, glue the plywood in as square as possible; you can always sand the side/downthrust in later. Glue in all the remaining spacers/cross pieces but not the tow-hook former; that is fitted just before covering begins.

If you make the Cloud as a glider, glue on a balsa nose block and shape it. If fitting a motor, glue on the side cheeks or simply leave the motor open to the elements. Note the extended nose option on the plan; it's better for final balancing and is recommended. A short nose means more nose weight to achieve balance. The control snakes are the lightest possible, 2 mm dia. OD, 1 mm dia. ID, with 0.6 mm piano wire inners.

The tailfeathers are 'flat plate', built up from strip wood and need no build description. The tailplane spar (hinge line) should be very hard balsa, the remainder being of medium grade. If you don't like the diagonals, as the original used, simply glue in straight 'rib' strips, as per the fin/rudder.

### THREESECTION WING

The very simple three section wing structure needs the trailing edge slotted for the 1/16" ribs. Either use pre-made TE strip or make your own. I find pre-made TE strip is easiest.

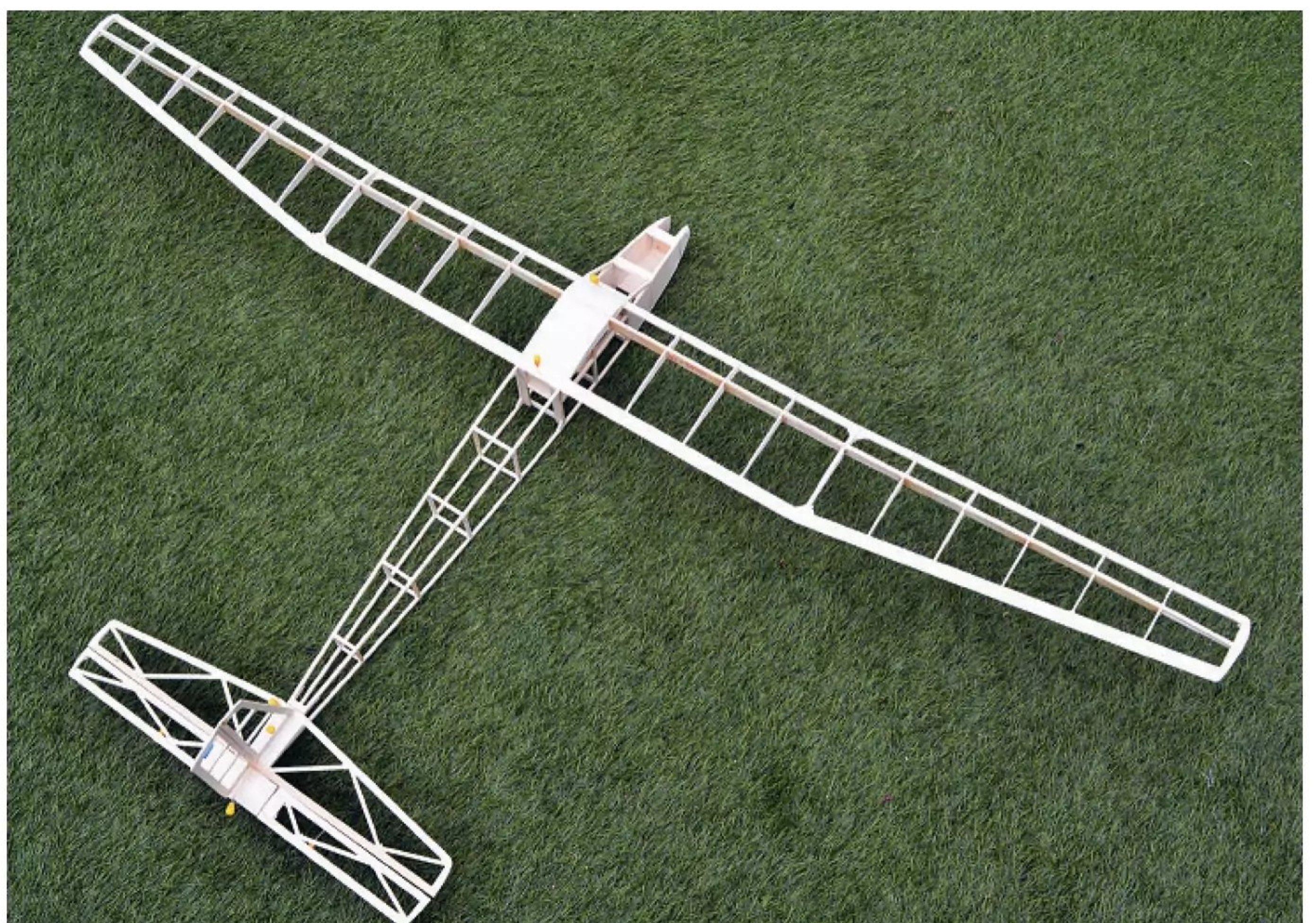
A hard 1/8" square balsa spar is pinned down, then the leading edge. Glue in all the ribs, ensuring the root ribs on all three panels



*Don't forget to give the outer panel root ribs the correct tilt.*

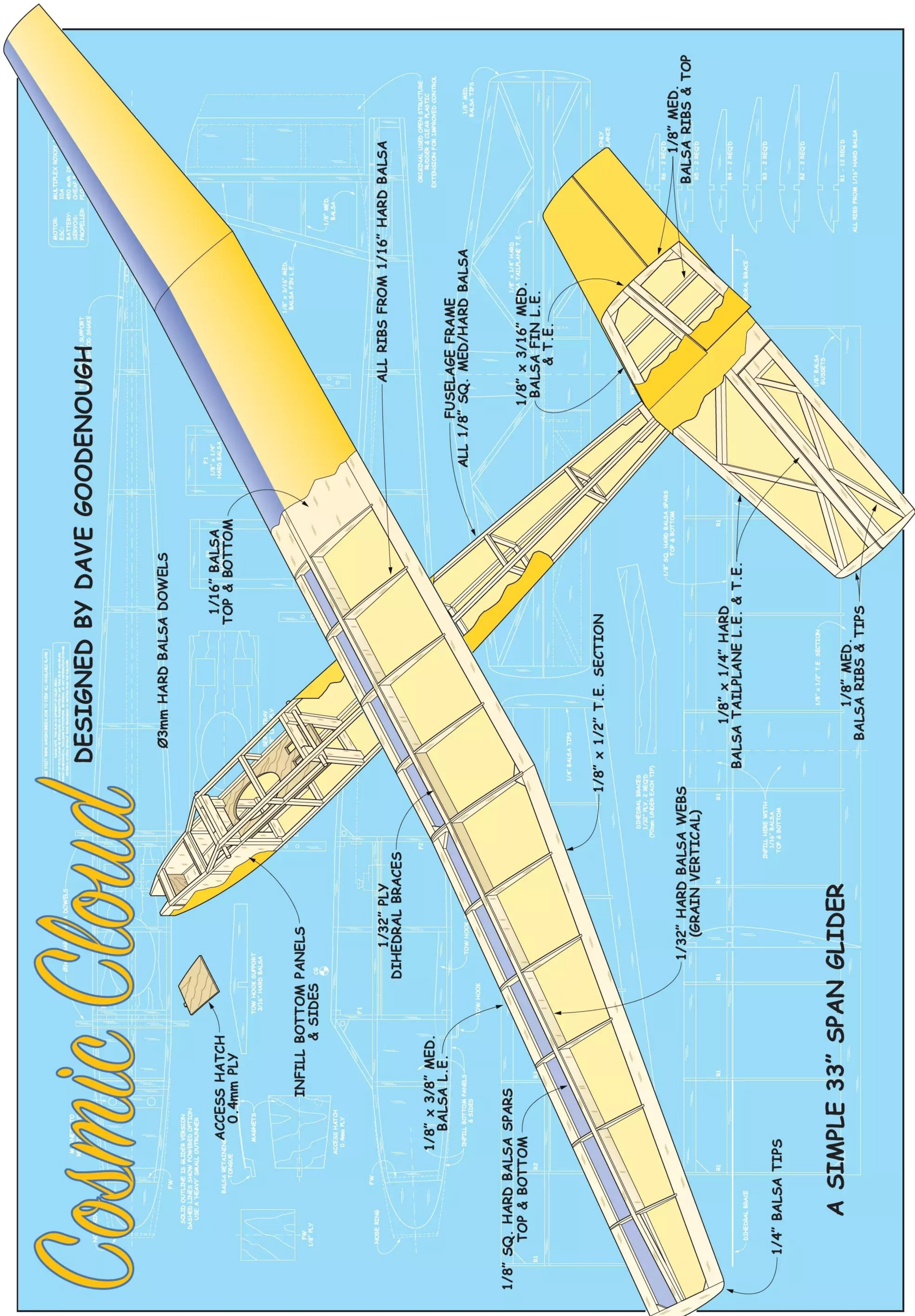
"The dihedral is 60 to 70 mm under the outer panel wingtips"

have the small dihedral angle built in. Glue in the gussets - you'll curse yourself later if you forget! When dry, glue in the top spar of each panel, checking/adjusting the root rib angles as you go. ✈️

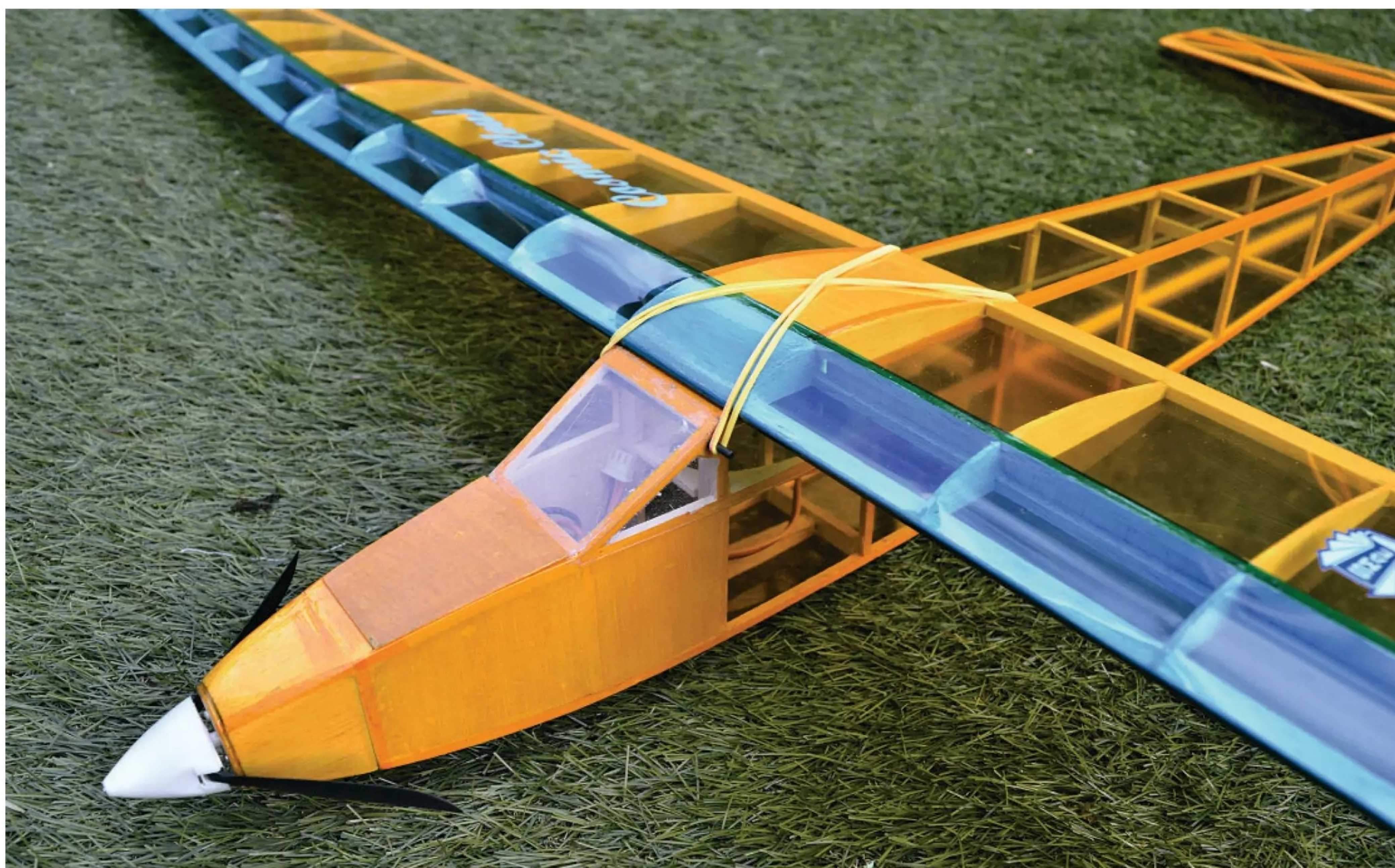


*The little lady in her naked state. A simple and lightweight design, don't you think?*









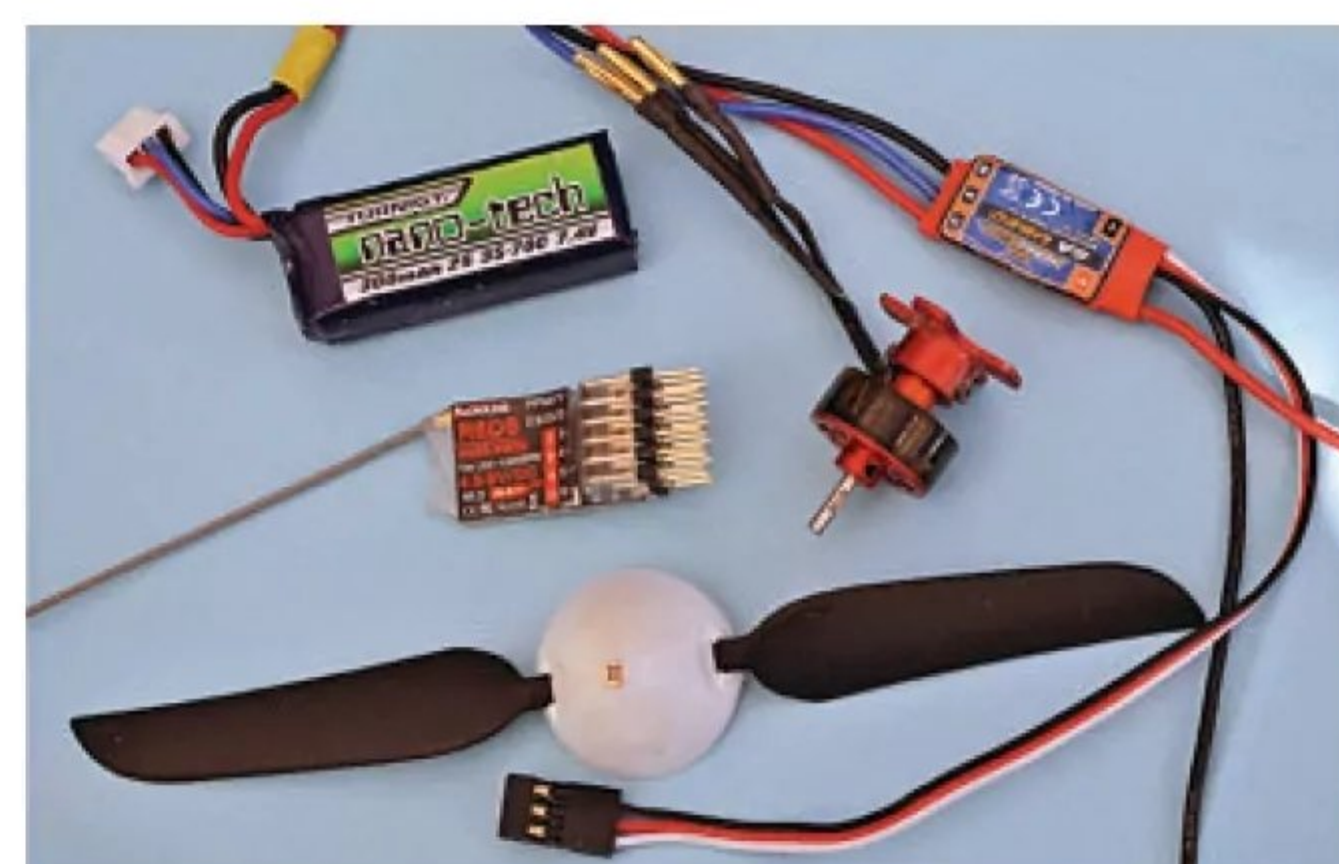
*Two colour covering with lightweight film is easy. Just use Oracover adhesive on the overlaps for perfect adhesion.*

“I’ve soared the model in a minimal breeze from decent lumps in the landscape, such as low hills, embankments and sea walls”

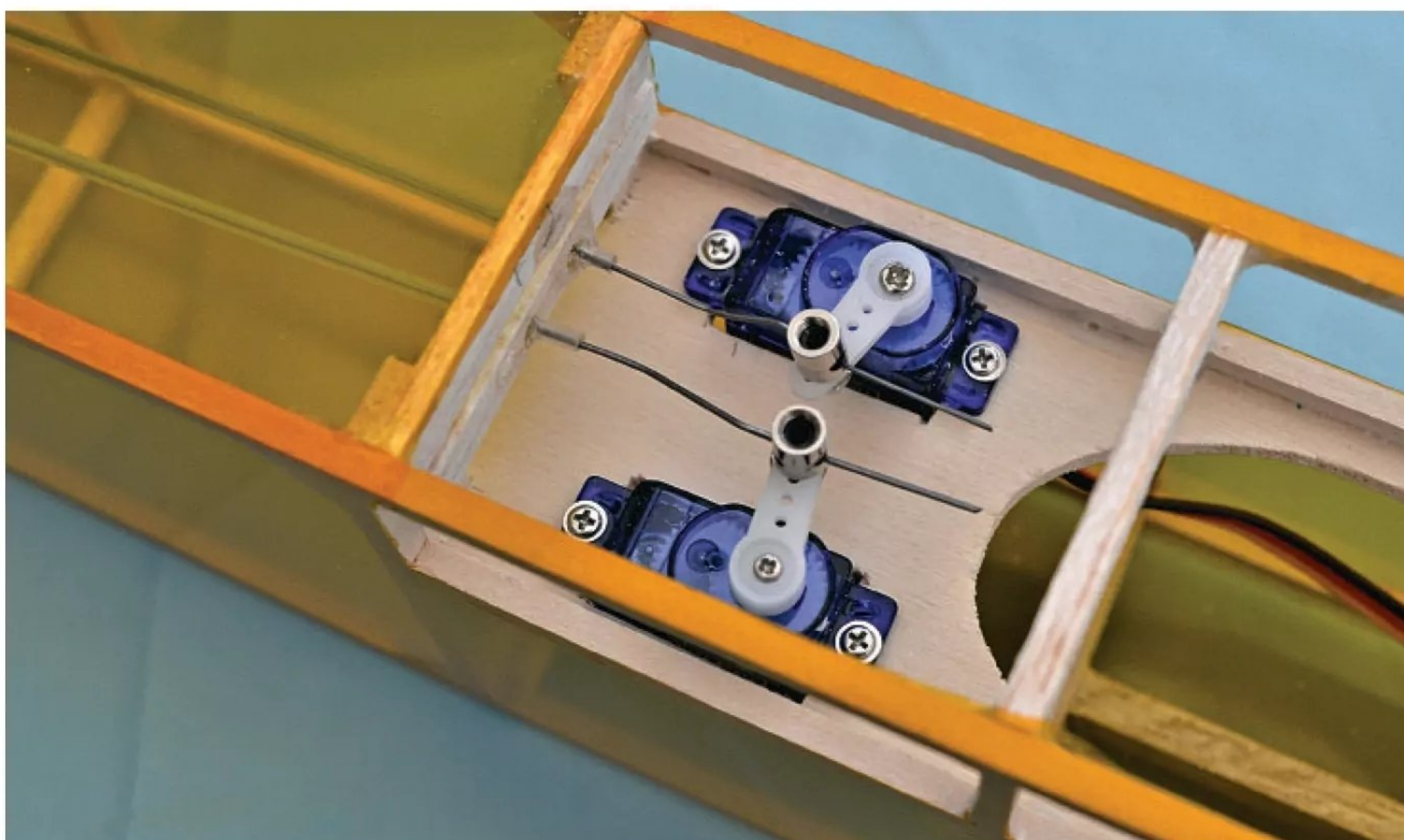
Infill the centre section top and bottom with light 1/16" balsa and glue in 1/32" webs between the wing spars. These aren't strictly necessary but might save the wing from damage in a heavy-handed launch or torrid landing. Don't fit webs in the root rib bays as these will be taken care of by the dihedral braces. VERY carefully cut through the root ribs on all three wing panels and make 1/32" slots adjacent to the wing spars. Glue in the 1/32" braces, easing the wing panels into place, before clamping or pinning them to dry. The dihedral is 60 to 70 mm under the outer panel wingtips. I made my initial wing with less dihedral than the original free-flight model as I assumed the shallower angle would be better for control when using radio, but I was wrong. The model was unstable and I had to increase it.



*Tow hook is simply a tiny screw eye straightened out. Use a dab of epoxy glue to prevent it loosening.*

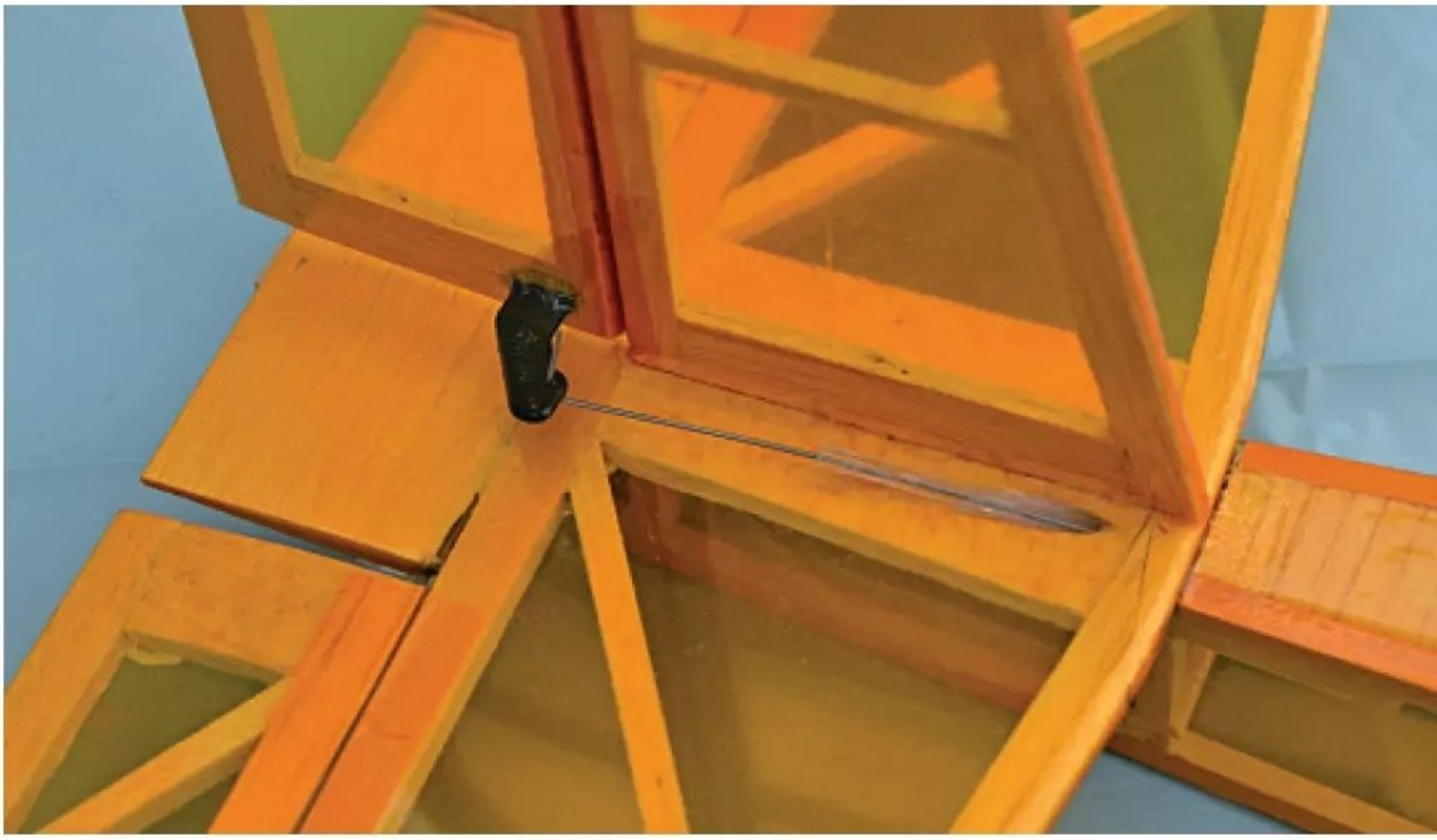


*The original power set. The motor was later replaced with a heavier Multiplex Roxxy motor of 18 mm dia.*

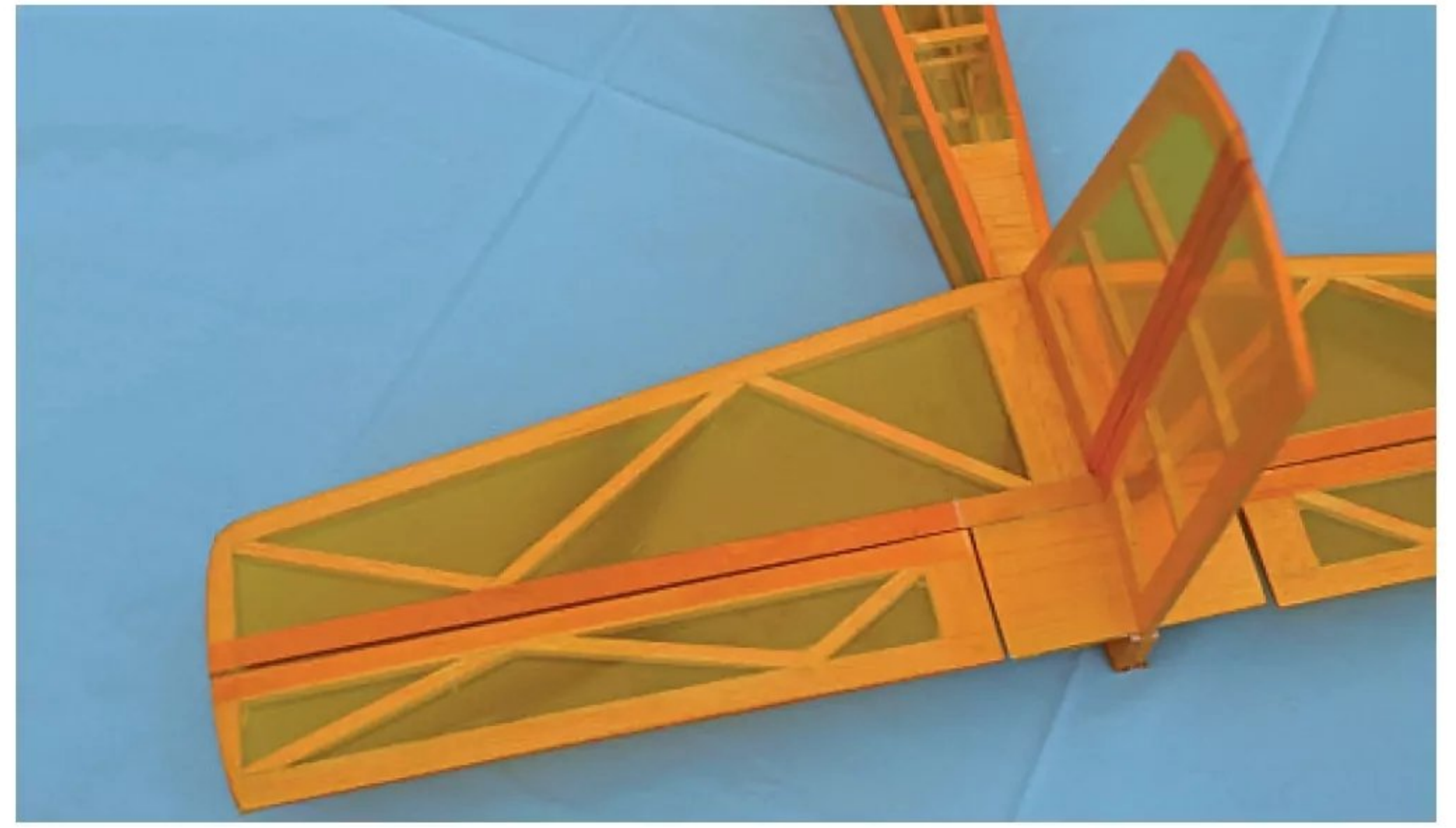


*Little 5g analogue servos are very cheap and provide plenty of control via the 0.6 mm dia. piano wire pushrods.*





*Control horns can be made from 1/32" ply or use small glue-in types like these plastic versions.*



*Rudder and elevator hinges are just covering film strips. Entirely adequate if ironed on carefully.*

With the glue dry remove the completed wing from the building board and very carefully sand it all over to remove any lumps.

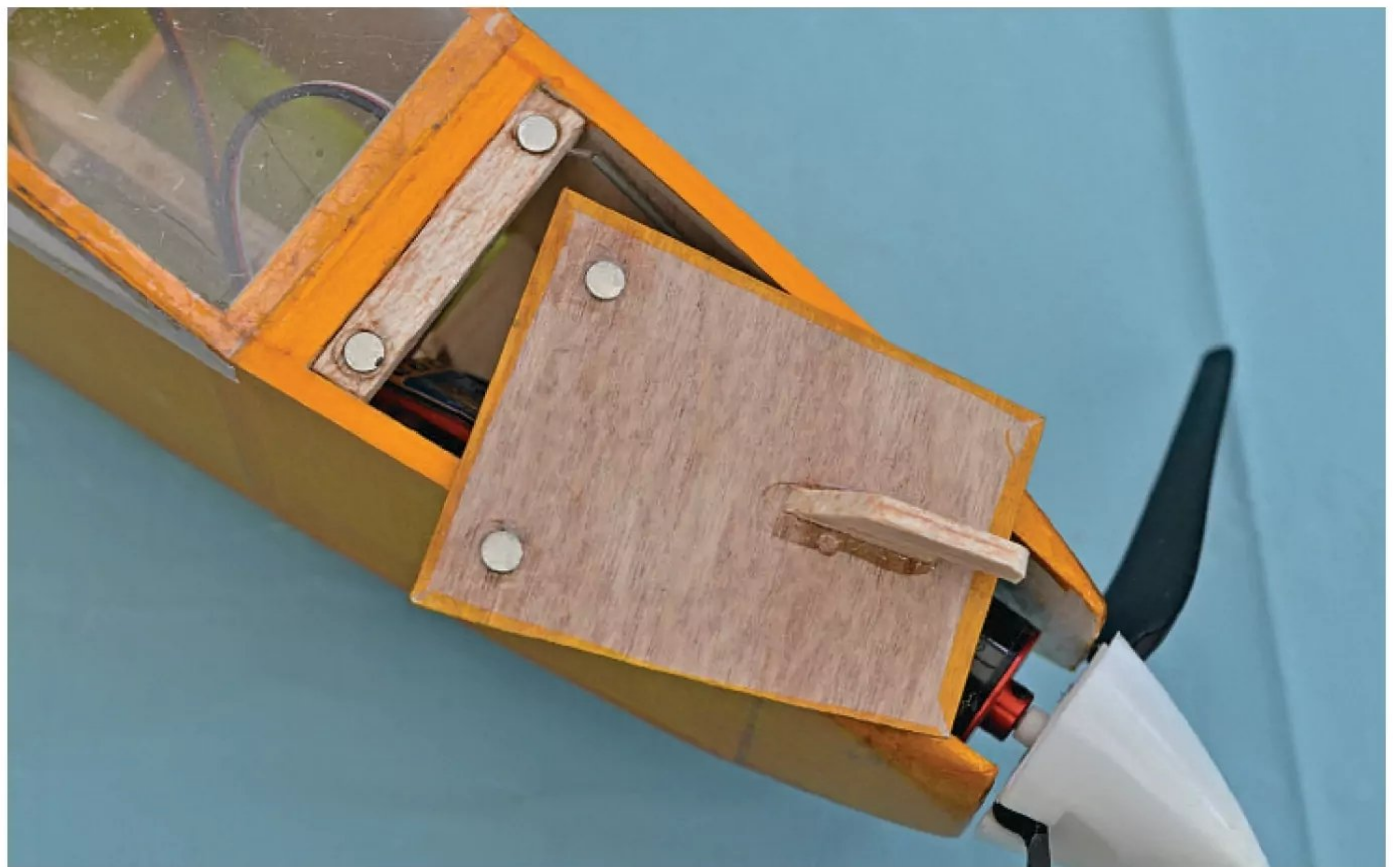
### COMPLETE COVER UP

By now you will probably have been thinking of covering but hold hard! If you're going the totally traditional route then lightweight tissue is your choice, but for simplicity and longevity Oracover 'Air' Outdoor lightweight covering film is 'best', if a bit expensive. Or Oralight would do. I found some old stock of 'Solite', so I used that. The colours were dictated by what I had in 'left over' stock but this turned out to be a mistake as it's heavier than 'Air' film. 'Full fat' normal covering film is far too heavy for this model and the strong shrinkage will distort the shape. I find that lightweight film is more controllable in this respect.

If you're new to film covering a model the process is simple, providing you're logical in approach. I take a 'belt, braces and buttons' approach to ensure good adhesion and shrinkage. There are a few film adhesives available but, in my experience, the 'best' by far is Oracover adhesive. It's fast drying, brushes on very thinly and 'sticks like brown stuff to a blanket' once heat activated. I have no interests with Ora products, other than finding that in use they are superb.

Start with setting the iron temperature properly, as almost everyone starts with an iron far too hot and then complains about the over-shrinkage of film, etc. Cut a small test piece of film and drop it onto the sock covered sole plate of your iron. If it sits there without wrinkling the iron is too cold. Increase the temperature very gradually until the film only just starts to slightly pucker. That's it, no hotter! If the film wrinkles and shrinks the moment you touch it on the iron, it's far too hot. Reduce the temperature until you reach a bare 'pucker' state.

To cover the fuselage paint on a bare lick of adhesive around the edge of the structure, then cut a piece of film around 10 to 15 mm larger all round than the fuselage bottom (always start there). 'Tack' the film in one spot (I start at the tail), then draw the film taut at the nose and tack there too. There will be some wrinkling but if you now work around the edges of the fuselage, tautening and tacking as you go, you'll have a reasonably tight covering. Seal all around the fuselage bottom carefully, then trim the film, leaving around 2 to 3 mm overlap. Use the iron to



*Battery/receiver/ESC bay cover is a section of 1/64" ply with a lug and magnets attached. Simple and effective.*

'wipe' the overlap around the edge of the fuselage and adhere it. Once done, pass the iron over the slack film covering to shrink it. If you find it won't fully tauten simply increase the iron temperature a little and the film covering will tighten. Repeat the process for all other parts of the model, adjusting iron temperature accordingly.

Do not try to cover the wing in one piece of film—I've seen it attempted. Cut six film panels to cover each part of the wing in sequence: underside centre section, then the two outers, top centre section, followed by the outers. Once done, you'll see that the method works well.

If you have a problem with curving the covering around the wingtips increase the iron temperature a little and heat the film as you pull it gently around the tip. It takes a bit of effort and patience, but the result is worth it. If you've been careful with temperature and used adhesive around all the edges there will have been no 'heat creep', the problem caused by over-heat/over-shrinkage. We've all done it so learn from our mistakes.

### GLAZED OVER

The 'cockpit' glazing is last. Some very thin clear plastic from household packaging is adequate. Cut it to shape and run a wisp of clear contact glue around the frame and around the edges of the windows.

The tow-hook, if you need it, is a small picture frame screw eye, opened and flattened with pliers. Drill a pilot hole in the fuselage tow-hook support, introduce a small blob of epoxy into the hole, then screw the hook in.

Drill holes in the fuselage gussets at the leading and trailing edge position, then glue in small wooden dowels or carbon rods to anchor the wing retaining bands.

Assemble the model and use an appropriately sized battery as nose weight. If it's not quite enough then glue lead strip inside the nose cheeks or in the avionics bay until correct balance is achieved. I made a mistake and couldn't use the tiny outrunner originally sourced as it was far too light. So, I lengthened the Cloud's nose as shown on the plan and fitted a heavier Roxxy 18-20-10 outrunner. With a 2S 450 mAh LiPo fitted the model only needed a few grams of lead ballast for final balance.

The elevator was adjusted for 3 mm up-down deflection and the rudder to give as much as possible. My model's all-up weight ready for flight was 220 g.

### FIRST FLIGHTS

Trimming is quick and easy if you find some long grass to test her over. It will cushion any whoopsies whilst you fiddle with the







*At the second test session a transparent rudder extension was attached to give more positive directional control.*



*Whiffing past under minimal power, the sun highlights the delicate 'Cloud' structure.*

controls. A gentle push into a breeze, resulting in a slow, straight descent is what you're after, so adjust your transmitter trims until the glide is consistent.

The power set I finally used is a little more powerful than I would have liked but with a small folding propeller and careful use of the throttle all was well.

I won't bore you with 'how to fly' advice suffice to say that you should take things gently and not thrash the transmitter sticks all over the place. Gently does it, that's the ticket!

My initial test flights were a bit torrid, with the little Cosmic Cloud 150 performing poorly, due to having too little dihedral. Minimal use of the motor saw it climb away with ease but, with the rudder giving minimal turn control, I had

to add a small clear plastic rudder extension. Some free flight models don't respond well to power and radio interference and the Cloud, as originally built, was one of them.

The elevator is quite effective and you could loop the model, but that's not what it's about. Wafting about and enjoying simple pleasures is where this model wins out. You could reduce the size of the elevator or have just one side moving.

'Opening the tap' is startling with the Roxxy motor. It needs to be reined in as a rocket-like vertical climb isn't Cosmic Cloud 150's normal flight envelope.

I've soared the model in a minimal breeze from decent lumps in the landscape, such as low hills, embankments and sea walls. On

flat land the motor will get you up and away smartly to explore the fun and frustration of thermal soaring, always a challenge with small and light models that dance around on the merest zephyr of a breeze.

A towline or light bungee launch needs a mate to help, but once instructed how to do it 'kiting' up a model glider is easy. Just don't overdo the rudder control, using small adjustments to keep it straight as it climbs.

#### TAILWHEEL

This drawing was scaled from an old Model Aircraft advert from September 1964. However, I'm certain that the original design is pre-1960, which in most eyes makes it 'vintage' for qualification purposes, even as an enlargement. The lightweight construction means that the eventual sub-250 g flying weight should be easily achievable, so no CAA number is needed.

Any problems, please email: [coetquidan@yahoo.com](mailto:coetquidan@yahoo.com)

## DATAFILE

|                            |                                              |
|----------------------------|----------------------------------------------|
| <b>Name:</b>               | Cosmic Cloud 150                             |
| <b>Model type:</b>         | Enlarged F/F glider                          |
| <b>Designed by:</b>        | Dave Goodenough                              |
| <b>Wingspan:</b>           | 50" (1270 mm)                                |
| <b>Functions (servos):</b> | Rudder (1), elevator (1), throttle (via ESC) |
| <b>Motor:</b>              | Multiplex Roxxy 18-20-10                     |
| <b>ESC:</b>                | 10A                                          |
| <b>Battery:</b>            | 450 mAh 2S                                   |
| <b>Servos:</b>             | 5 g analogue                                 |
| <b>Propeller:</b>          | Pichler 5" folding                           |



# Motors, ESC's, LiPo's, Chargers, Servos, Props



High Quality, High Performance, Large Range, **60/120C, 3S 2,200mAh Only £24.00!**



We stock: ARTF's and BIY Kits, BL Motors, Motor Mounts, ESC'S, UBEC'S, Plastic Props, Wooden Props, Folding Props, 3 Bladed Props, Prop Balancers, Spinners, LiPo's, Ni-Mh, Futaba and Radiolink Radios, Servos, Servo Leads, Servo Testers, Connectors, Cables, Heatshrink, Chargers, LiPo Dischargers, Watt Meters, Tools, Soldering Equipment, EDF Units, Electric Retracts, Undercarriages, Covering, LED Lights, Pilots, Tachometers, Glue, plus many other items. Please have a look at our easy to use website for more information. [www.4-Max.co.uk](http://www.4-Max.co.uk)



2S 4000mAh  
LiPo Battery for  
Spektrum  
Transmitters

**£25.99.**



Approved by The BMFA  
for the Payload and  
Egg Challenges

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



## Purple Power Professional LiPo's (JST-XH)

|                |                             |        |
|----------------|-----------------------------|--------|
| PPL-25C2S-0350 | 25C/50C, 2S (7.4V) 350mAh   | £4.50  |
| 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 |
| <b>PPL-60C3S-1300</b> | 60C/120C, 3S (11.1V) 1300mAh | £17.00 |
| PPL-60C3S-1800        | 60C/120C, 3S (11.1V) 1800mAh | £21.75 |
| <b>PPL-60C3S-2200</b> | 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 |



## Brushless Electronic Speed Controllers

|                      |                                   |         |
|----------------------|-----------------------------------|---------|
| 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  |
| <b>4M-HESC50AV2*</b> | 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



## UBEC's (Voltage Stabilisers/Regulators)

|             |                                 |        |
|-------------|---------------------------------|--------|
| 4M-UBEC5A   | 5A UBEC, 7A Peak, 6-29.4V I/P   | £14.99 |
| 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 |

## Outrunners - Professional Black Series

|          |                                               |        |
|----------|-----------------------------------------------|--------|
| PO-2826- | 920kv, 1040kv, 1290kv, 1420kv, 2200kv         | £22.99 |
| PO-2830- | 980kv, 1210kv, <b>1350kv</b> , 2150kv, 2700kv | £25.49 |
| PO-2834- | 910kv, 1020kv, 1160kv, 1680kv, 2100kv         | £27.49 |
| PO-3535- | 870kv, 1090kv, 1390kv                         | £28.99 |
| PO-3541- | 810kv, 920kv, <b>1070kv</b> , 1270kv          | £33.49 |
| PO-3547- | 700kv, 800kv, 960kv, 1190kv                   | £35.99 |
| PO-5055- | 500kv, 595kv                                  | £61.00 |
| PO-5065- | 360kv, 420kv                                  | £75.50 |
| PO-6366- | 230kv                                         | £99.99 |

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





# Great Value Quality Servos **From £3.28**

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

For more information on all these products and hundreds of others, please visit our website

Tel: 01256 782 512

**www.4-Max.co.uk**

Sales@4-Max.co.uk





## BIY (Build it Yourself) Kits



New

£439.99

### SE5a

Wingspan 1690mm/66"  
Battery 10S 5000mAh

Weight 8500g/18.7lbs  
(Supplied Separately)



New

£424.99

### Fokker DVII

Wingspan 2100mm/83"  
Battery 6S 5000mAh

Weight 6000g/13.2lbs  
(Supplied Separately)



New

£439.99

### Miles 2.H Hawk Major

Wingspan 2480mm/98"  
Battery 10S 5000mAh

Weight 9300g/20.5lbs  
(Supplied Separately)



£109.99

### Cloud Clipper

Wingspan 1800mm/71"  
Battery 3S 2200mAh

Weight 1800g/4lbs  
(Supplied Separately)



£99.99

### Cloud Walker

Wingspan 1650mm/65"  
Battery 3S 2200mAh

Weight 1250g/2.75lbs  
(Supplied Separately)

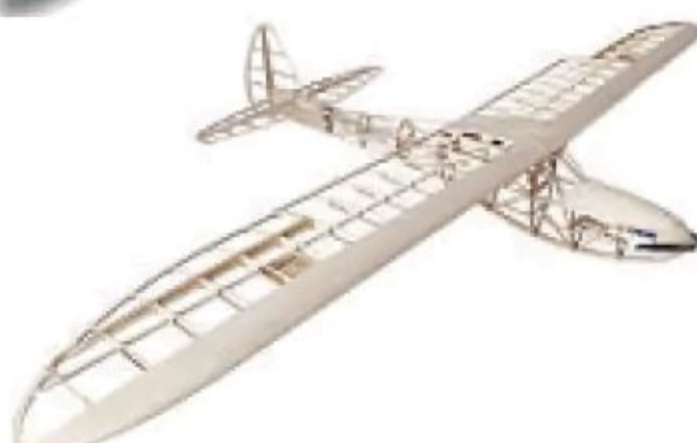


New

£169.99

### Lippisch G108

Wingspan 2750mm/108.25" Weight 1700g/3.75lbs  
Battery 3S 2200mAh - 3S 3700mAh (Supplied Separately)



£139.99

### Super Sinbad

Wingspan 2500mm/98"  
Battery 3S 2200mAh - 3S 3700mAh

Weight 1900g/4.2lbs  
(Supplied Separately)



£49.99

### Micro Sinbad

Wingspan 1230mm/48.4"  
Battery 2S 350mAh

Weight 190g/6.7oz  
(Supplied Separately)



£169.99

### Leprechaun

Wingspan 2600mm/102"  
Battery 3S 2200mAh - 3S 3700mAh

Weight 1650g/3.6lbs  
(Supplied Separately)



New

£49.99

### Micro Leprechaun

Wingspan 1200mm/27.25"  
Battery 2S 450mAh

Weight 350g/12.3oz  
(Supplied Separately)



£169.99 Kit  
£299.99 ARTF

### VP2600 Glider

Wingspan 2600mm/102"  
Battery 3S 2200mAh

Weight 850g/1.9lbs  
(Supplied Separately)

For more information on all these products and hundreds of others, please visit our website



## Chargers, Wattmeters, Servo Testers and Power Supplies

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



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

**New**

**£109.99**

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



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

**New**

**£199.99**

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



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

**New**

**£79.99**

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



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

**New**

**£169.99**

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



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

**New**

**£175.99**

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



The ToolkitRC Q4AC is a Dual Input, Quad Output Smart Charger. 1-4S LiPo, LiHV, LiFe, Lion and 1-10S NiMH.

The charging power output on AC is up to 100W, on DC with a suitable power supply up to 200W. The Q4AC has intuitive menus.

**New**

**£69.99**

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



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

**£84.99**

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



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

**£49.99**

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



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

**£79.99**

### ToolKitRC M4Q - 200W Quad Out Charger



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

**£84.99**

### ToolKitRC M4 Pocket - 80W O/P Charger



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

**£24.99**

### SKY High Power Discharger -



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

**£119.99**

For more information on all these products and hundreds of others, please visit our website





# USING FOLDING PROPS AS PUSHERS

**Mike Freeman** offers advice for when using a folding propeller to provide thrust on a pusher model

Words & photos: **Mike Freeman**

**A** powered flying wing with a prop up front always looks a bit odd to me. So, during the design and development of my Hi8us flying wing design, which featured in the July 2022 issue of RCM&E, a pusher prop was a must have. I also wanted to mix sports aerobatic powered flying with an efficient glide phase, so a folding prop was also essential. This was all very well, but I soon realised there was a potential risk of catastrophe!

Read on to discover why and how to mitigate the risk....



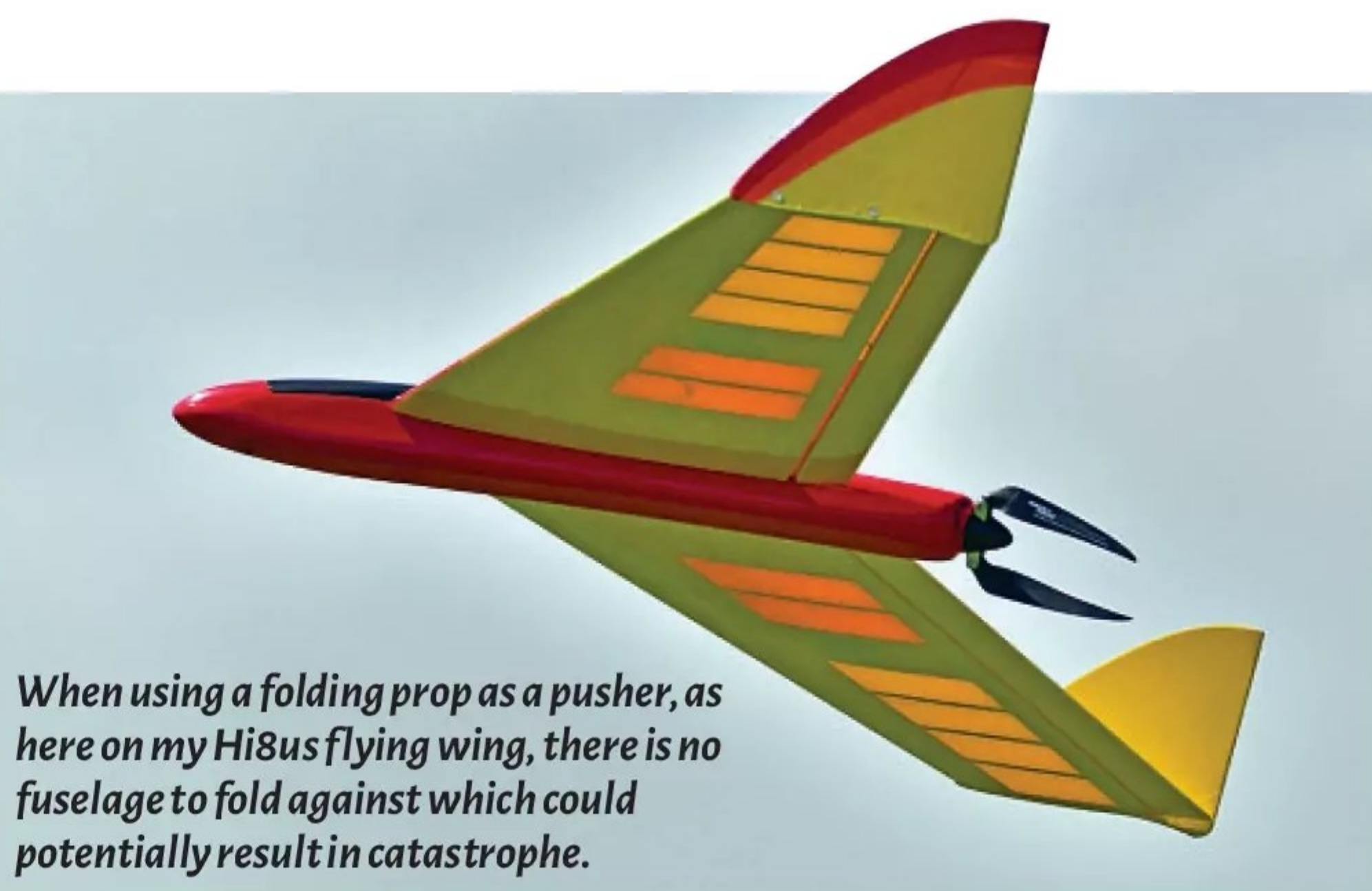
*Folding props are a fabulous addition to a powered glider. They pop out when you need them and tuck against the sides whilst gliding.*



*A powered glider can soar more efficiently with the blades of a folding prop tucked away alongside the fuselage sides.*



A folding prop on a glider is essential during landing. Imagine the damage a 14" diameter fixed prop could do if it caught the ground!



When using a folding prop as a pusher, as here on my Hi8us flying wing, there is no fuselage to fold against which could potentially result in catastrophe.

## FOLDING FORCES

Folding propellers use centrifugal force to swing the blades out into action. It's the same force anyone trying to sit on a fast-moving playground roundabout feels as the centrifugal force tries to throw them out radially, away from the centre or axis of rotation.

The equation to determine centrifugal force (CF) for a folding prop blade is:

$$CF = m \times \omega^2 \times r \quad \text{where}$$

$m$  = mass of the blade (g)

$\omega$  = angular velocity (rads/sec)

$r$  = distance from the axis of rotation to the blades CG (mm)

We don't need to get bogged down with the mathematics so we can ignore the  $\omega^2$  and just appreciate that CF is proportional to  $m \times r$ .

## THE PROBLEM

For a traditional puller folding prop, when the blades have folded back the fuselage stops the blades from folding too far and ensure the 'r' for both blades is on the correct side of the axis of rotation, as seen in Fig. 1. When the motor starts up the CF throws the blades outwards and all is fine!

For a pusher folding prop model there is no fuselage behind the spinner and therefore there's a risk that one of the blades could go over the centre line of the motor, i.e. the axis of rotation resulting in the 'r' for both blades being on the same side of the axis of rotation, as seen in Fig. 2. In this scenario, as soon as the motor is started and the prop starts rotating the CF of the blades will try to throw both blades in the same direction. Just imagine the damage the resulting out of balance would cause!

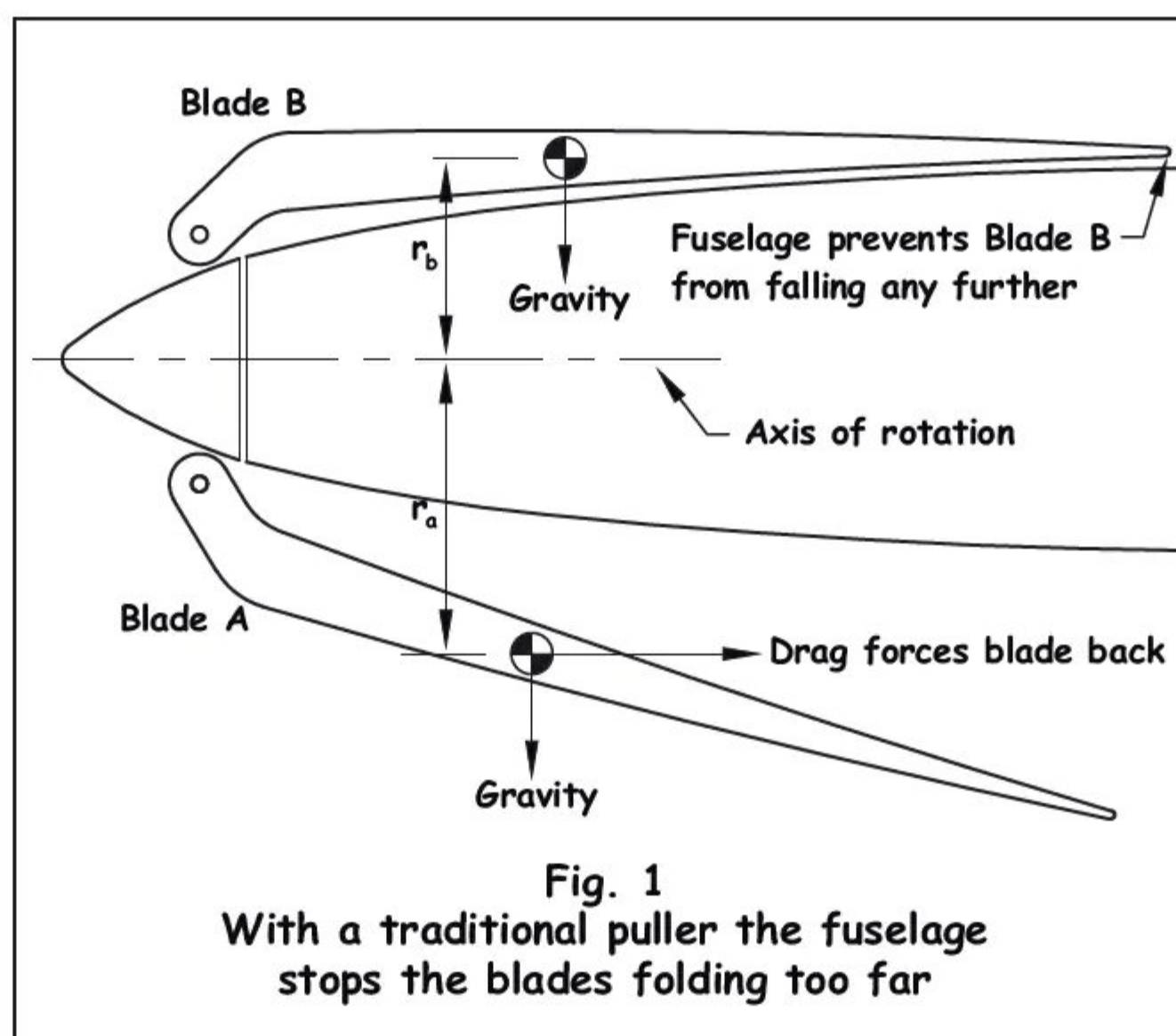
Another possible risk is a blade swinging too far forward whilst launching and catching the elevons on start up as seen in Fig. 3.

We need to restrict the movement of the blades to stop both these scenarios from happening.

## THE SOLUTION

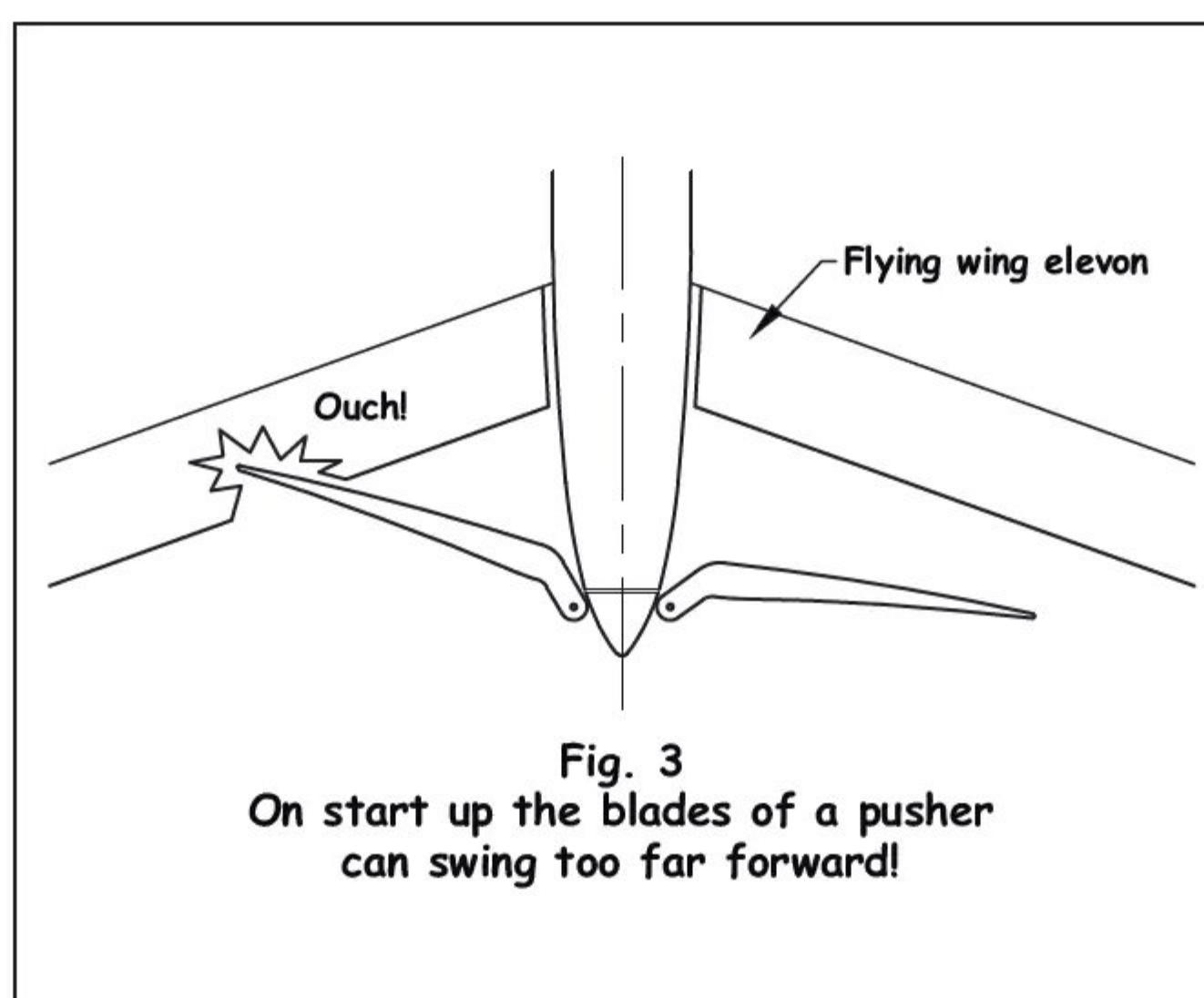
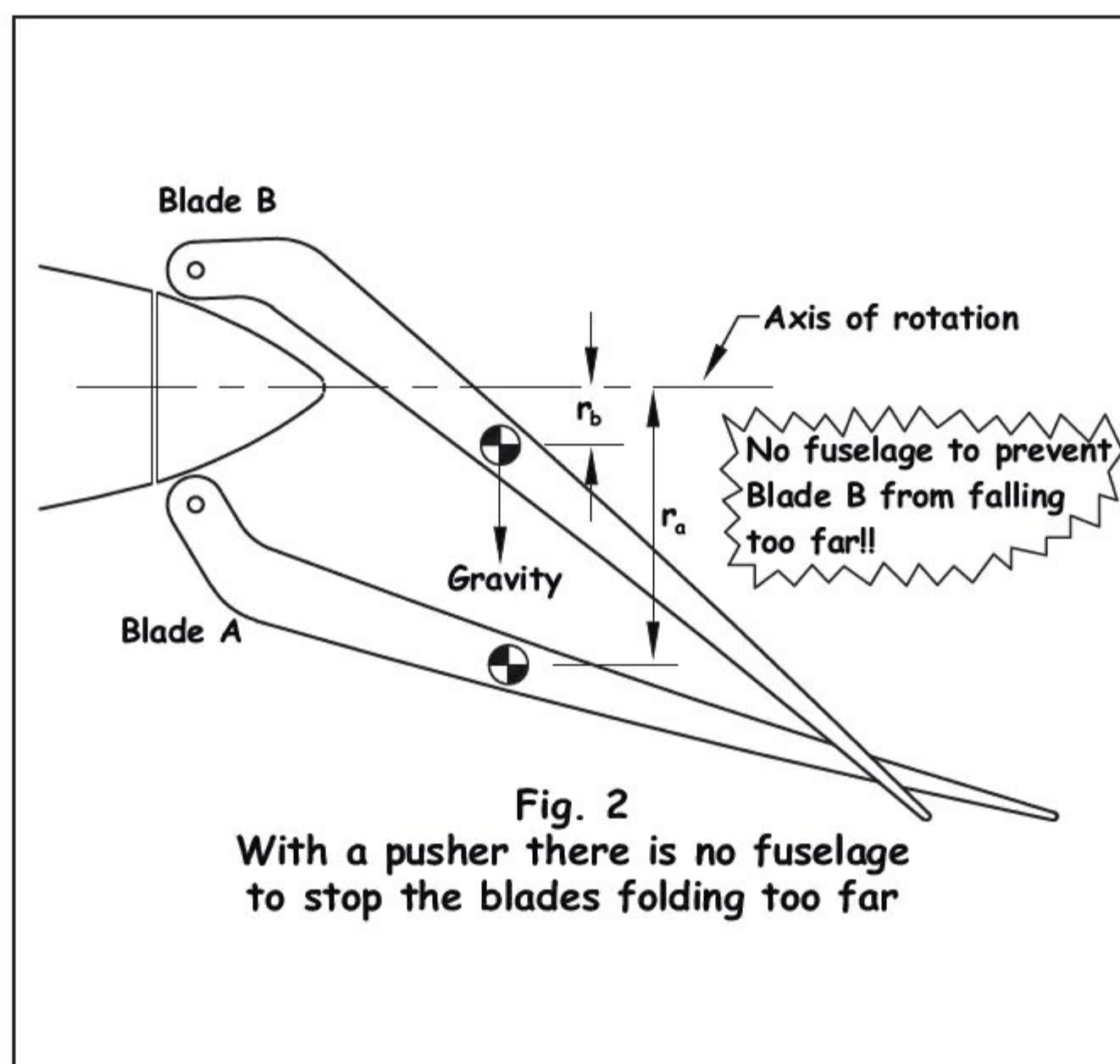
There are lots of different folding prop yoke/spinner combinations available so during my flight testing of Hi8us I came up with three solutions to this folding prop conundrum which should cover most of them. The accompanying photos show the idea but here are some additional points to note:

1. Add thin strips of carbon fibre sheet or ply on both sides of the yoke whilst assembling the prop and spinner



combination. Use trial and error to gauge the length of strip required to limit the blades movement in both directions.

2. Slip suitably sized O-rings onto the yoke before fitting the blades. Use trial and error to choose the right diameter, thickness and number of O-rings.



"We need to restrict the movement of the blades to stop both these scenarios from happening"

3. My favourite method is a short section of shrink wrap tube shrunk onto the yoke before the blades are fitted. Cheap and simple!

It's worth noting that the risk reduces as prop diameters drop below 10" (250 mm) as the blade's CG is closer to the axis of rotation and the blade's root shape and spinner can prevent a blade folding too far. But it is probably still prudent to apply one of these solutions, just for peace of mind! ■



Without a fuselage to fold against a pusher folding prop blade could fold too far, putting the blade's CG on the wrong side of the axis of rotation.



Occasionally on start up a folding prop blade can shoot forward on the first rotation. Not a problem with a traditional folder in the nose but it could take chunks out of the wing on a pusher.





Thin carbon fibre strips added to either side of the yoke limit the blades movement.



Once fitted the thin carbon fibre strips look unobtrusive but do an essential job.



Thin ply could be used instead of carbon fibre strips.



O-rings slipped onto the yoke before the blades are fitted limit the blades movement, but the diameter and thickness of the O-rings needs careful selection to achieve the desired result.



My preferred solution is to use shrink wrap tubing which is cheap and easy to fit. This is the method I use on my Hi8us flying wing.





First seen at the Nottingham 'Kidz' thrash in 2024, Caitlin's piloting of the ubiquitous Crack wing was enthusiastic to say the least! Andy Symons Photography.



Teddy Williams and another pilot show us their delta constructions. The larger one suffered a fuselage break that ended its day prematurely.

# BIG UP THE INDOOR

**Dave Goodenough** reports from an indoor fly-in especially arranged for the kids - young and old!

Words: **Dave Goodenough**

Photos: **Dave Goodenough, Andy Symons**

**L**ittle more than a week into January 2025 I was woken from my wintertime hibernation and after sorting vittles for the day ahead, I thrust forth into the snowy wastes of the Staffordshire Moorlands, being told to 'get on with it' by my wife and Smaug impersonator. Duty called and there was fun and fury on the cards. I just had to wend my way to Coventry and find the indoor venue booked to contain the rampant enthusiasm of some thirty-five young pilots, plus their family and friends.

Following the roaring success of the 'Big Up The Kidz' events at Langar airfield, and also the Southern Model Show in 2024, Dan Hampson - recipient of a well-deserved BMFA award - had gathered the crew together again and organised an indoor event at the Sports Connexion site at Ryton-on-Dunsmore. I take my beanie off to him as he'd set the pilot entry limit to what I thought was the challenging level of thirty-five. In the

end there was no reason to be concerned as the entrants' list filled up in record time.

Let's be clear here. Many 'adult' events and competitions garner less than a third of Dan's target and it was very clear indeed that many more youngsters wanted to join in, but the limit had to be set. Model flying is very much alive and it's the youngsters that are 'leading the charge'.

## LATE TO THE PARTY

Despite an early dart for many the foul, freezing conditions slowed a lot of attendees, me included, and several arrived on site after the 10 am start time and then scrambled for pit space. My first pass along the line wove through the mayhem and bounced off enthusiastic kids and helpful parents/assistants - it was absolute bedlam! The flying arena was no better, being given over to 'free' flying of anything that might take to the air and stay there under whining electrical power.

With so many over the 'live' side of the barrier tape and torturing their transmitters, I was able to chat to some of the support 'staff'. I thought my trip was involved, but one crew had crossed the snowy divide beyond Manchester from the land of hammers, Warrington, a fair bit further than my own troublesome trek. Another had wandered up from the balmy rolling hills of the Cotswolds. The mix of accents was as diverse as some of the model designs, from near-Scouse to Estuary English.

## COMPETITIVE

A pair of tables were occupied by frantic fettlers, the two teams tasked with constructing, then flying, identical Yak 55 kits in a build-off. I returned from time to time to see how they were progressing but was oft chased away like a hovering and bothersome horsefly. The cyano accelerator, being wielded like bug spray, was very effective!





*'It goes like this...' Explanations before complications of the 'bits knocked off' kind.*



*'Mind the camera!' The cavorting canard 'RAF-1' takes aim at yours truly. I escaped with just a cleft beanie.*

The team members seemed to be in a state of flux as each time I looked there seemed to be someone different waving glue, fixing parts or peeling cyano off unintended parts, mostly fingers! According to Dan's programme, both models, at the given

"My first pass along the line wove through the mayhem and bounced off enthusiastic kids and helpful parents/assistants"

completion time, should be 'Ready to fly a circuit, perform a loop and roll, plus prop hang, then land'. All simple stuff then!

I was unreliably informed that William Lawrence and Ashton Boycott formed Team One, the other trembling trio being Adam Broomhead, Daniel Ellison and Luke Oliver; others seemed to drift in and out of their orbit unannounced, with little help forthcoming.

Succumbing to yet another puff of accelerator, I buzzed off.

#### LET'S CRACK ON

With fingers, electronics and models warmed up the mayhem reached epic proportions sometime after 11 am. A multitude of 'Crack' wings were posed, placed and positioned



*The build-off was a hoot, what with changes of 'staff' wandering off to fly at times. All good fun had by all.*

before 'GO!' was given and the damned things erupted all over the place. It was completely bonkers!

Nominally described as 3 x 5 minute combat sessions, it was near-impossible to keep the Mk.1 eyeball and camera focused on anything, with any variation of slow and devious flying to 'full chat and flat out' rocketing around the arena periphery. The clatter of impacted foamies mixed with pilot and helper laughter,





*Model of the meeting was definitely the Crack wing. Fast, furious and virtually indestructible it was a joy to many and a bane to others.*

“Nominally described as five-minute combat sessions it was near-impossible to keep the Mk.1 eyeball and camera focused on anything”

and the sort of ribald comments usually contained within a well-oiled pub! Out came the cyano/accelerator again, with crews ducking the manic models and gathering the parts forcibly removed by impact and beginning to litter the floor - it was carnage!

At one point there was a huge ‘BOOM’ that sounded like either the crack of doom or some kind of death-knell. In fact, it was neither, just a terrified ‘Crack wing’ escaping the melee and flying full tilt into the overhead and unused hot air ducting. Both model (disfigured nose) and duct (dislodged dust) survived the encounter.

That unused ducting was a challenge for many, as by ‘eck as like it were damnably cold inside the hall. Many less than active participants were wearing layers of clothing more suited to arctic climes, yet most of the youngsters were prancing about in apparel little more than spring wear. One tiny morsel seen shivering yet still scurrying about with unbounded enthusiasm was little Ruby Hampson, bossing everyone about and adopted by one and all as mascot for the day.

With ‘Time!’ called on the combat session and models by the dozen being repaired, another open fly-for-all began, being barely differentiated from the previous madness except by size and shape of model, murderous intent of wilful dismantling and the amount of aerial bolides all attempting to occupy the same airspace whilst largely staying in one piece.

#### **RIDICULOUS TO SUBLIME**

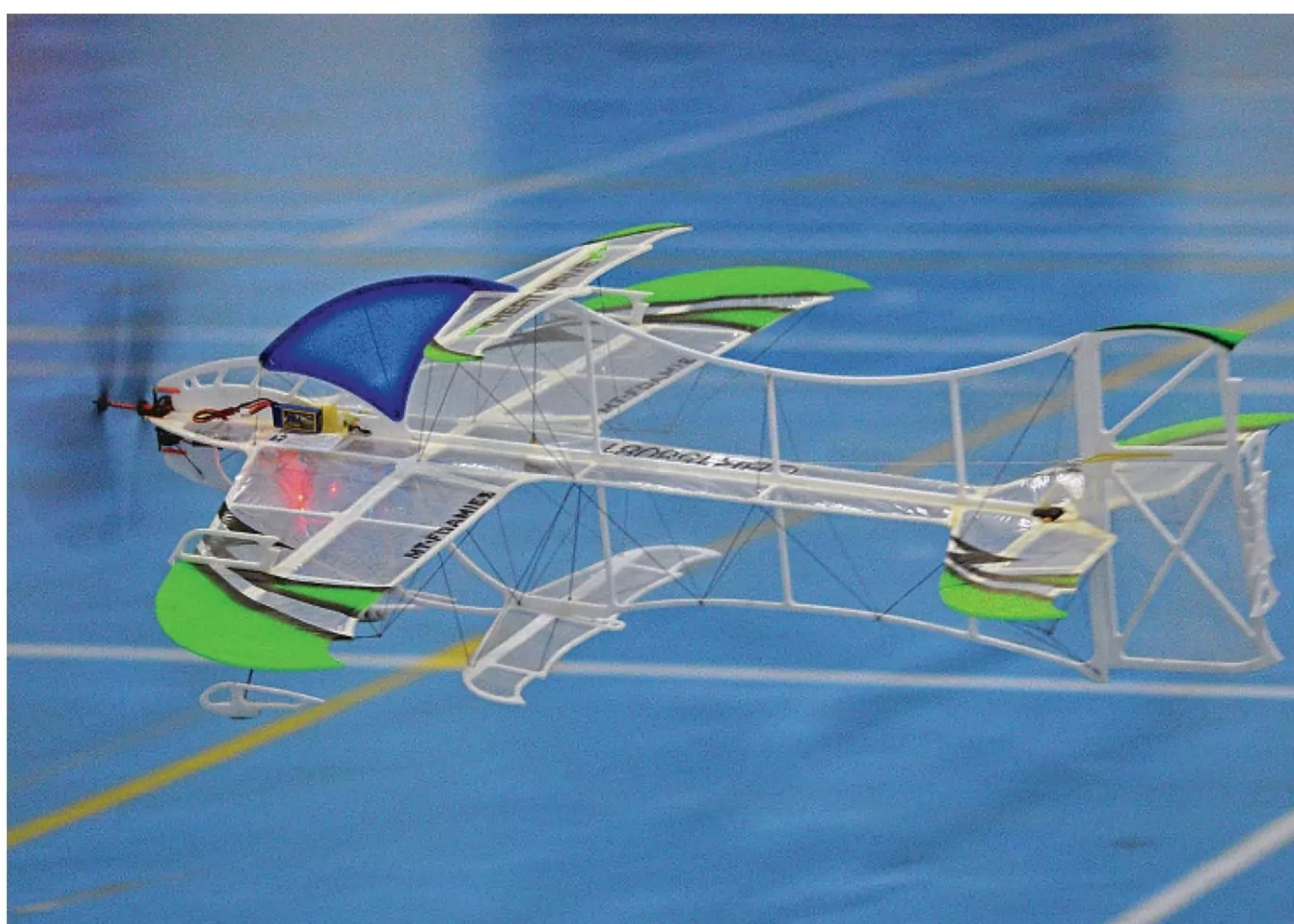
Almost an hour of Depron and EPP shredding, prop breakage and battery frying later, ‘Wind it up!’ noises were heard. A short period was



*Ruby eggs Teddy on to perform aerial antics amongst the gathered flying thuggery. He acquitted himself admirably.*

set aside for a display of superlight F3P model pairing. These models have their own rarefied niche within competition indoor flying and are oh-so graceful.

Luke and Charlie belied their tender years by displaying these large yet ultralight confections of fretted foam, ultra-thin film and cobwebs of carbon fibre rod. Impossibly slow in the air, they performed aerobatics in what can only be described as a dainty display, despite the occasional snap manoeuvre undertaken in slow-motion. No torturing of the air by howling and wailing



*Ultralight and very slow and beautiful to watch, this F3P competition device was utterly mesmerising in the air.*





*Ex-factory pristine, the mower began its decline in short order. The general consensus was that much more power was needed.*



*The eventually successful Space Shuttle was a spectacle to behold, especially when it looped!*

overpowered outrunners, the power was applied 'just so' via large and slow propellers, driven by just enough grunt. For those that have never seen these aerobats in action before, the display was nothing short of mesmerising. Magical stuff!

With the ultralights returned to the pits to the sound of well-earned applause there was a distinct fidget going on within the throng. It was time for the 'Homebuilds & Weirdos' to attempt to commit aviation...

### YOU MUST BE JOKING!

There had been mutters of 'Barmy', 'It'll never fly' and 'WOT?!' heard as people perused the 'Design It Yourself' end of the model flying spectrum, there being a dozen or so attempts at reinventing the wheel strewn about the pits. Never mind the elder sage comments, the kids didn't care and just wanted to have fun! A few designs were recognisable, others vaguely resembled aircraft, but all were obviously attempts to get power to overcome



*Held aloft before its release the 'X-thing' shows its curious form. It flew magnificently before succumbing to yet another Crack attack.*

the shortcomings of what would prove to be tortured aerodynamics.

One deviant device obviously had garden shed origins as the 1:1 John Deere rotary mower, lovingly scaled from life by Joe Hampson, was presented as a prime example of how **not** to do it. Seemingly almost the weight of the agricultural donor design, the sagging foam edifice was launched o'er the sports hall 'field' and refused at the first hurdle - flight! The clatter as it smote the floor was loud and the laughter louder still. Several launch attempts were made, none succeeded, and each arrival saw more bits depart the device. It retired hurt, probably fatally.

Impossible to miss was Riley Howe's enormous-for-indoor Space Shuttle that had been lurking in an out of the way corner. Brought forth, the very semi-scale floppy flier looked all kinds of wrong, yet the prop-in-slot layout certainly proved that thought had gone into the design somewhere. With its outrunner screaming, all four sheets of Depron that made up the aeroplane seemed to work in unison as the black-n-white beauty (?) lurched forth, sinking slowly to the floor. Some rapid re-propping saw the crew present the thing for another attempt. 'You can do it!', was bellowed and the Rx sensed the noise stick being shoved to full. Launch, sink, thank you ground effect, and the device was airborne - just! Nursed around the circuit, the

effort proved too much and once again it sank ignominiously to the floor. It was back to the pits for a rethink, maybe more cells in the LiPo and yet another re-prop.

An 'X' configured, forward swept biplane/quadruplane/wossname had been threatened upon us by Luke Oliver. Uncertain of outline and definitely a torture to decide which way was 'top', it was fired up and launched with little fanfare. Eyebrows were raised, various unrepeatable utterances made by elder attendees, but fly this very different device did - and very well indeed. As flight experience grew, so did the antics it performed, including vertical take-offs. It was later wounded in a Crack attack and taken away to sulk.

### WITCHING HOUR

Flown in from her lair near Pendle and missing the Halloween deadline by several weeks, a foul presence fired up her broomstick, cast a hex upon the throng and proceeded to circulate the hall with malice aforethought! Aply flown by Alex Ames, the Haerial Hag zipped about and enjoyed her awayday before returning to her pit-side hideaway to have another hubble-bubble brew-up. A 'close encounter of the Crack Wing kind' miffed the madam, though she returned to the indoor skies later.

Rotary mowers got another chance with a 1/3 scale (?) version in virginal white foam. This device defied expectations and flew incredibly well, ✈





*The Wafting Witch awaits her 'spell' in the air. Incantations, hexes and runes were cast about but failed to ward off Crack wing meddling by the local warlocks.*



*The shattered shuttle fights for flight under extreme Crack provocation – survival is in doubt.*

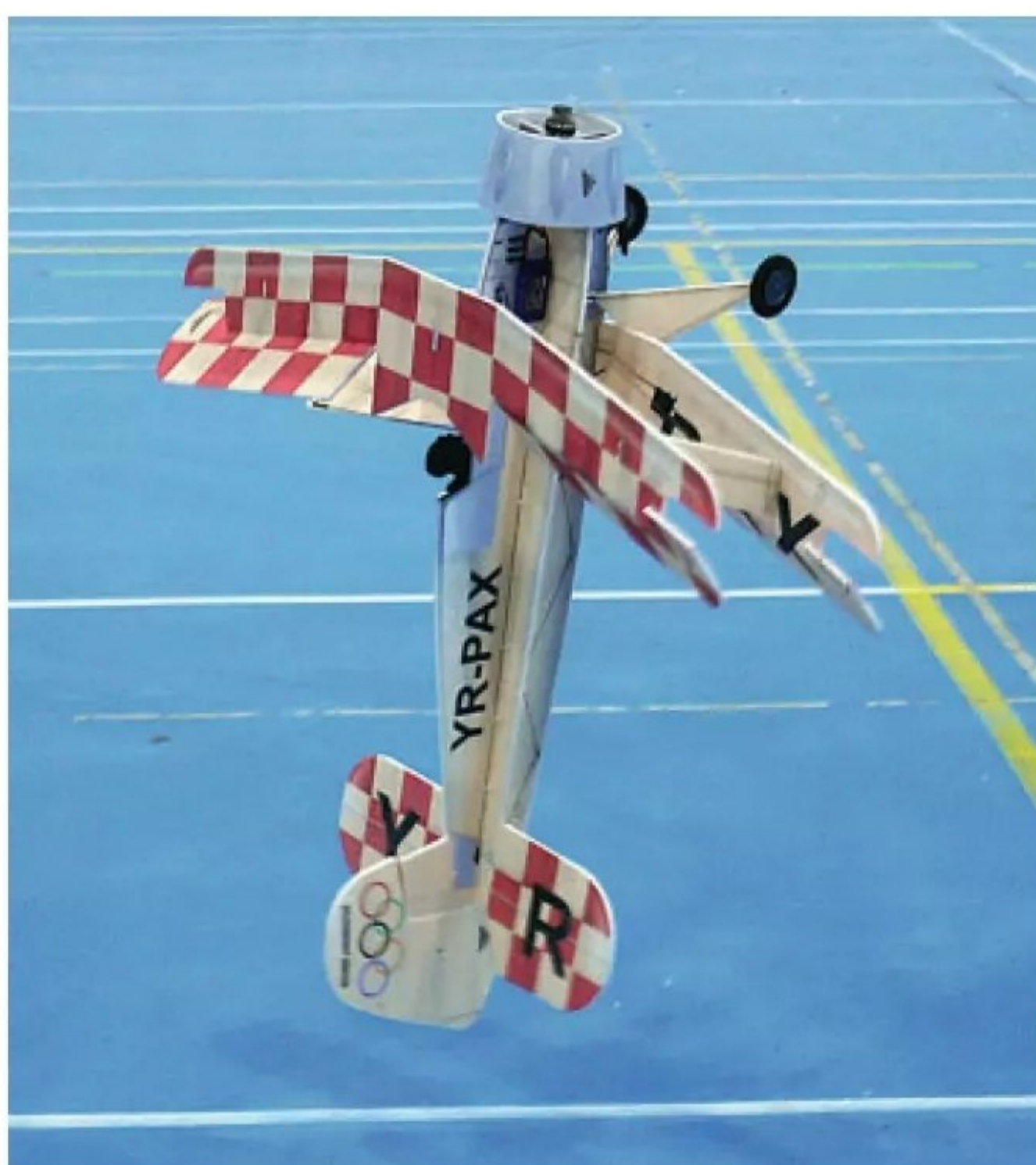


*Furious fettling on a well named model. It was indeed bloody crazy in the air!*

if a tad wayward at times. It looked like the young pilot was having a hard job keeping up with it. Clayton McAulay fielded a bright yellow and very stable 'Disc' whilst Teddy Williams piloted a French rounded, Mirage-shaped delta until



*Battle scarred and held in reserve this little Wildcat was a rare scale treat amongst the simple foamie bolides.*



*A rare and pretty Jungmeister dances in front of the camera. One of the better performers on the day, to my eyes.*

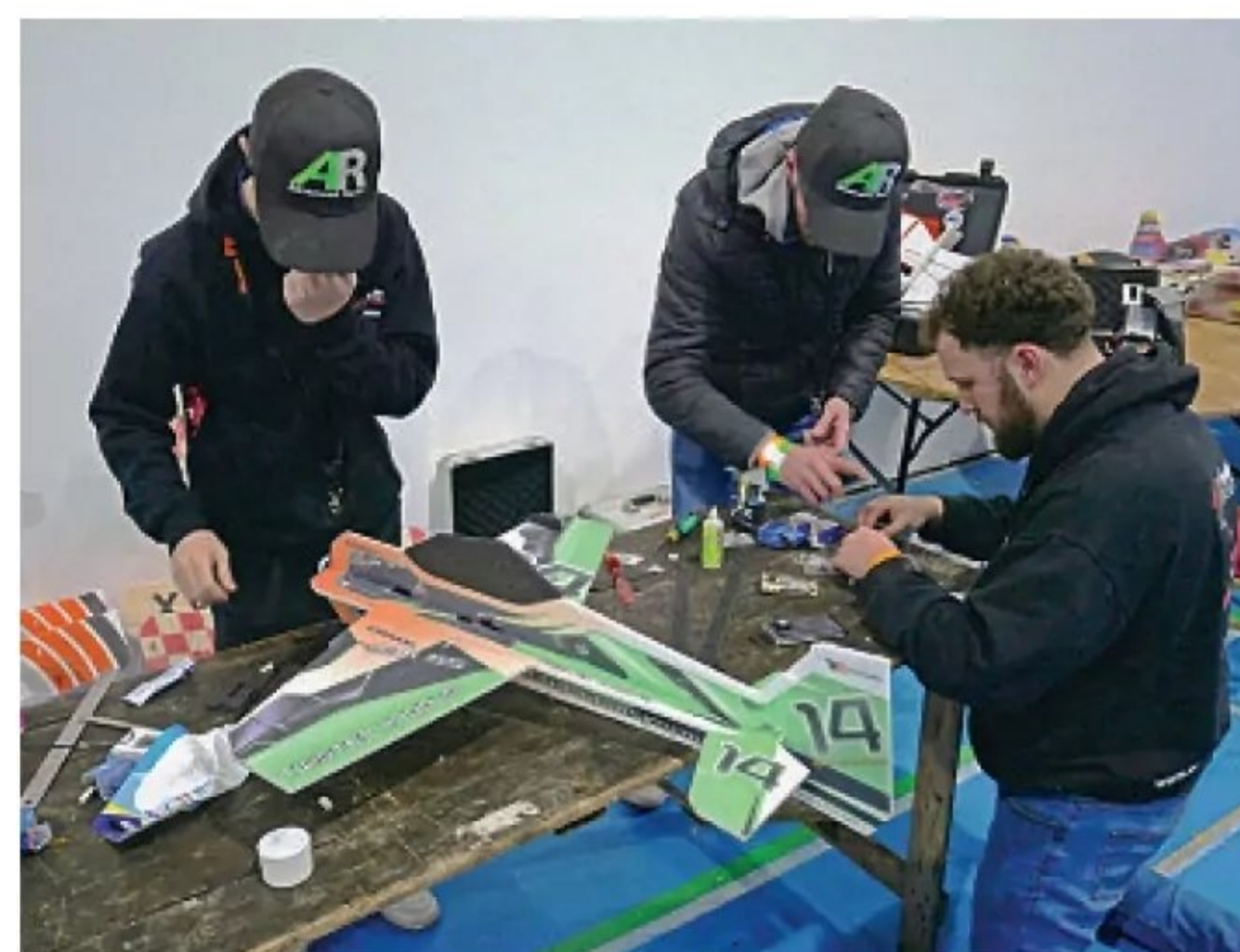
“Had these youngsters not become worn out yet?”

an unintended impact put paid to its day by snapping the fuselage.

The hooligan brigade began to fidget again and their Crack wings were unleashed. More of the same antics, regular impacts and confettied foam ensued before the giant Howe 'Shuttle' joined the fray. Immediately seized upon as a target, the spaced-out delta suffered nudges and impacts, and even succeeding in looping, whilst trying to evade those combat hungry, swept wing killers. The Depron delta finally collected a wing in its fractured nose before sinking to the floor, defeated.

#### DONE & DUSTED

The build-off pair were called forth to account for themselves, looking oh-so purposeful - if you ignored the missing wheel on one model. Flight tested, attempting the allotted tasks and being generally thrashed, one of the Yaks had to take top spot and the prize went to Team One, William Lawrence and Ashton Boycott. Other awards were handed out to worthy recipients and then the mayhem



*Getting there! Glued fingers, dropped parts and the stench of cyano kicker over at the build-off bench.*



*The small but ever-energetic pair of Teddy and Ruby flew possibly the tiniest model at the event and enjoyed every moment. Andy Symons Photography.*

recommended with a renewed frenzy. Had these youngsters not become worn out yet?

Relegated to the old fart bench for a bit of R&R, I scribbled more notes before finishing my nibbles and began to gather up my accoutrements, all whilst the enthusiasm of the young pilots continued unabated, strewing yet more forcibly detached model parts across the hall floor. I tottered out, defeated, and left the wildness behind.

#### UNBELIEVABLE

There's no other way to describe the 'Big Up The Indoor' meeting. It was proof positive that this wonderful hobby is alive and well, with huge enthusiasm burgeoning amongst today's youth. You may not like the total domination of foam and ready-made kit models but seeing several own designs flown at the event proves to me that the will to design and craft aircraft is safe with the youngsters. Many will fall by the wayside, but some will no doubt go on to far better things. All need to be encouraged.

Listing all the young pilots and the disposition of prizes and handouts would be possible but would take up the column inches that are best used to describe the manic mayhem at Coventry Connexion. Suffice to say, you know who you are, you all had a whale of a time and are counting the days until you can do it again!

Dave Goodenough: [coetquidan@yahoo.com](mailto:coetquidan@yahoo.com)



# Composite RC Gliders



E-Versions available

**KST**  
DIGITAL SERVO  
Official Seller

Newsletter sign up:



+49 (0)152 31 700 200

compositercgliders

composite\_rc\_gliders

@compositercgliders

info@composite-rc-gliders.com

www.composite-rc-gliders.com

## Balsa kits designed for building pleasure and hours and hours of flying fun!



Carrera 1600mm £89.95



Snowy E 2M £84.95



Wallaby 1260mm £89.95



P51 Mustang £129.95



PMP are renowned for prompt service, kits and accessories and our helpful advice.

## Phoenix Model Products

Online shop: [www.phoenixmp.com](http://www.phoenixmp.com)

Tel 01626 332287 email: [sales@phoenixmp.com](mailto:sales@phoenixmp.com)



Find everything you need to take your RC gliders to new heights. From F5J, DLGs and slope soarers to Dualsky motors, GM props, MKS, KST & CHA servos and much more. HyperFlight has you covered!

**KST**

**MKS**

**CHASERVO**

**MEGA** MEGA MOTOR

**DUALSKY**

**LEOMOTION DRIVES**



[www.hyperflight.co.uk](http://www.hyperflight.co.uk) WhatsApp: +44 7821 351341

Reliable fast shipping





# SUPERMARINE SPITFIRE MK.IX

After flying XFly's prototype desert schemed model **Kevin Crozier** finally manages to see sky below the alternative D-Day version's wheels!

Words: **Kevin Crozier**

Photos: **Kevin Crozier, Rob Bennett**

**A**t the end of my assembly review of the D-Day version of XFly-Model's Spitfire Mk.IX in the April issue I signed off with the promise to "...bring you up to date with how the 'Johnnie Johnson'

*Spitfire flies as soon as I can.*" Now, finally, I can make good on that promise after several weeks of waiting for the right conditions.

Originally, I had planned to make this model's maiden flight from the tarmac runway

of a Cotswold based club that I had recently joined, as a follow up to the successful first outing of the Spitfire's desert liveried sibling at the same strip earlier this year. However, work commitments and bothersome wind





*Due to the narrow track undercarriage and small wheels the XFly Spitfire is best flown from short grass or tarmac. Even this well-manicured turf is starting to get a little long for safe take-offs*



*Well caught! This roll to the left on take-off was anticipated by KC after the embarrassment of failing to do so first time out.*



*After a few trimming circuits with the wheels down the Spitfire was starting to show its true potential.*



*The review model replicates MK392, the aircraft which 'Johnnie' Johnson flew during the Normandy landings, complete with invasion stripes.*

directions (every which way but the right ones!) conspired against me.

I am also fortunate to be a member of another club in Gloucestershire with excellent facilities and a dedicated grass strip for model flying (no livestock allowed!) but I had ruled this out for early season testing as the grass was still a bit long and needed its first short mow. But a spell of dry, if windy weather quickly dried things out and the strip was ready sooner than I had expected. I took advantage of the

“It was a seriously lucky escape and kudos to XFly-Model for making such a tough aeroplane”

excellent ground conditions to test fly the XFly Tomcat, as reported in the last issue, which took off well from the short grass. Buoyed by my success with F-14, which is smaller than the Spitfire, I resolved to return the following week to maiden the Supermarine fighter. Rather stupidly I didn't consider the rapid growing conditions that just a little sun and a sprinkling of rain would have and when I returned just a few days later the grass was just a bit too long for a successful maiden.

#### MAIDEN OVER

I'd like to write that common sense took over at this point and after the Spitfire bogged down in the slightly too long turf not just

once, but twice, I put her back in the car to try another day. But no, that would have been far too sensible...

After aborted take-off number two, but being so determined to commit aviation, I hadn't realised that the gusty wind had swung by almost ninety degrees, hitting the poor Spitfire side on. Upon powering up for take-off number three, this time the pristine foam fighter managed to get rolling, but rather predictably to those watching she was hoisted sideways by a strong crosswind gust which I was far too slow to react to. The resulting cartwheel left her without a rudder, one elevator dangling and a nasty crack around one side of the fuselage just forward of the tail.

Back at home I checked the airframe for any other damage and I was pleased to see that there was none. This was a big surprise as the one-piece wing had taken the brunt of the crash but apart from a couple of minor scratches on one wingtip it was otherwise unscathed. I was also expecting to see some damage to the scale-like four bladed prop but other than having to dig some mud out of the mounting bolt hole in the front of the spinner there was no damage in that area either. It was a seriously lucky escape





*This is more like it! Caught on a fast flypast by Rob with its wheels up and four-blade prop nicely blurred.*



*I used a Voltz 4S 4200 mAh LiPo when test flying the new Spitfire. It's the perfect weight to avoid needing to add any lead in the nose.*



*Half flap is all that's needed for a well-controlled approach.*

“I don't know why but the sight of a Spitfire rotating around a long, slow barrel roll is so pleasing to watch”

and kudos to XFly-Model for making such a tough aeroplane.

After fixing the damage at the tail and rehangng the rudder using hinges from my 'those will be useful someday' supplies the Spitfire was ready to test fly once again.

#### **A FEW WEEKS LATER**

Finally, a day arrived which fitted in with my work schedule and also promised a reasonably consistent wind along my preferred tarmac strip. But then my kindly clubmate, Rob pinged me a message to say that the grass at my other club had just been cut. Add to that a 50% chance of rain high in the Cotswolds and it didn't take me long to change my plans to try the Spitfire once again from grass. The same 50/50 risk of some wet stuff hung over the grass patch too, but that club has a large, covered charging/seating area under which to take shelter. As it turned out the sun shone for most of the day and the conditions were pretty much perfect for the model's first flights.

Besides, I needed to fly the Spitfire from grass anyway as just being restricted to tarmac wouldn't have made her a very attractive proposition to most RCM&E readers.

#### **UP & AWAY**

This time I made sure the fuselage was lined up into wind. Power was gradually applied, holding the tail down with up elevator whilst correcting any sideways swing with rudder. This was far less noticeable on grass than on tarmac and the Spitfire was easily kept into wind. Easing off the elevator soon saw her lift into the sky, but this was quickly followed by a roll to the left – straight towards the clubhouse! This time I was better prepared and a hefty dose of right stick hauled her to the right and she was soon climbing up to a safe height for trimming.

Despite the untidy getaway, which I have since put down to being too gentle with the power, not wanting her to tip over and damage the prop, the aileron trim was quickly sorted. But she did have a strong desire to head for the clouds, which needed several circuits and multiple clicks of down trim to sort out.

With the Spitfire now flying pretty much hands off it was time to retract the main wheels and guide her through some typical warbird manoeuvres. Just as with the desert schemed model I had flown before, the new D-Day version didn't disappoint, and she was soon looping and barrel rolling with gusto. I don't know why, but the sight of a Spitfire rotating around a long, slow barrel roll is so pleasing to





Flaring out for another smooth three pointer.

watch, and this new XFly model certainly lived up to my expectations.

All too soon my Tx timer was sounding so I dropped her into the circuit and selected half flap, which I knew from past experience with

the desert model was just about right to slow things down for a well-judged landing. As with her sibling the D-Day model was easy to control all the way down on finals, flaring out nicely for a satisfying three-point landing.

#### FINE TRIMS

After retrieving the model, I was expecting to see quite a lot of right aileron trim and a large dose of down elevator following all the trimming circuits she required. So, I was a bit puzzled to see that only the merest of deflections had only been input!

I think this is because my new Futaba transmitter has much finer trim steps as standard than my previous JR and Spektrum sets. Add to this the fact that I was feeling more than a little nervy after seeing the model crash



A clear view of the neatly applied invasion stripes.



A final look at the XFly-Model Spitfire Mk.IX D-Day fighter.

## DATAFILE

|                            |                                                                                                    |
|----------------------------|----------------------------------------------------------------------------------------------------|
| <b>Model</b>               | Supermarine Spitfire Mk.IX                                                                         |
| <b>Model type:</b>         | ARTF warbird                                                                                       |
| <b>Manufacturer:</b>       | XFly-Model                                                                                         |
| <b>Distributor:</b>        | CML Distribution <a href="https://www.cmldistribution.co.uk">https://www.cmldistribution.co.uk</a> |
| <b>RRP:</b>                | £299.99                                                                                            |
| <b>Length:</b>             | 1010 mm (39.8")                                                                                    |
| <b>Wingspan:</b>           | 1016 mm (40")                                                                                      |
| <b>Flying weight:</b>      | 1350 g (review model 1790 g)                                                                       |
| <b>Motor:</b>              | 3541-KV745                                                                                         |
| <b>ESC:</b>                | 40A                                                                                                |
| <b>Prop size:</b>          | 11" x 7" 4-blade                                                                                   |
| <b>Servos:</b>             | 9 g x 6                                                                                            |
| <b>Functions (servos):</b> | Ailerons (2), Elevator (1), Flaps (2), Rudder (1), ESC, Electric retracts                          |
| <b>LiPo:</b>               | 4S 2600 - 4000 mAh (review model Voltz 4S 4200 mAh)                                                |

on its first take off and it undoubtably took me a good deal longer than usual to settle her down and to start enjoying flying this agile fighter.

Subsequent flights have shown that the XFly-Model Spitfire Mk.IX D-Day version is just as fun and pleasant to fly as its desert camouflaged sister. As with all R/C Spitfires fitted with narrow retracts in a scale position (opening outwards, not inwards!) take-offs do need to be undertaken with care, especially if you want to preserve that nice four-bladed prop! But you soon get used to how she handles and then this graceful R/C model Spitfire really comes into her own.

Could this be the first in a new line of WW2 warbirds from XFly-Model? I certainly hope so! ■





## ANTHEM DOUBLE ACT

Here's Mark Allen and I with our BJ Craft Anthems at the Bury MFC. Both models had their maiden flights last September, but we have only just managed to get together for this photo. I introduced Mark to F3A

competition and we both now fly in the UKF3A National League in the FAI (P25) class. Our Anthems are powered by Advverrun contra drive units with Debowski D3 ESCs and 10S 5000 mAh flight packs. Mark won the FAI

(P25) class at the last UKF3A Nationals, as well as flying helicopters and EDF jets. Photo is by Steve Tarrant.

**Peter Jenkins**

## BALSACRAFT SEA FURY

As a regular RCM&E reader I thought I would send you a few photos of my latest build, a Balsacraft Sea Fury.

A few years back I built the Bearcat that SLEC supply the kit for. It handles really well and so I have been looking for other Balsacraft models to build. I noticed that the plans for the Sea Fury were available online, however I was unsure where I could locate a canopy and cowl. Fortunately, another modeller had posted a picture of his model which used vac-formed parts from Vortex Vacforms. I also contacted SLEC about getting the fuselage formers cut, which they helpfully provided.

The original plan was for a brushed set up using nicads. Power is now provided by a brushless motor powered by a 4S 2200 mAh LiPo turning a 9 x 6 prop. A fixed undercarriage has been added for convenience.

On the initial flight the model was climbing and the test pilot, Steve Green ran out of down elevator trim. Following adjustments a second flight was made and this time the model was more controllable but was still climbing. Afterwards it was discovered that some of the stick-on weights in the cowl had fallen out in flight. Further adjustments were made, adding down thrust to the motor and epoxying in 100 g of nose weight. Then it was a case of waiting for another suitable day.

In early April the weather at the field in Langar was ideal for a test flight. Once again Steve tested the model and this time, after trimming it out, he reported that the model was flying well.

**John Hurdle**





## CARRIER DECK DISPLAY

Instead of setting my EDF jets on a plain table or the grass at our events I figured why not make something to add some 'eye candy'. It's a scratch-built carrier deck. My friend 3D printed the crew and I painted them. The model on the right is a Freewing twin 80 mm F-14 with upgraded

motors, custom paint and a 3D printed cockpit. It has operational flair dispensers and I modified the canopy to open and close.

On the left is a Freewing 90 mm F-18 in the custom livery of Maverick, Top Gun. There are almost 100 tie downs on the deck per section.

I am a member of the Shreveport Area Radio Kontrol Society (SHARKS) R/C Club in Louisiana and my carrier display took Top Honors at the Sharks' recent fly-in. The other pilots were in awe and interest was unbelievable - they had never seen anything like it! Maybe I started something?

**Gilbert Gerstmann**



## BUSY BEE!

I thought you might be interested in some pics following my latest test flights. All survived!

The latest models included a couple of 'free plan' builds, an EPP kit, a wallpaper covered combat wing and an own design mini fun fly - there's always something different to do!

**Martin Wood**





RC Factory 'Step One Baby' prior to its first very successful test flight.



# BABY STEPS

Words & photos: **John Stennard**

A small and simple model gives **John Stennard** a surprising amount of satisfaction

**L**ast month saw me preparing for the first flight of the Step One Baby and I'm pleased to say the fledgling has not disappointed. However, from egg to first flight was a slightly more complex process than I had anticipated. This has nothing to do with building the model which, aided by the on-line manual (containing no less than 50 photos!) was very easy.

After 75 years of model building and flying, can you still experience euphoric moments? The answer is yes, you definitely can, and size really doesn't matter, which is a good thing! I had high hopes for her/him (well, you can't call a baby 'it', can you). My model came very speedily from AT Models and with minimal beautifully coloured foam parts and CA recommended for the construction, other considerations would take up more time than the assembly.

The 500 mm wingspan and 35 g flying weight rang indoor bells for me, although the video clip shows it flying outdoors. Okay, it's a high wing, pusher motor design, with a V-tail and that's quite a common format. But in the case



of the Baby details are different as she uses two pusher motors mounted on the wings. Not only that but she is intended for one of the simplest control systems, namely two motor proportional throttle for pitch and yaw.

There are two main reasons for this: first, it's very simple and, second, it's very lightweight. Another consideration is that it's possible to utilise redundant micro-drone parts for the control system.





*Twin trailing edge 6 mm coreless motors are the Baby's special feature, fitted with 30 mm handed props.*

"I was delighted with the appearance of the model and at the earliest opportunity I took her out for her first flying lessons"

Some ancient mariners - sorry, modellers - will recall the Silverlit Palm Z micro biplane that introduced us to simple proportional steering combined with throttle. This system is still in use by many commercial, micro size RTF indoor/outdoor models and can work very well. The only disadvantage is that when using the motor speed for both height and yaw, precision flying is not always possible. This is not necessarily an issue outdoors but can be when flying indoors, particularly if the model is not a 'floater'.

The design of the Baby is very clever and no carbon fibre (CF) bracing is required. The wing can be glued in place or, as I did, made removable.

What I wanted to do was spend as little as possible, or preferably nothing, on the control system. After some experimenting with ex-micro drone flight boards and motors, I decided this would not be my route. Another suggested control system is using a micro receiver (micro-Rx) with two micro 2A ESCs. This requires some quite complex transmitter (Tx) programming and again was not for me. I took a look at the Microaces special receiver (Rx) with two motor outputs and this would have been fine, but I didn't want to spend the required money. So, it was back to a traditional system of either a Vapor type Rx module or a micro-Rx with integral ESC and two micro

1.7g servos which I had to hand. Both of these solutions required cutting and hinging tailerons on the V-tail and, of course, adding CF pushrods, not what the Step One Baby designer had intended, I know.

The size and shape of a Vapor type Rx module was not very practical, so I checked out the micro-Rx and with either linear or rotary servos the weight of the combo was 6.5 g. The supplied motor mounts are for 6/17 mm size coreless motors and here I had many to choose from. I decided to use two 61 k 'hot' motors; these would be turning tiny 30 mm props, so I thought the extra revs might be useful. A 1S LiPo, from 180 to 300 mAh, is suggested but a 380 battery would fit if I needed more weight in the nose. Interestingly, small nose weights are included in the kit for trimming the proportional motor control version.



*My adaptation showing one of the two 1.7g servos. I used pushrods to operate V-tailerons rather than the intended proportional motor system.*



*Micro-Rx is in the rear of the cockpit space. The rest is used for the 1S 380 mAh LiPo.*

The 1.7 g servos were let into the fuselage and recycled control horns, Z-bends and 1 mm CF pushrods were fitted. The Rx slid easily into the quite narrow internal space in the fuselage and the Tx was set for V-tail control.

I was delighted with the appearance of the model and at the earliest opportunity I took her out for her first flying lessons. I found that she needed a 1S 380 LiPo right up in the nose to achieve a flat glide and then, with power on, we were up and away. The Step One Baby flies extremely well; she is very stable but



*I fitted an undercarriage as I prefer this for use indoors. Step One Baby proved to be a fine flier and is easy to pilot.*



responsive and my size of taileron was just right to give good control. So, with top marks after her outdoor flights, I had to wait for indoor flying to commence before I had the chance to try her in a different environment.

With indoor flying in mind, I decided to fit a lightweight undercarriage (U/C). I do like controlled take-offs and landings. The U/C only added a couple of grams, creates a minimal of extra drag and I think, in a way, actually improves her charming looks. The indoor test flights were very successful, with the Baby taking off, flying and landing beautifully. She can be flown really slowly or surprisingly fast and is delightful to pilot. Another winner from the RC Factory.

### MINI-IFO REFURB

A couple of issues ago I included photos of a Mini IFO that I had been given. I really like small models but was never convinced that the Mini IFO offered anything extra when compared to a full size IFO. As renovating the Mini IFO was going to cost me nothing, I decided to give it a go. A new ply motor mount to suit a brushless outrunner was fitted and a 12A ESC connected up. The FP3, 28/15, 1800 kV

motor with an 8 x 4.5 prop was more powerful than required but was the only spare motor I had available. A few minor repairs to the covering and frame were quickly made using a combination of cyano and parcel tape.

In no time at all the renovated Mini IFO was ready for test flying. The bare weight was 110 g and I decided to do the first tests with a 3S 600 LiPo; this is the size I use on my Nutball. Using this LiPo resulted in an AUW of 150 g. I thought a 2S 450 LiPo might be sufficient, but I would have had to make up a plug conversion lead and I was keen to get the model in the air. So, as the indoor season had not started, I took advantage of kind weather to test fly the Mini IFO outdoors. This brought back many happy memories of IFO flying in the past and I soon recovered my IFO flying skills. First, I found that she would cruise around happily in the light wind but as soon as the throttle was opened the model became a 'wild thing'. Well, they were made by Wild RC! This rapid transformation was particularly useful indoors and enabled the pilot to avoid contact with floors, walls, ceilings and, of course, other IFOs! This ability is not so essential outdoors where a steadier

style of flying is normal. But I did enjoy some wild maneuvering and found the Mini IFO easy to fly inverted - that's until you get disorientated!

We have become used to a more docile style of flying (well some of us have!) and I think a wild IFO let loose in the 'all foamies' session might be a bit hazardous!

### JUST A CLIKAWAY

At the moment James with his Synergy and I, with my Klik R2, are the only members at our indoor flying who have really lightweight FP3 type models. I know that some indoor meetings specialise in flying this type of model. During a busy evening, we can usually manage to squeeze in a couple of flights. However, two things have happened that might change this situation...

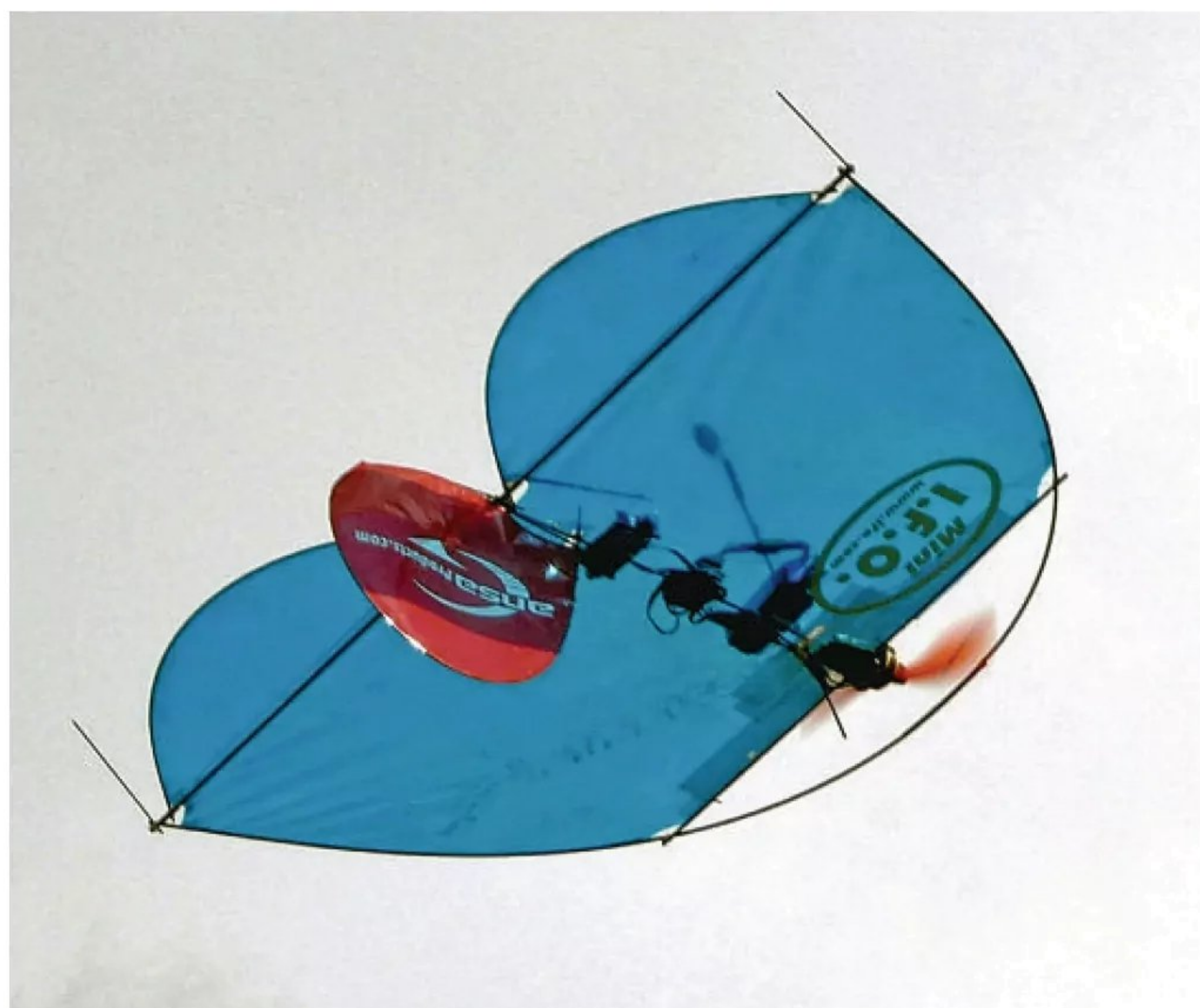
One is that I am going to replace my well-used Klik with the very latest Klik 25. More about this will follow. Second, I will remove the motor and ESC from the retiring Klik and the airframe will be taken over by another club member. So, there will then be three FP3 pilots and we could get to the point where we could claim our own slot - maybe!



*With a brushless motor up front the Mini IFO is as lively as you like!*



*First tests on the field quick brought back fond memories of IFO fun indoors!*



*Inverted performance is excellent but it's easy to get disorientated.*



*No problem with vertical climbs but it's safer without a ceiling!*

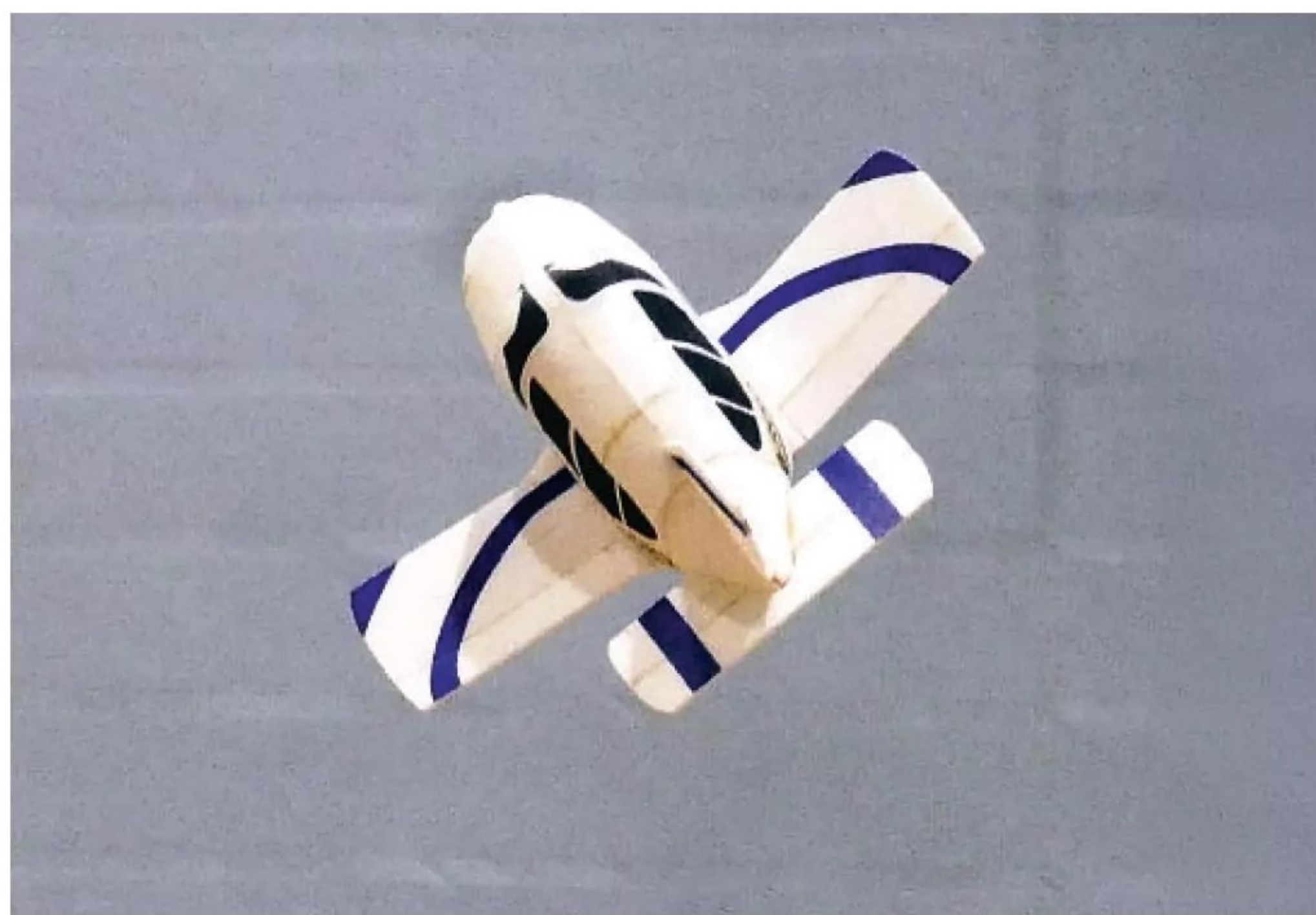




*Our indoor venue has a leaky roof, so James enjoys some targeted hovering!*



*Clive and his Fattie model. It looks too big for indoor flying.*



*The take-off and climb-out have to be 'vigorous'. Fattie does not understand 'slow'.*



*Phew! Another flight over.*

### R/C FATTIE

There is quite a niche following for a genre called 'Fattie' models, or sometimes 'Cartoon Scale' models. A quick web trawl will find plenty of photos and videos of these aircraft, plus plan sources. The models all feature a fuselage that is totally out of scale with the rest of the models and the plans available even include EDF models! It is even possible to 3D print such aircraft and a German site 'Der Pummel' has several designs available.

Of course, this genre of model was not specifically designed for indoor flying so when

“Although large the model is deceptively lightweight as it is constructed of foam and is, of course, hollow”

Clive appeared with his model many a jaw dropped in amazement. Think of a corpulent pylon racer and you have the right idea. The model has a steerable nosewheel linked to the ailerons.

Although large the model is deceptively lightweight as it is constructed of foam and is, of course, hollow. Eight-millimetre EPP is used for the wings, with a 3 mm skin on the fuselage. Airframe weight is only 290 g and a 3S 500 LiPo puts the flying weight at 340 g. The model has a wingspan of 840 mm and is powered by a Turnigy 2822 driving an APC ✈





*The internals are very minimal and just enough to support the corpulent body.*

9 x 3.8 prop. Take-off, cruise and maximum speed are all about the same, i.e. quite fast! With such a small wing relative to the body the model must be flown energetically and, surprisingly, although it looks quite fragile it has survived a fair few wall strikes. Fattie is always quite thrilling to watch and Clive does a good job of keeping the model under control. Well, most of the time!

There are plans for some less complex models available, such as a Piper Cub, perhaps a better model to start with than a Corsair! If Clive's 'Fattie' inspires you then please send me a photo of your model, particularly if it flies indoors.

#### **INDOOR EDF REVISITED**

In previous features I've covered my ups and downs with small indoor EDF models and it's a good time to get up to date. My Eric Stefford Phantom still gives me great pleasure to fly. Indoor EDF is definitely not a quest for speed and a stable model flying at any speed looks really good. I'm happy sticking with my micro EDF models and I'll leave the bigger, super



*Despite its looks Fattie is actually really light. However, it does have very, very small wings!*

scale models to the experts. Another factor always to be considered is the flying space. Our four-court hall does restrict both model size and speed.

With odd bits of gear around from defunct micro EDF models and in the light of developments at Minimum RC, I hatched a plan. I had two designs for micro jet models



*My old Typhoon next to my elderly and much-loved F-4.*





*Typhoon at rest after a very successful test flight.*



*My new Typhoon is now fitted with vectored thrust.*

that were purchased from a modeller in the USA some years ago. He also produced plans for 64 - 70 mm fans and his models were attractive for two reasons: they were cheap to build and flew really well. They were constructed from 6 mm Depron using a glue gun and I ended up building four of his big EDF models. One even had retracts. The micro jets were interesting; one was a Eurofighter for a 30 mm fan unit and the other a MiG 29, which used a mid-wing mounted 5-inch prop unit.

The interesting part was that they both featured vectored thrust. The Eurofighter used an extension nozzle linked to the rudder and elevator while the MiG 29 featured a mid-hinged elevator. These were built from 3 mm Depron. I built both and the Eurofighter flew particularly well. I flew it in both normal and vectored thrust mode.

Now, a 30 mm, 1S LiPo does not exactly produce a usable excess of thrust, so while it was an interesting technical exercise in practice it did not enhance the performance very much. The vectored thrust on the MiG 29 was more effective as the large mid-hinged elevator was able to deflect the airflow from the 5" prop more efficiently. But, again, while it was interesting technically, overall it did not add too much to the flight experience.

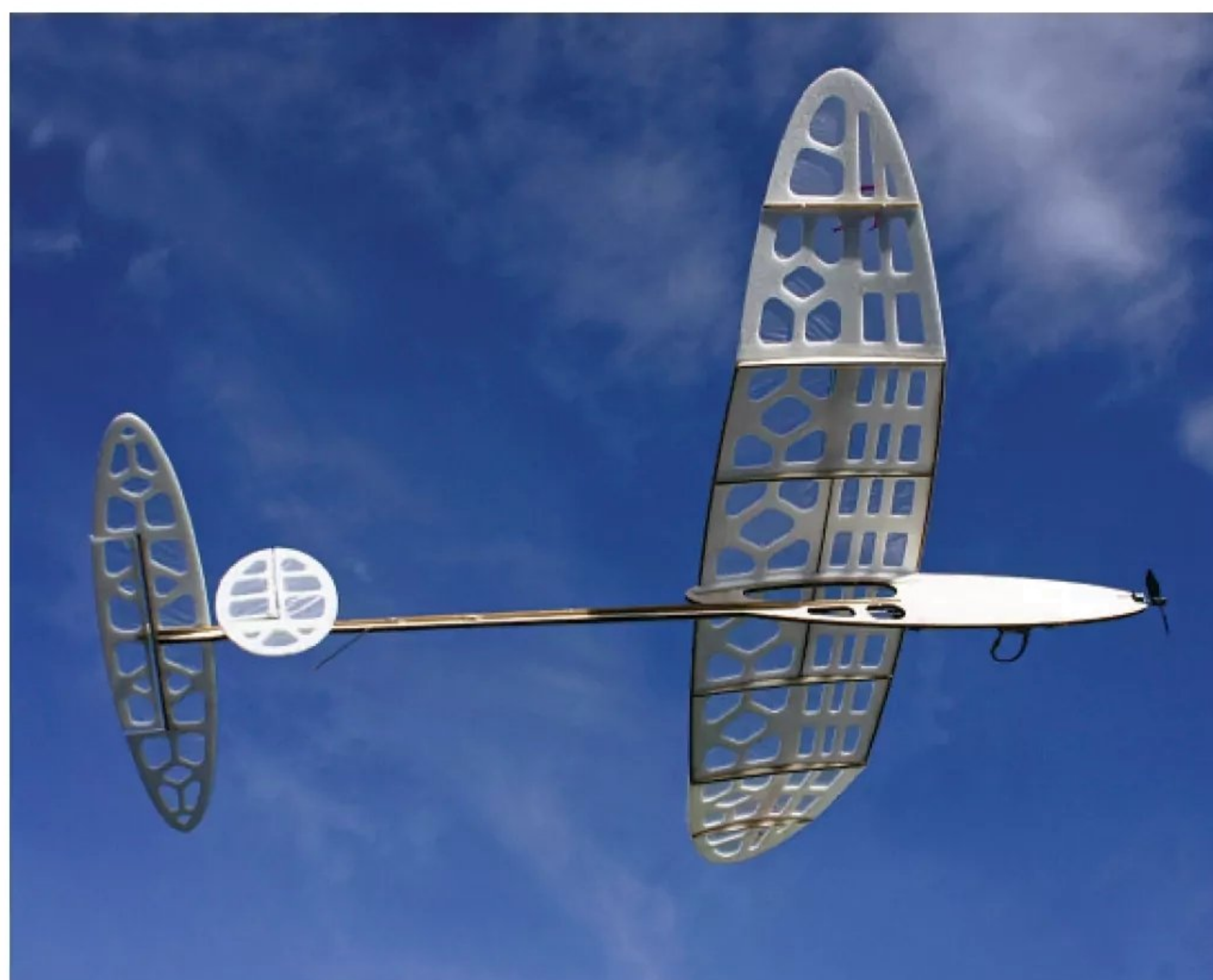
So, what is my plan? Well, I'm going to build both models again without vectored thrust but use 30 mm fan units in both. More to follow on this project.

#### FOAM AT ITS LIGHTEST

I'm finishing off with two really nice examples of lightweight foam construction used to make very light models.

The motor glider is an Elipsa and used a Vapor-type Rx module with a small coreless motor. She really was a beautiful sight cruising in calm air.

The Double Helix flew extremely well after the original basic R/C gear had been removed and, again, a Vapor Rx module had been installed. I eventually fitted a camera in the cockpit space and she performed well indoors as an FPV model. ■



*Extremely lightweight Elipsa was a charming calm weather flyer.*



*Double Helix was another nice model using lightweight foam construction. It flew so well I even used it as an indoor FPV platform.*





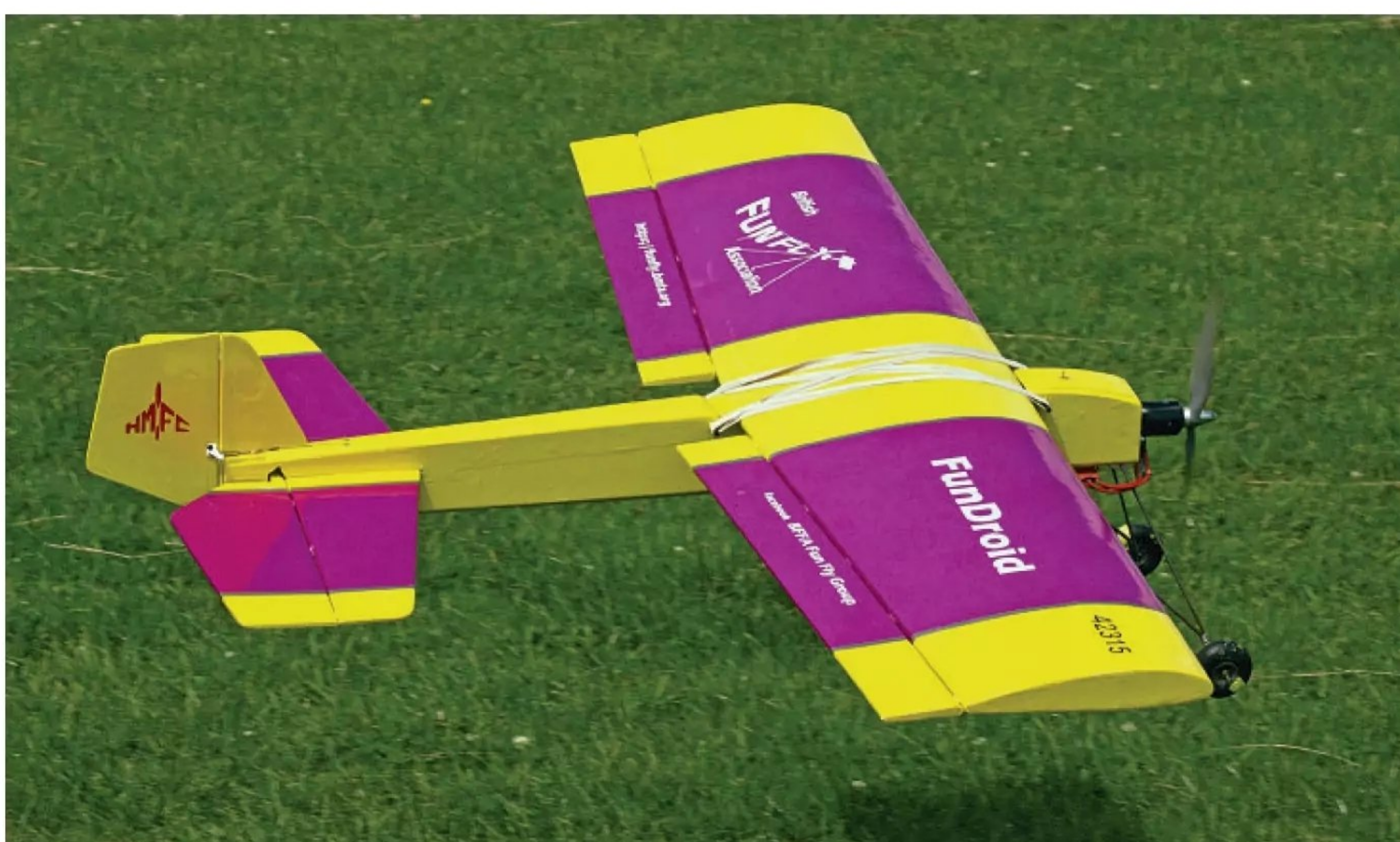
# FUNDROID

Continuing from the last issue, **Mike Bell** finishes and flies his Fun Fly model made from hybrid materials

Words: **Mike Bell**

**M**y simple and lightweight method of mounting the aileron servos is to make mounting brackets and glue them directly to the rib. If you have a 3D printer you can print a neat mount specific to your chosen servo, otherwise knock up a balsa and hardwood version. Either way, face the mounting plate with balsa to form a frame for the wing covering to attach to. I have used this method for years and it has proven to be perfectly adequate. The servos I used throughout are Hitec HS82MG but any mini servo with a similar torque spec will be okay. I would strongly recommend using metal gear versions to reduce the possibility of gear stripping in the event of a sudden stop. Full size servos are best avoided on the grounds of weight and you will struggle to fit them in the fuselage anyway.

The ailerons are constructed in the same way as the tail components except that the front strip is triangular stock glued to the



*Like all fun fly models Fundroid is very easy to fly.*





*Aileron servo mount glued to W2.*

foamboard so that there is an equal amount of balsa above and below the foamboard. The ribs are just 5 mm x 2.5 mm soft balsa strips glued to the foamboard to align with the wing ribs. These are sanded to simple triangular sections as shown on the plan, noting that you will need to sand the top and bottom edges of the triangular strip to match.

### COVERING & ASSEMBLY

Assembly of the tailplane, elevators, fin and rudder to the fuselage is best accomplished after covering all the parts. But before you dive in, here are some things to consider when covering over foamboard and Depron:

- Fun Fly planes are traditionally covered, at least in part, with translucent film. I imagine this became the norm to keep weight down. I experimented with applying translucent film to foamboard and the result was disappointing in that it took on a blotchy appearance where it was in varying degrees of contact with the card surface. In any case, the translucent film loses its cosmetic attributes when covering over solid surfaces, so I opted to go with opaque all-round.

- Use the minimum amount of heat possible to attach the film and keep the iron moving otherwise the foamboard core will be affected and the board surface will take on an uneven texture.

- Depron surfaces seem to be much less affected by the covering heat but it's still best not to linger.

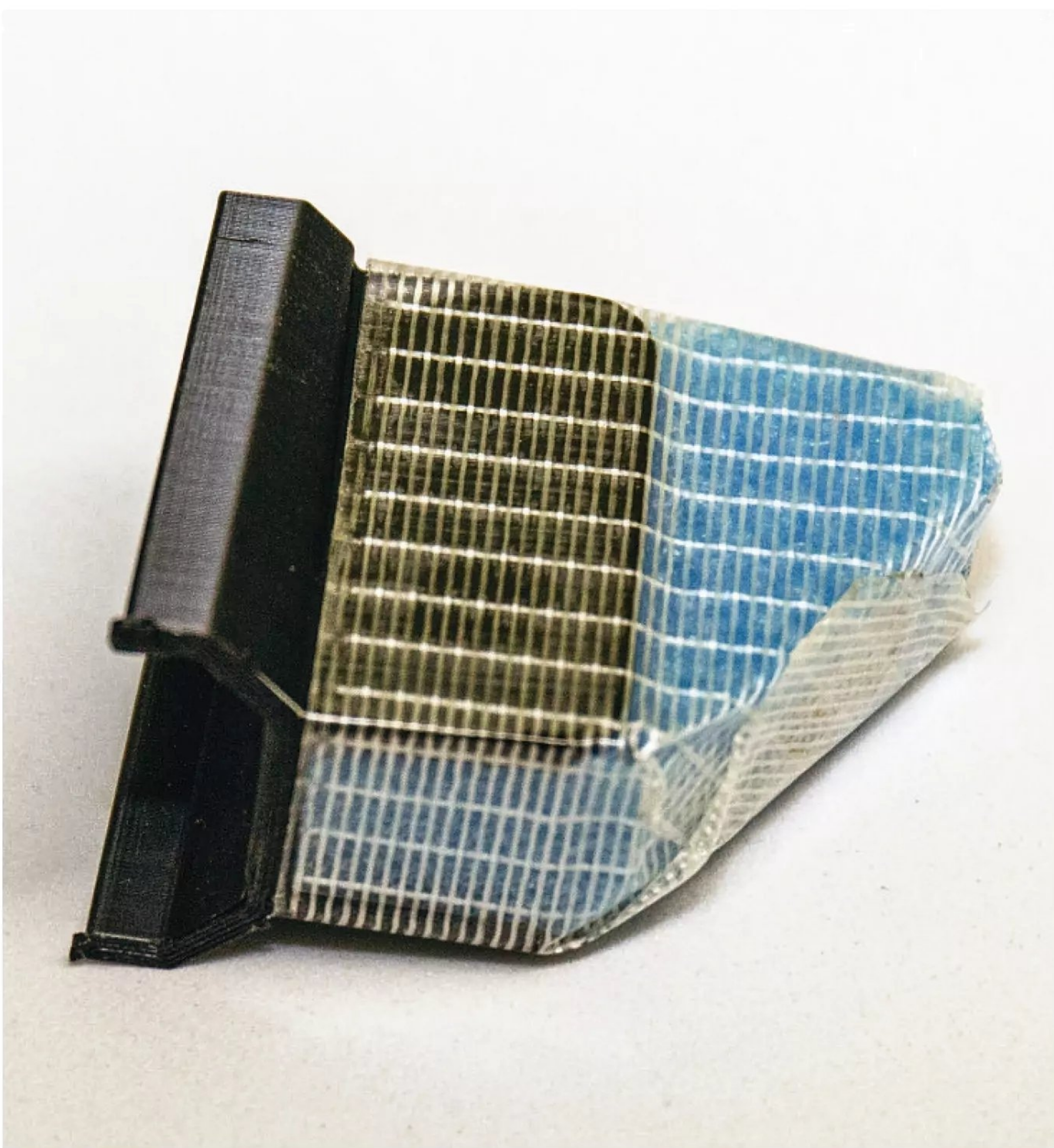
- The covering adheres well to the glass tape reinforcement, but I would recommend wiping the surface down with meths or isopropyl alcohol first.

Cover the fuselage and the tail components with your film of choice, trying to avoid covering areas that will be glued in during assembly. You will need to hinge the elevators to the tailplane before assembly. I used hairy Mylar strip for all the hinges on this model.

To insert the tailplane into the fuselage you need to cut away the tape from the slot in the fuselage and extend the slot to the end of the fuselage side with a knife. Keep the material you cut away to re-insert later. Slide the tailplane / elevator into the slot from the rear and, before gluing, cut away the fuselage sides to clear the movement of the elevator joiner. Once happy with its squareness the tailplane can be glued in. I used Gorilla clear, but epoxy would be okay too. If you apply masking tape to the fuselage and tail, you can wiggle the joint



*Aileron cross section.*



*3D printed shock absorbing tail skid. A lite-ply version would work too.*

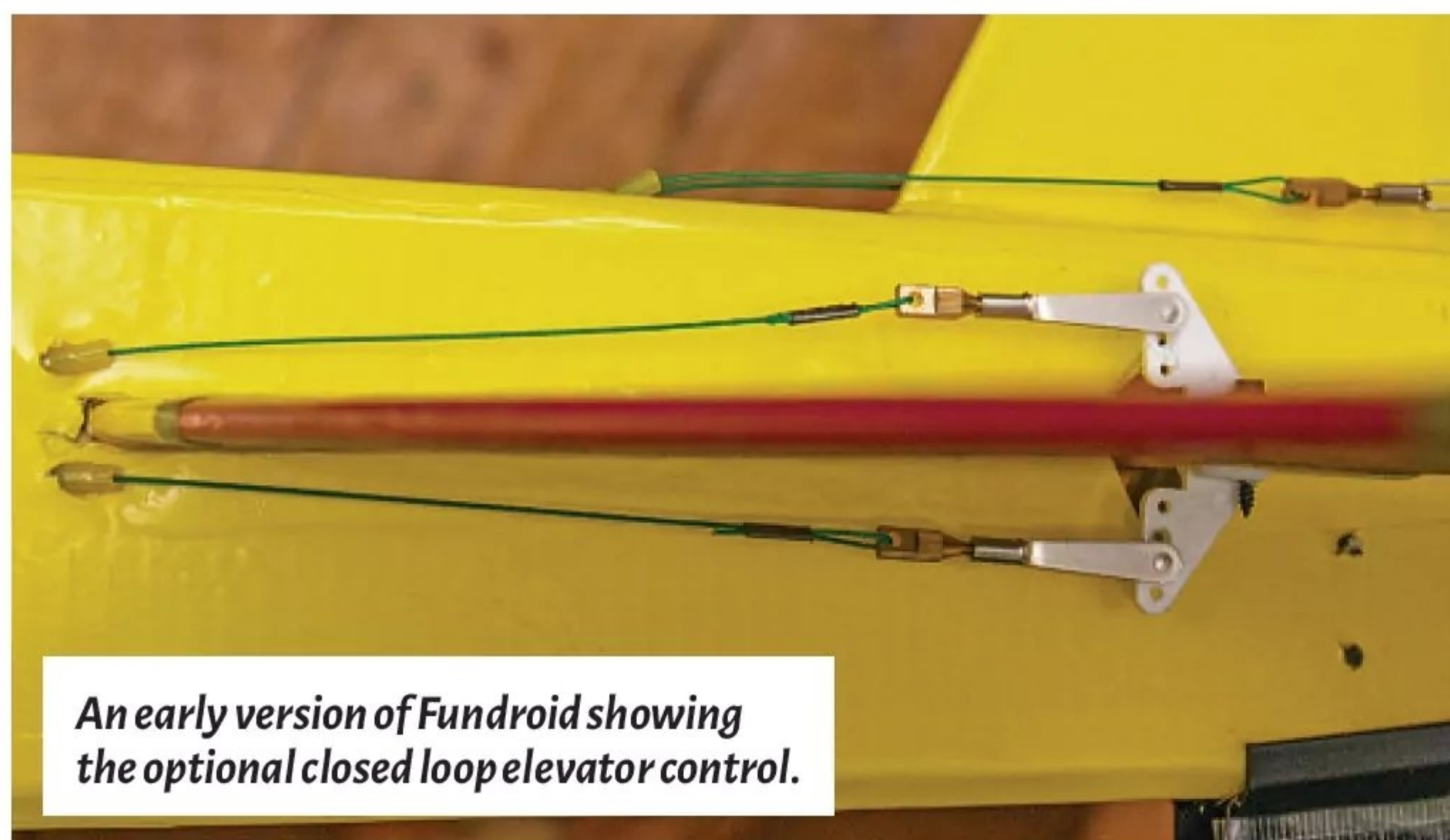
about a bit to work the glue in and any glue that squidges out will be captured on the tape. Replace the pieces you cut out of the fuselage sides behind the tailplane and leave to set.

Mark and cut a slot in the fuselage top deck to accept the fin. You will also need to slot the front of the fin to slide over the tailplane, remembering to include cut-outs to allow the elevator to move. The bottom surface of the fin should be in contact with the lower

fuselage sheet. Once happy the fin can be glued in place, making sure that it is vertical.

The fuselage needs a tailskid which could be as simple as a 3 mm lite-ply item slotted into the fuselage lower sheet. In my case I elected to make a 3D printed bracket into which a piece of stiff foam is inserted and held by tape. The assembly is contact glued to the fuselage which allows it to be knocked off if sideswiped hard and the foam effectively damps down





An early version of Fundroid showing the optional closed loop elevator control.

If the Centre of Gravity allows a rear mounted elevator servo is preferred.

### 3D PRINTED PARTS

Here are links to Mike's 3D printed tailskid and servo mount, as mentioned in this article. Both are available to download at [www.thingiverse.com](http://www.thingiverse.com)

Shock absorbing tail skid for RC Fun Fly plane  
[www.thingiverse.com/thing:6975737](http://www.thingiverse.com/thing:6975737)

Mini servo wing mounting bracket  
[www.thingiverse.com/thing:6975730](http://www.thingiverse.com/thing:6975730)

“...make sure the control surfaces are slop free otherwise those big control surfaces could generate flutter when flying fast”

vertical loads from hard landings. Feel free to use your own preferred method.

Before covering the wing, I inset some carbon strip into the leading edge to help stop

the fuselage from denting the wing in case the wing moves due to a ground strike or similar, then I applied glass reinforced tape to cover the carbon and extend over the lower wing surface



Suggested control throws represent a fairly soft competition set up.





*You'll have lots of fun if you and some mates have a go at a Fun Fly competition!*

to confer some ding resistance in the wing seat area.

When covering the ailerons take care not to press the heated covering to the foamboard in between the ribs or it will stick to the board and look a bit unsightly. If you rub candle wax onto the foamboard surface between the ribs this is less likely to happen but keep it away from where the covering needs to stick.

#### RADIO & MOTOR

There are a couple of options regarding fuselage servo installation and connection. For rudder, a pull-pull system is the neatest solution. For the elevator I initially used pull-pull again, but I found this a bit fiddly and the tension in the wires tended to slacken off over time. The alternative is to mount the elevator servo in the fuselage side, just under the tailplane, and connect to the horn with a wire pushrod. Before committing to this option make sure that the CofG won't end up too far aft or you'll have to ballast the front end, which always ends up



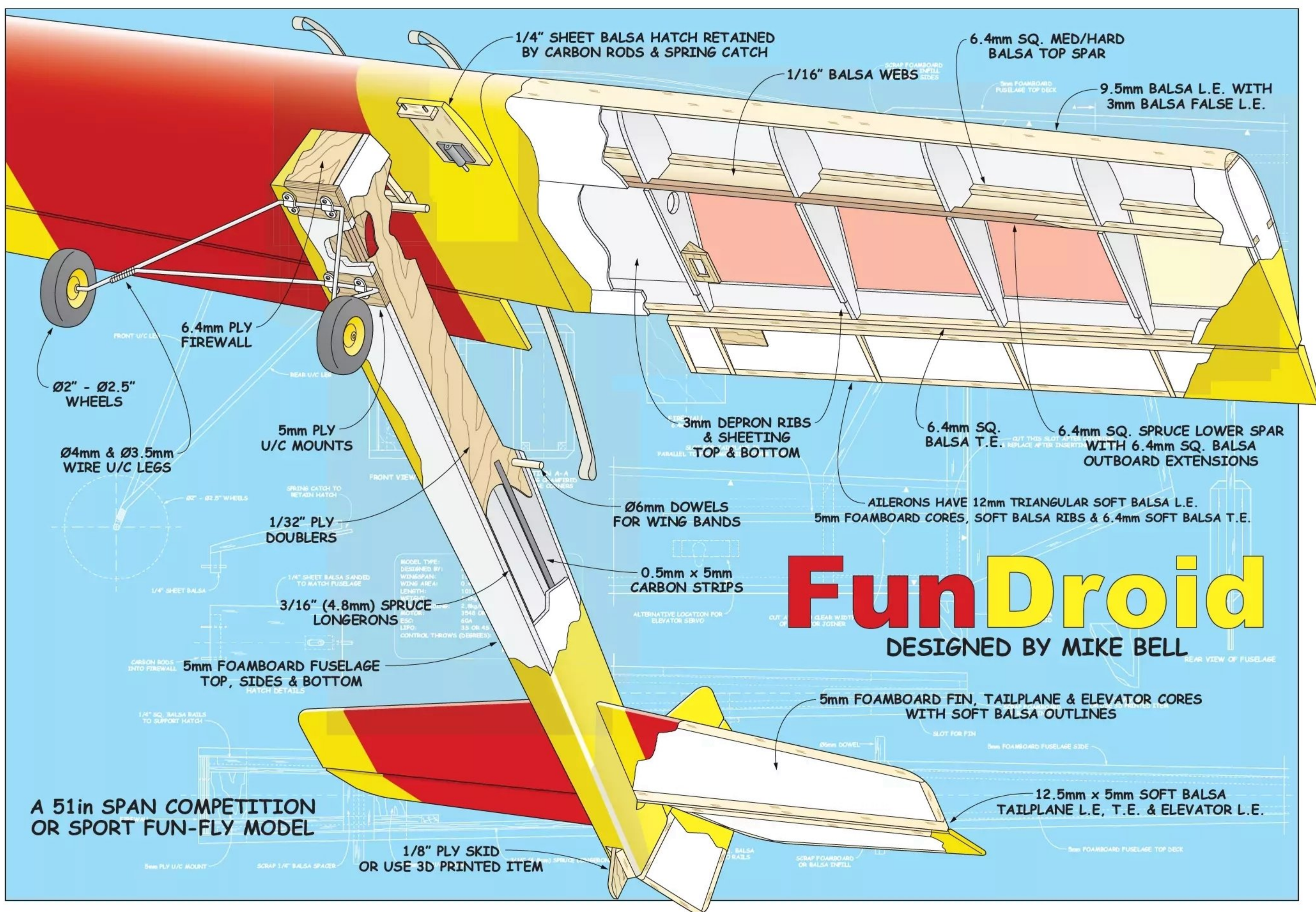
#### PRO-PLAN NOTE

Sheets 1 and 2 of the Fundroid Pro-Plan were published with the May 2025 issue of RCM&E. The Pro-Plan in this issue is Sheet 3 and completes the set. On the other side of this month's plan sheet, you will find construction drawings for Cosmic Cloud 150. Please turn to page 48 to read about that model.



*Fundroid with her designer, Mike Bell.*





adding a lot more weight than adding balance weight to the rear. Whatever installation you opt for, make sure the control surfaces are slop free otherwise those big control surfaces could generate flutter when flying fast.

Bend up the U/C to the dimensions shown on the plan and adjust the bind and solder joints to position the wheels a little bit behind the prop. Don't be tempted to bolt on a Dural or composite U/C as this will be way too stiff and will pull the mounting out of the fuselage in the event of a hard landing. The wire version spreads the load over two mounting plates and can take a surprising amount of punishment.

A wide range of motors will work, with a 3548-size outrunner being quite popular among the Class 2 and 3 competitors. The model can accommodate 3S and 4S batteries in 2200 mAh capacity (3S for Class 3 and 4S for Class 2). The choice is up to you depending on whether you will be using Fundroid for competition or general use. For sport flying the ever-popular 3S LiPo is more than adequate.

I use a 60-amp ESC for both 3S and 4S but make sure the one you use will cope with your choice of motor/prop combination. There isn't much room in the fuselage for an internal ESC installation and, anyway, it is standard practice to mount them externally on fun fly machines to facilitate cooling.

#### SET UP & FLYING

All my balsa fun fly models (and I've built a fair few) end up with a ready to fly weight

(i.e. with battery) of around 2.75 lbs. (1.25 kg.). Fundroid came out at 2 lb. 10 oz. (1.2 kg.) so I was delighted to be able to confirm that the key target of avoiding extra weight can be met.

Fundroid is not particularly sensitive to C of G position. The best location will depend on pilot preference but 90 mm from the leading edge should be a safe starting point. Similarly, control surface movements will depend on how you want to fly it; the suggested throws represent a fairly soft competition set up but if you aren't used to flying this type of model you could have reduced movements set up on the rate switches to start with. You will probably want around 30% expo as a starting point for elevator and ailerons, but you can tune this to suit your preference. Turning and looping radius can be tightened up by mixing flaps (ailerons) with elevator. The flaps should deflect down with up elevator and vice versa, but to be honest this probably isn't worth the fuss for sport flying.

Like all fun fly models Fundroid is very easy to fly with the controls set up to suit your skill level and mode of flying. It will handle pretty much any weather conditions but expect it to be bounced around quite a bit in turbulent conditions due to the light weight.

If you build one, I'm sure you'll have a lot of fun with it. But you'll have even more fun if you and some mates have a go at a Fun Fly competition. Take a look at <https://funfly.bmfa.org> for information on event dates, rules and general inspiration. ■

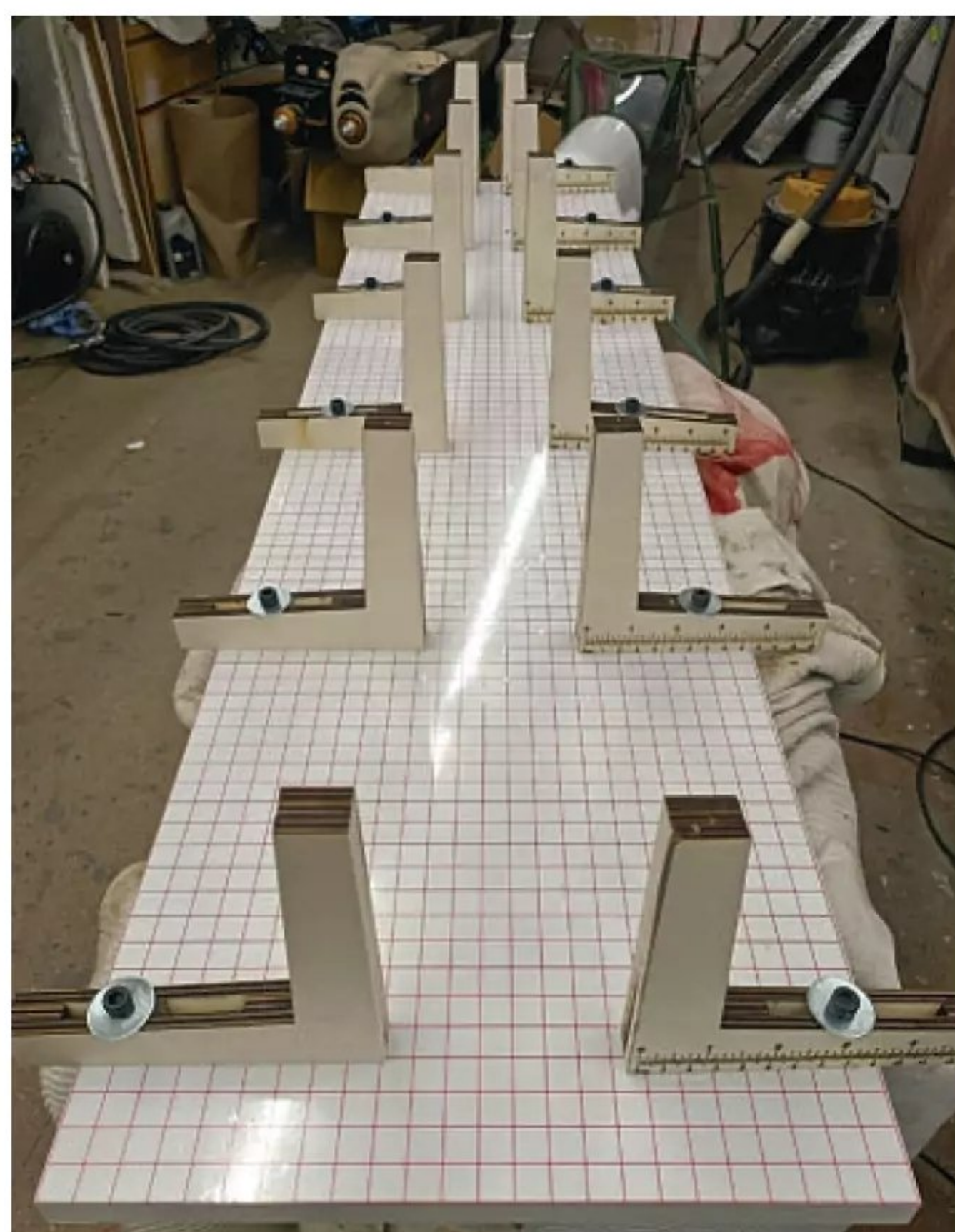


Scan this QR code, or visit the link shown, for construction shots and views of Fundroid: <https://youtu.be/IJtPERvKMyM>

## DATAFILE

|                                  |                                                                 |
|----------------------------------|-----------------------------------------------------------------|
| <b>Name:</b>                     | Fundroid                                                        |
| <b>Model type:</b>               | Competition or sport Fun Fly                                    |
| <b>Designed by:</b>              | Mike Bell                                                       |
| <b>Wingspan:</b>                 | 1300 mm. (51 in.)                                               |
| <b>Wing area:</b>                | 0.43 sq.m. (4.6 sq.ft.)                                         |
| <b>Length:</b>                   | 1010 mm. (43.5 in.)                                             |
| <b>Weight:</b>                   | 1.2 kg. (2.63 lbs.) (inc. 3S 2200 LiPo)                         |
| <b>Wing loading:</b>             | 2.8 kg./sq.m. (9.1oz./sq.ft.)                                   |
| <b>Motor:</b>                    | 3548 or similar outrunner                                       |
| <b>ESC:</b>                      | 60A                                                             |
| <b>LiPo:</b>                     | 3S or 4S 2200 mAh                                               |
| <b>Control throws (degrees):</b> | Ailerons: +/- 30°<br>Elevator: +/- 30°<br>Rudder: Max. possible |





## FLIGHTPLAN FUSELAGE JIG

£39.95 | [www.flightplanmodels.co.uk](http://www.flightplanmodels.co.uk)

A key ingredient when embarking on a trad-built model is accuracy. Ensuring that everything remains square during the process is paramount in order for the finished article to fly straight and true. When it comes to making an arrow-straight fuselage this jig from Flightplan Models is just the ticket. The kit includes 12 angled uprights (made from laser-cut, laminated 6 mm plywood to a total thickness of 18 mm for enhanced toughness and durability), and all necessary components i.e. M6 bolts, T-nuts, washers, adhesive transfer grid, Allen key and instructions. Note that a base board is not included.

The uprights utilise a one-bolt system, allowing for easy adjustment to fit the contour of the fuselage, and feature both metric and imperial measures for enhanced accuracy. For that larger project, extra angled uprights, nuts, bolts etc. can be purchased separately



## GLOBEMASTER C-17

£309.99 | [www.cmldistribution.co.uk](http://www.cmldistribution.co.uk)

With a production run of 279 examples manufactured between 1991 and 2015, the McDonnell Douglas / Boeing Globemaster C-17 is a long range, heavy-lift strategic and tactical transport aircraft that's seen service in both military and humanitarian arenas.

Crafted from lightweight EPO this 1200 mm span EDF from XFly-Model comes fully painted, sporting a scale outline and details that combine to give a top-drawer representation of the full-size. Fuelled by a 4S LiPo (2600 – 4000 mAh recommended) the factory-installed powertrain of 4 x 40 mm 12-blade EDF fans, 1413-KV5000

brushless motors and 20A brushless ESCs delivers an abundance of thrust, even for rolls and loops etc., with sensible throttle management yielding flight times of around 3 to 8 minutes. The U/C, with steerable nosewheel, is a fixed arrangement incorporating dual wheels that provide high levels of accuracy throughout taxiing, take-off and landing. Conveniently sized for ease of transport and storage in one piece the C-17 can be flight-ready in around 15 minutes from opening the box, with 7 x 9 g servos (pre-fitted) providing five channel guidance for ailerons, elevator, flaps, rudder/steering and throttle control. Requires Tx, Rx and LiPo to complete.

## LIPO SAFETY CARRY CASE

£9.98 | [www.overlander.co.uk](http://www.overlander.co.uk)

The potential fire hazards when handling LiPos can never be underestimated. Numerous incidents and accidents have been well documented, and nobody wants to add to those statistics. Measuring 210 x 140 x 160 mm this Safety Carry Case from Overlander is crafted from fire-resistant materials and has been designed to reduce the risks associated with LiPos whether at home, in the workshop or on the go, providing an extra layer of protection to safeguard your batteries from thermal runaway and other hazardous situations. It's an essential accessory for



anyone using high-capacity LiPo battery packs, including the Supersport XL range, which are known for their high energy density and power output. Compact yet spacious, this case is perfect for larger packs whilst maintaining portability and convenience, whether charging, storing or transporting your battery packs.

## RADIANT MOTORS & CONTROLLERS

£17.50 – £83.99 | [www.jperkins.com](http://www.jperkins.com)

Built to last and competitively priced, Radiant's all-new, air-specific, high-torque brushless motor and ESC range covers everything from diminutive 2S set ups right through to massive 10S power trains. 32-bit programmable ESCs (supplied with pre-fitted connectors) blend perfectly with brushless motors that feature 6061-T6 aluminium alloy front and rear covers, a

14-pole precision balanced rotor, high purity copper windings, oversize bearings and a heavy-duty stainless-steel shaft, offering exceptional quality that translates into smooth running, longevity and the ability to turn large propellers. Check out J. Perkins' website for more information on these and Radiant's range of batteries, leads and electric flight accessories.





Neil's most recent Limbo Dancer was built for his flying buddy, Chris. He set himself a challenge to build, cover and maiden it in just one week!



# GOLDEN GLOW

**Neil Hall** returns with more advice for wannabe users of glow engines and to gladden the hearts of those already smitten with IC power

words & photos : **Neil Hall**

**M**any who know me will know that I am slightly partial to the old Balsacraft/Precedent kits and one model that I usually take everywhere is my Limbo Dancer. I've not been without one for many a year. It's one of those models that's fun; it will get on and off the ground easily in winter conditions; it just works in any situation and should anything ever happen to it I can build another from the plans very quickly. However, my Limbo Dancer had not seen the flying field in around three months, due to an experiment gone wrong or maybe an error in judgement on my part.

For years I've powered my Limbo Dancer with an old O.S. Max 40 FP two stroke. A good, reliable glow engine, it's nice and light, very quiet, offering plenty of performance for a Limbo Dancer and on a 12 x 6 prop it easily hovers and its slow flying characteristics are phenomenal. So, this has been the set up I have always used. But, for some reason - and even now I don't know why I did it - I removed my trusted 40 FP and mounted one of my O.S.



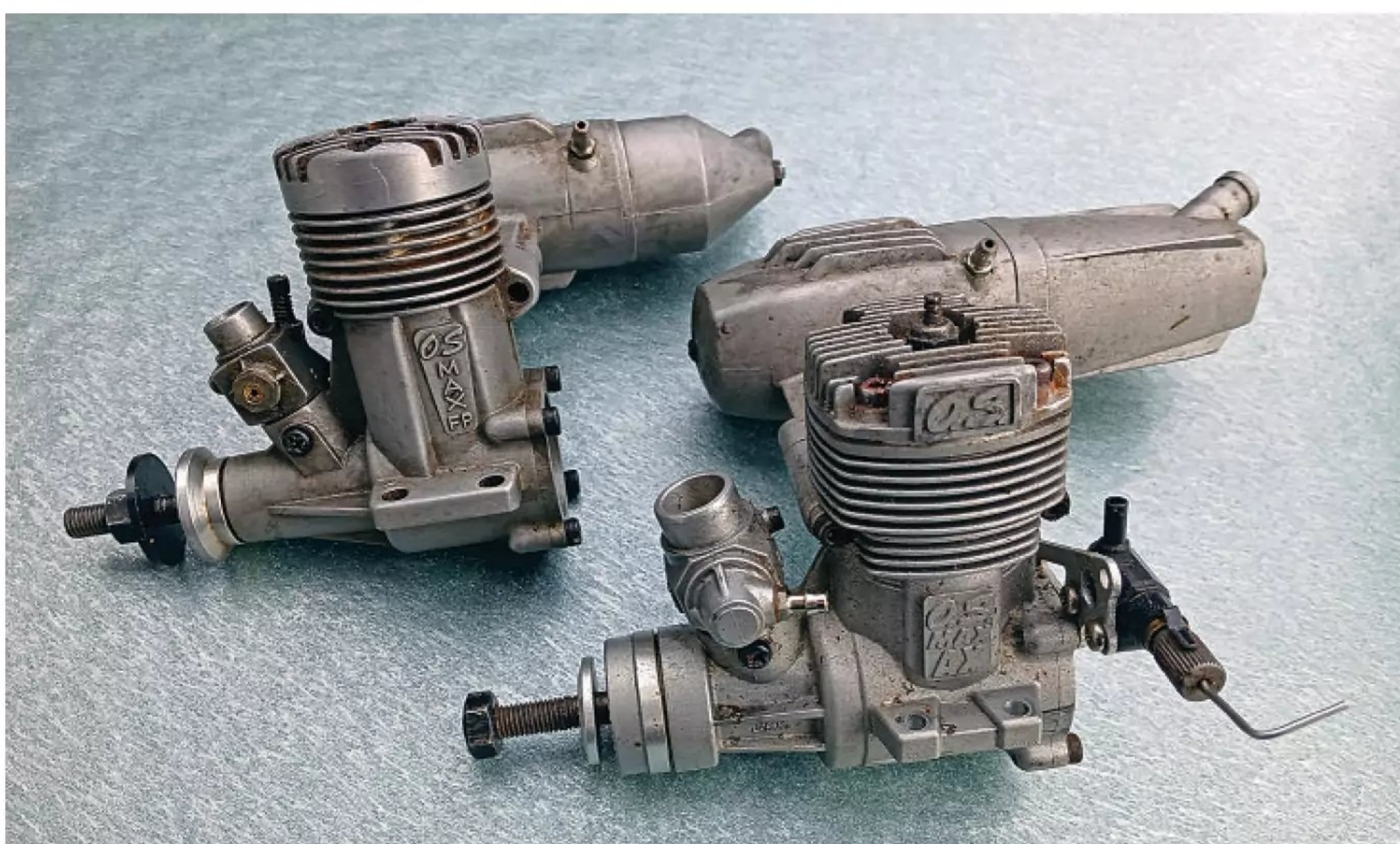
*O.S. Max 40 FP is the perfect partner for a Limbo Dancer.*



Max 46 AX engines instead. The AX is quite a beast for a .46 size two stroke engine and it's absolutely brilliant, but not on the front of a Limbo Dancer. Well, not for me anyway. The 46 AX is a fair bit heavier than the 40 FP and this, from a flying perspective, completely ruined the model. All its fantastic slow flying capabilities had gone and as for hovering, stopping it climbing was the main issue. I really didn't like the model like this, hence I left it hanging in the shed for a while.

#### FIT AN APPROPRIATE ENGINE

Electric power is becoming more and more popular, with one of the contributing factors being ease of use. But I have a lot of love for glow engines and for me these engines are really simple and just as easy to use. It would be nice to think that by writing these articles I might be encouraging anyone who has never tried glow to give it a try. So let me run through the things I do to help me have trouble free operation when using glow engines, flying trip



*Too much power! When Neil swapped the 40 FP for this 46 AX it was impossible to stop the model from climbing when held vertical in a prop hang.*



*Neil's own Limbo Dancer, now reunited with its perfect dance partner up front.*

after flying trip, and hopefully it will push the encouragement a bit further.

You are probably thinking, why did he tell us about his Limbo Dancer and how the 46 AX ruined the way it flew? Well, it brings me to my first point, which is probably the most important - fitting the correct choice of engine. To get the most from the model I am flying, in the way it is intended, I want to fit the right engine. For example, if you take

a .40 size trainer and mount a .61 size engine up front, the extra weight and power of the bigger engine is going to cause the model to naturally fly faster than it needs to, its handling won't be as good and it will consume a much larger amount of fuel, taking away all its good attributes as a trainer. This is a similar thing that I did with my Limbo Dancer. Still to this day, I don't know what came over me. But I know it won't happen again!

When choosing an engine, I normally consider its weight, how it will affect the Centre of Gravity of the model, its power output and the propeller size I will need, as well as ground clearance for that size of propeller and how much fuel the engine will use and what flight time can be achieved. A well-balanced model with its perfect dance partner up front makes the experience much more fun. If I want to enjoy the engine, first I have to enjoy the





**Pro Synth 2000 fuel from Weston UK is Neil's fuel of choice. 20% nitro mix for his four stroke engines and 10% nitro for his two stroke glows.**

model and other than my loss of a brain cell or two with my overpowered Limbo Dancer, I really do enjoy flying my glow models.

I am now flying my beloved Limbo Dancer again, with its original 40 FP engine back in its rightful place. Sanity has been restored.

#### TRUSTED FUEL

I have to have a constant source of glow fuel. By this I mean a fuel that's readily available and one that is going to work for me. It has to be a brand I have confidence in. I use 10% nitromethane fuel for all my two stroke engines and for most of my four stroke engines too. For my larger four strokes, especially if mounted inverted, I use a 20% nitromethane fuel of the same brand. And I know I can get this delivered within 48 hours.

I think that sticking to my favourite fuel is important for many reasons, but probably the main advantage is that the tuning of my engines pretty much stays the same, just needing minor tweaks here and there. I like things to be easy for me at the flying field. After all, I am there to fly.

Gone are the days of me worrying if my local model shop has any fuel in stock and not knowing what brand or nitromethane content I'm going to get. Or if they only have four stroke specific fuel, etc.

(I do support my local model shop. It's where I purchase a lot of balsa wood, covering materials, glues and all the other good stuff we aeromodellers use.)

#### WHICH GLOW PLUG?

So, what about glow plugs? Depending on which fuel you choose to use and what nitromethane content it has will depend on what type of glow plug is best used. A lower nitromethane content needs a hotter glow plug whereas a higher nitromethane content wants a cooler glow plug. Engine type and size plays a part in this, too. A four-stroke engine requires a four-stroke plug and vice versa.

Since I keep my fuel choice simple it means I can keep my glow plug choice simple too. So, apart from my larger four strokes, I simply use a four-stroke glow plug, the O.S. Type F. For all of my two stroke engines I use a 10 percent nitromethane content, which is pretty much down the middle, so for glow plugs I do the same - I use a medium plug, the O.S. No.8. Two of each are carried in my flight box as spares, brand new ones! If I'm going to need to change a plug, I need to know it's new.

If you have an engine that's been running absolutely fine and one day, out of nowhere, it decides it's not your friend anymore and is not

#### FUN FACT

I stumbled upon a fun fact not long back. A current Formula 1 car has a 1.6 V6 hybrid engine with a power output of around 625 horsepower per litre of engine power (not including what the electric part produces). An O.S. glow engine for an R/C racing car has a power output of around 791 horsepower per litre.

As I like Formula 1 and glow engines, I liked this, so I thought I'd share. So, pound for pound our little glow engines really do pack a punch

going to play ball, change the glow plug. You might think it's not the glow plug because its starts and runs but if it's not running properly and all of a sudden it has become touchy then, trust me, before doing anything else change the glow plug. I have seen many a modeller caught out by this!

#### NEW PIPES, PLEASE!

I've been told in the past that I do unnecessary things, like change the fuel pipes on all my models every winter in preparation for spring and summer. This also includes replacing or thoroughly cleaning fuel filters.

No, I'm not a fair-weather flyer, I fly all year round. I just make it a winter job. Is it unnecessary? Probably, but it doesn't take long, it doesn't cost much and I reduce the chance of a plumbing issue costing me flying time.

I also check my fuel tanks at the same time, fixing any issues and replacing them if needed. Good plumbing is vital to good operation, as is tank position and length of pipes, and



**Always use good quality glow plugs. O.S. plugs are excellent. Their Type F is specially made for four stroke engines and the No. 8 is a good all-round medium plug for two-strokes.**





*Replacing fuel tubing and cleaning or replacing fuel filters is well worth doing on a regular basis. Don't wait until your plumbing starts playing up!*



*The author's field kit is kept inside an adapted plastic toolbox.*

so their condition is something I give a lot of attention to.

Although most plumbing set ups are quite basic, there are some glow engines that use slightly different set ups. If so, I always give the instructions a good read and follow the manufacturer's guidance.

#### **FIELD BOX**

A basic field kit will have a fuel pump which can be electric or manual, a glow ignitor which can be rechargeable, corded or the type that take an AA battery, and a way of turning the engine over. This can be an electric starter, again either rechargeable or corded, or there is the option of



*Always turn the current adjust dial down before clipping a glow lead to a plug so you don't blow it if the dial has been accidentally knocked high.*

starting by hand using a rubber (chicken) finger or a chicken stick. Glow engines can have a nasty bite, which is why I always carry a first aid kit too. Don't let this put you off; I've never had to use mine in all my years flying glow powered models and I hand start everything. It's just worth carrying. Remember to respect your engines and they will respect you; I remind myself of this all the time.

I also carry a few basic tools, including a glow plug spanner (socket and ratchet type), screw drivers and hex drivers etc.

As for my own flight box, well, I'm a dinosaur. I have a corded starter, a corded glow ignitor (times two), a power panel, a 12V car battery and a manual fuel pump. I could upgrade to lighter, more modern kit but my equipment works all the time, every time and that's important. Flying models is much more enjoyable and fun when things work.

I make a habit of turning the voltage dial on my power panel down to its lowest setting before clipping my glow ignitor to my glow plug. I then turn it up to the required setting. Should the dial accidentally be turned up too high it will blow a glow plug so making sure it's turned down stops this from happening.

#### **MODEL RESTRAINT**

It's very important that a model cannot move while starting its engine. My safety and the safety of my fellow modellers is of the upmost importance. I make my model restraints from standard plumbing materials using 15 mm copper pipe, two elbows and a tee soldered together, with some pipe insulation wrapped around to protect my models. This makes for a perfect restraint.

There are many ways to simply restrain a model. I have seen modelers use screwdrivers pushed into the ground and I've seen cricket stumps used. It really doesn't matter as long as the model is well secured.

#### **KEEP IT QUIET**

Glow engines create noise. They are an internal combustion engine after all. But they don't have to be overly noisy. I personally over prop my engines using large propellers as this keeps the noise low but gives me the attributes I like. I find I get a more pleasing performance from lower RPMs, with aerobatic manoeuvres that look and sound effortless. I have to experiment to find a propeller that works but it's worth the effort.

I won't be the noisy modeller; my flying sites are too precious. I use the correct muffler, 





*A reliable model restraint can be easily made up using plumbing pipes and fittings. Pipe lagging protects the tail surfaces of the model.*



*After each flying session Neil gives his models a good wipe over using diluted screen wash from a spray bottle and some kitchen towel.*



*Coming next from the Hall hangar is this lovely Stampe which will be powered by an O.S. four stroke.*



*For the past year Neil has been discovering the joys of petrol engines. Hopefully, we'll be able to twist his arm to write another set of encouraging articles about this popular form of model power.*

I choose my props wisely and I stay within the BMFA and my club's noise guidelines.

One of my clubmates, Mike, has a Chris Foss trainer with a Super Custom 46 up front and he has mounted the engine using nylon washers. The engine and airframe are gelled together, with no vibration noise. It just sounds solid, so this is something I shall be experimenting with in the future. It's more fun flying glow when your clubmates appreciate your engines and your efforts to keep any noise as low as possible.

#### **AFTER RUN**

One question I get asked a lot is, 'Do you use any type of after run oil?' This is an oil that modellers put into glow engines to protect them during periods of non-use. I used to use it when buying fuel lubricated with castor oil. But now I use fuel made with synthetic oil, I don't.

However, my end of session routine is the same. Upon finishing a flying session, I drain my fuel tanks and then I run the engine until it stops. This is usually just for a few seconds. I then put my glow ignitor on and spin the engine over. This burns away the last of the combustibles (the methanol and nitromethane), leaving just the oil in the engine, which will look after it just fine (but with castor a few drops of after run would have been added). I've done this for years and I have some very old engines that run beautifully. After all this is done, I simply give my models a good wipe down using diluted screen wash that I put in a spray bottle and some kitchen towel.

So, to sum it all up: with a good model, a good engine, good fuel, a good and correct glow plug, good plumbing and a simple field kit you'll be good to go. It really is that simple and it is the best fun ever.

I have to make using my glow engines as simple as possible and ensure they have good reliability as I don't have any electric models to fall back on. A session at the flying field does take a bit of preparation and effort as it's usually an all-day affair for me, from getting the models ready, loading the car and sorting food and drinks. Then, when I've done that it's a 45-minute drive to the patch, so my engines have to work and work well.

#### **WHAT ARE YOU WAITING FOR?**

Maybe you are new to the hobby, just starting out, or you are still relatively new and you have cut your teeth with electric models. Maybe you have seen the odd glow powered model at your flying field. Or perhaps you have read my previous 'Golden Glow' article. Something is tempting you to try glow power, but you are undecided. You are not sure if it will work for you but, still, you are tempted and you really fancy trying it. If so, let me leave you with the best piece of advice I can...

You know that guy at your flying field, the one who flies glow, the one whose engines perform brilliantly. They seem to idle forever without skipping a beat. He's the guy who seems to be having the most fun and everything works for him. Make that guy your best friend, buy him multiple beers, latch on to him in any way you can because he's the guy you are going to get the best help from. But, most of all, go out and have fun with glow engines, like I have for so many years.

#### **COMING SOON**

I've been learning a bit about petrol engines over the last year or so. I've started to get into it a bit more and I am really enjoying it. I'm enjoying the learning process and I hope you get the same enjoyment from trying glow.

I was going to try and squeeze in taking a look inside a glow engine, to see the beauty of its simplicity. But we will have to leave that for another time, as in my next article I want to cover one of my favourite things to do with a glow engine - and one of the most nostalgic.

In the meantime, go out, get oily, have fun - enjoy glow!

If I've tickled your taste buds and you want any help or advice, I'm always happy to help. You can contact me via email at [bareknuckleflying1@gmail.com](mailto:bareknuckleflying1@gmail.com) ■



# RCM&E BACK ISSUES

**£6.35  
EACH**

(inc p&p)

For EU and ROW, please see  
[www.classicmagazines.co.uk](http://www.classicmagazines.co.uk)

Whether it's recent releases or vintage copies, step back in time and browse through the ages with the *RCM&E* back issue collection.

**AVAILABLE TO ORDER TODAY AT  
CLASSICMAGAZINES.CO.UK**



**OCTOBER 2024**

- Handsome Halifax
- Flair Fly-in
- Stealth



**NOVEMBER 2024**

- Showstoppers
- Elmbridge at 50
- Scale World Champs



**DECEMBER 2024**

- Art of Illusion
- LMA over 25 kg scheme
- Splash Down



**JANUARY 2025**

- Wot-Knot Revival
- Encanto
- The very best of scale



**FEBRUARY 2025**

- Magister takes to the air
- Heli of a day at Prestbury
- Photo drone tested



**MARCH 2025**

- Mastering a shopping list
- Fun fly Down Under
- A bit of British magic



**APRIL 2025**

- Assembling Spitfire legend
- Charm of a Pitts biplane
- Modelling a Barling Bomber



**MAY 2025**

- Testing a Tomcat
- Spacewalker resurrection
- Puppeteer with a difference

**OTHER ISSUES ALSO AVAILABLE – ORDER YOUR BACK ISSUES NOW!**

## 2 EASY WAYS TO ORDER

**CALL:** 01507 529529 **ONLINE:** [www.classicmagazines.co.uk/issue/rcm](http://www.classicmagazines.co.uk/issue/rcm)



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.

## MAY

### May 17

**Waltham Chase Aeromodellers Medium Hall Indoor R/C Meeting** at Crofton Community Centre, Stubbington Lane, Stubbington, Hants PO14 2PP. From 6.30pm to 9pm. The sports hall is four-badminton court size and particularly suitable for lightweight indoor R/C models. Flying at these events will take place in accordance with our indoor flying guidelines (available on our website). Admission £8 for fliers and £2 for spectators and junior fliers, whilst accompanied junior spectators and parents of junior fliers admitted free. Fliers will be required to show proof of insurance. These events are supported by the BMFA Southern Area. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

### May 17-18

**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. Note due to slope access restrictions in place during Spring this event WILL NOT RUN as listed if the prevailing winds are Easterly and we would need to fly over the pier. In this case a decision will be taken in the week running up to the event and we will look to defer the date as best we can. For more information contact Phil Cooke on 07772 224719, email [webmaster@pssaonline.co.uk](mailto:webmaster@pssaonline.co.uk) or go to [www.pssaonline.co.uk/about-us/events/](http://www.pssaonline.co.uk/about-us/events/)

### May 18

**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>.

### May 24-25

**Don Valley MFC Open Weekend** at Bentley Moor Lane, Carcroft, DN6 7BD. Free entry and camping. Food and drink with an onsite toilet and night flying. No certs required to fly - be safe, enjoy. Proof of insurance please. Relaxed atmosphere aimed at the club flyer. Tabletop sellers welcome, no fee involved. 100 cc limit on I.C. If you intend camping give us a shout, it helps with organising space. Please contact John on 07934 689317 or email [info@donvalleymfc.co.uk](mailto:info@donvalleymfc.co.uk)

### May 29

**Waltham Chase Aeromodellers Small Models Meeting** at Wickham Community Centre, Mill Lane, Wickham, Hants, PO17 5AL. From 7pm till 9.30pm. Hall is suitable for smaller indoor R/C models. Models to be limited to a max. weight of 95g for fixed wing inc. battery (max. 2S LiPo), helicopters limited to 305mm (12") rotor dia. Models will be weighed and judged on their suitability for the venue. Flying will be in accordance with our indoor flying guidelines on our website. Admission £6 for fliers, £2 for spectators and junior fliers. Accompanied junior spectators and parents of junior fliers admitted free. Fliers to show proof of insurance. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

Models to be limited to a max. weight of 95g for fixed wing inc. battery (max. 2S LiPo), helicopters limited to 305mm (12") rotor dia. Models will be weighed and judged on their suitability for the venue. Flying will be in accordance with our indoor flying guidelines on our website. Admission £6 for fliers, £2 for spectators and junior fliers. Accompanied junior spectators and parents of junior fliers admitted free. Fliers to show proof of insurance. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

## JUNE

### June 1

**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 22nd. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>

### June 7

**Prestbury Park Model Flying Club Scale Model Helicopter Fly-In and BBQ** at What3Words glad. thatched.lads. Entrance sign posted off B4079 Pamington Road (North of Oxenton). 2.7 miles from M5 J9, Tewkesbury, Worcestershire. Relaxed scale helicopter fly-in. Scale helicopters only please. BMFA Membership and CAA Flyer/Operator ID required. Electric, piston engine and turbine power permitted. BMFA 82dB noise limit applies (except for turbines). Organisers may exclude excessively noisy models. No requirement for A or B test but you must fly safely. Pilots Briefing at 9:30 am. £10 per pilot. Enquiries: [ppmfrc@gmail.com](mailto:ppmfrc@gmail.com)

### June 12

**Waltham Chase Aeromodellers Small Models Meeting** at Wickham Community Centre, Mill Lane, Wickham, Hants, PO17 5AL. From 7pm till 9.30pm. Hall is suitable for smaller indoor R/C models. Models to be limited to a max. weight of 95g for fixed wing inc. battery (max. 2S LiPo), helicopters limited to 305mm (12") rotor dia. Models will be weighed and judged on their suitability for the venue. Flying will be in accordance with our indoor flying guidelines on our website. Admission £6 for fliers, £2 for spectators and junior fliers. Accompanied junior spectators and parents of junior fliers admitted free. Fliers to show proof of insurance. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

### June 15

**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>.

### June 21

**Waltham Chase Aeromodellers Medium Hall Indoor R/C Meetings** at Crofton Community Centre, Stubbington Lane, Stubbington, Hants PO14 2PP. From 6.30pm to 9pm. The sports hall is four-badminton court size and particularly suitable for lightweight indoor R/C models. Flying at these events will take place in accordance with our indoor flying guidelines (available on our website). Admission £8 for fliers and £2 for spectators and junior fliers, whilst accompanied junior spectators and parents of junior fliers admitted free. Fliers will be required to show proof of insurance. These events are supported by the BMFA Southern Area. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

### June 26

**Waltham Chase Aeromodellers Small Models Meeting** at Wickham Community Centre, Mill Lane, Wickham, Hants, PO17 5AL. From 7pm till 9.30pm. Hall is suitable for smaller indoor R/C models. Models to be limited to a max. weight of 95g for fixed wing inc. battery (max. 2S LiPo), helicopters limited to 305mm (12") rotor dia. Models will be weighed and judged on their suitability for the venue. Flying will be in accordance with our indoor flying guidelines on our website. Admission £6 for fliers, £2 for spectators and junior fliers. Accompanied junior spectators and parents of junior fliers admitted free. Fliers to show proof of insurance. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

### June 28 – July 6

**PSSA 'Fly for Fun'** event with the Lleyn MAC – Nr Abersoch, North Wales. Meet at the Londis car park in Llanbedrog for 09:30am each day. Slope map will be left in shop window for late arrivals (weekends only). 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](mailto:webmaster@pssaonline.co.uk) or go to [www.pssaonline.co.uk/about-us/events/](http://www.pssaonline.co.uk/about-us/events/)

## JULY

### July 3

**Waltham Chase Aeromodellers Small Models Meeting** at Wickham Community Centre, Mill Lane, Wickham, Hants, PO17 5AL. From 7pm till 9.30pm. Hall is suitable for smaller indoor R/C models. Models to be limited to a max. weight of 95g for fixed wing inc. battery (max. 2S LiPo), helicopters limited to 305mm (12") rotor dia. Models will be weighed and judged on their suitability for the venue. Flying will be in accordance with our indoor flying guidelines on our website. Admission £6 for fliers, £2 for spectators and junior fliers. Accompanied junior spectators and





parents of junior fliers admitted free. Fliers to show proof of insurance. For further details please contact Alan Wallington on 01489 895157, email [indoor@wcaero.bmfa.club](mailto:indoor@wcaero.bmfa.club) or visit <https://wcaero.bmfa.club>

## July 6

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

## July 12 - 13

**Woodspring Wings 25.** Model Aircraft Show. From 10.00am to 16.30pm. The Woodspring Wings Model Aircraft Show has been a regular fixture on the flying calendar since shortly after the club began in 1989. It has since grown to be the biggest model aircraft show in the Southwest and attracts around 4000 visitors each year. The show features all-day model flying displays by some of the country's top pilots, plenty of traders and food and drink to suit all tastes. In recent years we have also enjoyed fly pasts by the BBMF Lancaster, the Red Arrows and the BBMF Spitfire, something we hope to continue every year. Located near Yatton in the Somerset Levels, Woodspring Wings is ideally placed to run a show of this size and popularity. The club owns a total of 21 acres of land including the flying field itself and adjacent fields meaning ample space for the event and plenty of free parking available. For more information please visit [www.woodspringshow.co.uk](http://www.woodspringshow.co.uk) or on Facebook. Camping available on site for the weekend with good advance discounts.

## July 12 - 13

**Pontefract 13th Annual Fly-In Weekend** at Pontefract Park, southwest corner of junction 32 of the M62. Sat nav - WF8 4QD. Entry via huge white gate 1/4 mile south towards Pontefract. Further details see map on [www.pandas.bmfa.org](http://www.pandas.bmfa.org). Saturday 12th July - any R/C model type (electric or IC), plus control line (no free flight). On Sunday 13th July - Single Channel and Retro Fly-In for all age-appropriate IC and electric powered vintage and retro models (ideally up to the late 1970s but we are flexible as long as they fit in with the general theme of the day). Free entry, further details and updates at [www.singlechannel.co.uk](http://www.singlechannel.co.uk). To fly you must have insurance and your CAA documentation up to date plus any model over 7.5 kg requires BMFA B, LMA proficiency or equivalent recognised certification. However, feel free to bring along your models and display them if you don't want to fly. Limited free camping available, contact: Phil Green ([philg@talk21.com](mailto:philg@talk21.com)) or Shaun Garrity ([aeromodeller@gmail.com](mailto:aeromodeller@gmail.com))

## July 19

**Christchurch & District MFC Open Waterplane** event is at Longham Lake on Saturday 15 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](http://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](mailto:roachfoxwood@aol.com) three days before for weather check.

## July 20

**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>.

## AUGUST

### Aug 2-3

**PSSA 'Fly for Fun' event** at The White Horse, Westbury, Wiltshire. Meet at the White Horse car park. Pilots brief at slope location at 10:30am each day. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. Note this meeting will only run with locally forecast winds from West through to North. For more information contact Phil Cooke on 07772 224719, email [webmaster@pssaonline.co.uk](mailto:webmaster@pssaonline.co.uk) or go to [www.pssaonline.co.uk/about-us/events/](http://www.pssaonline.co.uk/about-us/events/)

### Aug 3

**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 31st. Please check with the WSRFC before travelling: <https://whitesheet.bmfa.club>

### 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](mailto:manny@bmfa.org). Rules and general info at [www.funfly.bmfa.org](http://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](mailto: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](mailto: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>.

## SEPTEMBER

### 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](http://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](mailto:roachfoxwood@aol.com) three days before for weather check.

### 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](mailto:webmaster@pssaonline.co.uk) or go to [www.pssaonline.co.uk/about-us/events/](http://www.pssaonline.co.uk/about-us/events/)

### Sept 21

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

## 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>



To use our **FREE READERS' AD SERVICE** simply fill in the coupon provided and we'll print your advert here, in Britain's best-selling R/C flying magazine

## FOR SALE

**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).

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

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

**BRIT PACK KIT**, Ambassador Products  
'Musketeer'. 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).

**FREE PLANES** & radios. Funboy, Tiger Moth, 4-channel,  
Easy Star, Spectrum, DXGi transmitter. Loads of spares,  
inc. servos etc. Selling due to having a clear out.  
Contribution to Alzheimer's society required. Buyer to  
collect. 01789 721225 (Stratford on Avon).

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

**4 x 6-CHANNEL** and 1-channel Hi-Tec Optima  
receivers - offers? Email sandytough@btinternet.  
com (Aberdeen).

**SLEC HIGH TECH PROPELLER BALANCER** x 2.  
One is complete, the other is missing a spindle -  
£20 par inc. P&P Hawker Hind plan 37", Bristol  
Scout Hansa D1 49" - £12 each inc. P&P. Call John  
on 01407 710312 (N.W. Wales).

**D.B SPORT & SCALE MASCOT** 1500 mm (59")  
span trainer, untouched kit - £120 ono. Buyer to  
collect. 01509 508821 (Loughborough).

**DB MODELS SOPWITH PUP E**, 1/8 scale, 40" span  
inc. Vickers gun, cockpit dashboard, 3D wheels,  
pilot, ESC & motor. Covered in olive drab and only  
flown twice - £250. Buyer to collect. 01952770818  
(Telford).

**SOPWITH PUP PLANS** David Boddington 63.5",  
stained but unused. Dennis Bryant SE5a (copies).  
Bryan Taylor Hawker Hurricane (copies). Tony  
Nijhuis Mk 9 Spitfire 62.5" - £15 each inc. P&P. Call  
John on 01407 710312 (N.W. Wales).

**4 x SIX CHANNEL** and 1 x one channel Hitec  
Optima receivers - offers? Email sandytough@  
btinternet.com (Scotland).

**FLAIR BRISTOL FIGHTER** kit, new in box - £250.  
Buyer to collect. 01525 370205 (Bedford).

**BIG-STICK** 66" built, OS-GGT15 petrol engine,  
special Glo-Plug, no electric gear needed, great  
condition and ready to fly - £360. Max-Trainer 58",  
test flown only, uprated motor - £140. 07855  
200745 or email dennis1945@proton.me  
(Newcastle).

**RUCKUS**, almost new with battery 3300/4S  
included. Uprated motor, as new, ready to fly -  
£150. Ruckus, great condition, with battery  
3300/4S included. Uprated motor, as new, ready  
to fly - £140. 07855 200745 or email dennis1945@  
proton.me (Newcastle).

## WANTED

**D.B. BARNSTORMER** 50" bi-plane plan. Will pay  
full price. Call Tom on 01443 670462 (Cardiff).

**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).

# RCM&E

Post to: RCM&E, Marketplace, PO Box 99, Horncastle, Lincs, LNP 6LZ

## FREE READERS' ADVERTISING

Please write your details in CAPITALS in the grid below, including a contact  
name and address or telephone number in the word count. Please also enter  
your full details in the address box below the grid.

PLEASE TICK: **FOR SALE** ☐ **WANTED** ☐

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Free Readers' Ads will only be accepted on the coupon supplied.

### Terms and conditions

We will endeavour to print your details in the next available issue of RCM&E.  
**Free Readers' Ads will only be accepted on the coupon supplied.**  
Coupons received after the copy date may be held over until the next  
issue. No responsibility can be accepted for misprints. Please comply with  
the Trade Descriptions Act when detailing goods for sale. This service is  
only available for private sales. Other services and trade advertisers must  
use the pre-paid classified section at the end of the magazine. Under 'The  
Business Advertisements (Disclosure) Order 1977', consumers must be able  
to differentiate between an advertisement for a private or trade sale.

Name .....

Address .....

Postcode .....

Tel. No. ....

Signature ..... Date .....



# Next issue

## SLINGSBY SKYLARK 1

The full-size Skylark 1 made its appearance in the 1950s. At one-sixth scale, as interpreted by Chris Williams for RCM&E's next pull-out Pro-Plan, it makes a very handy sized glider and fits nicely with Chris's previous scale models at this scale. As this is a fairly small aeroplane and the wing loading needs to be kept low the airbrakes have been left out and so glide path control has

shifted to the ailerons which are programmed to lift simultaneously when the occasion demands. Also, the wing mounting pylon has been widened to help contain the strain from any side loads, such as an emergency crosswind landing on the slope. Please note that although small in size the Skylark needs as much building as any larger scale model glider so it's definitely not a Kwik-Build design!



## ONE MAN & HIS SHED

Amongst many topics covered in his next column, Dave Goodenough investigates a motor seizure that afflicted his twice size KK Topper. Inspired by the late Peter Miller he adds a hinged building board to his workshop arsenal, ideal for building dihedral into a one-piece wing. Included in the mix are some more 'middle aisle' tool finds, thumbs up to a second-hand airbrush and compressor bought at a knockdown price and the quest to turn a budget priced mini circular saw into a usable addition to his power tool collection.



## EDGE TX EXPLAINED

Next month we bid welcome to Kev Scott's second article on ELRS and EdgeTx technology. This time Kev concentrates on introducing the EdgeTx operating system which is used, and continues to be developed, on radios from FlySky, Jumper and Radiomaster. These radios come in a variety of screen sizes and have displays that are either monochrome or colour. They also have a varying number of channels, so the EdgeTx operating system must cope with quite a few variations. The Jumper 25 model shown is controlled by ELRS (described in Kev's previous article) and the controlling transmitter uses Edge Tx.

**RCM&E**  
**JULY 2025**  
Issue on sale  
20th June

**Editor:** Kevin Crozier  
kcrozier@mortons.co.uk

**Publisher:** Tim Hartley,  
THartley@Mortons.co.uk

**Publishing director:** Dan Savage,  
asavage@mortons.co.uk

**Art Editor:** Kelvin Clements

**Design:** Druck Media Pvt Ltd.

**Group Advertising Manager:**  
Sue Keily

**Advertising:** Mason Ponti - mason@  
talk-media.uk - 01732 920499

**By post:** RCM&E Advertising, Talk Media,  
The Granary, Downs Court, Yalding Hill,  
Yalding, Maidstone Kent ME18 6AL

**Sales and Distribution Manager:**  
Carl Smith

**Head of Marketing:** Charlotte Park

**Commercial Director:** Nigel Hole

### Editorial address:

RCM&E, Media Centre, Morton Way,  
Horncastle, Lincolnshire LN9 6JR

**Website:** [www.modelflying.co.uk](http://www.modelflying.co.uk)

General enquiries and back issues:  
Tel: 01507 529529 24 hour answer phone  
[help@classicmagazines.co.uk](mailto:help@classicmagazines.co.uk)  
[www.classicmagazines.co.uk](http://www.classicmagazines.co.uk)

**Subscription:** Full subscription rates (but see  
page 74 for offer): (12 months 12 issues, inc  
post and packing) - UK £76.20. Export rates  
are also available - see page 74 for more  
details. UK subscriptions are zero-rated for  
the purposes of Value Added Tax.

### Customer services:

Tel: 01507 529529

### Lines are open:

Monday-Friday 8.30am-5pm

**Distribution:** Seymour Distribution Ltd,  
2 East Poultry Avenue, London, EC1A 9PT

### Subscription agents:

RCM&E, Media Centre, Morton Way,  
Horncastle, Lincolnshire LN9 6JR

**Printed:** Acorn Web Offset Ltd, Loscoe Close,  
Normanton Industrial Estate, West  
Yorkshire, WF6 1TW

**Published date:** RCM&E is published on the  
third Friday of every month

**Next issue:** 20th June 2025

**Advertising deadline:** 2nd June 2025

Pre order the next issue  
[www.classicmagazines.co.uk](http://www.classicmagazines.co.uk)

Scan



Or call 01507 529 529



© Kelsey Media Ltd. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage retrieval system without prior permission in writing from the publisher. ISSN 0269-8307

The Publisher's written consent must be obtained before any part of this publication may be reproduced in any form whatsoever, including photocopies, and information retrieval systems. All reasonable care is taken in the preparation of the magazine contents, but the publishers cannot be held legally responsible for errors in the contents of this magazine or for any loss however arising from such errors, including loss resulting from negligence of our staff. Reliance placed upon the contents of this magazine is at reader's own risk.

RCM&E, ISSN 0269-8307 (USPS 25434) is published monthly by Kelsey Media Group Ltd, The Granary, Downs Court, Yalding Hill, Yalding, Maidstone. Kent. ME18 6AL





## RCM&E Web Directory & Classified

**ALWAYS IN STOCK:**  
Huge range of miniature fixings, including our socket servo screws.

**ModelFixings.co.uk**

also the home of **ModelBearings.co.uk**

- Taps, Dies & Drills • Adhesives
- Engine & Miniature bearings • Circlips, etc. etc.

Tel/Fax +44 (0)115 854 8791 Email: [info@modelfixings.com](mailto:info@modelfixings.com)



Supplier of new electric RC Gear 2.4ghz receivers, servos, speedcontrollers, motors, batteries & other RC equipment. I buy used radio gear both 39mhz and 2.4ghz Contact me for details

[www.flyingwidgetsupplies.com](http://www.flyingwidgetsupplies.com)

Tel: 07795363634 (After 6pm Please)

email: [Charliewidget@aol.com](mailto:Charliewidget@aol.com)



[www.mantuaamodel.co.uk](http://www.mantuaamodel.co.uk)

179 Dedworth Road Windsor Berks SL4 4JN

Tel: 01753 856321

For all your modelling needs.

Metric and imperial Balsa. Plywood and Spruce. Radio Control - Accessories - Adhesives - Finishing Materials - Modellers Tools - OPS engines and spares

Distributor for Mantua Model of Italy - Mantua & Aviomodelli kits fast mail order service



**Just Kits**  
R/C MODELS AND HOBBIES



Hull and East Yorkshire Premier Model Shop ~ For all your modelling needs

194 Hessle Road, Hull HU3 3BE • Tel: 01482 618001 • [www.justkits.co.uk](http://www.justkits.co.uk)

**CHRIS FOSS designs** Manufacturer of Quality Kits since 1976

Try one of our fantastic ARTB  
(almost-ready-to-build) R/C Aircraft Kits

Just open the box and within minutes you are ready to start gluing



Mark Three

CHRIS FOSS DESIGNS, Dept RCME, Unit 1, Freehold Street, Shoreham, W Sussex BN43 5TQ. Telephone: 0788 373 9518

VISIT OUR WEBSITE: [www.chrisfoss.co.uk](http://www.chrisfoss.co.uk) TRADE AND EXPORT ENQUIRES WELCOME

Radio Controlled Aircraft, Boat and Model Engineering Plans & Parts

**sarik hobbies**

MODEL AIRCRAFT BUILDER

Find us on Facebook

The World's  
**Biggest Selection**

[www.sarikhobbies.com](http://www.sarikhobbies.com)

\* World's biggest selection of printed RC Model Plans & Short Kits.

Plans  
Laser Cut  
Wood Packs  
Canopies  
& Cowls  
Short Kits  
Materials  
Coverings  
& much more

## CRACKING OFFERS ACROSS OUR SCALE MODEL MAGAZINES

Whether you're passionate about building radio-controlled model aircraft, model boats, miniature powered machinery, or mastering model engineering tools and techniques – we have the perfect read for every model enthusiast!



SCAN ME



## SUBSCRIBE TODAY & SAVE UP TO 49%

VISIT: [WWW.CLASSICMAGAZINES.CO.UK/MODELLING25](http://WWW.CLASSICMAGAZINES.CO.UK/MODELLING25)

classic  
magazines

CALL: 01507 529529 QUOTE: MODELLING25

OFFER EXPIRES  
31/12/25



## RCM&E Web Directory & Classified



realmodelpilots@btinternet.com  
www.realmodelpilots.co.uk



Email: info@motorsandrotors.com  
www.motorsandrotors.com

**APOB**  
**BUY \* SELL \* TRADE**  
**01276 862551**  
**EBAY; APLANEOLDEBARGAIN**



Mail Order Service for: Composite Materials  
**Bucks-Composites**  
www.bucks-composites.com  
Tel. No. 01903 765918  
Mobile No. 07762 882378

**RCM&E**  
To advertise  
please contact  
Mason on  
01732 920499  
mason@talk-media.uk  
Talk Media  
in association with  
**MORTONS**  
MEDIA GROUP LTD

**LIGHTING FOR  
AEROMODELLERS**  
High intensity lights,  
flasher units and  
circular LED arrays for  
fixed wing, helicopter  
and UAVs.  
See www.  
lightingforaeromodellers  
.co.uk  
and request PDF showing  
many more items.

**D.B. SPORT & SCALE LTD**  
RADIO CONTROLLED MODEL AIRCRAFT KITS & ACCESSORIES



ORDER ONLINE AT **DBSPORTANDSCALE.COM**  
TEL: +44 (0) 1656 514950 EMAIL: SALES@DBSPORTANDSCALE.COM

**FREEZATRONIC Art F.X.**  
Custom Graphics Service  
Colour Schemes - Logos  
Bespoke Art - Adverts  
Decal Sticker Sets  
Custom Artwork  
and More!  
3D  
Call Us Today For All Your Graphic Design Needs!  
07446 361 870 freezatron@yahoo.co.uk

**Perma-Grit®**  
Tungsten Carbide Grit Abrasives  
www.permagrit.com  
01529 455034

**Tom's Traditional  
RC Building  
Service**  
Tel: 0208 423 3509  
Mobile: 0794 164 1440  
Email: r.thomas74@btinternet.com

## RCM&E Shop Guide

Take advantage of this inexpensive way of promoting your business in the best-selling r/c magazine and reach over 45,000 loyal hobbyists!

**GREATER LONDON**  
**AVICRAFT Ltd**  
15 Chatterton Road, Bromley, BR2 9QW  
Tel: 0208 460 0818  
Open Tuesday, Thursday, Friday and Saturday  
10am until 5pm  
One of the longest standing British Model Shops.  
Specialists in Remote Control Equipment, Remote  
Control Planes and all associated accessories.

**LINCOLNSHIRE**  
**MASONS MODELS**  
20 New Road, Spalding, Lincs PE11 1DQ  
Tel: 01775 722456  
Monday, Tuesday, Friday & Saturday 9am-4pm;  
Wednesday 9am-2pm; Thursday & Sunday Closed.  
www.masonsmodels.co.uk  
All major credit cards accepted. Mail Order.

**RCM&E**  
www.modelflying.co.uk

**KENT**  
**RAPID RC MODELS**  
Unit 5 A, Wallend Farm, Lower Road,  
Minster, Kent ME12 3RR. Tel: 01795 870414  
www.rapidrcmodels.com  
Open 7 days a week: Monday-Friday 10am-7pm,  
Saturday 10am-4pm, Sunday 10.30am-4pm  
Suppliers of RC Model Aircraft and RC Accessories.

www.modelflying.co.uk





# PARTING SHOT

## JAVELIN LAUNCH

This 'Bird of Time' was made by my friend Baptista Pereira (BP) a while ago as a motor glider. BP is a former Portuguese F1A and F5J national champion who has also represented our country internationally. His free-flight roots clearly show in the quality of his building. The main reason I'm sending these pictures is not related to BP's prowess as a modeller but the launch technique of our friend Mário Madeira. By the look of it maybe we should start calling him Super Mario. He does lack the moustache though! He is a gym teacher and it shows. That throw was almost javelin like. Notice he is off the ground at launch. I just wish I knew beforehand that he would throw it like that as I would have upped the shooting speed!

**Arnaldo Correia**



## DATAFILE

|                |                              |
|----------------|------------------------------|
| Photo:         | Arnaldo Correia              |
| Camera:        | Nikon D5600                  |
| Aperture:      | f/16                         |
| Focal Length:  | 140 mm<br>(in 35 mm: 210 mm) |
| Shutter Speed: | 1/250 sec                    |
| Lens:          | 70-300 mm f/4-6.3            |
| ISO:           | 800                          |
| Metering:      | Spot                         |
| Program:       | Aperture priority            |



### SLICK 89in

CRAZY AGILITY AND MANOEUVRABILITY

All the crazy agility and manoeuvrability of the Laser, while keeping the friendly flying characteristics of Pilot-RC planes

#### SPECIFICATIONS:

**Wingspan:** 89in (2.260m) | **Length:** 83.3in (2.117m)

**Wing area:** 1,308sq in (8,445sq cm) | **Weight:** 19.51lbs (8.87kg)

**Required Engine/Motor:** 55-76cc or equivalent electric

**Required Servos:** 5 high torque plus throttle

(Uses x2 per aileron, x2 per elevator and x1 on rudder)

**SPECIAL OFFER**

WAS: £989.95

**NOW: £789.95**



Offer applies to  
PIL700 - Blue/Green  
(Scheme 02) Only

#### EDGE 540 V3

Yellow/Blue/White -  
(Scheme 02)

**NEW**



PIL825

**Wingspan:** 67in (1.7m)

**£489.95**

Red/Black/White -  
(Scheme 01)

**NEW**



PIL824

**Wingspan:** 67in (1.7m)

**£489.95**

#### LASER

Orange - (Scheme 08)



PIL691

**Wingspan:** 60in (1.52m)

**£399.95**

Green - (Scheme 07)



PIL693

**Wingspan:** 67in (1.7m)

**£479.95**

#### EXTRA NG

Red/Blue/Silver -  
(Scheme 07)



PIL832

**Wingspan:** 67in (1.7m)

**£489.95**

Yellow/Silver/Black -  
(Scheme 06)



PIL742

**Wingspan:** 90in (2.2m)

**£899.95**

#### EXTRA NG

Red/Silver/Black -  
(Scheme 04)



PIL724

**Wingspan:** 103in (2.6m)

**£1299.95**

#### EXTRA SX

Red/Silver/Black -  
(Scheme 01)



PIL800

**NEW**

**Wingspan:** 90in (2.2m)

**£989.95**

#### EDGE 540 V3

Red/White/Black -  
(Scheme 01)



PIL797

**Wingspan:** 103in (2.6m)

**£1449.95**

#### SLICK

Red/White/Yellow -  
(Scheme 05)



PIL773

**Wingspan:** 84in (2.1m)

**£769.95**

#### SKYWOLF V2

Green/Blue -  
(Scheme 04)



PIL795

**Wingspan:** 67in (1.7m)

**£479.95**

Orange/White -  
(Scheme 05)



PIL720

**Wingspan:** 88in (2.2m)

**£699.95**

#### SUNCOVERS



An easy and effective way to keep your model looking better for longer.

Available in various sizes  
35cc ~ 170cc, Decathlon  
107in & 2.2m Jet

**£69.95 ~ £109.95**

#### SERVOS



PW-21AH  
21.5kg.cm/0.079s Servo  
**£89.95**

PW-37AH  
37.8kg.cm/0.07s Servo  
**£129.95**

PW-28AH  
28.7kg.cm/0.056s Servo  
**£119.95**

PW-48AH  
48kg.cm/0.10s Servo  
**£139.95**

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



# BOEING C17 GLOBEMASTER

XFly Model is proud to announce its first transport aircraft C-17 in the EDF range. With a 1200mm wingspan, the C-17 features a scale outline and details including four efficient engines and landing gear. The factory pre-installed power configuration, includes four 40mm fans with 1413-KV5000 brushless motors and four 20A brushless ESCs, paired with a 4S LiPo battery, delivering an abundance of thrust for vertical climbs, rolls, loops and other maneuvers.

**NEW!**

## FEATURES:

- Four efficient 40mm EDF power configuration delivering an abundance of thrust for vertical climbs, rolls, loops and other maneuvers
- Landing gears with dual wheels designed for grip ability, accuracy and stability
- Battery compartment reasonably designed to easily achieve a proper C.G.
- Extended flight time of 3-8 mins when using recommended 4S 2600-4000mAh LiPo battery
- Quick and easy assembly
- Full painted with decal pre-applied

## SPECIFICATIONS:

- Wingspan: 1200mm/47"
  - Length: 1050mm/45"
  - ESC: 20A x 4
  - Flying Weight: 1560g
  - Wing area: 16dm<sup>2</sup>
  - Motor: 1413-KV5000 x 4
  - EDF Size: 40mm 12-blade
  - Servos: 9g servos x 7
  - Recommended Battery: 4S 2600-4000mAh
  - Radio: 5CH – aileron, elevator, throttle, rudder/steering, flaps
  - Skill Level: Intermediate
  - Aprox. Flying Duration: 3-8 mins
- Requires: Radio, battery and charger to complete



E&OE.

**XFLY-MODEL**

Part No: XF124P Boeing C17 Globemaster – W/O TX/RX/CHARGER & BATT

RRP: £ 309.99

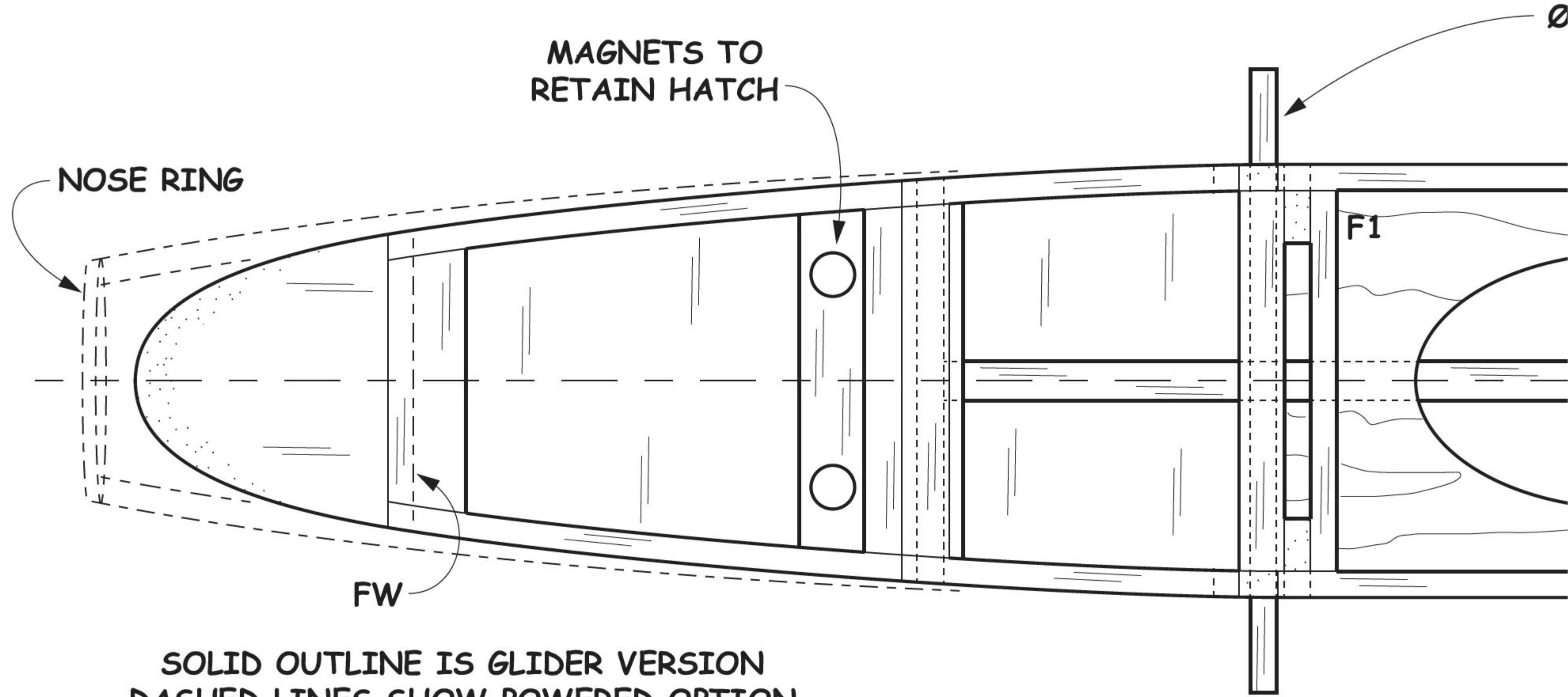
**CML**

CML PRODUCTS ARE AVAILABLE IN ALL GOOD MODEL & HOBBY SHOPS. CHECK OUR WEBSITE FOR FULL DETAILS  
[WWW.CMLDISTRIBUTION.CO.UK](http://WWW.CMLDISTRIBUTION.CO.UK)



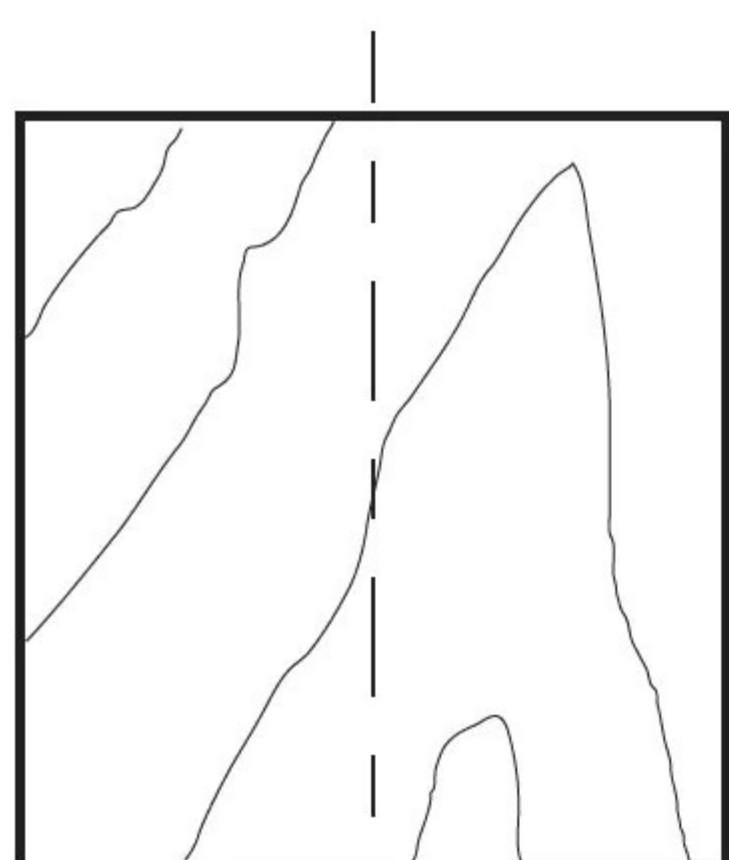


500



SOLID OUTLINE IS GLIDER VERSION  
DASHED LINES SHOW POWERED OPTION  
USE A 'HEAVY' SMALL OUTRUNNER

400

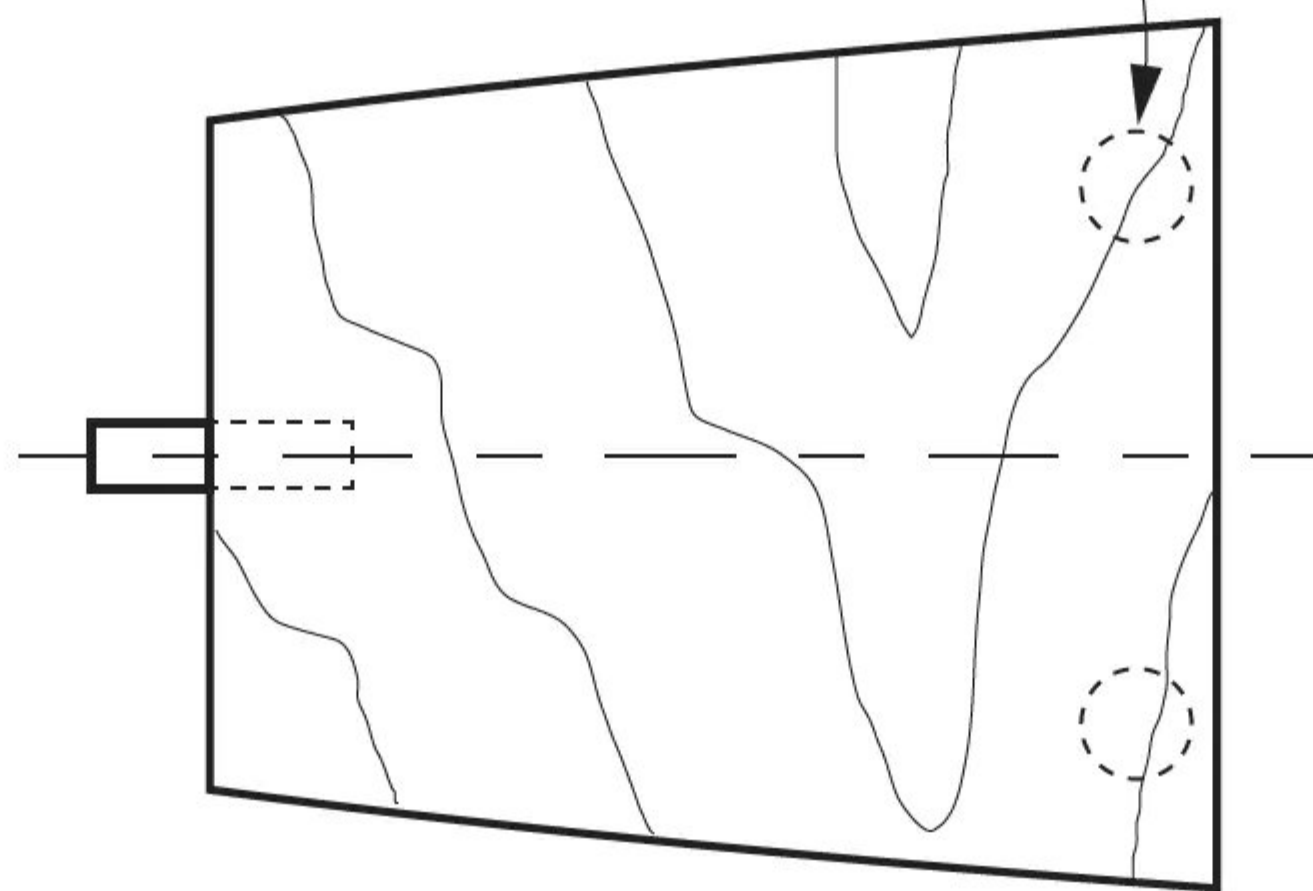


FW  
1/8" PLY

BALSA RETAINING  
TONGUE



MAGNETS

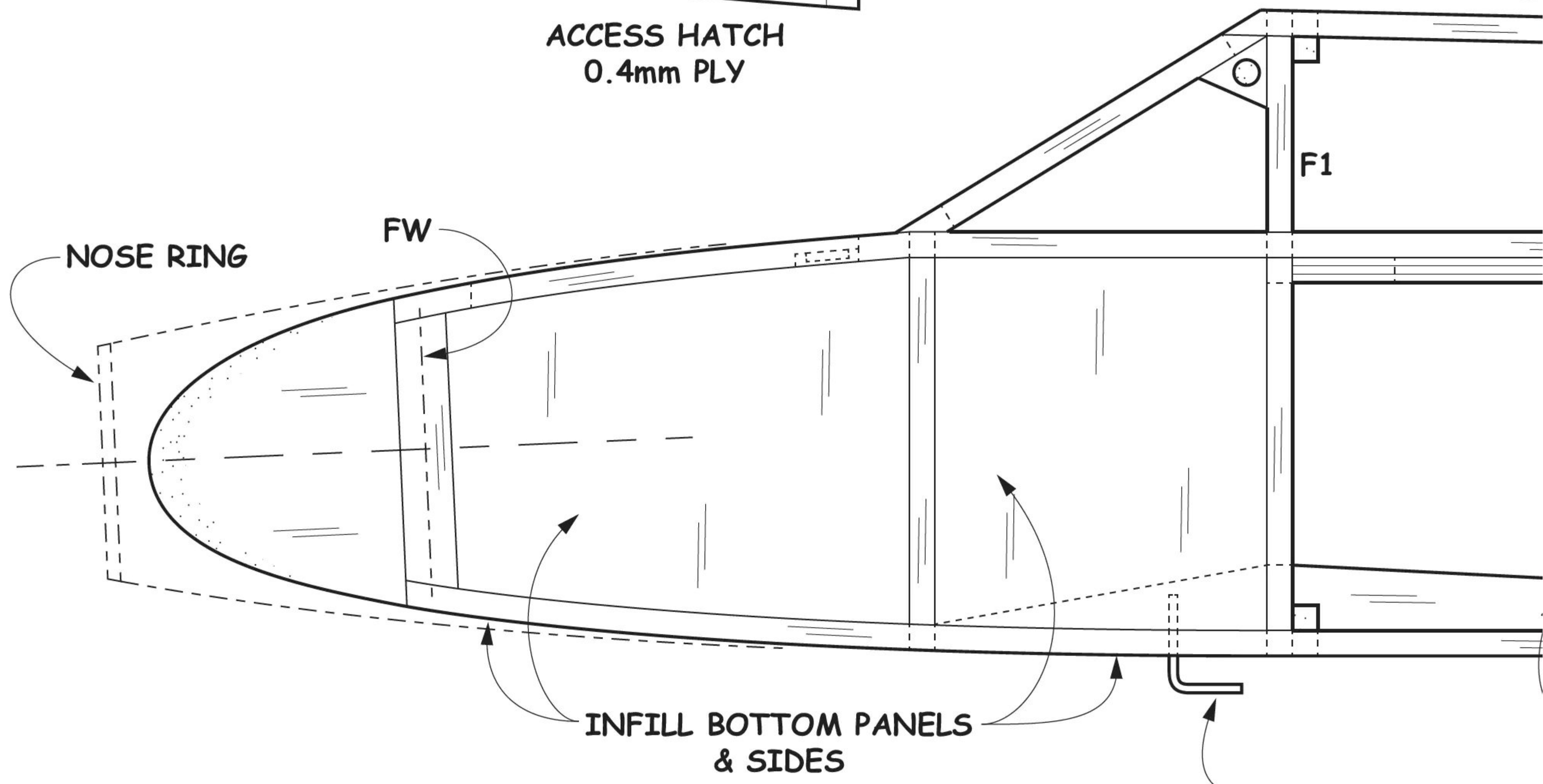


ACCESS HATCH  
0.4mm PLY



TOW HOOK SUP  
3/16" HARD BA

300



NOSE RING

FW

INFILL BOTTOM PANELS  
& SIDES

F1



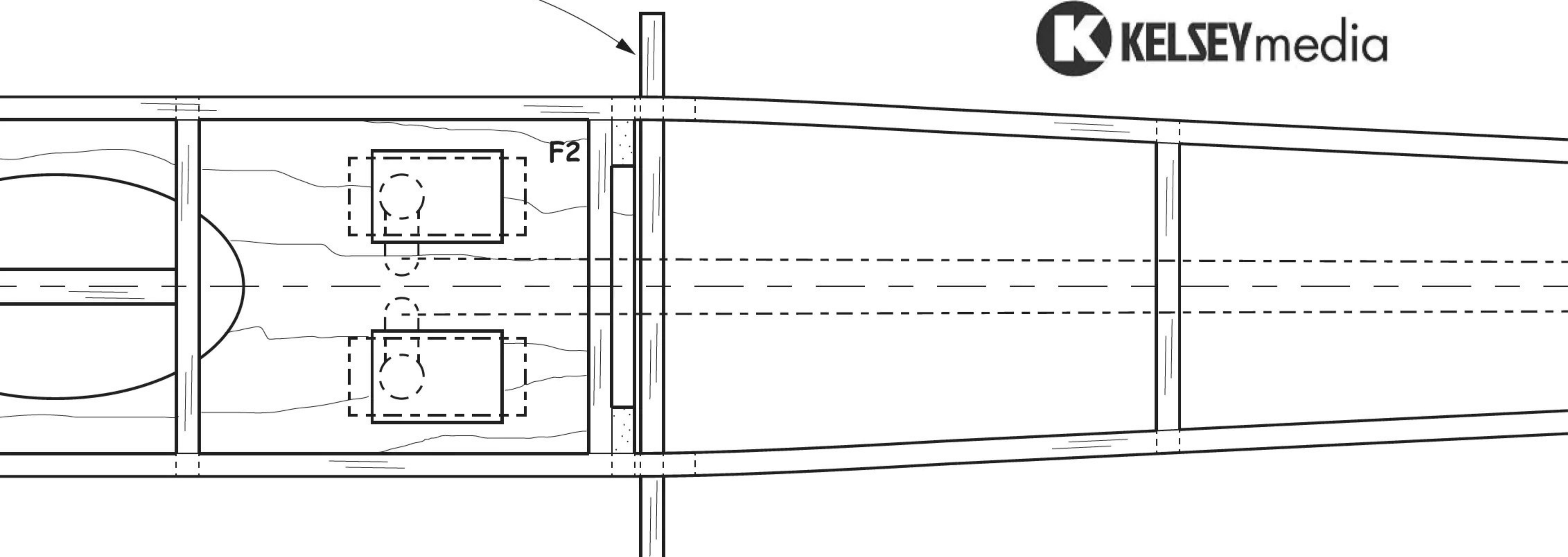


PLEASE VISIT [WWW.SARIKHOBBIES.COM](http://WWW.SARIKHOBBIES.COM) TO VIEW ALL AVAILABLE PLANS

PLEASE NOTE, THIS PLAN IS COPYRIGHT OF KELSEY MEDIA.  
NO PART OF THIS PLAN MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS,  
ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR ANY INFORMATION STORAGE  
RETRIEVAL SYSTEM WITHOUT PRIOR PERMISSION IN WRITING FROM THE PUBLISHER.

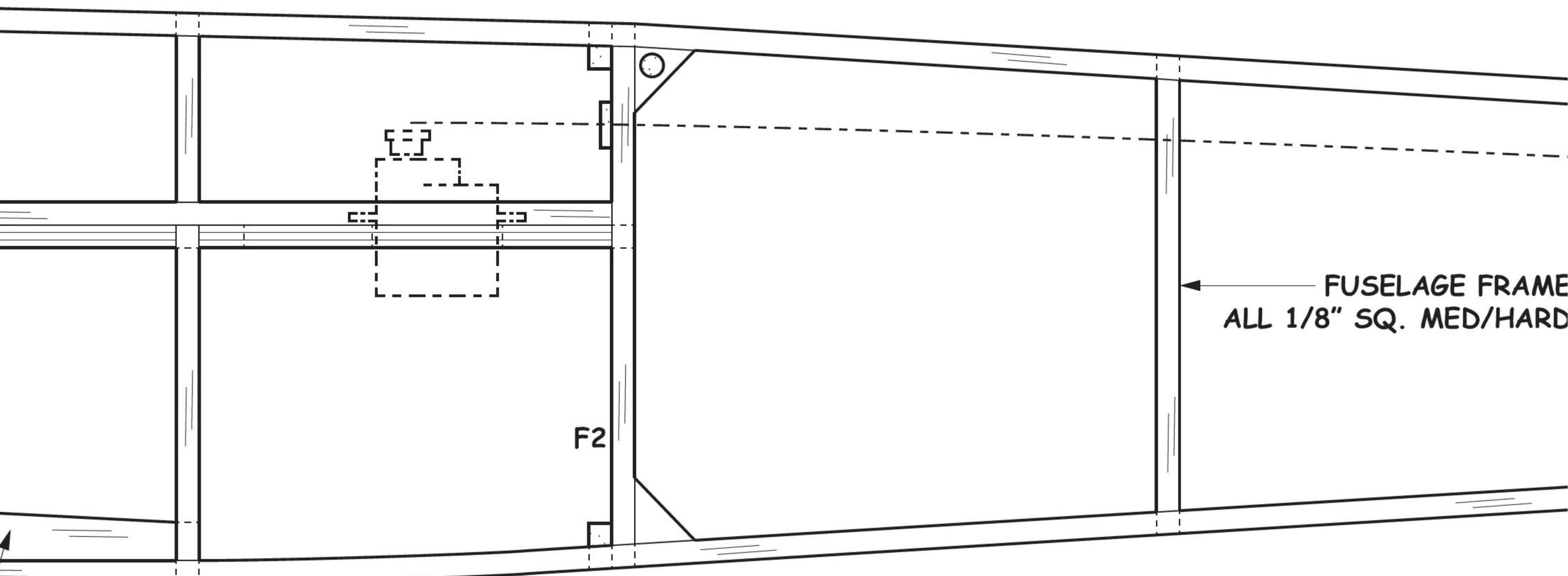


3mm HARD Balsa DOWELS



PORT  
Balsa

○ PUSHROD SNAKE  
SUPPORTS  
○ 1/16" x 1/4" Balsa



TOW HOOK SUPPORT

1/8" x 1/4"  
Balsa TAIL

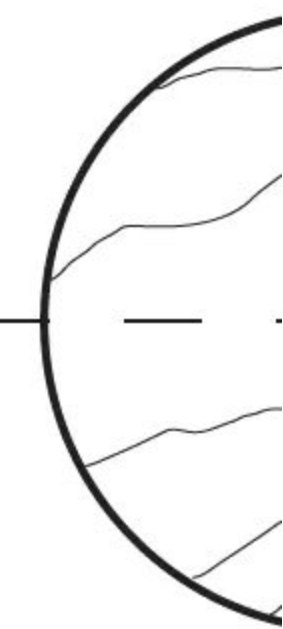
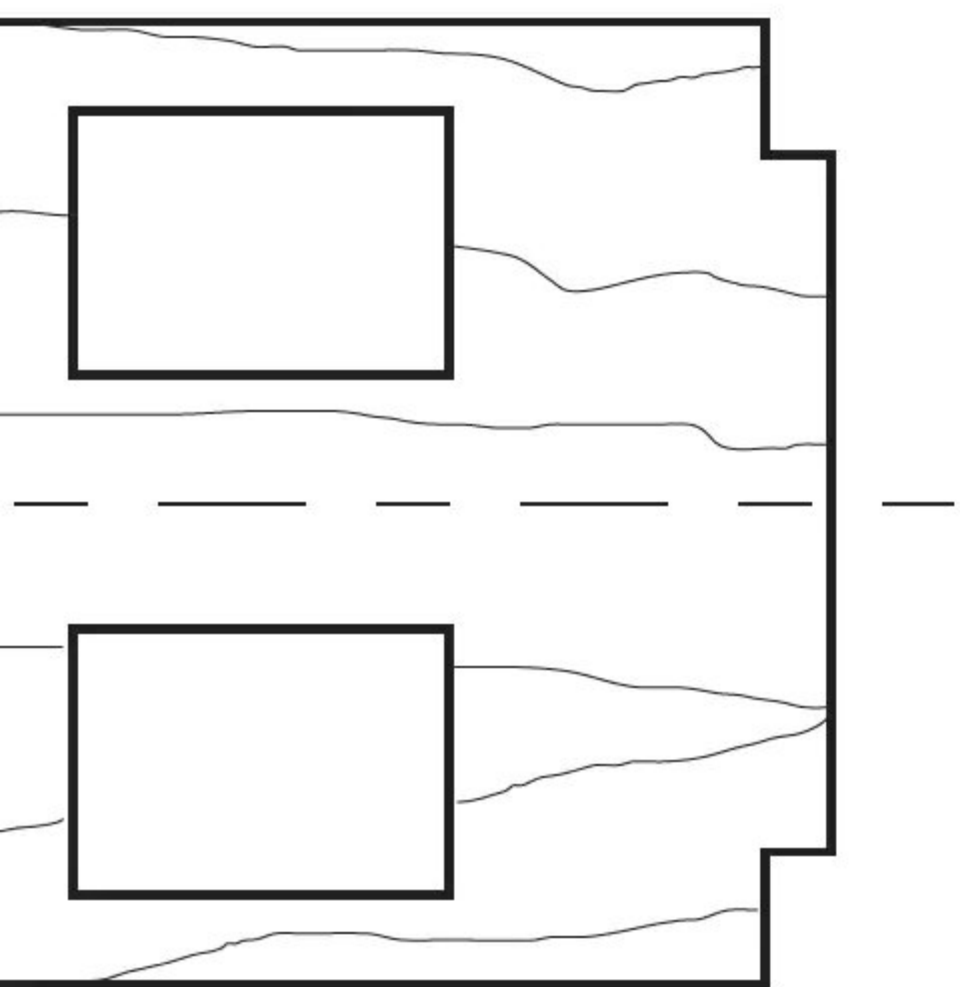
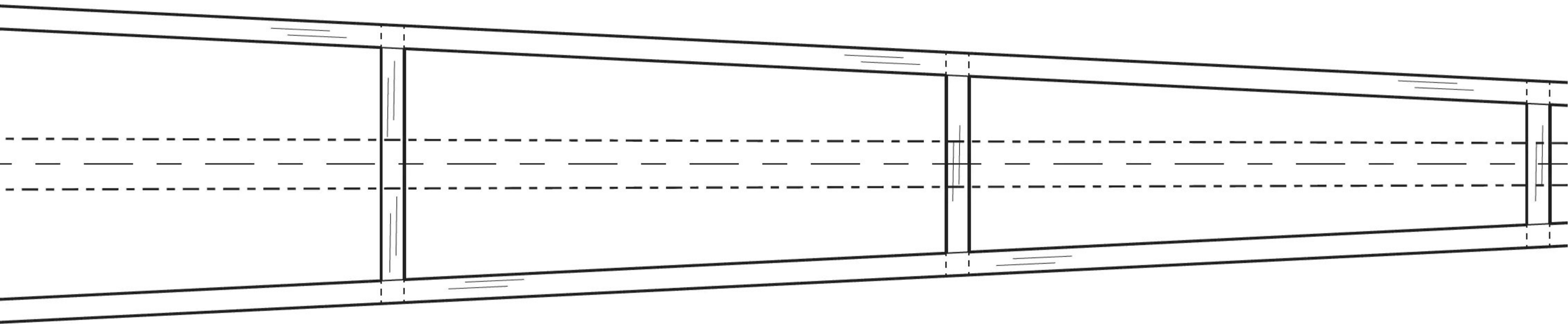


ALL AVAILABLE PLANS

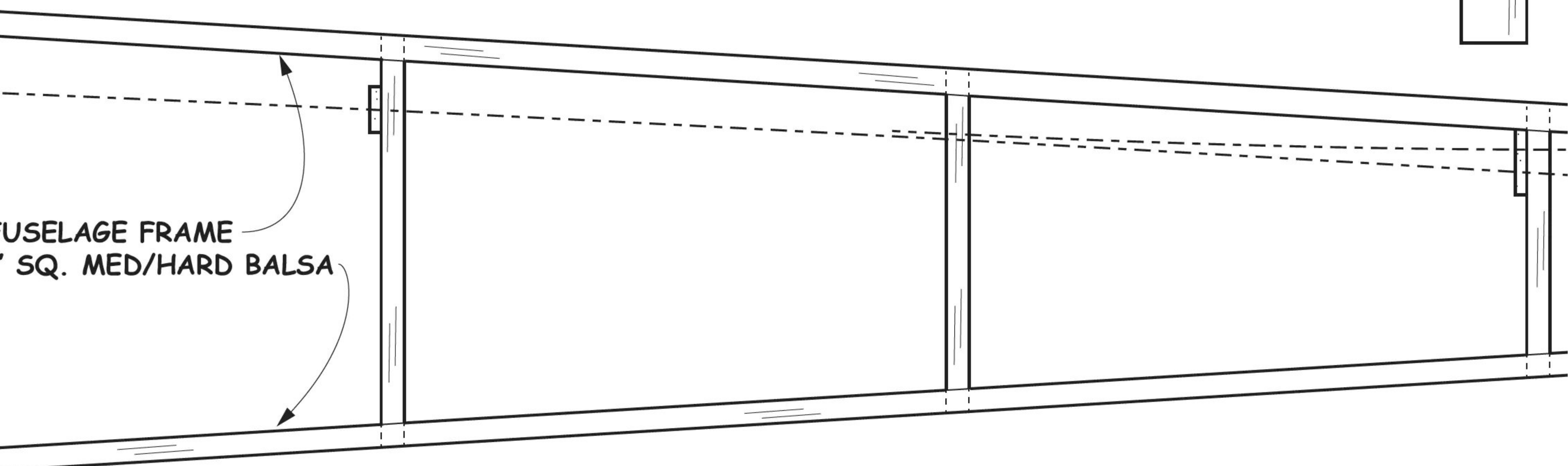
KEY MEDIA.  
ANY FORM OR BY ANY MEANS,  
OR ANY INFORMATION STORAGE  
FROM THE PUBLISHER.

MOTOR: MULTIPLEX ROXXY 18-20-10  
ESC: 10A  
BATTERY: 450 mAh 2S  
SERVOS: CHEAP 5g ANALOGUE UNITS  
PROPELLER: PICHLER 5" FOLDING UNIT

TOP INF  
RUDDER



NOS  
1/1  
DRILL TO



FUSELAGE FRAME  
SQ. MED/HARD BALSA

1/8" x 1/4" MED.  
BALSA TAILPLANE L.E.



# RCM&E

## COSMIC CLOUD 150

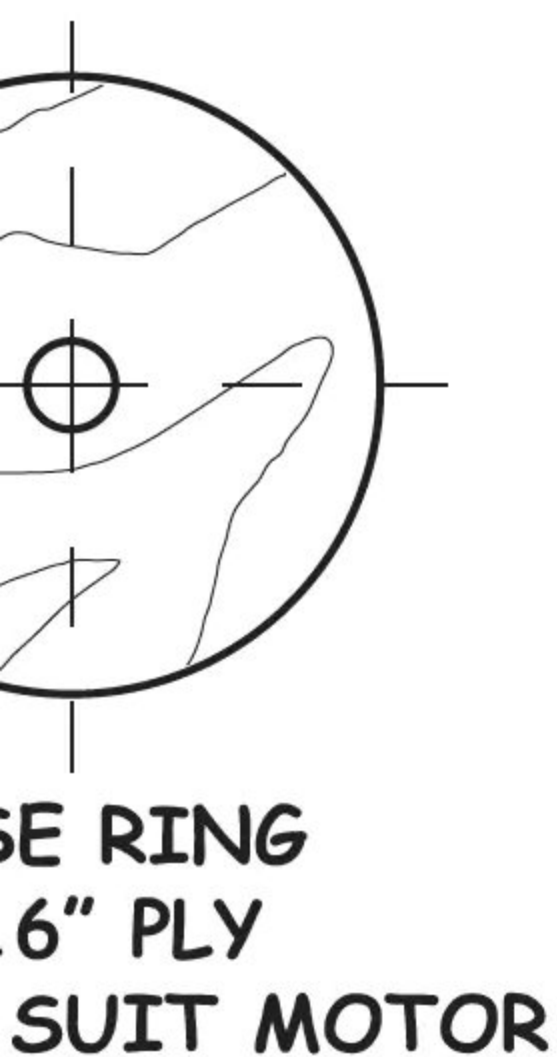
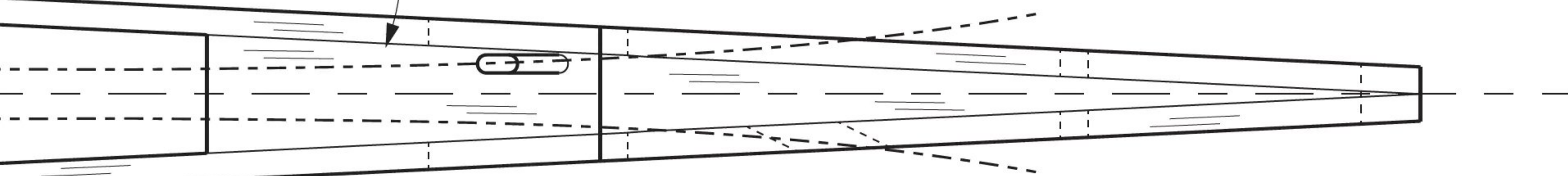
BY DAVE GOODENOUGH

PLAN No: RC2273

No. OF SHEETS: 1 OF 1

First published in  
RCM&E June 2025

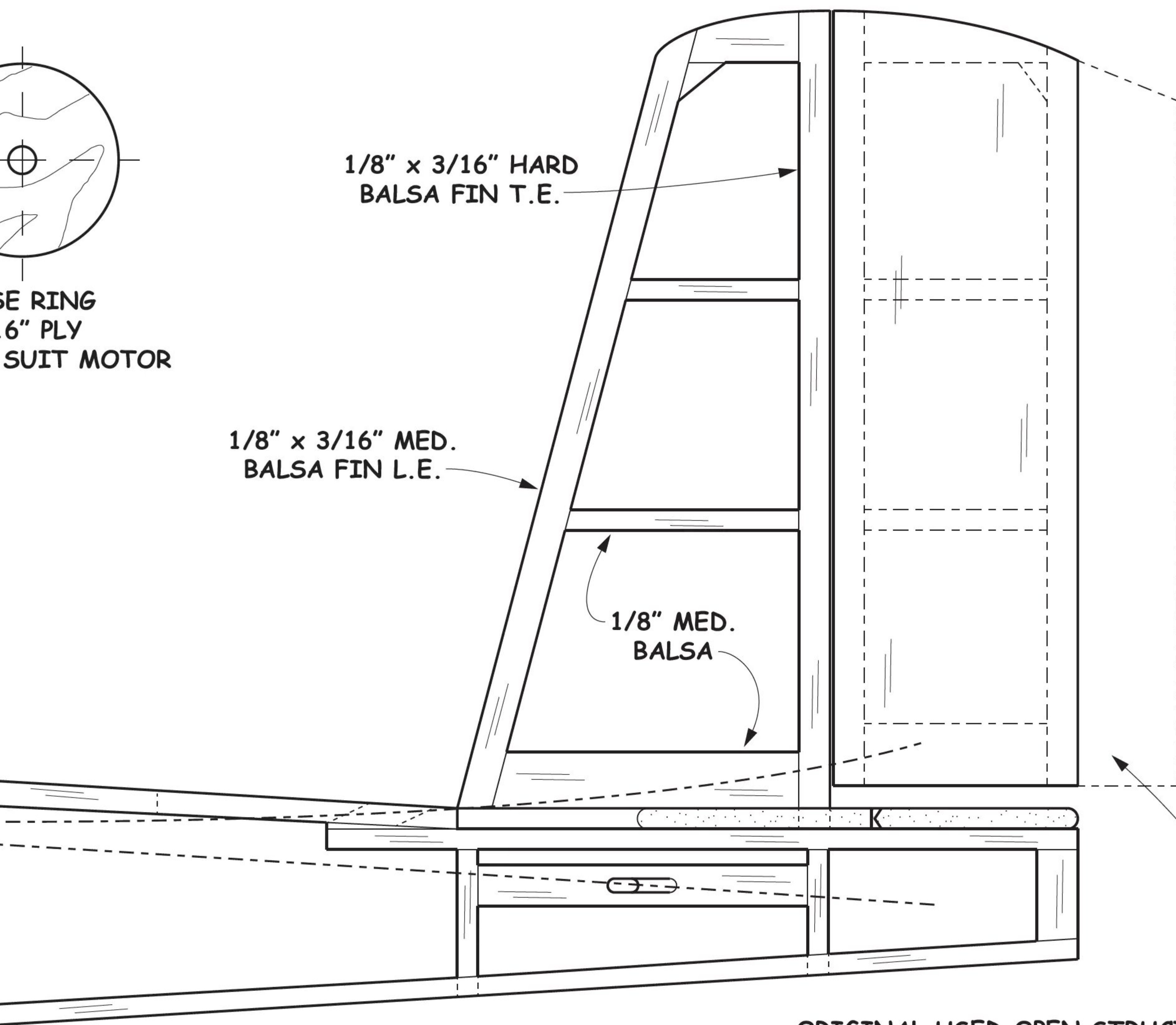
FILL TO SUPPORT  
PUSHROD SNAKE



1/8" x 3/16" HARD  
BALSA FIN T.E.

1/8" x 3/16" MED.  
BALSA FIN L.E.

1/8" MED.  
BALSA

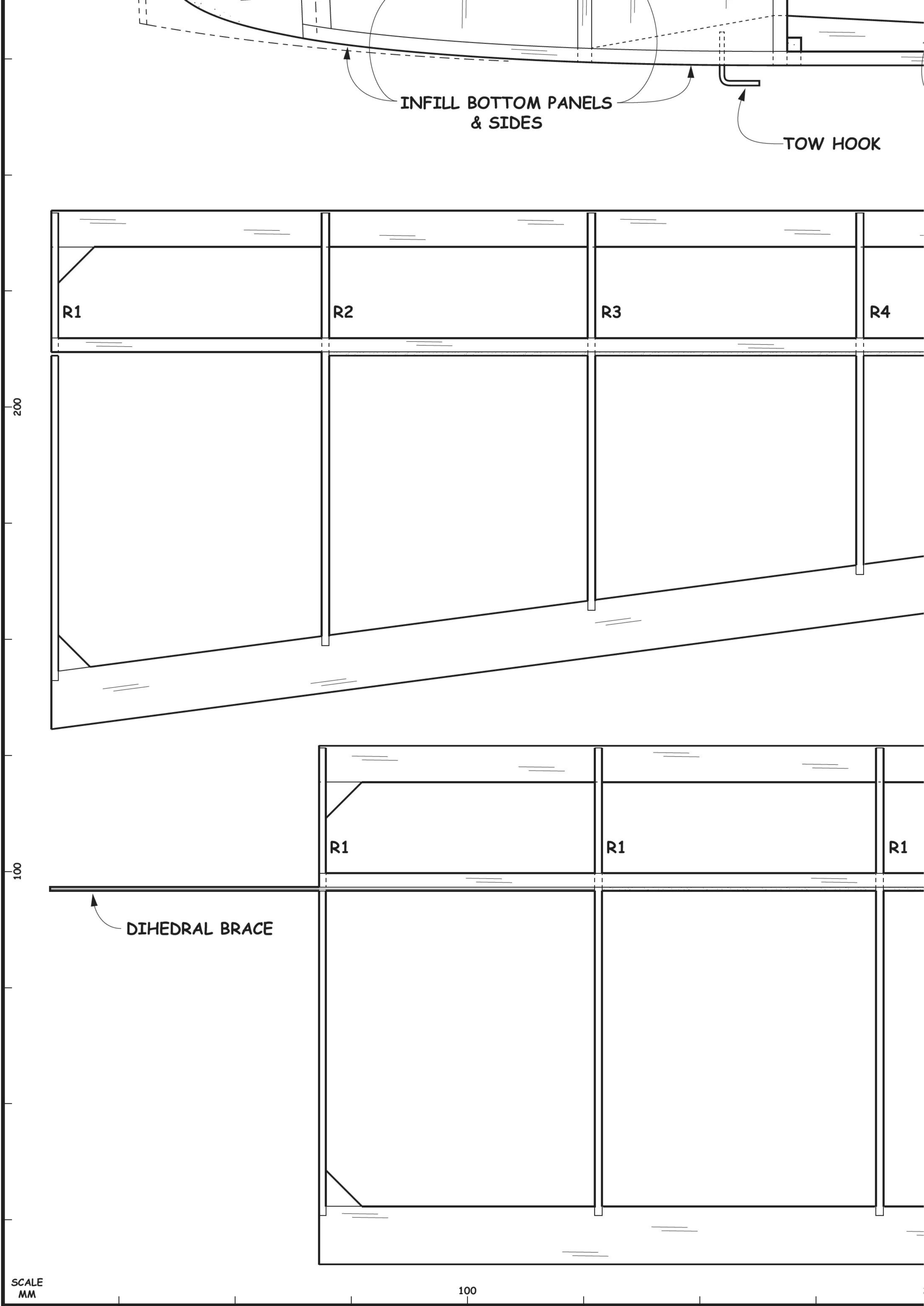


ORIGINAL USED OPEN STRUCTURE  
RUDDER & CLEAR PLASTIC  
EXTENSION FOR IMPROVED CONTROL

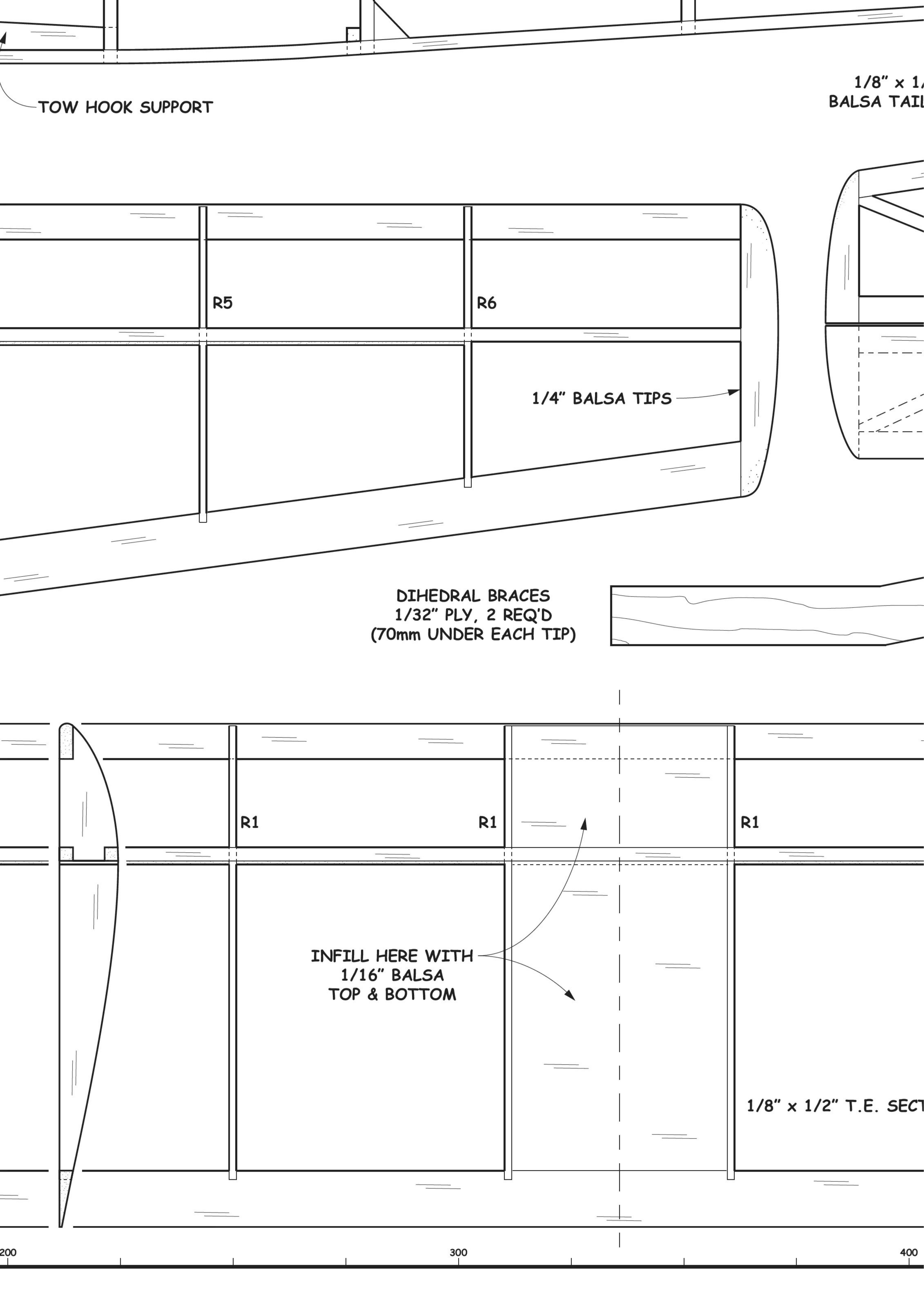
1/8" MED.  
BALSA TIPS











TOW HOOK SUPPORT

1/8" x 1/2" Balsa Tail

R5

R6

1/4" Balsa Tips

DIHEDRAL BRACES  
1/32" PLY, 2 REQ'D  
(70mm UNDER EACH TIP)

R1

R1

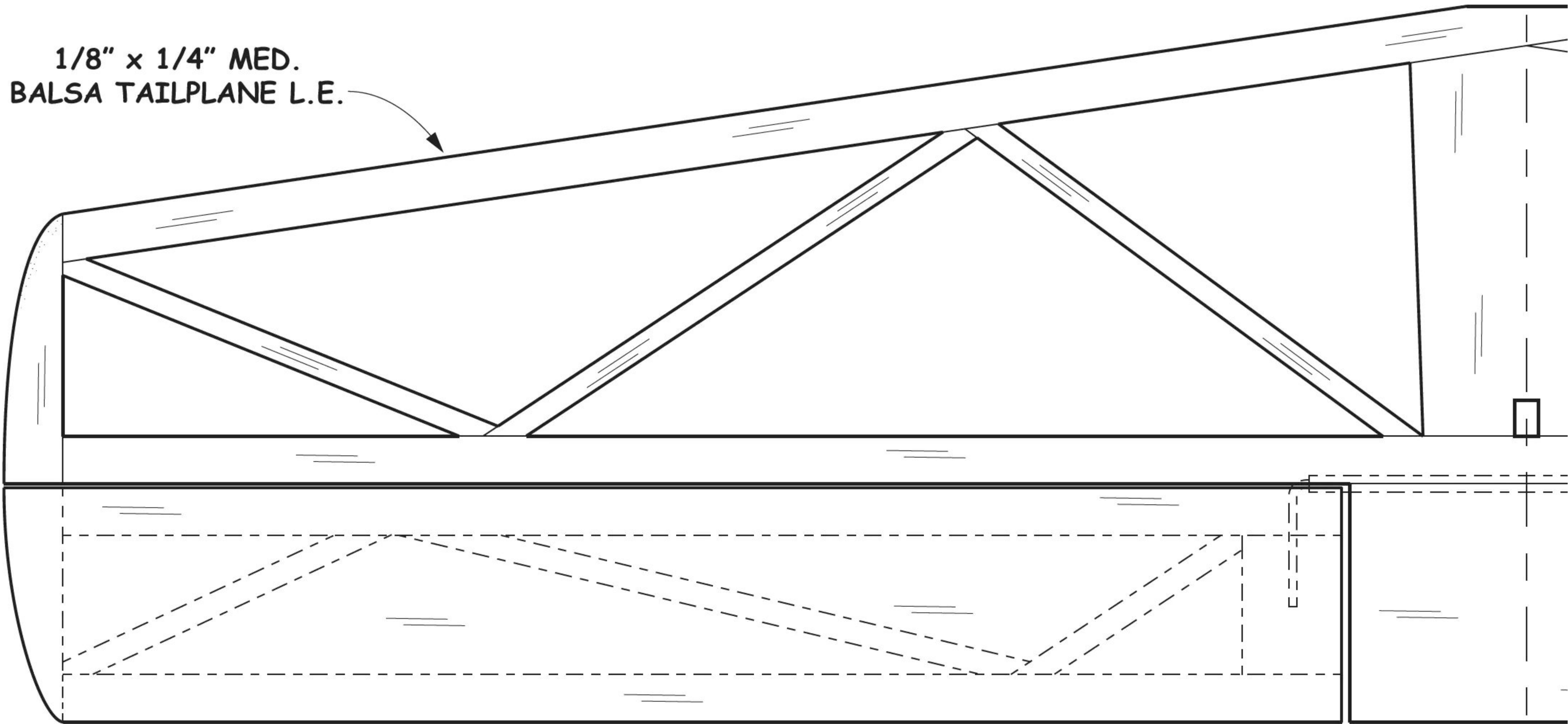
R1

INFILL HERE WITH  
1/16" Balsa  
TOP & BOTTOM

1/8" x 1/2" T.E. Section

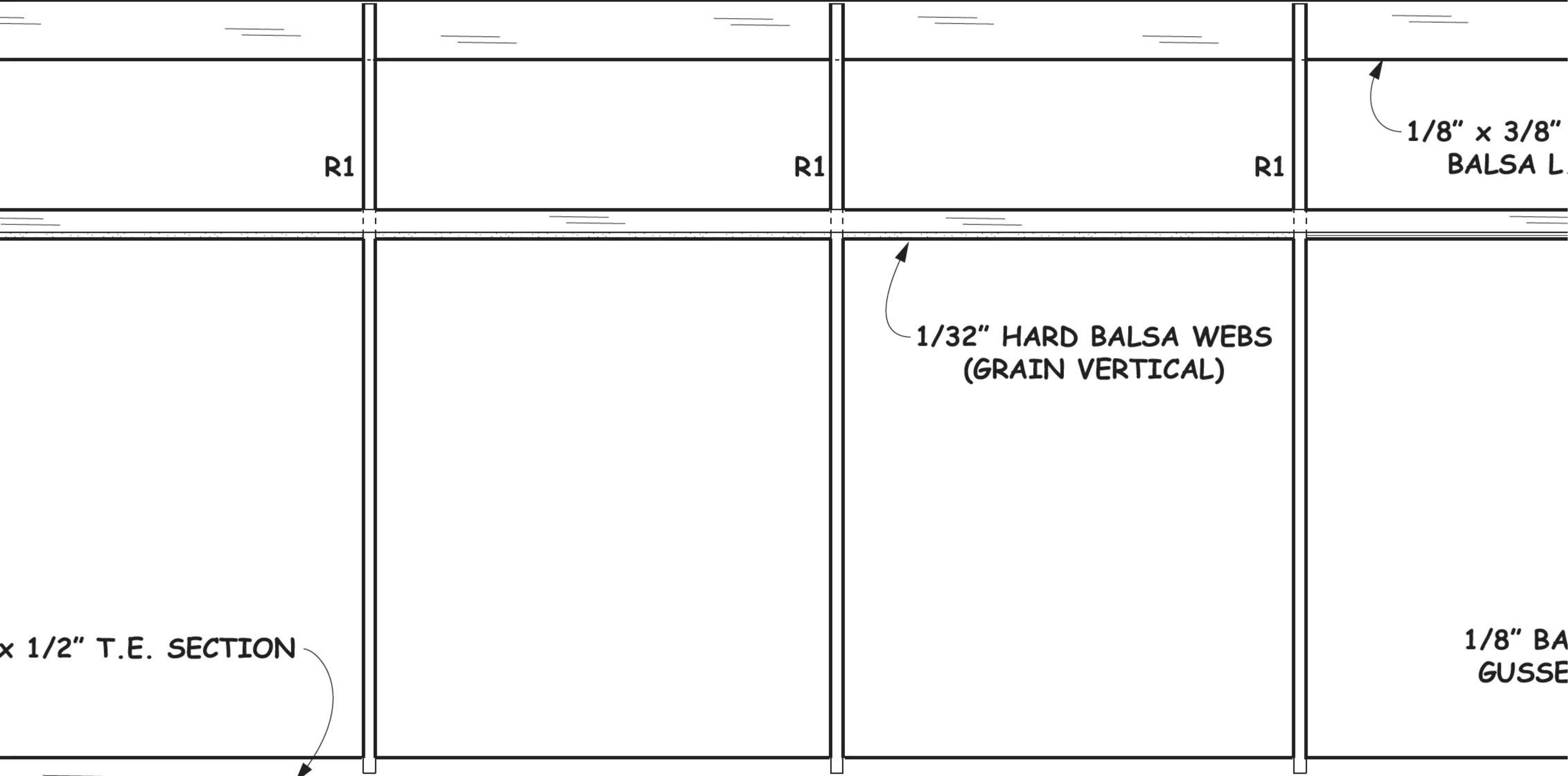


1/8" x 1/4" MED.  
BALSA TAILPLANE L.E.

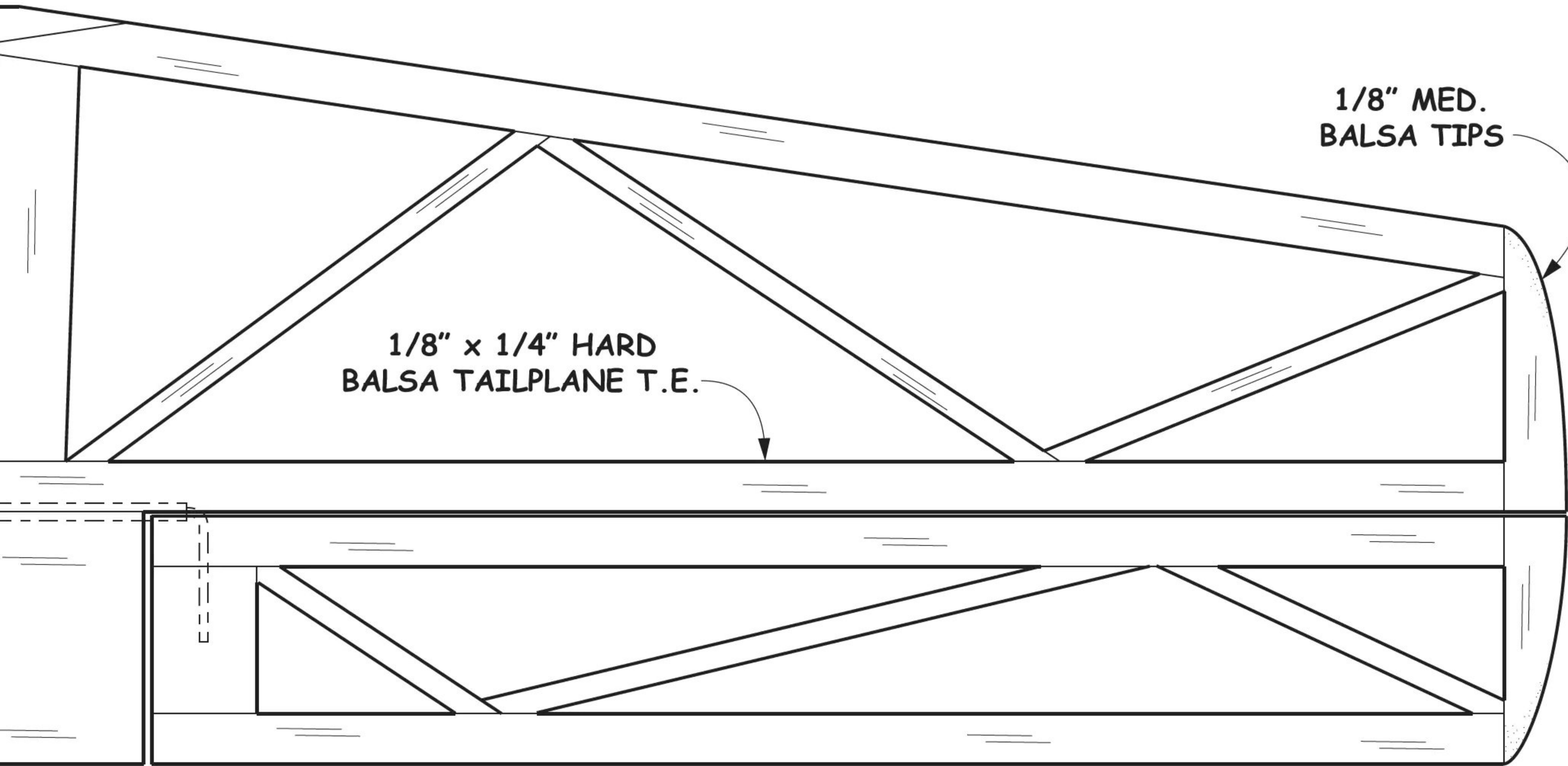


WIRE JOI

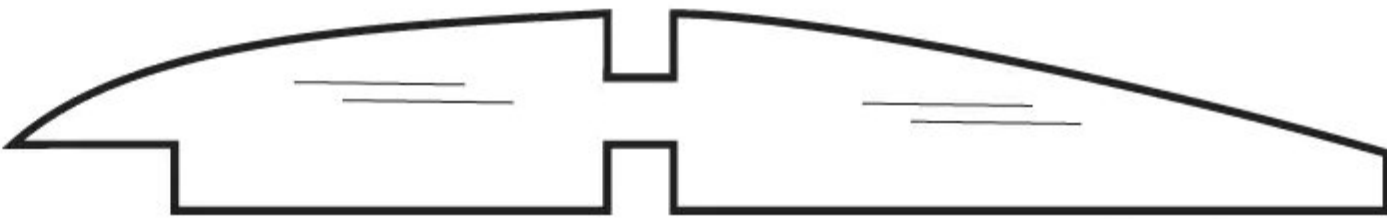
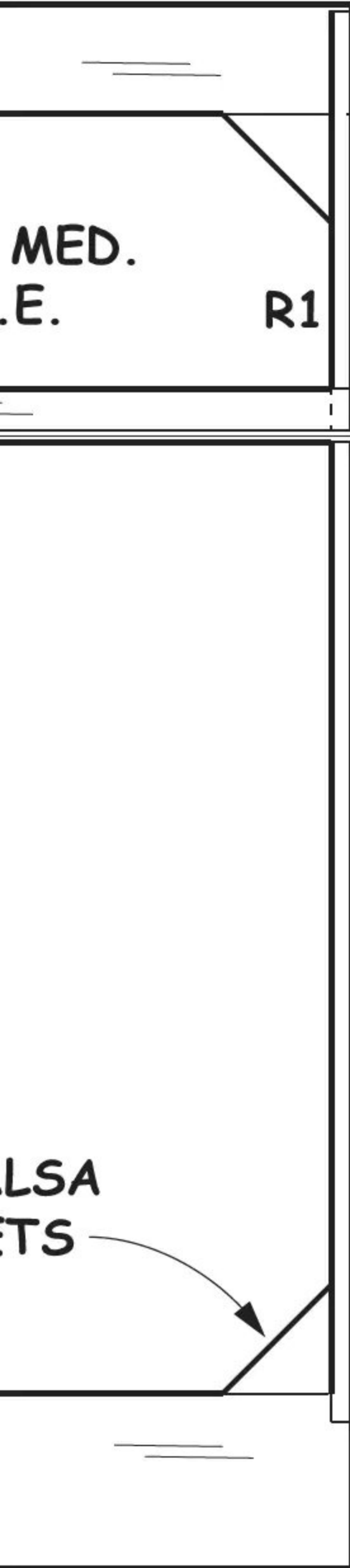
1/8" SQ. HARD BALSA SPARS  
TOP & BOTTOM



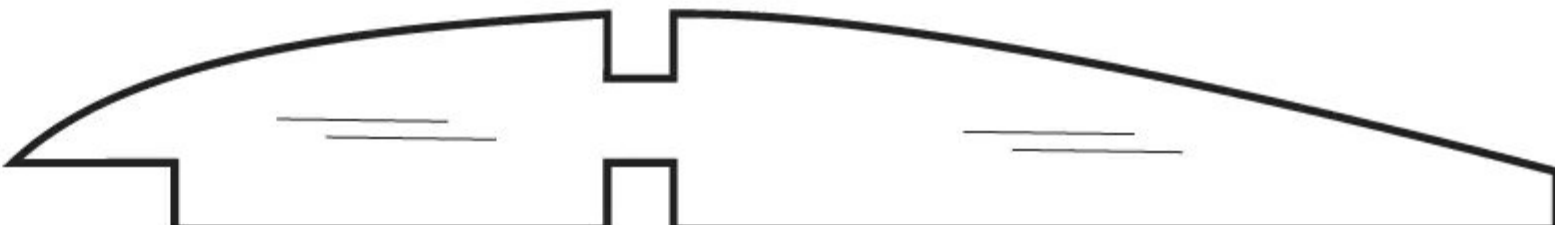




SUGGEST USING RIGHT SIDE ELEVATOR ONLY  
OPEN STRUCTURE BEST FOR EASIER CG BALANCE



R6 - 2 REQ'D



R5 - 2 REQ'D



R4 - 2 REQ'D



R3 - 2 REQ'D



R2 - 2 REQ'D



R1 - 12 REQ'D

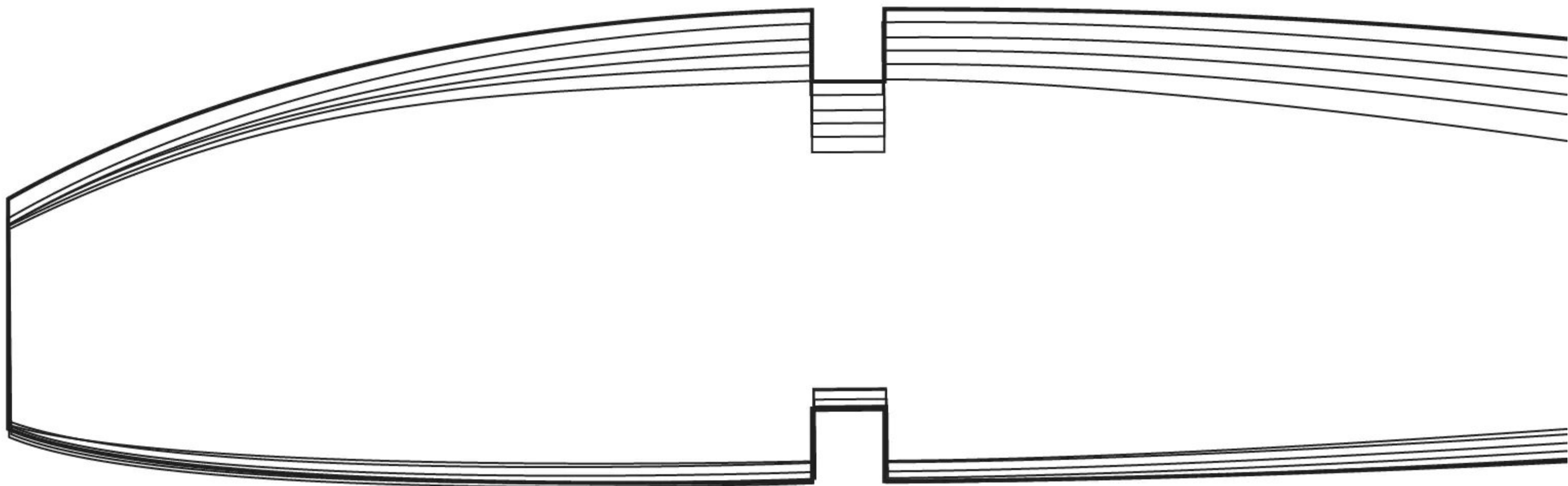
ALL RIBS FROM 1/16" HARD Balsa



PLEASE VISIT [WWW.SARIKHOBBIES.COM](http://WWW.SARIKHOBBIES.COM) TO VIEW ALL AVAILABLE PLANS

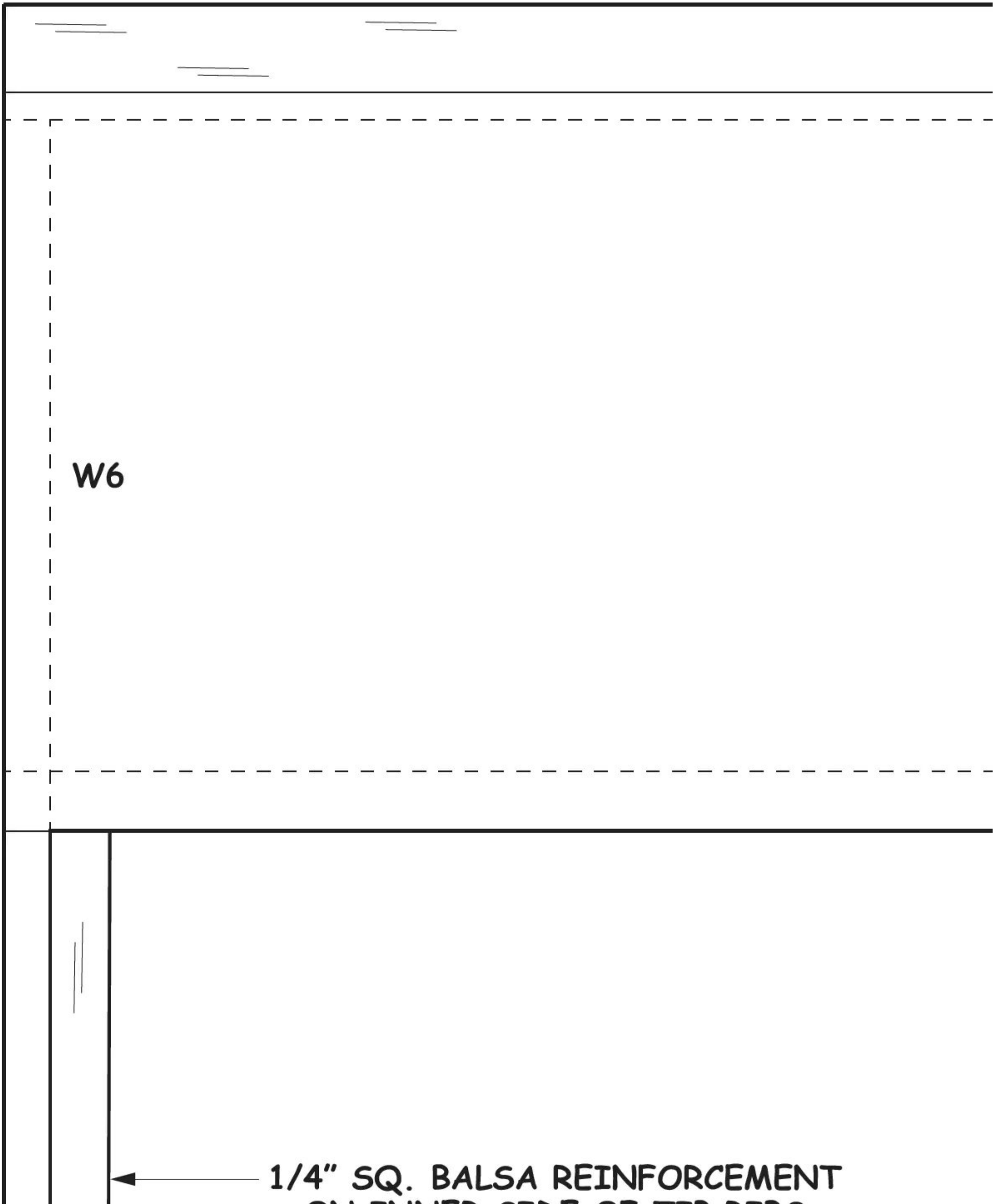
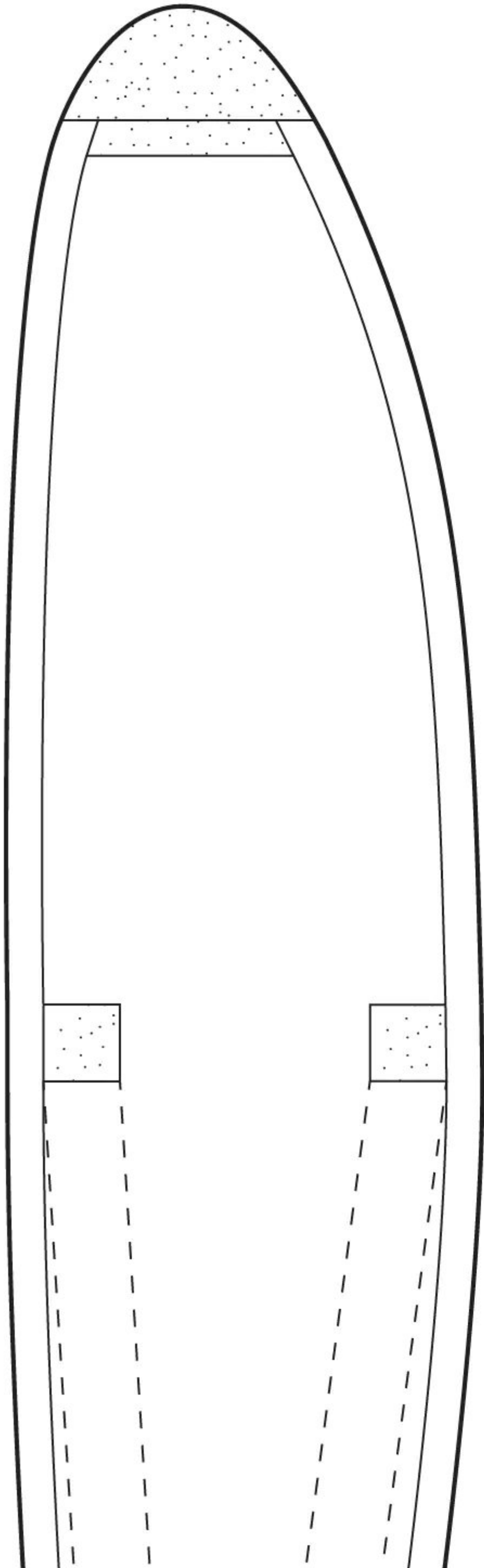
PLEASE NOTE, THIS PLAN IS COPYRIGHT OF MORTONS MEDIA GROUP LTD.  
NO PART OF THIS PLAN MY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS,  
ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR ANY INFORMATION STORAGE  
RETRIEVAL SYSTEM WITHOUT PRIOR PERMISSION IN WRITING FROM THE PUBLISHER.

RIB ALIGNMENT



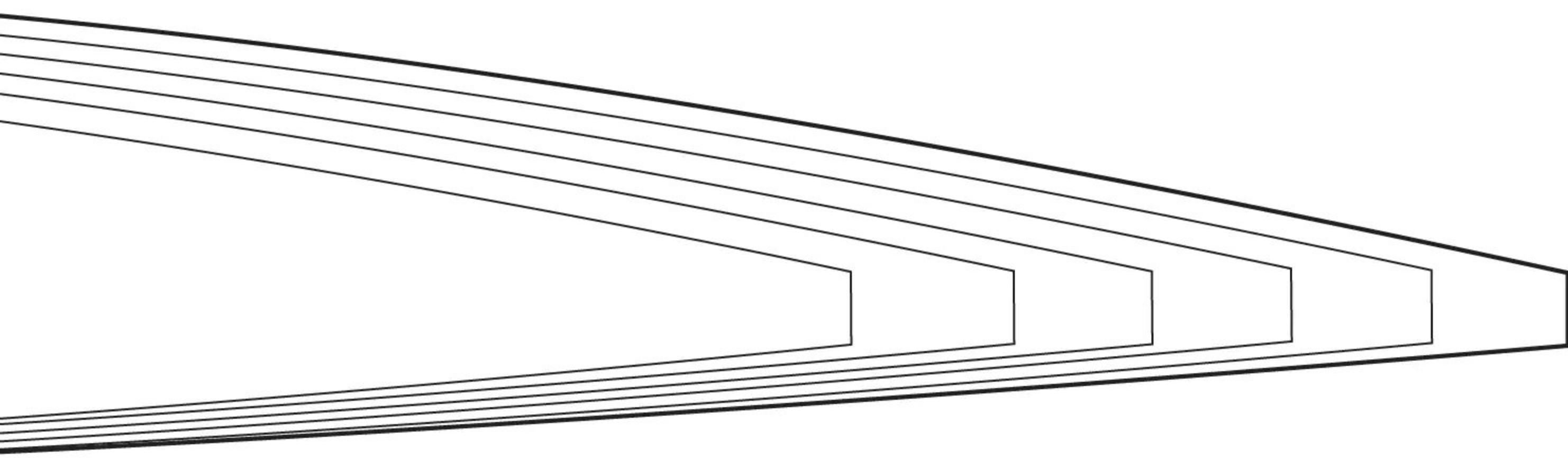
TO MAINTAIN CORRECT INCIDENCE OF ALL  
THE SPAR SHOULD BE PINNED TO THE BOARD  
THE ROOT & THEN JACKED UP BY 3mm AT THE  
THE TRAILING EDGE SHOULD BE JACKED UP  
FROM THE BOARD AT EACH RIB

VIEW ON WING TIP



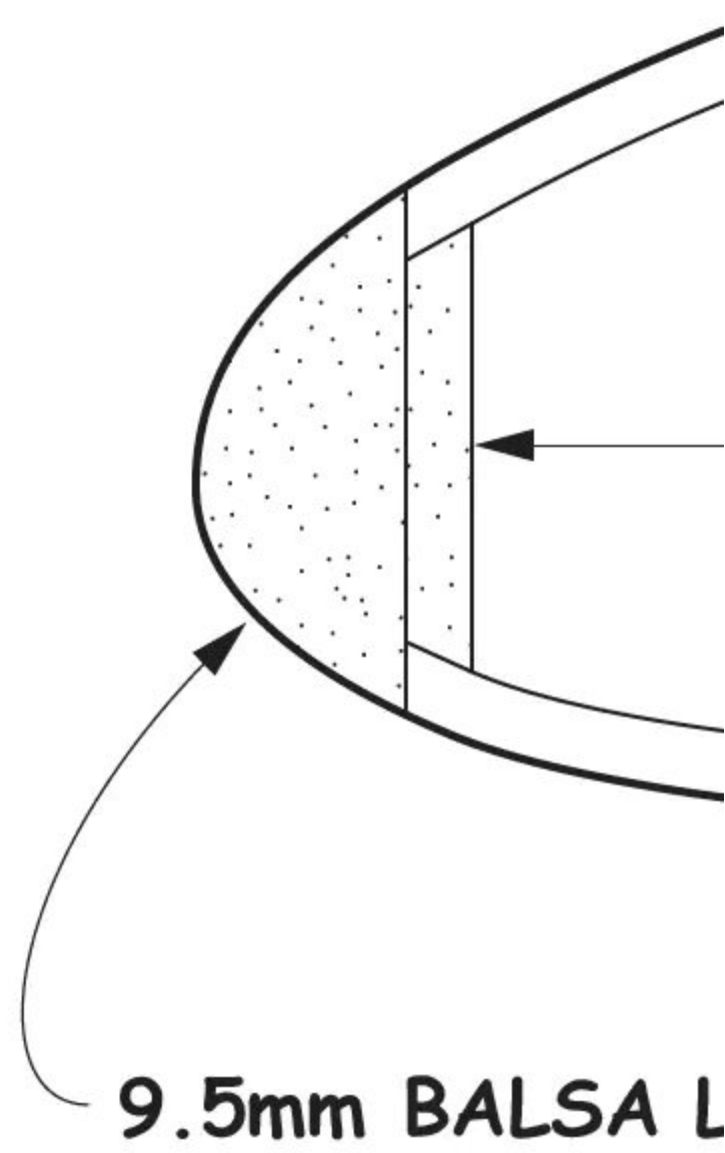
1/4" SQ. BALSA REINFORCEMENT





RIBS  
RD AT  
TIP RIB.  
BY 8mm

3mm DEPRON  
TOP & B



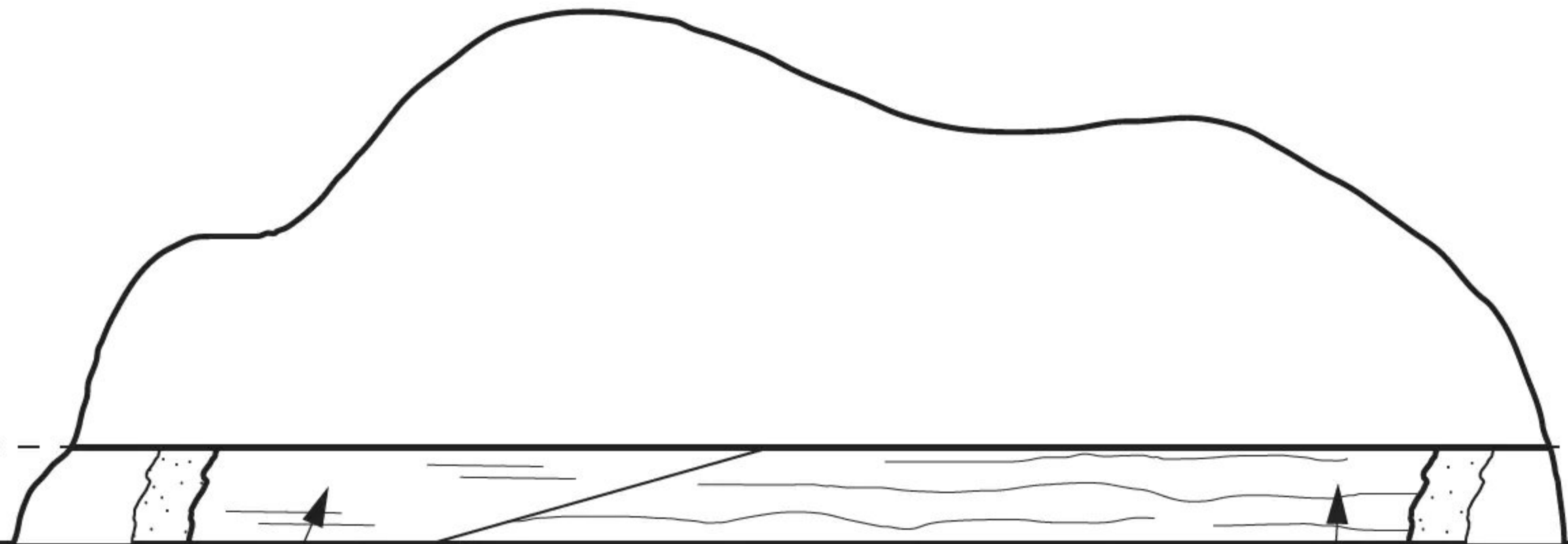
9.5mm Balsa L.E.



3mm DEPRON SHEETING  
TOP & BOTTOM

W5

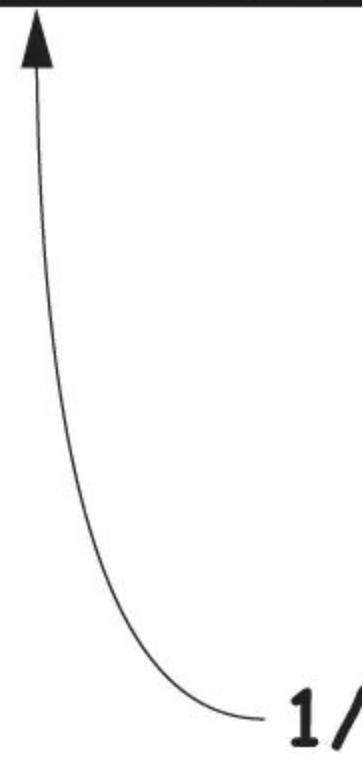
W4



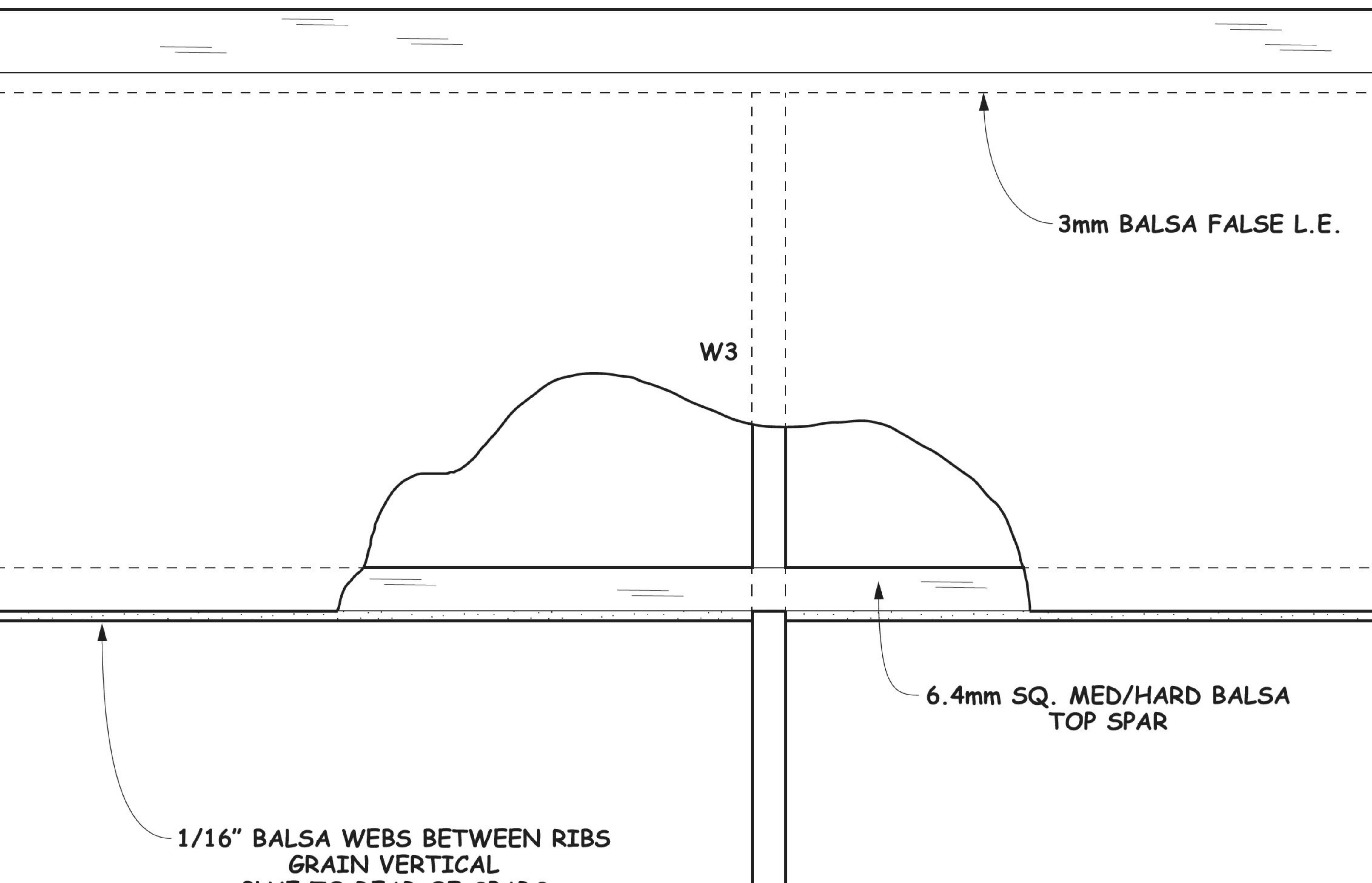
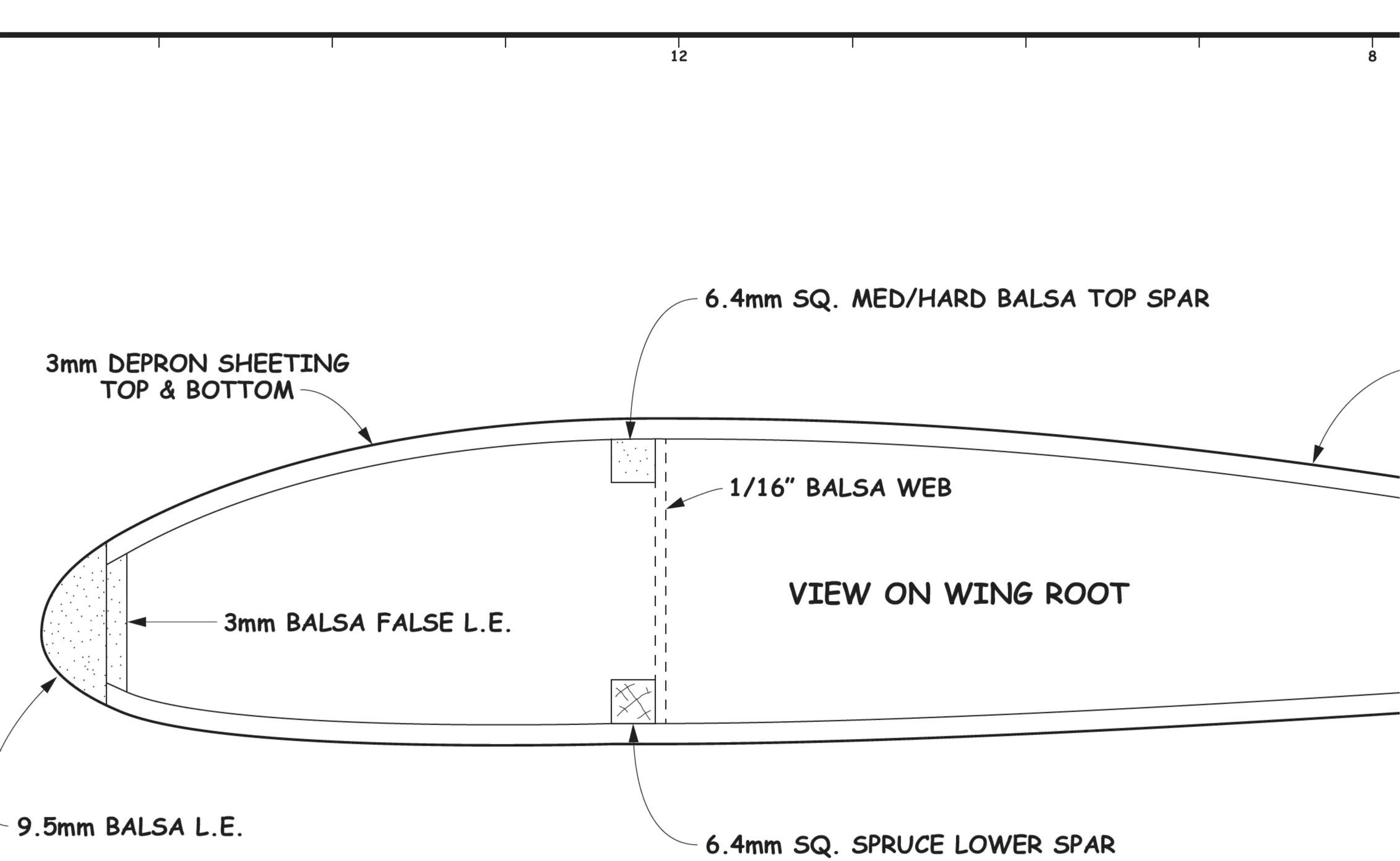
6.4mm SQ. SPRUCE LOWER SPAR  
WITH 6.4mm SQ. BALSA  
OUTBOARD EXTENSIONS



1/









# RCM&E FUNDROID

BY MIKE BELL

PLAN No: RC2272

No. OF SHEETS: 3 OF 3

First published in  
RCM&E June 2025

3mm x 5mm DEPRON RIB CAPS  
TOP & BOTTOM

6.4mm SQ. BALSA T.E.

3mm DEPRON T.E. SHEET  
TOP & BOTTOM

W2

W1

3mm DEPRON SHEETING  
TOP & BOTTOM

4

8



ING TIP

1/4" SQ. BALSA REINFORCEMENT  
ON INNER SIDE OF TIP RIBS

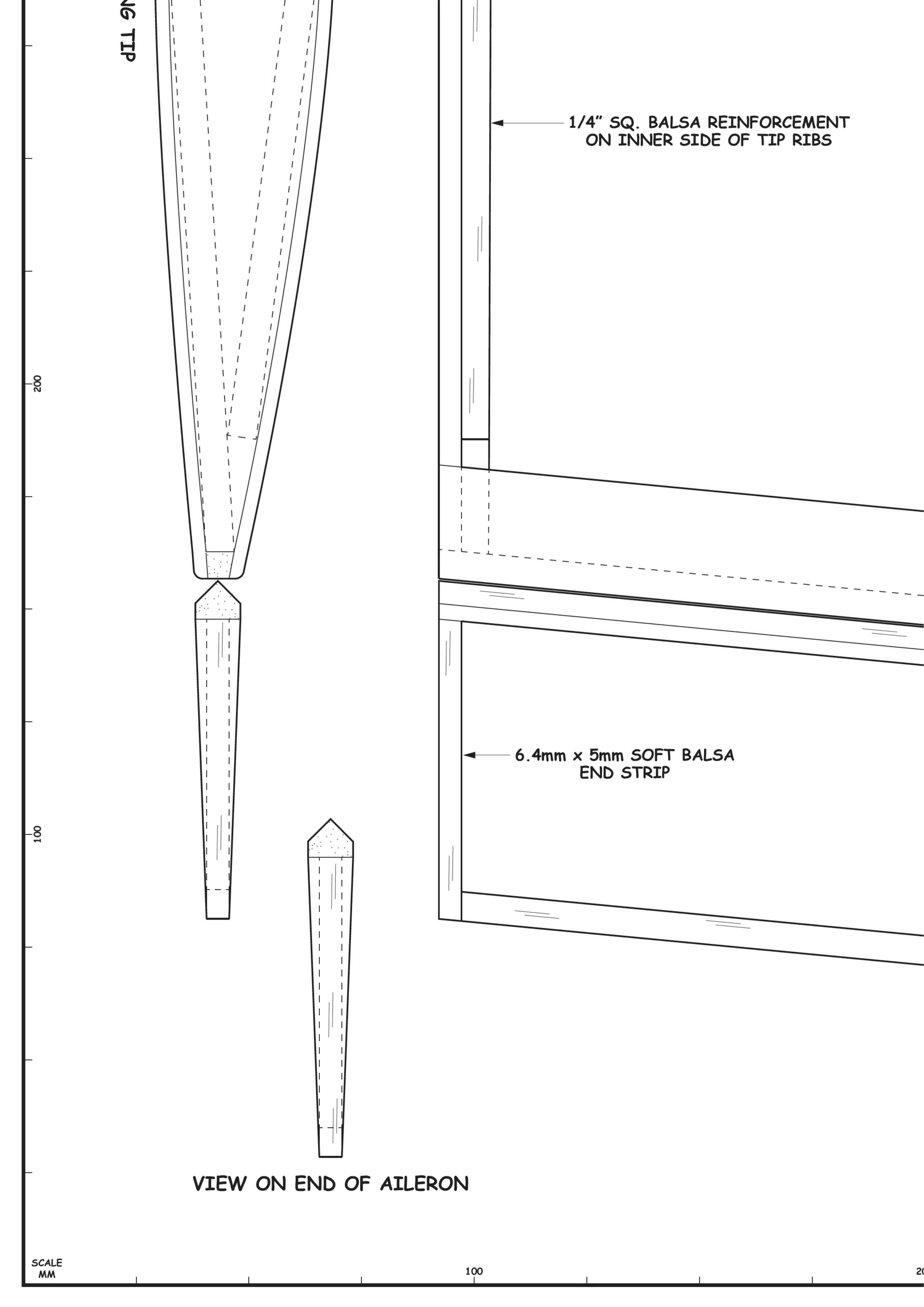
6.4mm x 5mm SOFT BALSA  
END STRIP

VIEW ON END OF AILERON

SCALE  
MM

100

20





6.4mm SQ. SPRUCE LOWER SPAR  
WITH 6.4mm SQ. Balsa  
OUTBOARD EXTENSIONS

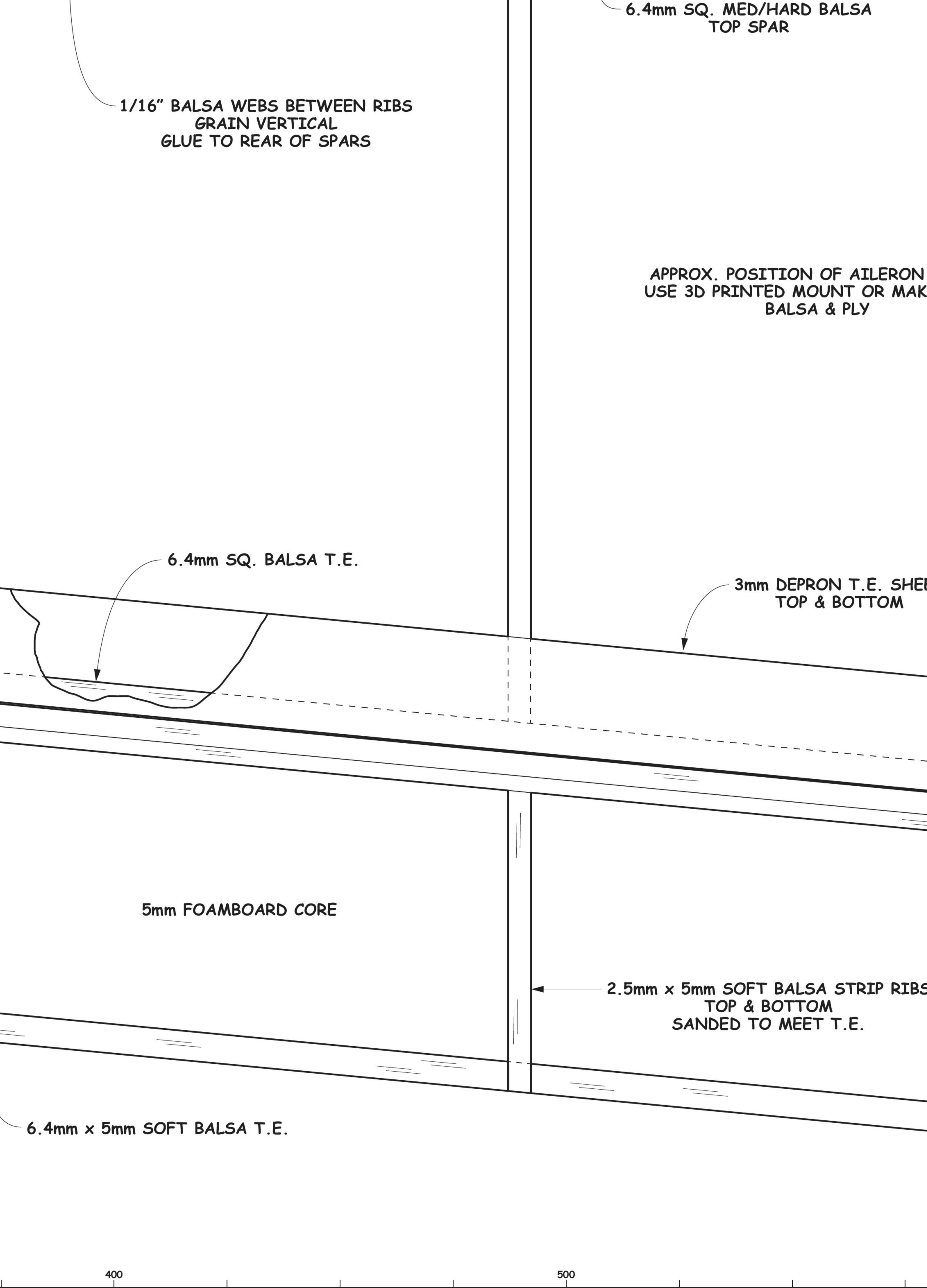
1/

RIBS CAPPED WITH  
3mm x 5mm DEPRON STRIPS

12mm TRIANGULAR SOFT Balsa L.E.  
SANDED DOWN TO 10mm

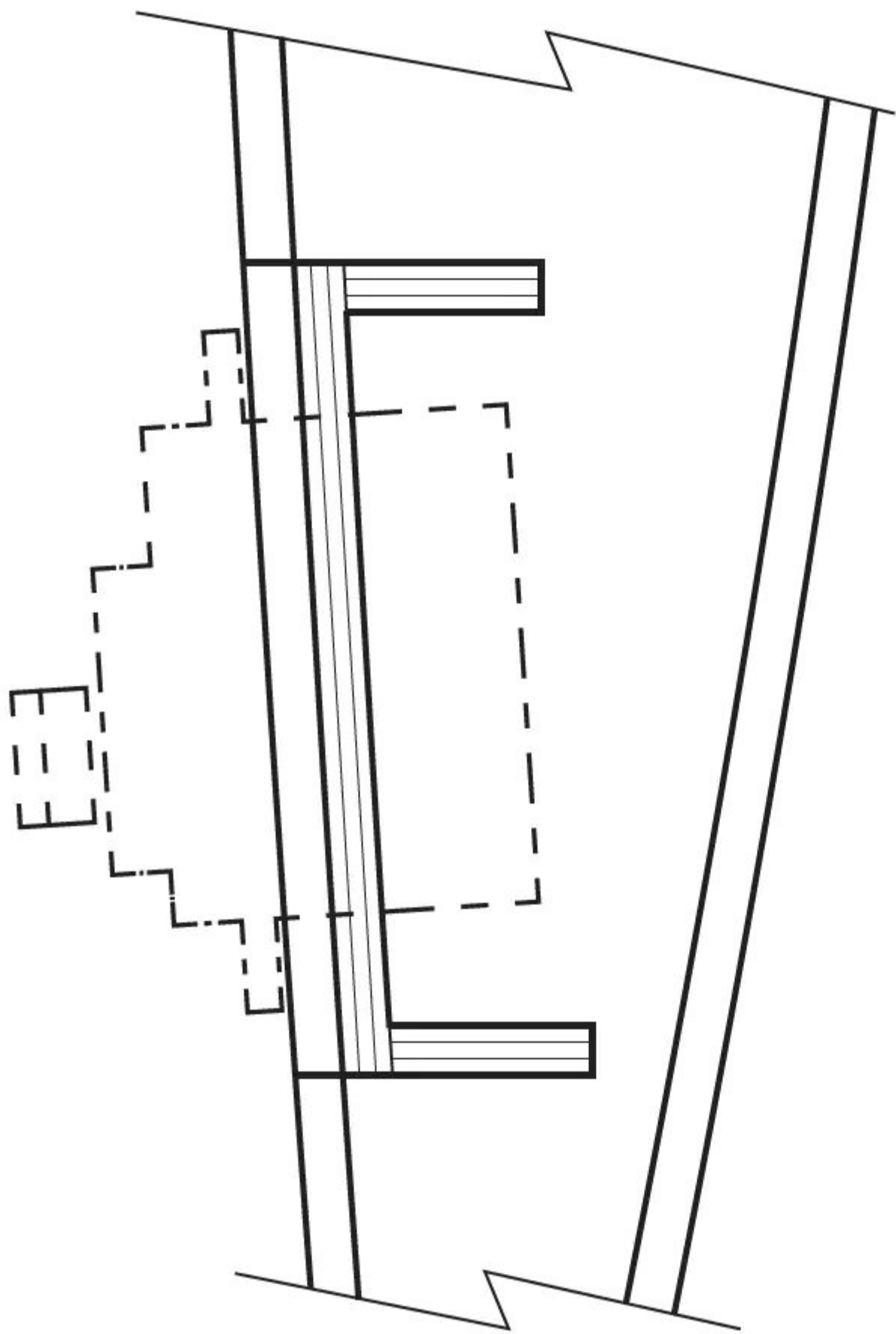
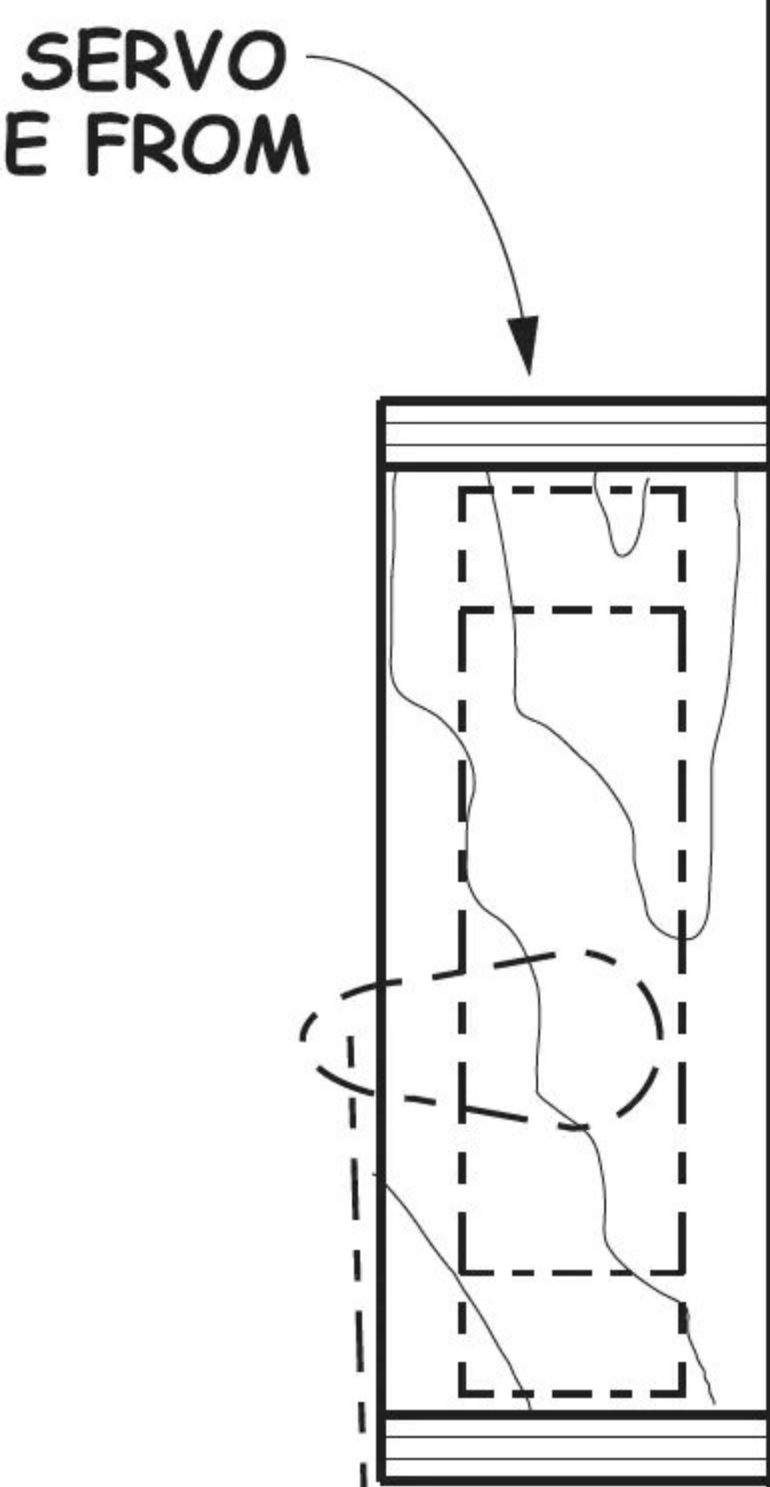
6.4mm x 5mm



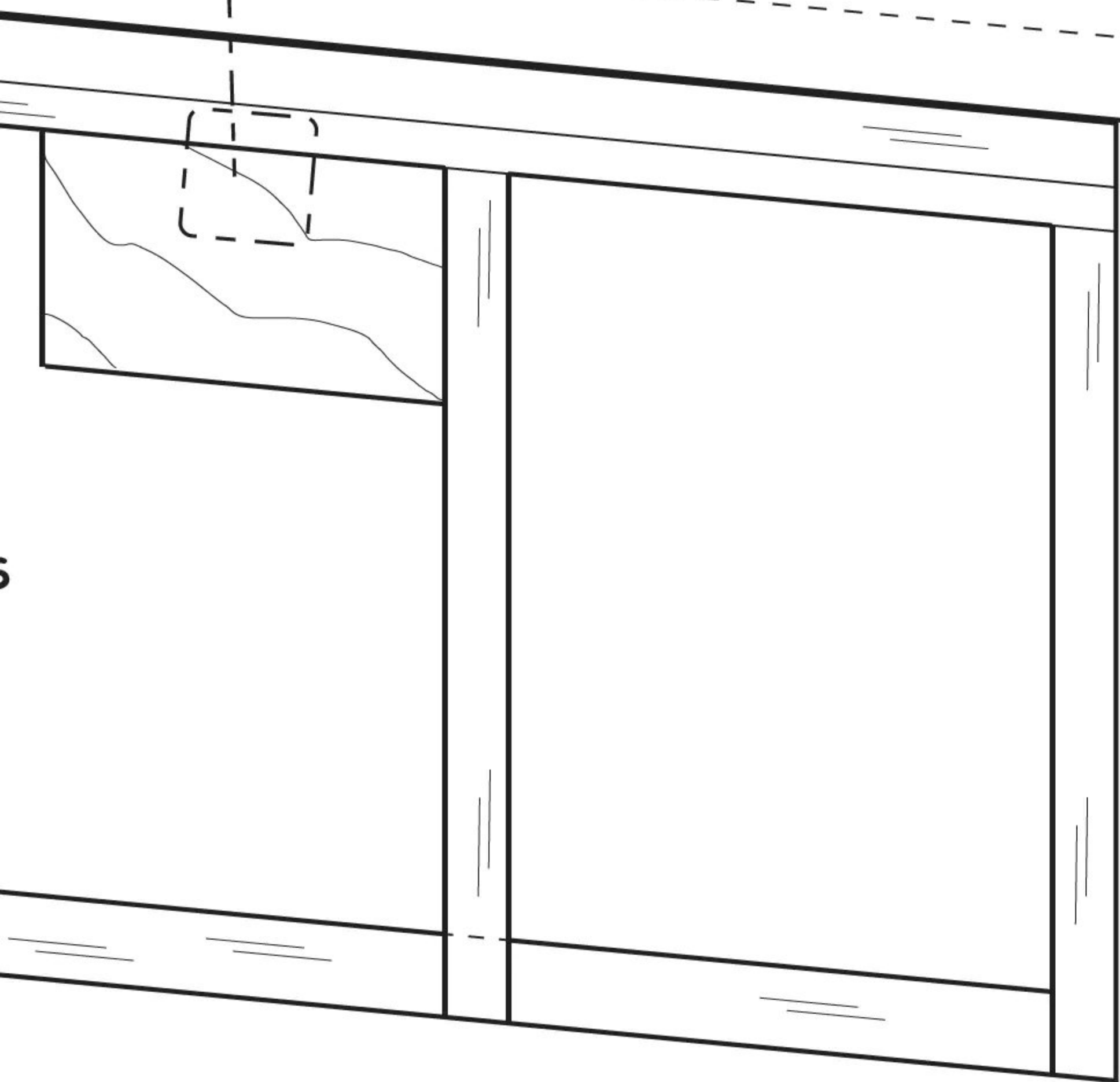




3mm DEPRON SHEETING  
TOP & BOTTOM



ET



6.4mm x 5mm SOFT BALSA  
END STRIP