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Welcome

Welcome to the April 2026 issue of RCM&E.

How many model clubs have you belonged to over the years? For me it's been quite a few and I hold all of them in deep regard. When I first joined RCM&E back in the early 1990s it meant relocation from Kent to Hertfordshire where I spent many happy years flying with St Albans MAC, as well as flying helicopters at Watford Wayfarers' heli only site. After a change in career to R/C distribution, I found myself drawn back to model publishing, requiring yet another move 15 years ago, this time to the West Midlands, where I seem to be steadily racking up membership of several clubs and flying groups. I won't mention them by name as I like to be a bit discrete in that regard whilst editing the magazine, but you know who you are and I'm very grateful to be able to fly with all of you.

Why so many clubs? Well, that's really a reflection of the diversity of our wonderful hobby these days and my duties as the editor of this great publication, which require me to dip my toes into many model flying disciplines, whether it be sport flying, thermal and slope soaring, floatplane flying and jets, to name just a few of my interests.

But as the old saying goes, you never forget your first love and for me I hold a special place in my heart for my first model club, Maidstone Model Flying Club, which is currently celebrating its 60th Anniversary, having had its inaugural meeting on 8th February 1966. (That year seems familiar for some reason…)

To commemorate this milestone David Ashby, Editor Emeritus of RCM&E and the current Chairman of MMFC has compiled an entertaining 23-page document that serves as a timeline with memories and stories to mark MMFC's 60th Annniversary. Yours truly gets a mention, as does David's brother, Graham, who followed me into the Editor's chair when I left it vacant in the mid-90s. It's a fun read (and sad too in places when mentioning lost friends), but I guess it will be of most interest to those of us who have been welcomed into the club's ranks over the years.

Happy 60th Anniversary to all at Maidstone Model Flying Club!

So, what's in store in this issue?

John Laker starts things off with his description of a long-standing scale model project for a Dart Kitten. Next, join us at our local indoor venue as we put E-Flite's UMX Eratix flat foamy through its paces before Danny Fenton (Make It Scale) looks forward to a busy year on the scale modelling scene.

Then it's over to Chris Williams (Scale Gliding) who has made good use of recent rainy weather to finish off a trio of scale gliders. Harry Curzon tells us about his latest EDF jet purchase, a fabulous looking EE Lightning from Freewing before handing over to Lindsay Todd who makes a welcome return with yet another unorthodox R/C design, this time the sci-fi inspired Skybug One.

Part two begins with another RCM&E staff flight test, this time for Volantex's diminutive Supermarine Spitfire before Thorsten Häs reports from JetPower, Europe's big international air show and trade fair for jet and turbine model building. Among the many varied topics in his One Man & His Shed column, Dave Goodenough tries a new method of textile covering, with mixed results. And, finally, yours truly wraps things up with a flight report of XFly-Models fabulous 4S Hawker Hurricane fighter. I hope you enjoy reading it all.

Happy Flying!

Kevin Crozier

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SCAN ME!

On the cover

Photo: Thorsten Häs

Following its successful relaunch in 2024, JetPower, Europe's largest international air show and trade fair for jet and turbine model building, was once again a great success when held at Breitscheid airfield in Germany from September 19 to 21, 2025. Approximately 90 international exhibitors, both manufacturers and dealers, exhibited in over 3,500 square metres of indoor space, with additional outdoor space. The airshow offered a continuous schedule during which manufacturers presented their models and technology.

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Lindsay Todd makes a welcome return with another unorthodox R/C design

SWITCH ON

Our latest round up of model flying news and miscellany

FUN FLY FESTIVAL

James Gordon from the British Fun Fly Association writes:

"Fun Fly has always been my main passion in modelling and we at the BFFA are always really keen to spread the word about Fun Fly to as many people as possible so that they can get as much satisfaction and enjoyment out of Fun Fly competitions as we have, either at club level, area or national level. It really is the ideal way into competition flying and is inexpensive and accessible to everyone. The clubs I belong to all run monthly Fun Fly competitions and they are always thoroughly enjoyable club days.

There seems to be a trend now for a lot of people to think that competitions are only for the elite and are far too serious, so they get put off from having a go. This is a great shame and we really want to show that Fun Fly competitions can be incredibly rewarding, entertaining and, most importantly, fun! While the pilots' skills at the top level are incredible, there are three different classes, starting with the entry level Foamy class suitable for the total fun fly novice, so there really is a class to suit everyone.

We would like to encourage people to come along to our Fun Fly Festival at Buckminster on 2nd and 3rd of May, which is designed to introduce Fun Fly to new pilots, all in a very relaxed environment.

Have a look at our website, where there are loads of pictures in the gallery, plus information on the BFFA and Fun Fly: ***https://funfly.bmfa.org/***

Please also have a look at the calendar entries for our Buckminster events in the BMFA Calendar, which has a bit more detail. Below are more details for our Fun Fly Festival and also the Fun Fly Nationals."

MAY 2 – 3

BFFA Fun Fly Festival

This event at BMFA Buckminster is open to any BMFA member, with newcomers particularly welcome. Enjoy two separate days of competitions, practice or instruction in fun fly competition flying. Classes for novice and expert fun flyers including the Foamy Class for standard, out the box foamies. Trophies awarded both days. £15 per pilot, per day (paid on the day) and camping available from the Buckminster office. More details at **https://funfly.bmfa.org/**

Please note that as this is a Bank Holiday weekend only electric models are to be flown. Contact James Gordon on 07966 439835 or email **jamesrrg@hotmail.com**

AUGUST 15 – 16

BFFA Fun Fly Nationals

British Fun Fly Association's Fun Fly National Championships at BMFA Buckminster. Open to any BMFA member with an A certificate and newcomers are very welcome! Classes 1, 2 and 3 including the Foamy Sub Class will be flown. Take part in up to two classes for no extra fee. Briefing at 9 am on both days. For more details, rules and entry forms see **https://funfly.bmfa.org/**

£30 entry fee for the weekend (paid on the day). Juniors FREE! Camping available from the Buckminster office. Contact James Gordon on 07966 439835 or email **jamesrrg@hotmail.com**

THE GUIDE TO MODEL RAILWAYS ISSUE 2

Aeromodellers often participate in other modelling interests alongside building and flying model aircraft. Another popular hobby that many participate in, or aspire to learn about, is model railways. Kelsey Media are therefore pleased to announce a new bookazine about the subject, the second issue of a new series, The Guide to Model Railways.

Where The Guide to Model Railways Vol.1 tackled the basics of the hobby, from selecting a baseboard to laying the track, this new sequel dives deeper into the essentials and covers advanced techniques for creating realistic, fully operational layouts. Inside you'll find...

Baseboards & Track
Expert advice on constructing strong foundations and laying track for smooth running.

Wiring & Train Control
Clear explanations of DC and DCC systems, plus tips for reliable electrical connections.

Construction Kits & Detailing
Enhance buildings and rolling stock with superdetailing, weathering and lighting.

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How to model third rail and overhead line equipment for modern image layouts.

Plus, so much more! Packed with practical diagrams, step-by-step guidance and insider tips, this is an indispensable resource for beginners and seasoned enthusiasts alike. Order your copy here:

https://shop.kelsey.co.uk/book/the-guide-to-model-railways-issue-2

DRONES AT THE WINTER OLYMPICS

Pictures kindly supplied by Noel Stave, Stave Studios, Inc.

If you've been watching TV coverage from the Winter Olympics in Italy this February then you've probably been highly impressed by the use of drones to capture footage from many of the events, often close up from behind the athletes as they perform at the highest levels of their chosen sports. We thought you would like to know more about these versatile camera platforms, so we are grateful for to Olympic Broadcasting Services for providing the following information about the drones used, taken from their Media Guide:

Above the Action

Drones have been part of Olympic broadcasting since their debut at the Olympic Winter Games Sochi 2014, with their use and capabilities expanding at every subsequent edition. Milano Cortina 2026 will mark their Winter Games debut, both outdoors and indoors, with up to 15 FPV drones to be deployed across the venues.

Thanks to advances in design, transmission and low-latency systems, drones now deliver broadcast-quality footage in real time, making them one of the most powerful storytelling tools in live sport.

Free from cables or ground constraints, these drones can track athletes at near-competitive speeds, delivering dynamic coverage that replicates the view from the athlete's own perspective. This immersive angle conveys speed, terrain changes and technical skill in ways no other system can.

The possibilities span nearly every winter discipline. In Alpine skiing, FPV drones can chase athletes down steep courses, capturing their line choice, how they absorb compressions and their technique through blind crests and turns. In freestyle skiing and snowboarding FPV drones can follow athletes as they launch over the kickers, sharing the same sense of height, rotation and amplitude that the judges observe, before they land back on the course.

Ski jumping presents another opportunity, with drones following athletes down the in-run and into take-off before peeling away mid-flight to reveal body position, stability and distance. In biathlon, FPV drones are planned to be used at the start, following the group of athletes as they set off. This perspective makes the gaps, the scramble for position and the fight for the lead more visible, providing viewers with a clear sense of the race dynamics from the very beginning.

FPV drones will also be used for the first time ever in sliding sports. Drones will follow athletes racing at up to 140 km/h through the narrow ice track, diving into and out of curves to convey both the raw speed and the extraordinary precision required to hold the racing line.

Drone Operations

Delivering these dynamic shots requires a highly specialised set-up. Outdoors, drone pilots operate from elevated positions to maintain line-of-sight with the athlete, both on approach and departure, ensuring precise tracking at high speeds. Nearby, a heated support cabin serves as the operational base, equipped with a battery charging station, spare drone, receiver and dual monitors. This set-up allows the team to monitor both drone signal integrity and race developments in real time.

The FPV drones used for sports broadcasting are custom-built for this purpose. Their inverted blade design, with propellers mounted beneath rather than above, enhances aerodynamic efficiency and enables smoother flight curves, which is especially critical when following athletes through steep descents or tight turns. The batteries are engineered for rapid replacement, typically lasting for two athlete runs before needing to be swapped.

Each drone team consists of three specialists - pilot, director and technician - working in sync via a dedicated communication channel to manage flight paths, timing and technical adjustments. They stay in continuous contact with the director in the outside broadcast van and the technical crew, enabling real-time video filter adjustments to adapt to weather and light conditions. The result is consistent image quality, no matter the terrain.

Hovering Drones

Alongside these dynamic FPV shots, up to 10 traditional hovering drones remain essential for scenic and transitional coverage. A hovering drone might capture the broader atmosphere of a slopestyle course or the sweeping Alpine landscape, while FPVs dive directly into the heart of the action. Together, they complement each other: one providing context, the other full immersion.

The integration of FPV drones alongside conventional aerial coverage signals a new chapter in Olympic broadcasting. These perspectives provide unprecedented immersion into the athletes' experience, deepen narrative insight and transform the viewing experience into something more dynamic, engaging and visually compelling, drawing audiences into the very core of the Games.

Safety in Every Flight

All drone flights are carried out in close cooperation with the Italian Civil Aviation Authorities, Prefectures and Police, and in coordination with International Federations, venue management and production teams.

Flights are meticulously planned, conducted exclusively in controlled areas and the drones keep a safe distance from athletes, spectators and restricted zones. All drone operations are pre-approved by the relevant authorities and drones are piloted by certified professionals, following the applicable strict safety protocols and aviation regulations at Olympic venues.

DART KITTEN

John Laker relates the ups and downs of a long-standing scale model project

Words & Photos: **John Laker**

As a keen trad modeller, I built control line and free flight models in the 1960s. Moving to New Zealand and starting a family curtailed modelling until I built my first R/C powered glider called Big Bird from plans in 1981. I started collecting plans for future builds. In May 1983, I read in a US magazine, Model Aeroplane News, an article on the build of a quarter scale model of the Dart Kitten. I am attracted to aircraft of the 1930s after building a 1/4 scale Piper Cub and Tiger Moth and decided this would be built - one day! The author was Art Schroeder, sadly no longer with us. Art's article included a write-up of the build from Pär Lundqvist, the model's designer, and Art added details of his own. I ordered Pär's plans and studied the details.

Art Schroeder stated that the build is for an average builder, but I would disagree with this. There were a lot of tricky build sequences and some head scratching along the way. He also stated that the model would loop and roll but the full-size version was not designed for aerobatics.

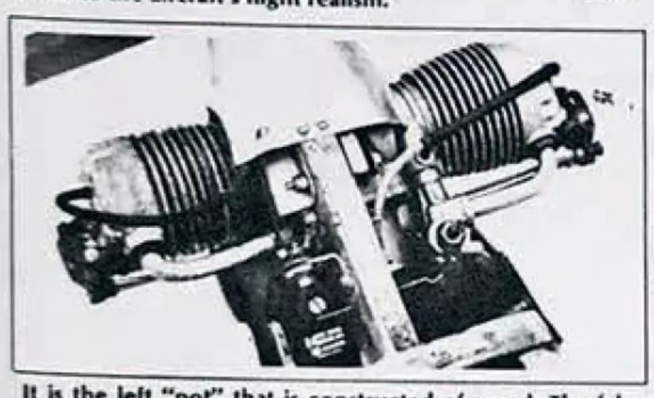
My building experience and lack of funds curtailed the start of the build and it was not until 2007 that it began. The intervening years saw several scale and sports models built including a 1/4 scale Piper Cub and Tiger Moth from Sig kits, then a 1/3rd scale Corby Starlet from plans (difficult to handle due to an incorrect CG being shown), a Decathlon and a 90-inch Cloud Dancer from the Fred Reese plan, a great design that I flew for over

John's Dart Kitten was originally flown with four stroke engines before being converted to e-power for flying at his new electric only club.

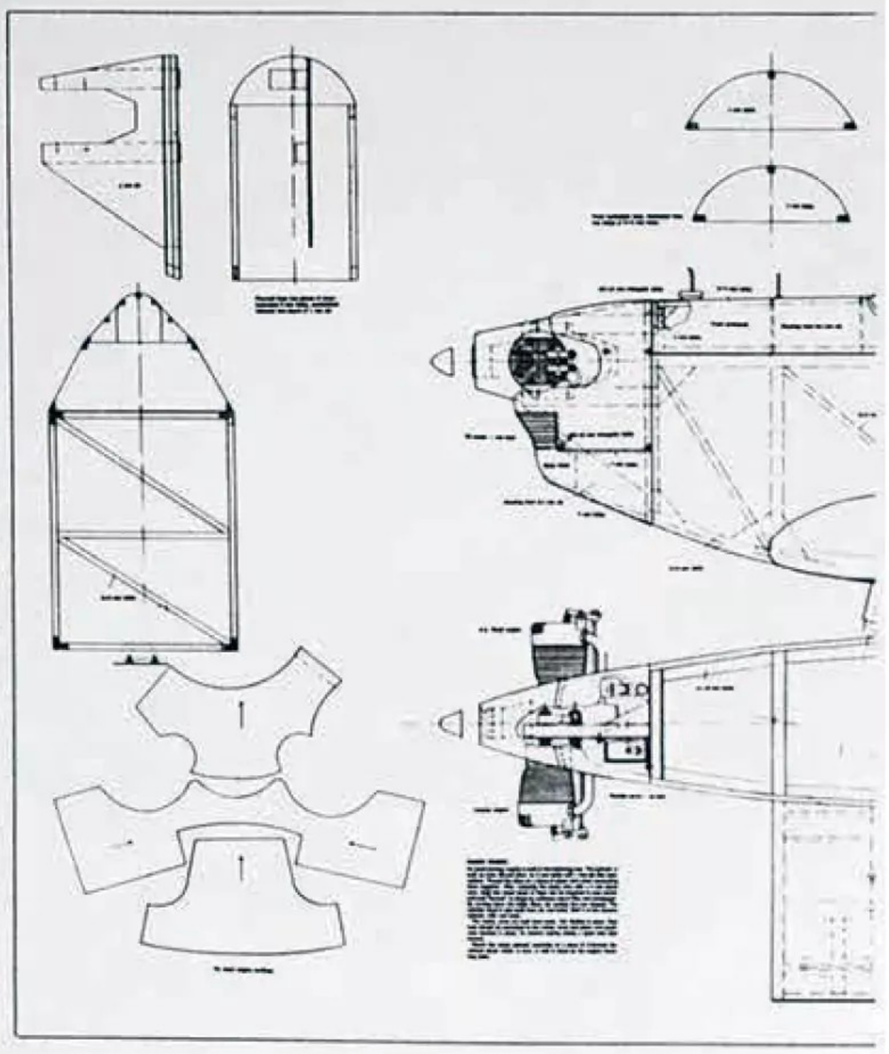
(Continued from page 68)

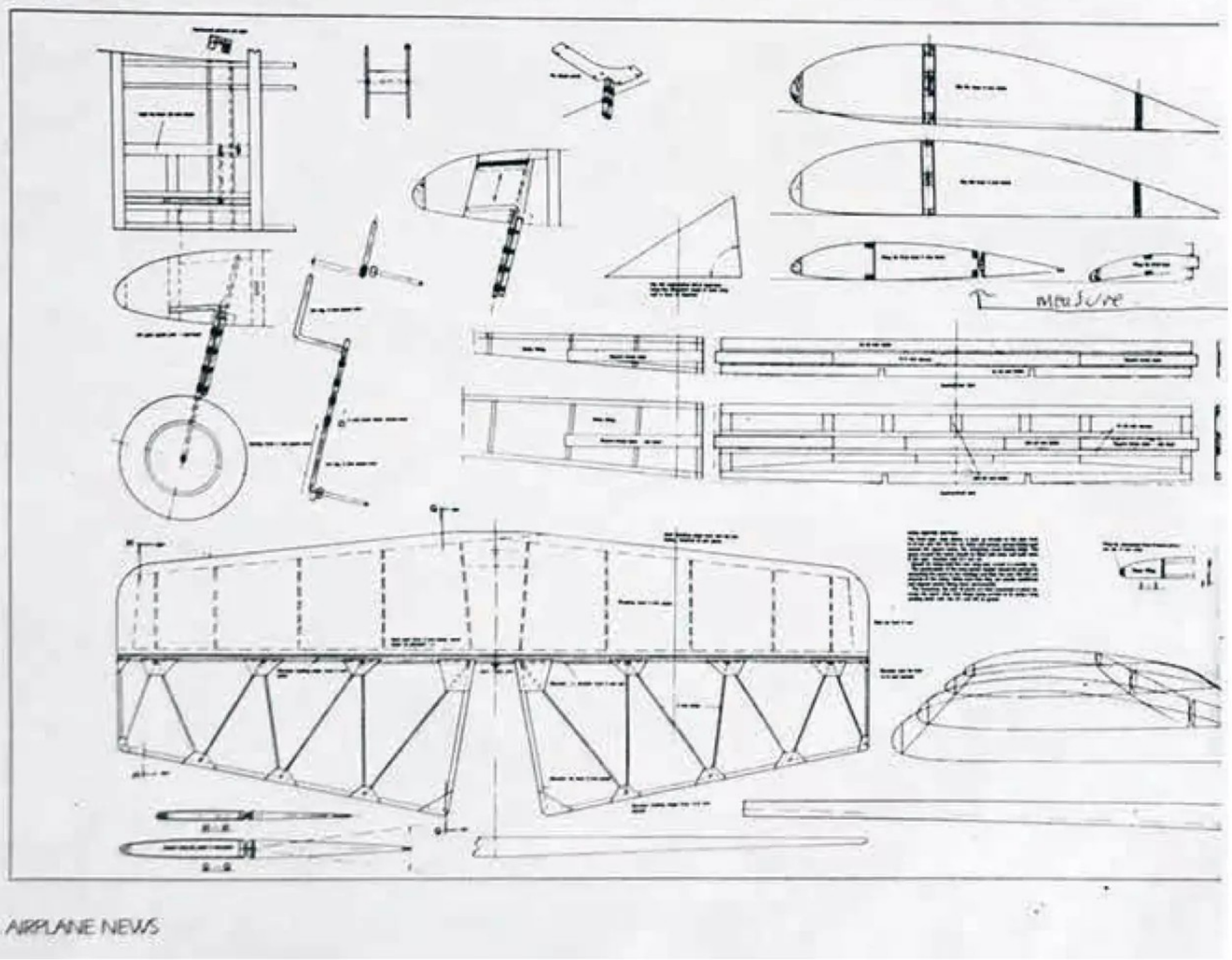
DART KITTEN

Basic fuselage framework illustrates the lightness of Dart Kitten. Light building is a hallmark of Swedish modelers and leads to the aircraft's flight realism.



It is the left "pot" that is constructed of wood. The fake cylinder really adds to the aircraft's realism.





A page from MAN's Dart Kitten article in the May issue, 1983.

15 years. My skills were now improving ready for the Dart Kitten, but it still took four years to finish it while I was still at work.

FULL SIZE KITTEN

The full-size Dart Kitten is an orthodox, low wing, light touring aircraft from the mid 1930s. It was designed to be built in a chap's 'back garden' if you had the mind to - and the room!

The prototype, known as the Kitten, was built by the Dart Aircraft Co. and completed in December 1936. It first flew on January 15th, 1937, with registration G-AERP and was fitted with a French Ava 27 hp, two-stroke, flat four but was underpowered. A second Kitten was built with various modifications and fitted with a more powerful JAP engine. It flew later that year with registration G-AEXT. The purchase price in 1938 was 360 pounds Stirling. The two aircraft flew again after WWII but sadly both crashed, killing the pilots, but G-AEXT was not destroyed. It is now the only surviving aircraft of this type and is fitted with an Aeronca JAP-99 engine of 35 hp.

A third Kitten was assembled in 1951 from parts stored in a garage in Loudwater, Buckinghamshire. This machine had further minor mods and was registered G-AMJP. It too later crashed.

DART BUILD

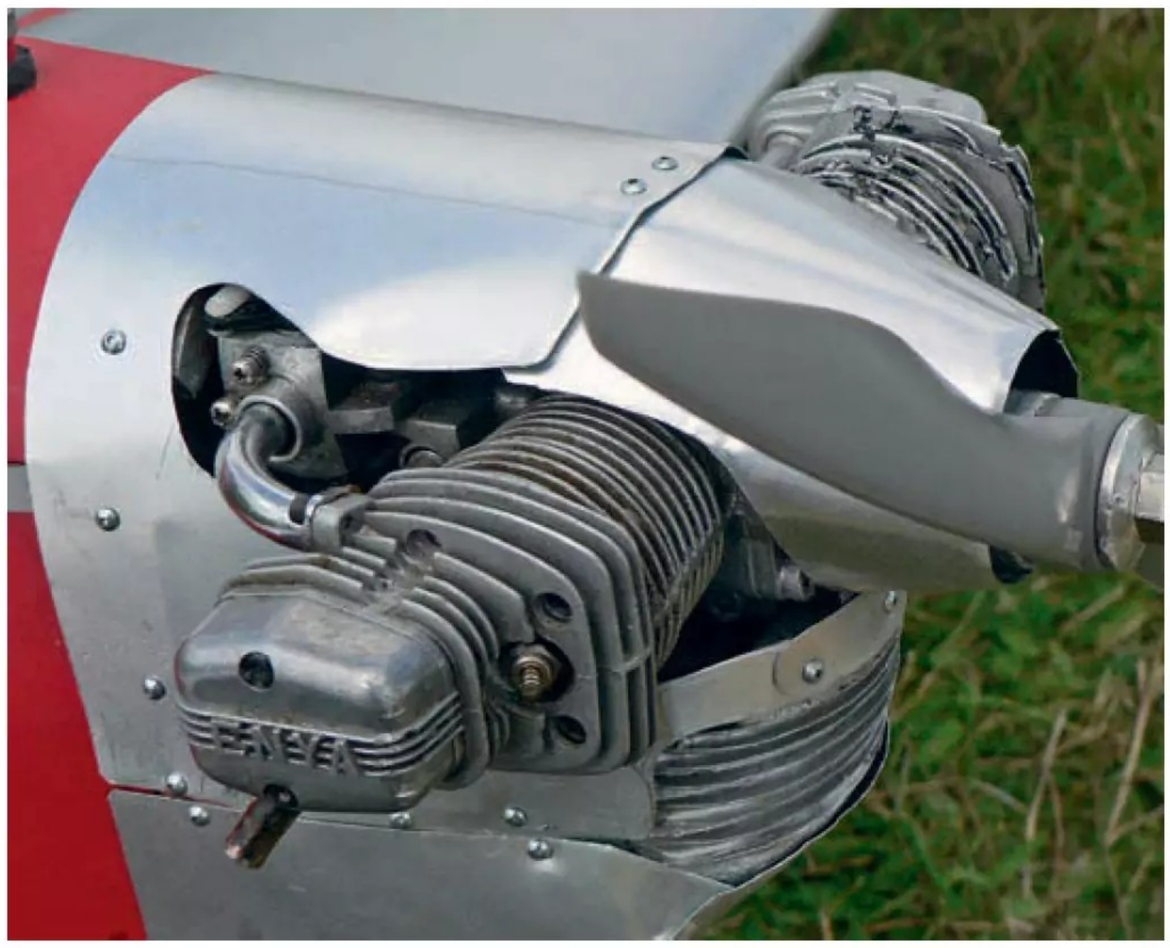
The model spans 2440 mm (96 inches), with a design weight of 5.3 kg (11.68 lbs). Pär Lundqvist was renowned for designing lightly constructed models and he therefore suggested that the model be powered with a .60 size four stroke

End view of the wing centre section during construction showing the modified carbon tube within boxes arrangement.

In lieu of expensive 4 mm ply the airframe was covered, where required, in 8 or 10-micron fibreglass sheet.

A few simple instruments are well worth adding to any scale model...

...and a suitably sized pilot is a 'must add' scale feature too!



The Kitten was originally powered with an Enya 60 four stroke.

glow engine which he said would give a realistic scale speed. I thought it might be marginal as the prototype model weighed 4.7 kg.

Fuselage construction is mainly a balsa box with 0.4 mm ply side reinforcements. A ply firewall and ply engine mount, reinforced with hardwood, supplies strength for the engine. The wing panels are a conventional balsa build with some panels reinforced with 0.4 mm ply. The undercarriage is a sprung steel rod unit set into a rigid hardwood and ply box.

The wings slot into the fuselage centre section via aluminium square boxes which I changed in favour of carbon tubes within carbon tubes set inside the undercarriage boxes and ply/hardwood boxes in the wings. Each aileron has its own servo.

The rudder has a pull-pull set up and the elevator is designed to operate inside the rear of the fuselage as per the full-size aircraft. The whole elevator/stabiliser is removable as per the full-size. The plans did not give the positive angle for the stabiliser but after drawing additional lines onto Pär's drawing I measured it as about two degrees.

The top of the fuselage, in front and behind the pilot, is removable and held in place with several cap screws, making fitting the controls and adjusting the tank location easier.

Having checked with local model shops I found that 0.4 mm ply was either very expensive or difficult to obtain. I therefore substituted it with 10 and 8-micron fibreglass sheet which is exceptionally strong but needed polyurethane glue to adhere it to the balsa. The 8-micron sheet was used for the wing panels.

Pär's prototype was fitted with an O.S. 60 four stroke engine. I had an Enya 60 four stroke going spare, which I used. I built a dummy port cylinder head by creating a silicone mould of the Enya's head, then I poured a replica. I did not build and fit the exhaust system, thinking that this might get damaged during initial test flying.

The battery switch is fitted under the scale port storage hatch behind the pilot's seat. The pilot sits on the receiver, with the Rx battery tucked up front. Luckily the dummy radiator was able to be made from several shaped thin sheets of lead to aid the correct C of G.

I chose to follow the colour scheme and registration of the surviving Kitten and so I obtained a Traplet CD, 'Full Size Focus' FF16, now available from Sarik Hobbies, giving me lots of up-close details and insignia, etc.

Litho plate was used for the cowl and covering the wing join which simulates the full size. The wings are slotted into the

Fresh from covering and finishing, the Dart Kitten awaits its maiden flight with the Enya up front.

Still looking good after its conversion to electric power for flying with the Western Bay Model Flyers.

fuselage via carbon tubes and are held in place by a sprung locking wire arrangement held around a large plastic nut head, all hidden in the wings. This was later reinforced with a small O-ring under each wing, held in place by screws set into hardwood blocks. The covering was Solartex throughout, giving a strong skin and it's great for covering tight curves.

FIRST FLIGHT

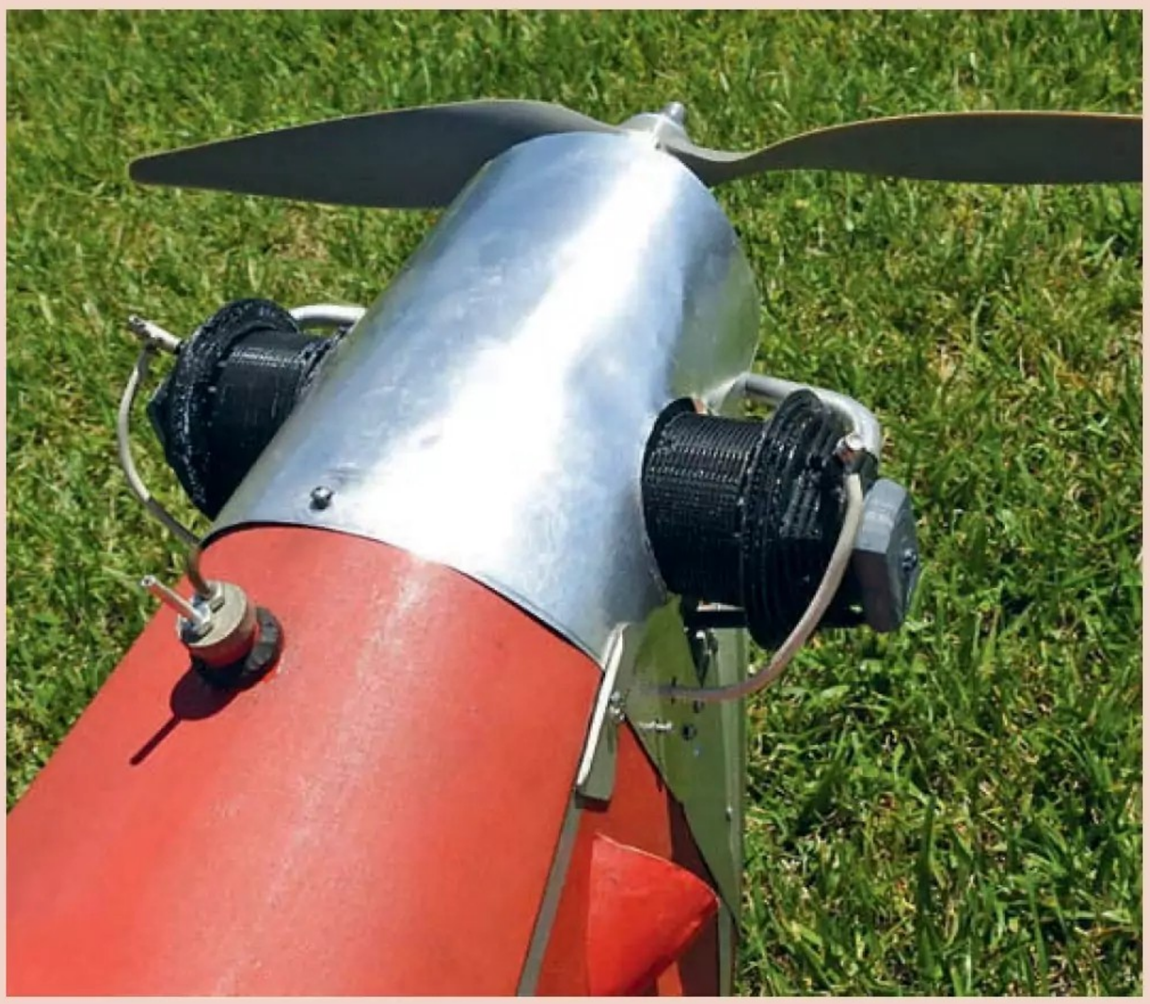
The maiden flight was on the 13th of February 2011 at the then Papakura, Manukau club grounds at Clevedone, near Auckland.

Opening the throttle gently, she trundled along and soon the tail came up. She then seemed to just gently rise up, in a sort of levitation, with a slow forward speed. At about 70 feet she gently dropped the port wing. I gave a correction, then she dropped the starboard wing; this gentle dropping of each wing continued from side to side until I pushed in a great deal of down elevator, increasing speed. But now she was about 30 feet from the ground! After my hands had stopped shaking, I made a gentle turn to the right, gaining a little more height whilst dialling in all available down trim. She would still not fly level without lots of down elevator but at least the swinging from side to side had stopped. I assumed this was the result of gentle stalling, but it was unnerving on the maiden flight. I brought her round and landed her gently, flaring at the last minute. Obviously, I had got the angle of the stabiliser wrong.

Back in my shed, I packed 3 mm of hardwood under the leading edge, tightened the locking nylon stabiliser screw and waited for another suitable day.

Subsequent flights confirmed the new tailplane angle was okay, but she still needed a little down trim. Take offs and flights were still marginal and the homemade sprung undercarriage was taking a hammering.

The model is a replica of G-AEXT, the last known surviving Dart Kitten which is part of the Real Aeroplane Company collection at Breighton, North Yorkshire.



Now powered by a Rimfire 1.20 electric motor, the Kitten now sports a dummy 3D printed engine and matching dummy exhaust system.

I decided to fit a Laser 100 engine with a 15 x 8 prop, along with a pair of oleos from Unitracts. This needed a complete modification to the engine mount. Some lead from the radiator was removed and after making some new litho cowl parts we were ready for further test flights. My model now had a total weight of 5.7 kg, a little more than the designed calculations and about a kilo heavier than Pär's prototype.

SUCCESS!

Subsequent flights proved to be a joy. With the Laser there was adequate power for take-off, using throttle control for scale flying once airborne, with extra oomph when needed.

The Dart Kitten was never intended to be acrobatic, although she will perform a graceful wingover given encouragement. So gentle circuits are the norm.

She is a lovely looking aeroplane, full of nostalgia for the gentler things in life and a memorable build.

ELECTRIC CONVERSION

Since moving to Tauranga two years ago, where I fly electric only at the local Te Puna field with the Western Bay Model Flyers, I have had to convert the Dart Kitten to electric power.

The Rimfire set up flies the Dart Kitten just as well as the four strokes did, albeit with shorter flight times.

A 1.20 Rimfire electric motor was installed after making modifications to the firewall and removing some of the lead sheets up front. An 80-amp speed controller was fitted and a 16 x 8 electric prop. She is powered with a 6S LiPo fitted up front where the tank used to be. This set up flies the Kitten just as well as the IC set up, albeit with shorter flight times.

I've now fitted new dummy engine cylinders, 3D printed by one of our club members, and fitted the dummy exhaust system.

FULL SIZE KITTEN

A few years ago, I read in the Aeroplane magazine that a new owner, Kate Howe had acquired the full-size G-AEXT. I emailed her through the Lancashire Aero Club and sent her a photo of my model, telling her she was not the only one to own G-AEXT! Kate replied, describing her maiden flight. "*It levitates!*", she said. Just like the model, I thought. It must be the thick wing section.

Kate kept the aeroplane for about eight months and then sold it to the Real Aircraft Company at Breighton Aerodrome where it now resides. ■

Awaiting another flight at Maramatanga Park, Te Puna, south east of Auckland, NZ.

Full-size G-AEXT photographed at a Breighton Airfield event in 2015 by Tom Wray. Breighton, near Selby in Yorkshire, is home to the historic aircraft collection of the Real Aeroplane Company which includes the Dart Kitten.

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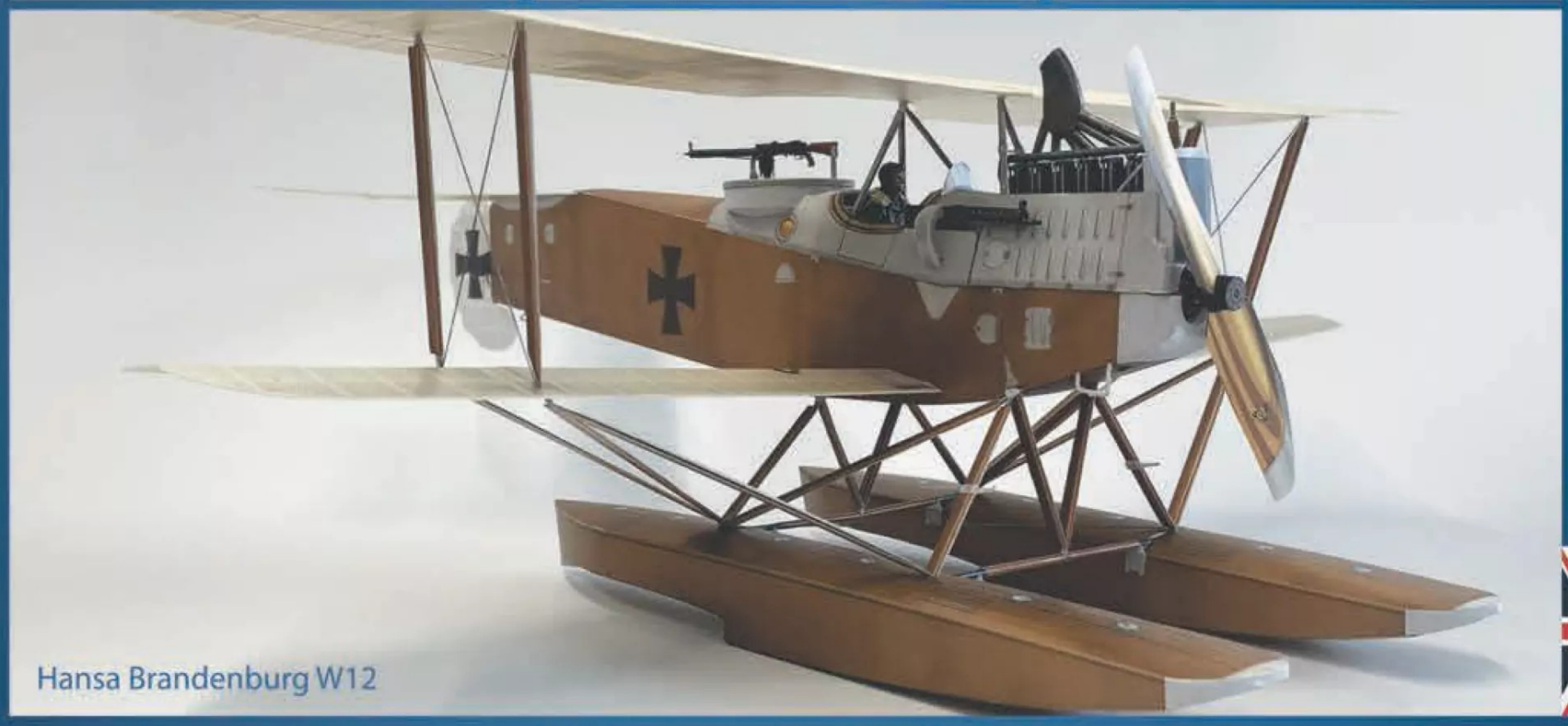
Sopwith F.1 Camel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UMX ERATIX 3D

The editor puts E-flite's new flat foamy through its paces inside the local school sports hall

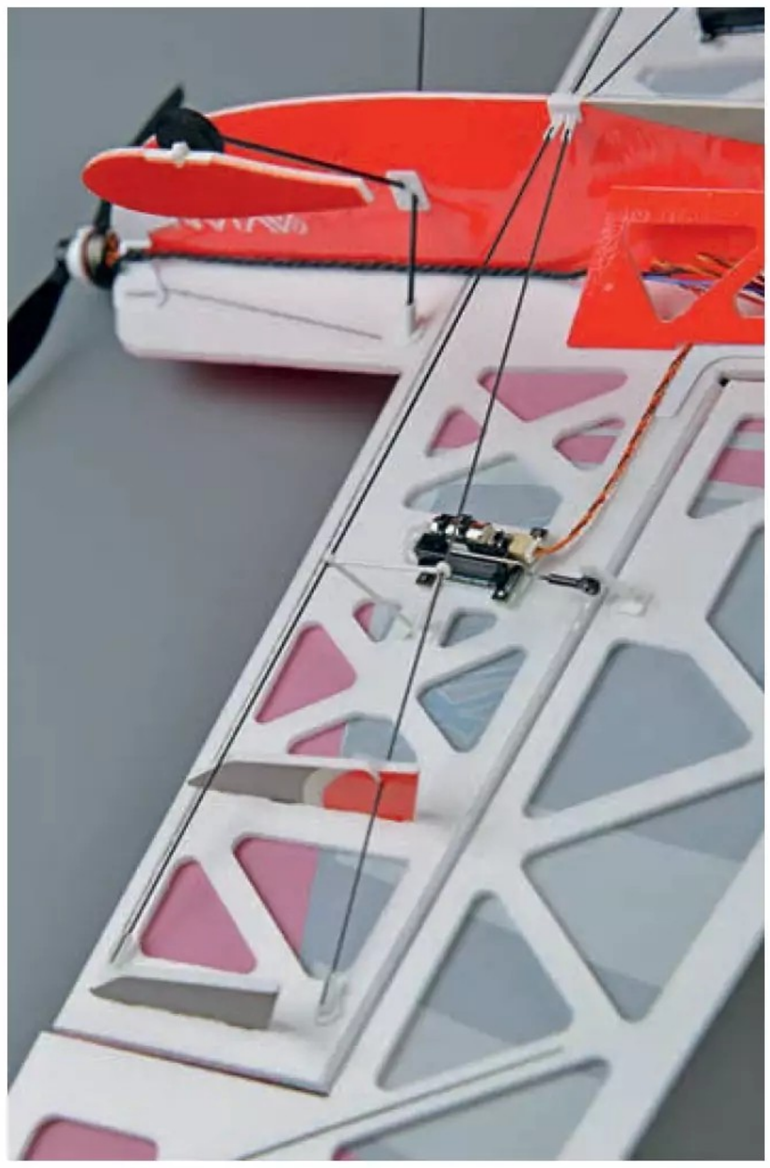
Words: **Kevin Crozier,** Photos: **Kevin Crozier, Barry Atkinson**

My local indoor flying venue is a standard four-court sports hall. It's big enough for flying sedate indoor R/C models in circuits at slow speeds and so this is the preferred model type for most of the regulars on Friday evenings. There's only a couple who try to fly aerobatics but mostly it's just me. For several years my sole indoor aerobatic model has been an E-Flite 4-Site biplane, the original 386 mm wingspan version, not the larger 800 mm span model. Just the sight of this brightly coloured bipe is guaranteed to clear the air so I invariably end up with the hall to myself, giving a solo demonstration of my limited indoor aerobatic skills. It's the only 'agile' indoor model that I've got so I tend to treat her gently. Even so, she is starting to show her age.

What I needed was a similar sized but punchier aerobatic steed. So, when Logic RC kindly offered one of E-Flite's new 450 mm span UMX Eratix 3D Flat Foamy models for review I put it straight into the photography studio, making sure it would be available to fly at the next indoor session.

Underside view showing the fretted out flying surfaces. Composite rod reinforcements are inlaid along the leading edges and radiate back from the motor mount.

Eratix is well supported in its big carry case.



Composite rod is also used for the V-struts.

KEEP IT IN THE FAMILY

This little lightweight is a scaled down version of the Eratix 3D FF (Flat Foamy) of 860 mm wingspan. The Eratix series might look like other scale aerobatic planes such as the Edge 540, but they are actually purpose-built 3D designs.

Besides the two Flat Foamy options there's also a rather tasty 1.6 metre Eratix 3D SWS (Sport Wood Series) version for 6S power that keeps catching my eye... Maybe one day!

BIG BOX

As with other UMX (Ultra Micro) models the Eratix comes in a carry box. Just the thing to protect it on a wet and windy night when transporting it to the flying hall. However, this one comes in a whopper of a container so it needs a bit of thinking about when loading it up with other boxed models for a night out. I wouldn't want to be without the case though as without it the laser cut, flat foam airframe would be vulnerable to damage whilst in storage and being transported.

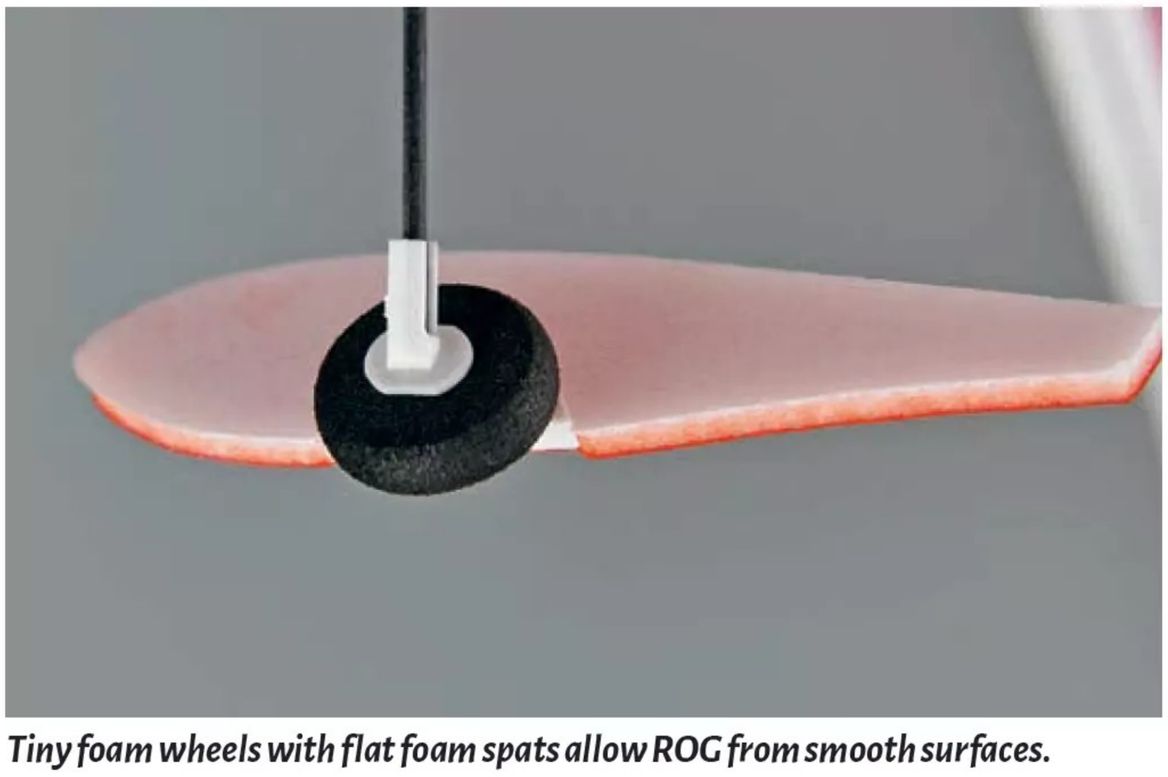
Inside the box is a large polystyrene tray that supports the airframe. Removeable pieces of foam hold Eratix in place; a small one at the front protects the motor and propeller whilst a large oblong piece clamps the rear fuselage in place. These protective pieces are keyed and lift off, allowing the airframe to be lifted clear of its box.

All the pilot has to do is to copy a few set-up steps into a NX, DX or iX Spektrum transmitter, bind it to the model, attach a 2S 300 mAh LiPo and start flying. I used the new Spektrum NX8+ transmitter featured in the March issue and in ten simple steps the job was done. No wonder it's called a Bind-N-Fly model!

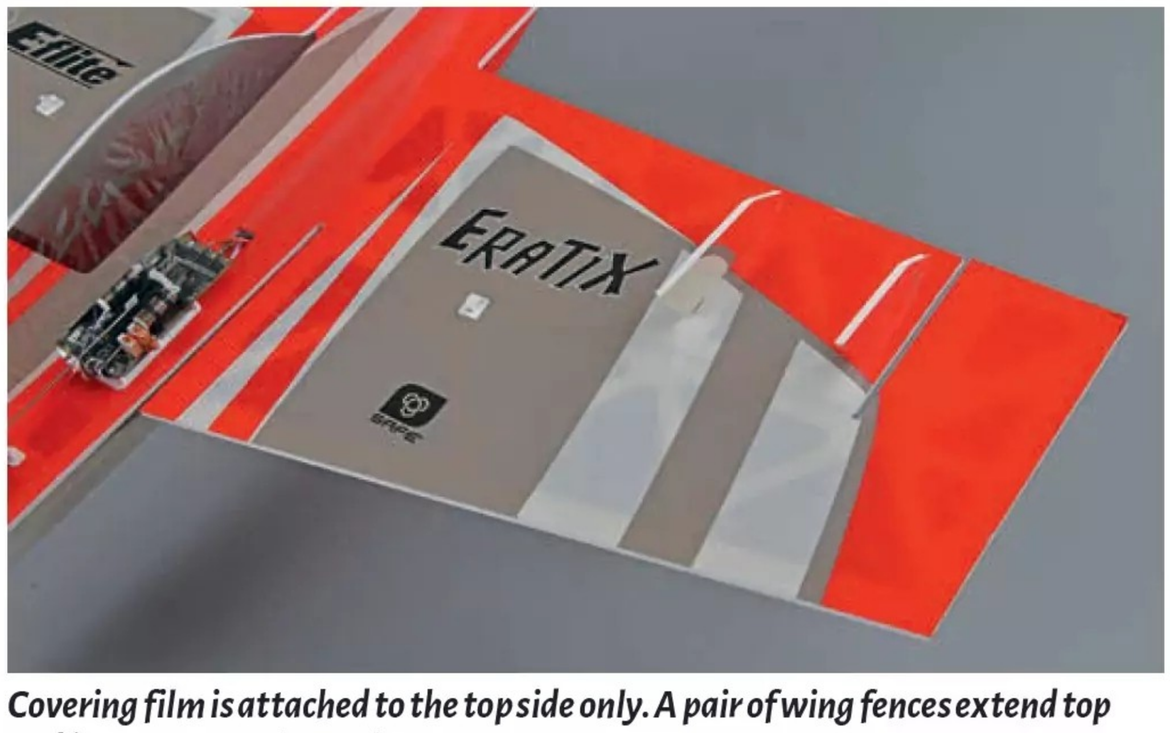
The aircraft includes Spektrum Smart Technology to provide telemetry information to a compatible Tx such as the NX8+. It provides warnings, including one that will stop you from flying the model if the on-board LiPo doesn't have enough power to fly safely. This gets set up automatically and it even set off a vibration alert when I tried to fly the Eratix with some old batteries that didn't have enough puff to fly it for more than a couple of minutes. Fortunately, Logic RC had sent over a brand new 2S 300 mAh LiPo so I could test it at full power.

A CLOSER LOOK

Eratix is fully assembled and made from flat pieces of laser cut 3 mm thick white foam.



Tiny foam wheels with flat foam spats allow ROG from smooth surfaces.



Covering film is attached to the top side only. A pair of wing fences extend top and bottom on each panel.

Rear fuselage is braced by long, angled supports with triangular cutouts.

Composite rod reinforcements are inlaid along the leading edges of the wings and radiate backward from the motor mount. The same rod braces the wings via V-struts. Thicker rod is used for the undercarriage legs, neatly finished off with small foam wheels and flat foam spats.

Flying surfaces are covered top side only with a thin colourful film, closely bonded to the foam and applied with no visible wrinkles but left semi-taut over the cut-out areas. The fuselage, fin and rudder are covered on both sides in this material. Flip it over and each side of the rear fuselage, from the V-strut support back to the tailplane, is braced with long pieces of foam lightened with triangular cutouts of decreasing size.

The large control surfaces are operated with Spektrum linear servos driving each aileron. A further two servos for the rudder and elevator are mounted in a cutout in the fuselage just under the rear canopy. Short pushrods connect the wing servos to the ailerons whilst long wire pushrods activate the tail surfaces. The tail pushrods pass through two plastic guides to support them from bending in flight. Z-bends retain the rods on the servo horns, with micro ball links connecting them to the control horns.

Mounted on the same board as the tail servos is an all-in-one Spektrum Control Unit fitted with a DSMX receiver and a brushless ESC. This is wired to a 1404-3200KV, 12-pole brushless outrunner motor fitted with a 160 x 35 mm prop. The motor is fitted with a discrete prop saver – no little rubber bands visible here!

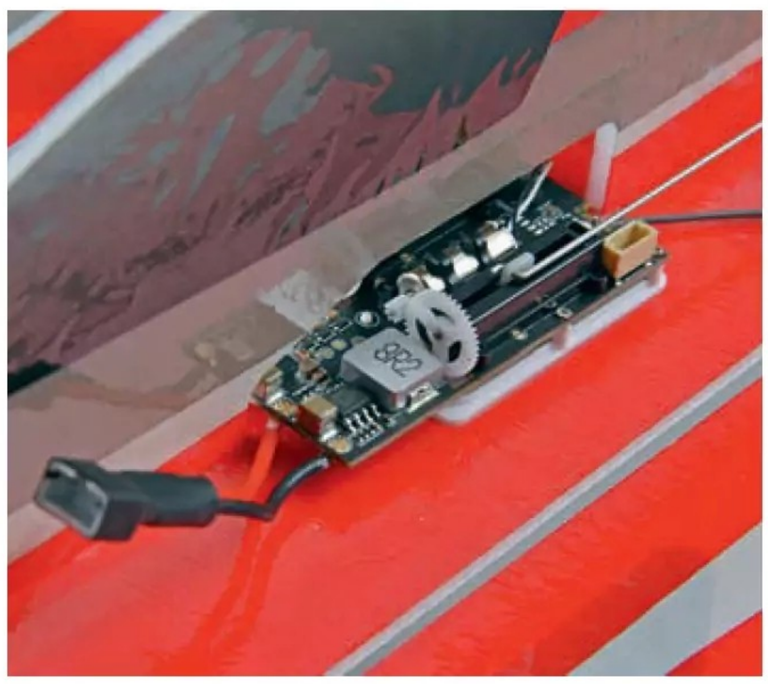
The control unit uses a 3-pin JST-PH connector to match the recommended 2S 280 – 350 mAh LiPo. A battery pack is not supplied but Logic RC kindly included a fresh 300 mAh 30C LiPo.

The slim instruction manual runs to 17 pages in the English section. It's packed with useful information, including a drawing of the CG position annotated at 72 – 80 mm behind the LE of the wing. However, this is nowhere near the greyed-out area shown, which places it around 25% chord. The text says to place the CG at 76 mm, plus or minus 4 mm. The effect is the same as the annotation but in reality this is closer to half span at the wing roots. I marked these positions ready for an old fashioned 'tip of the fingers' CG test but I couldn't get a consistent result with such a small airframe. Fortunately, this area coincides with the front edges of the ailerons, so I followed an imaginary line from the ailerons to the top of the canopy where I suspended the model using a light pinch between my thumb and forefinger. With the LiPo fixed to the hook and loop pad pre-fitted to the fuselage the little Eratix balanced perfectly.

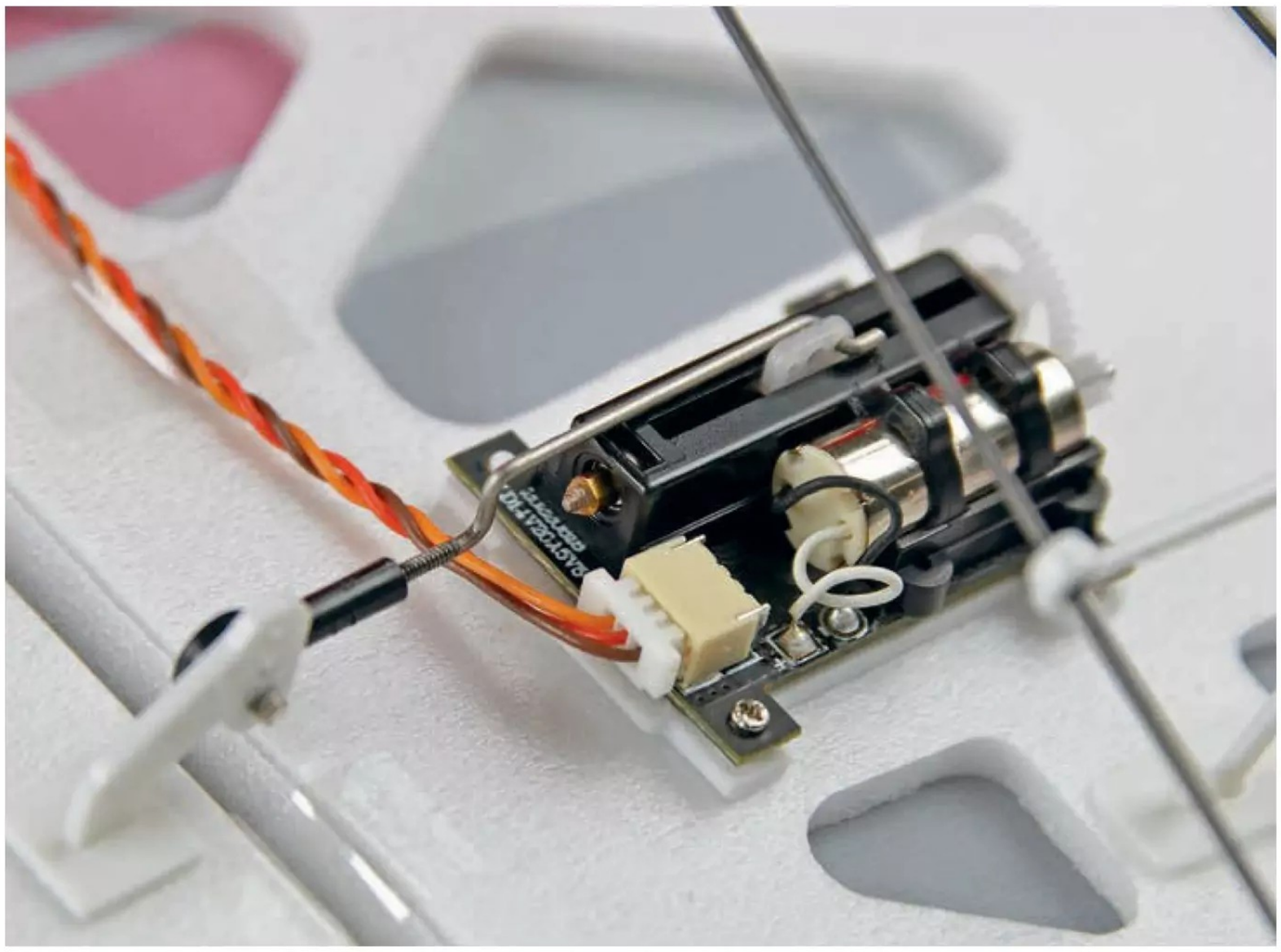
BIG MOVES

Since this is a highly agile 3D aerobat it's no surprise that the control movements, even on low rates, are huge. However, Eratix also features AS3X stabilisation and SAFE Select technologies. The latter limits pitch and bank angles and provides automatic self-levelling so it's not really applicable to this aircraft. It can be turned off so most people attracted to an Eratix will switch it off and leave it there! The target market is confirmed by Logic RC's website which shows the UMX Eratix as 'Skill Level 2 – Some Experience Required', qualifying this with, I

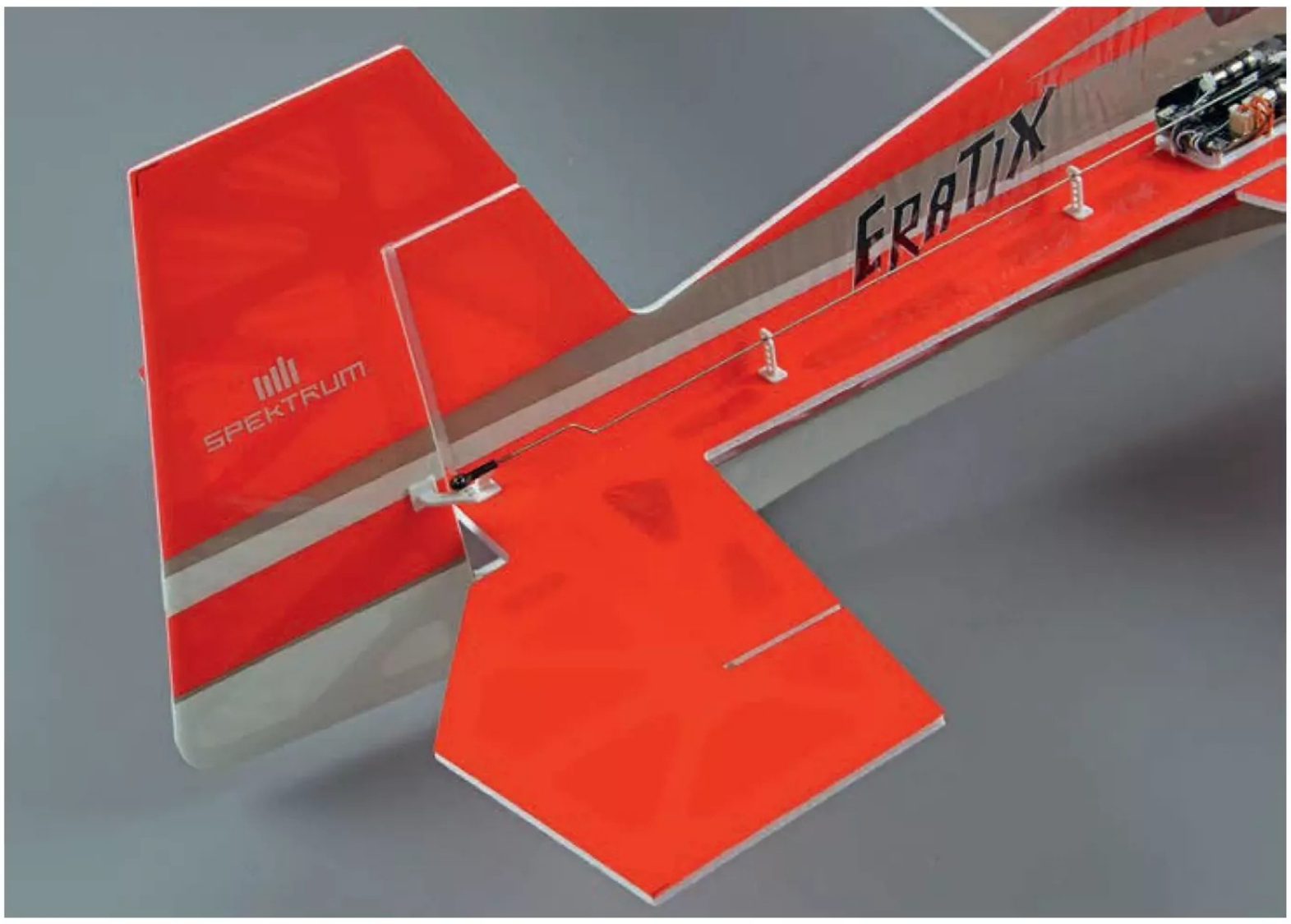
"You should have the experience and skills necessary to successfully fly higher performance ultra-micro models…"



Tail surfaces are driven by a further pair of linear servos. At the front of the board is a Spektrum Control Unit fitted with a DSMX receiver and brushless ESC. It is fitted with a 3-pin JST-PH connector.



Spektrum's well proven linear servos are short coupled to the large ailerons, aptly described in the promo literature as 'oversized'!



The large rudder and elevators are driven via long wire pushrods supported on each side of the fuselage by tall plastic guides.

The 1404-3200kV, 12-pole brushless outrunner motor is fitted with a 160 x 35 mm prop, with a discrete prop saver located in between.

Be sure to use a fresh 2S 30C LiPo before attempting any demanding, power hungry aerobatics such as prop hanging.

think that SAFE and AS3X come as a combined package so you always get both technologies even if it's only 3-axis gyro stabilisation that you want. Most experienced pilots would probably fall into Skill Level 3, with the best rated at Skill Level 4. As a B-cert pilot with over 50 years of R/C flying experience I'd happily put myself at Level 3 but even I appreciate help from a gyro sometimes, especially with something as agile as the Eratix with its huge control surfaces. So, I was very happy to let AS3X lend a hand whilst flying it!

OUTDOORS & IN

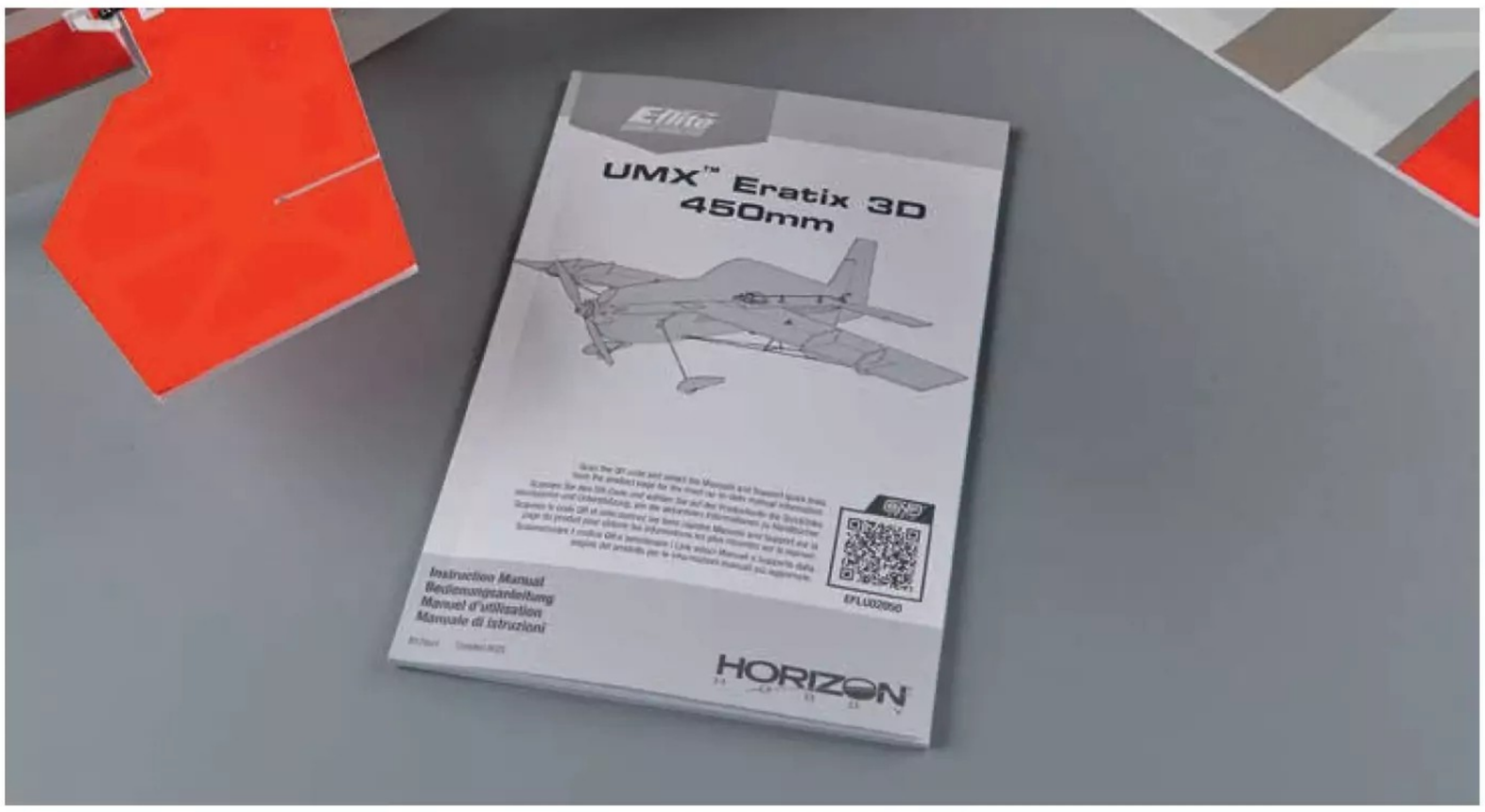
I learned from test flying the 4-Site that even small indoor aerobatic models are best test flown and trimmed in calm conditions outside. As I received the Eratix just before Christmas the chances of any calm weather was remote. But to my surprise such a day quickly arrived so after loading two larger models in my car, I made a soft bed for the Eratix, there being no space for its big carry box.

At the field a gentle underarm launch had her safely away. Looking at the NX8+ Tx I can see a few clicks of right rudder and aileron, as well as some up trim too. But some of that would have followed its most recent indoor outing as I continue to fine tune her. Suffice to say there were no dramas to report when flying her for the first time either indoors or out. After basic trimming I was soon looping and rolling the Eratix, revelling in her snappy responses but grateful for AS3X's assistance in maintaining stability as she was buffeted by gentle puffs of wind. Landing was easy and she settled in a slow, almost vertical descent onto her wheels. Lovely!

LOW VOLTAGE

Similar conditions prevailed for another couple of days, so I took Eratix to another site, this time having charged up a couple of those older batteries I previously mentioned. After an enjoyable first flight with the fresh Spektrum 2S LiPo, gyrating around the patch with ease and enjoying finding the limits of my prop hanging skills (more practice required!) I swapped to one of my older packs. All went well until I pulled up into another prop hang when the motor cut, obviously due to the LiPo lacking grunt, and the little model flip flopped and dived into the ground. Ouch! Fortunately, I was flying over long grass, so no damage was done.

This is no fault of the electronics which simply did what it was meant to do. Eratix is equipped with a Low Voltage Cutoff (LVC)



Slim manual provides a lot of helpful information including easy to follow set up guides. CG drawing is incorrect so stick to the position described in the text.

After securing a 2S LiPo on the factory fitted hook & loop pad the CG was found to be spot on.

and in level flight this will pulse the motor, indicating that you should land as quickly as possible. But by hauling her up into a prop hang the tired, years-old battery had momentarily died before the LVC could cut in and so the Eratix had simply fallen out of the air.

To test the LVC I loaded up another of my older packs but this time I kept her on the straight and level whilst flying small circuits. It too offered limited duration compared to the fresh pack that Logic RC had supplied. But the difference was that this time I could hear the LVC working and feel it too, as it also set up a vibration alert on the NX8+ transmitter!

The moral is clear. A model like this one, which needs plenty of power to perform demanding aeros for several minutes, deserves to be paired up with a new, fresh LiPo. I certainly won't be using those older packs anymore, confining future flights to the brand new 2S 300 mAh LiPo that Logic RC supplied.

IN THE GYM

With the Eratix well-trimmed and a good idea of its aerobatic capability, I awaited the next indoor session with high expectations. However, car trouble meant that when I eventually arrived my clubmates were well into their two-hour flying slot. I burst through the doors and readied the Eratix. My clubmates took pity on me and cleared the airspace, allowing me full use of the hall to tentatively explore the aerobatic capabilities of the Eratix in still air conditions.

I could see immediately that she has a lot of potential, rolling quickly down the length of the hall and looping with ease under the hanging

This compact and attractive little aerobat is well suited to medium to large indoor venues. It can also be enjoyed outdoors in calm conditions as the two nearby pictures show.

lights and heating ducts. Halfway through I realised that I was doing all this on low rates, so I flicked to full rates. Rolls were faster but still very controllable while loops were tighter and at much less risk from hitting the obstacles in the ceiling.

As for prop hanging, I'll need to work up to that as I wouldn't like the LVC to cut in at the wrong moment over a hard floor. It's probably something best done at the start of a flight when the battery is fully charged. I got close though, the little Eratix performing some very nice high alpha circuits around the hall.

IN SUMMARY

What a fabulous little aerobat the UMX Eratix 3D FF is. It offers bags of fun straight from the box after minimal setting up. Treat yourself to some fresh 2S LiPos so you don't have to worry about any low voltage shenanigans and I can assure you that you'll have a whale of a time flying her, whether indoors in a decent size hall (I wouldn't want to go smaller than a 4-court) or outdoors on a still summer's evening. ■

DATAFILE

Model	Eratix 3D FF 450 mm
Model type:	Flat foam aerobatic
Manufacturer:	E-flite
Distrubuted by:	Logic RC https://www.logicrc.com
RRP:	£189.99
Wingspan:	450 mm (17.72")
Length:	487 mm (19.17")
Weight:	66.5 g (2.3 oz) without LiPo
Motor:	1404-3200 kV brushless outrunner, 12-Pole
Functions (servos):	Ailerons (2), Elevator (1), Rudder (1), ESC
LiPo:	2S 280 - 350 mAh with 3-pin JST-PH connector

Paul Hoey's delightful, refinished Seagull Chipmunk. See 'Laser Power'.

A BUSY YEAR FOR SCALE

Danny Fenton looks forward to this year's big scale events, including the FAI F4 World Champiohships

Words & Photos: **Danny Fenton**

Last year wasn't a great year for the UK scale competition circuit. Several Sunday competitions were cancelled due to wind or rain. When the weather did allow us to fly the events were great fun and well supported. We saw several new competitors taking part and that is rewarding. Even better, they returned for more.

The Power Scale Nationals were wet and windy, but the R/C categories managed to fly enough rounds to get a result. F4B, scale control line, didn't happen.

If you fancy a go at scale competition then check the BMFA Scale website at **https://scale.bmfa.org** for further details, contact **enquiriesbmfascale@yahoo.com** or drop me an email.

This year, however, is poised to be a landmark year for scale modelling in the UK.

INDOOR SCALE NATIONALS

The Indoor Scale Nationals will soon be upon us and the BMFA website is live and open for entries: **https://scale.bmfa.org/bmfa-indoor-scale-nationals-2024-3908-4445**

The Scale Indoor Nationals are a highlight of the year for sure. This Richard Crossley designed Pawnee was built by Peter Evers. Picture by Mats Johansson.

Our modelling friends are travelling across the Channel once again and the weekend promises to be as good as ever. I have heard that another trip to visit RAF Cosford (RAF Museum Midlands) is scheduled for Friday and no doubt Paul Rich will have something special planned with the museum. The visit is as much about the socialising as seeing the wonderful exhibits.

The format for the weekend is unchanged. Saturday is dedicated to indoor scale R/C and Sunday to indoor scale free flight.

There is still time to get in some practice and take part. Or just come along to Walsall and see some superb flying scale models from around Europe.

SCALE WORLD CHAMPIONSHIPS

In July this year the UK will be hosting the 2026 Scale World Championships at Buckminster. If you are interested in scale modelling, then this will be the place to be. A record number of entries have already been received by the organisers.

The UK hosted the inaugural World Championships at Cranfield in 1970 and again in 1978 at RAF Woodvale.

Yours truly will be there, hopefully flying the flag in F4B, control line scale. The team trials

The Scale World Championships will be held at Buckminster from July 10th – 18th. Can David Law from the USA retain the World Champion title with his lovely Pitts Special.

'169' of the Irish Air Corps. Picture courtesy of Pat Reilly.

Underside showing the stripes. A very simple scheme, hopefully visible against our often-grey skies. Picture courtesy of Pat Reilly.

As you can see, I am close to applying paint. Note the re-worked forward wing fairing.

Three standard Yellow Seagull Chipmunks. Well, if you ignore mine which has a new tailplane, elevators and rudder!

will be in a few months' time when the team selection will be finalised. Three competitors each in F4B, F4H and F4C will represent Team GB.

I am so looking forward to welcoming friends from all around the planet. Some I met at the last World Championships, held in Romania, and others I have only spoken to online and look forward to meeting in person.

RCM&E will be there covering the event from July 10th to July 18th.

SEAGULL CHIPMUNK

Work has continued on my Seagull Chipmunk over the festive period and hopefully when we get some warmer weather I can crack on with applying some paint. I am considering finishing the model in an Irish Air Corps scheme, maybe 169, just for something different.

As you saw in the last column, I have repaired most of the crash damage inflicted when the elevator servo failed. I have changed a few things during the rebuild, including a much more accurate wing fairing, rudder and elevators. I have covered the forward fuselage in 25 gsm glass cloth to ease covering those wing fairings; I just don't get on with covering concave shapes.

The Irish scheme is simple: white, orange and green. I have drawn the Ying-Yang like roundels that are on the fuselage and upper wing surfaces in Illustrator ready to cut in my plotter/cutter. The wing underside stripes will just be strips of coloured vinyl. I have chosen to cut them in vinyl rather than paint, just to speed things along as this project has been on the bench far too long already.

As you can perhaps see, I have glassed the fuselage forward of the rear of the cockpit and used Oracover film for the rear fuselage, wings and empennage.

The Seagull Chipmunk highlights what can be done to an ARTF (Almost Ready to Fly) model to make it more unique. I know I have discussed this topic before, but it is worth re-visiting to give you the idea. I thought I might show a few models that have had some treatment over the years and caught my eye.

PORTUGUESE CHIPPY

Pascal's Chipmunk resplendent in some Dutch sunshine.

Pascal sent me pictures of his originally yellow Seagull Chipmunk. He used automotive aerosol spray paint over the scuffed Oracover. The dayglo was achieved using a paint originally intended for road markings! I think you will agree that Pascal's Chippy looks great in its Portuguese markings.

A TOUCH OF KLASS

I am including my WP971. Picture courtesy of Chris Bott.

I have included my Klass Kote painted Seagull Chippy, WP971. This was painted directly over the green and earth Oracover, without scuffing the surface, to see if it would last. Amazingly, the paint has remained stuck fast! After two years of flying and, in some cases, abuse, it has stood up very well indeed.

Paul Hoey has opted to re-cover rather than paint his Chipmunk.

Paul is a master with the covering iron.

LASER POWER

Paul Hoey is a really precise modeller and I admire his building immensely. Paul pays attention to detail in a way that I aspire to. His Chipmunk is lovely. When I tried to apply film covering, when repairing mine, I could not get the film to adhere in those blessed wing fairings. In the end I glassed the fairings and resorted to paint. Paul's is a lovely model indeed and who would think it started as a humble ARTF.

I asked Paul about the model:

"The engine is a Laser 120 with a 15" x 6" prop. A baffle has been constructed to direct cooling over the cylinder. The 120 gives plenty of power to fly in a scale manner, with a bit left over. Radio is Jeti with Hitec servos. I remodelled the cockpits to improve the scale appearance and upgraded the pilot to a 3D printed one. The landing lights are activated via an R/C switch and linked to the flaps via Jeti Mode functionality. Weight? I have no idea, but its CG is 130 mm from the LE with just a few grams of tail weight.

I have refinished the cowl with matched Oracolor paints, brushed on. After stripping the original yellow covering, I sanded and tidied the airframe. I researched civilian Chipmunk schemes and found G-APYG which was straightforward to reproduce. The deHavilland logo was done by Callie Graphics."

These pictures don't do justice to Paul's skills.

Thanks Paul. It's a lovely model.

POWER TOOL BATTERIES

Going back a few years, my first foray into painting over film covering was with another Seagull model, in this case the Sea Fury. This model was around 60" span (1524 mm). It came in at under 10 lbs (4.5 kgs) and, at that time, was usually powered by a 1.20 four stroke IC engine. But in mine (and Chris's) we used some very cheap equipment indeed, effectively to see if a large-ish electric warbird could be done under a tight budget. Remember, this is in 2008 when electric flight was not as common as it is now. In fact, these models were powered by 2300 mAh battery packs salvaged from DeWalt power tools, using early LiFe chemistry, giving around 10-minute flights and a kilowatt of power. More than enough!

Anyway, I digress. These models were pretty bland as supplied in a grey and green scheme. We repainted our models by first scuffing the covering with a Scotch Brite pad, then spraying with WarBird Colours, a water-based paint that is sadly not readily available these days.

The build can be found on the ModelFlying forum, home of RCM&E on the internet: **https://forums.modelflying.co.uk/index.php?/topic/3039-electric-sea-fury/**

It's a bit outdated by modern ARTF standards but is still a really good flyer. And the process still holds good.

GONE MILLING

Just before Christmas, in fact I think it was only a couple of days before the festivities, I descended on my good mate Tim Hooper. Until recently, Tim had been contributing to RCM&E even longer than I have and is a great friend.

The problem was that one of the undercarriage mounts on my Seagull Chippy was damaged and they are machined from a solid chunk of aluminium. Tim has a much meatier milling machine than my little Emco, as well as much more knowledge in the art of turning good metal into shavings than I do.

Armed with a bottle of wine and some mince pies, I loaded my car and headed West along the M54. I feel bad looking back that I talked Tim into spending a few hours right before Christmas helping me. Made worse by the fact that those few hours turned into several

The 'Three Amigos'! L-R: Myself, Shaun and Chris with more Seagull Models, this time Sea Furys. I think this is one of David Ashby's pictures.

Tim has an impressive workshop and there is no substitute for a large, heavy mill and lathe. They are so much more robust and can handle larger tooling. My little Emco is great for smaller jobs but fit more than a 4 mm cutter and it struggles.

The mission for the day, apart from eating mince pies, was to machine the aluminium stock ready for me to drill and finish. My time with Tim was brilliant. He is such an enthusiastic person and is so easy to get along with. I learned loads from him as we sawed, drilled, filed, milled and beat some aluminium into submission. After some aggressive milling we had the top-hat section I required.

Warmed mince pies were forced upon us by Netty, Tim's wonderful other half, and then it was back to the grindstone or, in our case, the mill. Some swearing and some scratching of heads followed as Tim's boring head was misbehaving and we couldn't understand why. But eventually the deed was done and I now have new undercarriage mounts.

I have changed the design slightly to accept some commercial oleo legs that clamp the entire leg rather than rely on grub screws. I must still cut a slot in the mount and drill and tap it for a hefty Allen bolt to clamp the leg in place. But that should be straight forward.

For those that don't recognise this character, this is Tim Hooper. It's not noisy in the workshop. He was just fed up with me droning on about Chipmunks!

There's still some work to do. I need to slit the clamp and fit some clamping screws, but the hard bit is done.

You can see the top hat section having been nicely milled, still in the mill's vice.

We started with a chunk of 6061 aluminium which we cut to size.

The Seagull Chipmunk, like many fixed undercarriage aircraft that use grub screws to clamp piano wire undercarriage legs or sacrificial stubs, suffers from the legs rotating on a hard landing. Hopefully this design change should stop that happening. The downside is that an abrupt 'arrival' will mean the leg will probably bend or break rather than the sacrificial piano wire bending. Time will show if it is a wise move.

A huge thank you to Tim and Netty for a wonderful few hours wasting metal, eating mince pies and generally just enjoying some time with friends. No doubt he will hang up the phone next time I call asking if he has a minute - and who could blame him!

I think that just about wraps it up from me for today.

As always if you want to drop me an e-mail, I can be reached at **cammnut@gmail.com** ■

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WHEN RAIN STOPS PLAY

Chris Williams makes good use of recent inclement weather to finish off a trio of scale gliders

Words & Photos: **Chris Williams**

The two months that have passed between the deadlines for the last column and this one have gone by with but just one opportunity to fly, thanks mostly to the industrial scale of the inclemency of the weather.

With no ability to observe and photograph what's going on elsewhere, this time around it looks like I can only really concentrate on matters arising in the workshop here at Williams' Towers...

A rare moment of action. The Petrel on its maiden landing at CMFC.

PROJECT CONCLUSION 1

As it turned out, the one aforementioned flying opportunity saw the recently completed Petrel achieve its maiden flight at CMFC, towed up behind Smallpiece's trusty Cub. At 1:4.5 scale this version sits nicely

Motley Crew demonstrates the size of the 4.5 scale Petrel.

between the fifth scale magazine version and the quarter scale model that sits in the hangar gathering dust. It differs from the published plan in that it is based on the full-size Petrel that is the queen of the UK's Vintage Glider Club's fleet and which was modified in the dim and distant past with a conventional tailplane in contrast to the original all-moving-tail (AMT). At 9 lbs in weight and with a span of just under four metres this model falls into my new favourite size of glider.

The maiden was a non-event excitement wise, as far as I remember, because that was some months ago now and she's since gathered nearly as much dust in the hangar as her larger sister.

PROJECT CONCLUSION 2

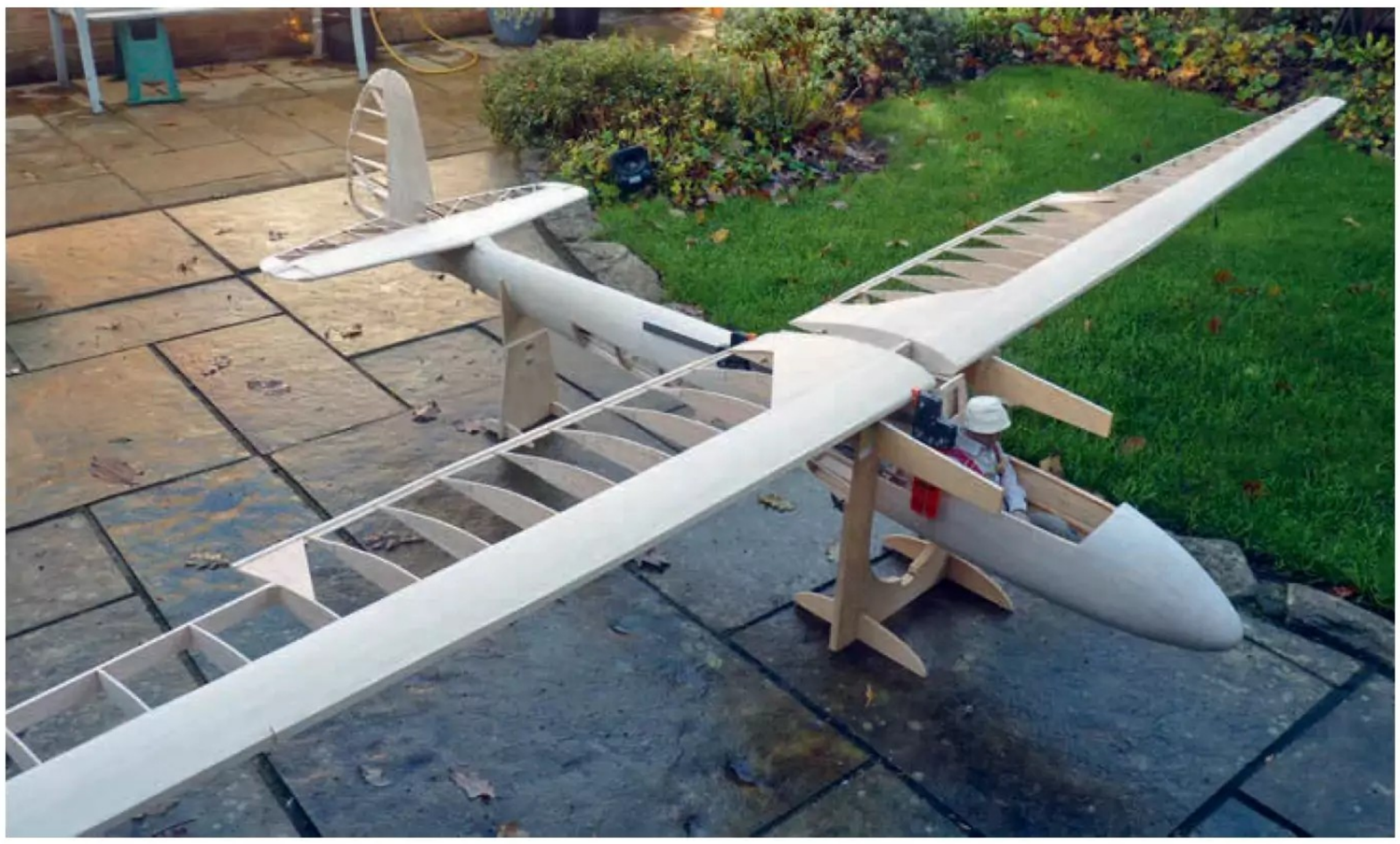
Deciding to stay with the patriotic motif, my wandering eye next fell on the Slingsby T34 Sky, a sailplane yet to grace my building board. With a fuselage based on the Gull IV, the Sky's 18 metre span was considered quite large in the 1950s. At 4.5 scale (surprise, surprise) the model would span four metres and an added advantage would lie in the scaling up of the drawing of my diminutive Gull 4 fuselage with the necessary longitudinal stretching to turn it into the Sky.

A month or so of very enjoyable dusty endeavour saw the airframe ready for the attention of the filming irons. Unable to find a suitably attractive full-size livery, I opted instead to produce a generic colour scheme that was more to my taste and I pronounced myself well satisfied with the result.

I must admit I was surprised that this glider hadn't shown up on my radar a long time ago because it seems to me it was one of the more elegant of Fred Slingsby's designs. But now it languishes in the hangar as the moving hands, having built it, move on...

PROJECT CONCLUSION 3

It was many years ago now that I obtained a copy of the Martin Simons book 'Slingsby



Checking the decalage of the Slingsby Sky

The Sky's elegant lines are revealed in side profile.

Slingsby Sky now finished in typical livery style.

Slingsby Dart 15 airframe, ready for covering.

Sailplanes' and it would seem that I haven't quite built every glider in it, because it came to my attention that one of the examples I had missed out on was the Dart 15, the predecessor to the Dart 17R. (That's right, I've done that one, still got the T-shirt!) It is said that in order to produce a glider that could outperform the dominance of the Ka6, computers were used for the first time to calculate many of the design features.

Designed once again to 1:4.5 scale, a computer was used to design this one too, although it only involved the relatively small task of scaling down the larger version. Another dusty four weeks later the Dart, too, was ready for its film covering and an intensive week of ironing ensued. The colour scheme is also generic, but this time it was inspired by a full-size Dart 17R.

I can often see the neighbours eyeing my bulging garage door and wondering what's going on inside. But I have yet to tell them about my condition... The one where you know how to start building gliders but you don't know how to stop!

RATTLING GOOD FUN

Having finally hung up my spray guns and embraced the world of iron-on film there are still occasions when the use of paint is the only option. I refer, for instance, to the humble canopy frame, for which it would be a cast iron, son-of-a-female-dog, to finish in film, I kid you not. Paint brush or rattle cans are the options and I would like to briefly touch on the latter...

Having finished your canopy frame to at least a grade of 180 grit it will then need a primer application. I have used many such primers over the years, some of them proving to be worse than useless. But recently I have settled for Jenolite's primer filler spray paint for the twin benefits of high build coupled with a quick rate of solvent evaporation. This means that at an ambient temperature of around 20 degrees centigrade you can apply two first coats and then, after a light flat with 320 grit, two more can be applied a couple of hours later. Repeating the process once or maybe twice, if necessary, you can prep the frame for the application of colour during the course of a day whilst being engaged in other parts of the project.

This primer, comparatively, seems to deliver more build than others I have experimented with, although it does need a jolly good rattle to distribute the solids adequately.

If you seek perfection an alternative would be to brush on several coats of a two-pack primer, flat with 320 grit and then apply one coat of aerosol primer to fill the flatting marks.

Related to the canopy frame is the binnacle that houses the instrument panel. If this is made up from plywood, then the aerosol/colour paradigm works here very well too.

F.O.L.O.

I have to say, the doctor was very good about it. '*Sit down, Mr. Williams*', he said kindly, '*and let me tell you the results of your tests.*' I gulped and nervously parked my posterior on the hard surgery chair.

I knew the news would be bad. The symptoms had been creeping up for several years now:

The Dart now resplendent in generic Slingsby style.

Dart's instrument binnacle finished courtesy of aerosols.

- A reluctance to fly when the conditions looked dicey.
- The occasional compulsion to fit a motor to whatever I was building at the time.
- And a tendency to pick up a camera as an excuse not to launch when distant shouts of 'sink!' could be heard.

'*Yes*', he continued, '*the blood tests do not lie and I'm afraid you have a severe case of F.O.L.O.*'

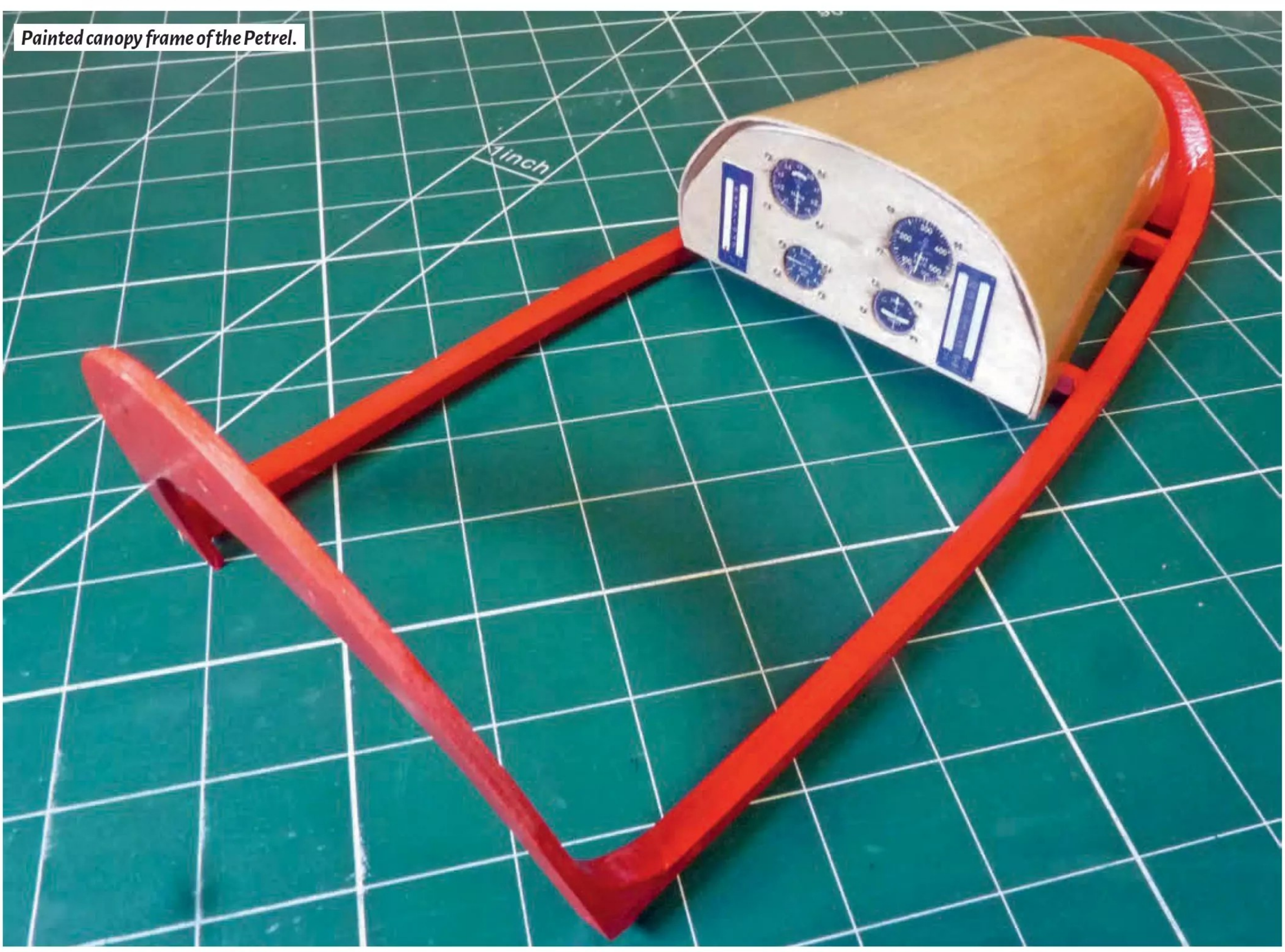
So that was it then, it was now official and it would be with me until the end.

In case you are not familiar with this condition, Fear Of Landing Out is caused by deterioration in the region of the knees. This causes a disconnect in the nerves leading to that region of brain that scoffs at the prospect of running up and down hills and leaves you weak and trembling should your model ever venture even an inch below the horizon.

There is no cure for this condition, but there are ameliorating strategies that you can employ. Fitting the aforementioned motor to your glider will bring some relief, as will building smaller models that can be plonked down on the side of the hill in any dire situation. Failing that, I'm considering keeping a wad of fivers in my back pocket to offer as a bribe to any able-bodied person that might be in the vicinity should the worse happen.

So, if you are a slope soarer yet to collect his or her bus pass, fear not... One day F.O.L.O. will come for you!

c_williams30@sky.com



Painted canopy frame of the Petrel.

Pilots' Pictorial

Get your planes in print! Get in touch… kevin.crozier@kelsey.co.uk

AIRCO DH.2

This is my R/C Airco DH.2 WW1 biplane. I cannot remember the name of the kit but it's just over a metre wingspan and flies on a 4S LiPo. Assembly was okay and it flies great, if a little bit noisy as it has got a pusher propeller.

The pilot was just a white plastic figure to which I added filler around the head and body and painted.

The wings are made from wood, covered in film and the metal struts which go out to the rear are rigged with cables. I have servos mounted at the back operating the elevator and rudder, not using cables as the plan shows, which makes it more responsive.

Peter Holt

ENGLISH ELECTRIC LIGHTNING

Being a chap of a certain age, I have a bit of a thing for cold war jets. When discussing the plethora of foam EDF models available with clubmates and bemoaning the lack of any British Cold War jets, I was told that Freewing had just released a 64 mm EDF English Electric Lightning. I went on the internet, found it and clicked 'buy now' before anyone could whisper 'unlimited climb'! I followed the tracking data with increasing excitement as the model scorched its way across the world and touched down on my doorstep a few days later.

I think this is a great little model. The quality is good, it goes together in no time at all, it flies well and, well, it's an English Electric Lightning! For an experienced EDF pilot it is a breeze to fly and gives a huge amount of fun per mAh. Given the wide speed range and excellent low speed handling the gyro version, with the control throws turned down and lower throttle settings, will also make this a reasonable first EDF. However, you do need to stay on top of it and it can get really small, really quickly, so is perhaps not a model for a raw novice.

Going back to the conversation that sparked all this, I think market size is a big decider on the models offered by manufacturers and feel this model is a toe in the water for a British EDF jet. If it sells well we might see a wider range of larger, more complex models that will excite us in the way an F-16 might not.

Photos by Ian White.

Adrian Addison

COMPER SWIFT

Attached are some photos of my Comper Swift. It was built from the Phillip Kent plan available from Sarik Hobbies (MW3487). The model weighs in at three and a half pounds and flies very well on a 'compact' 4S 2200 LiPo. It is finished in the colours of the Prince of Wales, as entered in the 1932 Kings Cup Air Race. I live in Chester, close to Hooton Park where the full-sized Swift was built. The model is fifth scale with a wingspan of 54 inches.

Tony Pritchard

P-38 LIGHTNING

This is my Lockheed P-38 Lightning. The model was built from a scaled down version of the Royal kit/plan to 57-inch span and was built without an undercarriage to keep the weight down. It is powered by two 2836 can motors and two 30-amp ESCs provided by George at 4-Max and uses a 3S 3200 mAh battery which gives about six minutes flying time. I built a take-off dolly for it, but it is so stable it can be hand launched as well.

Malcolm James Wilson

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Charlie sporting a well-deserved smile

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ENGLISH ELECTRIC LIGHTNING

After seeing **Harry Curzon's** latest acquisition in action, a foam EDF representation of the famous swept wing British fighter jet, we asked him to tell us a little more about it

Words **Harry Curzon**

Photos: **Harry Curzon, Laurie Hughes, Adrian Addison**

One of the earliest memories I have is of being about 3-years old, standing on the platform of the railway station at Leuchars awaiting the train to St. Andrews and my mother telling me to put my hands over my ears because a jet was coming. Seconds later a Lightning, taking off from RAF Leuchars, roared past. What an impression that made on a little boy: the shining silver arrow flashing by, the body shaking noise, the flames from the tail.

In that moment it made the Lightning my favourite aircraft for life.

A NICE SURPRISE

I was surprised and delighted when this near 23-inch span R/C model Lightning from Freewing was suddenly announced. It has a single 64 mm fan and is primarily for hand launch, though a fixed undercarriage is available. The shape is that of the F2a/F6 with a larger belly tank, cranked leading edge and squared off fin. The colour scheme is of an F2a of 92 Squadron, Royal Air Force.

The model was available in the USA long before it became available in the EU. So, I tired of waiting and ordered it from Hong Kong. Murphy's Law saw to it that within a few days it became available at https://

A true classic jet! The Lightning looks fantastic from any angle.

Parts spread straight from the box. Picture: Adrian Addison.

> "The model was available in the USA long before it became available in the EU"

motionrc.com/eu. The price on the website at the time of writing is €179 but if you register with a UK address it changes to €149 ex VAT in your shopping basket, with free delivery. So, depending on the exchange rate at the time you could be lucky and get one in under the £135 threshold and not be presented with any further VAT bill on arrival.

FAST BUILD

Assembly is very quick. The wings and fin glue on and the all-moving tailplanes are bolted to the pre-installed pivot driven by the elevator servo. Two hard plastic covers are glued under the belly and the nose to protect those contact areas of foam from belly landings.

You then get to apply the two roundels and the black lines on top of the wings, and this almost takes longer than assembly of the model! They are waterslide decals but of a fairly thick material so they are not as delicate as the sort supplied with a plastic kit.

As seems normal practice for Freewing the kit includes a substantial tube of foam glue and a thin steel wire with a hook at one end to poke down the fuselage to capture the servo cables and pull them up to the receiver. Finally, you install a receiver and plug in the servos, put in a 4S 2200 mAh LiPo, calibrate the ESC in the usual way and you are ready to go. You need four channels using the supplied Y-lead for the ailerons, or five channels for separate aileron channels.

COMPROMISES

The model has some compromises required to make it work, one of the most obvious being that the aileron pushrods are on top of the wing rather than underneath to help prevent them catching on the grass during landing. The intake bullet is smaller than scale diameter to help get air into the fan and there are intake cheater holes in the side and in the bottom of the fuselage. As so often happens, you see them clearly in modern high resolution still photographs, but you do not see them in the real world when the model is whizzing past.

Already some people are modifying the aileron pushrods to be under the wing and some scale extras, such as missiles, are available on thingiverse.com for you to 3D print.

I have learned from past experience with Freewing that the recommended control travels for aileron are to be ignored. They will make it roll like a high-speed drill but that is not realistic. I reduced aileron travel to a mere 6 mm each way and reduced elevator travel slightly until the leading edge of the tailplane is well above the bottom of the model so that at touch down the model lands on its belly and strakes, so not risking spearing the leading edges of the tailplanes into the ground! This amount of elevator travel still has enough authority to raise the nose very high when landing.

FIRST FLIGHTS

For the first two flights I had a friend launch the model, just in case it was badly out of trim. But it took only a click each of elevator and aileron to be hands off. Since then, I have thrown it myself; the model has a lot of power to accelerate away quickly.

With the much-reduced travels I have used the handling is fine and it has no vices. Like any small foamy, especially any model with a highly swept wing, it wobbles a bit in flight. That does not look so good but has no effect on the handling. I use a gyro in the receiver to damp out the wobbles so now it looks better.

Tail half being offered up to the elevator pivot rod. Picture: Adrian Addison.

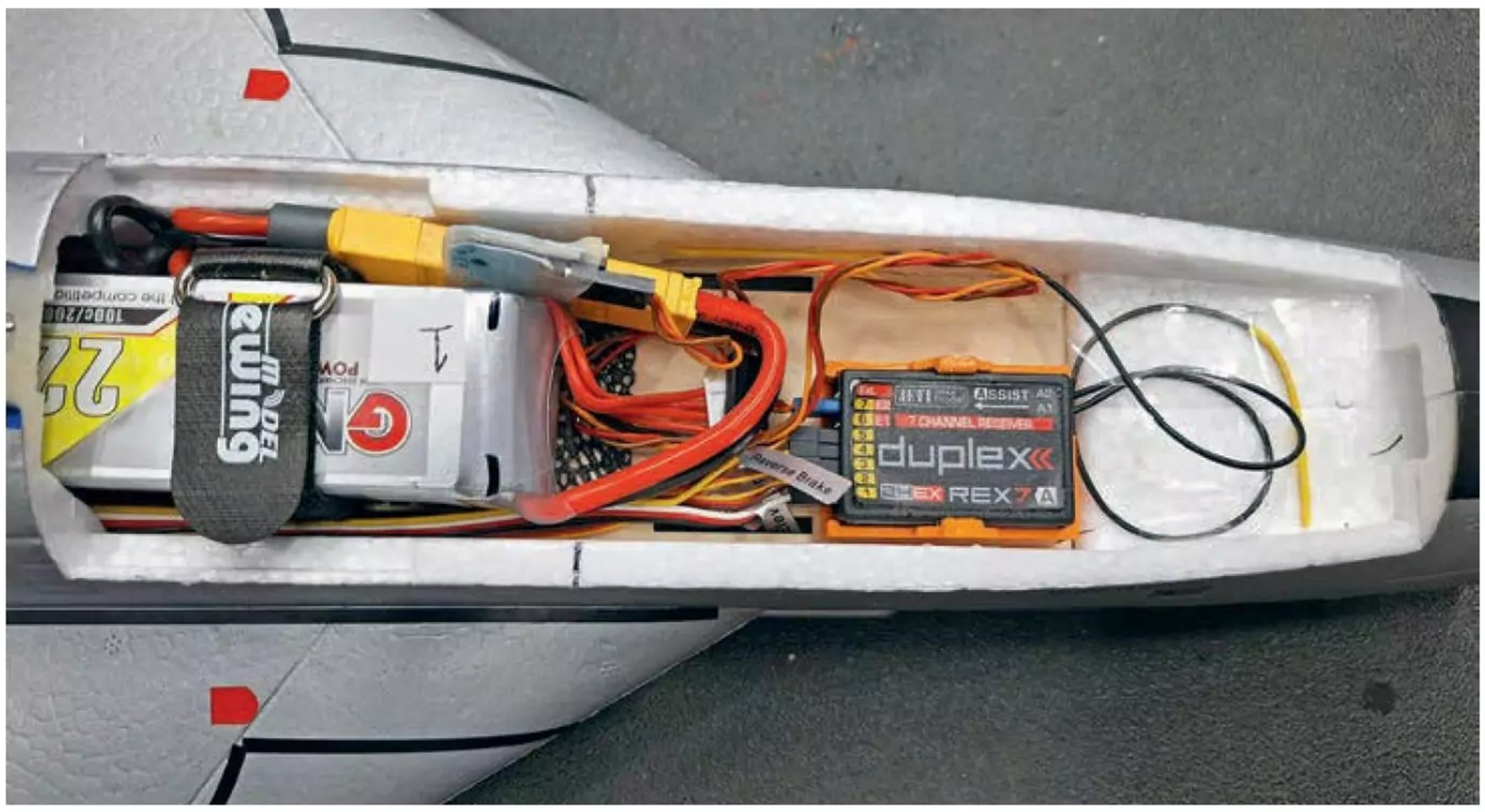
CG position is clearly marked on each wing panel forward of the optional fixed undercarriage mount. Picture: Adrian Addison.

"In common with many models, full throttle level flight is not much faster than at half throttle"

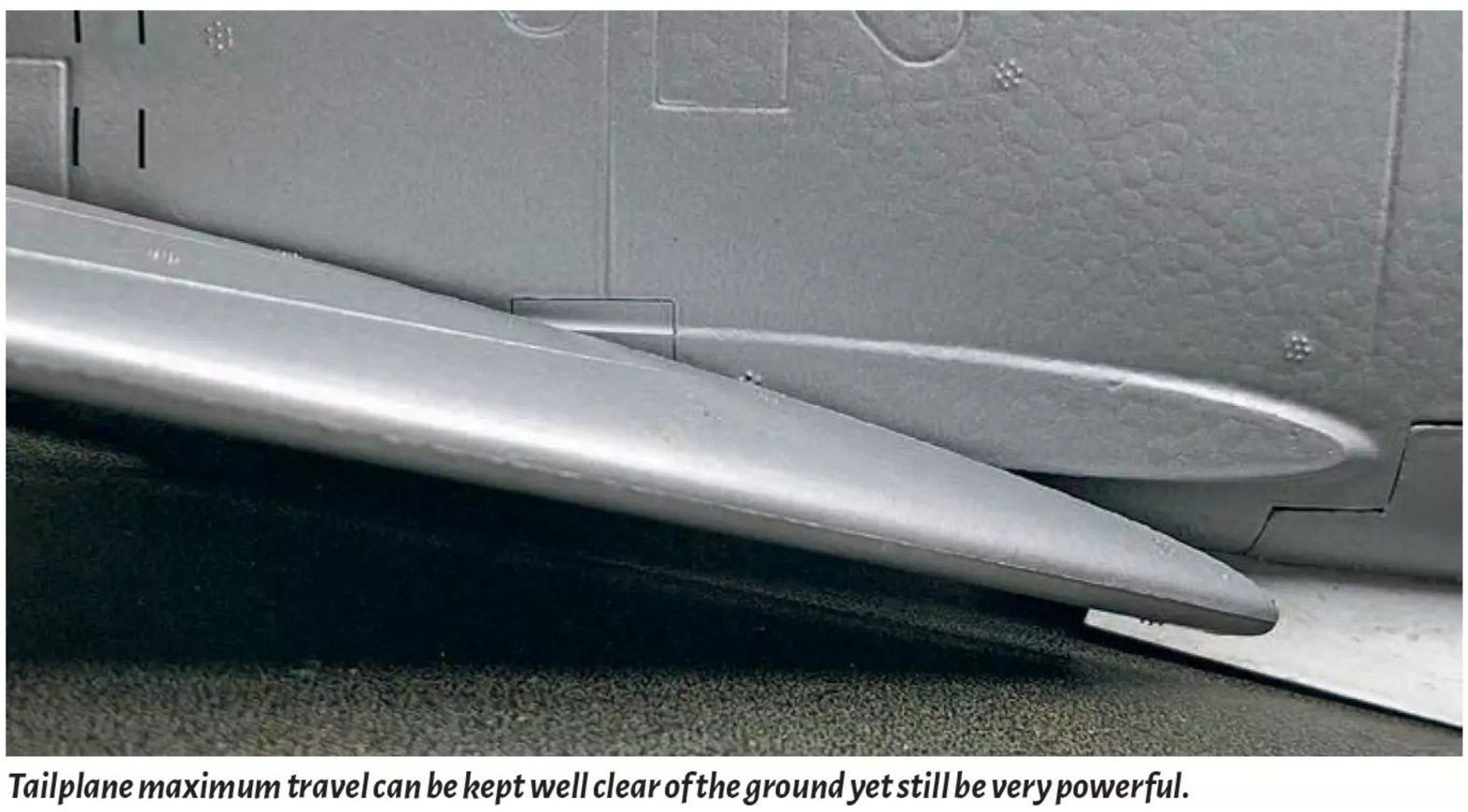
The amount of thrust is excellent and from level flight I can fly huge loops or achieve three vertical rolls before it runs out of speed. By then it is so small you do not really want to go any higher! Being a very small model it looks faster than it is, but it gets up to a very respectable speed and can become small very quickly so level flight cannot last for long and you find yourself frequently turning or half looping to bring it back before it disappears. The little fan is quiet so this Lightning is not going to cause any complaints.

The Lightning wing is often described as a delta with a notch cut out of it and the handling of the model underlines that delta wing behaviour. It works up to a high angle of attack before stalling so you can really crank it around tight turns or hold the nose ridiculously high up to get minimum speed before landing. If you have not experienced flying a delta wing before it can be against your instincts to pull the elevator far enough because all your experience says the model must stall. However, pulling well back on the elevator also causes a big increase in drag so be prepared to increase power to maintain speed or you could find it slowing down dramatically in a tight turn.

Inverted flight requires a big push forward on the elevator; if you take a look at the incidence between the main wing and tailplane required



Equipment bay is snug but has room for a battery telemetry sensor as well as the LiPo and receiver.



Tailplane maximum travel can be kept well clear of the ground yet still be very powerful.

Freewing's Lightning offers a lot of scale 'jet' fighter fun for so little cost.

All flying pictures are by Laurie Hughes. Look up Laurie's Facebook page at 'Laurie Hughes Photography & R/C' and be amazed by his stunning pictures of full-size aircraft.

for upright flight you will see why such a big change is required. It is not a problem of the CG being too far forward; I have noticed this large longitudinal dihedral in other swept wing jets with low set tailplanes.

For landing, when at about 3 feet high I cut the power altogether and glide the rest of the way, finishing with a very nose high attitude just before touch-down. Even with the nose so high the landing speed is brisk, but the lightweight model stops in a short distance. Do not flare too high or the drag will stop the model very quickly in mid-air!

The nose intake and the belly cheater holes always eat a little bit of mud and grass cuttings so after each flight I tip the model on its nose and clean them out, away from the fan.

TELEMETRY

I use telemetry to have a mAh counter to tell me when to land, in this case an SM Modellbau Unisens-e, with a pre-warning set when 60% capacity has been used and a final instruction to land at 70% used. The current in the Lightning is modest so if I start a circuit to land at the 60% warning the model is usually on the ground by 65% used. Fitted with a 2200 mAh LiPo the Lightning has given me flight times varying from just under four minutes to an excellent 7 minutes 15 seconds.

In common with many models, full throttle level flight is not much faster than at half throttle; full power makes a difference

Being a small model, it gets up to a respectable speed and can become small very quickly so level flight cannot last for long before you find yourself turning or half looping to bring it back!

Peeling away, giving a good view of the two hard plastic covers glued under the belly and the nose to protect the contact areas during belly landings.

Suitably dressed for mid-winter, Harry shows the small size of the model.

when climbing. For my most recent flight I left it at mid-throttle and flew low level circles and figures of eight in front of me, just enjoying seeing that amazing shape close up. It still zipped around at a good speed and landed at 68% consumed for a time of 7 minutes 15 seconds. The motor pulls a peak of around 50 amps when going quickly to full throttle at launch or in flight, but within five seconds it settles back to around 43 amps. This sounds like a problem for the supplied 40-amp ESC and I would prefer a safety margin. But all my Freewing EDFs pull many more amps for short time peaks than the ESC is rated for when continuous running and none have failed yet.

LIGHTNING SUMMARY

I am delighted with the Lightning. There is a lot of scale 'jet' fighter fun for so little cost and it's so easy to live with. What I need all of you to do is to buy a Lightning so that it sells out and convinces Freewing to make a full 90 mm version with retracts and flaps! Until then I will be having a blast with this little model. ■

DATAFILE

Model	BAC Lightning 64 mm PNP
Model type:	EDF jet
Manufacturer:	Freewing
Retailer:	MotionRC https://motionrc.com/eu
RRP:	€179
Wingspan:	583 mm (22.95")
Length:	817 mm (32.17")
Weight:	500 g (1 lb 2 oz) without LiPo
Motor:	4S 2840-2700KV brushless outrunner
EDF:	64 mm, 12-blade
Functions (servos):	Ailerons (2), Elevator (1), ESC, Nose wheel (1)
LiPo:	4S 1800 - 2200 mAh

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- 124.98 oz·in
9.0 kg·cm
- 0.10 sec/60˚

- 11.5 mm
@ 8.4V
- 83.32 oz·in
6.0 kg·cm
- 0.08 sec/60˚

- 16.5 mm
@ 8.4V
- 124.98 oz·in
9.0 kg·cm
- 0.055 sec/60˚

- 20 mm
@ 8.4V
- 361.07 oz·in
26.0 kg·cm
- 0.08 sec/60˚

OUR HV-SERIES

- 6 mm
@ 8.4V
- 36.80 oz·in
2.65 kg·cm
- 0.05 sec/60˚

- 7.5 mm
@ 8.4V
- 90.2 oz·in
6.5 kg·cm
- 0.09 sec60˚

- 8.5 mm
@ 8.4V
- 136.10 oz·in
9.8 kg·cm
- 0.11 sec/60˚

- 9.5 mm
@ 8.4V
- 159.7 oz·in
11.5 kg·cm
- 0.12 sec/60˚

- 12 mm
@ 8.4V
- 388.84 oz·in
28.0 kg·cm
- 0.09 sec/60˚

- 15 mm
@ 8.4V
- 458.28 oz·in
33.0 kg·cm
- 0.09 sec/60˚

- 15 mm
@ 8.4V
- 229.1 oz·in
16.5 kg·cm
- 0.043 sec/60˚

- 20 mm
@ 8.4V
- 312.4 oz·in
22.5 kg·cm
- 0.050 sec/60˚

- 20 mm
@ 8.4V
- 555.5 oz·in
40.0 kg·cm
- 0.08 sec/60˚

- 20 mm
@ 8.4V
- 694.4 oz·in
50.0 kg·cm
- 0.12 sec/60˚

- 20 mm
@ 8.4V
- 555.49 oz·in
40.0 kg·cm
- 0.11 sec/60˚

- 17 mm
@ 8.4V
- 833.24 oz·in
60.0 kg·cm
- 0.11 sec/60˚

- 20 mm
@ 8.4V
- 972.11 oz·in
70.0 kg·cm
- 0.10 sec/60˚

- 20 mm
@ 8.4V
- 1222.06 oz·in
88.0 kg·cm
- 0.13 sec/60˚

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- 0.10 sec/60˚

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Skybug One in its original six-wheel configuration with a V-tail.

SKYBUG ONE

Lindsay Todd makes a welcome return with another unorthodox R/C design

Words & Photos: **Lindsay Todd**

You must admit it has a very distinctive shape. I think I prefer the H-tail now.

It's an odd name granted, but then let's be honest, it is rather an odd design. All I can say is that I was inspired by the creations of Gerry Anderson in those classic puppet-based television series and films and I wanted something a little bit different. What you see before you are clearly the tainted musings of a somewhat warped mind, accused of being a horrific agglomeration of styles but ultimately suitably weird to be considered interesting. Originally, I had envisaged folding wings, but I concluded that this might be pushing things a little too far.

Joking aside, I even made up a storyline to justify this design based around insurance recovery specialists working for conglomerates and governments, contracted and sent out into remote areas on recovery missions. I hear Hollywood calling... Then again, perhaps not!

The initial design, which can be seen in some of the construction photos, was for a six-wheel arrangement with a V-tail. Indeed, this was the first prototype and whilst it flew okay, directional control on the ground was - how can I put this - virtually non-existent. I tried a few things but then the loss of our tarmac runway site in Shropshire meant being restricted to our grass field, which brought up further issues with ground handling. Some considerable thought went into a design review resulting in a change of tail design to an 'H' format and reduction in wheels from six to four, making the design much more accommodating to handle but just as much fun to look at.

ON THE BOARD

So, with design revisions put to bed let's crack on with the build.

I invested in a set of laser-cut parts. However, there is nothing here that can't be created without a little patience and a fret saw. Best to start by creating all the fuselage formers from 3 mm lite ply, together with the undercarriage blocks and doublers.

The main fuselage sides are made up of two sheets of 3 mm medium density balsa. These are reinforced on the inside faces with 6 mm square balsa longerons using the formers as a guide.

Glue together formers 1A and 1B to make up the motor mount. It is also a good idea to drill the former for the fixings for the motor.

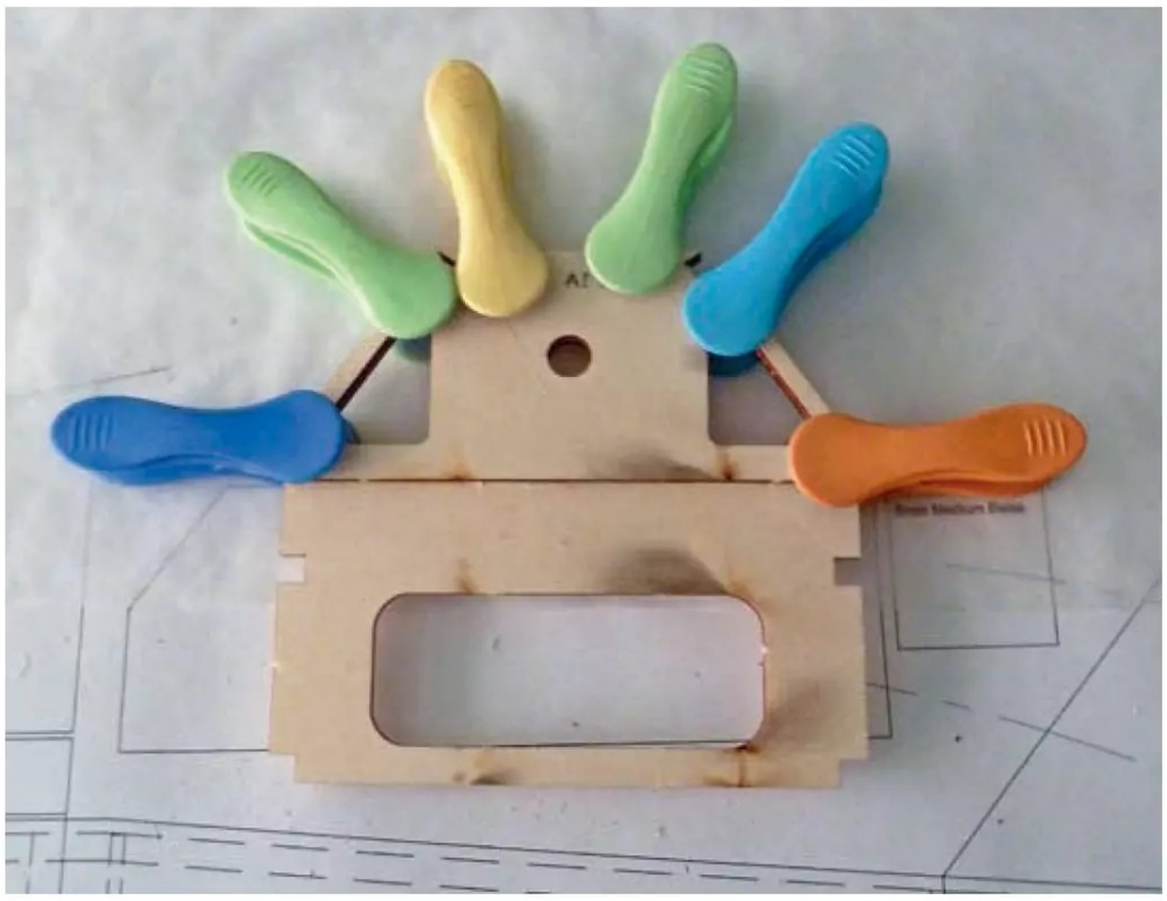
Formers F2 and F3 can be glued to one half of the fuselage side. Glue only the lower flat section as we will clamp the upper together once both lower parts are assembled.

3 mm ply U/C doublers are added to the lower edge, aligning with the cut outs and formers. The second fuselage side can then be added; again, fit the U/C doublers and some triangular section to the rear of the former lower sections. The hardwood U/C blocks can be added into the corresponding slots and the 3 mm balsa sheeting around the blocks from the rear door line to front of the fuselage.

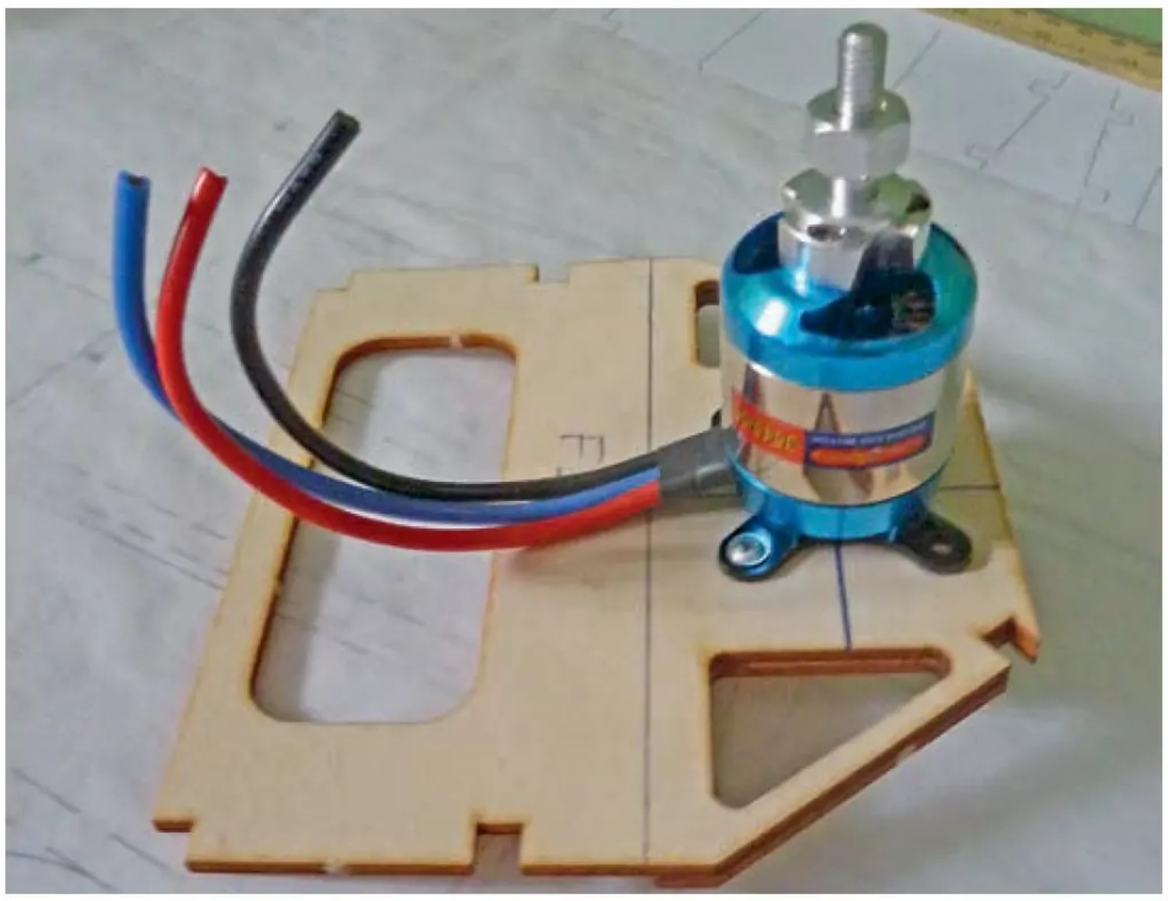
Now add glue to the upper edges of formers F2 and F3 and, using clamps, pull in and allow to dry. Square or triangular infill can then be added to reinforce the joints.

Next glue F1A/1B former into position, checking alignment with the motor such

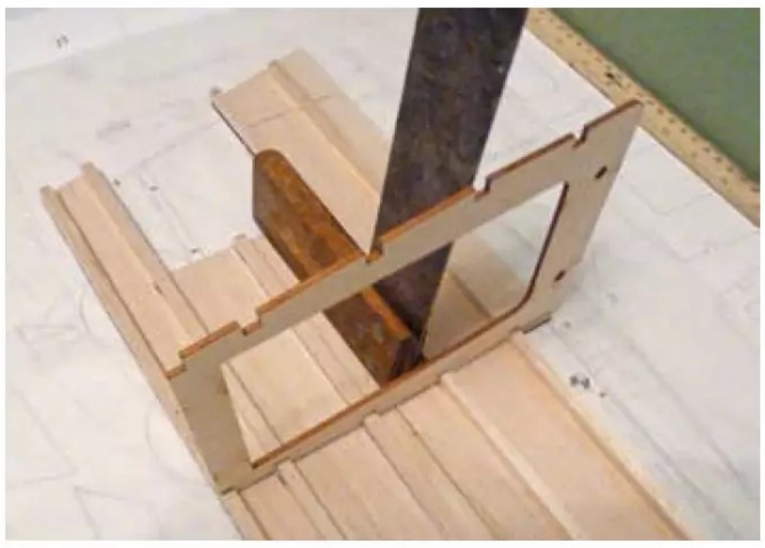
Fuselage formers were laser cut from 3 mm lite ply.



Laminating formers to create the engine mount.



Fixing the position of the motor is made easier before starting construction.



Fuselage sides bonded, with the longerons positioned using formers as a guide.

Formers in place and glued and clamped before being left to dry.

Angled top sides and base of the motor bay assembled.

that the boss will extend beyond the front of the fuselage for prop clearance. If securing with bolt and captive nuts fit them now whilst access is good. The top 6 mm square balsa longerons can also be added; these extend back beyond former F2.

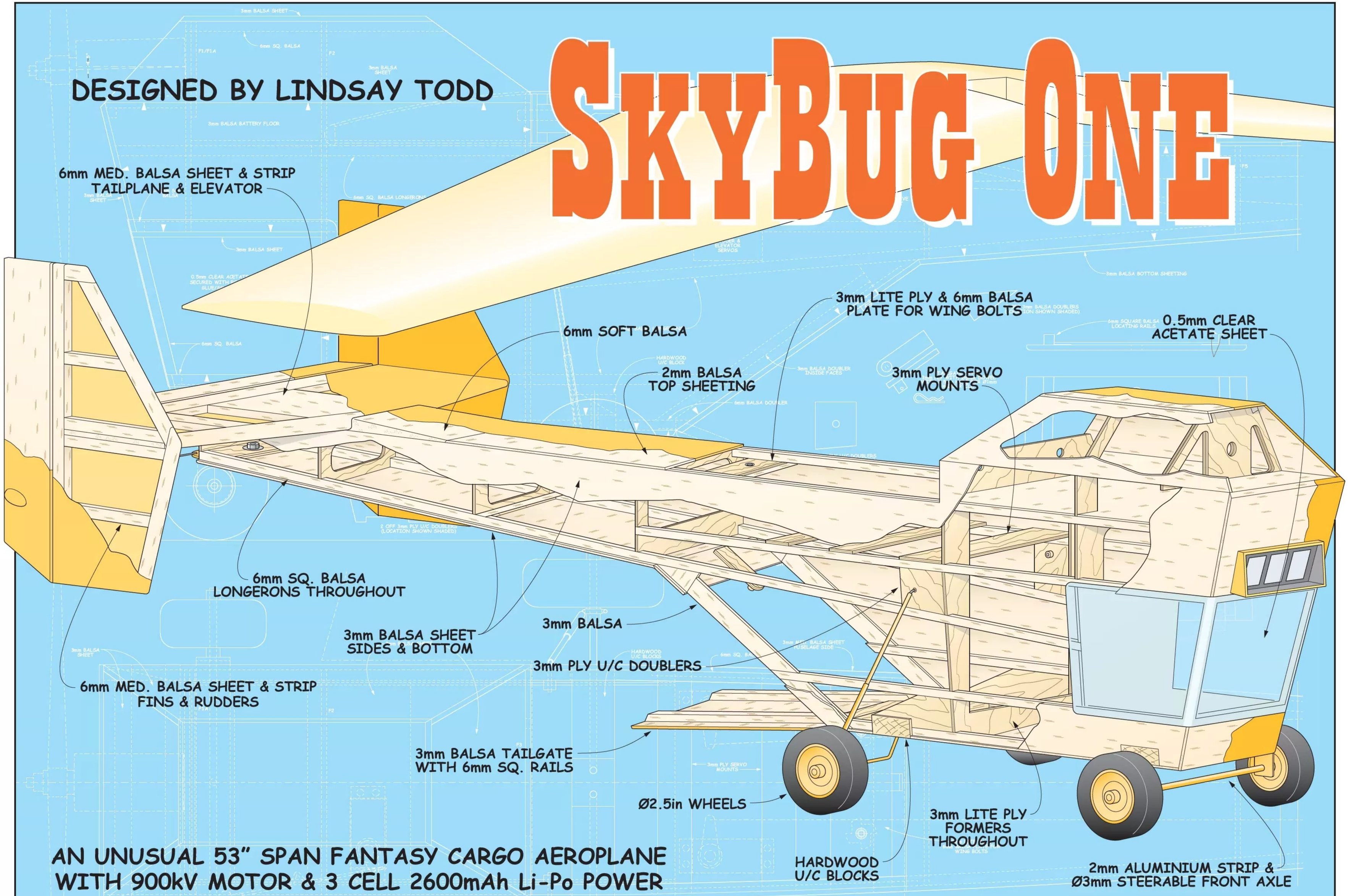
The top 3 mm sheeting for the battery bay can now be added to the top of the longeron from the rear of F1 back to F2 and then back to the front of F3, adding some 6 mm square to the edges for support.

Former F4 can be added followed by F5, F6 and F7. Then add 3 mm sheeting top and bottom. Leave space for the 3 mm ply rudder bell-crank plate forward of F7 on the underside.

The rear door shown on the prototype is optional and can be simply made from 3 mm sheet or made active by use of hinges on the

SKYBUG ONE

DESIGNED BY LINDSAY TODD



AN UNUSUAL 53" SPAN FANTASY CARGO AEROPLANE
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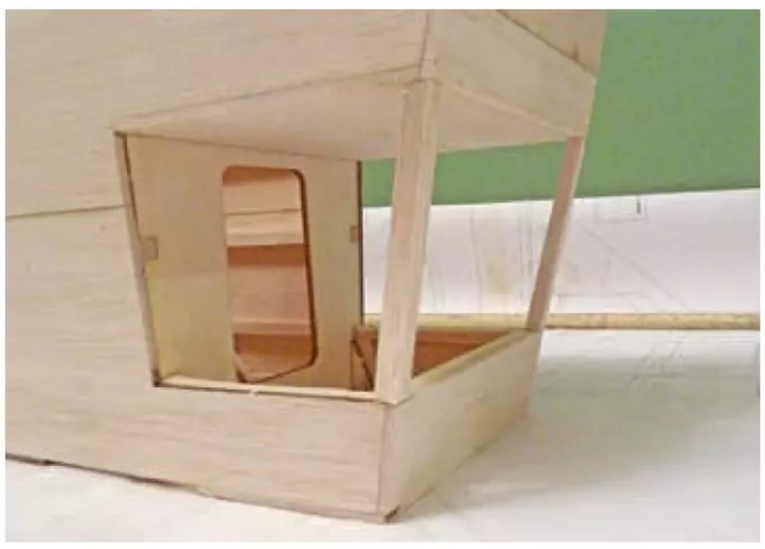


Cockpit framing and nose sheeting completed.

Undercarriage hardwood blocks and underside sheeting in place.

bottom edge and lining the inside with balsa doublers and retained in the closed position by a model car body R-clip.

Turning our attention back to the front, add 6 mm square balsa to the front inside, top and bottom faces of the cockpit area. When dry, sand square and add the front 3 mm balsa sheet to the lower section, ceiling of the cockpit back to F2 and the upper section at the angle change on F1. Sand these when dry and add further 6 mm square to the front edges and then the final 3 mm balsa front sheeting.

Now add the upper trapezoidal side 3 mm sheeting that supports F1 and extends back to F3. I chose to then coat the inside with acrylic varnish before gluing the top 3 mm sheet in place.

Make up 6 mm thick ply plates from 3 mm laminates. These are then glued to the inside of the fuselage aft of F3 which will anchor the rear U/C dummy struts.

FOUR WHEEL WAGON

The rear undercarriage is from 3 mm diameter piano wire. Each wire is located into a hole

Underside of front steering showing the centre mounted aluminium strip carrying the axle and the linkage to the underside mounted servo.

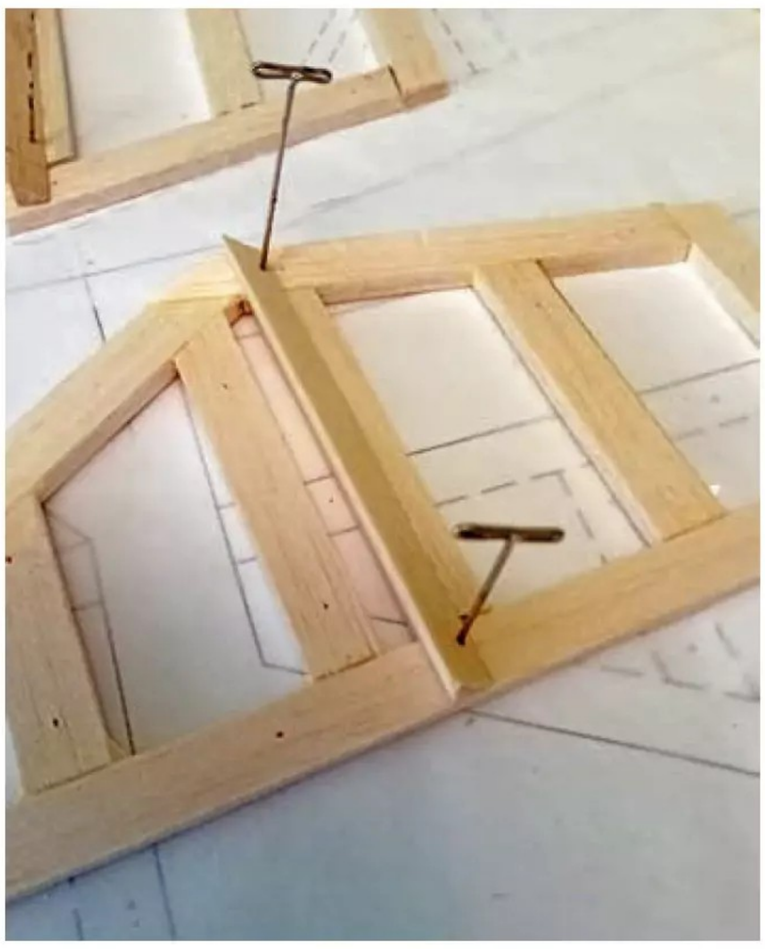
Skybug One in 4-wheel configuration with an H-tail. With its front mounted steering it 'drives' just like an R/C car!

Internal structure showing the ply plates for fixing the dummy rear undercarriage struts to on the exterior.

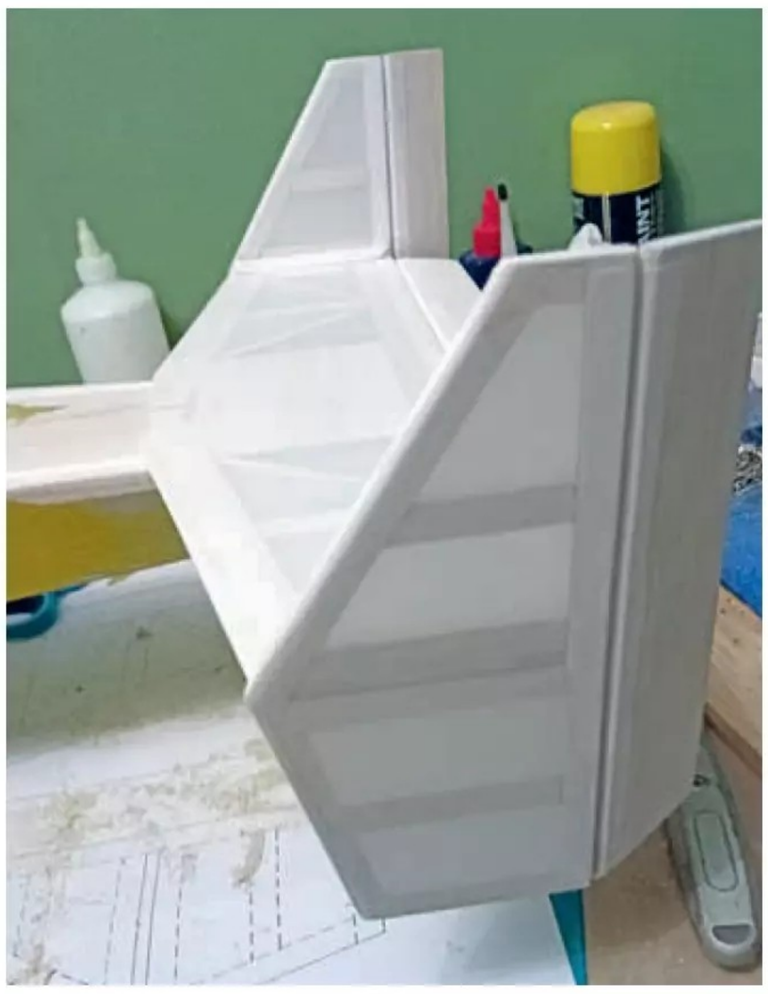
"The rear door shown on the prototype is optional and can be simply made from 3 mm sheet"

drilled into the rear U/C hardwood block. Fixing clamps are then used to secure with self-tapping screws. To complete, I made up fake struts from thin ABS tube fixed onto the axle and screwed to ply blocks in the fuselage sides.

The front undercarriage is made from a 2 mm folded aluminium strip carrying a 3 mm wire axle mounted via a 4 mm bolt with



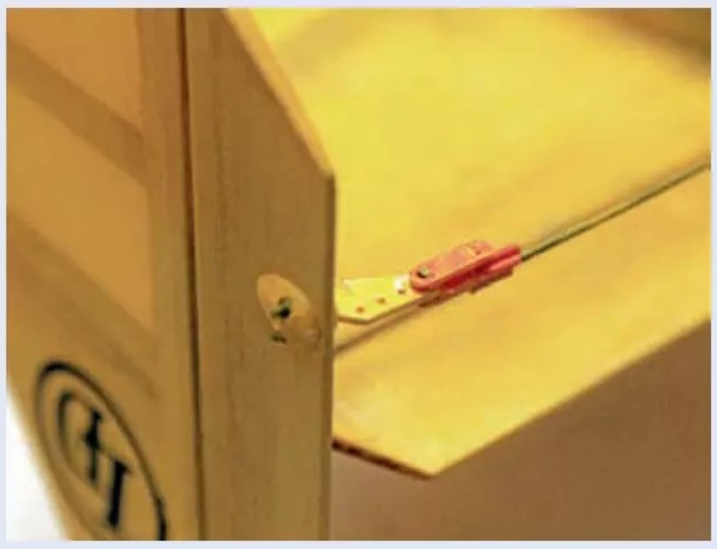
Tailplane and fins made are from 6 mm sheet and strip balsa. Triangular stock is glued to the inside faces of the fin slots to provide additional support when they are attached to the tailplane.



The tailplane was covered before gluing it to the rear of the fuselage. Afterwards the fuselage sheeting was completed and blended.

Rudder bell-crank is fitted to a ply plate at the rear of the fuselage

Finished rudder linkages.



Horizontal pushrods operate both rudders in unison.

washers passed through the centreline of the U/C block. This should be installed before working on the cockpit to ensure you still have access. Steering is via a standard size servo mounted in the underside of the fuselage with a connecting rod to a ball link affixed to the aluminium strip. Some protection to the servo is aided by a V shape bend in the wire so direct loads to the servo are minimised.

H-TAIL

The tailplane is made from 6 mm medium balsa sheet and strip, with all sheet elevators and rudders. Starting with the horizontal tailplane cut the sheet and strips to width and length, and glue together over the plan. Note the stepped cut outs to allow for accurate assembly of the fins. These are built in the same way using a scrap block to ensure the locating pocket dimensions are accurate. 9.5 mm triangular section is glued to the fin's internal faces either side of the tailplane pocket. There's no need to glue the fins onto the tail at this stage, just ensure a square fit is created.

Once happy with the fit the parts can be covered. I used a heat shrink fabric for covering all surfaces and creating the hinge on both rudders and elevator. The tail assembly can now be glued to the rear of the fuselage, checking for square and level.

The 3 mm ply with 6 mm balsa laminate wing bolt plate was added to the rear of the wing seat affixed to the top longerons and

> "I used a heat shrink fabric for covering all surfaces and creating the hinge on both rudders and elevator"

fuselage sides with triangular section above for security.

Two standard size servos are mounted forward of the wing bolt plate fixed to ply cross beams for elevator and rudder control. Control snakes were installed through slots in the side and underside of the fuselage and supported internally to give secure, flex free movement.

Whilst the elevator control is fixed to a single horn the rudder is more complex and uses a 1 mm aluminium bell-crank affixed to the underside rear fuselage ply plate by use of a bolt and spacer. Two rods connect to the rudders via control horns affixed to the trailing edge of each rudder internal face, so they function in unison.

I chose to cover the fuselage with glass cloth and acrylic resin. A few coats, with sanding in-between, provided a suitable surface for painting the silver base layer. ■

NEXT TIME

Join Lindsay in the May issue of RCM&E as he builds Skybug One's anhedral wing and completes the model ready for its first insurance recovery mission!

DATAFILE

Name:	Skybug One
Model type:	Unorthodox (sci-fi recovery aircraft)
Designed by:	Lindsay Todd
Wingspan:	1342 mm (53 in)
Wing area:	35.5sq.dm (530 sq.in.)
Weight:	2153 g (4 lb 12 oz) inc. 3S 2600 mAh LiPo
Wing loading:	20.65 oz./sq. ft.
Functions (servos):	Aileron (2), rudder (1), elevator (1), steering (1), throttle (via ESC)
Power system:	Overlander T3548/05 (710-watt, 900 kV) brushless motor, 60A ESC, 3S 2600 mAh LiPo
Propeller:	13 x 8 APC-E

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EMAX	ES9251 II	Sub Micro	4.0g	0.27Kg @ 4.8V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £8.79ea 5pcs £7.91ea
4-Max	4M-037AH-0045	Sub Micro	3.7g	0.45Kg @ 4.8V - 0.10sec/60° 0.55Kg @ 6.0V - 0.08sec/60°	Analog, Light Weight, High Speed	1pcs £6.84ea 5pcs £6.16ea
4-Max	4M-045DH-005	Sub Micro	4.5g	0.5Kg @ 4.8V - 0.10sec/60° 0.6Kg @ 6.0V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £4.72ea 5pcs £4.25ea
EMAX	ES9051	Sub Micro	4.1g	0.8Kg @ 4.8V - 0.09sec/60°	Digital, High Torque, High Speed	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-056DHVMG-009	Sub Micro	5.6g	0.90Kg @ 4.8V - 0.14sec/60° 1.05Kg @ 6.0V - 0.12sec/60° 1.20Kg @ 7.4V - 0.10sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick	1pcs £9.94ea 5pcs £8.95ea
New 4-Max	4M-053HVDMG-010	Sub Micro	5.3g	1.0Kg @ 4.8V - 0.09sec/60° 1.5Kg @ 6.0V - 0.08sec/60° 1.8Kg @ 7.4V - 0..07sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick, High Speed	1pcs £11.10ea 5pcs £9.99ea
EMAX	ES9052MD	Sub Micro	5.5g	1.1Kg @ 4.8V - 0.11sec/60° 1.3Kg @ 6.0V - 0.09sec/60°	Digital, Metal Geared, Coreless Motor	1pcs £13.83ea 5pcs £12.45ea
4-Max	4M-094DMGB-014	Wing	9.4g	1.4Kg @ 4.8V - 0.12sec/60° 1.9Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, Ball Raced, Wing, 8mm Thick	1pcs £11.54ea 5pcs £10.39ea
EMAX	ES08A II	Micro	8.6g	1.5Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Light Weight, Great Value	1pcs £5.34ea 5pcs £4.81ea
EMAX	ES08MA II	Micro	12g	1.2Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared	1pcs £8.35ea 5pcs £7.52ea
4-Max	4M-090AH-017	Micro	9.0g	1.7Kg @ 4.8V - 0.09sec/60° 1.9Kg @ 6.0V - 0.07sec/60°	Analog, Basic 9g Servo	1pcs £3.99ea 5pcs £3.59ea
EMAX	ES3301	Micro	10.6g	2.0Kg @ 4.8V - 0.12sec/60° 2.2Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, 9mm Thick	1pcs £8.79ea 5pcs £7.91ea
4-Max	4M-100AMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, High Torque	1pcs £7.49ea 5pcs £6.74ea
4-Max	4M-100DMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, High Torque	1pcs £9.05ea 5pcs £8.15ea
New 4-Max	4M-125HVDMG-028	Micro	12.5g	2.8Kg.cm @ 4.8V - 0.144sec/60° 3.4Kg.cm @ 6.0V - 0.111sec/60° 4.5Kg.cm @ 7.4V - 0.105sec/60°	Digital, High Voltage, Metal Geared, High Speed, Dual Ball Raced	1pcs £12.21ea 5pcs £10.99ea
New 4-Max	4M-130HVDMG-040	Micro	13g	3.8Kg.cm @ 5.0V - 0.112sec/60° 4.0Kg.cm @ 6.0V - 0.096sec/60° 4.5Kg.cm @ 7.4V - 0.083sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque, Very Low Play in Gears	1pcs £11.10ea 5pcs £8.15ea
4-Max	4M-094DHVMG-026	Mini	9.4g	2.0Kg @ 6.0V - 0.09sec/60° 2.6Kg @ 7.4V - 0.07sec/60°	Digital, High Voltage, Metal Geared , Ball Raced, 8mm Thick	1pcs £14.99ea 5pcs £14.17ea
4-Max	4M-160AH-027	Mini	16g	2.7Kg @ 4.8V - 0.13sec/60° 3.0Kg @ 6.0V - 0.11sec/60°	Analog, Great Value Mini Servo	1pcs £6.29ea 5pcs £5.66ea
4-Max	4M-175AMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared	1pcs £8.73ea 5pcs £7.86ea
4-Max	4M-175DMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Digital, Metal Geared	1pcs £9.99ea 5pcs £8.99ea
New 4-Max	4M-183HVDMG-044	Mini	18.3g	4.4Kg @ 4.8V - 0.101sec/60° 6.5Kg @ 6.0V - 0.078sec/60° 7.3Kg @ 7.4V - 0.059sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque	1pcs £14.99ea 5pcs £13.49ea
4-Max	4M-253AB-028	Standard/Mini	25.3g	2.8Kg @ 4.8V - 0.12sec/60° 3.3Kg @ 6.0V - 0.10sec/60°	Analog, Ball raced	1pcs £6.79ea 5pcs £6.11ea
EMAX	ES3004	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared, Ball Raced	1pcs £12.09ea 5pcs £10.88ea
EMAX	ES3054	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared, Ball Raced	1pcs £17.59ea 5pcs £15.83ea
4-Max	4M-455AH-033	Standard	45.5g	3.3Kg @ 4.8V - 0.15sec/60° 4.0Kg @ 6.0V - 0.12sec/60°	Analog, Great Value Standard Servo	1pcs £6.99ea 5pcs £6.29ea
EMAX	ES3001	Standard	37g	3.5Kg @ 4.8V - 0.17sec/60° 4.8Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-410ABH-052	Standard	41g	5.2Kg @ 4.8V - 0.20sec/60° 6.5Kg @ 6.0V - 0.16sec/60°	Analog, High Torque	1pcs £4.73ea 5pcs £4.26ea
4-Max	4M-556AMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared	1pcs £12.59ea 5pcs £11.33ea
4-Max	4M-556DMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared	1pcs £15.74ea 5pcs £14.17ea
New 4-Max	4M-490AMG-108	Standard	49g	10.8Kg @ 4.8V - 0.13sec/60° 13.8Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared, Waterproof	1pcs £17.76ea 5pcs £15.98ea
4-Max	4M-620DHVMG-112	Standard	62g	9.35Kg @ 6.0V - 0.15sec/60° 11.2Kg @ 7.4V - 0.13sec/60°	Digital, High Voltage, Metal Geared, Dual Ball Raced	1pcs £18.89ea 5pcs £17.00ea
EMAX	ES3005	Standard	42g	10Kg @ 4.8V - 0.16sec/60° 12Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced, Waterproof	1pcs £27.49ea 5pcs £24.74ea
4-Max	4M-556AMG-118	Standard	55.6g	11.8Kg @ 4.8V - 0.20sec/60° 13.2Kg @ 6.0V - 0.18sec/60°	Analog, Metal Geared	1pcs £14.69ea 5pcs £13.22ea
4-Max	4M-556DMG-173	Standard	55.6g	17.3Kg @ 4.8V - 0.18sec/60° 20.4Kg @ 6.0V - 0.16sec/60°	Digital, Metal Geared	1pcs £17.84ea 5pcs £16.06ea

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Successful in civilian and military roles, the 'Twin Beech' D18 had a production run more than 9,000, with 32 variants. Reflecting the U.S. Navy RC-45J trainer scheme, E-flite's 1.5 m span version's twin brushless power system delivers ample power using 3S 3200 - 5000 mAh LiPos, with unlimited vertical performance on 4S (no mods required). The Spektrum Avian Dual 40A Smart Lite ESC provides a variety of real-time power telemetry data with both Smart and non-Smart batteries via compatible receivers (including the AR631+ installed in the BNF version) and Spektrum AirWare-equipped transmitters. The BNF version is also equipped with enhanced AS3X+ and optional-use SAFE Select technologies. Composite reinforced and fully painted the EPO airframe has an abundance of scale detail, including panel lines and hatches, antennae, exhaust stacks and a pilot figure. Rugged electric retracts with metal components allow drama-free ROG operation and a 3-piece wing design makes for straightforward storage and transport. No glue is required for final assembly so the model can be ready to fly in less time than it takes to charge a battery!

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A scaled down version of their 64, 70 and 90 mm models, E-Flite's UMX (Ultra Micro eXtreme) Viper 30 mm EDF delivers smooth handling and fast, aerobatic performance. AS3X and optional-use SAFE Select technologies make it easier to fly whilst also providing real-time battery voltage and other telemetry information to compatible transmitters. Fitting the fixed U/C (with steerable nosewheel) provides taxi and ROG operation from smooth surfaces. Or the landing gear can be removed for increased speed and vertical performance, with easy hand launches using the automatic Hand Launch Assist mode. Moulded from composite-reinforced EPS for a lightweight, durable airframe this 531 mm span, 4S-capable Viper comes factory-assembled with LED landing and nav lights and is nearly ready to fly out of the box. Simply install the one-piece wing with hands-free connections using the quarter-turn thumbscrew, install a charged 4S 450 mAh LiPo, bind it to your 5+ channel DSMX/DSM2 equipped Spektrum Tx and you're ready to fly.

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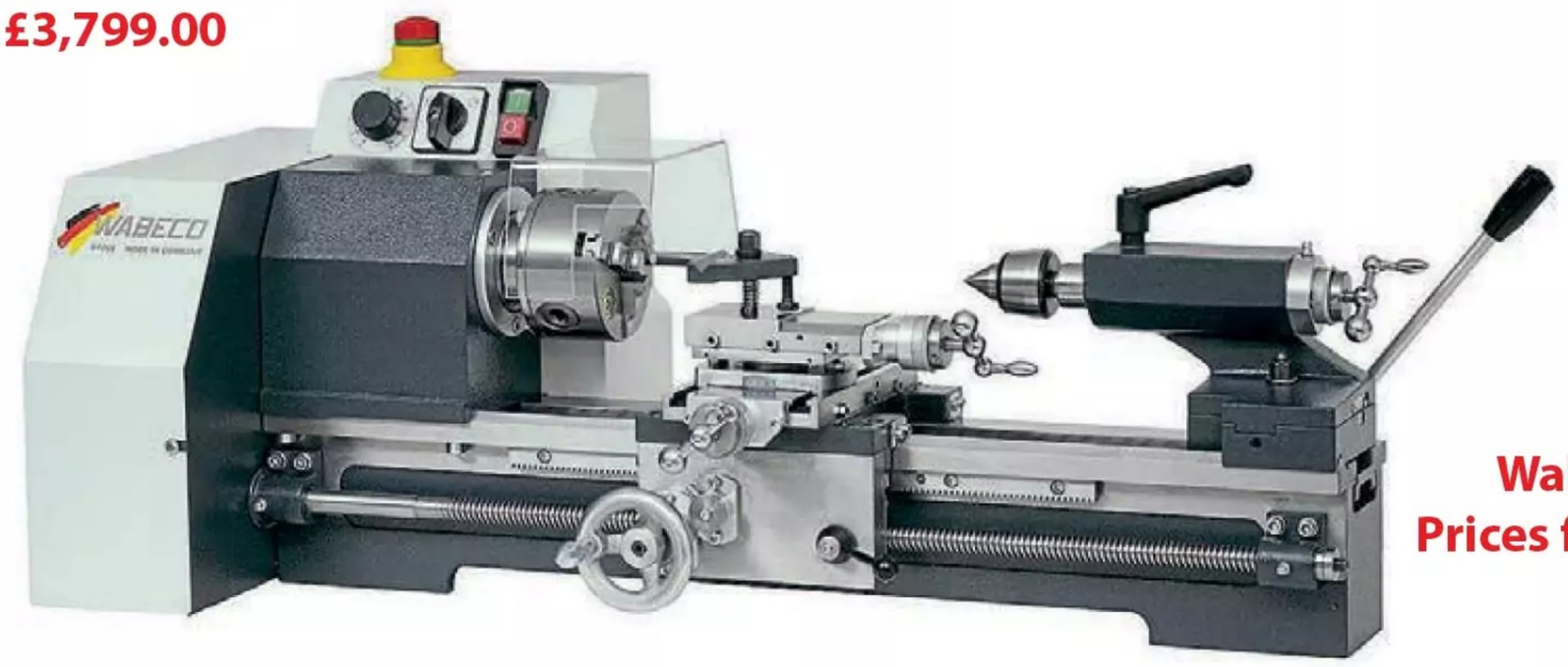

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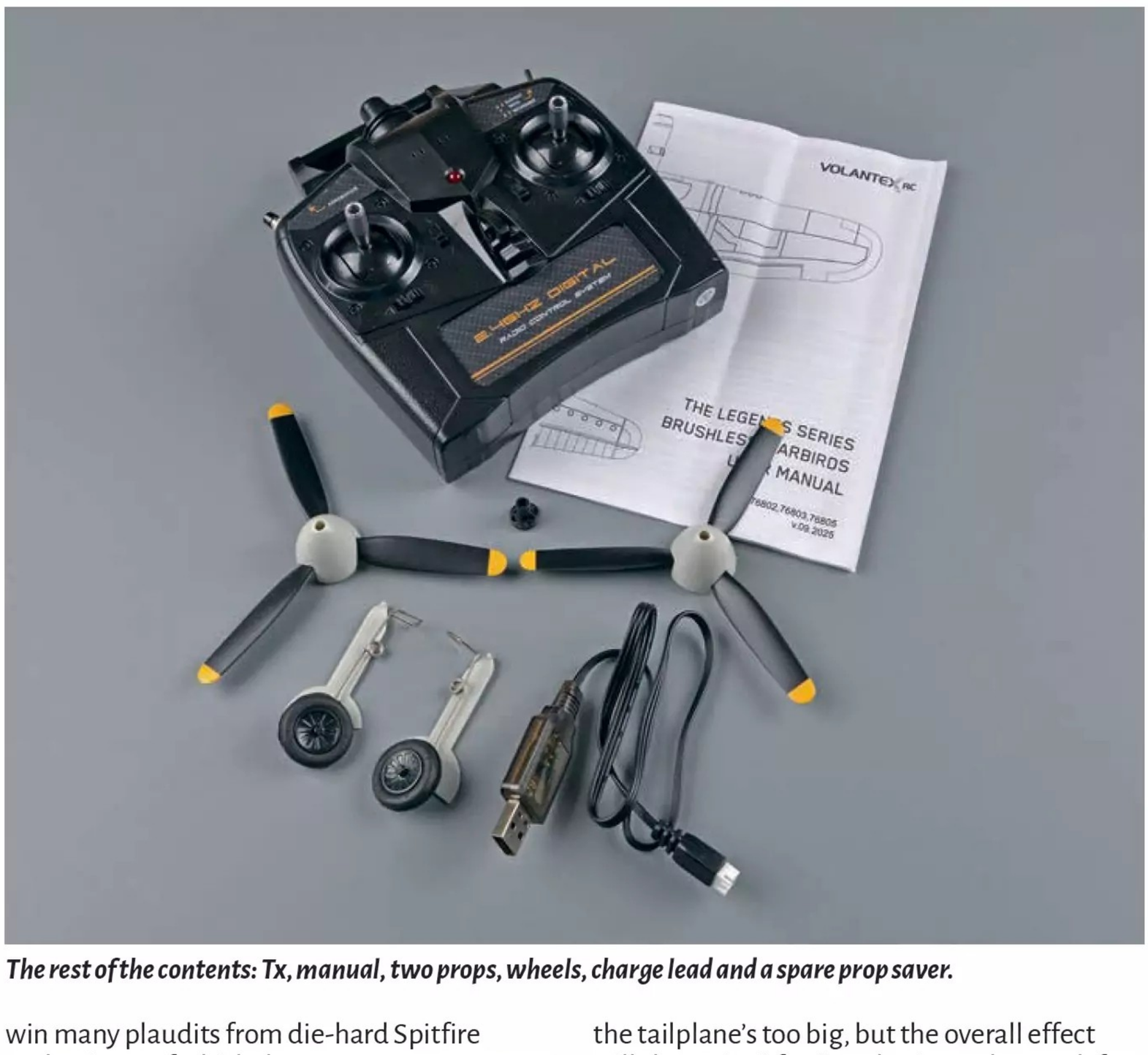
VOLANTEX SPITFIRE

Can Volantex's latest mini warbird impress as much as its Mustang and Corsair counterparts. We throw one into the air to find out

Words: **RCM&E** Photos: **RCM&E, Barry Atkinson**

Flip side of the little Spitfire straight from its box showing the wire pushrods out to the ailerons.



The rest of the contents: Tx, manual, two props, wheels, charge lead and a spare prop saver.

When we tested a couple of Volantex's 500 mm wingspan mini warbirds last year we have to say that we were pleasantly surprised. Prior experience with a couple of older types of smaller span WW2 fighters had been disappointing. However, the Volantex P-51D Mustang (see February RCM&E) and F4U Corsair (November RCM&E) both proved to be competent little models and surprisingly fun to fly. Obviously, they are best kept for calm weather flying and they are a tad too nippy to fly in an average size school sport hall (yes, we tried!). But given their freedom over a football pitch sized flying area and with your best prescription glasses on (they can get very small, very quickly!) they are both a treat to fly. They do tend to bounce around a bit in any puffs of wind and the on-board gyro can be a bit too sensitive at times, adding a few twitches. But generally speaking they are easy and fun to fly, especially with the gyro set to its Midd setting. But more on that subject later...

A BRITISH FIGHTER

After the two US fighters it's good to see that the latest addition to Volantex's 500 mm mini warbird range is a British aeroplane - none other than that all-time favourite, the Supermarine Spitfire. This little aircraft won't win many plaudits from die-hard Spitfire enthusiasts, of which there are some amongst our readership, we know. So, if you find your hackles rising just by looking at the pictures on this spread then please flip over a few pages and let your blood pressure settle.

Back with more tolerant folk. Okay, we know that the colours are a bit wrong (especially that sandy brown), the wheels are outboard in the wings, the ailerons are in the wrong place and the tailplane's too big, but the overall effect still shouts 'Spitfire!' So that's good enough for most people who just want a budget priced, look-a-like flying model of this famous fighter. And just like it's US siblings it flies remarkably well for such a small R/C model aeroplane.

However, in our opinion, it's not quite so locked in as the Mustang, nor our current favourite, the Corsair. It might just be our sample, but the little Spit does bounce around a bit in pitch,

especially when turning into any light breeze that may be present; the others can do that too but not so much. The best way to fly it when Tigger takes over as the pilot is not to try to smooth things out too much with your own elevator inputs as that's a sure recipe for overcontrol. You soon get used to it and even when they do happen those little phugoids don't last too long as being so nippy you'll soon be needing to make a turn and things will smooth out once more.

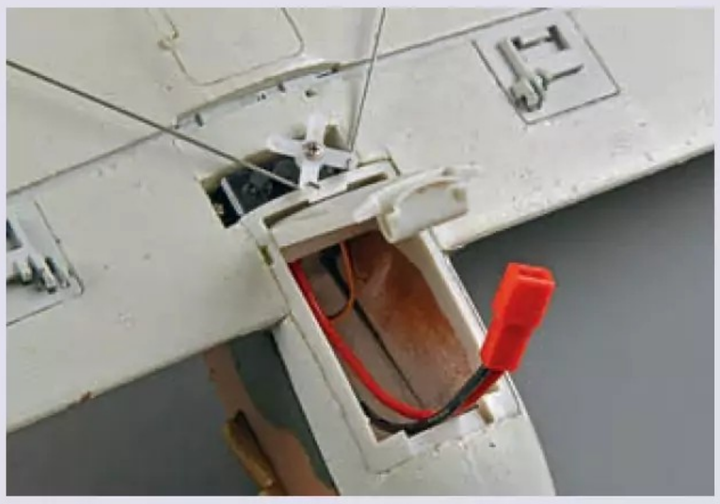
IN THE BOX

Each Volantex 500 mm warbird comes in a square box with the model safely ensconced in a polystyrene tray. Side pockets contain a pair of yellow tipped, three blade, black propellers, each fitted with a lightweight spinner. There's also a spare prop saver for the motor shaft and a USB charge lead to match the 2S 400 mAh LiPo supplied.

In a separate bag are found a pair of wire undercarriage legs, complete with wheels and gear doors; the square bases of the legs slide into matching plastic receptacles fitted on the underside of each wing. The legs can be clipped in properly, but we prefer to fly these tiddlers without their

The 2S 400 mAh LiPo has JST power and XH balance leads and so can be charged with most LiPo chargers at 1C...

...but the enclosed USB charger works well too, albeit at just over 2C.



LiPo bay is secured with a flip up lid.

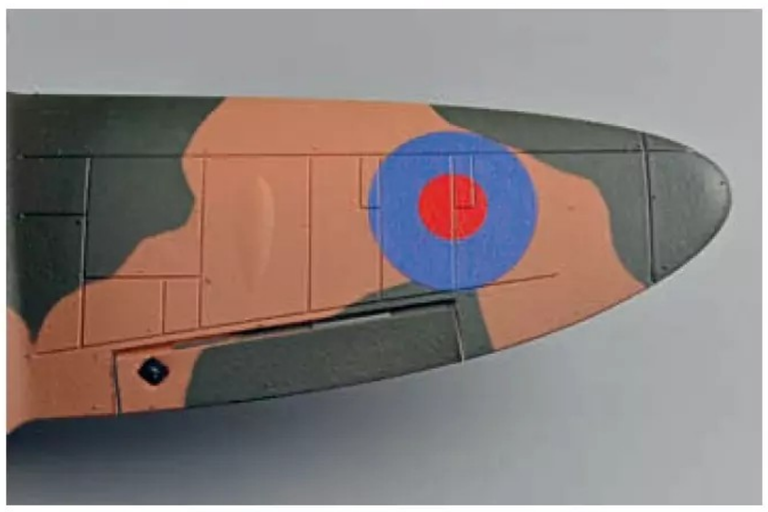
MANXMAN

This little model may not be 100% scale, but the livery is based on a real Spitfire as flown by legendary RAF fighter pilot, Wing Commander Douglas Bader. P7966 was one of the first to carry his initials on the fuselage. It was a 'Presentation Spitfire' paid for with money donated by the public on the Isle of Man and so wore the legend 'Manxman' in four-inch letters below the cockpit. DB flew it up until July 1941.

Sadly, on the 15th of October 1942 this Spitfire crashed during a training flight, killing a civilian worker working in a maintenance shed and injuring several other persons. The pilot also lost his life.

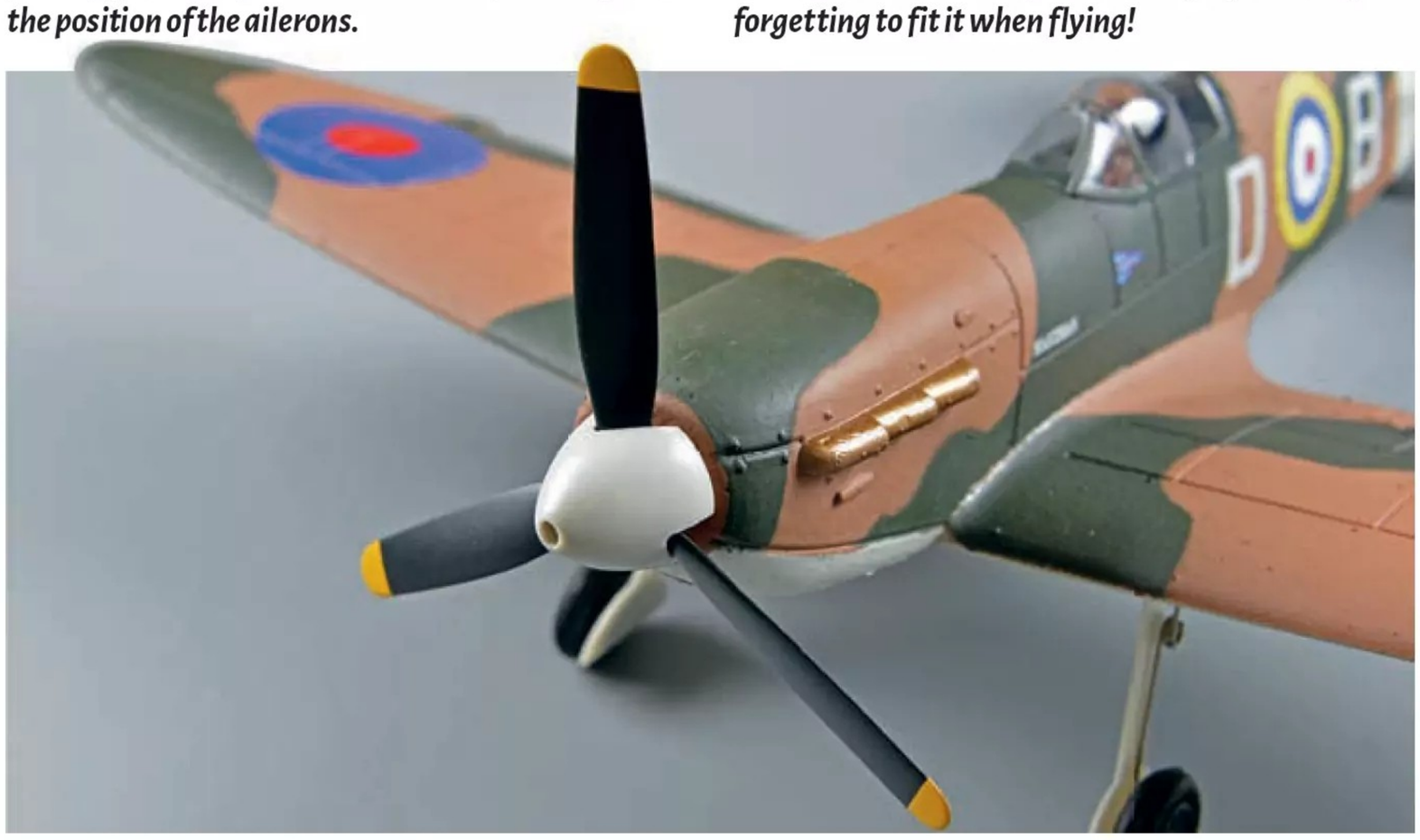
Aerobatic switch on the transmitter's left shoulder needs to be pressed to initiate full and fast rolls.

Gyro mode switch on the right shoulder is best left in the Midd position for most experienced pilots.



Overall, it gives a good impression of Supermarine's finest fighter but purists won't like a few things like the position of the ailerons.

The canopy looks good though and the aerial is a nice touch but is best saved for static display. We keep forgetting to fit it when flying!



Three bladed, yellow tip prop adds another realistic touch.

A two-piece prop saver fitted to the motor shaft and the back of each prop helps to keep the propeller in one-piece. It works well.

wheels. Any model warbird, whatever the size, looks so much better in flight with its wheels retracted and these little fighters are no exception. The wheels also add drag and will catch the grass when landing so are best left off for flying. However, don't bin the undercarriage as you can loosely fit them for static display. When sitting on a shelf on their wheels and with their props in place all the Volantex mini warbirds make quite passable display models, not too far removed from well detailed plastic kits.

A short but informative instruction booklet is supplied and is well worth reading, if only to get an understanding of what the aerobatic and three mode gyro switches do. Ours was a copy of the Corsair instructions but all the important info is the same across all the models.

Finally, hanging on underneath the tray is a small twin stick Mode 2 transmitter which is pre-bound to the receiver inside the model.

FLIGHT PREP

The 2S LiPo supplied with this and its sister models is fitted with a red JST connector and an XH balance lead, so we usually charge them using one of our regular AC chargers. But a

A tiny, fast, manoeuvrable and camouflaged model on a grey winter's day. We do like to give our friendly in-flight photographer Barry a challenge!

last-minute decision to test fly the Spitfire on the same day as charging several larger LiPos meant that we were out of spare charging ports. So, we used the USB charge lead supplied. We prefer to charge at 1C, matching the capacity of the pack being charged, but the charge lead outputs at over 2C. But with a new, fresh pack this shouldn't be a problem. All went well, although when tested it was found to have stopped charging at 94% capacity, but that's still more than enough to fly this little beast.

The pack slides easily into the underside battery bay at the front of the fuselage, just in front of the aileron servo. A hinged cover clips into place to keep it safely stowed whilst flying.

The transmitter is powered by four AA pencells (not supplied) which are fitted top to toe in the battery bay in the back of the case. The model is controlled by two sticks in the usual Mode 2 fashion. The only other controls to note are on each of the shoulders. On the left is the Aerobatics button which increases the control throws when blipped. Like the other Volantex mini warbirds the Spitfire will happily loop without pressing this button, but you do need to give it a quick squeeze just before commanding a roll either way as the aeroplane will only perform a tight bank without doing so. You soon get used to doing this, although it needs no finesse – line up the model, press the button and immediately bang over the aileron stick – and away she goes! Loops are a little more controllable and you can vary elevator input as she pulls over the top.

On the right shoulder of the Tx is the Mode switch. There are three modes: Expert, Midd and Beginner. As you would expect Beginner tames things right down, but we wouldn't recommend starting to fly with such a small, fast aeroplane anyway, let alone a Spitfire. At the other end, you really need to be fast on the sticks to keep control when in Expert mode. So trust us, the Midd setting is the Goldilocks setting. Set it in the middle and leave it there!

Last, but not least of the pre-flight preparations is to fit one of the two 3-bladed propellers supplied which simply clips into place with a firm push. The prop-saver fitted to the 1806 motor shaft, with a matching piece on the back of the prop, does an excellent job, staying firmly in place in flight but allowing the prop to pop off as soon as it hits anything hard such as terra firma or even a sport hall wall (yes, we have tried!). So don't worry about belly landing the Spitfire. The prop is sure to come off but rather that than damage a blade or two.

LET'S FLY

With the Tx switched on and the LiPo connected the X-Pilot gyro inside the model kicks in immediately. Try to keep it level whilst doing this. We usually connect the battery with the model resting upside down in its carry tray.

After a quick control check she can be thrown into the air using an underarm lob. The gyro helps out straight away and the Spitfire should climb out with very little correction needed. There is a One Key Take Off function that allows all the Volantex warbirds to be launched without needing to touch the Tx, but they climb away so quickly that you'll need to get onto the sticks almost immediately anyway. So, it's far better to be in full control straightaway, we reckon.

Now the fun can really begin and you'll soon find yourself zipping around the patch, looping and rolling (helped by the Aerobatics button!) and zooming in for low level straffing runs. If she does get a touch of the wobbles, then just ease off touching the elevator and make a turn. This is all it needs in most cases to put her back on the straight and level.

Just as with the Corsair and Mustang the 500 mm Volantex Spitfire is surprisingly fun to fly, if a little wayward at times. ■

DATAFILE

Model:	Spitfire Mk.II
Model type:	Mini warbird with gyro
Manufacturer:	Volantex
UK importer:	CML Distribution https://www.cmldistribution.co.uk
RRP:	£124.99
Wingspan:	487 mm (19.1")
Length:	400 mm (15.7")
Motor type:	1806 brushless
Servos:	2 g x 3, plus X-Pilot gyro stabilisation Functions (servos): Ailerons, elevator, rudder, throttle
LiPo:	2S 400 mAh

Volantex Spitfire next to its transmitter, giving a sense of scale of the small fighter.

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JETPOWER 2025

Thorsten Häs reports from Europe's largest international air show and trade fair for jet and turbine model building

Words: **Thorsten Häs**

Photos: **Thorsten Häs, Fynn Häs**

Following its successful relaunch in 2024, JetPower, organised by Peter Ritters, Andreas Engel and Werner Lewandowski, was once again a great success at the Breitscheid (Haiger) airfield of LSG Breitscheid-Haiger from September 19 to 21, 2025. Approximately 90 international exhibitors, both manufacturers and dealers, exhibited in over 3,500 square metres of indoor space, with additional outdoor space.

In addition to the exhibition and trade fair an airshow was held by the exhibitors and international show pilots, with a continuous schedule during which manufacturers presented their models and technology. The trade fair opened at 9:00 a.m. and the air show started at 9:30 a.m. Flying continued until around 7:00 p.m. including exhibitor slots and special show flights.

Exhibitors, pilots and spectators were well catered for, even if there were longer queues in some places this year. Spectators also had the option of camping on the show ground.

JetPower 2025 ended once again with increased visitor numbers, despite a very rainy start on the Sunday. In total over 8,000 visitors attended this major international airshow and trade fair for jet and turbine model building. The exhibitors were delighted with the positive response and had detailed discussions about their models and the technology on offer.

We hope you enjoy the following pictures and accompanying details of many of the models and products seen at JetPower 2025. There's also a selection of personal highlights from the three-day flight show, led by the FMT team, who ensured that everything ran smoothly.

Robin Trumpp shows off the underside of his fabulous Skymaster F-14 . See page 72 for more details.

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1 & 2: Advanced Radio – www.boomarc.com
This is an Australian manufacturer of battery and receiver switches that feature a display, telemetry and optional gyro, as well as special ignition switches for gasoline and turbine engines. Thanks to multi-protocol support (SBus2, SRXL, XBus, HoTT, EXBus) all their products are compatible with numerous well-known transmitter systems.

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3: Air Classic - www.air-classics.com
Air Classic's Fiat G-91 has a scale of 1:2.8. The model has a wingspan of 3,200 mm, is 3,900 mm long and weighs around 45 – 50 kg at take-off. There are two versions. In addition to models the company also offers prototype construction and a repair service.

4: Airworld - www.airworld.de
This company displayed a wide selection of its models including jets, warbirds and gliders. Their 1:4 scale Starfighter spans 1,820 mm inc. tanks, is 4,170 mm long and weighs approx. 20 kg.

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5 & 6: Akatja GmbH (aka CHASERVO) - www.chaservo.de
In collaboration with Final-Modellbau, the Impact Sportjet (1,960 mm wingspan, 2,000 mm long) was presented alongside already familiar CHADesign models. Further jets have been added to the CHADesign portfolio in collaboration with Skywing and Braekmann Modellbau; the Falcon Sportjet in 71" (1.7 m), 82" (2.03 m), 96" (2.26 m) and 110" (2.66 m) wingspan versions were presented and also shown in the flight slots. Over 40 different servo types are available to model flyers for a wide variety of applications.

7: Alterbaum-Premium-Helicopter - www.premium-helicopter.de
The focus at this booth was the collaboration with tectronic-in-motion, which allows the helicopters to be delivered with a pre-installed and pre-programmed 'Ardu-Heli' flight controller as a complete, ready-to-use system. This allows a wide range of flight modes to be pre-programmed without having to carry out complex and time-consuming programming yourself. A selection of their well-known turbine helicopters was on display on the airfield, including the SuperCobra at 1:5.3 scale with a 2.7 m rotor diameter, shown here with team pilot Christoph Hemming.

8: Braeckmann-Modellbau - www.braeckman-modellbau.de
Braeckman-Modellbau displayed the well-known Falcon series in 71, 82, 96 and 110-inch versions, along with the F-86 (1.8 m span) and the 87" Skywing L-39.

9 - 11: CARF-Models – www.carf-models.com
A new addition from CARF was the handy BEAM sport jet (1.8 m wingspan, 2.,1 m length,

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120-160 N turbine, approx. 10 - 11 kg), which impressed visitors at the stand and during its flight slots. A large selection of models was presented including the large ULTRA Scale Jet F-4 Phantom II in 1:4.5 scale. Take-off weight (dry) is approx. 37 kg to 40 kg.

12: CM Jets – www.cmjets.com
Best known for model-specific tank systems made of Kevlar, jet models are also available including the 1:5 scale F-5 with a wingspan of 1.95 m and a length of 3.45 m. These were flown fantastically well in the flight slots by Martin Pickering and Markus Rummer.

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JET POWER HIGHLIGHT #1

Skymaster F-14
For me, Robin Trumpp and his Skymaster F-14 were the absolute highlight of JetPower 2025. The 1:5.5 scale model of the Grumman F-14 Tomcat from Skymasterjet has a length of 3.47 m, a wingspan of 3.55 m and a take-off weight of 57.7 kg including 12 litres of fuel. Two JetCat P250Pro turbines power the model and a Jeti R/C system with CentralBox servo management and a Bavarian DEMON Cortex Pro gyro control the many functions, including the swing wings, flaps, speed brake, steering, spoilers, slats, rudders, cockpit lock and arrester hook. In addition, LED lights, an LED afterburner and wheel brakes are installed. In the flight slot, you could have been forgiven for thinking you were watching the movie Top Gun, the show flights being accompanied by appropriate sound effects.

13: Composite RC Gliders (CRG) – www.composite-rc-gliders.com
CRG showcased their wide selection of model gliders, some of which can also be equipped with turbines. The latest model from the Trinity portfolio was also on display. This dynamic, all-round flying wing can be equipped as a glider or with FES, has a wingspan of 3 m, a take-off weight of approx. 2.1 kg, six flaps and four ballast compartments. The Stingray Energy of 3.1 m span is now also available as a modified 'digital' design of the Swift.

14 & 15: Daniel's Design – www.danielsocionovi.com
Seen here is the beautiful and impressive Aeromacchi MB339 in 1:3 or 1:24 scale. An Aeromacchi M-345 and Fiat G.91, both 1:3 scale, as well as scale accessories, are also available from Daniel.

16 & 17: Derkum / D- Power
These pilots were showcasing the jet models from Phönix, the Viper with a wingspan of 2.1 m and the Aermacchi MB-339 with a wingspan of 2.7 m, as well as HELLORadio remote controls.

18: Electron Retracts - www.electron-retracts.com
Electron displayed a wide selection of their electronic retractable landing gear, controllers, electronic brakes, wheels and high-quality linkages.

19: ENJET Turbine Engines
ENJET Turbine Engines (enjetpower.com) and KYHK RC (www.kyhk-rc.com) cooperated to present their E86, E100, E130 and E170 turbines and a selection of corresponding jet models. The manufacturer

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focused on the weight/size ratio to thrust, especially for the E130; with a total weight of approx. 1,100 g, 130 N of thrust is achieved, resulting in rapid acceleration. A wide range of parameters can be configured and checked using the corresponding ENJET app.

20: Final Modellbau - www.final-modellbau.de
This stand offered a wide selection of sports and scale jet models from their portfolio and they flew them well in the flight slots, notably the 1:8 scale F-15 with a wingspan of 1,650 mm, the F-100 with a wingspan of 1,750 mm and the F-18 of 1,700 mm wingspan.

21: Fraes Fraes Freude - www.fraesfreude.de
Axel Meuser displayed a wide variety of products concentrating on model holders and stands, whether for storage, assembly or transport. Visitors could also view their Centre of Gravity

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scales, tow ropes and other accessories. New additions included the 'ProGlide' roller system for model stands.

22: FTL Innovations – www.ftlinnovation.com
In addition to their models, a new turbine development was presented which is intended to simplify installation and flight operations. The necessary components are installed under an outer cover. The current M100 Pro model offers up to 105N of thrust.

23 & 24: Die Modellflughelden - Futura Aktiv - www.modellflughelden.de
These well-known models of the Grob G120 TP in 1:3 scale, 3.44 m wingspan, for the JetCat SPT10 RX can also be operated with a suitable electric motor (e.g. Hacker Q100), as well

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JET POWER HIGHLIGHT #2

Northrop F-5E Tiger II
This Northrop F-5E Tiger II, based on the original model by the late Peter Glück, was built by Christian Glaser, exhibited by Marc Petrak and flown in the JetCat slot. The model is built to a scale of 1:2.9 and has a wingspan of 2.68 m and a length of 5.06 m. It is powered by two JetCat P350S engines and weighs approximately 84 kg.

25

as the Turbo Raven XXL in 1:2.24 scale, also with a wingspan of 3.44 m. The JetCat SPT10 or SPT15 can be used as the drive system but two electric motors connected in series (e.g. 2 x Hacker Q100) can also provide the necessary power.

25: Grumania Jets – www.grumania.com
In addition to their many accessories, Grumania also presented the new Heinkel He 162 A-2 and demonstrated it in flight. The model was created from original documents and features a high level of detail. With a wingspan of 2.19 m and a length of 2.99 m, it has a flying weight of approx. 18 kg and should be powered by a 160/180N turbine.

26: Hacker Motor - www.hacker-motor.com
Hacker announced that the Jeti DC24 II will now also be delivered equipped with the new control sticks from the DS24 II. Dennis Frick showed the new servo/patch cables with low resistance and special insulation, protecting against porosity due to abrasion, heat, aging or oils and chemicals. Also, for the turbine scene, a JetHush made of high-quality aluminum is now available, which further improves the reception quality of receivers by absorbing any influences from so-called turbine noise.

27: Heli-Factory - www.heli-factory.com
Alongside many other scale helicopters, Heli-Factory showcased the new Airbus H160 at a scale of 1:5.5 with a 2.43 m rotor diameter, approx. 24.5 kg with a Jakadofsky Pro 7000 turbine.

28: JetCat - www.jetcat.de
At the booth itself, the team showcased several special models and presented a wide variety of turbines. The Pro P190 and P350 engines have now gone into series production. The JetCat slot featured the Grumman F-14 Tomcat from Skymasterjet by Robin Trumpp and the Northrop F-5E Tiger II from Marc Petrak (see highlights) but other models from the portfolio, including a wide variety of F-16s from Tomahawk Aviation, also put on a great show.

NEXT TIME
Thorsten will conclude his report from JetPower 2025 in the May issue. ■

JET POWER HIGHLIGHT #3

3D Flight Show
The Krill Ares XL of 2.7 m wingspan (above) was flown by Luca Baumann in the 3D Flight Show. It is powered by a JetCat Turbine P350 Pro-S, with landing gear and linkages from Electron Retracts and lighting from Unilight.

Marco Benincasa also impressed with his Jet Revolution (above right) which has a wingspan of 1.9 m and is suitable for turbines weighing between 8 and 14 kg.

'Ryu' Thanetphon Sinthuphrom showed off the Jet Matrix (right) with his signature dramatic flight manoeuvres. What was special about this flight slot was that the jet had changed owners earlier that day, which is why Ryu held back a little...

Balsa Cabin 'Overture' just at the point of starting the covering. See 'Curious Contact'.

NOTHING VENTURED...

Dave Goodenough experiments with a new method of textile covering, with mixed results

Words & Photos: **Dave Goodenough**

In the last missive I had pondered the use of polyester cloth, mentioned by others on 'how to' videos. Rather than perform a whoopsie on a new model, I decided to try a test piece with the chiffon I'd purchased. I don't know if it was my lack of experience and ham-fistedness with the material, but the 'open framework' test was a disaster and left the ever-loving memsahib in gales of laughter. Her expostulation of "*I told you so!*" was as expected and I retired, defeated, to the sanctum that is my workshop.

It's true that the material adhered to the test frame with 'Mod Podge', although I feel that ordinary model film or dressmaking glues would be cheaper, but when the covering iron was applied the material steadfastly refused to shrink, even with the iron turned to maximum. I foolishly reached for the hot air gun and began to play it across the cloth. The result was both sudden and catastrophic; the material began to shrink, but the temperature differential between shrinking and melting was too small and I created holes. Blast!

POLYESTER ADDENDUM

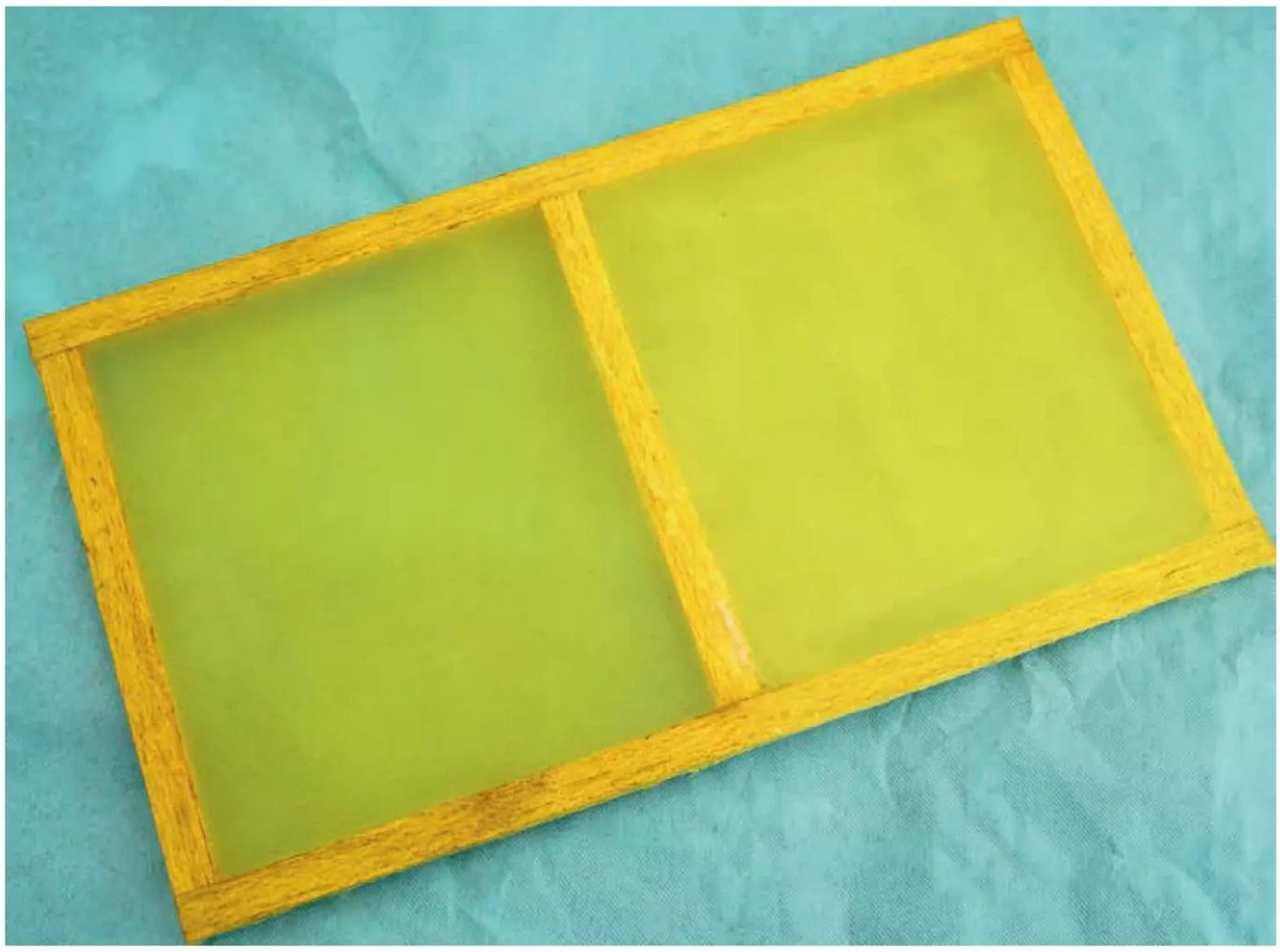
My dressmaking wife, now recovered after her tears of laughter, informed me that I needed polyester dress **lining** material, not the chiffon that I'd originally bought. I've sourced some of what should be the correct stuff with a weight given of only 41 g per square metre and adhered it to a 220 mm x110 mm frame. Even allowing for an overlap the weight of the material was a barely registered 1.5 g, with the frame weighing 9 g. Herself told me to buy 'Habotai' material. Apparently, it's the polyester equivalent of China silk.

Using Mod Podge as the adhesive again, I ironed the material in place without any specific attempt to draw out minor wrinkles. After all, this was a shrink test. Using the iron at normal film covering temperature didn't cause any shrinkage but turning up the temperature to max (my old film iron has no temperature indication) saw the polyester begin to tauten. Blow me down, it worked!

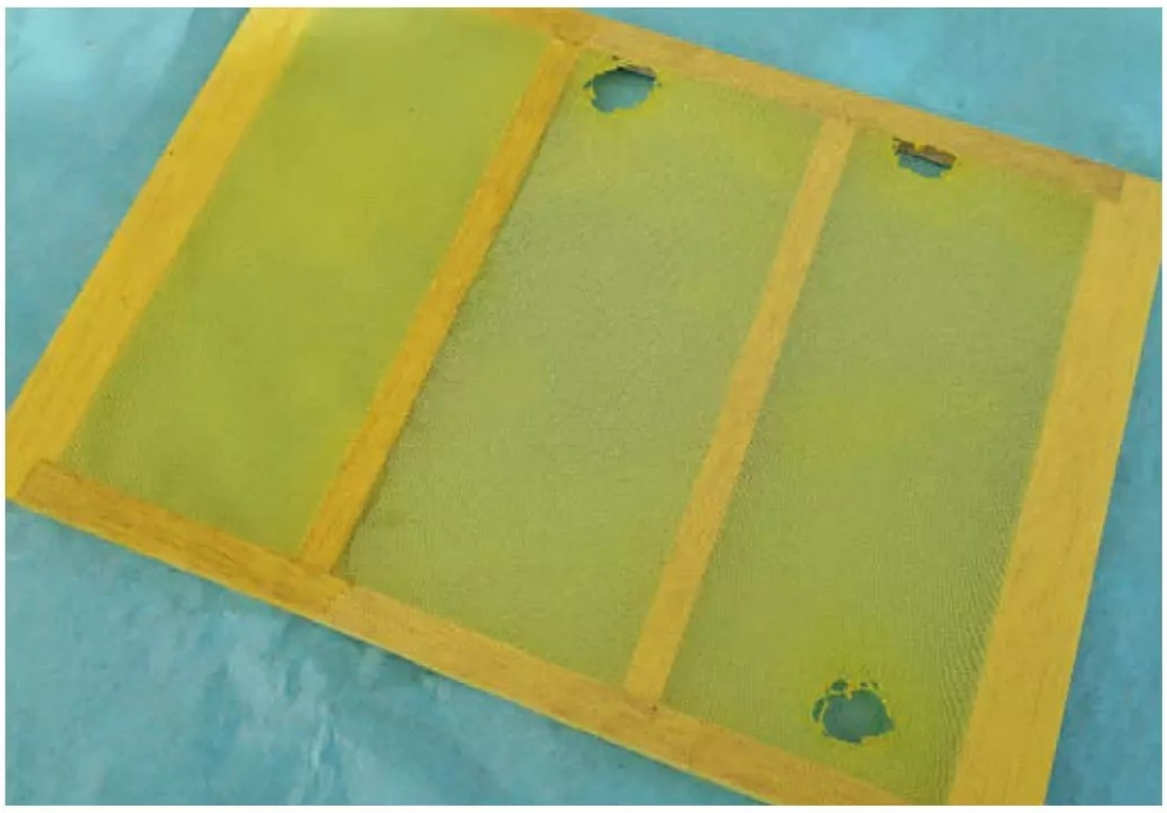
With the tautening test mostly successful, it was time to use some form of sealant/fuel proofer on the test piece. Polyurethane varnish on one side, acrylic varnish on the other. The results were a bit variable after the first coat, with the PU varnish leaving the material more translucent than the acrylic. I need to do a bit more research on the material but it's looking interesting.

CURIOUS CONTACT

In the last 'One Man' I'd mentioned buying an old kit from 'Man of Kent' mate Glyn and as I occasionally frequent a Facebook model group (Balsa Model Aircraft Constructors) I mentioned 'chapter and verse' about acquiring The Balsa Cabin 'Overture', originally designed by Cliff Goater. I'd added a photo gleaned



Polyester cloth after heat shrinking and varnish sealing with polyurethane (left) and acrylic (right). I think I should have doped the material first.



Oh, dear! My mistaken use of polyester chiffon to test as a covering was a disaster and led to my wife's mirth. Partly shrunk and doped (left), with the other sections overheated and holed.

My first test with polyester dress lining 'Habotai' material before shrinking. I found attaching it with Mod Podge was simple and straightforward.

from an online plans site, just to show what the model looked like.

Well, you could have knocked me down with a feather! Alan Saunders, whose photo it was, made contact and told me a little about the model. Apparently, he'd built his version back in the late 1970s/early 80s, he thinks, as a rudder/elevator/motor device, as originally kitted. Whether by build or design, it took a bit of trimming and Alan reckoned that if he built it again, he'd add ailerons which is exactly what I decided after perusing the plan.

I knew the kit was old as the dyeline plan 'dated' it, but I never imagined that it could have been possibly 40 to 50 years old! Never mind, a good design remains able to bring forth an eminently flyable model. I just need to do it justice in due course and if my test with polyester dress lining goes according to plan, I'll have the perfect flight test model for the fabric covering.

The final twist if you like, was finding out that Cliff Goater used to own The Balsa Cabin business and designed many models, including the Keil Kraft 'Elmira' sailplane and 'Student' power trainer.

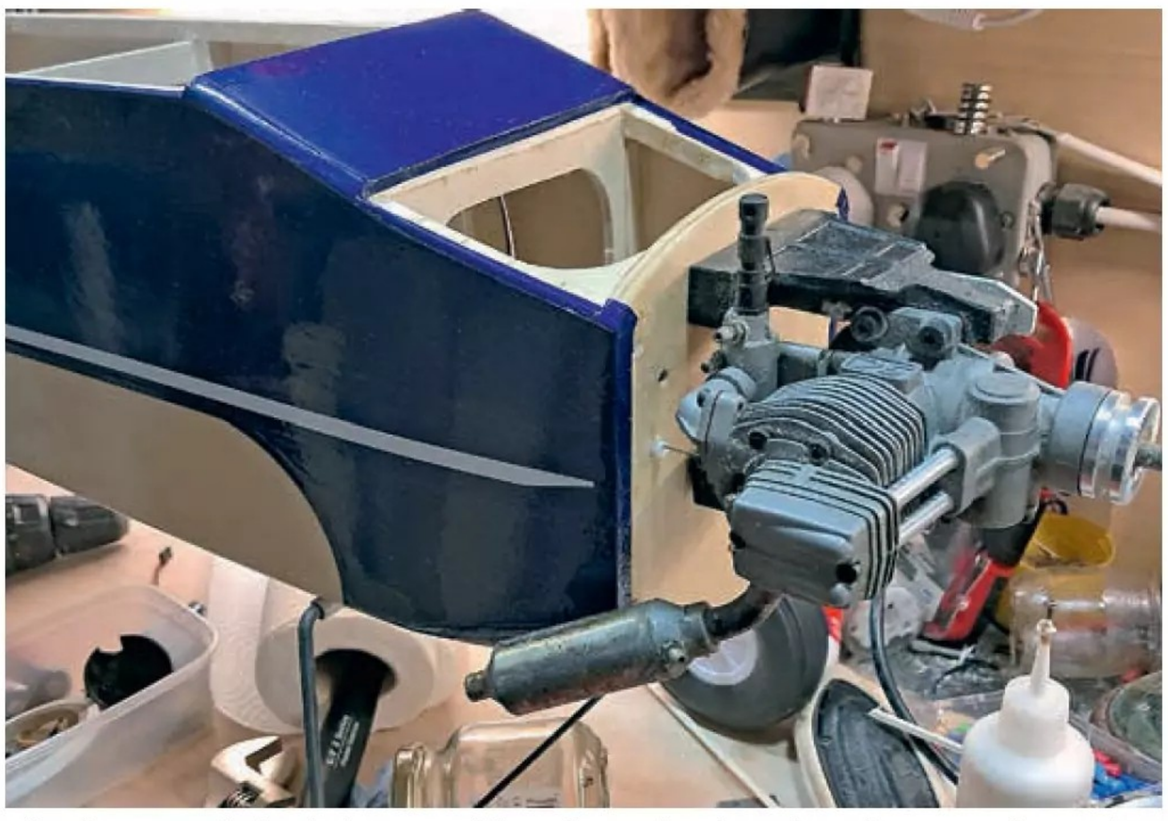
WEIGHING HEAVILY

My current model on the bench, being finished as I batter the keyboard, is an enlarged version of the Schumacher/Miller 'The Big Ship', currently being dressed in its cream/dark blue finery. *"Old fashioned"* colours, according to my light of love. *"It looks like a 1950s bus!"*, she said. Well, that's the 'style' I wanted, in keeping with the vintage look of the model. One drawback of the design is that it has a shortish nose, making it imperative that weight is saved at the rear of the long fuselage. I've used lighter wood than normal, reduced the cross-section of the tail feather parts and even changed the all-sheet fin to a built-up structure. Even the covering is the lightest I can feasibly get away with; Ripmax AERO film is very nice to work with and relatively cheap. I've also used a .52 four-stroke to power it, some 25% heavier than the two-strokes I had spare and a source of 'working' weight. But it needed yet more...

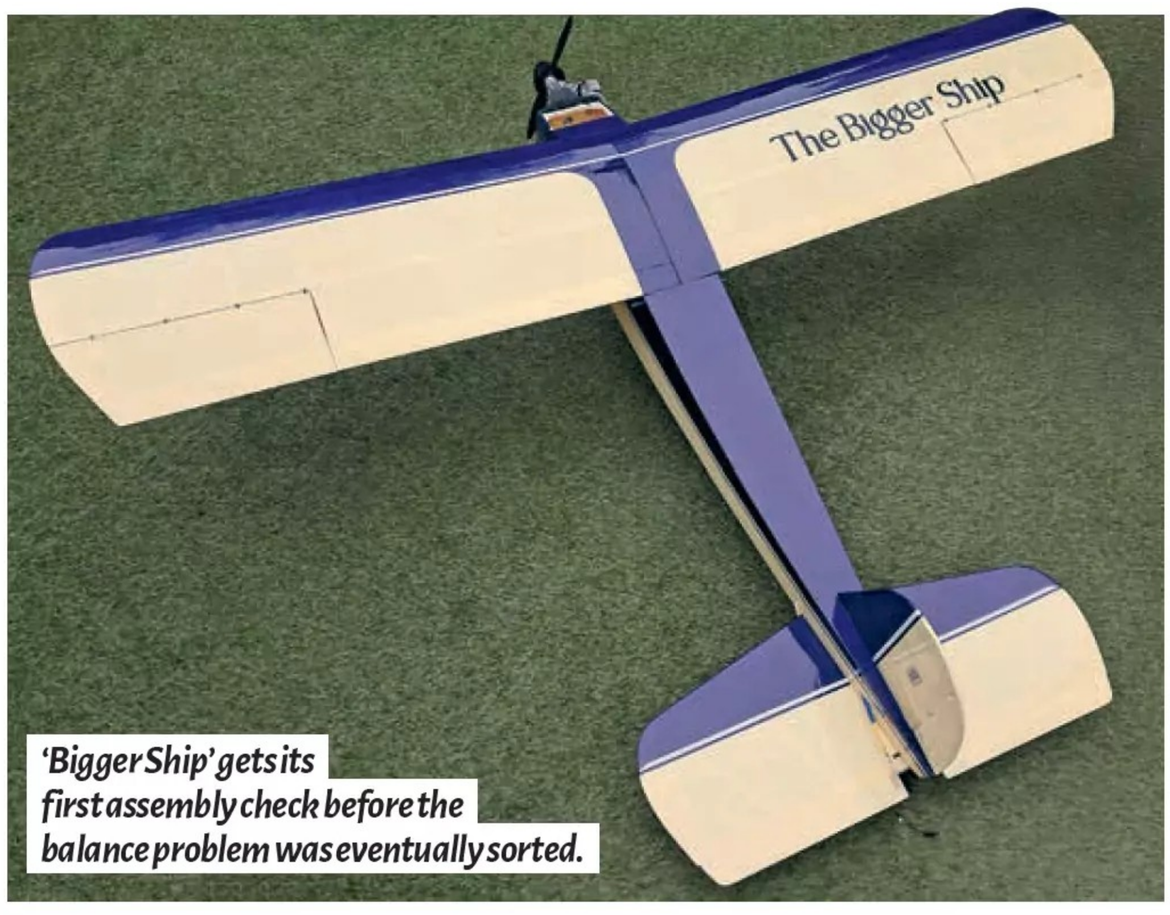
I hate 'dead' weight, so I opted to use a larger than normal battery pack, 4 x sub-C NiMh cells.

The old Balsa Cabin 'Overture' comes together on my dreadfully untidy bench. Try as I might, I can't build any other way!

It's a very heavy structure thanks to the plywood and rock-hard balsa used. Lord help any tree the Overture hits!



The short nose led to balance problems later, despite using a heavy engine and bigger NiMh battery.

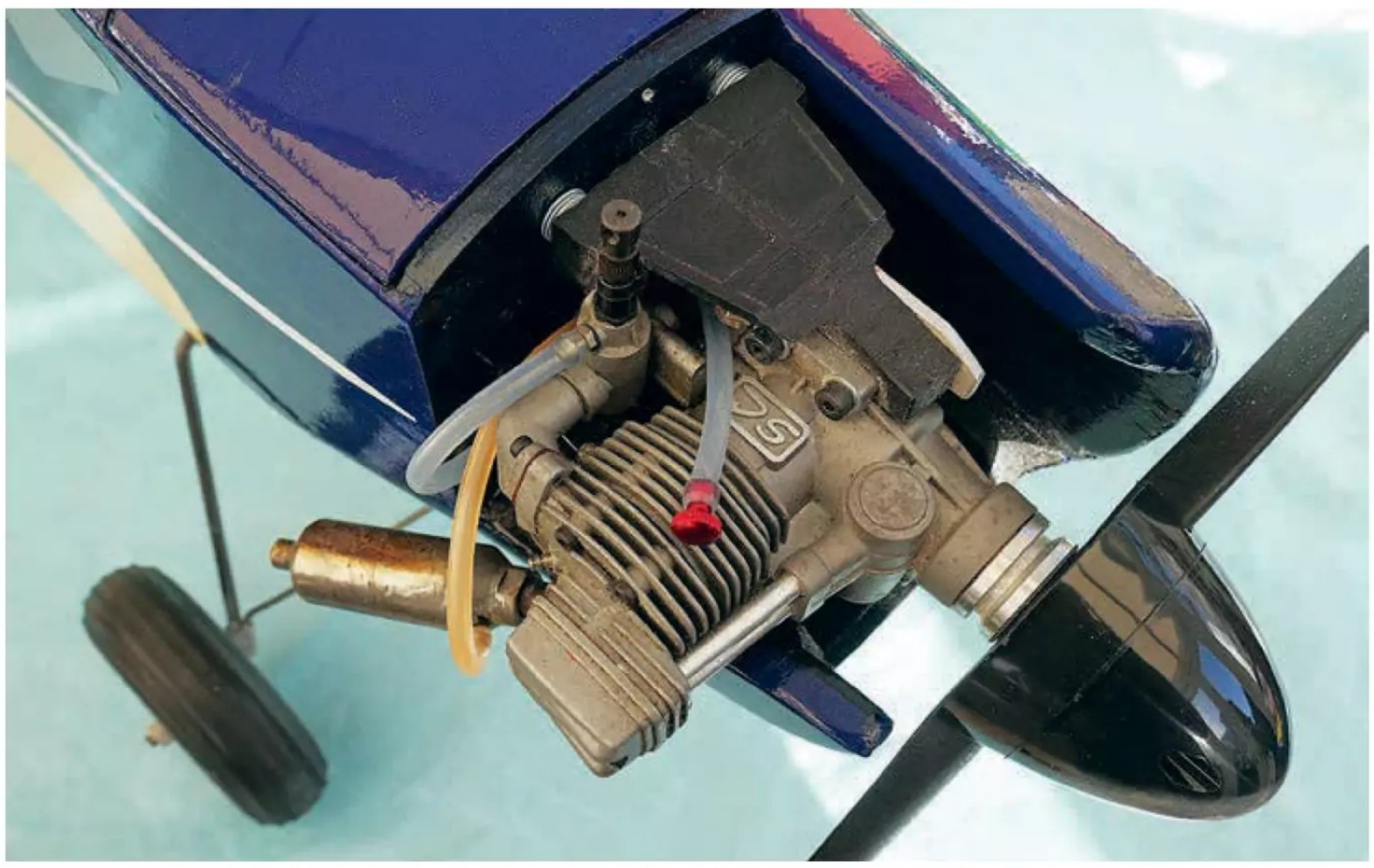


'Bigger Ship' gets its first assembly check before the balance problem was eventually sorted.

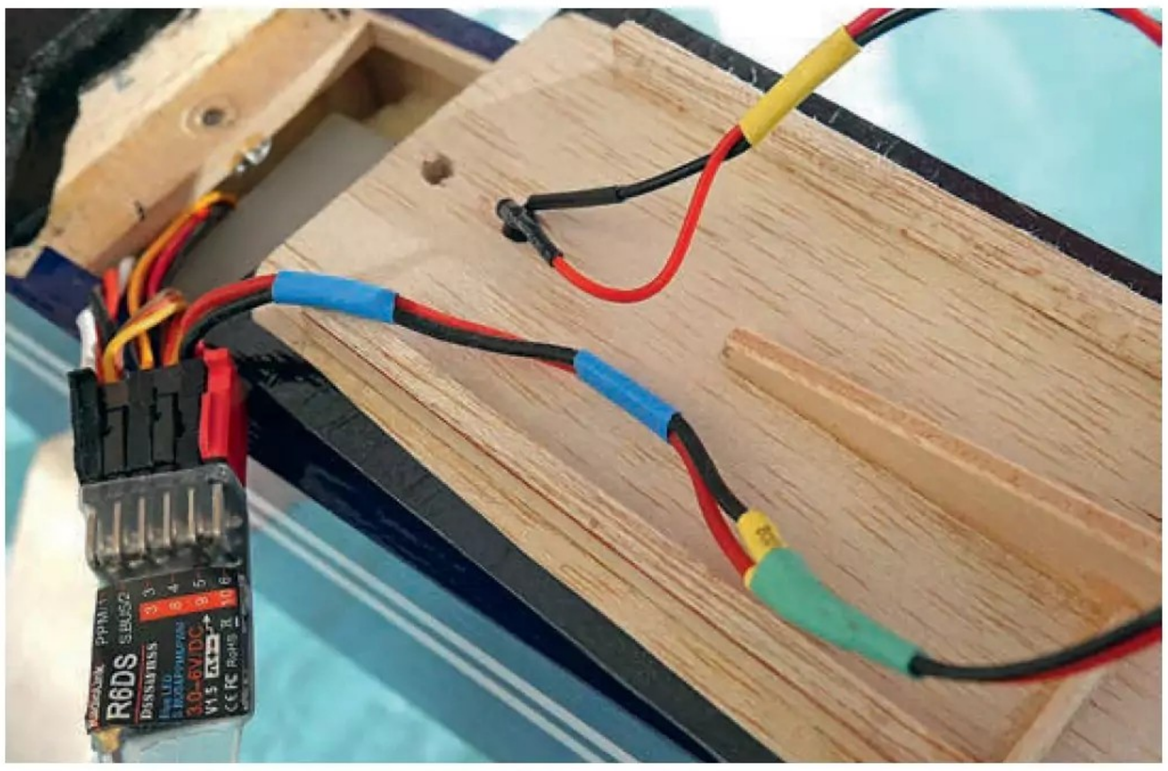
A useful lump of extra weight - fit a bigger battery! Longer flight times are then available whilst reducing 'dead' lead ballast. The 'power on' LED is lit to the right - see 'A Few Spare Electrons'.

I sometimes build my own battery packs to fit a certain space. It's not difficult but with only a minimal cost saving it's hardly worth the effort.

We've probably all got a pot of lead scraps for ballast, but when you run low a roll of Code 3 or 4 lead flashing is a worthwhile investment.



Nose of the finished 'Bigger Ship'. Somehow, I need to hide some 370 g of lead under the motor mount!



I know I've mentioned it before but wiring in an indicator LED can save you from murdering a battery through inadvertent discharge.

All that battery capacity will give extra-long flight times, if needed.

If all else fails lead can be added inside the cowl as a last resort. Having run out of my stock of scrap lead I bought a 0.5 m x 150 mm wide roll of 'Code 4' (1.8 mm thick) lead flashing sheet. At something close to 2 kilos there's enough of it to last for balancing many models in the future and it was just under £10 including post. 'Code 3' is also available at around 1.2 mm thick. Using prepared lead sheet is much easier than messing around with umpteen scrap offcuts. But be aware, lead is toxic and you should either wear gloves when handling it or thoroughly wash your hands immediately after.

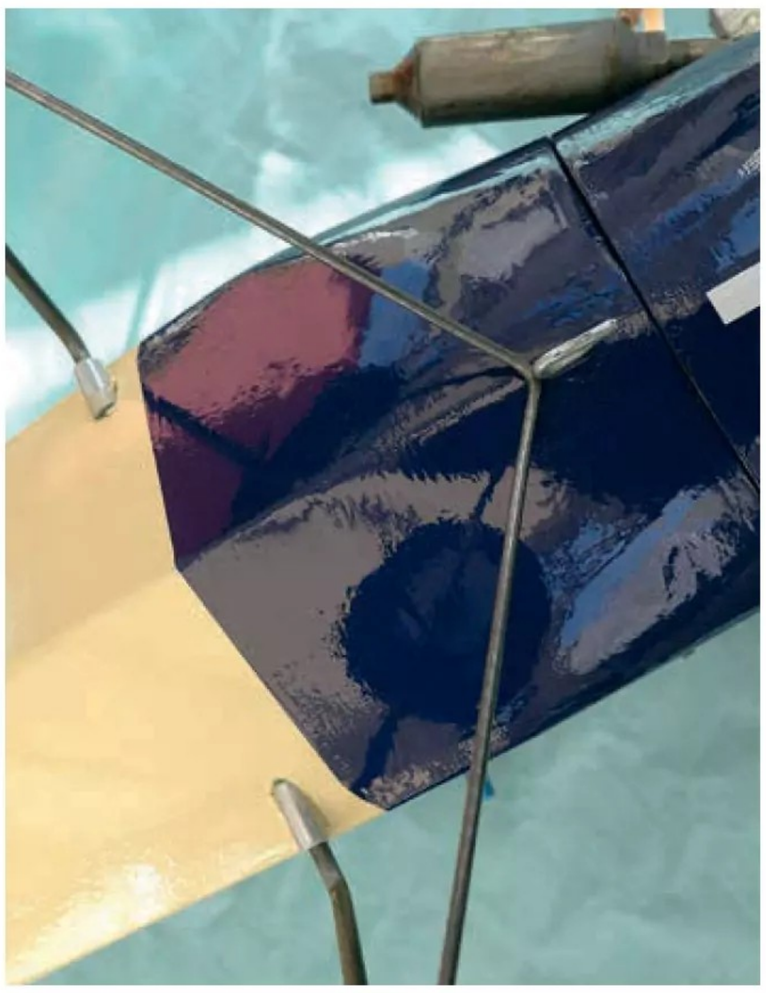
DEFEATED

Just as I was buttoning-up this epistle I'd managed to finish 'The Bigger Ship' just in time for winter's bite and weather to stop flying field playtime.

The attempt to minimise 'dead' nose weight was of only limited success and the roll of flashing lead was brought out and sullied yet again. It took a whopping 370 g (13 oz) of lead attached under the motor mount to bring the Centre of Gravity to its correct balance point. Allowing for the huge wing area of the model, that added just under 56 g (2 oz) per square foot. I think the 'Ship' can manage that without struggling.

A FEW SPARE ELECTRONS

A further addition to The Big Ship was my 'forgetful old codger' failsafe, a small flashing LED, something I've mentioned previously, but will detail again. I bought a small batch of 3 mm diameter flashing red LED units with light wire tails a while back and whenever I build yet another model, I solder and heat shrink-tube the joins onto a servo plug/wire, saved



'The Bigger Ship' suspension is simple using the pivoting main legs (left) and restraining bridle (right), shown resting against the attachment hook.

Rotated right back, you can see that an extreme arrival would fold the undercarriage back, rather than tearing it out on impact.

from a failed servo or a damaged extension lead. When either plugged into a spare channel on a receiver or a Y-lead piggy-backed to an active servo lead, the LED flashes constantly whenever the model is 'live'. This tiddly LED, in an easy-to-see position, ensures that I don't forget to switch off the battery post-flight.

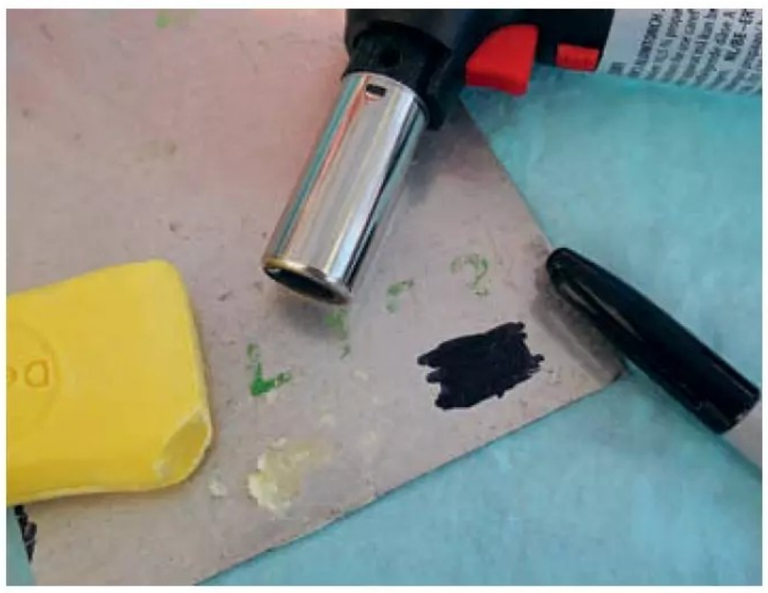
I freely admit that I've murdered batteries in the past by leaving a model 'on' when tired after a flying session. Be honest, haven't you done the same thing?

NOT QUITE THE BEGINNERS BUNDLE

Or 'Dural Deliberation'...

A mate recently bemoaned his lack of ability in bending a bracket from *'a bit of aluminium'*. Every time he attempted to set a tight 90 degree bend the metal fractured along the outside of the fold. To him aluminium is just aluminium but to 'the trade' it's a long list of various alloys with 'states of prepared condition'. General use sheets, such as those used in making power panel cabinets, lorry sides, etc. are sometimes still referred to by their old designations of NS3 'half-hard' and NS4 'hard'. 'Aircraft' alloys, often described as 'Duralumin', can be extremely difficult to bend if they are in a 'hard' state but can be temporarily annealed (softened). For us modellers Duralumin is mostly used for undercarriages, to utilise the inherent 'spring' in the material, or sometimes heavy-duty control horns, etc. It can be bent with care, but woe betide you if a 'tight' bend is attempted.

If you've bought or scrounged some aluminium that's in a 'hard' state it's simple to render it bendable. Reach for a 'Magic Marker' or a bar of hard soap and have a bowl of cold water to hand. Whatever your workpiece either scribble on a goodly layer of marker pen or wipe the soap bar onto it and leave a good scrape. A gas torch is a decent heat source, sized to suit the workpiece being annealed. Play it over the aluminium but never in just one place. You'll know when the item is at annealing



The pale green lettering tells you this is 'aircraft' Duralumin. A soap swipe (left) or spirit marker patch (right) will help you to reach the correct annealing temperature with a gas torch.

temperature with the marker pen as the depth of colour will fade or disappear. At that point dunk it in the water. 'Quenching' it's called.

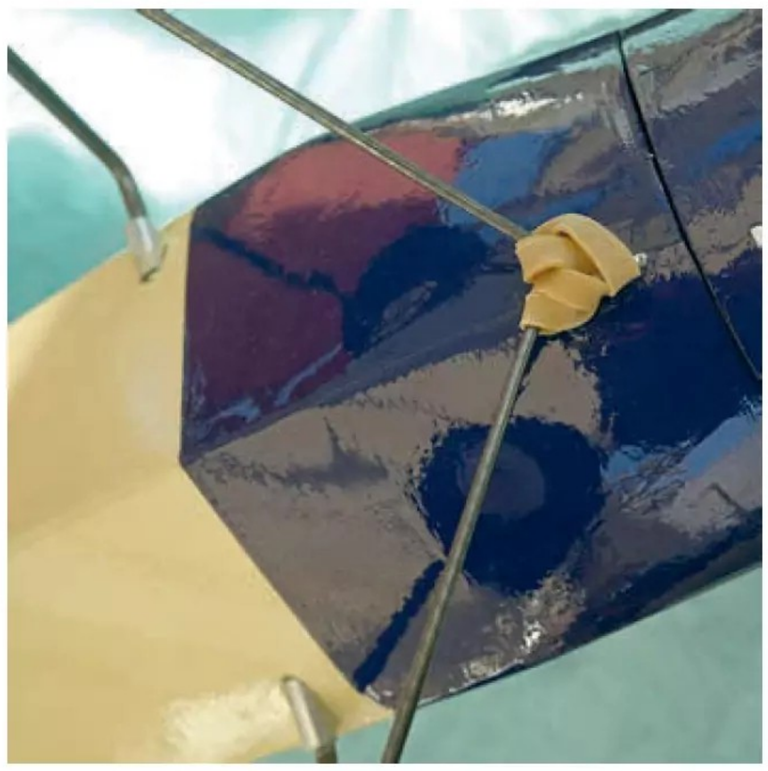
The opposite happens with a hard soap wipe. As the metal heats to the correct temperature the soap will blacken so quench the part immediately. That's it, done!

Unless the 'aluminium' is of some exotic alloy, or 'Unobtanium', you will have a workpiece ready to bend without fuss or cracking. Hard Duralumin, once annealed, will gradually revert to its original hard state, the time period being dependant on the actual alloy composition. But it will take several days.

HELD IN SUSPENSE

In a previous 'One Man' I showed how to provide a small degree of 'suspension' to a scale-like undercarriage by using a torsion bar axle, much like a WW1 aircraft. 'The Bigger Ship', mentioned previously, uses a simpler method that works for any size of sport or vintage model by varying the wire, tube and anchor sizes.

The main undercarriage is a single bent wire part with a pivot tube slid onto the unit part-way through the bending process. This provides side-to-side compression springing,



With a rubber band 'shock absorber' loosely wound round the bridle vee and the fuselage anchor hook, you can see the simplicity of the system.

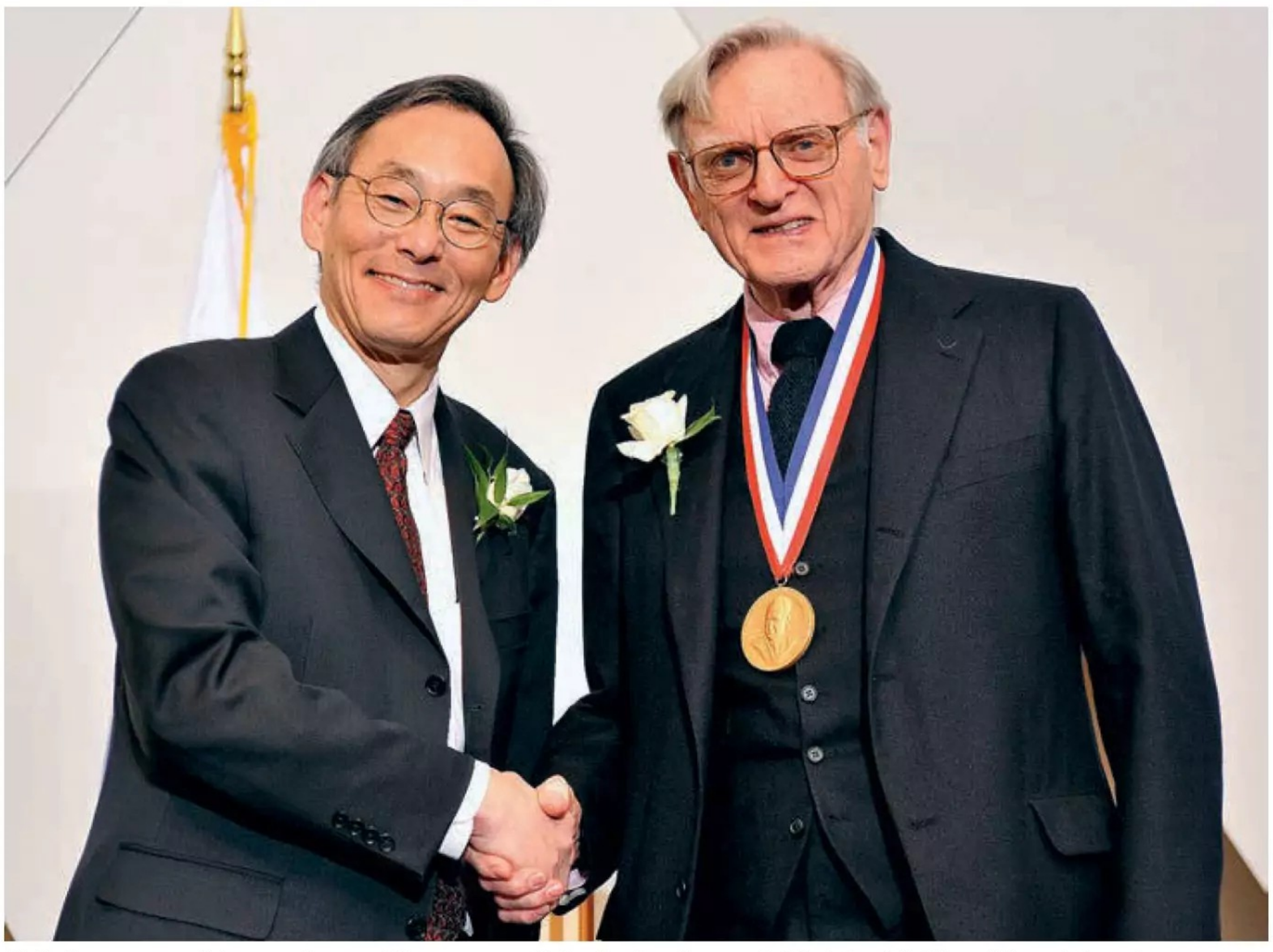
plus fore-and-aft pivoting in case of a heavy frontal 'arrival'.

But how do you stop the U/C unit from just whizzing round on the pivot, I hear you ask. A V-shaped straining bridle is soldered to the main undercarriage legs (see photo) and via a suitably sized rubber band is held by an under-fuselage hook. On the 'Ship' that's a small, re-bent cup hook, screwed and epoxied into a hardwood block. It all sounds a bit 'Heath Robinson' but is in fact a very practical method of preventing a too-solid undercarriage from damaging an airframe in a challenging arrival.

By the time you read this I should have tested the model's flying abilities and the undercart. As it's an old and well-proven method I shouldn't need to pen future comments about its efficacy. But if it all goes a bit 'Pete Tong' you'll read it here, eventually.

NOT MY FAULT!

I was collared at a flying field a while ago and questioned about LiPo batteries. *"What do you know about recharging over-discharged ones, being*



U.S. Secretary of Energy Steven Chu presents John B. Goodenough (right) with his gold medal at the 2009 Enrico Fermi Awards in Washington, DC on January 12, 2010. Picture attribution: 'DSC0217' by U.S. Department of Energy, United States Government Work.

USEFUL LINKS

Dress lining as a covering material: *www.youtube.com/watch?v=4agoPcQEr_U*
Lead sheet flashing: eBay suppliers
6V Flashing LEDs with tails: eBay suppliers
'Habotai' light polyester dress lining: eBay suppliers
Wide 'Doculam' by the metre: Retromodeller

as your family invented the things!" That rather floored me!

I had to explain that it was naff-all to do with us Anglos, despite having the same medieval name. It might be nice to wave around the fact that 'one of our number' was a Nobel Laureate, sharing the Chemistry award with two others some years back. German born to American parents, the late John Bannister Goodenough was a stateside member of our surprisingly widespread family with a common root who knows where in history. His work on Li-Po and Li-ion batteries is what he is best known for but this eminent scientist, diagnosed as dyslexic when young, forged a stellar career in his chosen field. His Nobel award in 2019 made him the oldest ever recipient at 97 years old. He passed in 2023, just a month short of his 101st birthday.

So, when you cook or over-discharge your model's electrical power source or look at the melted/flared up remains of a perforated battery, it was nothing to do with me. Honest!

TAILSKID

If that project you're plugging away at begins to drag, or you wonder '*Why am I still doing this?*', William Butler Yeats had an answer:

"*It doesn't matter how slowly you go as long as you don't stop.*"

Keep plodding on. You'll get there eventually.

Send me an email: **coetquidan@yahoo.com**

Welcome to **RCM&E**. In each issue we aim to bring to our worldwide readership the very best selection of radio control model aircraft news, views and kit reviews, alongside informative and entertaining feature articles covering each and every aspect of the diverse model flying and building hobby.

Whether you are interested in radios, warbirds, gliders, electric power, IC or petrol/ engines, jets, multirotors, new tech, traditional modelling or the latest techniques, we aim to cover the R/C model flying hobby in all its aspects. There's even some free flight and control line coverage too! Not only that but each issue contains at least one full-size model building plan.

Kevin Crozier

Editor

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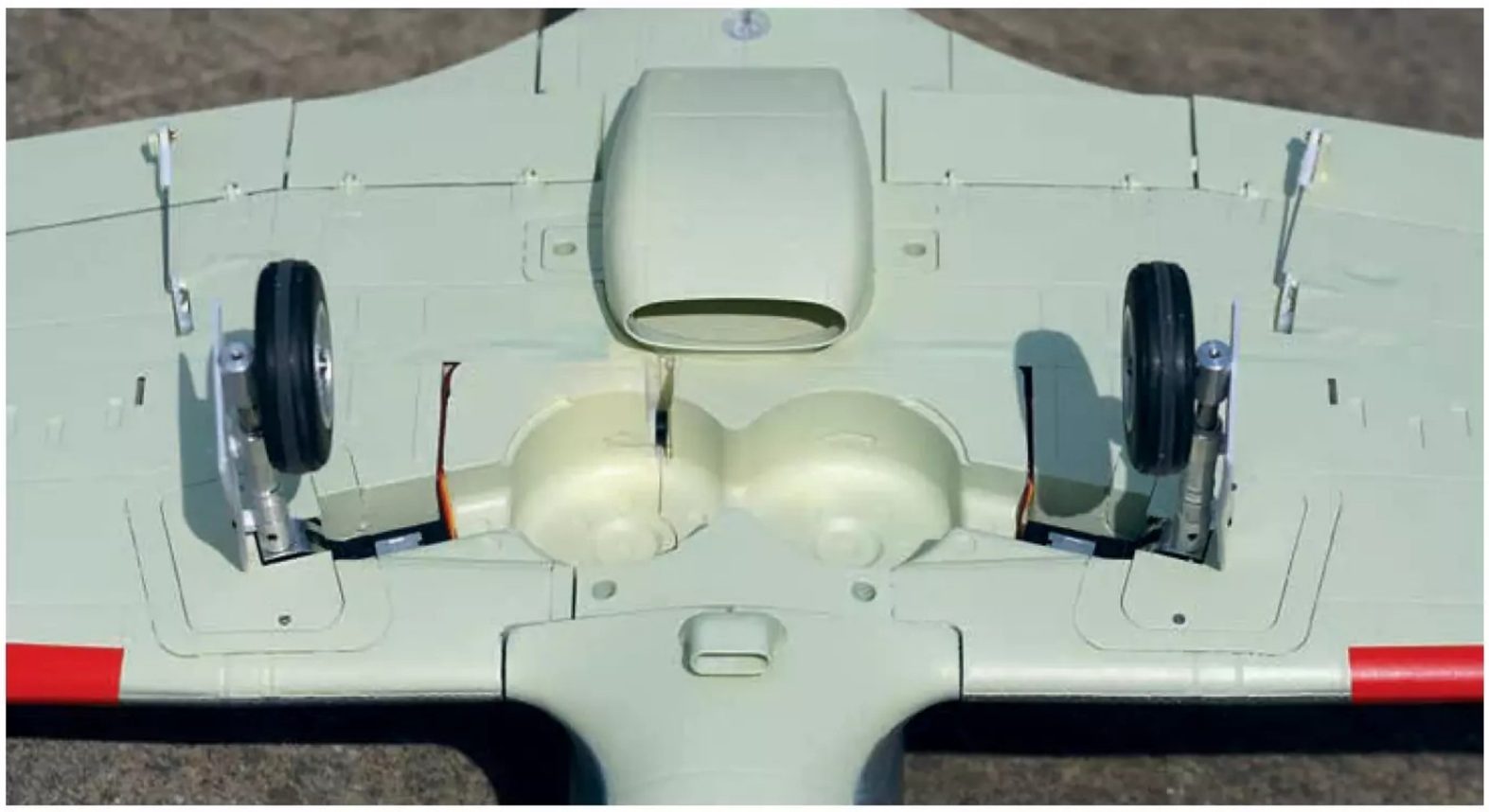
HOW THE HURRICANE FLIES

After patiently waiting for suitable conditions, **Kevin Crozier** takes the new XFly Hawker Hurricane for its maiden flights

Words & Photos: **Kevin Crozier**

I can't wait to see that famous Hawker planform against a clear blue sky. It's winter now in the UK so I've cheated and used XFly's pictures for this article. Much sunnier!

Looking good at rest on XFly's riverside test strip. For my maiden flights from winter grass, I elected to remove the Hurricane's gear doors to minimise drag.



It's also worth spinning the wheels to check that they rotate freely. One of the prototype's spun easier than the other.

Long winter grass and wet, soggy conditions aren't conducive to test flying a new 4S warbird, especially one with a scale retractable undercarriage like the XFly-Model Hawker Hurricane. But over the course of a few visits to the model club that we favour for most review model flying, I realised that the strip was standing up remarkably well to the seasonal weather.

What a difference a year makes. At the same time last year, several months after the strip had been reseeded, there were still visible 'tracks' of thicker grass where the seed drill had travelled along the length of the main strip. There were also some cracks that could have caught the wheels of a model the size of the 1200 mm span Hurricane. But some sterling work by hardworking club members had filled the cracks over the summer and regular grass cutting until later in the year had meant that it still provided a reasonably short take off surface for winter flying. So, I decided to take the plunge

Under the canopy! Inside the prototype Grim Reaper's radio and battery bay.

and take the XFly Hurricane with me the next time I visited.

DOORS OFF

To keep the wheels rolling as much as possible over the winter sward I paid particular attention to checking that each hub was rotating freely on its axle. This was well worth doing as one was freewheeling less than the other. A small adjustment to the axle soon remedied this.

Although the tracks of lusher grass along the lines of the year-old-plus sown seed was far less noticeable by this time, I also took the precaution of removing the undercarriage doors so that they wouldn't be able catch in any slightly longer patches of turf and slow the Hurricane down during her take off roll.

Actually, I was glad I did this as each gear door is held on with a pair of tiny screws, both of which were a bit too easy to unscrew. If you have one of these models (and I understand from Jason at CML that they have sold really well), then it would be worth checking the gear door screws and nipping them up if found to be similarly loose. You wouldn't want to see an undercarriage door floating off during a sortie!

TAKE OFF

When performing the first take off from grass with the Hurricane's sibling, the 1200 mm XFly Spitfire, the Supermarine fighter caught me unawares with a strong pull to the left, hence my caution when flying the Hurricane in similar conditions. But since then, the Spitfire, when flown from shorter summer grass, has proved to be a delight to fly and hasn't repeated its

Our test model took off straight and true. This image shops the Reaper's two-tone underside to good effect.

XFly's Hawker Hurricane will fly inverted with ease but looks especially nice performing long barrel rolls.

> "I paid particular attention to checking that each hub was rotating freely on its axle"

earlier wayward tendencies, helped no doubt by the fitment of a gyro. But I do wonder if it too has a slightly sticky wheel on one side. I intend to check it out soon, plus I'll probably take the gear doors off that one too and try it again for some late winter, early spring flying alongside the Hawker Hurricane.

But I digress. With failsafe and range checks safely completed the Hurricane was carried out to the strip and lined up into the gentle breeze. Power, more than adequately supplied by the 3541-KV810 motor and 4S 3300 mAh LiPo, was smoothly applied and the 'Grim Reaper' (see the 'skeleton with scythe' decal just under the cockpit!) started her take off roll. This time there was no strong deviation off-line and the familiar outline of Hawker's famous fighter climbed steadily away into her first circuit. With the wheels down and no flap selected I detected a small twitch to the right and quickly realised that I was flying her too slowly, so I levelled out and allowed the airspeed to build while I busied myself checking the trims. A couple of clicks of down elevator and a few of right aileron soon had her flying straight and level, so my

thoughts turned to allowing her to climb to a few mistakes high, then slowing her down and selecting flap to see if anything untoward happened whilst in her 'dirtiest' configuration.

A GOOD SET UP

I left my last RTFM article, when describing the Hurricane's assembly (see December '25 issue) waiting for XFly's instructions on setting up the Hawker fighter. I have reviewed quite a few of their models now and have come to trust the set ups given in XFly's instruction manuals. Fortunately, I didn't have to wait long and just as I was finishing writing that article a PDF copy of the Hurricane instructions appeared in my inbox courtesy of XFly's UK distributor, CML Distribution.

XFly usually give details for high and low rate set ups and so it was in this case. As I already had a similar set of rates set up in my Futaba transmitter to operate the XFly Spitfire it was easy to copy the model memory across and adapt it for use with the Hurricane, taking care to re-centre the trims and to reduce the flap settings. The control throws could then be readjusted to suit the Hawker fighter, including slowly increasing the throw of each flap. I did, however, leave the Flap/Elevator mix as set up for the Spitfire...

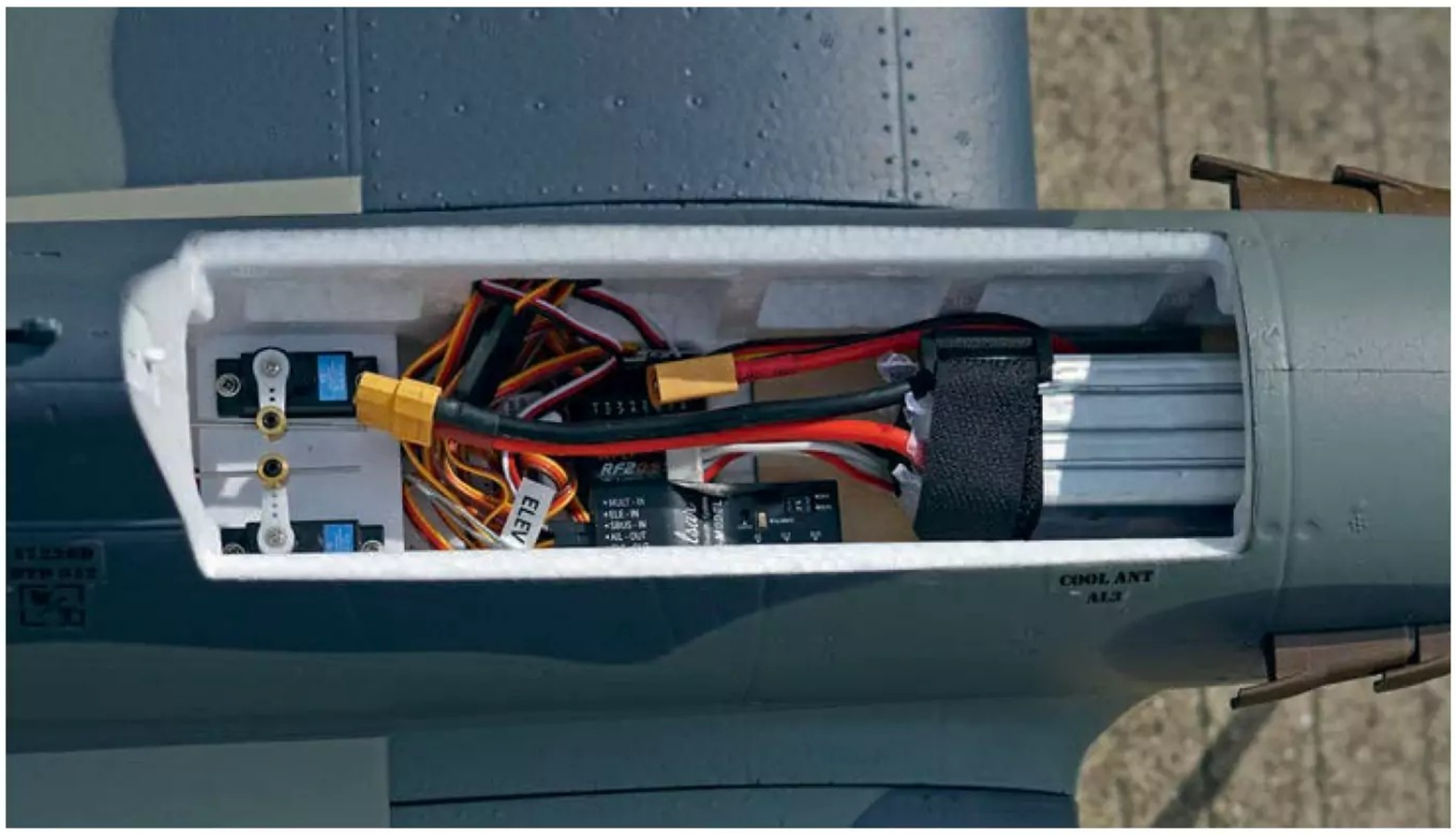
Back now to the Hurricane's maiden flight and it was time to select first stage of flap. The distinctive model carried on overhead with no ill effects, so I selected second stage of flap and this time the Hurricane did react, tipping her nose down quite noticeably, indicating that the flap/elevator mix on the maximum flap setting was too high. However, in all other respects she behaved impeccably so things were going well for her first landing.

With a cautious six minutes set on the Tx timer the time had arrived to bring her in for her first landing. She is no lightweight, especially with that 4S 3300 LiPo in the front of the battery bay (with which she balances spot on according to the manual), so I opted to keep the approach speed quite fast and only use half flap as there was no visible pitch change at that setting. She motored over the hedgerow at a fair lick but flared nicely. However, the extra speed caused a bit of a bounce and an untidy arrival. I wasn't too happy with myself but a check over of the model revealed that all was well. So, after a break for a coffee, she was readied again for her second flight.

PUSHING THE ENVELOPE

This time I flew her far more aggressively, and much more in keeping with the wartime role of the full-size aircraft, to which she responded positively. Immediately after take-off I retracted the gear and got her up to speed, following which it was time to try a few warbird appropriate manoeuvres such as large loops and long barrel rolls. She performed all these with ease, even on the low-rate settings, and it was great to see her really stretch her legs, looking especially life-like on fast passes

Our remaining shots are of the alternative Sea Hurricane shown here on a dirty flypast with flaps and undercarriage down.



Inside XFly's prototype Sea Hurricane showing the 4S LiPo fitted right up front. The model balances well with it in this position.

> "...she behaved impeccably so things were going well for her first landing"

along the strip, then pulling up into graceful climbing turns. Magic!

All too soon the Tx timer was sounding again. But this time my flying buddy, Barry, urged me to try bringing her in using full flap. I found that holding off the exaggerated flap/elevator mix (which I forgot to reduce whilst having a coffee!) needed only slight upwards pressure on the stick and she settled into a far slower and more manageable approach, ending in a smooth, near three-point landing. That was more like it, meaning I could wrap things up with pride in my flying restored!

To sum up then, the Mk.1 Hawker Hurricane 1200 mm PNP warbird from XFly-Model is a

It's already selling well, so don't be surprised if you see an XFly Hurricane in action somewhere near you.

A view you don't often see. Here's a prototype 3D model ready for test flying.

Sea Hurricane or Grim Reaper? Both are likely to be very popular.

great success and is a worthy follow on to CML and XFly's previous collaboration that resulted in the lovely 1200 mm Supermarine Spitfire. At the time of writing in early February both versions - Battle of Britain 'Grim Reaper' and Sea Hurricane - were sold out but the second shipment is expected anytime soon. Hopefully, Jason at CML will remember to put RCM&E down for a follow up review of a full production kit, but this time for the Mk.1 Sea Hurricane in the alternative grey and green livery as used on the full-size aircraft displayed at Old Warden as part of the Shuttleworth Collection.

STEP INSIDE LOVE

I don't know about you but during the wet and gloomy winter months I find it difficult to get motivated about my modelling when trapped inside a cold and damp workshop. My fan heater quickly warms things up so I really shouldn't use the weather as an excuse. But as a fully paid-up member of the 'miserable old gi... err... man' brigade I think I've earned the right to do my winter modelling in more comfortable surroundings. For me that means working indoors on the kitchen table and peninsula worktop. This restricts some of the activities that I can partake in for fear of damaging any work surfaces with, say, sharp scalpels or dropping blobs of epoxy on the floor tiles and suffering the ensuing wrath of 'The Boss', delightful though she may be otherwise! There's also more than enough room to put together a modern ARTF kit, especially the latest ones that require little more in the way of tools than a screwdriver and an Allen key or two.

So, step forward the Volantex Ranger, which will be the next ARTF to pass through 'Chez Crozier'. This 1600 mm span powered glider shouldn't take very long, especially as I've cheated and tasked my gliding buddy, John, to apply the sticker sheet for me! I know from

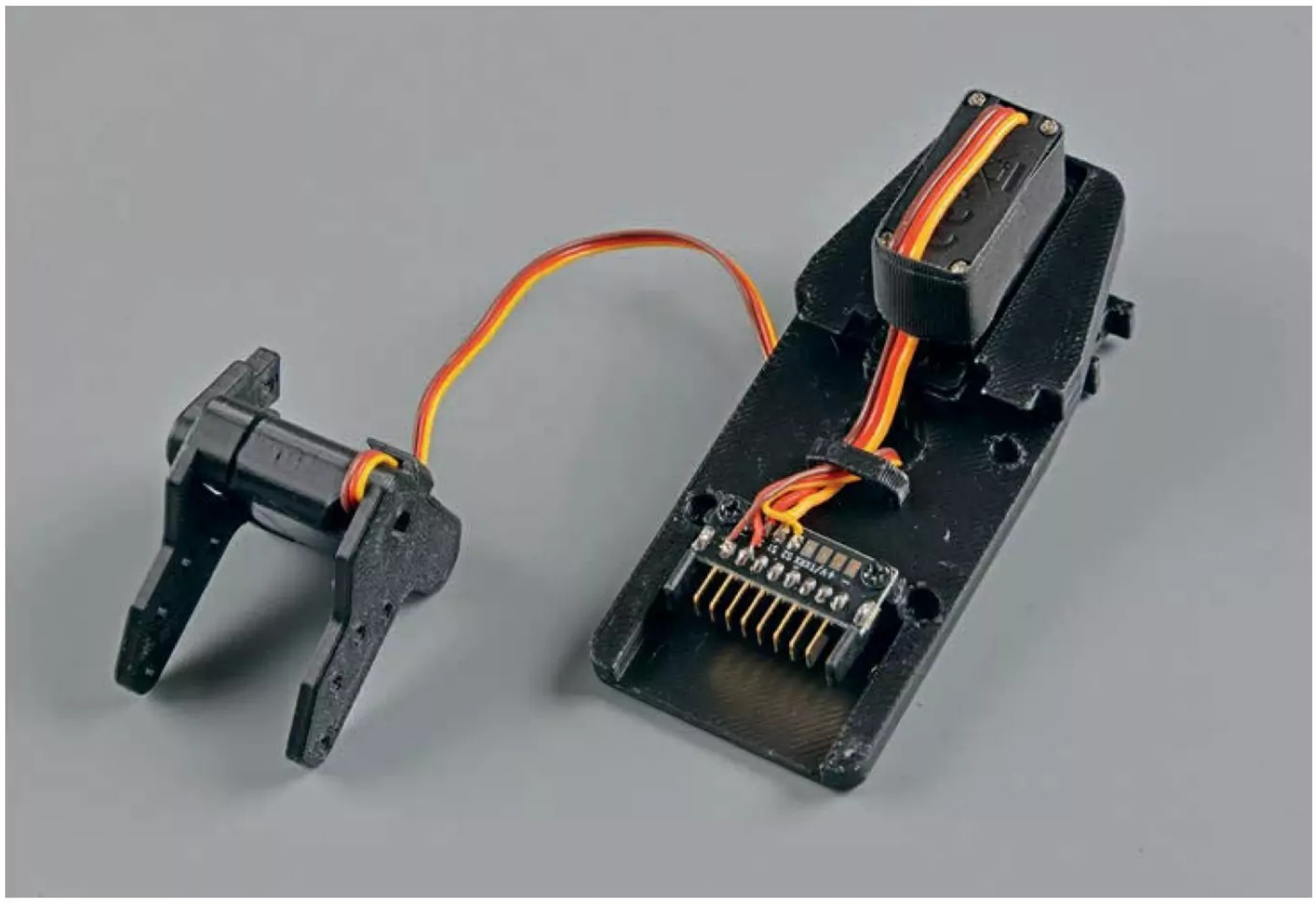
> "I wanted the Ranger to look nice in the pictures when it eventually appears in RCM&E"

prior experience with another Volantex kit, the sweet little Phoenix 1600 which we use for fun-filled summer evening soaring competitions, that I would make a real mess of things if left on my own with the Ranger's blue stickers, which need to be neatly applied along all of the flying surfaces. John is a real whiz at this task, using soapy water on each panel before laying down each decal and, when slid into

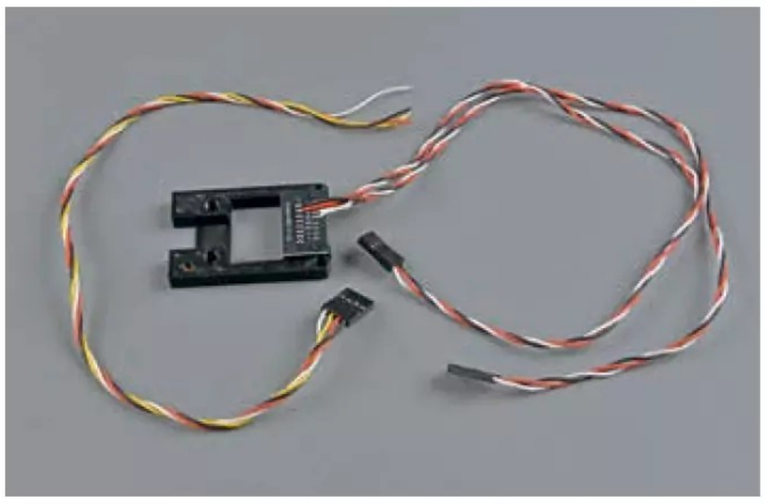
Volantex's Ranger 1600 shouldn't take too long to put together.

It's still in its box at the time of writing.

I'll be fitting a DJI O4 Air Unit Pro to the Ranger after it has been test flown.



An ATOMRC Quick-Release Two Axis Servo Gimbal V2 was purchased from Flying Tech (https://www.flyingtech.co.uk) to give pan and tilt views from my new FPV plane.



The V2 gimbal comes with two quick-release bases, allowing the camera and video transmitter (VTX) to be transferred between aircraft. This makes it possible to share a single FPV system across multiple models.

Volantex Ranger fitted with the optional camera carrying hatch. Alternatively, for a simple straight-ahead view there's also a camera port moulded in the underside of the nose.

place, squeegeeing out any soapy residue with the edge of some stiff cardboard. A beermat is ideal for this. When left overnight any trapped moisture will have evaporated, just needing a gentle buff down to lock each sticker into its final position. Usually, this simple task doesn't hold any fears for me, but Volantex's stickers are a touch on the thin side and I wanted the Ranger to look nice in the pictures when it eventually appears in RCM&E, hence me taking no risks and calling on John for help.

JOIN THE FPV SET

With its rear facing, pylon mounted motor and pusher prop the Ranger is typical of a model type that has long been used for ab initio flight training. Such models, with their curved, swept up wingtips, are generally very stable and easy to fly, hence their popularity as R/C trainers. But these same attributes also make them very attractive for FPV aficionados, for whom a stable camera platform is definitely a much sought-after attribute.

FPV stands for First Person View flying and uses a video camera mounted in a forward position on a model, usually around the conventional cockpit position, to give a pilot's eye view of things whilst operating the aircraft when wearing an FPV headset.

My sole experience with FPV so far has been with the super stable little DJI Neo drone coupled to DJI's Googles N3 headset. I was wary at first in case flying with FPV caused me to have motion sickness but flying the Neo didn't give me any problems so I'm looking forward to trying the technology when fitted to an aeroplane. I'm hoping that the super stable Volantex Ranger 1600 will give me a smooth flying experience.

Watch this space and I will report back and let you know! ■

All Write

Have your say in RCM&E's monthly chat room

Top letter

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

TND 3D PRINT FILES

I really liked the look of the Tony Nijhuis swing wing Tornado in the February issue, but I've taken a decision recently to embrace the 21st century and 3D print my models rather than using traditional techniques.

Model aircraft are a great reason to own a 3D-printer! I've already built a PlanePrint Shard plus SoarKraft's Pika slope-soarer and Igneous hotliner, both using paid-for STL files.

Does Tony have a plan to consider developing 3D printable versions of his designs? I'd be first in the queue!

Alex Blackwell

I suppose the answer to the question is, 'Never say never.' We do use 3D printing to make some accessories such as fuselage vents and pilot sets. But as a confirmed old school balsa basher, I'm still very much using 2D CAD to design model planes. Notwithstanding that, I have experimented with downloading 3D printed commercial model designs, which are very impressive. I suppose the element I was not so impressed with was overall weight, even using lightweight PLA. I can still build a balsa model for half the weight.

However, there is a compromise here and the more complex the model you are building out of balsa wood, the heavier it will be and the weight comparison between 3D printed models and using wood will lessen.

A good example of this is the Buccaneer. Known as the flying Coke bottle and having so many compound curves, this aircraft would really suit 3D printing. Having designed and built a prototype of the Buccaneer in balsa wood, the model was just too heavy and proved difficult to construct. Maybe it's a future contender for 3D?

I also think there is an untapped market for producing 3D printer files of scale model R/C aircraft. The reality is that the ownership of 3D printers by aeromodellers is very small in comparison with the overall ownership of these machines - just think if every owner of a 3D printer had the option to print an R/C model aircraft. What a great way to revive this hobby of ours.

Could Tony Nijhuis' designs such as his swing-wing Tornado be a contender for converting to 3D print files? 'Never say never', says Tony! Picture: David Ashby

I think I've just talked my way into it!

Tony Nijhuis

MARUTAKA SPITFIRE

Further to my Percival Gull 6, featured in All Write in the December 2025 issue, I have three other projects which I interrupted to make that model. One of them is an Marutaka Spitfire, which I believe was sold in the US as a Royal kit. I bought it way back in about 1995 and had the fuselage part built when we moved interstate in Australia in 1996, where it sat untouched until recently. It started as a Spitfire Mk.VIII but I wanted a Mk.IX, so I modified the rudder and designed a tailwheel. The original nose was not very scale but otherwise the Marutaka kits had a very good reputation. It's the same size as the old Brian Taylor plan so ages back I bought a Brian Taylor cowl and spinner and modified the structure accordingly.

On restarting the build, I modified it to take a .60 equivalent electric motor. I have been building models since I was 12 or so - that's over seven decades - and I can honestly say the wing was the most difficult I have ever had to build. But it's all turning out okay now.

Over the years the canopy had yellowed. Fortunately, I had not cut it so I filled it with Plaster of Paris and made a mould and a simple vacuum former. Jiri Pre of JP Warbirds provided the cannons and a lovely gunsight and scale exhaust stacks in the right scale. I have some decals from Callie for when the painting is done.

It's ready for paint now and I have just realised that the grey automotive primer I am about to use is just about the right shade for the grey undersides. I have mixed just a touch of black with it to darken it and will make a bit more, a bit darker, for the upper surfaces, saving myself some paint and work. I'll still have to get the green though!

BTW, please note, my workshop is NOT untidy. It is operationally configured!

Peter Kraus

kevin.crozier@kelsey.co.uk

HANGAR ONE KITS

Stuart Mackay's recent article on Mike Birch's Capricorn pattern design (RCM&E, December 2025) caught my eye. In particular, I noted the reference to Clive Weller.

A couple of years ago I was doing an on-line search for classic pattern aircraft and came across the Hangar One Kits website. Hangar One Kits are based in New Zealand and, amongst many goodies, market an extensive range of classic pattern designs which may be of interest to your readers of a certain age.

One of their line-up is a kit of a Clive Weller design, the Titan, dating back to 1978. They have a photograph on their website which I remember well from a magazine of the period that has some fond memories for me.

The photo of Clive and his model was taken at the London Air Park, also known as Hanworth Air Park, a grass airfield in the grounds of Hanworth Park House that was operational from 1917 to 1919 and again from 1929 until 1947. It was on the south-eastern edge of Feltham, now part of the London Borough of Hounslow. It remains a public open space, with large areas of mown grass used for sports, principally rugby and football.

I used to fly my models from Hanworth Air Park in the late 70s/early 80s and well remember meeting Clive there on several occasions during which we compared notes. Clive was a serious competition aerobatic pilot; I was just a sport flyer. If I recall, his model had a rear exhaust HP .61 up front with one of those 'peace pipes' which gave him a distinct edge over my Super Star with its standard side exhaust O.S. Max 60F-SR.

I exchanged emails with the owner of Hangar One Kits, Andreas Gabler, regarding the above and also discussing some of their scale kits. He is very helpful and recommended that customers from far afield contact him regarding shipping rather than simply using their website.

I recommend that your readers explore the Hanger One Kits website. There is much inspiration to be had: https://hangaronekits.com

Keith Cherrington

ANDES BIPLANE STRUTS

After I had planted my lovely Anthem aerobatic model in a tree just off the approach path at my second club field, I had to bring my Citrin biplane back into operation and used it for the remaining four of the five F3A competitions I had entered in 2025. Strangely, I scored higher with the Citrin than with the Anthem flying the P25 schedule! I always found the Anthem easier to fly as it seemed to have greater aerodynamic damping and seemed more locked in.

Then, a couple of months ago, a friend asked if I was interested in buying his Andes V2. He had the later version that was flown by Gerhard Bruckmann in the F3A World Championships. So, I took the offer, put my own Adverrun V1 contra and D3 ESC in it and, wow, what a revelation. It's like the Citrin to fly but more locked in, like the Anthem, and using the FCScore function of Flight Coach I'm scoring P27 higher with the Andes than I had been with the Citrin. So, it looks like I'll be campaigning the Andes in 2026. The photo shows me with the model after a successful maiden flight.

I emailed the designer of the Andes at CA Model, Mariano Gostanian, to ask if he had developed quick release wing struts for the Andes, as BJ Craft has for his biplanes and that the Citrin had from the word go. Back came the reply from Mariano that he flew his Andes without the wing struts! Since both the top and bottom wing are retained by four bolts at each corner of the fuselage/wing junction there is no need for struts, unlike with the Citrin where the top wing is retained by two bolts mounted fore and aft on the centre line of the wing/fuselage pylon, so requiring the struts to brace it against the lower wing, which is retained by two pegs at the front and two bolts at the TE. So, the second photo shows my Andes without the struts (when fitted they are held in by bolts inserted through the top and bottom of the wing respectively). It saves a huge amount of faffing about when rigging and derigging.

Peter Jenkins

Going Places

Diary dates for the coming season

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-njiiri@kelsey.co.uk**

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

MARCH

March 15

White Sheet Radio Flying Club Scale Event. Back up date 29th March. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

March 15

Horam Swap Meeting at the Horam Village Hall. Horam East Sussex TN21 0JE. What3Words: self.planting.brave. Doors open to sellers 08:00-12:00 with a table and one person costing £9.00. Buyers, £3.00 from 09.00-12.00. Usual refreshments and delicious bacon rolls. Come and grab a bargain or catch up with friends. Booking ESSENTIAL. Contact Robert Richardson: rob.richardson@talktalk.net

March 22

White Sheet Radio Flying Club F3F. For more information visit https://whitesheet.bmfa.club/

March 22

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

APRIL

April 3

Watton Radio Model Club Bring & Buy Good Friday at Hingham Social Club, Watton Rd, Hingham, NR9 4HB. Sellers from 5.30 pm. £6 per table to include 1-person additional helpers £1. Doors open 6 pm, entry £1, under 16s free. To book tables please contact Martin Pawsey on 01953 883892 or email: martin.pawsey@btinternet.com

April 12

White Sheet Radio Flying Club Scale Event. Back up date 26th April. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

April 11 – 12

The Great Cornish Model Show at Pool Academy, Church Road, Pool, TR15 3PZ. A celebration of modelmaking talent in Cornwall featuring working model train layouts, model aircraft (radio-controlled and miniature), model boats and ships, radio-controlled trucks and cars, military modelling, model engineers, miniature figure painting, paper modelling, plastic kit modelling, Lego models, wargamers, miniature roomsets and dolls houses, modelling demonstrations. Full trade support. Sat 10.00 am - 5.00 pm, Sun 10.00 am - 4.00 pm. Adults £9.00, U-16s £6.00, Family £18.00, U-5s free. Free parking, easy access, hot food and refreshments all day.

April 18

CADMAC Swapmeet at Stannington Village Hall, Stannington, Northumberland, NE61 6EL. Aeromodelling items only. Sellers' fee £7 per table plus the entrance fee, all tables are provided.

Admission £2, ladies and under 16s free. Sellers set up at 12:00 pm. Buyers enter at 12:30 pm. Doors close at 3:00 pm.

All proceeds go to Northumbrian Air Ambulance. Please contact Bob Brown on rwbrown17@gmail.com or 07515 682543 to book a table.

April 18

Truro RC Model Flying Club Swapmeet at Ladock Village Hall, near Summer Court, Cornwall, TR2 4PG. From 9:30 am to 13:00 pm. The hall is on the main road B3275 in centre of a small village. Free parking, free entry and no table fees. Everyone very welcome. Tea, coffee, biscuits and home-made cakes available to buy. Always many excellent bargains, especially for early customers. Friendly negotiations recommended.

April 18-19

PSSA 'Fly for Fun' at The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for pilots brief 10 am 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 event WILL NOT BE RUN if the winds are from the East due to slope access limitations. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or visit https://www.pssaonline.co.uk/about-us/events/

April 19

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

MAY

May 2-3

BFFA Fun Fly Festival at BMFA Buckminster is open to any BMFA member, with newcomers particularly welcome. Enjoy two separate days of competitions, practice or instruction in fun fly competition flying. Classes for novice and expert fun flyers including the Foamy Class for standard, out the box foamies. Trophies awarded both days. £15 per pilot, per day (paid on the day) and camping available from the Buckminster office. More details at https://funfly.bmfa.org/. Please note that as this is a bank holiday weekend, only electric models please. Contact James Gordon on 07966 439835 or email jamesrrg@hotmail.com

May 10

White Sheet Radio Flying Club Scale Event. Back up date 31st May. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

May 16

Bickley MFC Open Boot at Bickley MFC, Church Road, Sutton at Hone, Dartford, Kent, DA4 9EX. Gates open 9:00 am for 9:30 am start. Boot sale for all your modelling bits and pieces. Also, a perfect place to grab a bargain! Non-club members £5 to sell. Toilet on site. Camping must be pre-booked at admin@bickleymfc.org or visit https://bickleymfc.org/. For more information contact James Gordon on 07966 439835.

May 17

Bickley MFC Open Scale Day, at Bickley MFC, Church Road, Sutton at Hone, Dartford, Kent, DA4 9EX. Open from 10.30 am -17.00 pm (note earlier date for 2026). Scale models of all types welcome, flying or static! Informal, relaxed scale fly-in, open to any BMFA member and includes a lunchtime barbecue. Toilet on site and camping available if booked in advance at admin@bickleymfc.org or visit https://bickleymfc.org/. For more information contact James Gordon on 07966 439835.

May 16-17

PSSA 'Fly for Fun' event at The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for pilots brief 10 am 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 event WILL NOT BE RUN if the winds are from the East due to slope access limitations. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or visit https://www.pssaonline.co.uk/about-us/events/

May 17

Power Scale Soaring at Hole of Horcum, Pickering, North Yorkshire, YO18 7NR. A fun day for all R/C model PSS gliders. BMFA membership required. £5 for non-club members. Location What3Words - snowmen.ordinary.caps. Lat - 54.332235. Lon - -0.690234. Due to MOD restrictions, please contact beforehand for details. For more information call 07747 614074 or email michaelkitchen@me.com or call 07796 364738 or email jonedison@btinternet.com.

May 24

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

May 30-31

ModelAir Mayfly at BMFA Buckminster will be a fly-in with as many of the modelling disciplines and attractions there used to be at Old Warden including R/C flying, C/L flying, F/F & Radio Assist, Tethered Cars, Drone Racing, Camping. Excellent cafe. Pricing for pilots is £10 per person per day. Spectators £5 per person per day. To trade or car boot at the event please use the form at: https://modelair.info/contact-us/

Car Booters will be charged £5 per pitch, Traders are free. R/C flying will take place from 10:30 am to 4:30 pm each day. All types welcome but unfortunately no gas turbines. 15 kg weight limit. A B-Certificate is required or an A-certificate for slow vintage types. Models must be flown on 2.4 GHz only. Free Flight and Radio Assist flying will take place twice per day, from early morning until 10:30 am. The second session is 4:30 pm into the evening. 500 g weight limit, with a max. engine capacity of 0.8 cc or 100 W. Radio Assist 2.4 GHz only. BMFA membership required. For more information contact modelair.oldwarden@gmail.com or phone 07966 439835 (evenings and weekends only). Camping available; please enquire at BMFA Buckminster: https://nationalcentre.bmfa.uk

JUNE

June 6

Truro RC Model Flying Club is hosting the Truro RES gliding day competition events of the South West Area at their Trendeal field, near Ladock, Cornwall. 2 miles off the A3058. Qualified BMFA members only but spectators very welcome. Use the BMFA Truro & District Model Flying club website via the 'Locate Us' map for details, plus confirmation of dates and start times if reserve days for bad weather is forecast.

June 14

Bickley MFC Avicraft/Fun Fly Competition Open Day, at Bickley MFC, Church Road, Sutton at Hone, Dartford, Kent, DA4 9EX. From 10:30 am – 17:00 pm. One of our most popular events of the year. A light-hearted competition day with your favourite club style Fun Fly competitions plus a few new ones! Open to any BMFA member and any club sport models or Fun Fly models

welcome to join in the fun. Event and prizes supported by the London and Southeast BMFA areas, Avicraft and the British Fun Fly Association. Toilet on site and camping available if booked in advance at admin@bickleymfc.org or visit https://bickleymfc.org/. For more information, contact James Gordon on 07966 439835.

June 14

White Sheet Radio Flying Club Scale Event. Back up date 28th June. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

June 19

Weston Park Air Show at Weston-under-Lizard, Shifnal, TF11 8LE. Gates open each day at 8:00 am, show starts at 10:00 am and ends at 17:30 pm. Saturday evening dusk show starts at 20:30 pm and ends at 23:00 pm. In its 29th year, Weston Park is a beloved family-run event in Staffordshire. Offering a unique experience, the camping price includes full access to the show and park. However, please note that disabled camping spots are limited, so it is important to inform the gate staff upon arrival. Weston Park is a family run event and is fun for all the family. Enjoy the show in your caravan, motor home or tent and as an added bonus children under 16 go free for 2026.

June 21

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

JULY

July 1-5

PSSA 'Fly for Fun' event with the Lleyn MAC at Nr Abersoch, North Wales. Meet at the SPAR car park in Llanbedrog for 09:30 am each day (only applicable 4th/5th July). A slope map will be left in shop window for late arrivals. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. A daily flying charge will be payable at certain flying sites. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or visit https://www.pssaonline.co.uk/about-us/events/

July 12

White Sheet Radio Flying Club Scale Event. Back up date 26th July. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

July 19

Classic Glider at Hole of Horcum, Pickering, North Yorkshire, YO18 7NR. A fun day for all R/C model PSS gliders. BMFA membership required. £5 for non-club members. Location What3Words - snowmen.ordinary.caps. Lat - 54.332235. Lon - -0.690234. Due to MOD restrictions, please contact beforehand for details. For more information call 07747 614074 or email michaelkitchen@me.com or call 07796 364738 or email jonedison@btinternet.com.

July 19

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

July 19

Cocklebarrow Vintage Rally at Aldsworth, Glos, on the B4425 between Cirencester/Burford and off the A40 between Northleach and Burford. What Three Words: positives.arrival.calculate. All model types to 1975. BMFA membership required for flyers Contact Peter Marsh on 07831 193091, email: pjtvw@msn.com, or Paul Howey on 07405 164040, email: G4BBP@aol.com. For more information call 07747 614074 or email michaelkitchen@me.com or call 07796 364738 or email jonedison@btinternet.com.

July 26

Bickley MFC Open Ducted Fan & EDF Day at Bickley MFC, Church Road, Sutton at Hone, Dartford, Kent, DA4 9EX. From 10:30 am – 17:00 pm. A popular open day for EDF and Ducted Fans of all types. Also, some fun competitions for those who want to take part. Open to all BMFA members but sorry no turbines. Toilet on site. Camping available if booked in advance at admin@bickleymfc.org. For more information visit https://bickleymfc.org/ or James Gordon on 07966 439835.

AUGUST

Aug 1-2

PSSA 'Fly for Fun' event at The White Horse, Westbury, Wiltshire. Meet at the White Horse car park (location link below). Pilots brief at slope location at 10:30 am 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 or visit https://www.pssaonline.co.uk/about-us/events/

Aug 2

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

Aug 9

White Sheet Radio Flying Club Scale Event. Back up date 30th August. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

Aug 15-16

British Fun Fly Association's Fun Fly National Championships at BMFA Buckminster. Open to any BMFA member with an A certificate and newcomers are very welcome! Classes 1, 2 and 3 including the Foamy Sub Class will be flown. Take part in up to two classes for no extra fee. Briefing at 9 am both days. Rules and entry forms at https://funfly.bmfa.org/. £30 entry fee for the weekend (paid on the day). Juniors FREE! Camping available from the Buckminster office. More details at https://funfly.bmfa.org/. Contact James Gordon on 07966 439835 or email jamesrrg@hotmail.com

Aug 15-16

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

August 16

Cocklebarrow Vintage Rally. All model types to 1975. BMFA membership required for flyers. Aldsworth, Glos, on the B4425 between Cirencester/Burford and off the A40 between Northleach and Burford. What Three Words: positives.arrival.calculate. Contact Peter Marsh on 07831 193091, email: pjtvw@msn.com, or Paul Howey on 07405 164040, email: G4BBP@aol.com

Aug 22 - 23

White Sheet Radio Flying Club F3F English Open. For more information visit https://whitesheet.bmfa.club/

Aug 29

Bickley MFC Open Boot at Bickley MFC, Church Road, Sutton at Hone, Dartford, Kent, DA4 9EX. Boot sale for all your modelling bits and pieces. Also, a perfect place to grab a bargain! Non club members £5 to sell. Toilet on site. Camping must be pre-booked at admin@bickleymfc.org. For more information please visit https://bickleymfc.org/ or contact James Gordon on 07966 439835

Aug 30

Bickley MFC Open Glider Fly-In, 10.30 - 17.00. All types of gliders are welcome, including DLG, F5j, foam gliders, GPS gliders, FxRES, aero tow or anything else we haven't thought of! It will be a very informal event and an opportunity to see as many different glider types as we can. Please note 400 ft height limit for models over 7.5 kg. Toilet on site. Camping must be pre-booked at admin@bickleymfc.org. For more information, please visit https://bickleymfc.org/ or contact James Gordon on 07966 439835

SEPTEMBER

Sept 5

Truro RC Model Flying Club is hosting the Truro RES gliding day competition events of the South West Area at their Trendeal field, near Ladock, Cornwall. 2 miles off the A3058. Qualified BMFA members only but spectators very welcome. Use the BMFA Truro & District Model Flying club website via the 'Locate Us' map for details plus confirmation of dates and start times if reserve days for bad weather is forecast.

Sept 5 - 6

Southern Model Show at Headcorn Aerodrome, Kent. More details to follow.

Sept 6

White Sheet Radio Flying Club Scale Event. Back up date 27th Sept. Weather call will be the Friday before. For more information visit https://whitesheet.bmfa.club/

Sept 13

Scale Glider at Hole of Horcum, Pickering, North Yorkshire, YO18 7NR. A fun day for all R/C model PSS gliders BMFA membership required. £5 for non-club members. Location What3Words - snowmen.ordinary.caps. Lat - 54.332235. Lon - -0.690234. Due to MOD restrictions, please contact beforehand for details. For more information call 07747 614074 or email michaelkitchen@me.com or call 07796 364738 or email jonedison@btinternet.com.

Sept 19 - 20

PSSA 40th Anniversary Mass Build event at The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for pilots brief 10 am each day. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. This event will stage the Harvard/AT-6 Texan Mass Build event marking the Association's 40th Anniversary. For more information contact Phil Cooke on 07772224719, email webmaster@pssaonline.co.uk or visit https://www.pssaonline.co.uk/about-us/events/

Sept 20

Cocklebarrow Vintage Rally. All model types to 1975. BMFA membership required for flyers. Aldsworth, Glos, on the B4425 between Cirencester/Burford and off the A40 between Northleach and Burford. What Three Words: positives.arrival.calculate. Contact Peter Marsh on 07831 193091, email: pjtvw@msn.com, or Paul Howey on 07405 164040, email: G4BBP@aol.com

Sept 20

White Sheet Radio Flying Club Open Slopes. For more information visit https://whitesheet.bmfa.club/

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ADVANCED SCALE MODELS, C-130 100" Hercules and B-17G 100" Flying Fortress. Both still boxed and untouched - £300 ono. 07947 822794 (Oxon).

HOBBY HORIZON CARBON CUB S2 1.3m BNF scale. Bush Trainer new with AS3X safe, 3s LiPos, manual and box fittings included for optional floats. Never flown, was £299 new with LiPo battery. Will sell for - £250. Call Paul on 07778 034316 (Walsall).

RC SKYLARK, 6' wingspan and 4'8" Dolphin gliders. Transmitter, receiver, battery, charger plus many other extras including motors, propellers and assorted wiring. Great for inspiring beginners - £100. 07951 454003. (Cheltenham).

T-7A RED HAWK 64mm EDF Kit, New in box, 960mm length, span 750mm with a lovely finish to surface of foam. Will operate from grass. Call for photos - £85 P&P £5.95. 07946 414532 (Yorks).

NEW KITS, Flightline Bearcat - £220. FMS 70mm Advanti - £220. FMS J-10 Vigorous Dragon Grey - £150. FMS Corsair 800mm - £100. Arrows 50mm Viper - £100. Kavan Twin Sarik Glider - £220. X-Fly Twin 40mm F18 - £100. Buyer to collect. 01763 663016 (Herts).

ARMSTRONG WHITWORTH WHITLEY 48" complete with 2 motors, 2 speed controllers and servos. In as new condition - £160 ono. Hawker Typhoon 48" complete with motor, speed controller and servos - £120 ono. 01242 680659 (Cheltenham).

MODEL CANTABRIAN high-wing, completed ARTF from 10 years ago. Flown once and then stored. Sanwa controller with buddy box etc. - £100 for all. Call Pete on 07759 874916 (Kent).

SOARERS, 1980 Wildflecken 144" kit, built 1990 'Proton' 136", ailerons, flown a little but undamaged, well stored, both GF fuselages, servos, towline releases and accessories complete - £ free with a charity donation. Buyer to collect. Email Christopher on cjmail@flyskipper.com or call 07950 467485 (Kent).

FREEWING Grippen 80mm fan R/C model - £200. Freewing F-16 70mm fan R/C model - £150. Freewing Hawk 70mm fan R/C model - £200. FMS F18 70mm fan R/C model - £200. All kits are complete and unassembled as new. Buyer to collect. 01763 663016 (Herts).

RADIO CONTROL MODEL KITS, as new and not assembled. FMS Advanti, ducted fan - £200. FMS J10 ducted fan - £150. FMS Corsair, prop, £100. Flightline Bearcat, prop, £200. Arrows Viper, ducted fan - £100. X Fly F18 twin, ducted fan - £100. Kavan Shark, powered glider - £220. Buyer to collect. 01763 663016 (Herts).

RADIO CONTROLLED MODEL AIRCRAFT by David Boddington 2004, two unopened 1-72 scale Airfix Vulcan kits. XM607, series A5005 Falklands war, includes paint brush, series 09002 XH562 – offers plus P&P. Call Andrew on 01989 564932 (after 5pm).

OS GGT 15 gas/glow engine, new - £245. Call Julian on 07934 531930 (Cambs).

UNIQUE PRAZISE MODELLBAU R/C, all aluminium Hornet kit. Beautiful kit from some years ago and will need careful building - £300 ono. 07718 464066 (Dorset).

FLYWING FW200 GPS RC Helicopter, as new with 2 batteries and charger. Also scale Airwolf fuselage with good detail machine guns and nav lights, excellent condition. It can be flown like a drone, cost over £500 – offers around £300? 07415 093543 (Surrey).

65" WESTLAND WYVERN airframe only, elect retracts U/C doors open and close, double flaps, dummy prop, full cockpit with details, fuselage and plan all available. Wings not available - £500. Buyer to collect. 07759 396767 (Oxford).

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

WANTED

GOLDBERG JUNGMANN kit, in box. Great Planes Super Skybolt ARTF in any condition. Great Planes Shoe String, fibreglass version. Top prices plus postage paid! Call Conor on 0857 317939 (Dublin).

DRC GLIDER WINCH. Also, RES 2m span lightweight glider. Prefer pod and loom. Pick up available in Cornwall or Deven, otherwise RM at cost. Call Allan on 07840 423893 or email allanglover2@yahoo.ca

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

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

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

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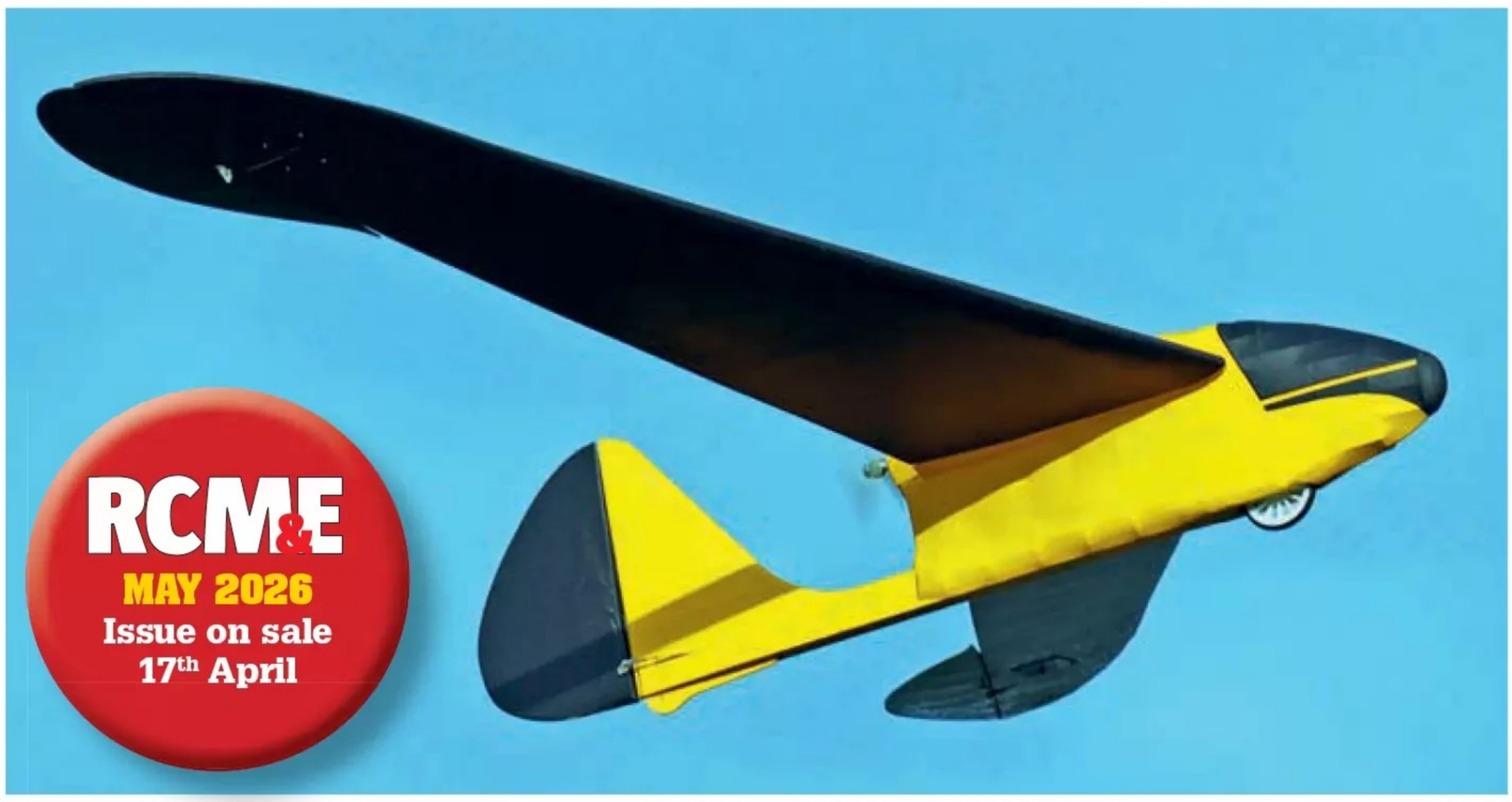
Next issue

BERNARD GROSS FLYING WING

Around September or October Tim Kearsley starts thinking about what to put on his building board for the winter season. Whilst browsing RCM&E he came across Modern Vintage Models. MVM take vintage designs and bring them into the modern era, using modern technology and materials to produce beautiful, laser-cut kits. Tim's eye was drawn to the Bernard Gross Flying Wing. Spanning 94 inches (2.4 metres) this model was originally designed in 1948 for free flight. The wings are swept back, and the fuselage is a pod and boom with a fin and large rudder but no tailplane. Elevons on the wing tips provide pitch and roll control. Thrust is from a pusher prop behind the wing.



3D FILAMENT CHOICES

If you 3D printed a plane a few years ago you would likely have made it from foaming light weight PLA (LW-PLA) and carbon fibre rods, with the odd bit of TPU for the wheels and hinges. You might also have made the odd part from regular PLA. If you considered yourself a real man, you might have built the whole thing from regular PLA, which Kev Scott did that with his first 3D printed plane. The only problem is it is difficult to maintain that real man image when there are tears running down your face due to its inevitable end! This is one of the problems with PLA - it can be quite brittle. However, moving forward to the current day, there are a lot more materials available. But some of the alternatives are on the heavier side and wouldn't necessarily be a good choice for printing a model aeroplane. Join Kev as he discusses the wide range of filaments now available and highlights the best ones for aeromodelling use.

Evo picture courtesy of planeprint.com

SKYBUG ONE

Our two-part Pro-Plan feature about Lindsay Todd's sci-fi inspired 'insurance recovery' aircraft continues in the May issue. Next time Lindsay completes the build of Skybug's distinctive anhedral wing and finishes the model using a pre-planned 'yellow over silver and rubbed back to create a used look'. Ground handling is much like an R/C car, so no issues present themselves once the four-wheel machine is trimmed to track straight. Once flying speed is reached Skybug will lift off cleanly and the controls offer a nice crisp response.

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PARTING SHOT

Snap Roll, Panic!
Dave Oliver was flying his Panic biplane with other Panic enthusiasts at the Woodspring Wings 2025 Fly-In when he decided to throw in a Snap Roll. But he wasn't expecting the result as the engine and firewall parted company from the airframe!

Apparently, the glue joint had weakened over time and the inertia of the manoeuvre had caused the separation. To add insult to injury the aircraft fell into the stream that borders the site, but Dave managed to retrieve it, along with the engine which had landed some 30 metres away from the model.

Mike Freeman

DATAFILE

Camera:	Nikon D500
Lens:	Nikon VR 70-200mm f/2.8E
Aperture:	f/8
Shutter Speed:	1/1000s
Exposure Mode:	Shutter Priority
Focal Length:	200mm
ISO:	100
Metering:	Centre Weighted
Exposure Comp:	0EV

Pilot AEROBATIC PERFECTION

SBACH 342 V2

THE NEXT-GENERATION SBACH 342 IS HERE

NEW ARRIVAL
75IN & 103IN

103IN
Wingspan: 103.9in (2.647m)
Engine Required: 100-130cc or electric equivalent
SKU: PIL842/843 £1399.95

Red/Silver/Black
(Scheme No. 11)

Green/Black/White
(Scheme No. 10)

75IN
Wingspan: 75in (1.9m)
Engine Required: 30-40cc or electric equivalent
SKU: PIL844/845 £629.95

EXTRA NG

NEW COLOUR SCHEMES

Blue/Yellow/White
(Scheme No. 08)

Green/Blue/White
(Scheme No. 09)

Pink/White/Black
(Scheme No. 10)

67IN
Wingspan: 67in (1.7m)
Engine Required: 20cc or electric equivalent
SKU: PIL896/897/898 £499.95

78IN
Wingspan: 78in (1.97m)
Engine Required: 30-40cc or electric equivalent
SKU: PIL871/872/873 £629.95

103IN
Wingspan: 103in (2.63m)
Engine Required: 80-120cc or electric equivalent
SKU: PIL883/884 £1299.95

EDGE 540 V3

Red/White/Black
(Scheme No. 01)

NEW ARRIVAL
75IN & 85IN

Yellow/Blue/White
(Scheme No.02)

75IN
Wingspan: 75in (1.9m)
Engine Required: 30-40cc or electric equivalent
SKU: PIL858/859 £619.95

85IN
Wingspan: 85in (2.15m)
Engine Required: 50-60cc or equivalent electric
SKU: PIL848/849 £799.95

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- Wingspan: 1,214mm
- Length: 1,1126mm
- Wing area: 487 sq.in
- Flight weight (exc battery): 980 grams

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RRP: £359.99

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28

24

500

400

300

3mm BALSA SHEET

6mm SQ. BALSA

F1/F1A

F2

1.5°

3mm BALSA BATTERY FLOOR

3mm BALSA SHEET

6mm SQ. BALSA

3mm BALSA SHEET

0.5mm CLEAR ACETATE SHEET
SECURED WITH RC MODELLERS
GLUE/SMALL SCREWS

6mm SQ. BALSA

3mm BALSA SHEET

HARDWOOD
U/C BLOCK

2mm ALUMINIUM STRIP &
Ø3mm STEERABLE FRONT AXLE

20

16

3mm BALSA
SHEET

F3

CG

6mm SQ. BALSA LONGERONS

3mm PLY RX MOUNT
ACROSS FUSELAGE

3mm PLY SERVO
MOUNTS ACROSS
FUSELAGE

3mm MED. BALSA SHEET
FUSELAGE SIDES TO

6mm SQ. BALSA LONGERONS

3mm LITE PLY
SERVO MOUNTING PLATE

HARDWOOD
U/C BLOCK

STEERING
SERVO

6mm SQ. BALSA

3mm BALSA SHEET

MYLAR H
BETWE

16 12 8

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KELSEY

TO
SS

3mm LITE PLY &
6mm BALSA PLATE FOR
WING BOLTS

CAPTIVE
NUT

F4

RUDDER &
ELEVATOR
SERVOS

A LONGERONS

HARDWOOD
U/C BLOCK

3mm BALSA DOUBLER
INSIDE FACES

6mm BALSA DOUBLER

MYLAR HINGE TRAPPED
BETWEEN LAYERS

TAILGATE LATCH
3mm PLY WITH Ø6mm DOWEL
WITH 1.5mm HOLE FOR Ø1mm
WIRE 'R' CLIP

TO VIEW ALL AVAILABLE PLANS

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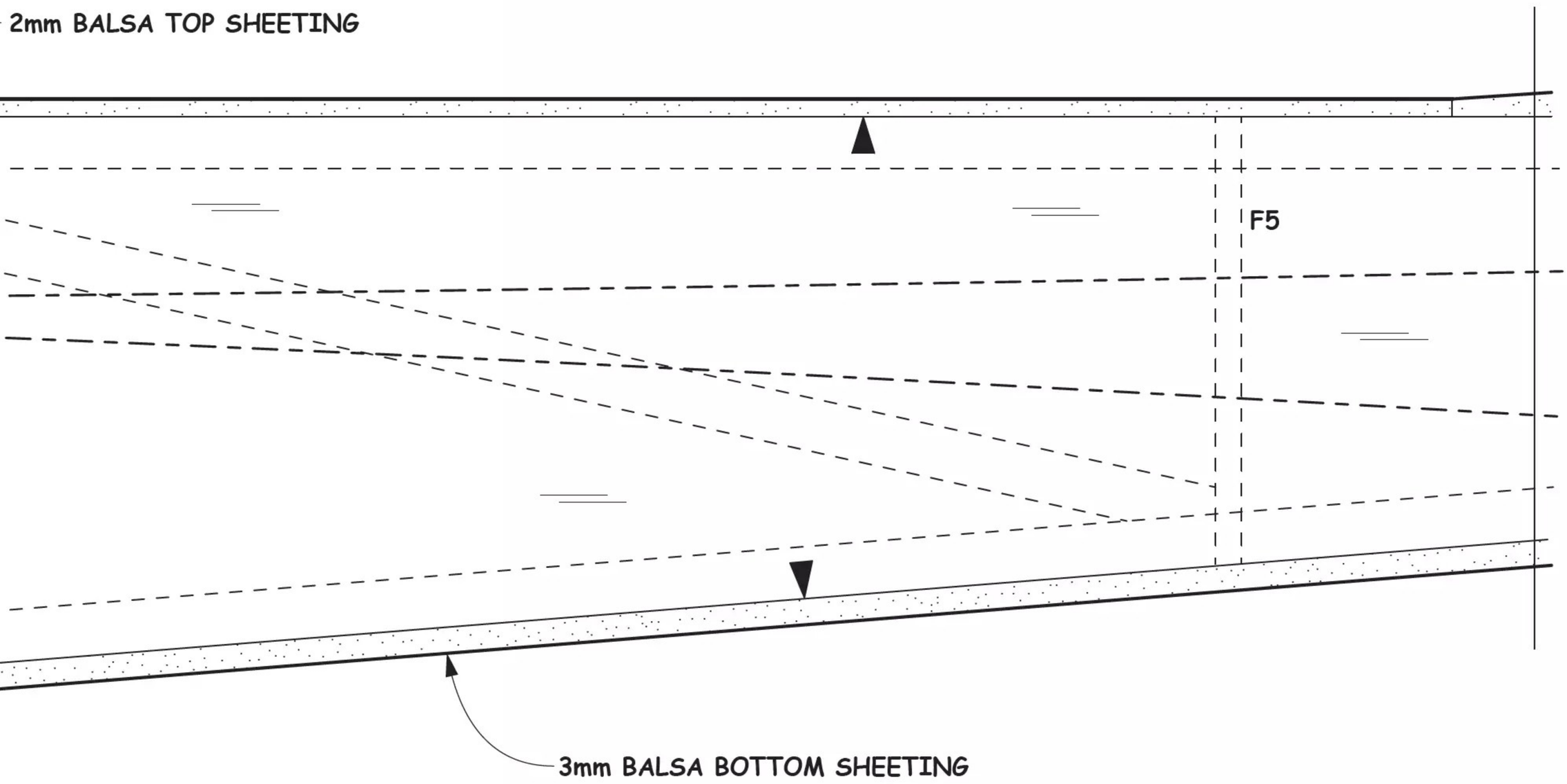
SCALE
INCHES

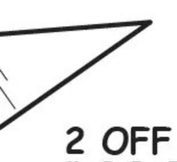
RCM&E

SKYBUG ONE

DESIGNED BY LINDSAY TODD

PLAN No: RC2282	No. OF SHEETS: 1 OF 4	First published in RCM&E April 2026





2 OFF 3mm BALSA DOUBLERS
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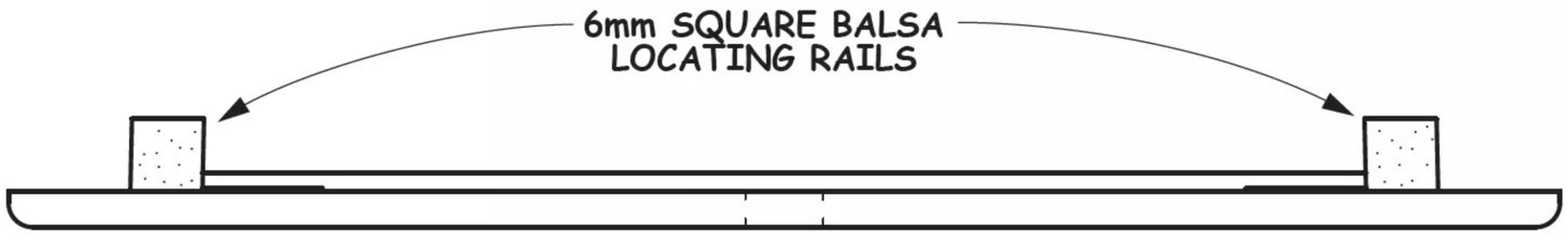
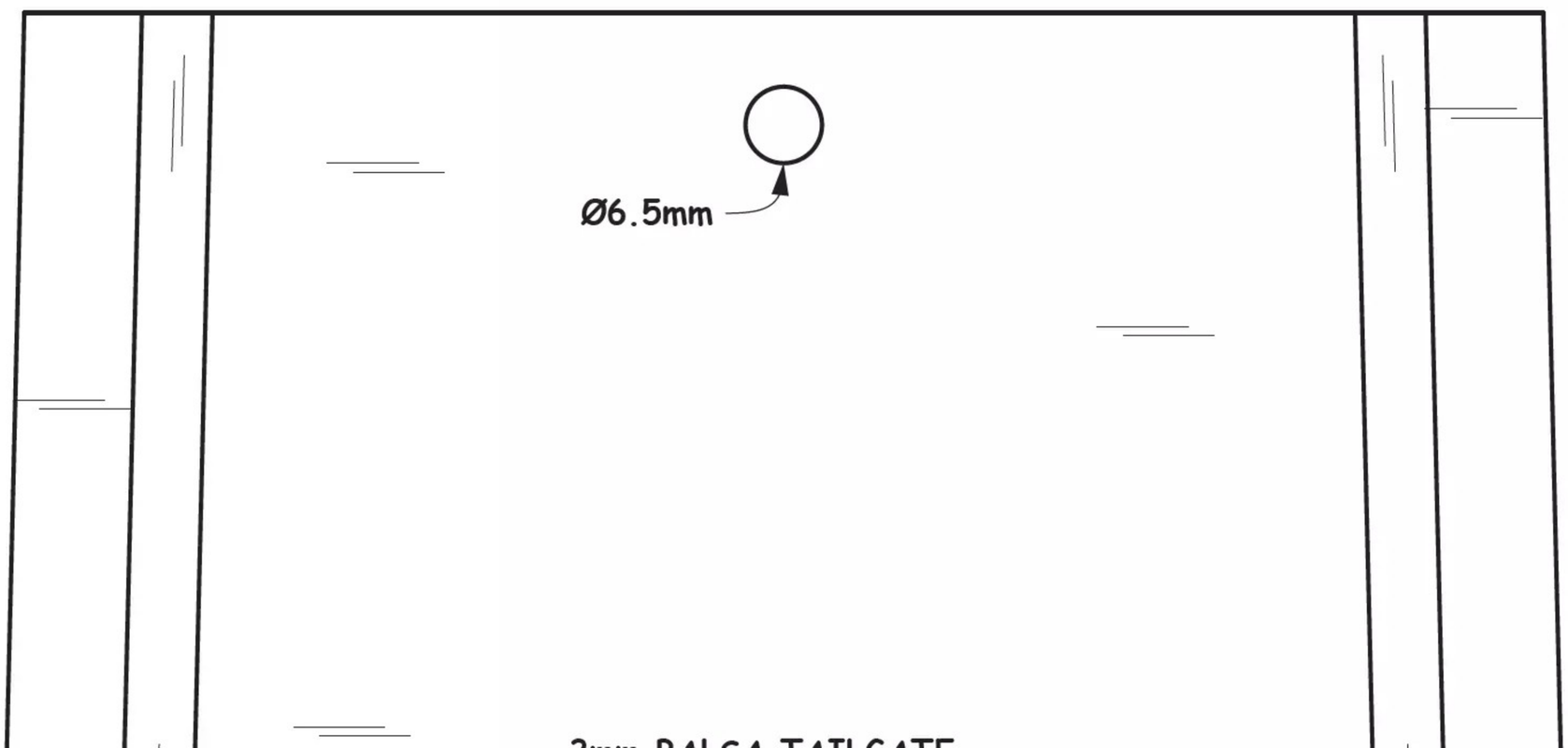




HARDWOOD
U/C BLOCK

2mm ALUMINIUM STRIP &
Ø3mm STEERABLE FRONT AXLE

Ø2.5" WHEELS

3mm BALSA
SHEET

F1
F1A

F2

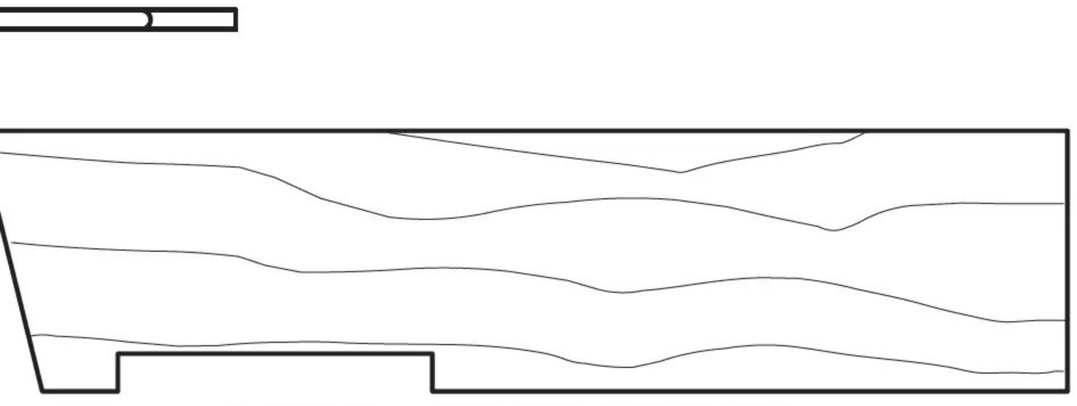
200

100

SCALE
MM

100

3mm BALSA SHEET



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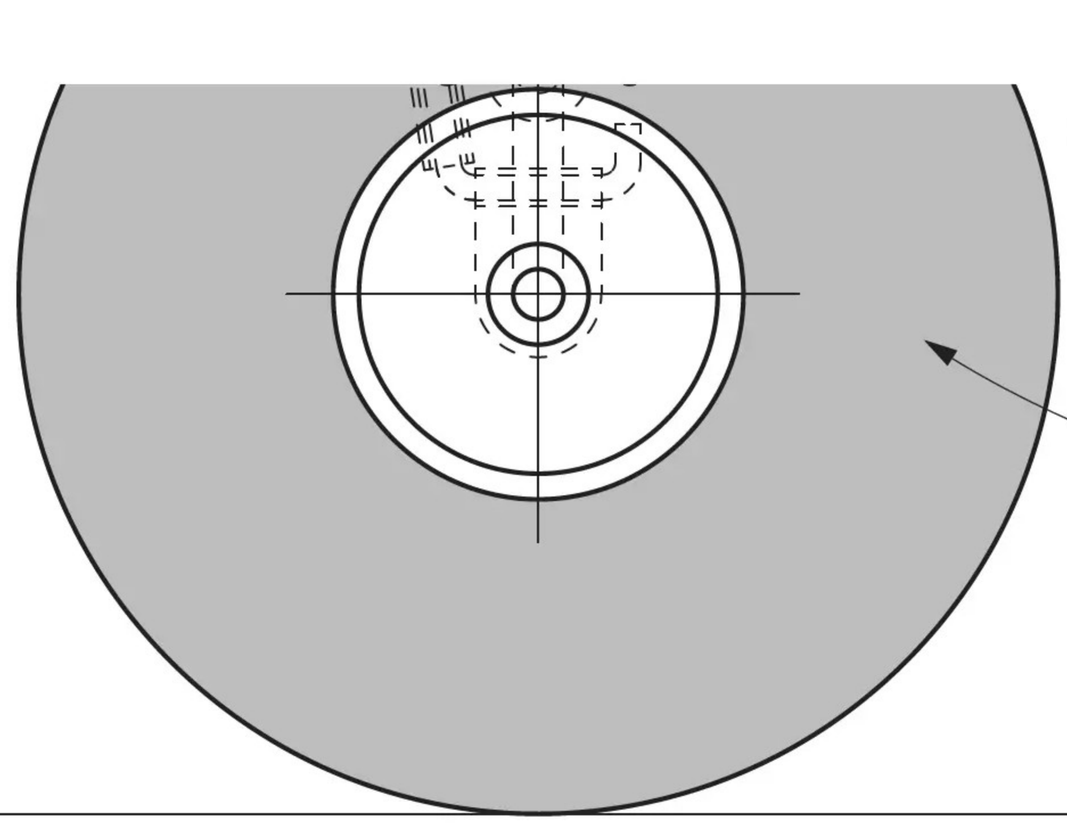
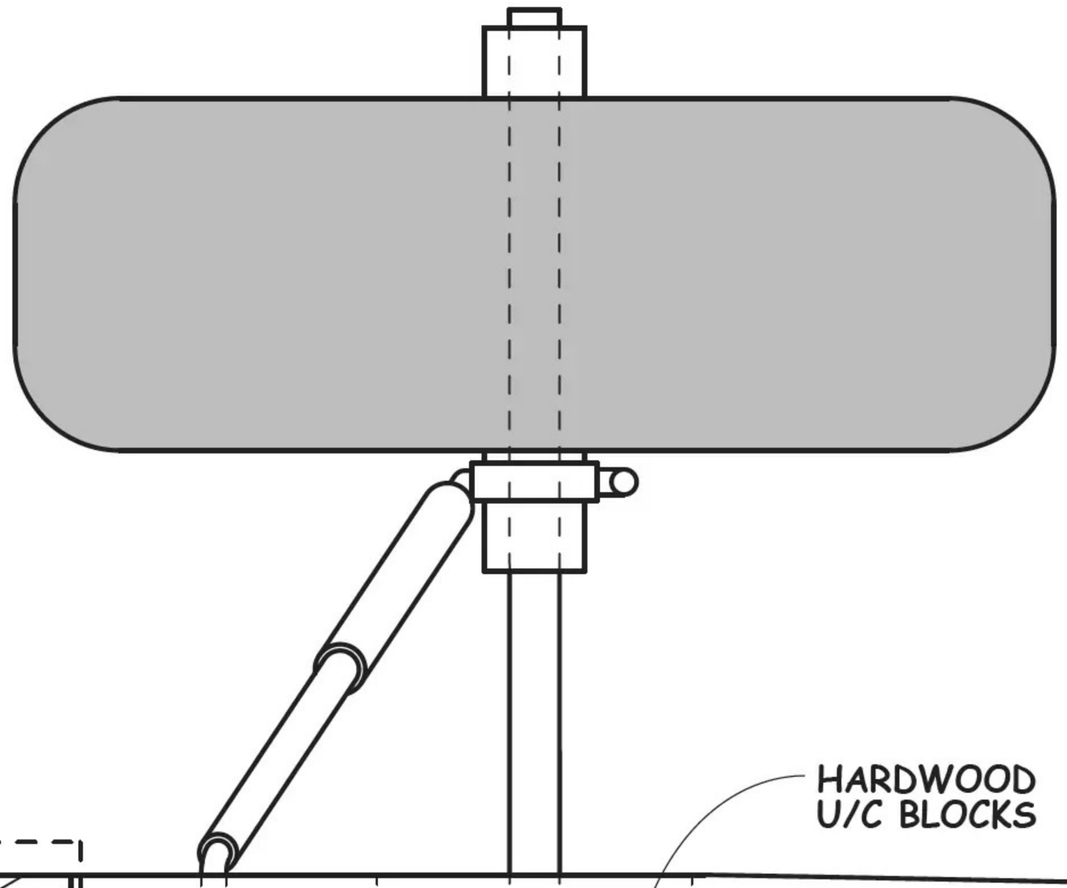
(LOCATION SHOWN SHADED)



MYLAR H
BETWE



3mm BALSA SHEET

HARDWOOD
U/C BLOCKS

F3

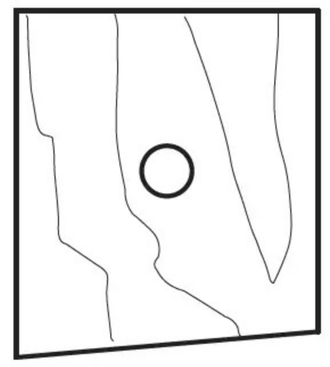
200

300

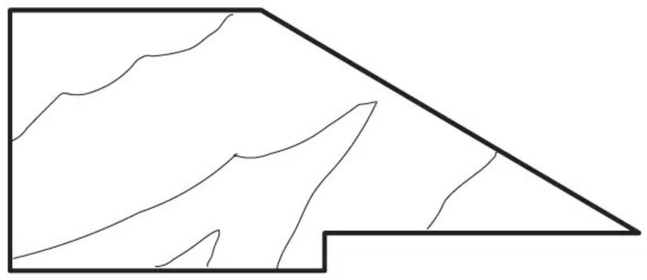
400

MYLAR HINGE TRAPPED
BETWEEN LAYERS

Ø3" WHEELS



2 OFF 3mm PLY U/C DOUBLER
(LOCATION SHOWN SHADED



2 OFF 3mm PLY U/C DOUBLERS
(LOCATION SHOWN SHADED)

VOOD
LOCKS

6mm SQ. BALSA

3mm MED. BALSA SHEET
FUSELAGE SIDE

F4

3mm PLY SERVO
MOUNTS

3mm LITE PLY &
6mm BALSA PLATE FO
WING BOLTS

400

500

3mm BALSA TAILGATE

6mm SQUARE BALSA
LOCATING RAILS

1.5mm BALSA DOUBLER

MYLAR HINGES TRAPPED
BETWEEN LAYERS

F5

2mm BALSA TOP SHEETING

12

16

20

600

700

28

24

500

6mm SOFT BALSA
SANDED TO SHAPE

400

F6

F7

3mm BALSA BOTTOM SHEETING

RUDDER CRANK MOUNTING
1 OFF 3mm MARINE PLY ON
TOP WITH 3mm LITE PLY BELOW
SANDED TO THICKNESS

300

6mm TRIANGLE BALSA
ABOVE & BELOW

20

16

F1
3mm LITE PLY

F1A
3mm LITE PLY

F3
3mm LITE PLY

16

12

8

F2
3mm LITE PLY

3mm LITE
(BOTTO

RUDDER CRANK MOU

3mm MARI
(TOP

F6
3mm LITE PLY

SCALE
INCHES

RCM&E

SKYBUG ONE

DESIGNED BY LINDSAY TODD

PLAN No: RC2282	No. OF SHEETS: 2 OF 4	First published in RCM&E April 2026

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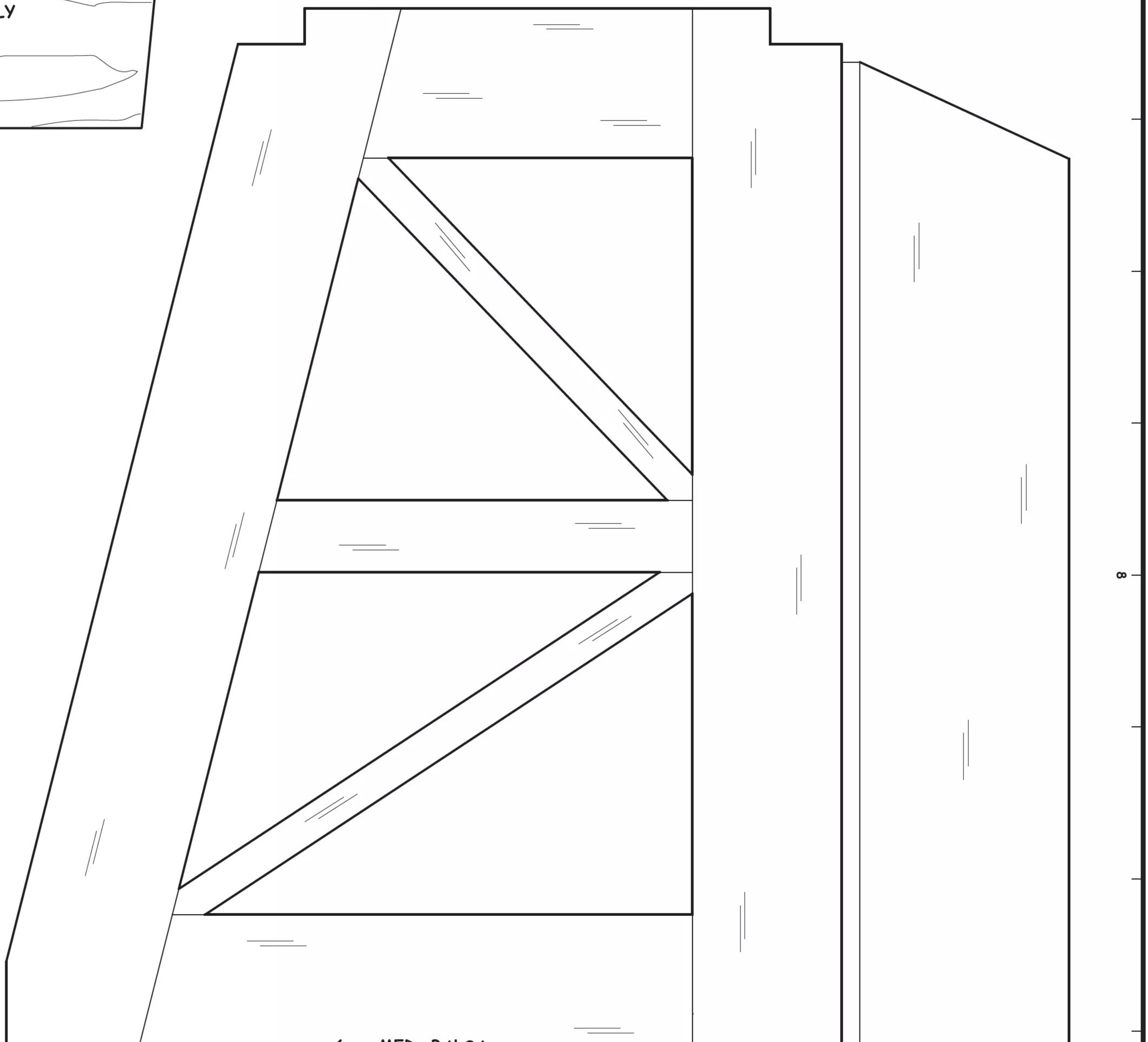
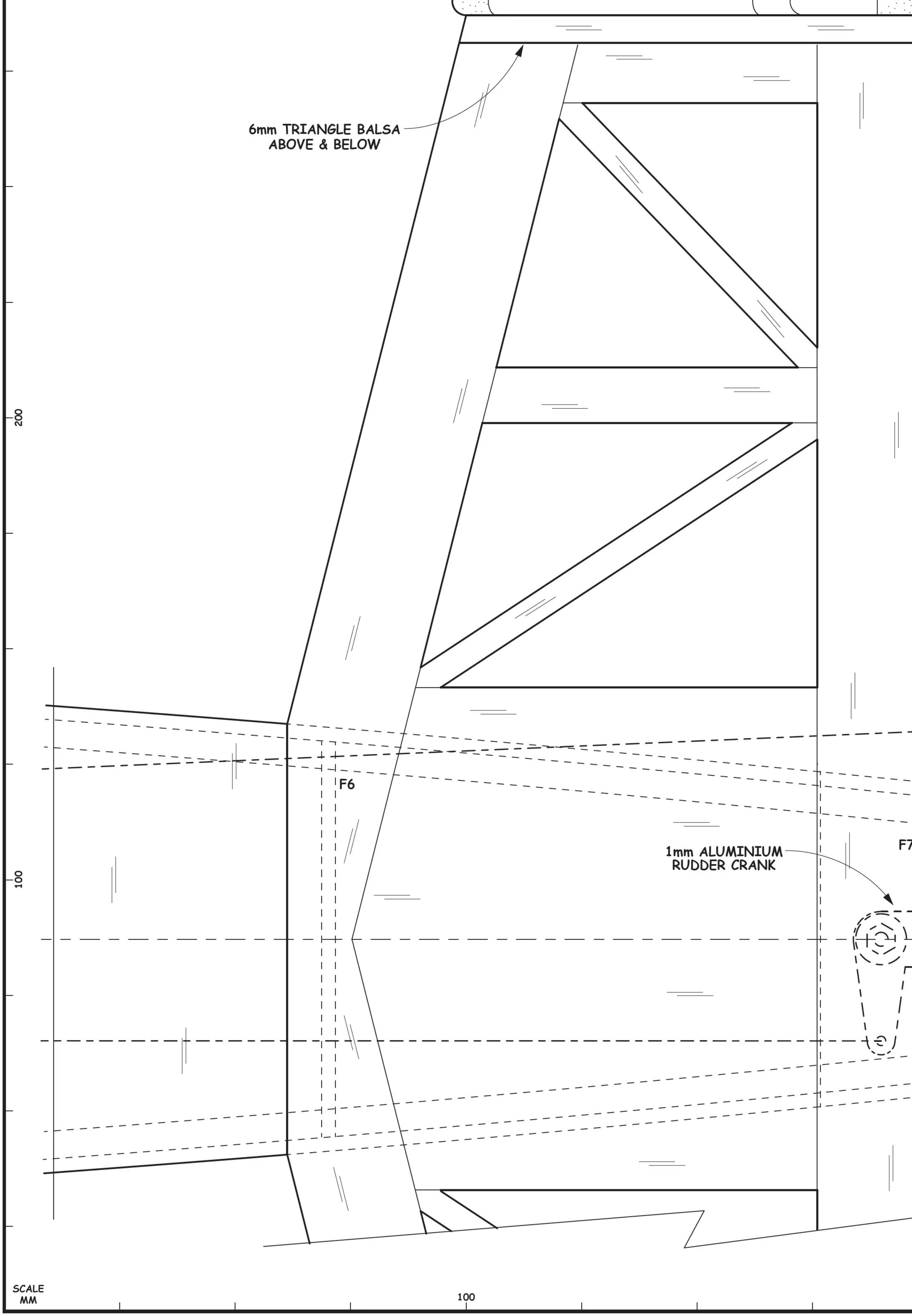
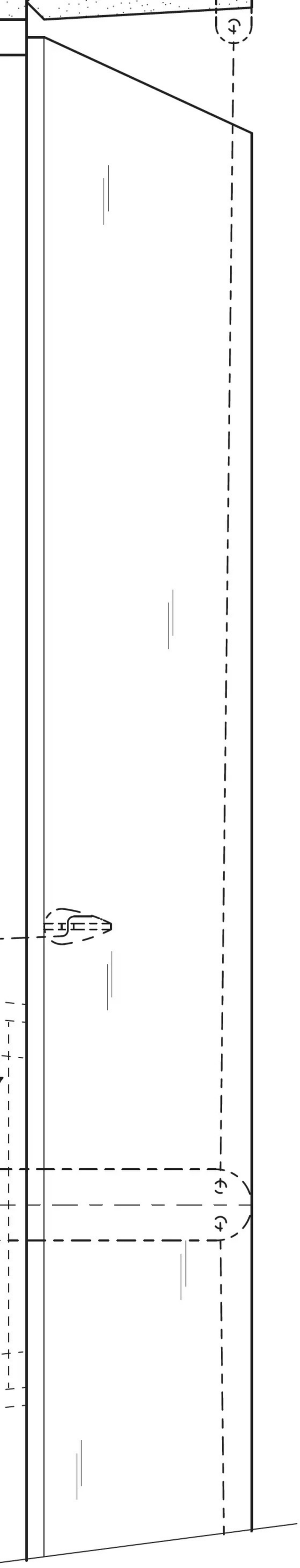
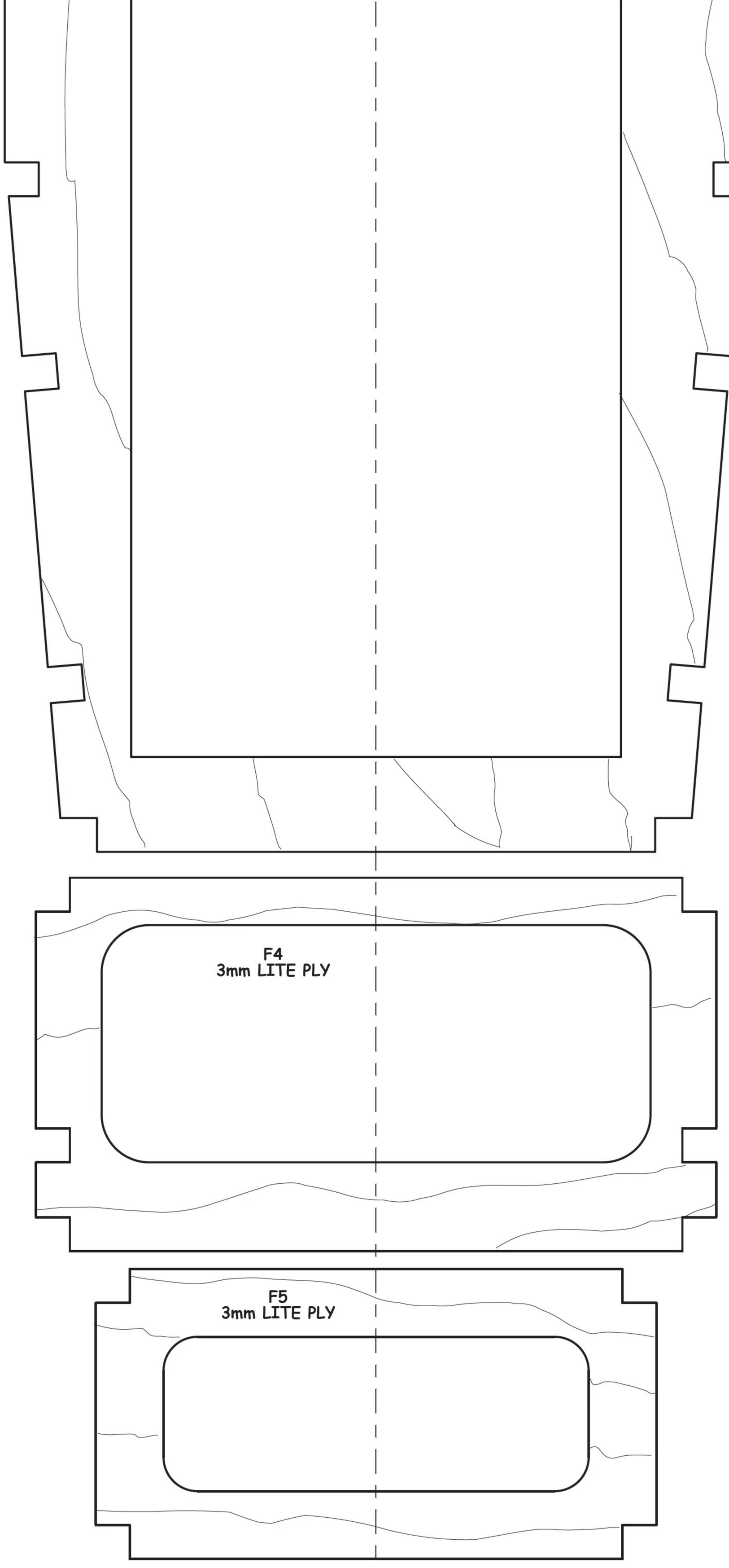


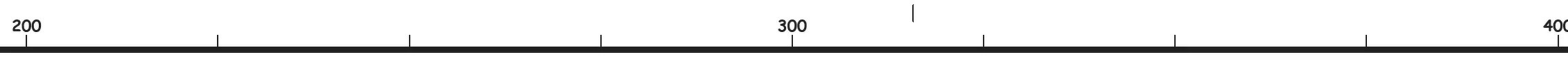

6mm TRIANGLE BALSA
ABOVE & BELOW
200
100
F6
1mm ALUMINIUM
RUDDER CRANK
F7
SCALE
MM
100

F4

F5







F6
3mm LITE PLY

F7
3mm LITE PLY

6mm MED. BALSA
SHEET & STRIP
FINS & RUDDERS
(2 OFF EACH REQUIRED)

400

500

6mm MED. BALSA
SHEET & STRIP
TAILPLANE & ELEVATOR

12

16

20

600

700