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VOL. 68 NO. 11 NOVEMBER 2025 www.modelflying.co.uk

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Welcome

Welcome to the November 2025 issue of RCM&E.

With all the sunny weather we've been lucky to have over the summer, my local flying patch, where sheep are usually put out to pasture, has not offered a terribly good menu for grazing. Of course, what goes in must come out, to put it plainly, so one benefit of not having any animals around is that there were a lot fewer 'obstacles' to avoid when taking off and landing. And those that were there were rather desiccated and largely scooped up during mowing sessions. The resulting 'clean' strip has been great for flying from but with everything greening up following recent showers and thunderstorms I suspect it won't be long before our woolly friends return.

Another benefit of their absence is far fewer flies wafting around over the patch. Unfortunately, larger chaps like me are somewhat of a beacon in this respect and when the sheep are around, I often find several of the annoying critters flying overhead, divebombing my scalp like mini airgun pellets. I find a wide brimmed hat is a great help to keep them out of my vision and I rarely fly in summer now without my Tilley. But sometimes I can still hear our tiny friends pinging off the fabric. I've long been thinking of trying out a fix that I believe was used by filmmaker Johnny English, who was well known for having feathers in his hat band. The reasoning is that the little devils will float around the highest point of the CO2/heat generating beast they are targeting - i.e. me! So, raising that point by several inches by pinning on a long feather is claimed to raise their flightpath. And by golly, even though it's early days, I think it works!

Please don't go using found feathers though as it's illegal to use feathers from protected species. So, unless you are sure of the breed that donated your feathery find then best give it a miss. I have two feathers and both came from toys found in souvenir shops in Welsh castles and so were ethically sourced. One was from a Robin Hood hat and the other was sold as a quill with a short biro inserted in the end.

Ok, now's the time to check out what we have put together for you in this issue. We start with Phil Stevens, who writes about two scale model builds used as STEM projects by local schools, based on the attractive Fairtravel Linnet. Our regular Retro Ramblings column from Sean Garrity is next and then it's over to Danny Fenton who reports from the Best of British Fly-In held at BMFA Buckminster. Dirk Tinck is well known for his Power Scale Soaring versions of Fouga Magister jets but in this month's Model Magic he relates the build of a larger moulded version for EDF.

For this month's pull-out Pro-Plan Dave Goodenough presents the Nippon Tombo, a simple to build Japanese pre-war glider. David Ashby files his latest Just For Fun column and then join me at the flying field as I put Volantex's micro F4U Corsair through its paces. John Stennard (Insider) returns with a look at two new potential indoor flyers, plus he updates the small heli fleet he uses for talks and demo sessions to the public. Our penultimate slot this month is taken by Dave Goodenough (One Man & His Shed) who has put together another fine mix of shed based musings. Finally, for my next RTFM feature I start to reveal my personal bucket list, concentrating on Keil Kraft's Elmira and Fleetwing.

I hope you enjoy reading it all.
Happy Flying!

Kevin Crozier

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On the cover

Photo: Phil Cooke

Dirk Tinck's EDF Fouga Magister project started many years ago when he made a foam Magister spanning 1.5 m fitted with two 70 mm fans. It is still flying to this day. Dirk then became interested in Power Scale Soaring and after a visit to The Great Orme with the PSSA he decided to make a big PSS Fouga. The new model had a moulded fuselage and foam cored wings. His first big PSS model was born! After sloping the model for a few years Dirk wanted to be able to fly closer to home, his nearest slope being two hours away. So, the idea came about to make the same plane but suitable for flat field flying - a big, scale, EDF Magister!

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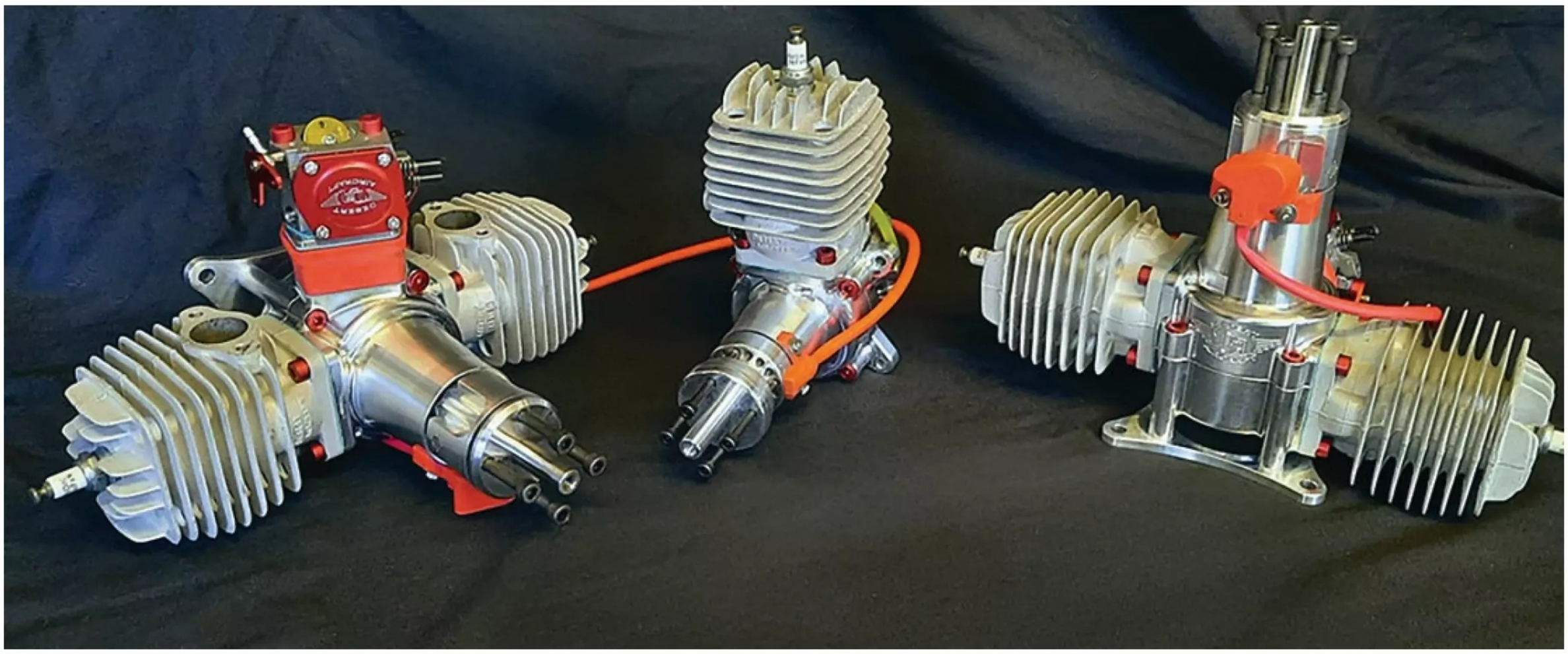
SWITCH ON

Our latest round up of model flying news and miscellany

AEROBATX POWER UK MODEL AVIATION WITH DESERT AIRCRAFT



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WORCESTER'S WARM WELCOME

I've been a member of Worcester Model Aero Club for just over a year and from day one I was made to feel at home and amongst close friends. One thing that blew me away was the 2024 AGM and how everyone was prepared to do something for the club and no-one appeared to be hiding behind chairs. One such person was Roger Styles who offered to arrange a series of events and what a superb job he's done, with help from others along the way.

What a fantastic year 2025 has been for the club and for me, starting with two curry nights arranged by Roger. The food was great, the banter fantastic and the model talk superb - what a great way to get clubmates together on a dark night, talking model aircraft. Plus, all through winter we were out flying at our winter perfect Goosehill site.

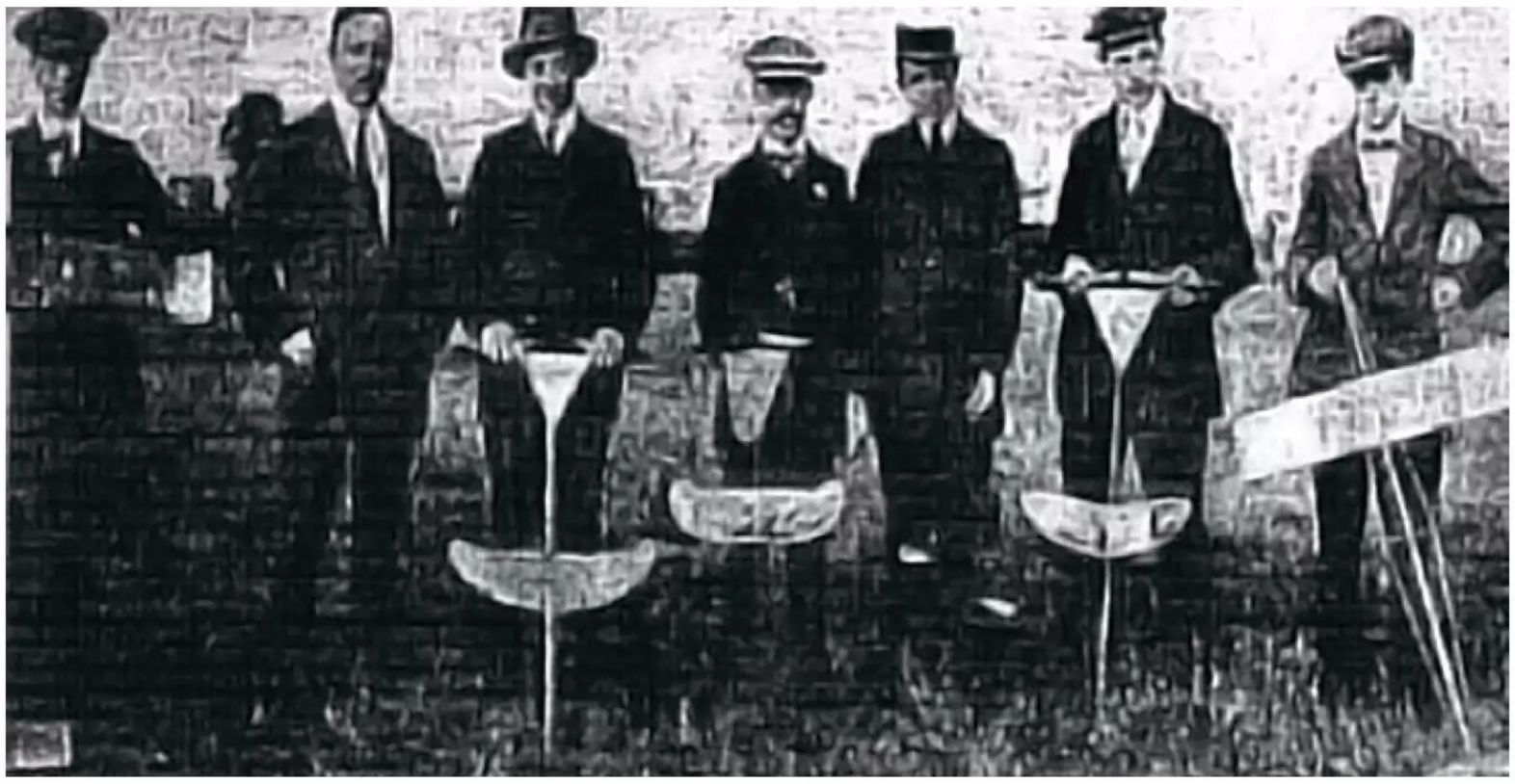
When spring arrived, we started the series of fun fly events that Roger had put together, one every two weeks, and crafted so that anyone could have a go, no matter their flying skills: Touch & Goes, Timed Flight, Spot Landing, Limbo and Balloon Popping. A points system was put in place and the overall winner at the end will receive a lovely trophy. *(And the winner is... Neil Hall! Well done, Neil—KC)*

The events have been evenly spread across our two flying sites on a Wednesday evening after 6 pm, meaning even most members who work can attend. The turnouts have been great. We also had a Sunday BBQ, that was also a scale day, with some lovely models on display.

Every event has brought fun and laughter and has been a massive success. We have another BBQ arranged, along with some meals out, including a Christmas Dinner. Roger told me that he really enjoys arranging these events and that is great to hear. A big thanks also go to the guys who have helped Roger along the way, especially Chris Layton.

The Worcester Model Aero Club may very well be one of the oldest model flying clubs in the world but it is still one of the most proactive, whether it be by doing things for its own members or by doing its best to promote our fantastic hobby. For me this also makes it one of the best model flying clubs in the world and I feel very privileged and proud to be a member.

Neil Hall



The models may have changed a bit since WMAC's first events in the early 1900s, but current members are taking to the club's new fun fly series with gusto.

MONTROSE MAC FLY-IN

CLUB NEWS, PLEASE

Regular reader, Denis Welchman has been in touch with the following enquiry:

"Over the years I have noticed that many clubs who are looking for members have had details of the club published in RCM&E. I wonder whether you make a charge for this."

Thank you for your enquiry, Denis.

All announcements from model clubs in RCM&E are totally free, whether they are promotional pieces written to attract new members, as are often featured right here in Switch On, or maybe a club event open to external visitors, which will likely be used in our Going Places events calendar.

The only exceptions to this would be any organisation or association wishing to promote a commercial event, such as a model show, using a display advertisement which would need to be paid for. But even then, we are usually happy to give such events additional free exposure in Switch On to back up any adverts that may have been placed.

If you want to promote your club and share your activities with fellow RCM&E readers just send the Editor two or three hundred words and some good quality, high resolution (minimum 1MB) pictures, preferably showing some club members with their models or some pit action etc. and we'll do the rest.

So please don't be shy. We are keen to help model flying clubs in any way we can. The item opposite is a great example and was supplied by our Golden Glow correspondent Neil Hall as a follow up to his piece about the Worcester MAC in the last issue.

The Montrose club in Scotland held its annual fly-in over the weekend of August 1st – 4th at their local site, luckily missing Storm Floris, which caused much trouble up here. A good turnout of fliers from all over Scotland enjoyed the summer like conditions, with visitors flying literally from dawn to dusk over the weekend. There was a good variety of models on display, from vintage, diesel, control line, electric gliders, ducted fan and gas turbine to the F3 types, all flown enthusiastically by their pilots.

The Montrose members worked hard over the Friday to set up the event, marking out and cutting grass runways and putting up temporary fencing round the flying site. A lot of preparation needs to be done on a public park for this, such as obtaining permission from the local Council to extend the usual flying area to cover the entire park, getting the use of the adjacent Junior Football Club's facilities, publicising the event to modellers, arranging for them to camp on the park all weekend and chasing up raffle prizes. Thanks are due to all who helped make it work and make the event the success it has become, including Sussex Model Centre and CML Distribution for donating raffle prizes, and the club members and visitors who made the event happen.

Graham McIntosh

Two completed model Linnets await their first flights.

A TALE OF THREE LINNETS

Phil Stevens reports on two scale model builds used as STEM projects by local schools

Words & Photos: **Phil Stevens**

I doubt you will have heard of the Linnet aircraft, but you may have come across the Emeraude which was designed by Claude Peil and first flew in 1954. It is a low wing, two seat wooden aircraft with a fixed undercarriage and an elliptical trailing edge. Many aircraft were built both commercially and as home builds, and a good number are still flying. If you think it looks a bit familiar it ultimately served as the basis for the aerobatic CAP-10.

In the late 1950s Air Vice Marshal Don 'Pathfinder' Bennet started a company called Fairtravel and set up a small factory to build the Emeraude under licence. He called it the Linnet. Don believed that it would make an excellent RAF trainer but unfortunately it was not to be and, in the end, only five were built. Of these only one is currently airworthy, but there is a second, G-ASMT.

Work on the full size at Stokesley. Model bench in the background.

This was inherited by a friend of mine as a restoration project. He reached out to a local

school in Stokesley, North Yorkshire to see if the students could be lured away from their video games to get involved. The response was amazing and in fact a selection process was required to limit participation to a manageable number.

STEM PROJECT

The aircraft is in poor condition and perhaps not surprisingly for a 70-year-old wooden structure a lot of work is required. Work started on the engine, a Rolls Royce Continental 0-200 which has now been fully rebuilt and test run. Fuselage restoration is underway but it's slow going as many of the original glued joints have failed. In order for the students to see slightly quicker progress and to have a chance of flying an aircraft (albeit not the full size) we decided to build a scale model.

The project had been set up as a STEM activity (Science, Technology, Engineering and Maths) so on-line training was required to become a STEM ambassador and to understand the world of 'safeguarding'. I also dragged a fellow club member, Chris Wilson, into it as it felt like there was hard work ahead.

A trawl of the internet came up with a 1/5th scale airframe for an Emeraude drawn by Bob

Replacement 'biscuit' joints, glued and stapled on the inverted fuselage of the full-size Linnet.

Early construction of the tailplane, getting used to working with balsa.

Morse in 1969, plus an article from 'American Aircraft Modeler', both available on-line. At 65" span it was a good size and whilst originally designed for a Merco 60 we decided to convert it to electric for ease and convenience. The outline was close to the Linnet, but we made a couple of tweaks for realism and, of course, we were able to incorporate modern lightweight materials.

Somewhere along the line another local school, The King's Academy in Coulby Newham, found out about the project and whilst we couldn't accommodate them on the full-size restoration, I agreed, in a moment of weakness, to build a model with them too!

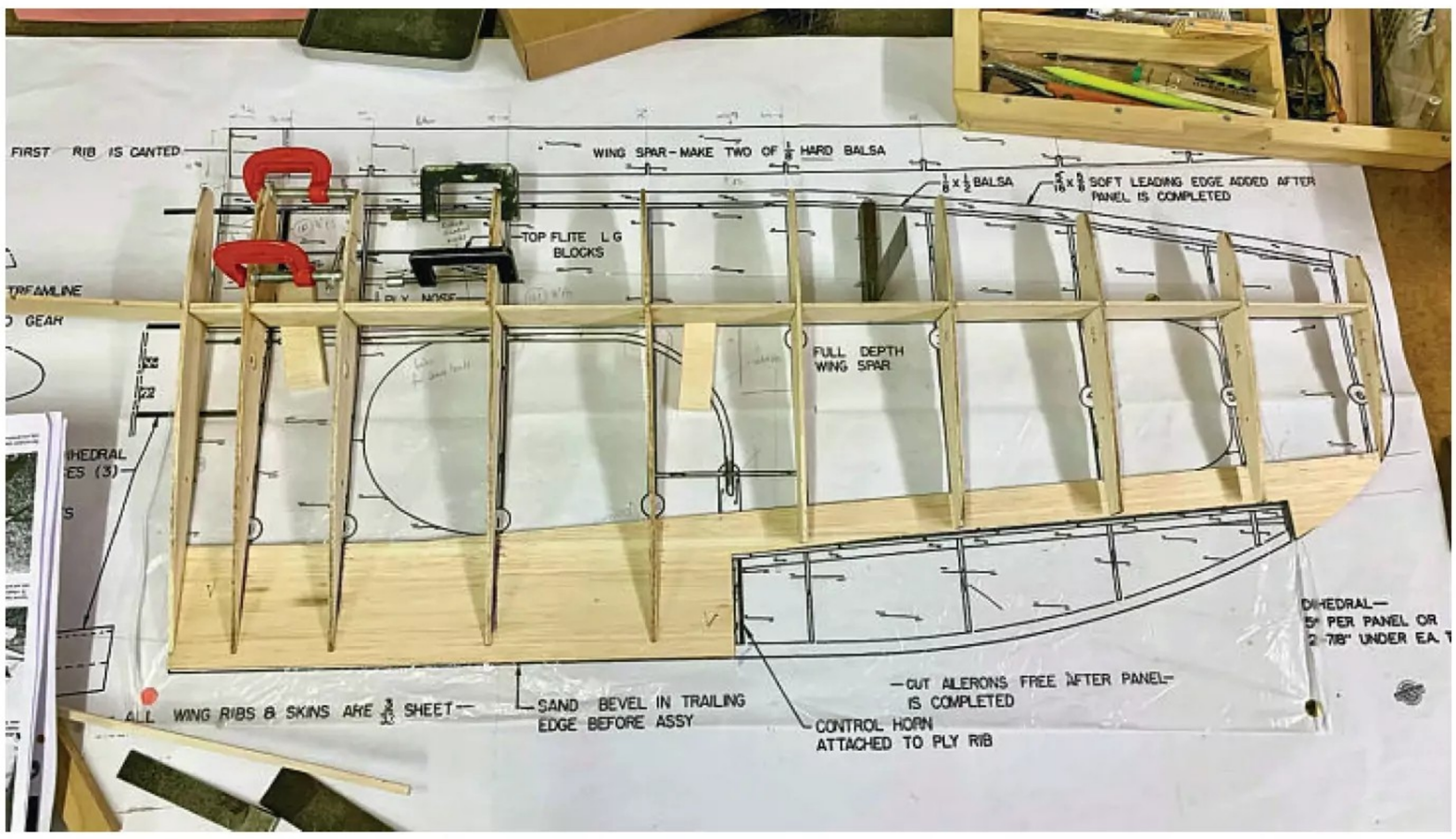
CALCULATIONS

We did a bit of maths (well it was a school project) and decided that 4S was the way to go, with a 60-amp speed controller and a scale sized 14" prop. A call to George Worley at 4-Max confirmed that we were close, but he recommended a lower kV motor and a slightly larger prop, hence a PO-5055-500 with a 16 x 10 JXF. After a quick description of what we were up to George offered a discount

Fuselage stringers being attached at The King's Academy.

Four hands are better than two when using thin cyano!

Laminated leading edge being fitted to the Stokesley model.



Undercarriage supports being added during the wing construction.

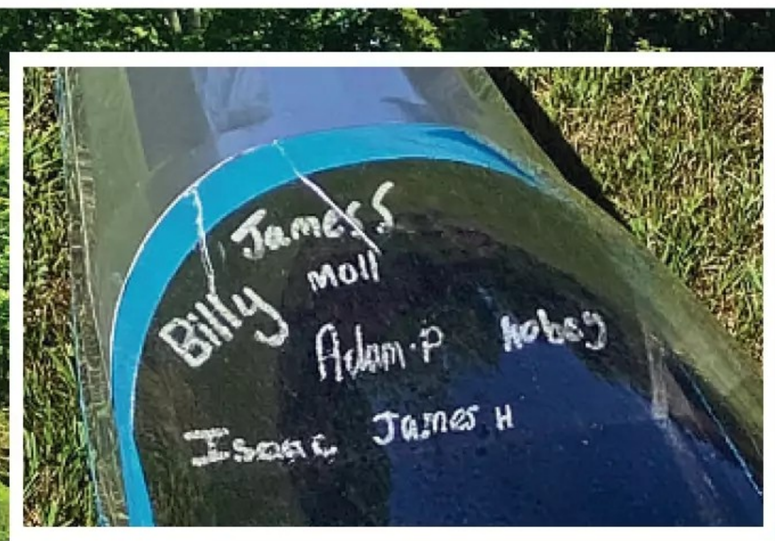
on parts purchased for the project which was really helpful.

We started with the tail feathers which seemed like a good way to get the students familiar with working with balsa and super-glue. Many of them had never come across balsa before and teaching them to cut it with a scalpel was a little nerve racking, although I am proud so say that no injuries were sustained in the building of these models.

The fuselage was conventional, but we substituted lite-ply for many of the formers. We ultimately got permission, after risk assessment, training and supervision, for the students to use a small bandsaw and scroll saw for cutting out. From the start we emphasised light weight and accuracy, and whilst we may have made some of the bits more than once the photos show that good fits were achieved.

Stokesley's model is a replica of the full size which is under reconstruction.

Names of the Stokesley students are recorded in the model.



A nice record of The King's Academy students.

G-KING is a made-up registration for The King's Academy model.

The original colour scheme really 'pops' with some sun on it.

We designed a battery box but when we came to set up the C of G it was way too far back. In the end the battery ended up as close to the firewall as we could get it. Even then a small amount of lead was needed. Interestingly, there was no C of G marked on the plan but a third of chord back from the leading edge gave us a good starting point. There were no control throws shown either!

The plan showed a huge amount of side thrust and down thrust which I was a bit sceptical about but replicated using threaded bar stand-offs on the motor which were designed to be adjustable. The down thrust proved to be excessive and was quickly reduced after first flights, but the side thrust was about right.

MOULDINGS

In his write-up back in 1969, Bob Morse mentioned that there were '*two pretty hard nuts to crack in building this bird*', the canopy and the spats. Clearly, Bob wasn't working with a well-equipped academy that just happened to have some superb vacuum forming equipment! The spats were made first and balsa plugs were carved and coated with resin. After a bit of trial and error with heater timings we managed to get some very respectable mouldings.

The canopy proved to be much more difficult. A plug was made using coated foam, but it got too hot and distorted badly. Plan B used catalyst filler smeared over the plug and sanded back, which was better but still susceptible to heat. Plan C required fibreglass cloth and resin which fared much better and produced a couple of quite good canopies.

It was a great learning point - not everything works first time - and it was interesting to get the students to try and figure out what we should try next.

The King's model has a colour scheme influenced by the only airworthy Linnet.

With the buddy box set up it was time for the students to fly their model.

No problem with the spats on short grass.

Taking off on around half throttle

CURVY WING

The wing is probably not what I would have chosen for a first build. It's a beautiful shape but the section is semi symmetrical. It thins out towards the tips and, of course, it has that elliptical trailing edge. The solution Bob chose was a full depth spar with notched ribs, not a technique I have used before but actually it was reasonably straightforward in practice. The spar was made from the hardest 1/8" balsa I could find - a piece I've had in the box for years and thought I would never use! This was reinforced at the centre section using ply dihedral braces and the second wing was built onto the first. Bob built his wings separately and then glued them together, reinforcing the centre section with a glass fibre bandage. I hate doing this and I'm pleased to say the alternative we chose has withstood all the aerobatics we have thrown at it so far.

I baulked at cutting out all those wing ribs separately, even with lots of students to help. The only sensible thing to do was to pop round to my friend and neighbour, Steve Hayley of Sky High RC. Steve was able to convert the rib forms shown on the plan to cutting files and produced a beautiful set of ribs for both schools. Now he has the files in his large portfolio of models he can produce extra sets if you're interested.

Other wing changes included individual aileron servos and solid, carved ailerons. The built-up ailerons on the plan looked far too faffy!

FINISHING

Before too long we had a couple of airframes that were starting to look quite a lot like a

Rightly proud of their work: Molly, Jamie, James, Billy and Adam. Nice job!

And away!

Coming in for a 3-pointer.

Linnet. The next question was around finishing and colour schemes.

The Stokesley build was a no brainer. We had to reproduce the colour scheme of G-ASMT, the aircraft we were restoring. The red and white scheme with black stripes and lettering really pops and looks fantastic with some sun on it.

At The King's Academy talk amongst the students of a bright pink scheme got me a little concerned and so I suggested that we look at the only currently flying Linnet, G-ASZR, which is blue and white. Their school colours are grey and blue, so we took the scheme and substituted silver for white. Of course, the registration had to be G-KING.

We used covering film from 4-Max which I have to say goes on beautifully. After a bit of tuition, the students quicky got the hang of it. I'm told silver can be difficult to apply but it didn't seem to be a problem. All the lettering and stripes were cut out of film.

The cockpit is huge and looked a bit empty, so pilots were purchased. One of the students at King's is a talented artist and she was enlisted to paint both pilots which she did brilliantly. They also came up with the idea of each student signing the rear cockpit former, which was a nice touch.

The canopy is held on with small screws, a deliberate move as we hope, as a future project, to install an FPV camera and have the students fly it via a virtual reality headset, just like the real thing.

WEIGH IN

Upon completion we did a bit more maths. Both models came out at around 6.2 lbs, which equates to a wing loading of 18 oz./sq. ft., so quite promising. With the 16 x 10 prop and full throttle we saw 41A or about 600W, so close to 100W/lb. However, with a thrust of 7 lbs I had no doubt they would be adequately powered.

The models took us just over a year to build and as they neared completion there was a definite feeling amongst some of the students that we shouldn't fly them in case all their hard work ended up as match wood. I had never been more confident that a model would fly well and so, of course, I ignored them. The Linnets were completed in May, just as exams were starting, so we agreed to put them on hold and arrange for flying days with both schools once the exams were over.

TOP MARKS

So how do they fly? In a word, beautifully. Both models flew straight off the board with very little trim adjustment needed. There was plenty of power, even at low throttle settings, giving comfortable seven-minute flights on 3700 mAh packs. After the first sorties we set the models up on a buddy box and were able to offer flights to all the students that had been involved in the build. This was extended to some of the teachers, who proved to be considerably less capable pilots!

In summary, I couldn't be more pleased. We set out to scratch build two scale models with students who had no experience of model building. The models perform extremely well and look very scale-like in the air, with a real presence. It is very easy these days to say that young people have no interest in doing anything that needs patience and tenacity, but they have proved us wrong. I have thoroughly enjoyed the experience and I hope we have imparted just a little bit of enthusiasm for careers in technology and engineering.

When we started there was only one flying Linnet in the world but now there are three. Hopefully in a year or two there will be four! ■

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RETRO RAMBLINGS

50 YEAR FLASH BACK

Shaun Garrity dives into a pile of past modelling periodicals and makes his annual pilgrimage to Ivinghoe Beacon

Words: **Shaun Garrity**

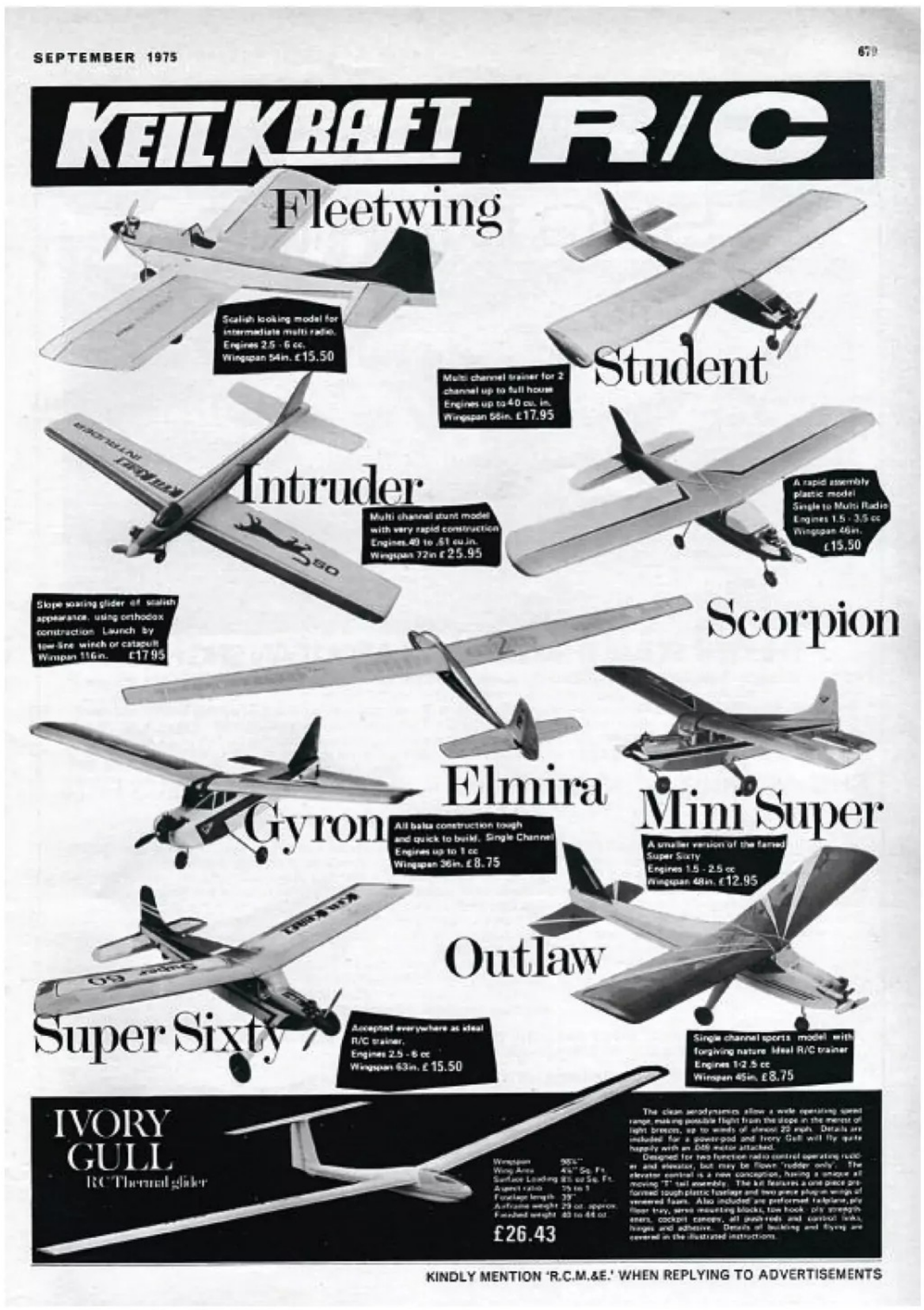
Photos: **Shaun Garrity, Jonathan Turner**

I recently picked up a pile of RCM&E, Radio Modeller, Aero Modeller and Model Aircraft mags from the 1960s, 70s and 80s. There's something about that fusty 'old book' smell I find a tad intoxicating. Maybe I'm just a little odd, however looking through them and reminiscing, I realised just how much things have changed, some for the better (less expensive and reliable radio gear, electric motors, LiPos etc.) and some not (models made from trees are in decline being replaced with ARTF foam, the loss of diesel and glo motor manufacturers etc.) But overall, it's still a brilliant hobby to get involved in.

I can't claim any originality for the idea of a 50 year Flash Back because I've shameless copied it from a series that ran for some time in Aero Modeller in the early 1990s. But I thought a trip down memory lane would tickle the old neurons and remind you of the halcyon days of the hobby when summers were eight months long, the wind was always perfect and it never rained when you were at the flying field. Okay, that's maybe a touch too

Anybody recognise all three of these maestros?

Jonathan Turner and Francis Donaldson with their wonderful Minimoas. See 'Ivinghoe Pete Beadle Nostalgia Event'.



Some great classics here.

Every club in the land had at least one member with one of these sets.

much of the old rose-tinted spectacles but you get my drift.

COST COMPARISONS

Talking about the cost of the hobby and how many things are less expensive now, you'll need to sit down for this fact. In the April edition of Radio Modeller a 27 MHz, four channel Futaba M6 set (with no mixing, servo reversing, model memories etc.) with four servos was advertised at £140.00. So, according to the Bank of England inflation calculator, it would now set you back an eye watering £1,097.00 ($1,476.00) of your finest modelling tokens.

Not everything is cheaper now though. April Radio Modeller cost 25p which translates to a meagre £1.96 today.

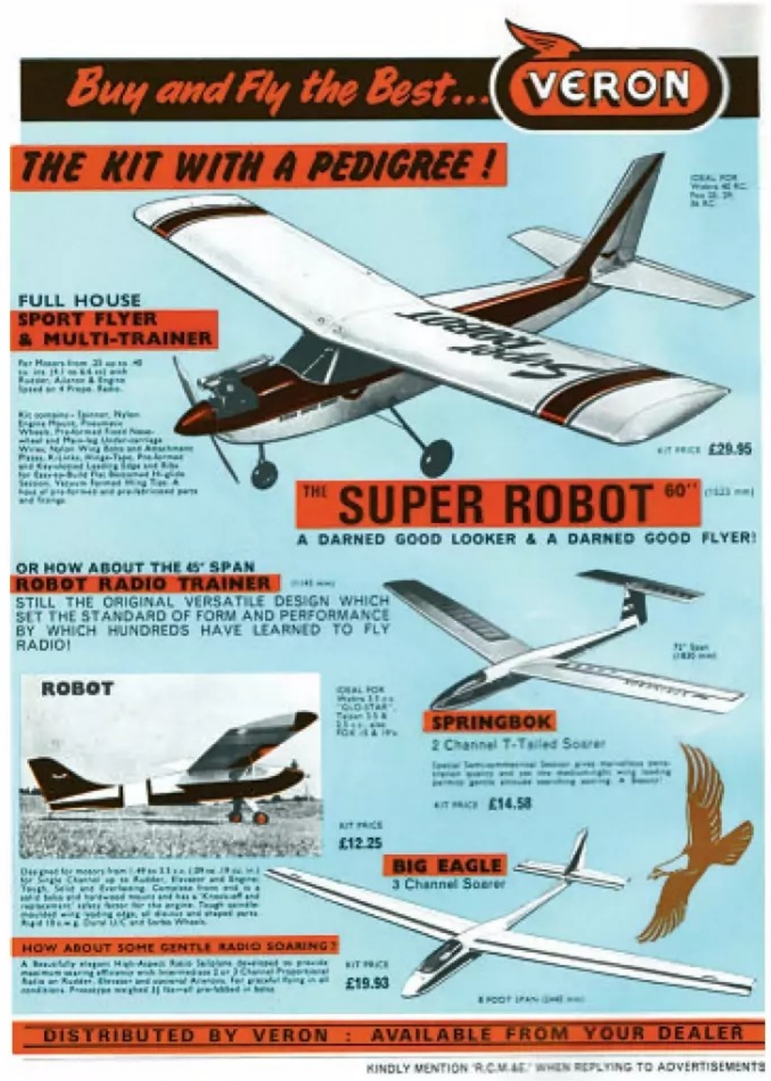
MADE FROM WOOD

As already mentioned, models made from trees was your only real way to getting airborne back then. But some manufacturers offered foam wings and glass fuselages. Micro-Mold offered vacuum moulded ABS fuselages for some of their product range.

July 1975 RCM&E featured a review of the Bob Brown designed DB Auto Gyro, a kit I recently acquired and which is still available today.

Model boats were a part of RCM&E back then, with a regular column called Wave Lengths and adverts from Model Flight

Phil Greeno was a superstar pylon flyer. Kit built R/C was a less expensive way of going propo.



Veron produced some truly great models.

Accessories promoting their Spearfish and the Black Tornado from SHG Marine.

Regular full-page advertisers included Veron, KeilKraft, Futaba, MacGregor, Skyleader, Horizon and Sanwa, along with Jim Davis Models, Galaxy Models and Roland Scott, who had a great marketing ploy. They included a printed form to apply for credit so you could get your toys on the never, never. I wonder how many arguments that caused

The Yamada YS 60 was the engine to own if you wanted an edge.

MacGregor offered well priced R/C gear but a simple single channel set in today's money would now be £164.00. Wow!

Humbrol, well known for paints and accessories, also sold a range of balsa kits.

Virtually every plan built model in the UK at the time used Solarbo balsa.

in the marital home when your significant other found out.

One RCM&E column I always read first was Commercial Developments. There seemed to be a never-ending supply of new kits and widgets appearing every month.

Graupner started heavily investing in electric flight, no doubt due to their association with Fred Militky, the king of e-power and who, along with MFA, began advertising their products, with magazine articles on this new form of power becoming more frequent.

Radio Modeller (until it merged with RCM&E many years later) wasn't just more of the same and offered different columns, including a regular one for Slope Soarers, Scale Topics and Marine Matters. Interestingly several manufacturers and model shops didn't advertise in both RCM&E and RM mags. Maybe a better deal was available, who knows, but Crescent Products with their brilliant .61 powered Tornado aerobat and PROFI motors certainly pushed the boat out, having regular full colour, cover page adverts.

MAGAZINE PLANS

I built quite a few of the plans featured in Radio Modeller from the 1970s. However, unlike RCM&E and Aero Modeller of the time you had to buy the full-sized plans, but the mag was cheaper, RCM&E being a wallet busting 10 pence more than Radio Modeller. That was an ice cream cone with a chocolate flake, plus change, back then!

Most modellers in the 1970s would have bought copies of Aero Modeller. It's the UK's oldest surviving mag, first published in November 1935 and still available today. 90 years is one hell of a long production run for a hobby mag. The next longest is currently a tie between RCM&E and Meccano magazine at 65 years but as the Meccano mag (first

Graupner offered a wide range of quality products.

Being remanufactured today by PB Models, the Crescent Tornado was, and still is, a cracking aerobatic plane.

Who doesn't remember the Micro Mold Lark?

Building from plans was the way most modellers went back then as kits were not cheap.

Popular and aspirational, but I never managed to get a flight longer than a few seconds as a kid with this range of kits.

This behemoth was a control line model. You would need to work out in the gym to build arm muscle for this monster!

K&B engines were a good alternative to O.S. and ENYA.

available 1916) is no longer published it will be relegated to third place next year.

Aero Modeller mainly focussed on free flight and control line models but started to cover radio topics. March 1975 featured a twin Autogyro design by Bob Brown suitable for free flight or single channel and it looked like a smaller version of the DB Auto Gyro (no surprises there). Engine Test was a regular column by Peter Chinn; informative, unbiased and invaluable when making decisions about a new power plant. Specific R/C free plans were rare, but a number were available for single channel conversion. Back then many modellers who flew control line or free flight would dabble in simple single channel radio, so the odd R/C plan gave the mag a wider appeal. Priced the same as Radio Modeller at 25 pence it was a very popular read.

IVINGHOE 'PETE BEADLE' NOSTALGIA EVENT

For several years now this has become a regular date in my calendar and I make a long weekend of it. But unfortunately, it increasingly seems to be cancelled on the day due to a non-perfect weather forecast so another date is arranged. This is a shame because our contingent were invited by Pete many years ago to join in the retro fun with Ivinghoe Soaring Association (ISA) members. However, this doesn't stop our intrepid group turning up from Yorkshire, Devon, Sweden and Norfolk in his memory. To be fair, with hotels booked and time off work arranged, we don't cancel - we turn up and fly.

A stiff breeze was forecast and on the day it was a tad lively, but not so strong that my two channel Veron Impala couldn't get airborne and land safely. In fact, I had many flights with a sub 250 g flying wing and in all 23 devotees of

I'm sure most 70s modellers owned at least one DC model engine.

SLEC were the bedrock of modelling accessories and widgets.

Just a few of the models at Ivinghoe on the Saturday.

No names but you know who you are. This Lapwing glider decided it was nesting season.

wind powered flight, including a good number of ISA members, climbed the hill and a great day was had by all.

To be fair, if it was raining that would be a step too far. I mean, I'm a keen modeller but there are limits! However, there are plenty of other things to do nearby, including Bletchley Park (home of the WW2 code breakers) and Woburn Safari Park to name a couple, but this wasn't the case and we had three great days slope soaring. On the Saturday 'event day' there was a cornucopia of classic slope soarers to be seen - Phase 6, Kwiksilver, Graupner Amigo 5, Flair Heron, Veron Big Eagle and Impala, Micro-Mold Hite Finder, Ridge Runt. The list went on and on.

I was chatting with a fellow slope fan, Francis, about an interesting modification he made to his Veron Cobra many years ago by adding ailerons and reducing the dihedral. It certainly opened the flight envelope of this two-channel scale soarer. He spoke about a long-time passion project he wanted to build and fly, the WIK Salto, but he had a slight problem - he didn't have one. But if anybody has an unbuilt kit, a model for restoration, or even just a tatty old fuselage he can take a mould off, please email me and I'll pass your details onto Francis and you can cut a deal. I can guarantee it will certainly put a big smile on his face.

Let's hope the weather behaves next year but whatever the case, like that famous line from the Terminator movie, "*I'll be back!*"

My thanks to Jonathan Turner for the Ivinghoe photos.

Well, that's it for another Ramblings. As always send your photos, missives etc. to me at **aeroomodeller@gmail.com** ■

Last flight of the day on the Beacon. It is a great site if you've never been.

Phase 6 in the evening sun, waiting to get skyward again.

Alan Gorham flew this lovely Bristol Beaufort built from the John Ranson plan. This model is over twenty years old and still uses geared motors.

BEST OF BRITISH

***Danny Fenton** visits BMFA Buckminster for a celebration of all things British*

Words & Photos: **Danny Fenton**

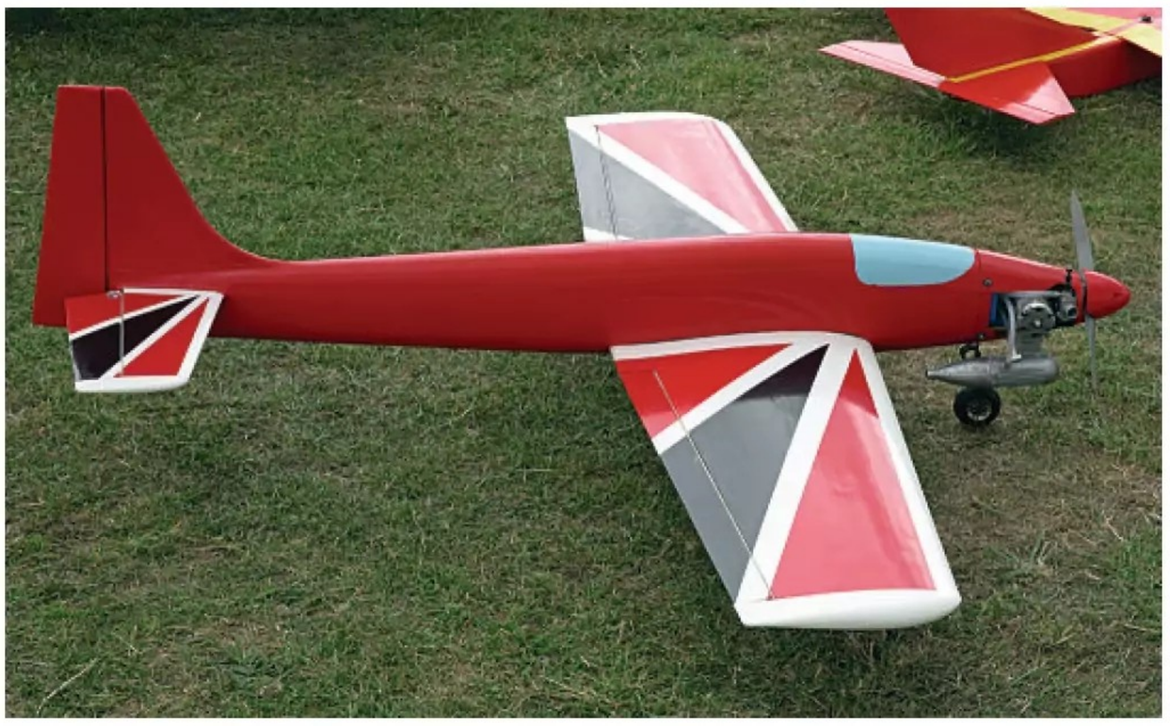
It seems only a couple of months since my report from the Best of British 2024. It's not surprising since the organisers decided to move the event from the autumn to summer, hence the short gap. It was a good move in my mind and the great weather, although a little blustery, attracted an eclectic mix of models.

The modelling trade was also well represented with stands in the Goldsmith Hangar from SLEC, Southern Modelcraft, Model Shop Leeds, Inwood Models, Modern Vintage Products and Warbird Replicas. Phil Clark of Fighteraces was able to deliver some orders but transport issues meant they couldn't have their stand on site.

The weekend remit was to celebrate all things British, be it engines (Lasers mostly), kits, including Flair and DB Sport and Scale models, just to mention a few. Even if the link was quite tenuous, the aircraft modelled being British was enough. The format made for

Possibly a Peter Russell Striker? (Most definitely, I'd say! RCM&E plan RC984 – KC)

This one is definitely a Taurus! Although an American design it was welcome to join in as part of the BoB fun.



Looks like a Meteor but I could be wrong. Lovely, isn't it?

More of the eclectic models that flew over the weekend.

John Rickett brought along a glorious Chrislea Super Ace and, just out of view, his wonderful Leopard Moth.

some lovely models, including many pattern ships from the 70s and 80s being flown. The weekend started on the Friday and we enjoyed three days of flying. The wind was stiff, but the sunshine helped keep the spirits high.

LASER POWERED

I enjoyed catching up with John Rickett and thoroughly enjoyed seeing him fly both his Chrislea and Leopard Moth. John's pièce de resistance was to spin the Moth from height to what I considered low level. John clearly knows the flight parameters of his models. He has

Chris Walby flew his Grumman Tigercat, powered by flat twin cylinder Lasers.

power management down to a fine art and the model flies very realistically. I am not sure what Laser engine drags the Leopard Moth around but a 180 is in the Chrislea.

This lovely enlarged Keil Kraft Fleetwing was flown by Phil Clark of Fighteraces.

TRAD BUILT

If you have been a regular reader of our illustrious magazine, you will recall the great RCM&E Fun Flys. The early ones were at the Greenacres Model Aeroplane Club. Sadly, the events are no more and GMAC has also regrettably had to cease flying at Aldridge Airport. The Best of British weekend (incorporating Laser Day) has that same feel, with a very friendly atmosphere, relaxed organisation, a great mix of models and, indeed, modellers.

What pleased me the most were the number of classic models. I love ARTFs (Almost Ready To Fly) and in my opinion the hobby would not have survived without them, but my heart will always lie with traditionally built models. There were very few ARTFs present and I cannot remember the last event where that was the case.

Phil Clark flew a terrific enlarged Fleetwing, which was built by his father. I am surprised more of the older designs aren't given a new lease of life in enlarged versions. There seems to be a resurgence in the old designs.

David Parnham flew this wonderful Flair Stearman with a UMS 5-cylinder 75 cc radial engine.

A crowded pits area. How many ARTFs can you see?

John Hutson launches his EDF Quark prototype powered by a 70 mm 4S Powerfun unit. Up to 4.5 minutes flight time, including vectored thrust.

FLYING PHOTOS

John Hutson asked me if I would take some flying photos of his Quark prototype. I often get asked to do this and it is not as easy as it sounds.

I don't think I am any better or worse than others at snapping shots but taking pictures often contains an element of luck. You can set the aperture, shutter speed and ISO so that you 'should' get a good picture. However, camera shake and composition have a big part to play. The pilot's ability to 'present' the model well and repeatedly in the same place along the runway is vital.

After waiting for the sun to re-appear from behind the cloud we had a go. Hopefully John was happy with the shots. Some of them came out well - and some were even sharp!

John's strange Quark on a fast fly-by.

Sunshine, aeroplanes and good company. What more do you need.

CATCHING UP

The banter during the day was fabulous. I spent ages just chatting and passing time, admiring the models, listening to tales and absorbing some pearls of wisdom from the likes of Mr. Laser, Neil Tidey.

I popped into the Goldsmith Hangar from time to time and although the traders were not making a fortune, I did witness some sales on all the stands. It was great to meet the team from Model Shop Leeds, not usually a trader at events; they brought along a van full of stock and seemed to enjoy the day. I liked their embroidered T-shirts and had to have one.

SLEC have taken over the Bel-Air product line, so I purchased a Keil Kraft Sceptre kit.

The Buckminster café was open all weekend and they supplied me with a fabulous 'Full English' brekkie. A big thank you to Jill for that. They also supplied coffees and ice cream throughout the day.

The large SLEC stand inside the Goldsmith Hangar.

Martin Harris beside his Aerotech Cub.

Bob, seen collecting his cases, had us all conducting a 'fingertip' search of the outfield for a missing hatch. It was found but at the other end of the runway to where we were searching!

Ron Gray organised the weekend (and the search for Bob's hatch!) but still found time to enjoy flying his P-51.

A gaggle of Flair scouts, more akin to a flying club from the 1980s.

LOST & FOUND

Ron Gray spotted a modeller (Bob) searching for a hatch from his model and immediately sprang into action. He organised twenty of us in a line across the outfield and we did a search. Lots of FOD was found - five metres of rope and a ten-metre tape measure were some of the memorable items - but no hatch. But it was good exercise and the hatch did eventually show up, but at the opposite end to the area Ron had us searching!

SLOTTED IN

During the weekend a few slots were flown. They were very informal and infrequent. The idea was to keep speciality groups together.

Peter Miller memorial group: Julian Barker - Grumpy Tiger Cub, Chris Walby - Ohmen, Ron Gray - Peggy Sue II, Mick and Graham King - Mini Max, Martin Harris - Glowman.

Monz Lyons flew her foamy Tiger Moth. The diversity of models was fabulous.

Eric Robson flew this wonderful Depron Vulcan.

One such group was for Peter Miller designs. A similar slot was set aside for Warbird Replica Models and for Flair 'Scout' WWI style aircraft.

The next BoB event is already in the BMFA Buckminster diary for next year. It's the first weekend in August so make a note in your own diary. It sounds like Friday was well supported, so I may camp for two nights next year...

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 ■

Chris Walby works on his Tiger Cat while more models await their turn to take to the air. I think I can see a couple of PB Models in that batch.

All Write

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

Top letter

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

BENT RETRACTS

RCM&E readers may be interested in a way to straighten those cheese-like (i.e. not the best piano wire) retract legs! They are very easy to bend on a bad landing but very difficult to straighten whilst still in the model. In my experience you do much more harm than good and can rip them out of the wing trying. If you try to straighten them out of the model, but still in the plastic body, again there is a high risk of breaking the mechanism.

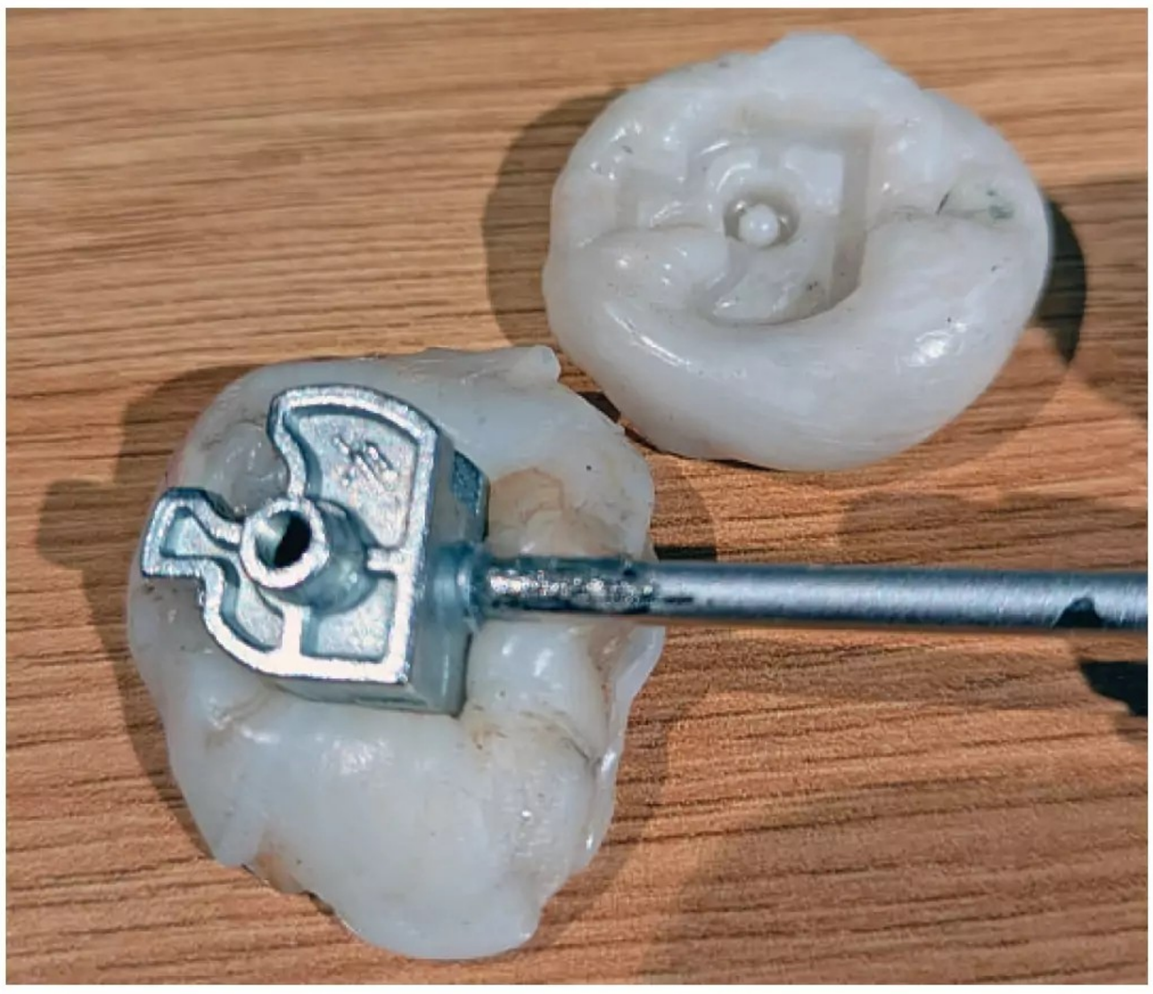
However, most retracts are reasonably easy to take apart. But when you do, you are presented with a cam mechanism that is again not particularly strong and is easy to damage! So, how to hold it whilst straightening the U/C leg? I'm sure metal could be shaped, ply could be cut, etc. but all are quite difficult to get exactly right.

My solution is to get hold of some thermoplastic granules. I used the Polymorph Hand Mouldable Plastic Granules available on Amazon. Many modellers may have some lying around already. Melt them in hot water, following the manufacturer's instructions, and carefully form a blob to grip the cam by pushing it on and then onto a flat surface (I used a granite kitchen worktop). Make up two of these. They are best done one at a time and make sure they don't join over the cam.

When cooled you will then have two flat surfaces to grip in a vice that will hold the cam safely and securely whilst you bend the leg back to the required shape.

Retain for the next time required!

Simon Blades



WAYWARD WALRUS

In the September 2025 issue of RCM&E James Wilson asked if there were any models of the Supermarine Walrus that had flown successfully after his unhappy experiences. Well, I have good news and bad.

Back in 2006 my friend Trevor Hewson designed and built a 30" span Depron version with a little GWS brushed motor and flew it many times at the Calshot Velodrome. He and I prepared a plan for publication and I built one. We often flew them together around the spacious hall at Calshot and they were both excellent fliers. I think Trevor's is still in good condition, but I foolishly tried to fly mine off water, with a rather soggy result.

kcrozier@mortons.co.uk

But I never had any worries about its flying qualities despite my own limited skills

That was the good news. In 2021, I tried again, this time with an 48" span enlargement of the venerable Aeromodeller plan. (I was about 10 when this was first published). The build was interesting and I managed to add retracts. But sadly it never flew well. After a promising start it just got worse and worse, pitching, rolling and behaving very badly over grass or water until it splashed down one time too many at Longham Lake and was recovered into the waste bin. A sad end to a very good-looking aircraft.

Mike Roach

DELUGE DOWN UNDER

I have just received my copy of the May RCM&E (yes, it gets here very late here in Australia) and I was thrilled to see my letter published.

Ironically, after saying how the Grafton Model Aircraft Club has only had to close our field once in fourteen years, we, along with most of the clubs in eastern New South Wales, have been closed more often than not throughout this year.

Mind you, we have suffered much less than some of our brother clubs, with some of our neighbouring clubs being under flood waters and a few of their members losing all of their possessions and houses in the catastrophic flooding to the south of us. Up until today we have received over seven million litres of rain on our 150 x 18 metre wide strip alone - and we are situated on 320 acres!

However, us modellers are, if nothing else, a resilient mob and there had been many hours of helping hands and the obvious jokes about flying sea planes and the like. Sadly, there has also been loss of life but, as far as I know, no aeromodeller is among those tragic figures.

The GMAC weathered cyclone Alfred and we had the equivalent of a category one cyclone for over four hours at our field. This wind blew our electric fence energiser down and smashed it beyond repair and this, in turn, allowed the cattle to get on and do some serious damage to the surface of the runway. It took some time to fix and it is now back to its very best.

Our access track became a complete bog and the main road access, which is a gravel road, was very badly damaged and on a couple of times had two metres of floodwater flowing over it.

On the good side, after we had to postpone our annual fun fly event, the Mayor and several of our local councillors were invited to attend the rescheduled event and they all saw the remaining damage, and the road was fixed on the Monday after the fun fly. At least now the powers that be understand our needs to be able to conduct such an event. The Mayor was very impressed with our event but I could not get him to attempt a flight on a buddy box.

Our neighbours are happy with us as well as we campaigned strongly for weeks to get the road fixed. Being a 'tourist attraction' seems to have helped.

Daryl Woolfe

AN EXPENSIVE LESSON

I've been around the block a few times, model flying so to speak, and my friends know me for being a stickler (to the point of being pedantic) for safety and pre-flight checks. My late father was an air force flight instructor and he made it painfully clear (often literally) to pre-flight e-v-e-r-y flight.

Sadly, the one time I did not follow my own rules I paid for it dearly. I have a lovely F3F glider which was solid, fast and comfortable in flight. When I kitted her out, I knew there was going to be a need for nose weight so in order to not waste too much, I choose a 2S LiFe battery over the much lighter LiPo. I had used them before in gliders without any problem.

We flew my glider a month or so ago in bitterly cold (for us!) strong winds of 70K/hr plus. In total I flew my glider twice, for maybe a total of 15 minutes, but I screwed up the second landing and slightly damaged the V-tail. A friend of mine is very adept at these kinds of repairs and he offered to fix it for me.

Fast forward and last week we were going to have a friendly F3F competition. My friend got the fuselage ready just in time. I was going to pick it up on the way, so he charged the battery for me. The evening before he called and told me it only took about 15 minutes on a quick charge to charge the battery. Was this okay? I thought it probably was as the battery had seen little use and a LiFe holds its charge very well.

So, where did I go wrong?

- I did not check the battery charge before the flight, as I always do.
- I did not have a check flight before the competition, as I always do.
- The moment I launched it the controls felt sluggish. Not nearly as crisp as usual.

Immediately after launch, when first feeling that something was not right, I should have called a landing. But I didn't. I started my run and had a hard time keeping my line, also because the wind was very variable with lots of gusts. My mates put it down to that, but I knew better.

Coming around for the seventh or eighth leg, she was barrelling along at just over eye level and suddenly veered to the right - towards me! I had no control whatsoever. She flew just over my head and then over the judge's head, slamming into a tree behind us.

Thankfully, no one was hurt (not counting my ego). The damage is considerable. Both wings leading edges are damaged, but the wing centre spars are intact. The fuselage has almost no damage and the V-tails have some superficial damage. It's all repairable. But if I had listened to myself and kept to my own rules this would not have happened.

At home I checked the battery. Both cells showed 1%, i.e. dead. The lesson? Always do your checks, before every flight, no matter what. Follow your instinct and if it doesn't feel right, land!

It was an expensive lesson learned.

Rene Wallage

TICK LIST

Re your remarks in the September Editorial about insect bites and infections, particularly about your 'bulls-eye wounds'. Here in Michigan, we watch for the 'bulls-eye' rash symptom of Lyme Disease, tick borne and becoming more common in the UK. Please remind your readers to do a thorough check of clothing and self after a day at the flying field. Ticks reach parts that even Heineken can't reach!

John Stuart

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

Dirk provides an idea of the size of his 1:4.5 scale Fouga Magister compared to the full-size on display at Buzet in Belgium.

FOUGA MAGISTER

Dirk Tinck, well known for his Power Scale Soaring versions of Magister jets, builds another Fouga, this time for EDF power

Words: **Dirk Tinck**

Photos: **Dirk Tinck, Phil Cooke**

The idea for this project started many years ago at the very beginning of the EDF modelling scene, way back in the early 2000s. At that time, I made myself a foam Fouga Magister spanning just 1.5 metres using Styrofoam construction and fitted with a pair of 70 mm HET fans running on 2 x 3S LiPo packs. The model flew so well. I must have had hundreds of flights to this day and it was so versatile I even slope soared it with success! As this was just a try-out, I wanted to build a bigger one with more scale detail. Around this time, I also became very interested in Power Scale Soaring (PSS) and after a visit to The Great Orme, Wales with the PSSA, I decided to make a big PSS Fouga.

I chose to build a fully moulded fuselage as I wanted it to be light. The plug for this part was made in foam, carefully following the Philip Avonds drawings I found in a Fouga Magister reference book. These drawings were at 1:48 scale so I had them enlarged to 1:4.5 scale, producing a good size model with lots of presence. The plug

Flying the Magister still gives Dirk goosebumps, even after thirty-five years of model flying!

Dirk chose to make a fully moulded fuselage as he wanted it to be light.

The Fouga is painted in the camouflaged livery of the Salvadorean Air Force.

was filled and sanded many times until I was happy with the exact shape and form. I ordered a pair of foam cores for the wings and the V-tail rudders. I planked them with balsa and glassed them before they got painted in the famous Red Devils scheme. My first big PSS model was born!

After sloping the Magister for a few years, I became conscious that where I live in Belgium there is no chance of flying it without travelling at least two hours to the nearest suitable slope! So, this is how the idea came about to make the same plane, but suitable for flat field flying - a big, scale, EDF Fouga!

THE BIG ONE

I knew that building an EDF model this big would take a lot of time, effort and a serious amount of cash! I didn't want to invest a huge amount of money in just one airframe so I decided to mould it in its entirety. This way I could manufacture more than one airframe from the moulds and perhaps recoup some of the money I was about to invest. A good plan, but little did I know it would take me six years to realise my prototype EDF Magister!

To continue expanding my modelling knowledge, for this project I wanted to cut the foam cores for the wing and rudder plugs myself. I set up a gravity hot wire system and very soon I was planking four beautifully cut cores. I cut away the ailerons, flaps and the moving parts for the rudders/elevators on the V-tail. I then positioned the wing joiner tubes, servo hatches, landing gear bays and doors before we commenced the mould manufacture.

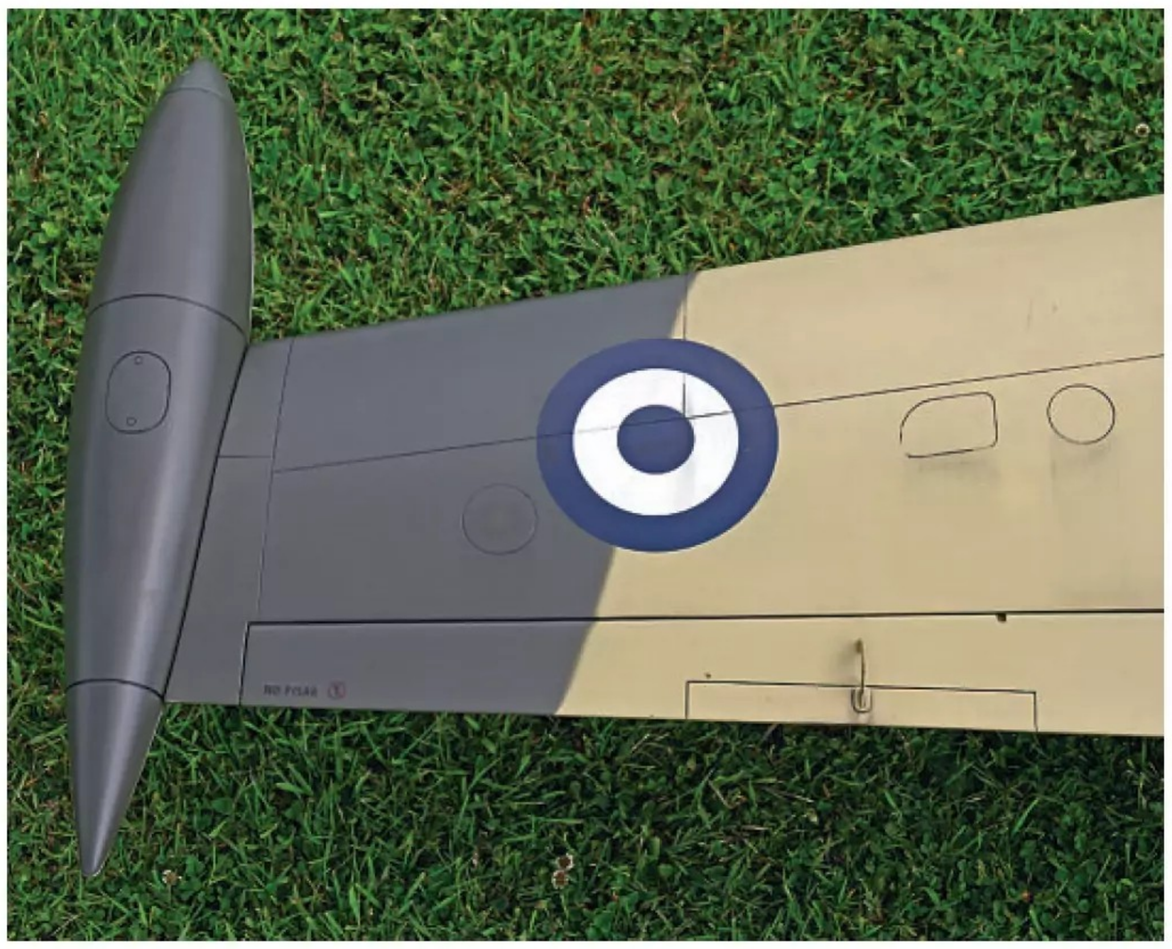
> "I knew that building an EDF model this big would take a lot of time, effort and a serious amount of cash!"

FROM THE MOULD

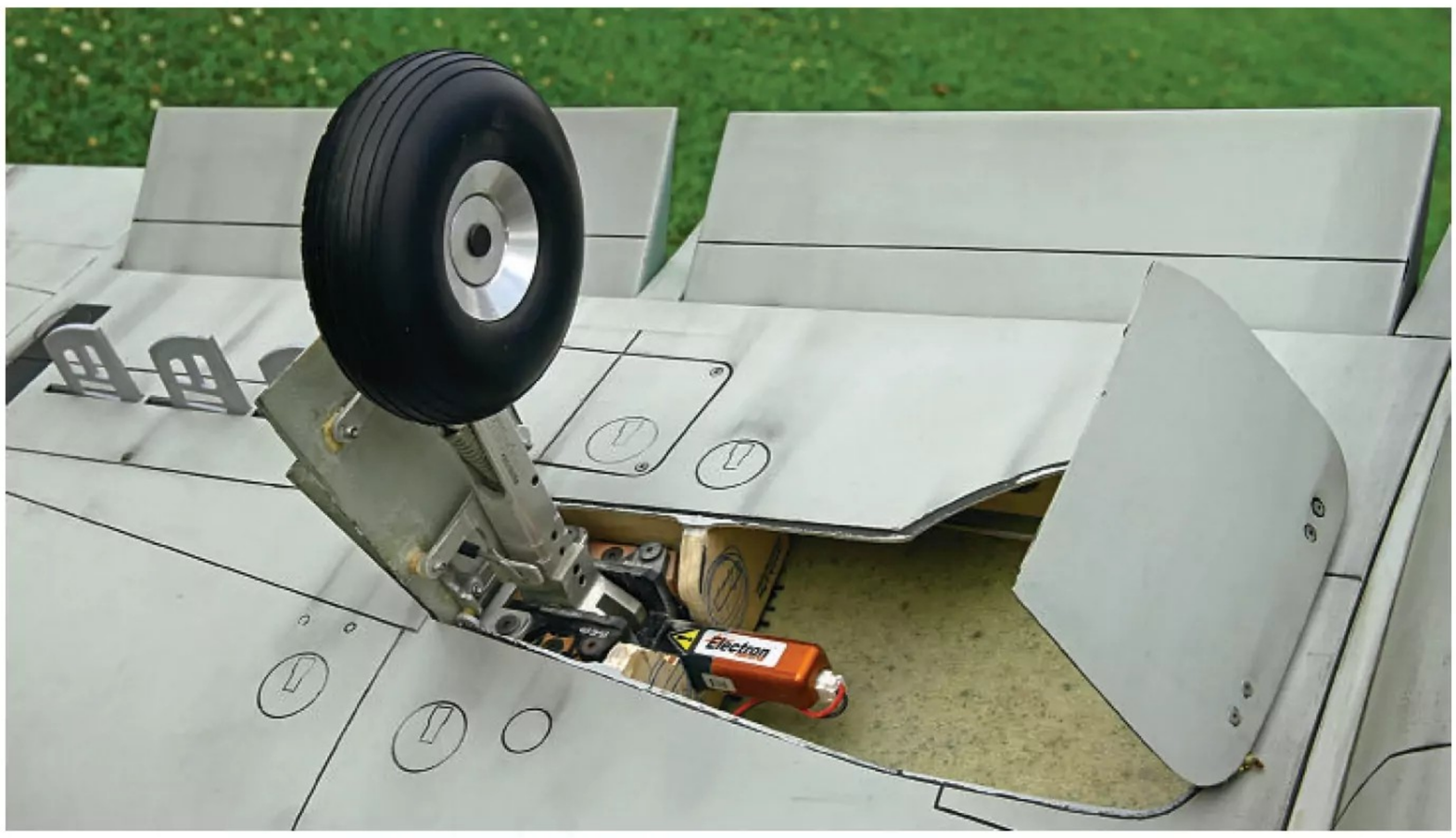
Moulding in its simplest form is just like 'copying' objects. I'm sure we've all done some moulding on the beach, filling plastic

Dirk shows off the underside of his large scale EDF model.

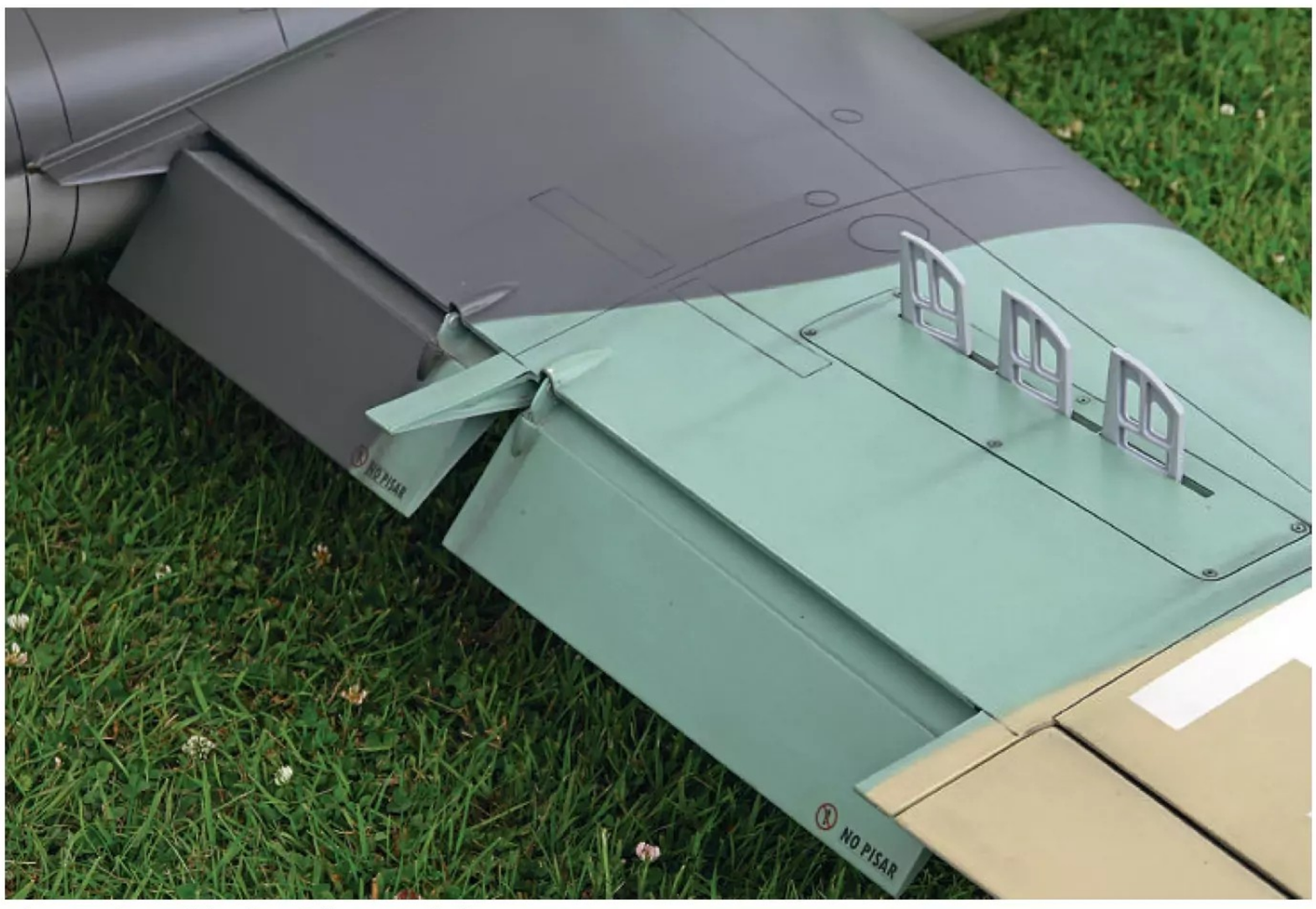
Nose gear strut and hub are Avonds Jet items, fitted with a homemade foam tyre to save weight.



Outer wing detail.



Main landing gear uses Electron electric retracts.



Flaps and speed-brakes fully extended.

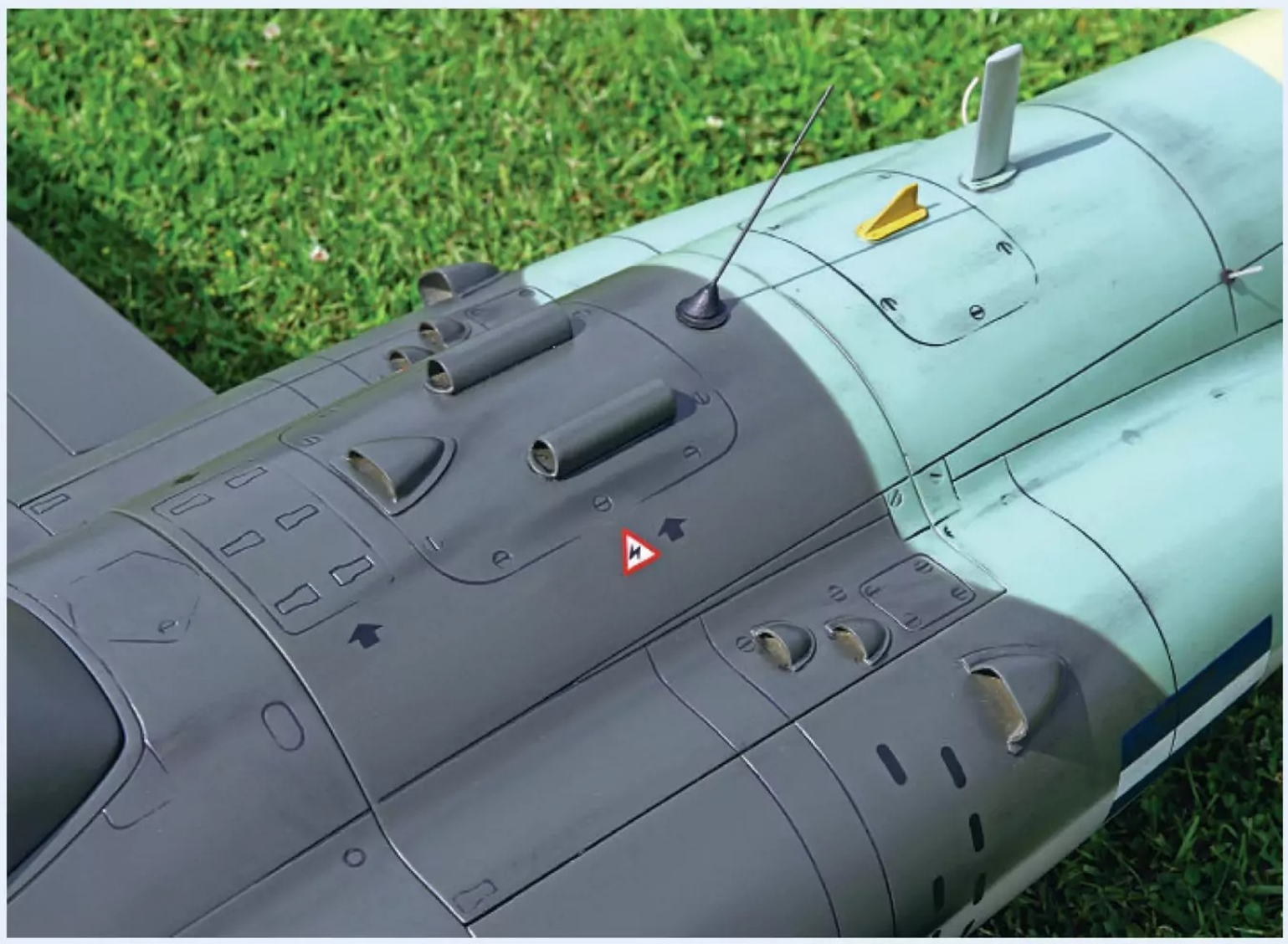
"This aircraft will not be breaking any speed records, but she flies very scale like, steady and graceful, just like the full-size"

buckets with compacted sand and then turning them upside down to produce an accurate replica. When we 'mould' components for model aircraft the basic principle is just the same, but the materials and techniques are different.

We can mould everything - every form or feature on a model - as long as we keep in mind that we need to be able to remove the mould from the plug and, in the end, the model out of the mould. If that is not possible due to the geometry we have to make the mould in several pieces. For example, consider the wings of the Fouga. This required no less than

Wingtip nav lights.

Coming through for a fast and low pass.



Small accessories like the front antennas on the nose, little air vents, rudder balancers and different scoops are all important additions to maximise the scale effect.

twenty-four moulded parts! Two upper shells, two bottom shells, four root section halves, four tip section halves, eight flap shells and four aileron shells.

You can form a mould around a plug in three basic steps. First, you prepare the plug to make sure the mould doesn't stick to the plug, potentially damaging either the mould or the tooling. The plug must be as shiny as possible. We need to wax the surface a minimum of five times with release wax and bring on a layer of PVA (release agent) or a chemical release agent.

In the second step we cover the model with glass cloth or carbon fibre, wetted with polyester or epoxy resin (which is lighter), layer after layer. For small objects approximately two-millimetre thickness is sufficient. For larger parts up to five mm or more may be

Jet intake giving a hint of the lightweight structure inside.

required. Now we have a negative form on the inside.

The final stage is the de-moulding. When all is cured, we try to separate the plug and mould by twisting the combined assembly and pushing wooden sticks (I use lollipop sticks) in between the two mating parts. Adding water between the two can help dissolve the PVA and make separation easier.

To make the model parts we want to use, and to become a positive form again, we follow exactly the same process but now laying up on the inside of the fresh mould. It's a lengthy process but hugely satisfying.

These are only the basics of moulding parts. To make them stronger and lighter I used a sandwich technique, adding a thin layer of foam (1 mm) between glass layers. This is only possible in combination with vacuum bagging as the foam is too stiff to follow the sometimes-complex curves. This is also useful to get rid of excess resin (weight) by placing a bleeder towel on top of the glass in the bag while vacuuming it. Everything gets pushed together whilst curing and the result is a 'bullet proof' new part.

I also painted the insides of the moulds with IMC (In Mould Coating) before the lay-up. This way you get coloured parts from the mould.

Moulding parts is a never-ending learning process. There are always some improvements or refinements which could be made, but of course all these tricks have a downside. The lay-up of just a wing shell will keep you busy for some six hours!

Thrust tube plug was 3D printed due to its complex geometry.

FOUGA FUSELAGE

For the fuselage plug, I was able to make an EDF fuselage from the original PSS moulds, albeit with some changes applied to better suit the EDF fuselage. These included larger exhaust openings, the addition of an EDF motor access hatch, a hatch for the front gear and with aerofoil sections of the wings and rudders adapted to meet the fuselage at the correct incidence (like a first rib built into the fuselage). Then it was just the case of laying up the fuselage in the moulds - again!

It took a full two years from the start of the project to the time the plugs were ready. I wanted the moulds to repeatably produce a number of scale details not produced on the PSS model. Adding panel lines all over the airframe moulds alone took me six months! Moulding all these complicated plugs took another year - piece by piece - but in the end I had 58 beautifully moulded parts which all fitted together and combined to produce all the components for a complete EDF Fouga Magister, including one glass fuselage with a motor hatch, front hatch, nose cone, tail cone, two moulded wing panels, two ailerons, four flaps, two rudders, two tip tanks, two tip tank nose cones, a clear moulded canopy and six gear doors!

The wing joiner is a 1010 mm long by 30 mm diameter aluminium tube from a hobby store.

THRUST TUBE

Let's not forget the thrust tube! For this part my friend Phil Cooke pointed me in the direction of 3D printing for ease due to its complex geometry and another friend Andy Meade offered to print the plug following my drawing of how it needed to look, with key dimensions regarding the inlet and outlets.

A few weeks later I received the 3D printed thrust tube plug by mail. After a little surface preparation, I laid-up two half moulds around it and upon joining them, I produced a beautiful, accurate thrust tube, shiny and smooth on the inside and fitting perfectly in the fuselage. For maintenance reasons the moulded tube is removable, as are the moulded ailerons and flaps, all hinged with full span, extractable pins.

Another view of the nose. Lovely scale details wherever you look.

EDF & AVIONICS

For the EDF power plant I've chosen a 128 mm fan from Schubeler running on 4 x 7S packs of 5000 mAh, two in series, resulting in 14S in two parallel sets, making 10000 mAh which will comfortably give me a flying time of five minutes. The fan produces 11 kg of thrust for an aircraft with an AUW of 14.5 kg.

The main landing gear comes from Electron and the nose gear strut and wheel are Avonds Jet items. In my quest to reduce weight, I made my own foam tyre for the nose wheel, saving 55 grams.

The servos are Savox HV throughout, powered by two 2S 2200 mAh LiPo packs. The radio system is my old but trusty Multiplex Royal Evo 12, upgraded to 16 channels, guiding a dual receiver and switched by a PowerBox digital switch.

FIRST FLIGHTS

In May 2024 she was ready for her maiden flight. On an early evening, alone at the airfield,

Due to the low-slung undercarriage, the tailskid/wheel is a worthwhile addition!

we took a shot at it. After just fifty metres rolling at full throttle, she took off without hesitation. Trim wise all she needed was one click of up elevator and a few clicks of right aileron trim and then she flew as if on rails. This aircraft will not be breaking any speed records, but she flies very scale like, steady and graceful, just like the full-size. After four minutes of flight, she was lined up on finals, with flaps deployed halfway at half throttle, and settled into land without any issues. But she needed all of the runway to come to a stop!

Four more flights were completed with the airframe unpainted, but the project was already a success!

SALVADOREAN CAMOUFLAGE

In the following weeks, after the holidays, I decided to paint the Fouga in the livery of the Salvadorean Air Force. I like the colours and I love models with camouflage!

Before painting I made a whole bunch of accessories like the front antennas on the nose, the little air vents, rudder balancers, trim tab balancers for the ailerons, different scoops, etc. All are scale features which bring the finished model to life when viewed up close. At this time, I also made the canopy windows, vacuum formed using, again, different homemade plugs. The rear window panel is hinged on the front frame and spring operated to act as a cheat hole when the EDF needs a little more airflow at high power!

A lot of surface preparation sanding was involved before I applied the primer and again lots of sanding before adding the paint. The paint is matt wall paint, covered with a very thin layer of semi-matt yacht varnish. Decals are all paint masks plotted by a friend and for the small signs I opted for printed waterslide decal paper. With all the decals and markings applied, for the first time I tried some weathering techniques with oil paint filled panel lines and dust streaks.

By May 2025 I was ready for the photo shoot and some more flights with the fully detailed model in front of Phil Cooke and Andy Meade's cameras. We found a retired Fouga Magister at a little airstrip in Buzet, Belgium, which provided a perfect background to shoot some static photos.

The first flights with the fully painted model were made at my local model flying club, 'The Aeroscouts' in Denderleeuw, Belgium. Some minor adjustments were made regarding the C of G, aileron, rudder and elevator throws, and battery position. The 3.5 kg battery 'blocks' are strapped to a sliding tray which allows four centimetres of adjustable movement to the front or rear.

Dirk may eventually fit aircrew but the model is already at the max weight it can currently handle.

A GOOSEBUMPS MODEL

Flying the Magister still gives me goosebumps, even after thirty-five years of model flying, because there was so much work and time

Atmospheric picture of the V-tail jet.

The Magister is painted in matt wall paint, protected by a thin layer of semi-matt yacht varnish. Decals are from paint masks with waterslide paper used for small signs.

spent on its development! That said, in flight she handles like a big jet trainer.

Lightly loaded, the wings clearly show the glider heritage of the French aeroplane manufacturer. Rolling distance before lifting for take-off is about one hundred metres. From the moment she's airborne, she feels stable, crisp and responsive to the controls. Under power it's not a plane that will go vertical unlimited (of course, the full-size was just the same) but the 11 kg of thrust generated by the EDF unit provides a good push to maintain a decent climb angle.

As I am still getting to know her, I have yet to perform any aerobatics beyond a slow roll, which looks very realistic. With each flight we will continue to stretch the flight envelope, bit by bit.

Landing the Magister requires some guts, especially on short runways, because she keeps gliding on when not slowed down by the flaps or the speed-brakes in the wings (another characteristic Fouga feature).

Using the flaps and speed-brakes are very helpful when landing, especially on short runways, otherwise the Magister keeps floating on!

She now has seven flights in the logbook, the longest of which was five and a half minutes, which saw us with only fourteen percent charge left in the battery after we taxied in! Again, we are learning more with each flight.

This build cost me a lot of my free time. I estimate at least 5000 hours, but the results have been worth every minute. I'm more of a model builder than a model flyer but I really enjoy flying this model, even if it brings some stress with it!

For those interested in more building details, I regularly update a building blog in the EDF section of the RCM&E Model Flying forum. It can be found under the title: Fouga magister 1/4.5 moulded from scratch. I hope you enjoy reading through it as much as I did creating it. ■

DATAFILE

Name:	Fouga Magister CM170
Model type:	French two-seat jet trainer
Scale:	1:4.5
Designed by:	Dirk Tinck
Wingspan:	2700 mm (106.3")
All Up Weight:	14.5 kg (511.47 oz)
Fan unit:	Schubeler 128 mm EDF
LiPo:	4 x 7S 5000 mAh (14S/10000 mAh)
Radio:	MULTIPLEX Royal Evo 16 ch, Savox HV servos

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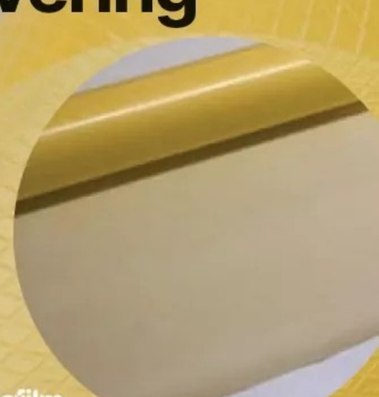

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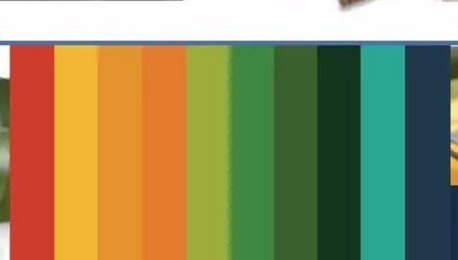

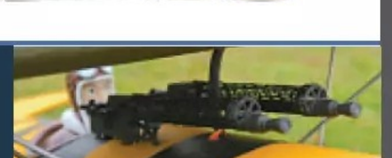

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Pascal Hiel and Matthias Paul flew a selection of FW Models, demonstrating their performance and capabilities in the high alpine air. They were often the last pilots to leave, long after the last gondola ride.

FLYING CIRCUS 2025

Thorsten Häs reports from the Tirol in Austria on a weekend of high alpine model gliding from the top of Schönjoch in Fiss

Words & Photos: **Thorsten Häs**

More than 110 international pilots were welcomed by the organising team on the Schönjoch and all of them found their way from the valley via the Schönjochbahn cable car and a short 15-minute walk to the starting point. The walk can be done either via a mountain road or via the Kunstweg, a mountain hiking trail. For larger models there is also a shuttle service. At the top of the mountain the Flying Circus has a cordoned-off take-off and landing area, a meadow for pitting models and a registration/transmitter tent.

In principle model flying is also possible on the Schönjoch outside the Flying Circus, subject to Austrian legal regulations. However, for the event a separate ascent permit and a corresponding NOTAM (Notice to Airmen) are issued so that other aviation participants are also aware of the event's airspace restrictions. Flight operations start at 10:00 am and end around 4:00 pm at the latest so that you can still catch the last gondola ride into the valley at 4:30 pm. Alternatively, you can stay longer and make your own way down to the valley, e.g. with a mountain bike, which you can also take

CHAServo team flew various models from their CHADesign portfolio.

Matthias Paul carries the FW Models Libelle to the launch site on the Schönjoch. Aircraft is 1:3.5 scale with a wingspan of 3.28 m.

Werner Fehn and Sebastian Franken from Composite RC Gliders flew their new DG-808S (CRG entry-level model) with six-flap wings and 3.75 m wingspan.

Daniel Aeberli and Chocofly were also high up on the Schönjoch, seen here with the new Neukom AN-66D. The AN-66B has a V-tail (4.0 m wingspan) and the AN-66D (4.66 m wingspan) has a T-tail.

with you on the gondola in the morning for an additional fee.

As always, all model pilots who can fly are allowed to take part in the Flying Circus. It doesn't matter whether it's with a beginner or an expert model or whether it's made from foam, wood or high-end composite, scale or purpose built, small or large, old or new! All model pilots are welcome and will receive assistance from the team or other participating pilots. If there is one special feature that makes the Flying Circus so special it is the mix of participants: hobby pilots like you and me, but also team pilots from participating companies, all on an equal footing. A close exchange with team pilots or the manufacturers themselves is easy and informal, possibly much easier than at any other trade event, and at Schönjoch we are one big family.

In 2025, the companies CHAServo, Chocofly, CNC Luftsporttechnik, Composite RC Gliders,

One of the Rookie Day coaches, Jürgen Stropp-Kilian, prepares a student for a training flight. Many thanks for your commitment, Jürgen, to promoting our hobby.

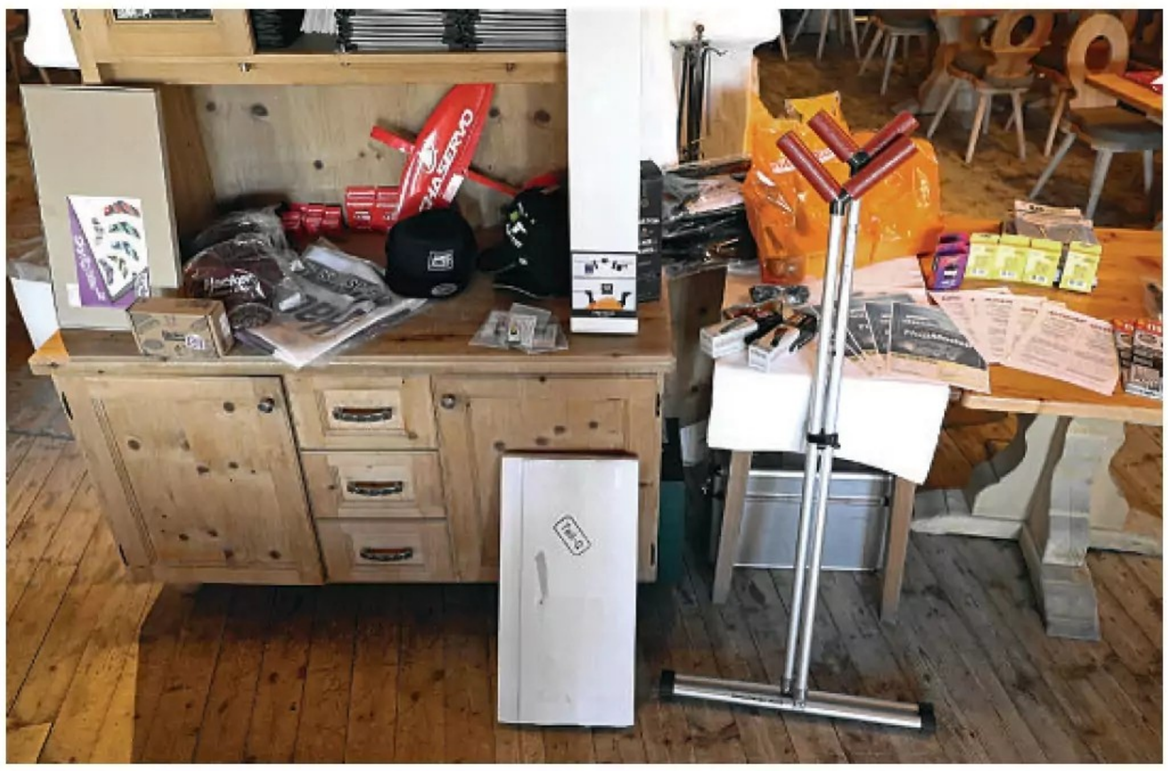
Theo Arnold with his new 1:2.5 scale GP15 from Ceflix (6.0 m wingspan, 2.57 m length). Theo's GP15 is powered by a KTW Orbis 20 x 13 self-launching system on 12S.

Carsten Stumpf from CNC Luftsporttechnik displayed a large selection of different models powered with +Jet EDF power units, from 80 mm to 130 mm diameter.

Stefan Nam launches his the Táltos 'Pegasus' (3.5 m wingspan) from Paco Scale Models in Hungary. The model is built to order. Assembly uses furniture clamps so the large glider can be transported and stored in a small box.

Brand new from CHAServo was the Firlefanz, now available as a ready-built RTF with 3 x DS06 CHAServos. 50 cm wingspan, approx. 155 g take-off weight.

The KST Team flew several models equipped with a selection of KST servos.



Raffle table in the Hexenalm with lots of choice thanks to the many donors and sponsors.

Vlastimil Vostřel showed the performance of Samba Model's F3x competition gliders, even when high alpine slope flying. Here is the Pike Paradigm for GPS with a 4.7 m wingspan.

PS-Modell presented the new Kobuz 2.2 and Swift 2.2 version 2, developed in cooperation with Chocofly (Daniel Aeberli) and Migflight (Georg Schamberger). These models impress with their excellent flight characteristics and small storage size.

Flight-Composites, FW models, KST Servos, PS-Models, Samba Models and unilight.at all took part in the Flying Circus as commercial participants and sponsors.

EVENT SCHEDULE

Here's the standard program of the Flying Circus:

- Thursday free flying.
- Friday free flying and pilots' dinner with a prize tombola at the Hexenalm at the Schönjochbahn valley cable car station, with many gifts from participating and supporting sponsors.
- Saturday free flying with twilight flying at the Perdatscher Bichl model airfield, with drinks and traditional Leberkäse sandwiches.
- Sunday free flying until the end of the event.

This year, once again in the program was Rookie Day. Rookie Day means that selected experts from the Flying Circus team and participating manufacturers are on hand to support any rookie pilots. A wide range of

Josef Leng releases his IS-A Salamandra. His replica of the Polish training single-seater has a wingspan of 4.2 m and is made of plywood covered with Oratex.

T-Max from Competition-Tools piloted by Rafael Schydlo. Wings come from the F3x Mamba series fitted to a scale-like, all-purpose fuselage. Offers performance of a competition model with a scale look.

Flight Composite presented a wide range of models for classic slope flying in Fiss, including the ICE-X of 3.77 m wingspan.

Our friends from Ireland, Northern Ireland and Scotland (left to right): Richard O'Brien, John Pearson, Bill Scott, David Stevenson and Ralph McCarthy. Unfortunately missing from the picture is Brendan Shelly.

options are available, starting with instructor-student flights with a standard beginner's model, instructor-student control with selected models from participating manufacturers, technical and/or active coaching, including the accompaniment of the rookie during take-off, flight and landing of his own model aircraft by a dedicated coach.

Some older spectators, not just children and young people, took the opportunity provided by the Rookie Day and registered for a teacher-student flight. Whether it was for their very first model flying lesson or even if they already had experience in model flying, anyone could register as a rookie. Rookie Day was also taken up by a few experienced model pilots who wanted to hear a few tips and tricks from the experts or who simply hadn't had the opportunity to do slope or alpine flying before and who wanted some support high on the Schönjoch.

CHANGEABLE WIND

The weather conditions were once again such that a lot of flying was possible this year,

Steve Steff gets his Teufel safely away. Of wooden construction and fully aerobatic, it still flies well in thermals. Wingspan is approx. 2.2 m, with a modified MH 43 profile.

although the wind direction was changeable so that the take-off/landing direction had to be changed accordingly. But this is one of the unique things about the take-off point on the Schönjoch - it can be flown either to the south or to the north, as determined by the flight controller, which means that continuous flying is possible almost regardless of wind direction.

A SPECIAL MENTION

I would like to mention a very special group of travellers and participants to the 29th Flying Circus. Friends of model gliding from Ireland, Northern Ireland and Scotland visited us this year. Richard O'Brien (Cork), John Pearson (Armagh), Bill Scott (Scotland), David Stevenson (Northern Ireland), Ralph McCarthy (Cork) and Brendan Shelly (Cork) made the journey to the Flying Circus with their models. They all met up at Dublin airport and travelled from there by plane with their model flying luggage to Munich and then drove south to Fiss in two rental cars. They were impressed by the facilities and the hospitality of the many participants. Whether it was with flying tips, help with repairs on the mountain or simply socialising, the team were able to fly a lot and get to know the peculiarities of high alpine flying. We had a great time with them on the mountain and we would be very happy to welcome them again, and any more of their model flying friends, in the future.

NEXT YEAR

The date is set for the 30th Flying Circus from 25th to 28th June 2026. We are already looking forward to this very special anniversary and are sure that we will meet many of our international friends from the last few years on the Schönjoch at 2,500 metres in Serfaus-Fiss-Ladis! ■

Group picture of Flying Circus 2025 participants.

NIPPON TOMBO

Dave Goodenough presents this month's pull-out plan for a simple to build Japanese pre-war glider

Words & Photos: **Dave Goodenough**

Tombo awaits its first toss into the Peak District air.

I don't know about you flying fettlers out there, but I sometimes get the urge to trawl the interweb and look for something interesting to design and build. For some unknown reason I came upon a website showing Japanese gliders of the 1930s and 40s, a couple of which had my 'looks interesting' antennae wiggling.

The Nippon 'Tombo' (Dragonfly or, more accurately, Tonbo) looked almost model-like and whispered, 'build me!' Thankfully, there was a reasonable 3-view of the craft. The Tombo was a simply made glider, designed to meet Japan's need for training whilst readying for war. Easy to assemble and disassemble, Asahi Miyahara's cheap to build glider, with its viceless flying manner yet aerobatic ability, fitted the bill. With little other information available the wee beastie presented here is a best effort, a pastiche if you like, brought forth from that scant documentation. Wagner Models sell a downloadable print 'kit' for a 1/50th scale paper model for less than three Euros.

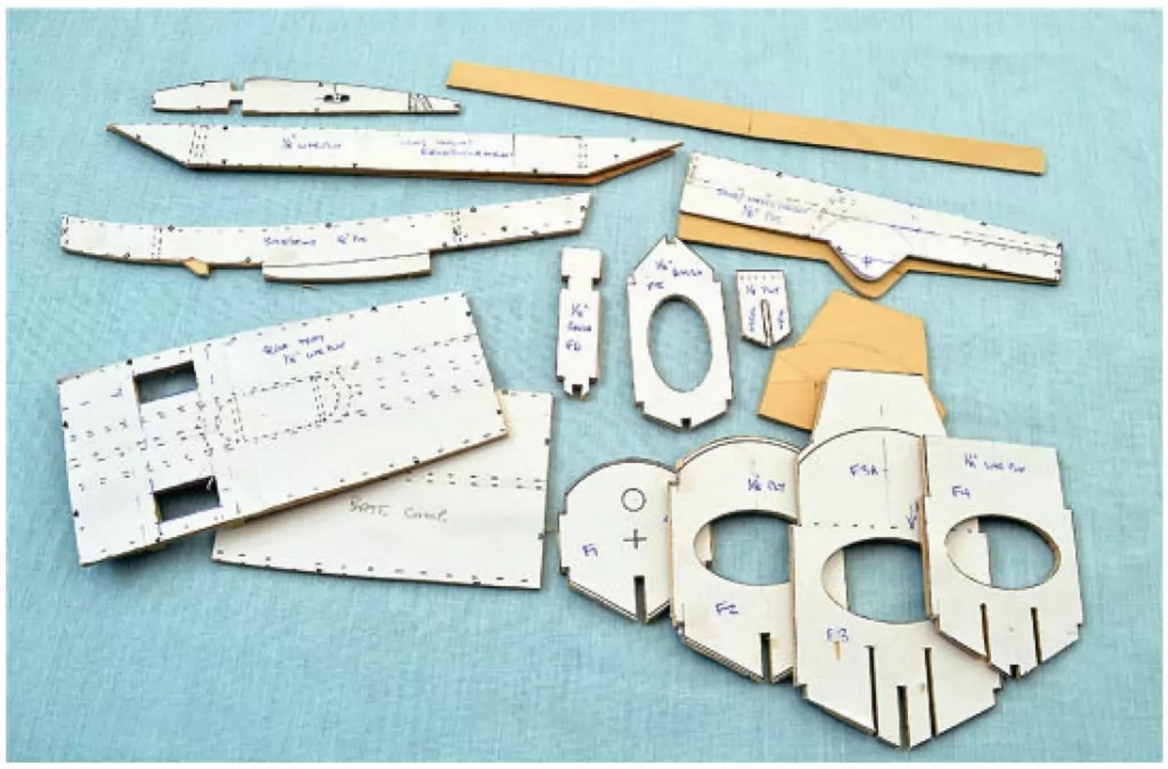
WHAT TO DO?

The glider looks deceptively simply but the hexagonal fuselage presented a few minor head-scratching moments. If you've built one or two models before this one won't challenge you much as only the fuselage construction is a little nadgery for the unwary. Built to 1.7 metre span and 1/7th scale, the size makes transport simple as the one-piece 1740 mm (68 inch) wing will fit in most car cabins.

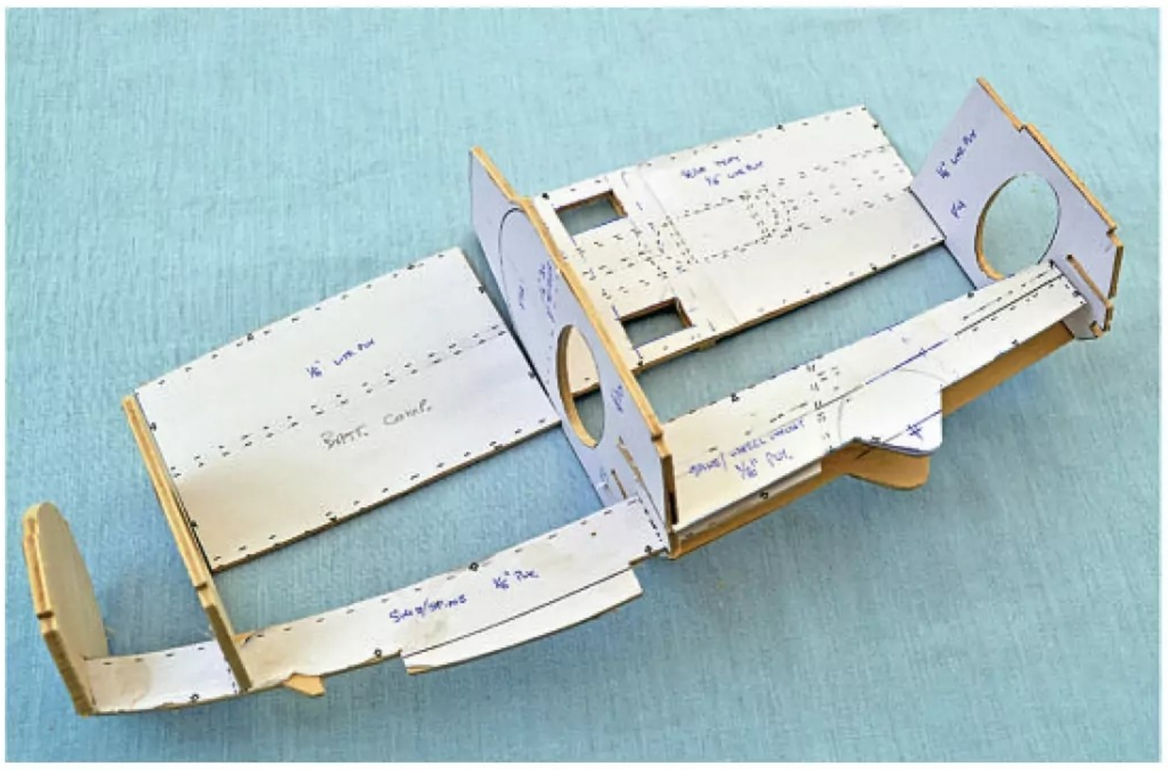
As the wings and tail feathers are the simplest to construct, we'll leave them 'til later, beginning with that angular fuselage. I always make up a complete kit of parts before any build and suggest that you do too as it makes construction quicker.

With two fuselage sides cut from 1/16" medium/hard balsa sheet, glue 1/8"x 3/16" strip around the edges where indicated, ensuring they overhang by 1/16". This overhang will be planed/sanded later to give a wider wing support doubler and gluing surface for the angled top and bottom sheeting. Be sure to make left and right-handed sides. Most of us have cursed ourselves for making two left or right sides - it's a modeller's rite of passage!

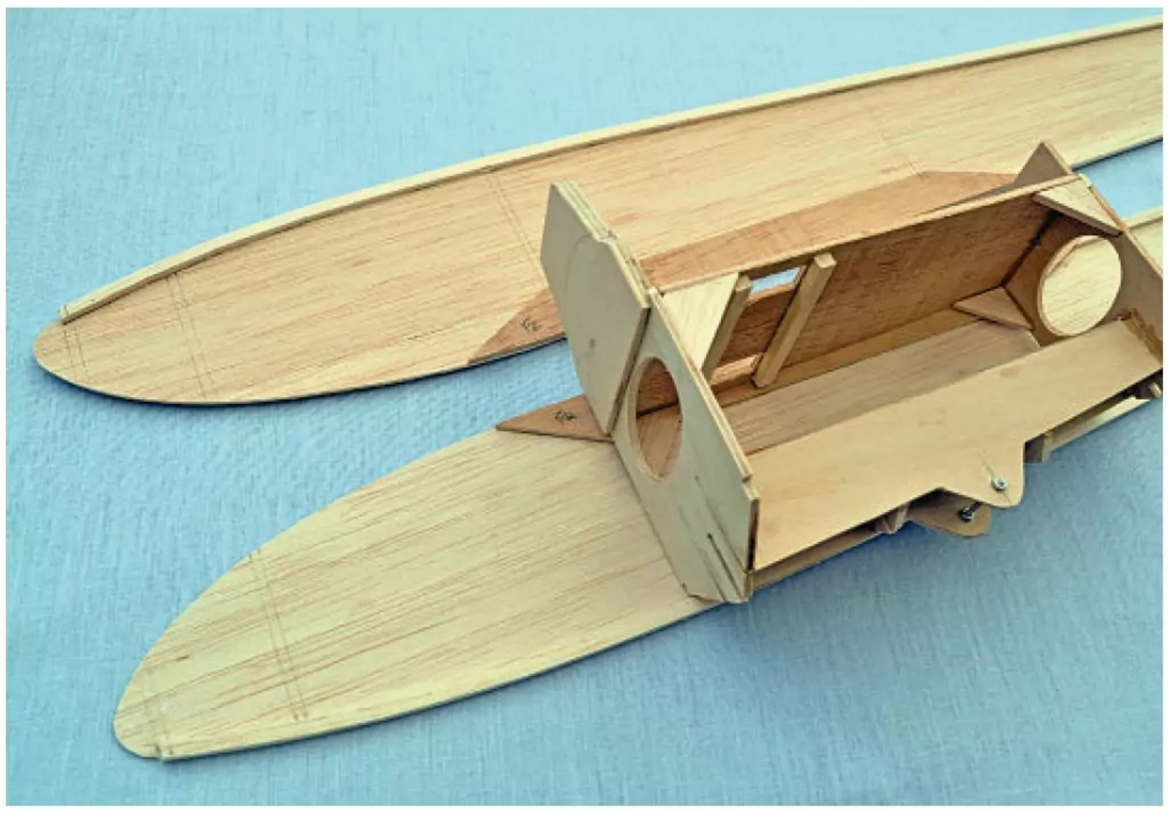
Four formers, F1 to F4, interlock with the lower spine/skid and the landing wheel supports. The original aircraft used a large landing wheel for alighting on poorly made strips, so I opted to include the fitting of a 45 to 50 mm diameter lightweight foam wheel. Even on a small model a wheel can increase roll-out dramatically so you have been warned! Unlike many models you assemble the central formers, wing support doubler, battery base,



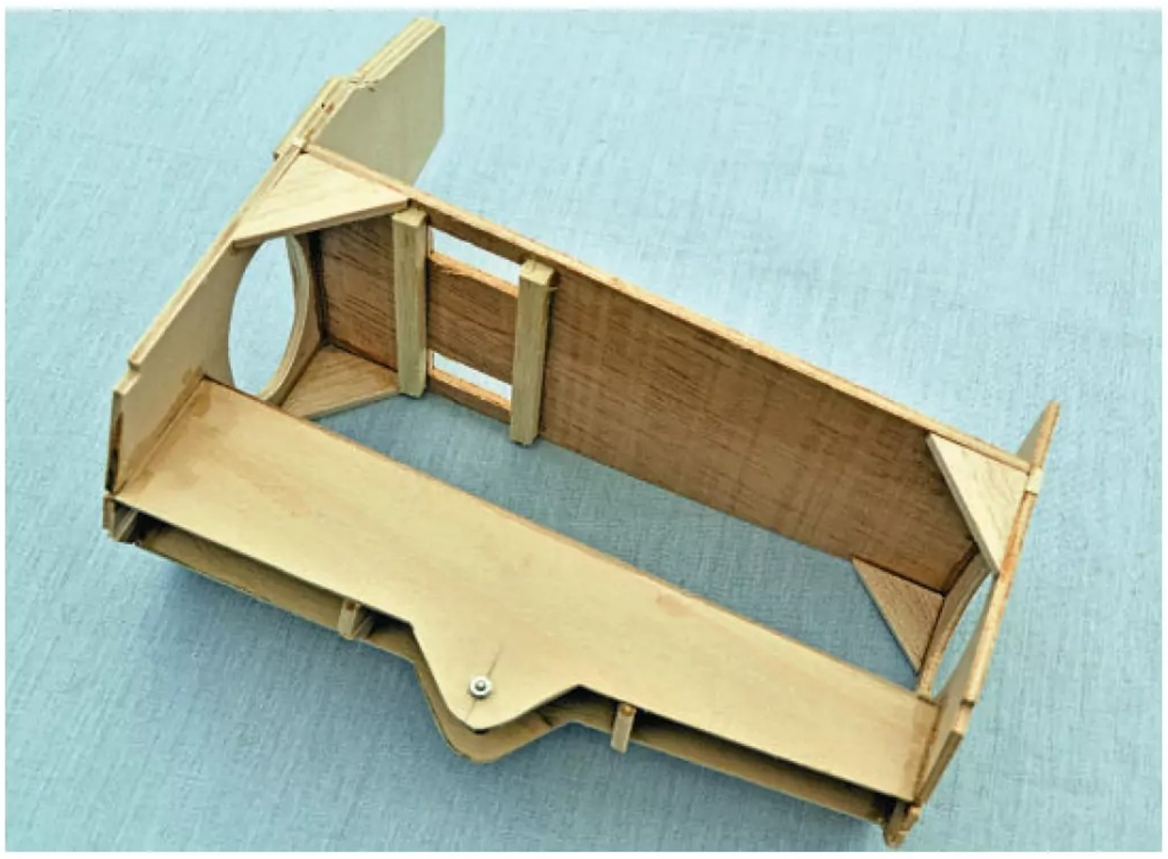
All the plywood parts. I glue stick photocopies of the parts onto the plywood as it's easier to keep the cutting/sanding accurate.



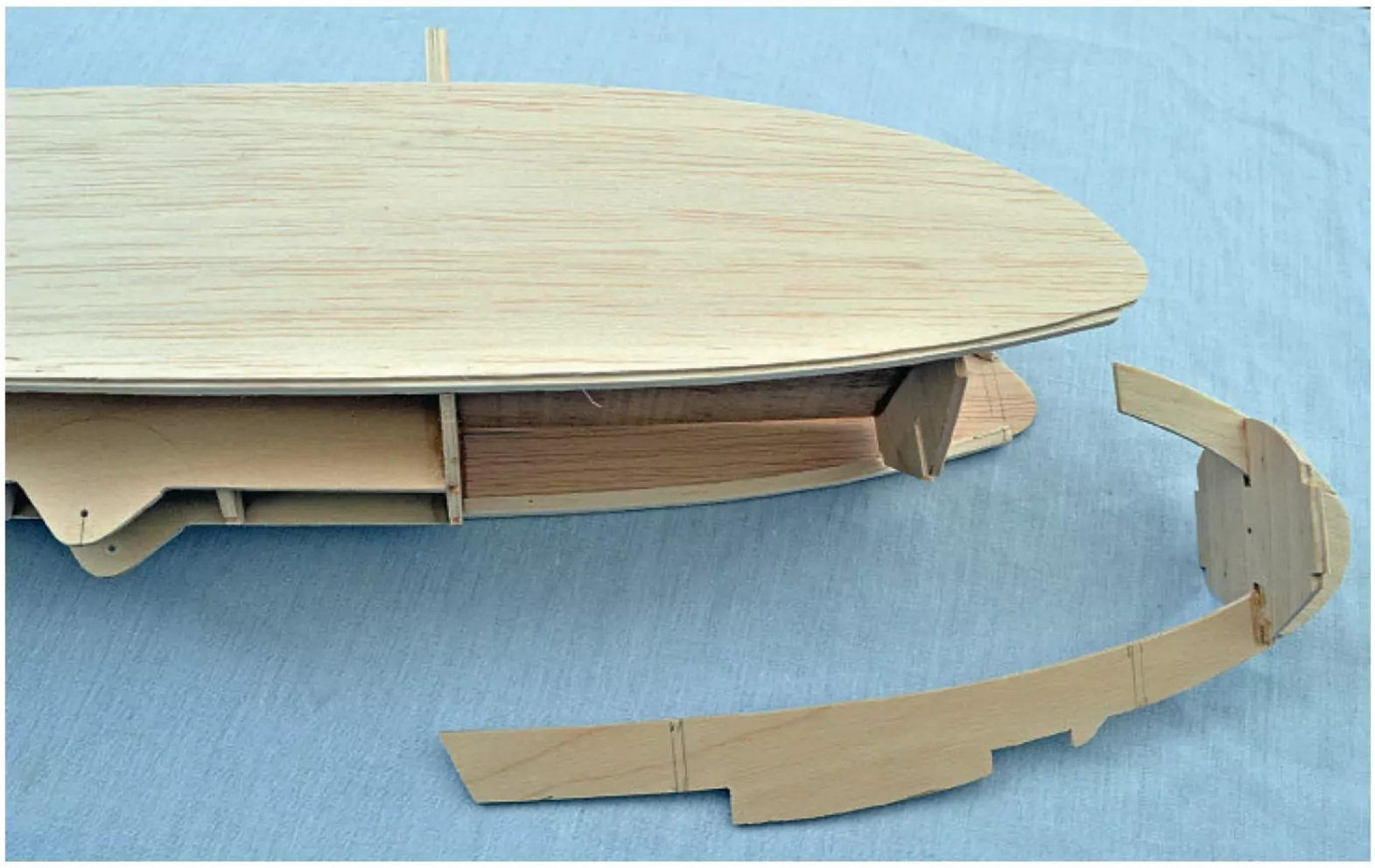
Fuselage formers are test assembled to prove accuracy.



Lined up on the fuselage side, only F3 is glued on initially.



Assembled and glued, the central fuselage interior is ready to be built upon.



Tombo's distinctive nose is easily shaped with the skid/spine assembly.

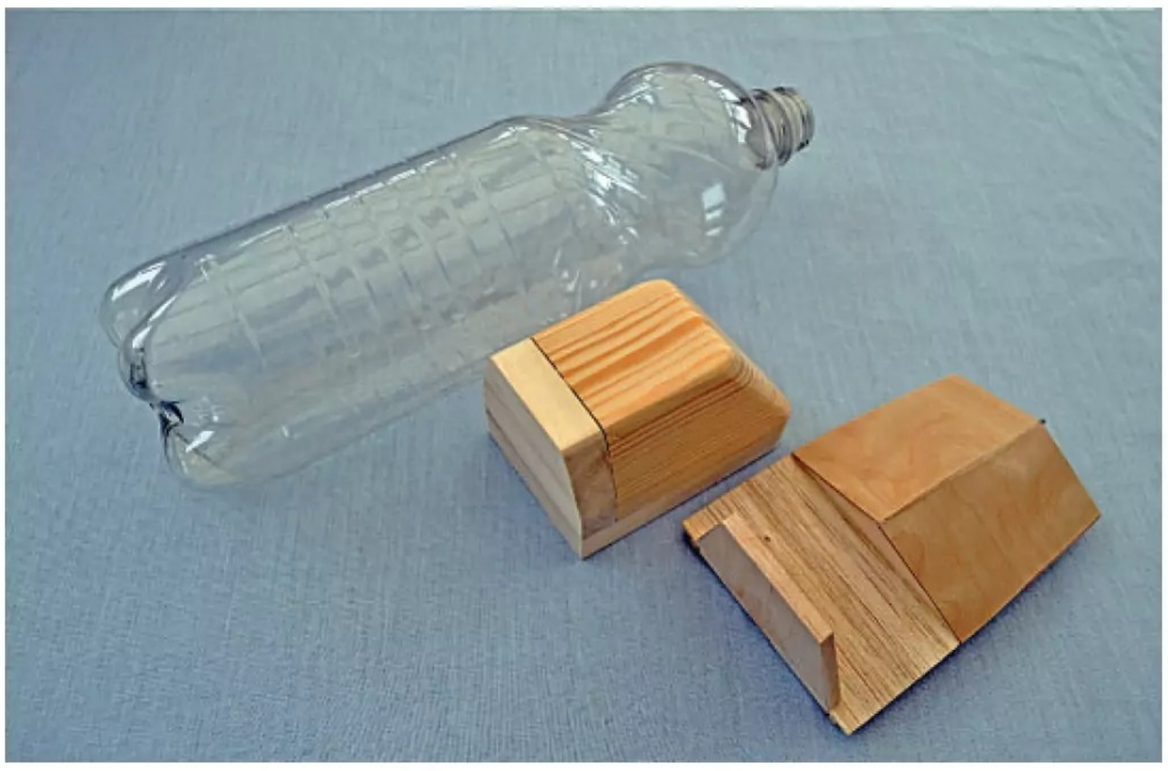
Wheel mount and skid form a simple yet strong central spine.

servo mount and landing wheel supports first, over one fuselage side. In plan view there is no parallel fuselage side as it's curved from nose to wing trailing edge, meaning that the accuracy of build starts with former F3 being accurately glued to the right fuselage side at 90 degrees. I used a small try square to align it but a playing card, edge-on, would do as a squaring gauge. Glue the battery base and servo tray in place next as they serve as the curved form to shape the middle fuselage section. The left fuselage side is then glued to F3, with care taken to keep it parallel with the right side and accurately aligned to prevent building in a twist.

Once fully dry pull in both the nose and tail ends against formers F2 and F4, the battery base and the servo tray. With the parts held in place with rubber bands and the alignment checked, I wicked cyano into all the 'dry' joints. Draw the rear end in, glue, then add the rear fuselage formers. At the nose pull in the sides and glue F1 and F2 in place. Finally, glue the nose former/skid in place and fix the control snake outers into position.

If you're building Tombo as a pure glider infill the nose back to F1 with soft balsa block. For an electric powered version keep the curved fuselage nose sides as 'cheeks' and use a small pancake outrunner motor of around 70 to 100 Watts, screwed to F1. As designed the downthrust angle is adequate.

Nose underside is sheeted to give that distinctive shape.



A canopy is heat shrunk over a shaped plug. Very easy if you are careful with a plastic bottle and heat gun.

Lots of space for your radio gear and battery. The cockpit base is simply made from sheet and curved formers.

"For an electric powered version keep the curved fuselage nose sides as 'cheeks' and use a small pancake outrunner"

HEXAGONICAL

With the top and bottom fuselage hard balsa 'spines' glued in use a sanding block to shape the edges of the fuselage sides and the top and bottom spines. Glue 1/16" medium balsa sections crosswise from the tailplane mount to the angled F4A former on one side only. Cover the upper nose back to F2. Also with cross grain cover the lower fuselage on one side only, from tailpost to nose, shaping and slotting the sections to fit around the wheel well and skid. Sand the edges of this sheet to match the angle of the upper and lower fuselage spines and cover the remaining fuselage opening. Sand all the angled edges carefully, leaving them slightly rounded.

The access hatch is all balsa. A 1/16" balsa base is curved over and glued to two guide rails, then 1/8" formers and the top spine are glued in place. Cross grain 1/16" sheet covers the top and it's all sanded to blend in with the fuselage. The 3/16" rear cockpit former is glued in place too, sanded to match the F3 outline. Balsa strip is added to form the fuselage upper, adjacent to the canopy, which also provides a gluing surface for the canopy.

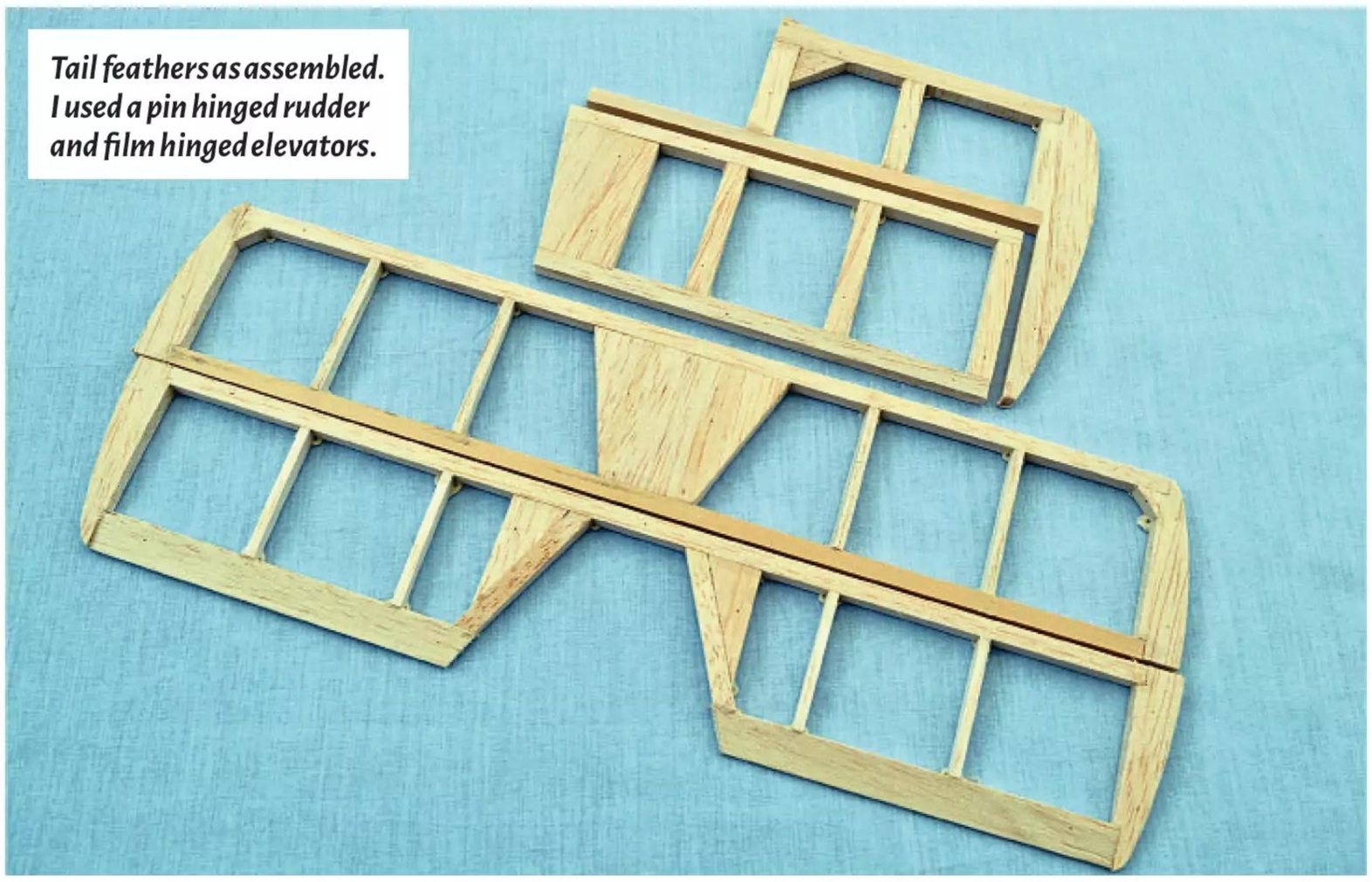
I made my own canopy using the carved block 'plug' and heated/shrinking pop bottle method that has been described in the magazine before. A cheap 1/8th scale pilot bust was used, with a headband added for whimsy.

With the interior of the cockpit painted 'neutral', Miyahara-san was glued in place, then the canopy adhered with 'cockpit glue'.

The final cockpit frame is from strips of self-adhesive aluminium tape, 'burnished' into place. It's used in the ventilation industry for taping duct joints airtight.

WINGS & THINGS

The tailplane and fin are flat structures, all from 6 mm medium balsa, except for the elevator mainspar and fin tailpost, both of



Tail feathers as assembled. I used a pin hinged rudder and film hinged elevators.

NIPPON TOMBO

A SIMPLE TO BUILD JAPANESE PRE-WAR GLIDER

DESIGNED BY DAVE GOODENOUGH

SOFT BALSA BLOCK COCKPIT FAIRING FIXED TO WING

3/16" SQ. SPARS HARD BALSA OR BASS

1/8" x 3/8" BALSA L.E. CAP

ALL WING RIBS 1/16" HARD BALSA

1/16" PLY SERVO MOUNT

1/16" BALSA SHEETING

0.4mm PLY

1/8" LITE PLY SERVO TRAY & BATTERY TRAY

ALL CORNER REINFORCING PLUS TOP & BOTTOM SPINE FROM 1/8" x 1/4" BALSA

1/8" HARD BALSA DOUBLERS

DIHEDRAL BRACES FROM 1.5mm (1/16") PC BOARD

3/16" x 3/8" BALSA L.E.

1/16" BALSA WEBS GRAIN VERTICAL

VAC-FORMED CANOPY

FIN & RUDDER ALL 1/4" MED/HARD BALSA

1/16" MED. BALSA FUSELAGE TOP & BOTTOM SHEETING

1/8" PLY SPINE

1/8" PLY FORMERS

SOFT FOAM LIGHTWEIGHT WHEEL

1/16" PLY WHEEL MOUNT/REINFORCEMENT

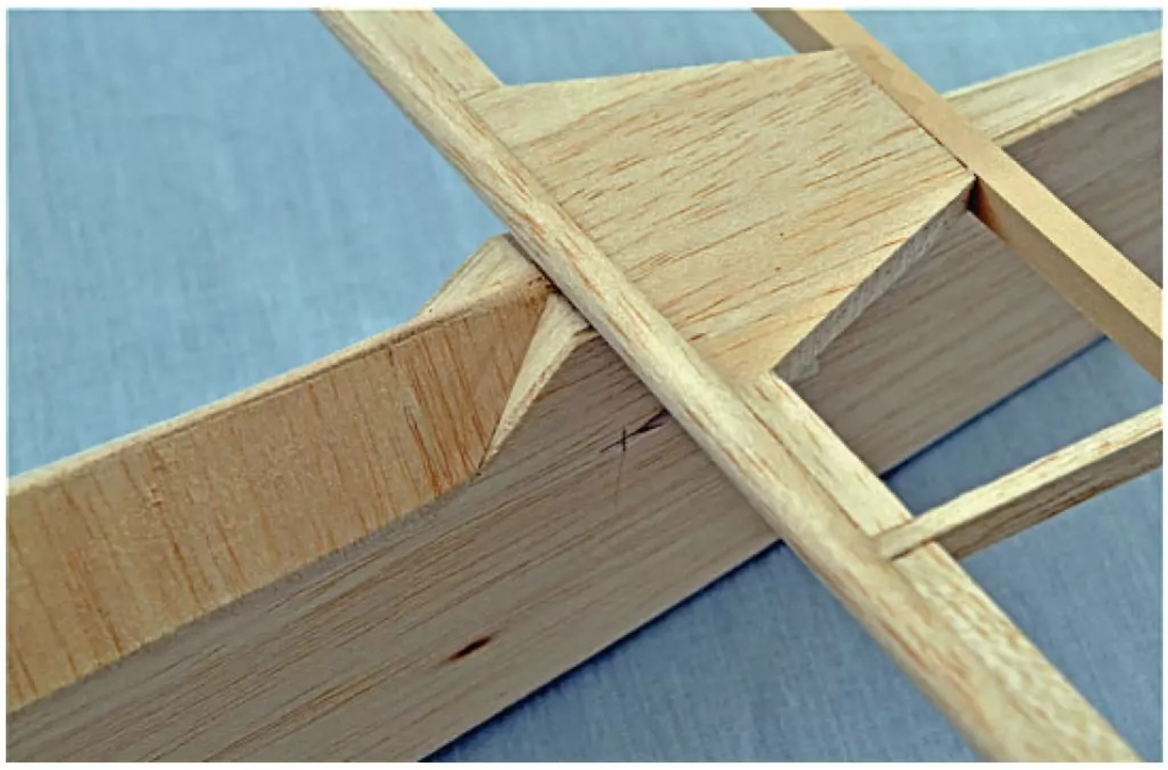
1/16" HARD BALSA FUSELAGE SIDES

1/4" x 3/4" BALSA T.E.

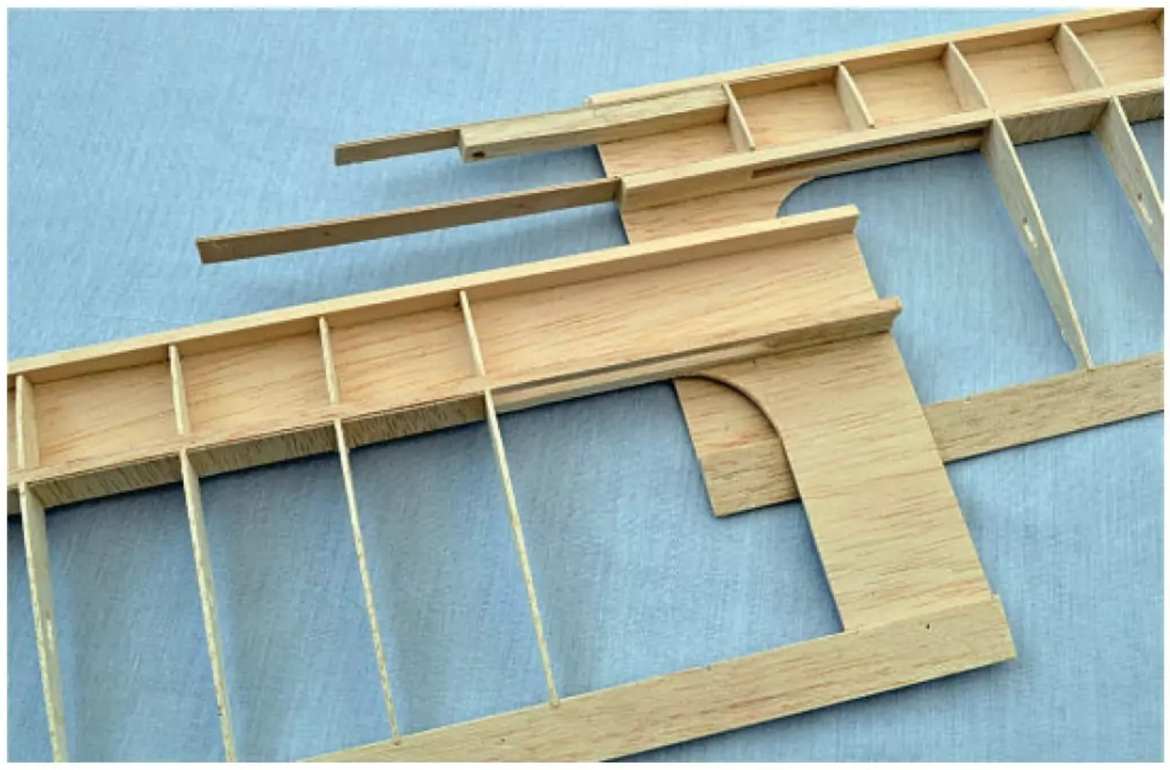
TAILPLANE FROM 1/4" MED/HARD BALSA

1/8" BALSA AILERON SPAR & L.E.

SOFT LIGHT BALSA TIPS



Hexagonal fuselage section is easily faired into the tailplane platform.

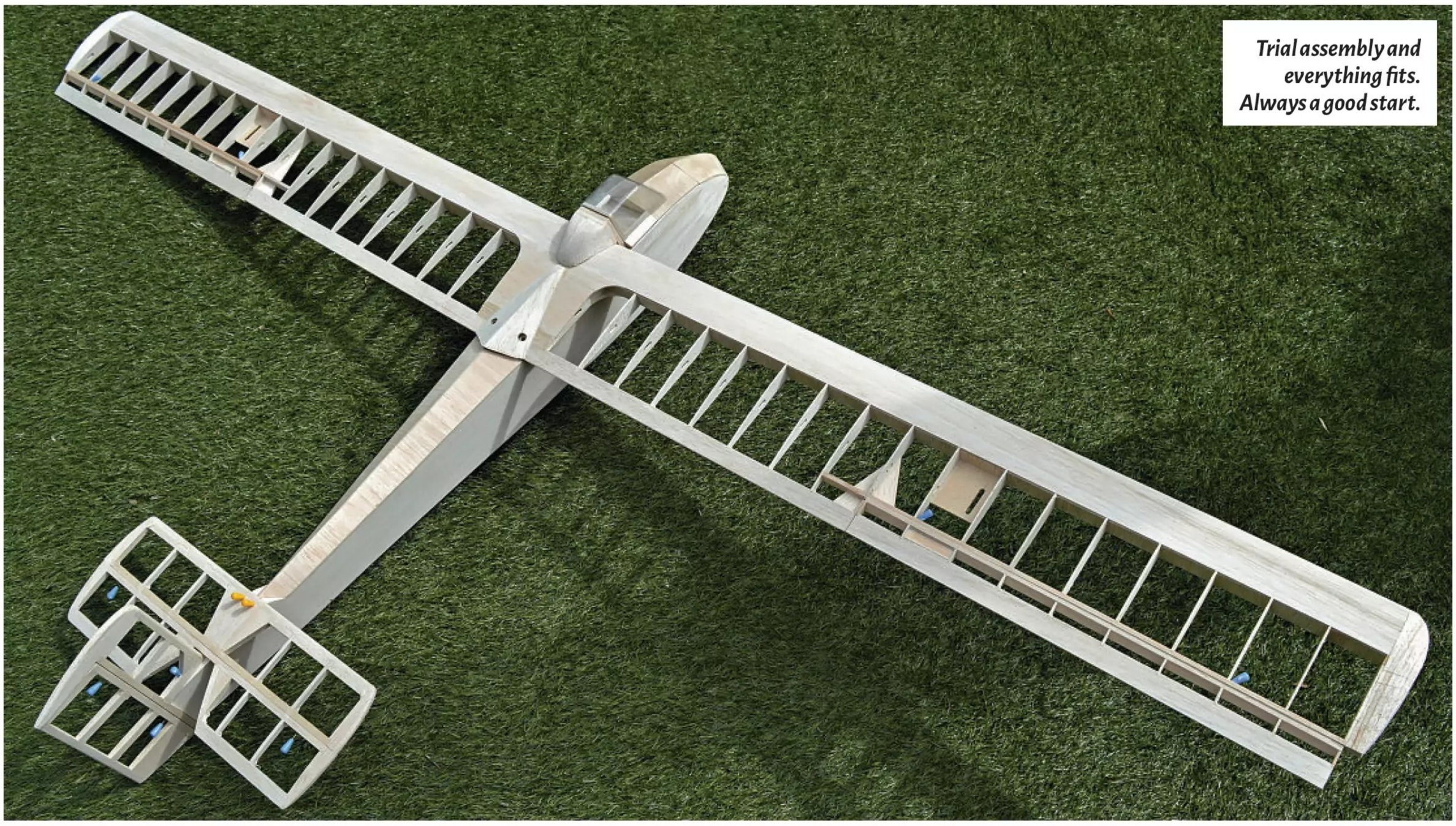


Ready for joining, the wing halves have the centre half-ribs added later.

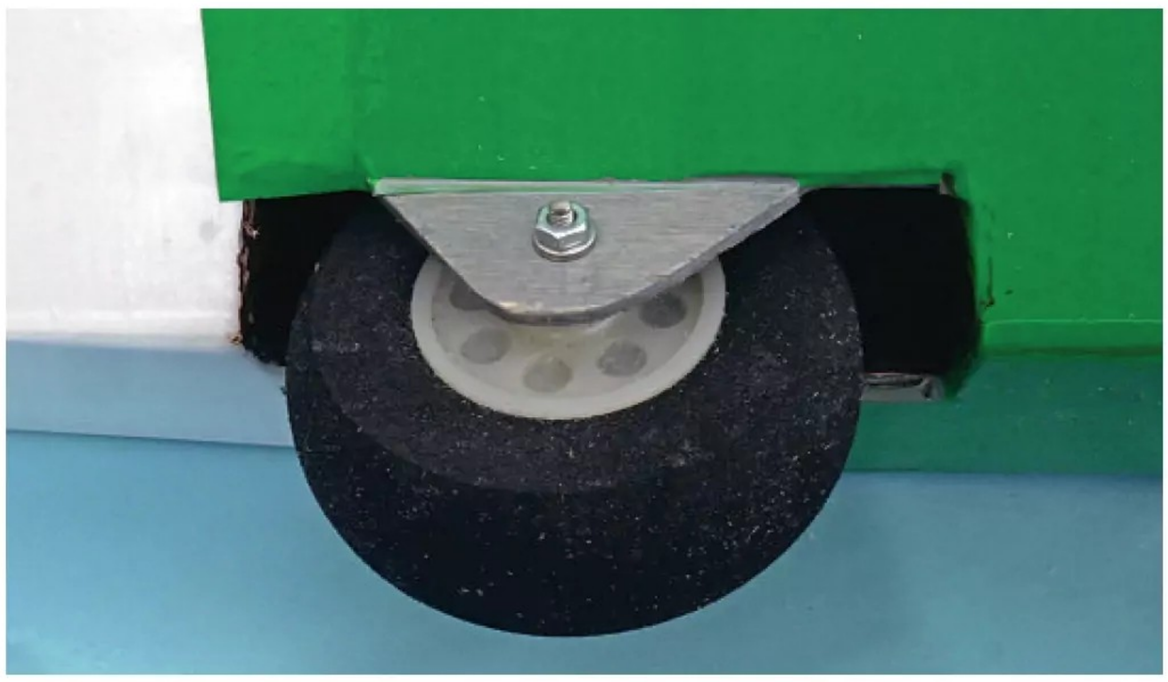
Simple wing structure before the top sheeting is fitted. Aileron servos and arms are tested and adjusted before gluing in place.

which use very hard balsa. I added some shape to the tailplane by rounding the leading edge and tapering the elevator section but it's probably not necessary. The fin/rudder has rounded leading/trailing edges. Both elevator and rudder have angled leading edges, shaped

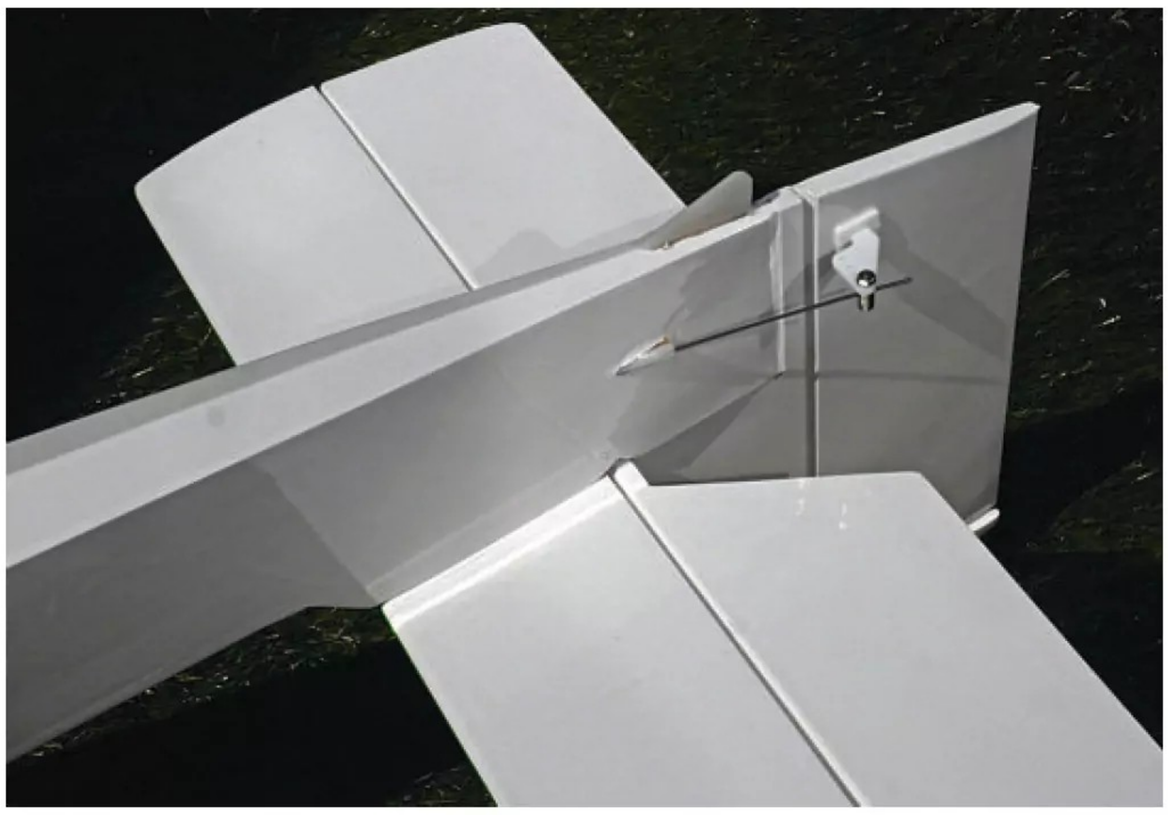
Here you can see the distinctive nose and wing fairings. Simple to achieve with a little work and care.



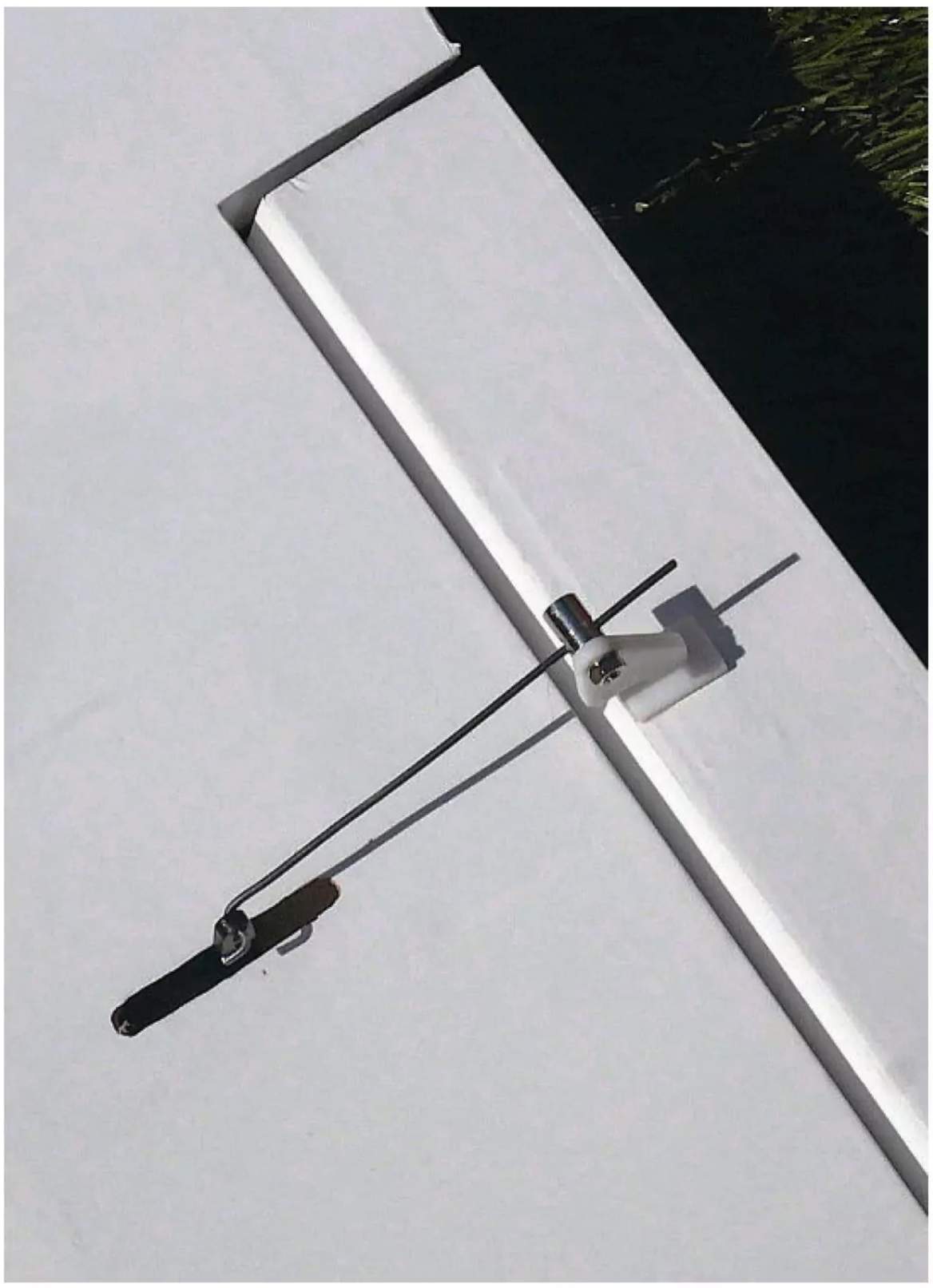
Trial assembly and everything fits. Always a good start.



Landing wheel is very noticeable and shouldn't be omitted. Sleeving the wheel axle prevents 'pulling-in' of the plywood mounts.



Rudder hook-up of the wire pushrod. Ditto for the elevator.



Couldn't be simpler! Top film-hinged aileron and a short pushrod connection.

to be hinged by covering film. If you want to use 'proper' hinges adapt the parts to suit.

The flat bottom wings are very simple to build. Cut a full complement of ribs then pin down the pre-slotted trailing edge sections, the aileron sub spar and the lower wing sheeting for one wing, lifting the front by 1/16" to match the rib profile. Glue in the centre section infill. Add the 1/16" ply servo plate and 1/8" balsa reinforcing gussets. Glue the lower wing spar over the sheet and, once dry, begin to fit all the ribs and aileron riblets. When dry glue in the top wing spar and inner leading edge, sanding the balsa strip to fit vertically. Don't glue in the first three ribs nearest the wing centre join as they are part-ribs, glued in after the dihedral braces are fitted, which comes next.

On one wing half attach the dihedral braces and balsa block infill pieces where the wing attachment pegs and screws will be fitted later. Suitably supported at the right dihedral height, offer up the second wing half to the first, to ensure all is correctly aligned. Once the 'fit' is correct, add glue to the mating surfaces, slide together and pin until dry.

Now fit all the centre section part-ribs, lightly sand the ribs and spars to remove any lumps, then fit the top sheeting and spar webs. Plane/sand the leading edge and glue on the front leading edge strip. Plane and sand to profile. Attach medium balsa block wingtips and shape to the section shown.

I opted to use 12 g metal gear servos for the ailerons, glued in place before the wing

> "The colour scheme is the one shown on the paper kit. I used it as it is both colourful and probably correct"

is covered and with the arms acting through the mounting plate slots. Providing that you 'prove' the servos before fitting, after gluing in place they are a 'fit and forget' component. Both servo arms should have approximately 30 degrees forward rake to give differential aileron control, i.e. more up than down. On a modern computer radio this can be adjusted electronically if you forget to adjust the rake.

With the wing structure finished carefully mark and drill the leading edge by 4 mm for the two carbon locating pegs and also drill fuselage former F3 to accept them. Drill two holes for the rear securing screws, aligning them with the fuselage/wing anchor T-nuts. Fabricate the fuselage/wing fairing, sand to fit, then drill to allow the wing securing bolt heads to pass through.

Finally, shape a light balsa block to form the fairing behind the cockpit, but don't glue it on just yet.

COVERING

The colour scheme in the photos is the one shown on the paper kit. I used it as it is both colourful and probably correct. The flying surfaces are covered 'as per normal' but the fuselage should be taken logically, working up from the bottom white panels to the top, then finishing with the green, also bottom to top. All the overlaps were treated with a lick of Oracover adhesive, my favourite film attachment glue. Lettering was sourced from an eBay seller, after I found an acceptable font on their sales site.

The cockpit rear fairing can be covered in one piece, using the heat and pull stretching method; once done, glue to the wing.

The rudder uses 4 x Robart 2.5 mm pin hinges, whilst the elevator and ailerons are film hinged, which is perfectly adequate for this low-stressed model. Control horns are the glued in type, with a tang passing through a slot cut in the control surface. With the backing plate glued on I have found them to be tough and they've never shifted, even in a tumbled out-landing.

CONTROLS & BALANCE

I'm a serial rudder whacker and so I use as much movement as practicable. Tombo first flew with 20 mm each way and I've left it as such. The elevator is rigged at 8 mm up/down on low rates, 10 mm when switched

Tombo gets a heave from LMMGA clubmate Harry Twist into the slope-side breeze.

Whistling along on a fast pass, getting to grips with the Tombo's handling. All was well.

Whoops! A drop in slope windspeed has test pilot Brian Sharpe looking for a safe out-landing spot.

Clubmate Harry retrieves the errant Tombo after the breeze departed without warning. The smile says it all - no damage!

to high. Ailerons are effective and use 10 mm maximum up, 6 mm down. These deflections will give a comfortable starting point but increase them a bit if you want the model to be sprightlier.

The Centre of Gravity was initially marked at 50 mm behind the wing leading edge, but a couple of millimetres further back shouldn't upset the flying characteristics and will 'enliven' the model.

FLYING

If you have come here first to see whether there were any problems thrown up by flight testing, I'm sorry to disappoint you but there were none. Tombo was launched off a slope into a 12 to 14 mph breeze and simply... flew. True, a bit of trim-tapping was needed to correct a minor left bank and slight nose down attitude caused by a tad too much nose weight, but after that it was plain sailing. Control throws were dialled back after the first flight and the model has been happily wandering the Staffordshire slopes offering fine flights ever since. It's no lightweight for its size, which helps with penetration, but it still flies well in 10 mph plus breezes over a not too steep slope.

I've found no vices as such, despite using it in marginal conditions, but like any glider it will stall if you slow it down too much. Thankfully, it is benign in such a situation and will recover if enough height is available.

The different look and colour scheme has raised some interesting comments, thankfully all positive, whilst others stare at this mostly scale model of an older craft and wonder what this six-footer is.

At a decent but manageable size, and relatively simple to build and fly, what's not to like? Get stuck in and enjoy a model from those days before 'the big one' kicked off. You won't regret it. ■

Dave Goodenough: **coetquidan@yahoo.com**

DATAFILE

Name:	Nippon 'Tombo'
Model type:	Pre-war glider
Designed by:	Dave Goodenough
Wingspan:	1740 mm (68")
Fuselage length:	930 mm (36.6")
Flying weight:	930 g (32.8 oz)
Functions (servos):	Ailerons (2), Elevator (1), Rudder (1), Throttle (ESC)
Motor (optional):	70 to 100 Watts
Battery:	2S 1200 mAh & 5A UBEC with 4.8V output

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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
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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
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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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50mm	FMS 4500kv (4S LiPo)	1,086g	£41.58
64mm	PowerFun 3900kv (3S LiPo)	872g	£39.20
64mm	FMS 3900kv (3S LiPo)	TBA	£53.99
64mm	PowerFun 3500kv (4S LiPo)	1,072g	£39.20
64mm	FMS 3150kv (4S LiPo)	1,162g	£53.99
70mm	FMS 2750kv (4S LiPo)	1,253g	£70.20
70mm	PowerFun 3400kv (4S LiPo)	1,435g	£47.50
70mm	PowerFun 2300kv (6S LiPo)	1,816g	£53.49
70mm	FMS 1900kv (6S LiPo)	TBA	£75.59
80mm	V3 FMS 2000kv (6S LiPo)	TBA	£129.99
90mm	PowerFun 1450kv (6S LiPo)	2,924g	£95.00
90mm	FMS 1850kv (6S LiPo Metal Case, Inrunner)	4,000g	£172.99
90mm	PowerFun 1100kv (8S LiPo)	3,360g	£95.00
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Jason Eldridge's modified CARF Corsair. See Bickley Scale.

THERMAL MANAGEMENT

Summers are getting hotter, so too are ESCs. David Ashby describes his favourite contingency

Words & photos: **David Ashby**

Go back 20 years or so and electronic speed controller (ESC) cooling was a popular topic. It was a time when they didn't seem as well made and reliable as they are now, so doing everything possible to keep them cool in the air might be the difference between a good or bad day at the flying field. It didn't help that some RTF model manufacturers hadn't appreciated that ESCs like some headroom (20% is the figure commonly quoted these days) so fitting a 40A ESC in a model where 40A, or perhaps a tad more, was regularly drawn by the power system wasn't very sensible.

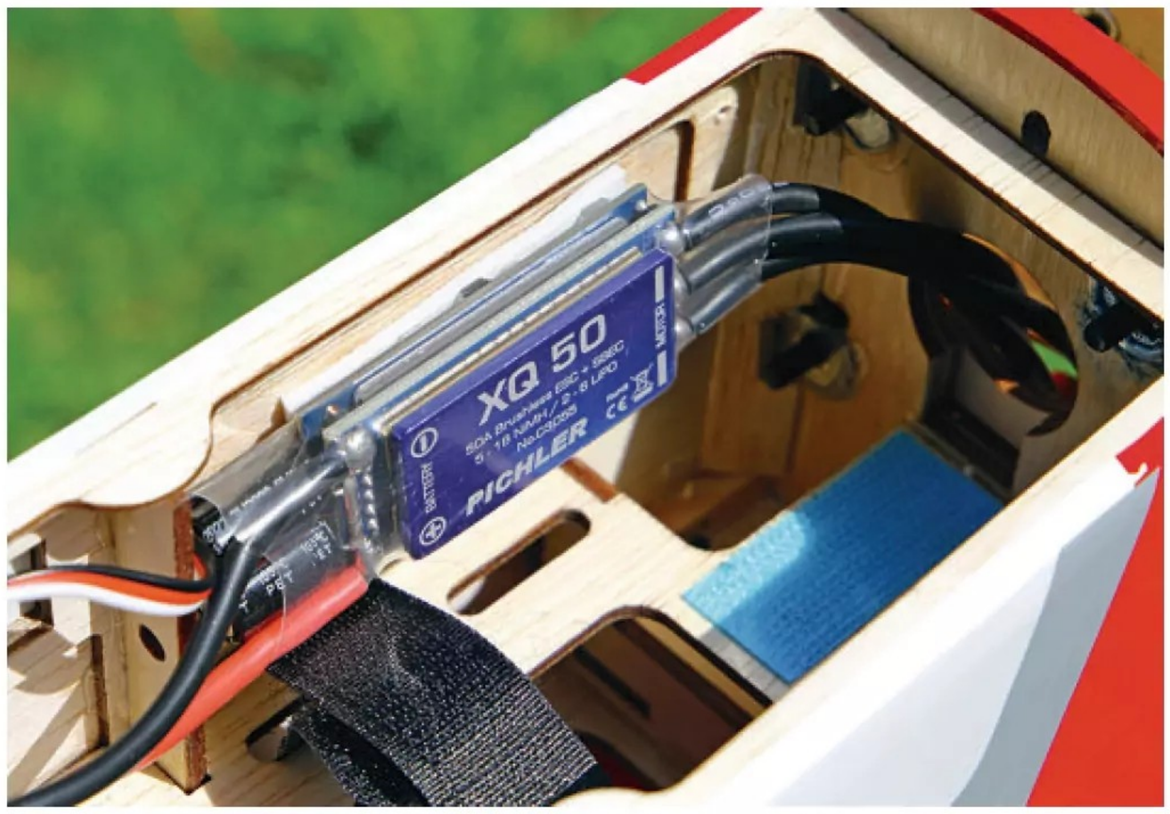
But ESC reliability and headrooms improved, some ready-to-fly (RTF) foam models incorporated a bit of airflow cooling and the subject seemed to disappear from the conversation.

Then summers got hotter. A lot hotter. Coningsby, Lincolnshire saw the gauge hit 40.3-degrees in July '22 and while the summer just gone didn't match that, at my club it was still hot enough to make a few ESCs overheat and stop functioning. And nothing good happens after that.

Perhaps ready-to-fly models have made us a bit blasé. Fewer flyers know their power systems intimately these days or appreciate the essential balance between prop size, current draw, motor and ESC ratings. Not that I'm going to devote column inches to all that, there's plenty of info out there, just Google and get reading. But if you're new to the hobby then please make sure you do. And buy a watt meter too.

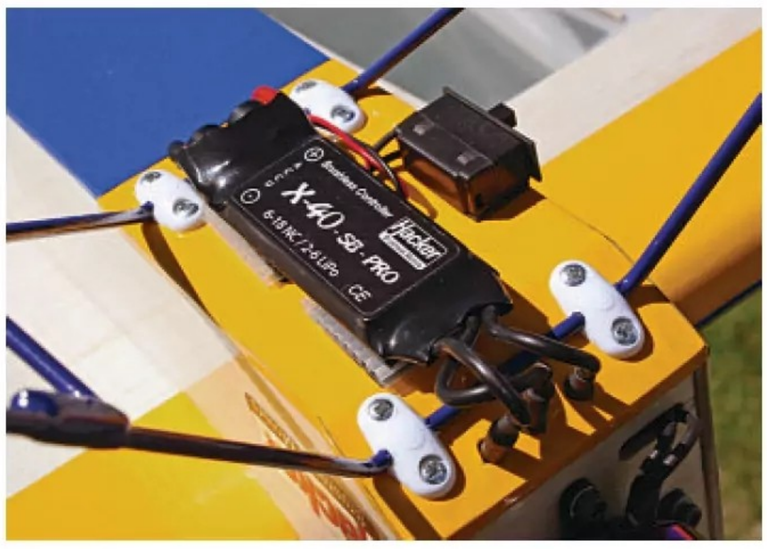
One of my clubmates, a beginner, lost his balsa ARTF Wot4 in this manner. He sited the ESC under the hatch alongside the battery where, on a 30-degree day, it simmered nicely for a few minutes before expiring. A separate receiver power source there wasn't and that was that. It's a hard lesson to embrace, especially for newcomers who must quickly appreciate

This may be an extreme example but nothing good happens when an ESC expires.

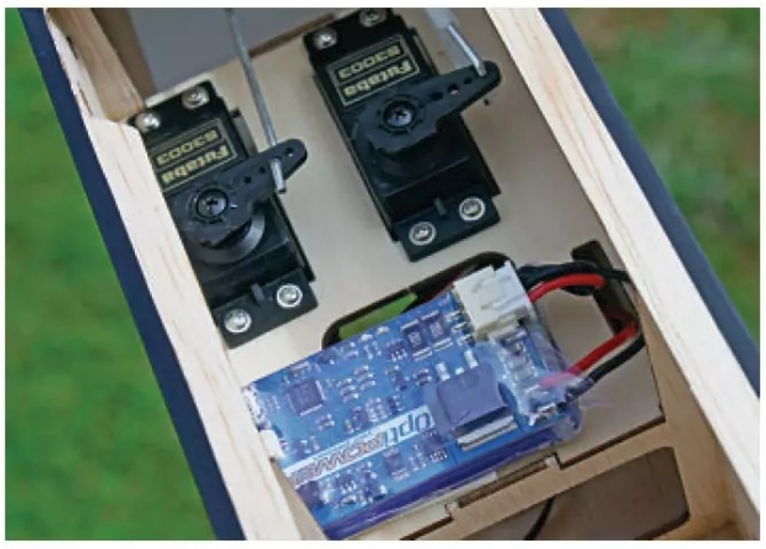


It looks snug but is it getting the cooling airflow it needs?

One solution is to cut an aperture in the fuselage underside.



Or, where appearance isn't important, put the ESC outside.



Optiguard is a 2S back-up solution that kicks in when it senses a voltage drop at the Rx.

Heli flyers use Optiguards too.

that success in the hobby must sometimes be earned through hard, bitter experience.

ESC?

Perhaps it does no harm to chat about my favourite option that might help prevent the loss of a model. First up, it's important to appreciate what an ESC actually does and why it's such a vital component in your power system.

It was all a bit easier back in the day when most club sport models were IC powered, used a .40 - .60-size engine and had 4-6 servos. A 4-5 cell NiCD or NiMH battery connected to the receiver using a switch harness and provided power to make the servos move. Job done.

Then electric powered arrived and, to save weight, one big battery provided power, not just to the motor but to the receiver and servos too via a little wire from the ESC that plugged into your receiver's throttle channel. All very simple.

Included within the ESC's circuit is something thing called a Battery Eliminator Circuit (BEC). This is basically a voltage regulator that takes high current from the LiPo battery powering the motor and steps it down to a level that won't fry the receiver and servos, usually 5V or 6V. The BEC also delivers a constant current, commonly 5A, which is sufficient to satisfy the current demanded by 5-6 servos and, say, some small electric retracts.

But supposing a pilot gets carried away at the sticks or forgets to set his timer? Will the model fall from the sky when the battery is exhausted? No, another bit of ESC circuitry called the Low Voltage Cutoff (LVC) is designed to shut down the motor before this happens leaving enough in reserve to power the receiver and servos while the pilot guides the model down safely.

That the ESC is the heart of a model is obvious and why considerations regarding cooling and receiver power back-up/ redundancy are so important, especially if the model is large or expensive or both. But at what point do you look at a model and know that something must be done other than to rely on the ESC alone?

Bickley's scale day saw a great turnout although t'was very windy so most of the WW1 bipes didn't fly.

Built from the Balsa USA kit, James Gordon's Eindecker went up.

Gavin Barden's Miles Messenger chugs past.

There's no hard and fast answer to that although respectable RTF model manufacturers do make allowances where heavier or elaborate ready-to fly models are concerned. EDF jets are notoriously current-hungry and that's why FMS fit a separate BEC (sometimes called a UBEC) to theirs, one that'll handle the current demands from digital servos, elaborate electric retracts and lighting.

I tend to fit some sort of redundancy if the model is a balsa ARTF conversion as they tend to be on the larger and heavier side than foamies. My go-to solution has become the Ultra-Guard 430 from Optipower that I've fitted to some of my balsa ARTFs and F5J competition gliders. It's basically a small 2S 430 mAh LiPo buffer battery pack with a circuit board attached. The pack connects to the board using the balance lead plug and a line from the board connects to a spare receiver port. The unit then monitors the model's voltage and uses the buffer pack to power the Rx if a voltage drop is detected, perhaps due to the failure of a motor battery or ESC. At 40g it's lightweight and small enough to find a home in most club-size aircraft and helicopters.

While the unit's operational status is reflected by LEDs on the board, its activation in the air may go unnoticed. An optional external high intensity LED can be added to signal activation, although I've tried it and must report that bright sunlight does negate the effect. Nevertheless, Optiguard is a good plug-n-play solution and one that doesn't require a soldering iron.

Incidentally, the buffer LiPo is topped up by the existing power system while you're flying. Running in at just over £50 some might argue that it's an expensive solution, but I disagree. Apart from the peace of mind the unit offers, it's a small price to pay for saving a model, especially an expensive one. Remember too that pilots rarely get to choose the crash site.

"Apart from the peace of mind the unit offers it's a small price to pay for saving a model"

BICKLEY SCALE

My Model Magic in the September issue featured Kevin Wesley's sublime Sopwith Camel. I shot it at the Bickley Scale Day in early June and it would be remiss not to mention a few of the other models that caught the eye.

Nigel Nixon's Ki-43 Oscar is a beautifully re-worked and re-finished ARTF. It uses 12S power to spin a 24" x 12" prop.

A neat installation inside too.

In particular Will Simpson's sweet little 36" span DH Mosquito built from the Rob Caso plan that was published in a 2011 issue of this magazine. A lot of care and thought went into the project. It uses two Hobbywing X rotor 2306 1600 kV 28 g drone motors because they have the high torque needed to swing the 8" x 6" scale props, but by only running them on 2S not the 6S they were designed for. That means the ESCs can be tiny BLheli units with no BEC to save weight and space. His RC Groups build thread is the place to go for more info so just put 'Rob Caso 37" Mosquito Build' into the site's search box.

A strong wind prevented some of the models from flying, particular the draggy WW1 types, but some did brave the breeze including James Gordon's Balsa USA Eindekker, Gavin Barden's Miles Messenger and Nigel Nixon's impressive Ki-43 Oscar. The latter started life as an ARTF model before Nigel glassed and painted it to leave the superb finish you see. It uses a 12S power system spinning a 24" x 12" prop and looked and sounded very fine indeed.

A trophy sponsored by Futaba UK went to Jason Eldridge for his CARF Corsair. A heavy modified and superbly detailed CARF Corsair mind. He added panel lines and rivets across the entire model and Mick Reeves scale rib tapes on the outer panels of the wings, flaps and elevators. Next came a cellulose base coat paint then paint masks and rubdowns from FlightLine graphics. An electric wing folding mechanism and a sliding canopy topped it all off making a worthy winner on the day.

Will Simpson and his sublime little Mossie.

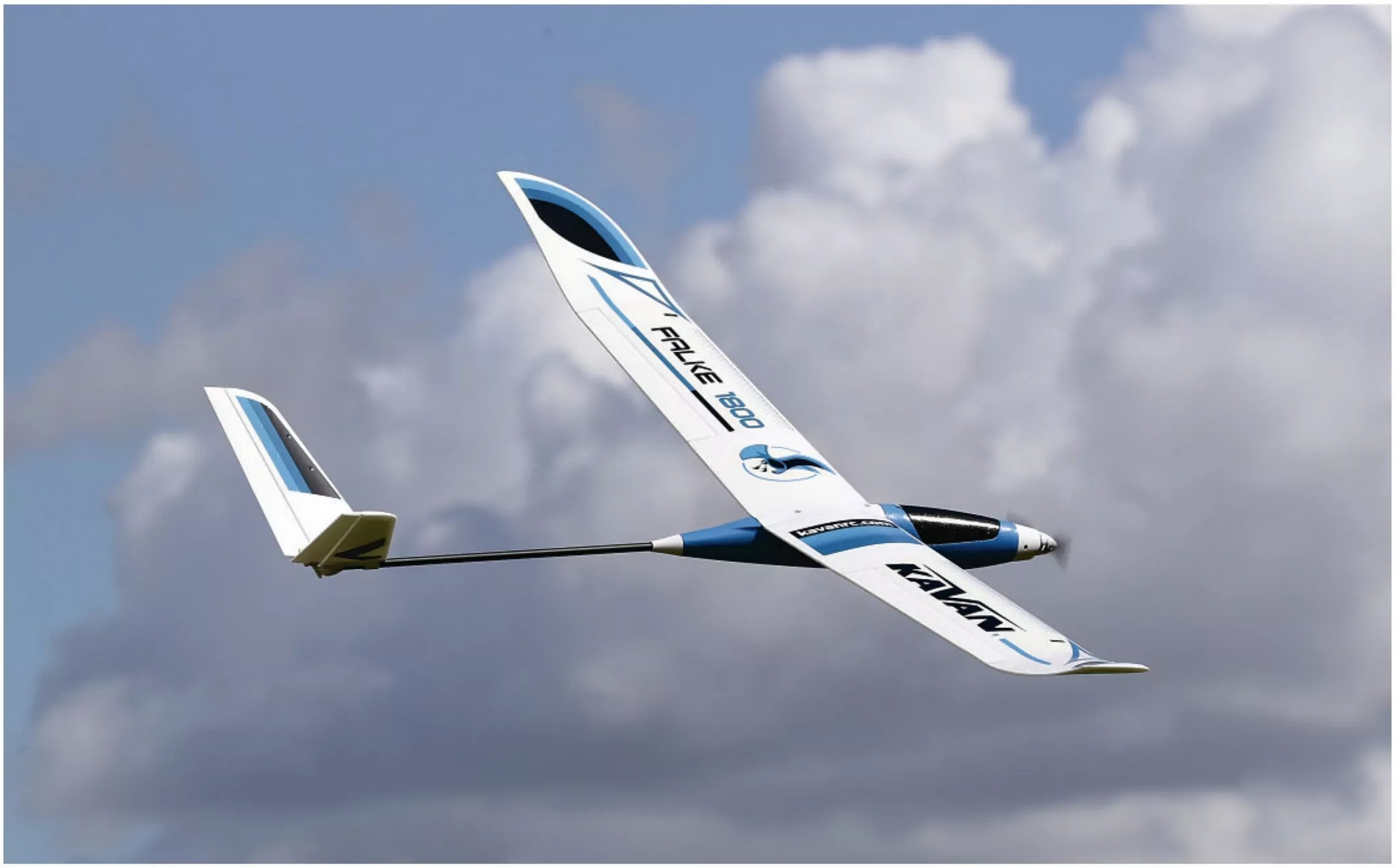
John Young flew his Hughes 500 impressively.

FREE-4-ALL FALKE

I haven't had a good year on the RES (rudder, elevator, spoiler) motor glider front. I started 2025 campaigning the 2m span Mirai, then built a Fresh RES machine as a back-up. It flew so well that the Mirai became unloved and found a new home. Then the Fresh crashed, after an elevator servo died in the process (to use the old chestnut), hitting the ground so hard even the stickers came off. So, I was airframe-less when the next Kent Interclub Free-4-All (a simple format 2m span glider comp) came along.

Jason Eldridge's extensively modified CARF Corsair won the Futaba Scale Cup, seen here with Geoff and Mandy Wallace from Futaba UK distributor J.Perkins.

Aside from creating a folding mechanism Jason added some fine detail here.



Kavan's Falke, my stopgap thermal finder.

Just ailerons. Flaps aren't really needed.

I added 5g at the tail, just to negate its slipperiness.

With no time to repair or build afresh I needed something pronto and Kavan's 1.8m span Falke jumped off the web page. At 600 g it's pretty light for its size but just had a look about it that promised it wouldn't embarrass me when pitted against the wide variety of types the competition format supports.

Apart from the carbon fuselage boom it's made from EPO foam and uses ailerons, ruddervators and throttle. Power is from a modest little C2714-1450 outrunner spinning a 7" x 6" folding prop and three LiPo cells, a 950 mAh pack in my case.

So how does it perform? Surprisingly well actually. The power system delivers a decent climb-out after launch and it has a smooth and predictable flight pattern. It seemed a little too slippery at first but moving the C of G back a little negated that. It signals lift easily and turns can be flat and tight when the time comes to follow a thermal downwind.

Free-4-All is designed to encourage beginners to thermal competition, so the rules are relaxed within the 2m span limit. Rudder, elevator, ailerons and spoilers are allowed but camber changing must be switched off and flaps can only be used as brakes. Balsa, foamies and moulded gliders are fine, launched by electric or bungee (hi-start) power. Electric powered models must have a height limiter set to 100 metres and 30 seconds of power. The bungee is a 15 m rubber tube and a 100 m nylon towline with pennant attached.

The aim is fly 10 times over a 4-hour period with a 6-minute maximum working time before landing in a designated area. The best six flights are entered and points are awarded for every second flown. Landing outside the box nullifies the flight score.

Proving popular, some three or four events are held every year, encouraging comp tyros to have a try and with 15 entrants arriving at the Falke's

Jim's Junior 60 has a very authentic patina that reflects its adventures over the years.

And the noise from the brushed motor, drive belt and gears is rather pleasant.

debut outing in early August. A wide variety of types competed ranging from bitsa creations to Radians, EasyGliders and, of course, the latest top-spec all-balsa RES machines. While sunny, the conditions were unpredictable; a strong breeze and patchy thermals with the best lift passing through just after midday for an hour or so. This suited the Falke as it penetrated the gusts when lighter machines started going backwards. I flew bunch of four-minute flights and a couple of six-minuter's to place third. Not bad for its first outing.

I didn't mention but it breaks down easily for transportation in the nice box it comes in

"I think it has a lovely patina that reflects its flying adventures over the decades"

so makes a good packable all-round holiday soarer for slopes and fields. Definitely a keeper.

JUNIOR 60

I was talking about the satisfaction that comes from refurbishing old models a few months ago and another has recently flown at my club. A bereavement donation, it's a Junior 60, built, we think, in the 1980s or perhaps earlier and altered to accept a brushed electric motor sometime in the late 1990s. Call it shabby if you will but I think it has a lovely patina that reflects its flying adventures over the decades. What makes it really special though is the sound from the brushed motor and belt driven gearbox. Pleasingly agricultural, it resembles the steady chug of a steam powered boat as it potters past. Even the dyed-in-the-wool IC pilots stop to watch and enjoy the distinctive sound. Jim Beagley is the flyer entrusted with 'looking after it' for the next owner.

That's it for now, I hope your summer months have been as busy at the flying field as mine have been. I'll see you next time and, as always, justforfunrcme@gmail.com is where you'll find me. ■

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VOLANTEX CORSAIR

The Editor takes a punt on flying Volantex's latest mini warbird in a bit of a breeze!

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

Earlier this year we left John Daniels having a ball with one of Volantex's 500 mm P-51D Mustangs. More recently, Volantex's UK distributor CML sent over the latest in what is known as 'The Legends' series of mini warbirds, a rather fetching navy blue Corsair F4U. As with the Mustang, I had planned a studio photo shoot to show off this fine-looking model to best effect before handing it over to John. But when another model needed taking to the flying field, to be captured by my good friend Barry's new camera, I decided to take potluck and have the Corsair photographed too, skipping the studio session altogether. At the patch the sun was shining, but this summer's all too regular strong and gusting wind had also decided to make an appearance. Would it be too much for the little Corsair to handle?

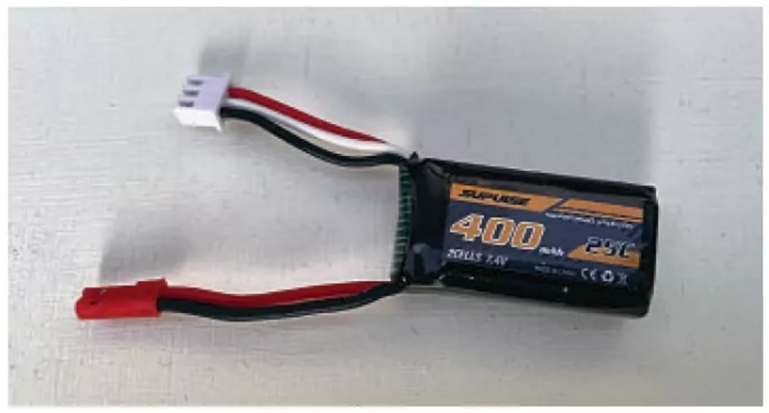
STATIC SHOTS

I requisitioned one of the club's starting tables to take static pictures of both the tiny Corsair and a larger bush plane. By the time I had put my camera away I was mightily relieved that the little warbird hadn't been knocked off the tabletop in the stiff breeze!

Even in a stiff, bumpy breeze that would normally keep such a small model on the ground the X-Pilot gyro keeps the Corsair on the straight and level.

It's a well finished little thing, neatly sprayed and with well applied decals.

The basic transmitter supplied is set up to fly the Corsair and does the job perfectly well. Or you can use your own DSM or SBUS Tx by plugging in a suitably small receiver.



A USB charger is supplied with which to charge the 2S 400 mAh LiPo, but the JST lead and HX balance connector mean that it can also be used with a fast charger. You'll need a JST adapter lead to suit your charger.

"If fitted for static display the wheels can be easily removed before a flying session"

If you have read John's review of the similar sized P-51D Mustang you may recall him praising it for having a far more scale like appearance than Volantex's earlier 400 mm series warbirds, saying it could easily pass as a well finished plastic kit. The Corsair shares the same attributes and a collection of these neat little warbirds would look great sitting on a modeller's shelf, either in the workshop or even in the living room - with permission from the boss of the house!

The little LiPo drops vertically inside the battery bay.

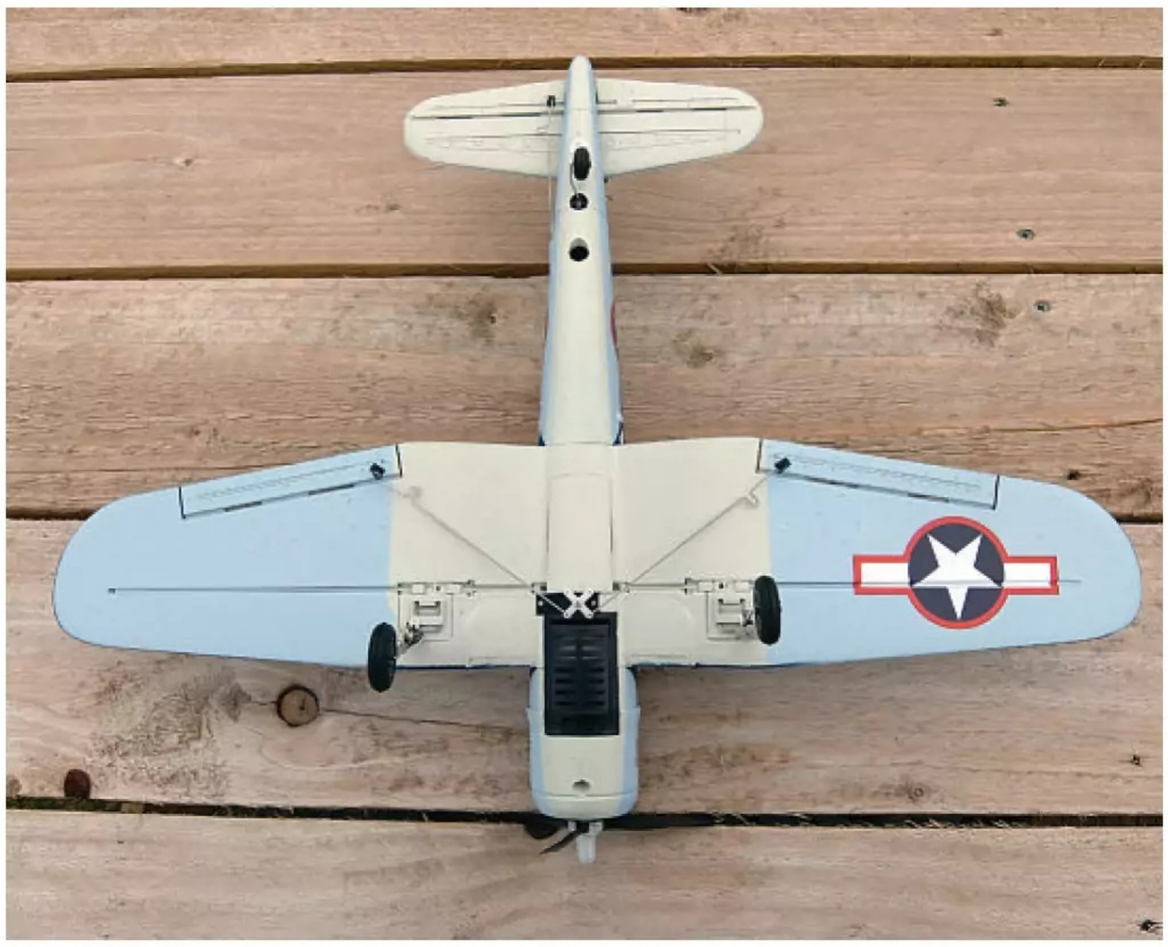
Inside the square box with the little fighter are found two three-bladed propellers, slide on main wheels complete with doors, a ready paired four channel transmitter and a 2S 400 mAh LiPo with matching USB charger. As with the Mustang, the F4U comes with a brushless motor and is fitted with an X-Pilot 6-axis gyro stabilisation system.

Nose art and other markings replicate those currently used on an FG-1D Corsair based at the Mid America Flight Museum.

The pilot bust pays homage to Lt. Col. Ken Walsh, one of the highest-ranking United States Marine Corps fighter aces in World War II.

The small one-piece model is ready to fly, just needing one of the scale-like props to be clipped in place. It is fitted with a prop saver and on catching the grass during landing the prop will invariably pop off. But rather that than break a blade each time it is flown. As with the Mustang the removeable prop also means that the model will go back inside its carry box for safe storage between flying sessions.

I followed John's advice when preparing the Corsair for its first flight, opting to leave the clip-on main and tail wheels off to improve its appearance in the air. If fitted for static



Underside view showing the main wheel clips and the central aileron servo. Pushrods can be tweaked by compressing or opening the U-bends near the control horns. Ours was fine straight from the box.

Behind the scale looking 3-blade prop is the clip-on prop saver. Removing the prop (and wheels) allows the model to be safely stored in its original box.

You'd be hard pressed to differentiate this little 498 mm span fighter from a much bigger foam warbird in these pictures. Kudos to Volantex for making such a neat little plane and to Barry and his Olympus camera/lens for capturing it so well in such tricky conditions!

"…as John suggests, stick to the Midd setting and you'll have a lot of fun with this super little fighter!"

display the wheels can be easily removed before a flying session.

Preflight all that needs to be done is to charge the 2S LiPo and to fit four AA cells inside the Tx battery box. A USB charger is supplied to charge the 2S LiPo but since the pack is fitted with a red JST connector and an XH balance lead connecting it to a fast charger is easy if you have one. As with all my LiPo packs I made sure to charge it at a comfortable 1C.

FIRST FLIGHTS

After plugging in the LiPo the X-Pilot stabiliser kicks in, making itself known by twitching the tiny servos. The transmitter is supplied as Mode 2 and it features three flight modes: Strong Assist, Soft Assist or Off (no assist). The select switch is on the top right shoulder of the Tx and pushing it away to the rear will switch the X-Pilot off, whilst the middle setting (Midd) gives you Soft Assist, and pulling the switch towards you enables Beginner mode and Strong Assist. In his review John recommends using the Midd position for most flying so that's where I started.

After checking that all the controls were moving in the correct directions and that they were responding correctly to the X-Pilot, as detailed in the small but informative manual, the throttle was raised and the little Corsair was given a gentle underarm lob. Even on partial throttle the small brushless motor and

To roll from straight and level you'll need to press the Aerobatics button or simply roll off the top of a loop.

KC caught on the hop after picking up the Corsair, showing the diminutive size of Volantex's latest mini warbird.

2S combo had plenty to give and the cranked-wing bird was happily zipping around despite the strong breeze. She covers a lot of ground very quickly, especially in windy conditions, so don't fly her too far away otherwise the Signal Loss Alarm will kick in, although you'll probably have turned her around well before the maximum range is reached.

Even in the Midd setting there's quite a lot of elevator, allowing the Corsair to pull through some nice round loops. However, full aileron doesn't provide enough control movement to fully roll the model. To perform rolls you need to press the 'One-key Aerobatics' button on the left shoulder of the Tx which automatically feeds in the additional aileron throw needed to perform a roll. There is just enough aileron throw to perform a half roll without pressing the aerobatic button so pulling the Corsair up into a half loop and rolling off the top makes for good-looking manoeuvre.

The 'One Key' button works with elevator too but there's plenty of movement available to perform loops without assistance, at least in Midd mode.

EXPERT & BEGINNER MODES

Flicking the mode switch to Expert turns off the X-Pilot stabiliser system but John's Mustang review strongly cautions against doing this. For the sake of completeness of this review I gave it a try but immediately saw what he meant and promptly switched back to the safety of the Midd setting!

I also tried Beginner mode, which as the name suggests quietens down the model a lot. As John says, "It also reduces the model's turning capabilities which is not a good thing due to the model's fairly high flying speed. With Beginner mode selected and an inexperienced pilot on the sticks I can easily see it quickly going out of range and maybe flying out of sight."

So, as John suggests, stick to the Midd setting and you'll have a lot of fun with this super little fighter!

ONE-KEY TAKEOFF

The 'One-key Aerobatics' button also provides another function - 'One-key Takeoff'. If pressed before raising the throttle and launching the model it will hold the Corsair level as it climbs. To quote the manual, 'The airplane will take off automatically and hover in the air until any operation on the transmitter'. If you touch any of the controls during the climb out the plane will exit this function and return control to the pilot. It does work but it didn't feel any more stable to me than a normal climb out.

CORSAIR'S A WINNER

As with the 500 mm Volantex Mustang this new Corsair is not really a model for novice pilots but it will provide a lot of fun for anyone who is well on their way to A-cert standard. The Midd position for the X-Pilot system is the best setting so leave it there, pushing the Aerobatics button before moving the ailerons if you want to perform any rolls.

As for handling the wind, I've taken her out on several occasions since that first outing and none were in anywhere near calm conditions. But the tiddly Corsair handled everything that Zephyrus threw at her with aplomb. So, despite her diminutive size she's definitely not a calm weather only model. ■

DATAFILE

Model:	F4U Corsair, blue
Model type:	Mini warbird with gyro
Manufacturer:	Volantex
UK importer:	CML Distribution https://www.cmldistribution.co.uk
RRP:	£129.99
Wingspan:	498 mm (19.6")
Length:	396 mm (15.6")
Motor type:	Brushless
Servos:	2 g x 3, plus X-Pilot gyro stabilisation Functions (servos): Ailerons, elevator, rudder, throttle
LiPo:	2S 400 mAh

The Mosquito flies in. A possible Vapor alternative?

TWO FOR INDOOR

*This time **John Stennard** looks at a pair of popular indoor models, eyes up some potential inside planes and preps a new squadron of demo helicopters*

Words & Photos: John Stennard

Open the window and in flies a Mosquito, pursued by a Slow Ultra Stick!

In a way this is a follow on from the Vapor as two new models have appeared and one looks related to the Vapor. It's called the E43 Mosquito and at first glance it could be a Vapor. At 360 mm wingspan and 350 mm length it's very similar in size and the flying weight and battery match up as well. The geared coreless motor also looks similar but it's when we get to the R/C that things change as it has a micro-Rx and two 1.7g rotary servos. The Rx is listed as DSMX/2 and the Tx E-FHSS. It comes with or without a micro palm size transmitter. I guess that you can bind your DSMX/2 Tx to the Rx, but this isn't mentioned.

At the time of writing you would not get much change out of £85 for this model. True,

UMX Slow Ultra Stick should be good indoors and outdoors in calm conditions.

"It's always important to find out which kind of models are being flown as you could buy something unsuitable"

Airbug hovercraft and alternative designs are very popular.

it has a transmitter, but if you shop wisely, you can get a UMX Vapor for around £110 to use with your own Tx. This has a stabilised modular Rx, lights and wing struts. Of course, the RTF version of the UMX Vapor with a Tx is more expensive but most indoor fliers have their own transmitter. If you don't have a compatible Tx then, with its palm size unit, the Mosquito could be an alternative to the Vapor.

Hot on the heels of the Mosquito (do they have heels?) comes a new E-Flite indoor/small space model in the form of the UMX Slow Ultra Stick. This is a 501 mm wingspan model with a flying weight of 46 g and is basically a scaled down version of the 1.2 metre Slow Ultra Stick. Like the previous model it can be purchased as an RTF or PNP and there's a £30 difference between the two. Check out the retail prices but it is more than a UMX Vapor. Of course, it has the UMX stability and only requires a 1S 150-200 LiPo. I use 1S 220-380 LiPos in most of my indoor models.

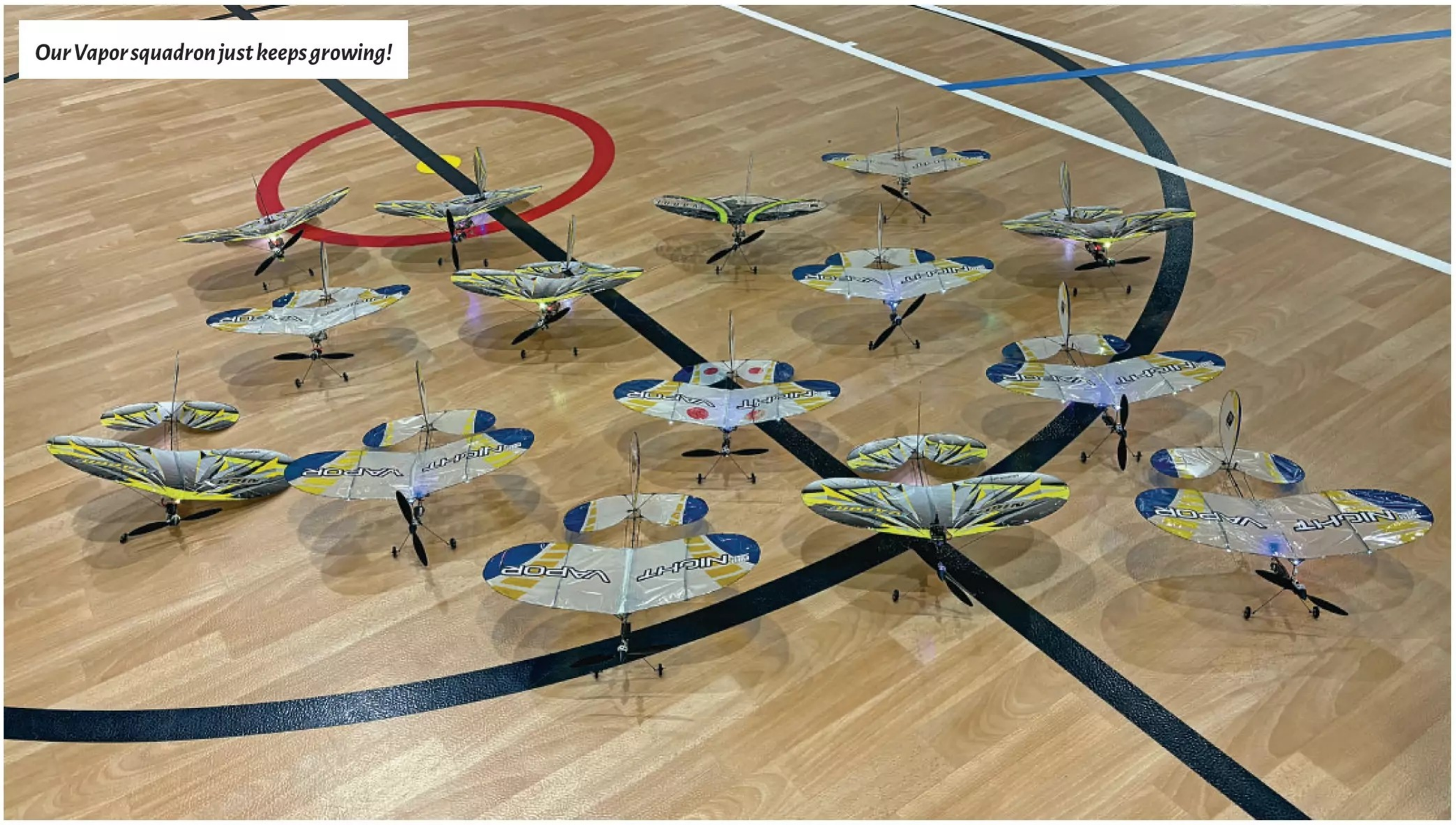
This could be a good choice of model for a first indoor flying experience as it should be easy to handle and fly over a wide speed range, plus have good manoeuvrability. It will also have a calm outdoor conditions capability and be especially suitable for small flying spaces.

We have a strict 'Vapors or very similar' flying slot rule and a Slow Ultra Stick would not be allowed to join in; it would have to wait for the 'Small Foamies' slot. It's always very important if you are joining an indoor flying group to find out which kind of models are generally being flown as you could buy something unsuitable.

TALKING ABOUT VALUE

I very rarely quote prices as they can vary depending on the supplier and original source. A non-indoor enthusiast can sometimes view the prices of micro/small indoor models and think they are expensive compared to outdoor models. However, micro size electronic technology can be more expensive and some models will have been hand built. If you have tried any of the Minimum RC CF micro models, which are similar but less complex than the Vapor, you will appreciate the skills involved.

If you also consider the usage and airtime, an indoor model is likely to be flown regularly throughout a typical indoor season. At our twenty-six (September to April) indoor sessions all my indoor models will be flown without fail, with no rain or high winds to ground them. Damage is infrequent, so the flying costs, even with some LiPo replacements, are low and I think give a good return on my investment. I, and many of our indoor contingent, are flying models that have outlasted many of our outdoor ones.



Our Vapor squadron just keeps growing!

SAFETY IN NUMBERS

Not perhaps the case when we are talking about Vapors and Airbugs! I was a very early exponent of the Vapor and introduced the Airbug to our indoor enthusiasts. Over time the Vapor morphed into several different versions. I think the current UMX version is the best and I have one I frequently use in minimum flying space display situations, plus another one fitted with FPV. This version can lift a micro camera unit and 1S 380 LiPo with ease and fly for around eight minutes.

As you can see from the photo on the previous page our members' enthusiasm for the Vapor has not waned! Our record is 15 circulating together, with very few air-to-air mishaps, even with the lights off! Even when two meet they usually survive intact. On occasions we have demonstrated the Vapor's abilities (and the pilots!) with table take-offs and landings and flying through hoops of different diameters. It's a fun machine out of all proportion to its size. If you want one check out the prices as they can vary between suppliers.

The Airbug was originally sold by a firm called Flying Wings, then by another firm, and finally went out of production. Over this period, we built many and when they became unavailable, we resorted to card templates and basic drawings. Originally built from basic EPP we have found the German Pichler EPP from Model Shop Leeds to be an excellent substitute. Indeed, more than that, it is a better material, being very easily to glue, flexible and very tough.

Most members who join our club and come to the indoor sessions build an Airbug so we see new ones and different adaptations appearing all the time. Most builders stay with the basic size but then modify the motor mounting, shroud, etc. to suit their gear and preferences. A high kV motor of around 2500, with a 5" prop is usually used with a 2-3S 450-1000 LiPo. Although not essential a small car type gyro is often fitted to smooth out the hovering experience. With a lot of thrust available the 'hover' element is not actually required as the Airbug slides easily.

The Airbug session is extremely popular and full of thrills and spills!

My E-Flite UMX Airtractor poses with a larger version.

Both models fly well over a wide speed range. The flaps on the UMX version are surprisingly effective.

A 'fatty' Beech Bonetti. These fun models always raise a smile!

FATTY MODELL

I've mentioned the 'fatty model' one of our members flies indoors and plans are available online for several designs. There are also flying and instruction videos. Most are intended for outdoor flying and the German FMT (Flugmodell und Technik) magazine have just introduced a plan and kit for this type of model. Kits from FMT can be ordered from the UK. The plan is from Jurgen Bestenlehner and is of a Beech Bonetti V35F, which is like the more familiar Bonanza. The Beech Bonanza design first flew in 1947 and has been a very popular light aircraft with over 18,000 of all variants being produced.

Interestingly, in my early teen building years I was given a KK Flying Scale kit of this model. I tried to return it to the model shop to exchange for a warbird but was not successful. In fact, it proved to be one of the best performing KK Flying Scale models I ever had! The next best was a Jetex powered Sabre but sadly, as they often did, this model met a fiery end!

The Bonetti model is a Depron construction and has an 800 mm wingspan and 650 g AUW. Videos of it flying are on You Tube. While this is definitely an outdoor model the 'fatty model' concept is very appealing and I will be looking into some designs that might be indoor capable. An early find is a Piper Cub and this might be suitable. It's designed for outdoor use but if I can reduce the AUW it might be okay for indoors.

AERIAL APPLICATION PLANES

Crop spraying aircraft have been around for some time and there are several R/C models available, not to forget 'Dusty Crophopper' from the Disney film 'Planes', of course!

I had a glider tow to 2000 feet behind this Pawnee! A No-Cal RC version is planned.

mCX and one of our new coaxial micro helicopters.

The Chinook was the first of the replacement helicopters.

Chinook and Cobra are a very similar size in model form!

> "…the 'fatty model' concept is very appealing and I will be looking into some designs that might be indoor capable"

I've been having fun with the E-flite UMX Air Tractor which I have found to fly extremely well. With a wingspan of just 702 mm (27.6 ins) and a flying weight of 169 g (6 oz) this model is within the micro/small model category. It comes with an integral Spektrum AS3X/SAFE Rx and a feisty 1208-2150 kV brushless motor running on an 3S 300 LiPo. It's a five-channel model as it includes flaps.

Setting up is easy but take care to include the flap/elevator settings. I can usually achieve a ROG take-off providing the grass is short. Landings with the flaps are really nice, especially if you don't nose over! The Air Tractor has a wide speed range and it rolls and loops nicely. It also flies comfortably inverted. The effect of the flaps is surprisingly noticeable and makes slow flying and landings fun. It's a great little plane than can be flown in quite small flying zones. The photo shows its relative size when next to a 'standard' size of AAP model.

For a while a local gliding club used a Piper PA-25-260 Pawnee as a glider tug and I enjoyed a trip to 2000 feet following a tow rope some distance behind it! An indoor AAP would

Micro coaxial squadron ready for our indoor demo sessions.

Scale detail is quite amazing on such a small helicopter.

make a nice model and there are a lot of Pawnee plans online which could set me up with the basis to build a No-Cal RC version for indoor flying.

MICRO HELIS WITH A PURPOSE

The traditional coaxial micro heli has been around for a long time, perhaps epitomised by E-Flight mCX which is no longer in production. This type of heli is ideal for small space demos. Our regular school holiday talk/demo sessions at Aerospace Bristol are very popular and around 400 visitors will hear about our hobby and the BMFA over the two days. They will also see Vapors, helicopters and quads fly and have the opportunity to ask questions. It's valuable publicity for our hobby and for many it may be the first time they have seen a 'live' model flying.

We only fly micro size helicopters but our mCX helicopters are steadily wearing out. I purchased a micro size Chinook from a well-known internet supplier and this has proved easy to pilot and is a popular model with spectators. The only disadvantage is the integral LiPo but as its display slot of just a few minutes is short it charges up for the next session (20-minute session, then 20-minute break, six session per day) without any problems.

With mCX replacements in mind I purchased a selection of micro size scale helis as shown in photos. These all fly well and being scale models adds to the visual impact. They are all three channel helicopters with the roll control not available. Basically, this just means that flights have to be more planned. We have a standing team of thirteen club members who are involved with our outreach activities and its usual for a least seven or eight to be available for our aerospace and other events. Most can fly planes, helicopters and quads so displaying is no problem, even if keeping all the batteries charged is! ■

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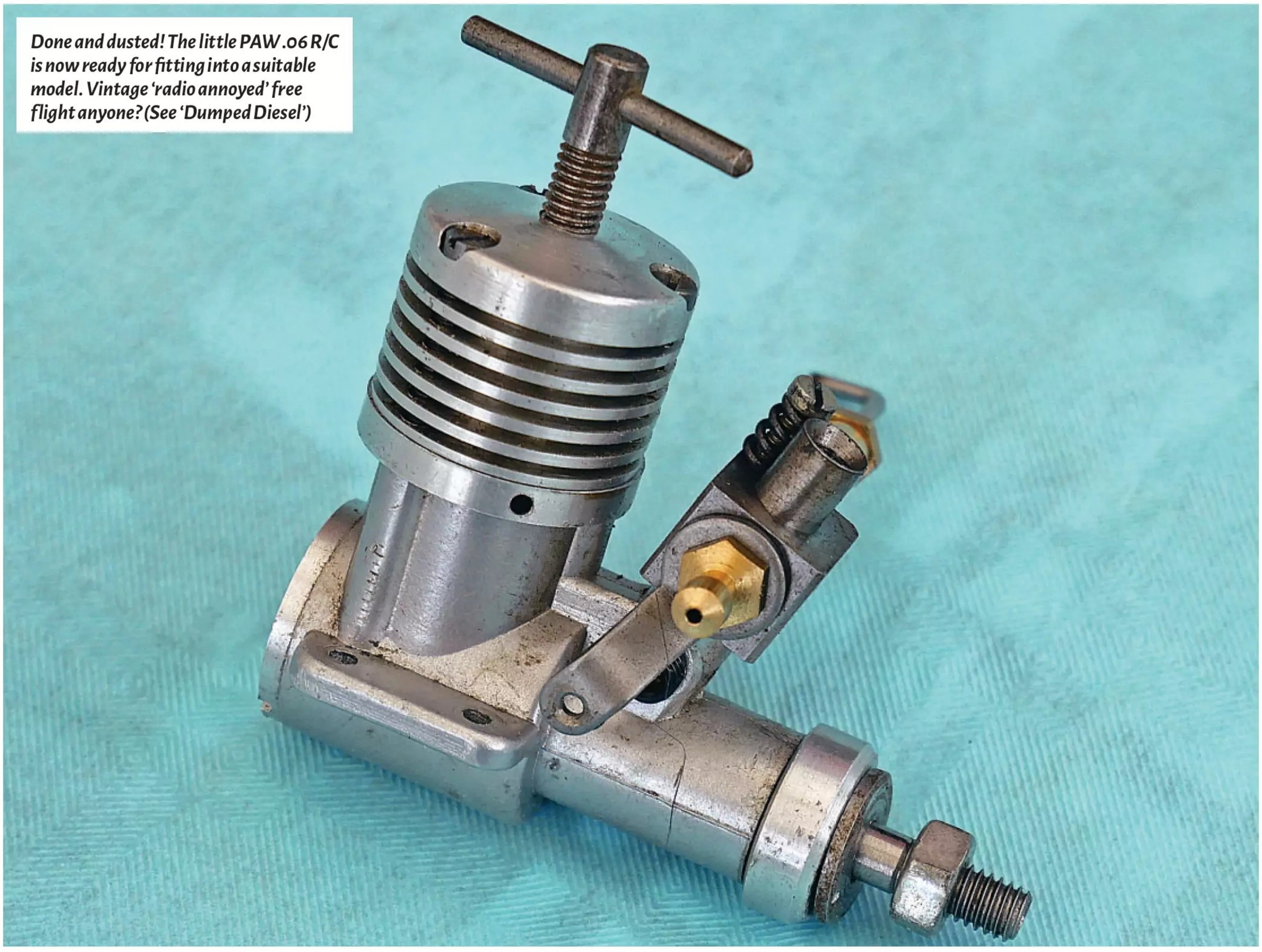


Done and dusted! The little PAW .06 R/C is now ready for fitting into a suitable model. Vintage 'radio annoyed' free flight anyone? (See 'Dumped Diesel')

MITHERING MOUNT

Dave Goodenough adapts an engine mount for small motor use, fettles another discarded diesel and puts an old transmitter aerial to good use

Words & Photos: **Dave Goodenough**

Mithering is local parlance for worrying/bothering in my neck of the woods. The lovely new engine test mount I'd bought recently had a drawback - using the engine bearer clamp strips interfered with access to the motor carby needle and the fuel inlet on the small engine I needed to check out.

Blast! What to do?

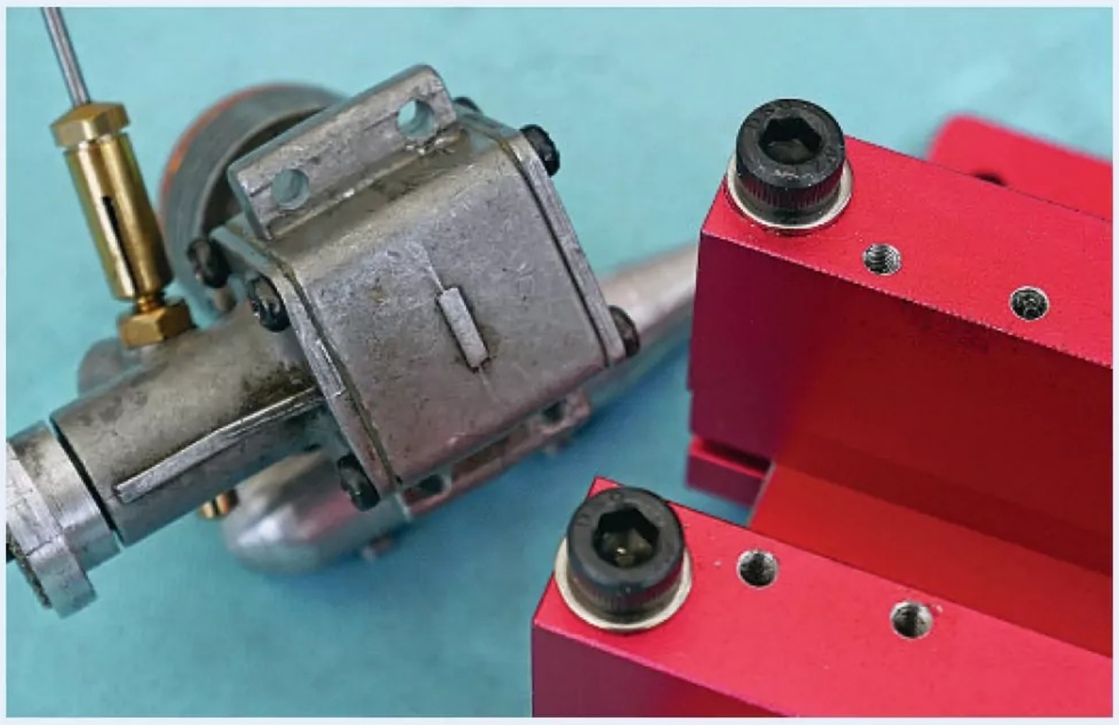
Simples! Do away with the top clamp strip, drill and tap the mounting pillars and secure them to the base. Yes, it's a little extra work but, as you can see, the result gives easy access to the needle and fuel inlet whilst ensuring a good solid mount for the motor. By turning/repositioning the test mount pillars, plus inverting them, you can drill and tap other hole pitches for smaller motors several times over, yet still retain the clamp plates for bigger motors. It's a win-win all round!

SILENT RUNNING

Well, maybe not silent but certainly quieter.

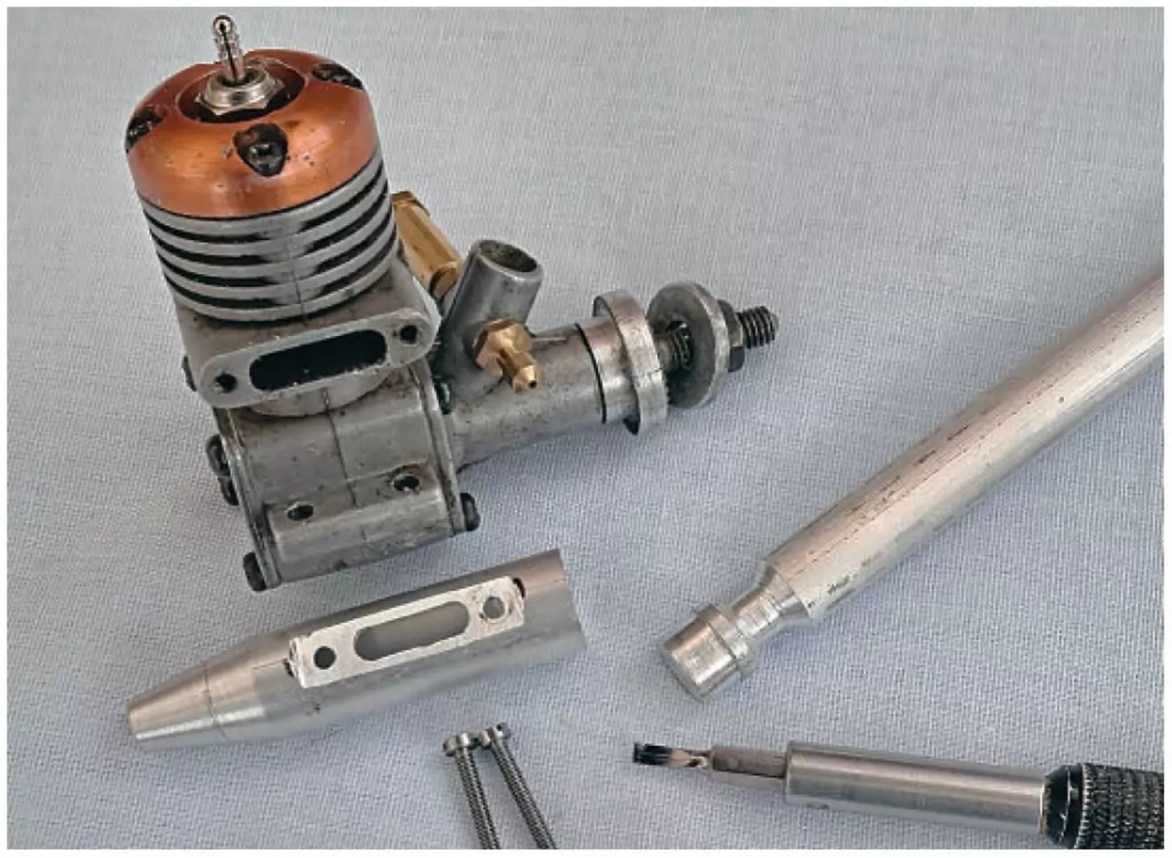
I'd rebuilt a little 'Kingcat' glow engine and to be sensitive to my mates at the patch I decided to muffle the howl with a small silencer. With a small expansion volume, the edifice I made was going to 'choke' the engine a bit, reducing its power output, but that suited my needs for lower revs and a larger propeller. The engine is destined to reside in a Vic Smeed/David Boddington 'Tomboy Senior' free flight/radio assist model to simply bumble about under minimal radio interference.

The main body of the silencer is a section of 1/2" (12.5 mm) dia. aluminium tube with a 1.5 mm wall thickness, allowing me to file a flat on one side to mate with the engine's exhaust outlet without breaking through the tube wall. The end caps are from 10 mm dia. solid aluminium bar with the exhaust end drilled 3.5 mm and turned to a taper for aesthetics and the front cap rounded. Both ends have a turned step in their diameter, finishing 0.002" (0.05 mm) larger than the main body bore. This allowed the ends to be an interference fit (a light press fit) into the tube and ensured that they couldn't fall out, with no screws needed. With the exhaust slot chain-drilled and file-slotted only the two clamp bolt holes needed drilling, then a quick clean of the thing had it ready.

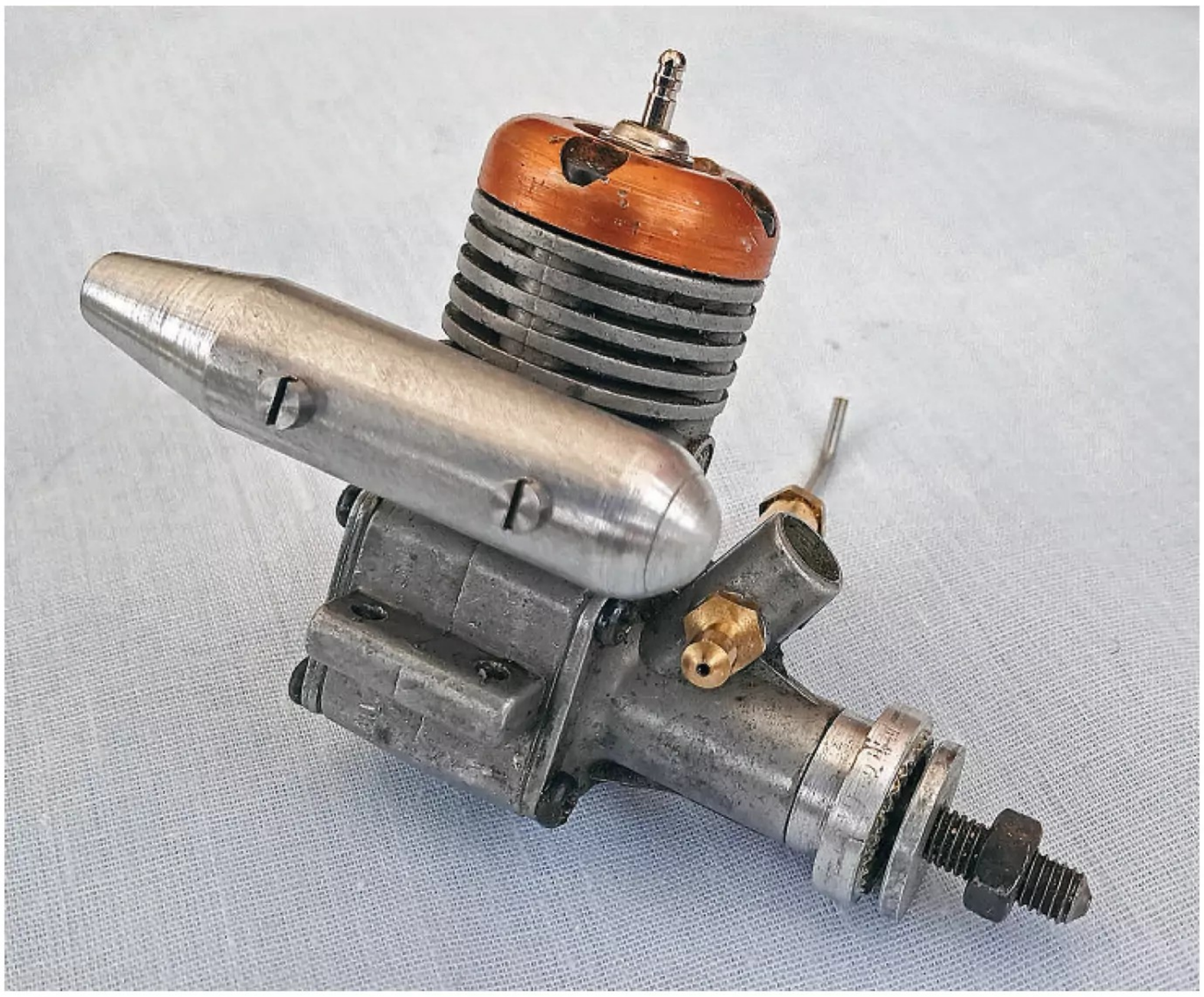


Where the engine test stand clamp plates interfere with smaller engines, remove them and drill/tap screw holes directly into the pillars.

'Kingcat' silencer was made as a pressed together unit. Here the tail is fixed with the nose end to follow.



Nearly finished, the 'Kingcat' silencer only needs the front cap fixing before mounting.



It may only be a 'bodgeneering on the lathe' job but the silencer looks the part and does the job in quietening the engine.

"I just have to construct that vintage radio-annoyed model that's in my 'To Do' pile of plans"

One 'challenge' with the engine is that being of quite an age the screw threads were measured as 8 BA (British Association) size. I needed 8 BA x 3/4" units to secure the new silencer and thankfully found some cheesehead screws on eBay. Not cheap at £6.50 for 25 but then using the correct size screw/bolt is far preferable to the alternative of bodgeneering the wrong size fixing and possibly ruining the engine.

TIME FOR TESTING

Running the now silencer-mounted little motor 'on the bench' proved what I had expected and hoped for. The sharp note from the exhaust was muted and the 'top end' revs were a little reduced. It was now socially acceptable.

I just have to construct that vintage radio-annoyed model that's in my 'To Do' pile of

Post exhumation, the once-buried little PAW carburettor was cleared of local 'loam' before stripping and cleaning.

Don't poke and prod with a screwdriver, etc. Clear muck and soil from between cooling fans with a strip of thin plywood. It'll do the job without scratching or scoring.

Parts from the gifted PAW 2.49 R/C engine cleaned of sullying 'laquer' and ready for assembly. It's a tough and dependable motor, even after many years of misuse.

PAW carry stock of most engine spares. Here are the muffler and cylinder bolts, and spare needle valve assemblies that also suit other motors.

Once stripped and 'de-soiled' the little PAW motor parts were soaked in solvent to soften old burnt fuel 'laquer'.

plans. There are a lot with Vic Smeed's name on them but the 'Tomboy Senior' has floated to the top.

A handsome beast. The PAW 2.49 R/C, not me! A careful clean and rebuild has resulted in another thoroughly useful motor.

DUMPED DIESEL

No, not a fuel spill but another of mate Glyn's donated engines - the PAW .06 R/C diesel that, according to him, had suffered a bout of 'full chat' burrowing. I know that 'worm charming' is a competition sport in Cheshire but trying to club them into submission with a fast-moving sport plane is beyond the pale!

PAWs may be tough, but the fuel needle had succumbed and departed, along with a bit of the valve brass thread, never to be seen again. Obviously retrieved from the local Kentish turf, the carby was found packed with what agriculturalists would call 'light sandy loam'. Great for vegetables but not so much for small diesel engines!

As donated, an unused muffler ring came with the wee beastie and will be fitted when the motor is cleaned throughout. As with previous 'earth impact' engines you can't take chances with soil ingestion and a thorough dismantle/clean/rebuild is mandatory.

BORING AERIALS

A recent foray to the lake saw my floating fabrication drift off to points unintended and heading for a mixed flock of floating web-footed itinerants. Ignoring all the wild waving of sticks on the admittedly ancient ex-glider and repurposed two-channel 27 MHz transmitter, the scale pilot cutter parted the seriously annoyed and furious fowl; it was a

The old transmitter may have 'cooked its chips' but the aerial remains useful. Turn the sections into drills/borers.

complete cluster-duck. Rescuing said float-away and rechecking the controls via a spare Rx proved that I now had an ex-Tx. The tranny had expired electronically.

Time to head for the recycling depot? Well, not just yet. The old and defunct unit could provide one last service by donating its aerial. I've mentioned before that old aerial tubes make great boring tools for balsa and lite-ply, so I retained the 'that'll be useful' bit and consigned the old Tx body to its fate. Carefully removing the aerial top 'button' and bottom screw mount allowed the various size tubes to be slid apart, almost ready for future services to modelling.

The most obvious use for the tubes is that, once sharpened, they cut perfect holes in sheet without leaving the ragged 'fur' of twist drill use. In a bit we'll find a neat way of using these bores to accurately fit aileron pin hinges.

CHUCK-N-DUCK

I bought another kit from the Czech Hiesbok company, the Bambi-3XL 'Experimental' model of around 1420 mm wingspan. It'll be a future review for the magazine.

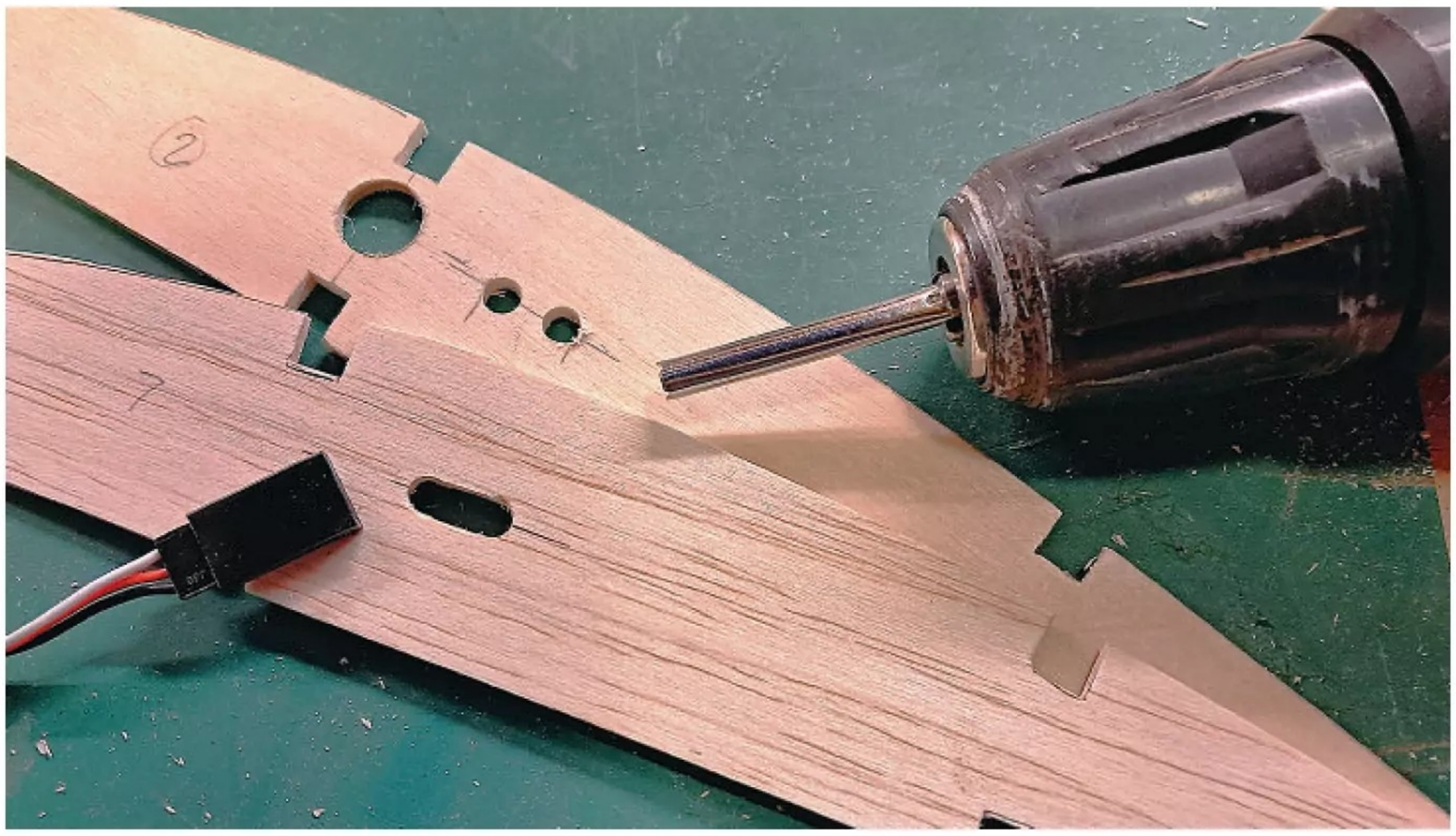
Nestled in the parcel was a second kit, a freebie, the 'Rookie Mini', a 578 mm span 'chuck' or HLG/DLG free flight glider. Like the Easy-2 beginners' model from the same stable that I'd built before, the kit contents and preparation are nothing less than superb. It may be only considered a 'school glider' in the Czech Republic but it is far better than that. It's a proper small 'builders' model' that will teach you lots about trimming, something that many R/C fliers of my acquaintance could do with understanding.

I've added a photo of the contents. Amazing quality when you consider the original homeland price of just £14! I've seen it advertised on UK eBay, price adjusted to allow for the extra postage.

I'm going to enjoy the simple pleasure of chuck gliding again. Please avert the camera when this old dumpling, in his eighth decade, attempts the discus launch 'twirl'!

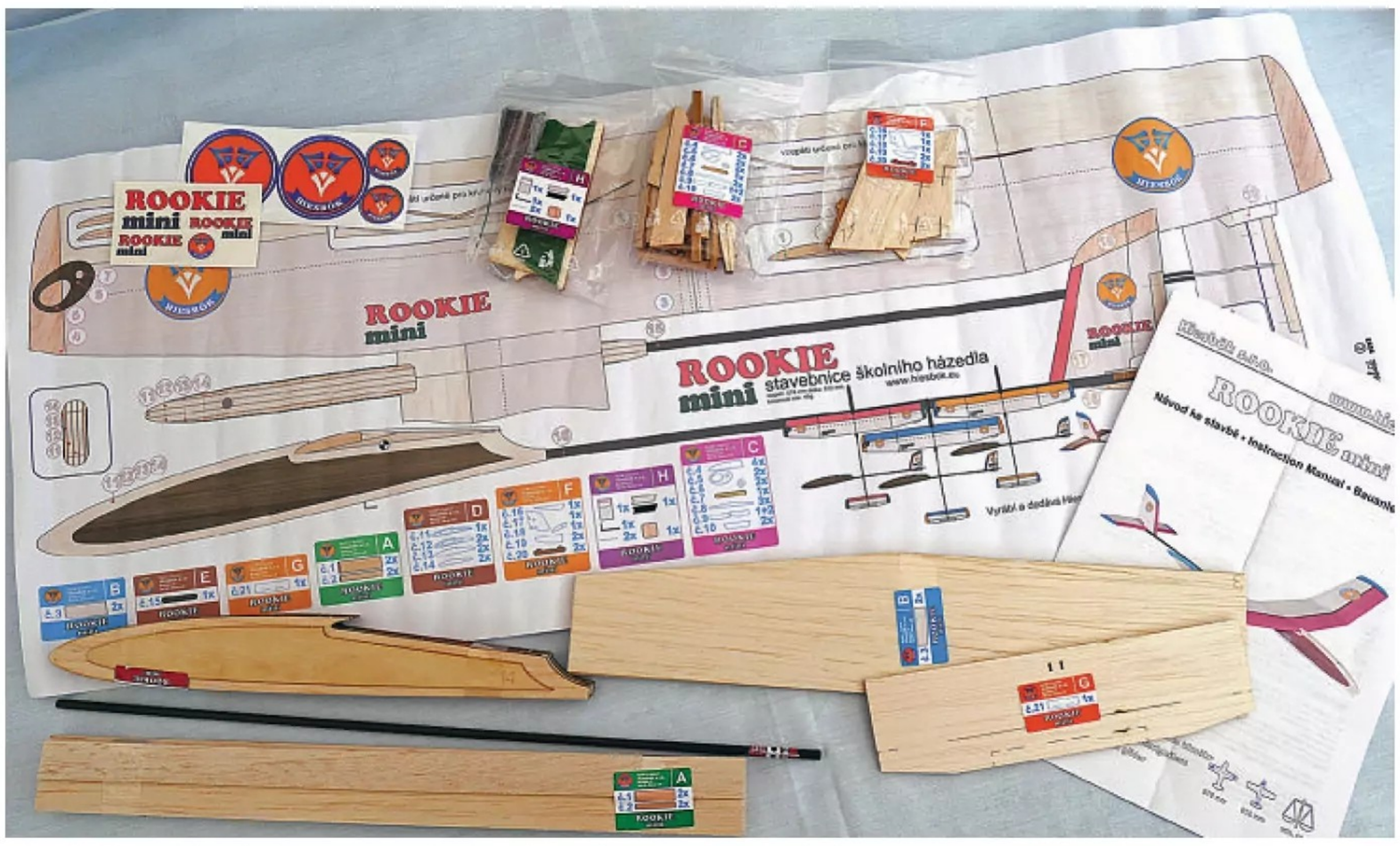
ANGLED ANCHORAGE

No, nothing to do with boats but a method of top-hinging ailerons with pin-type 'knuckle' hinges, such as the Robart or MP-Jet devices. I won't say 'my' method is either best or even right, but it works for me (and others) and

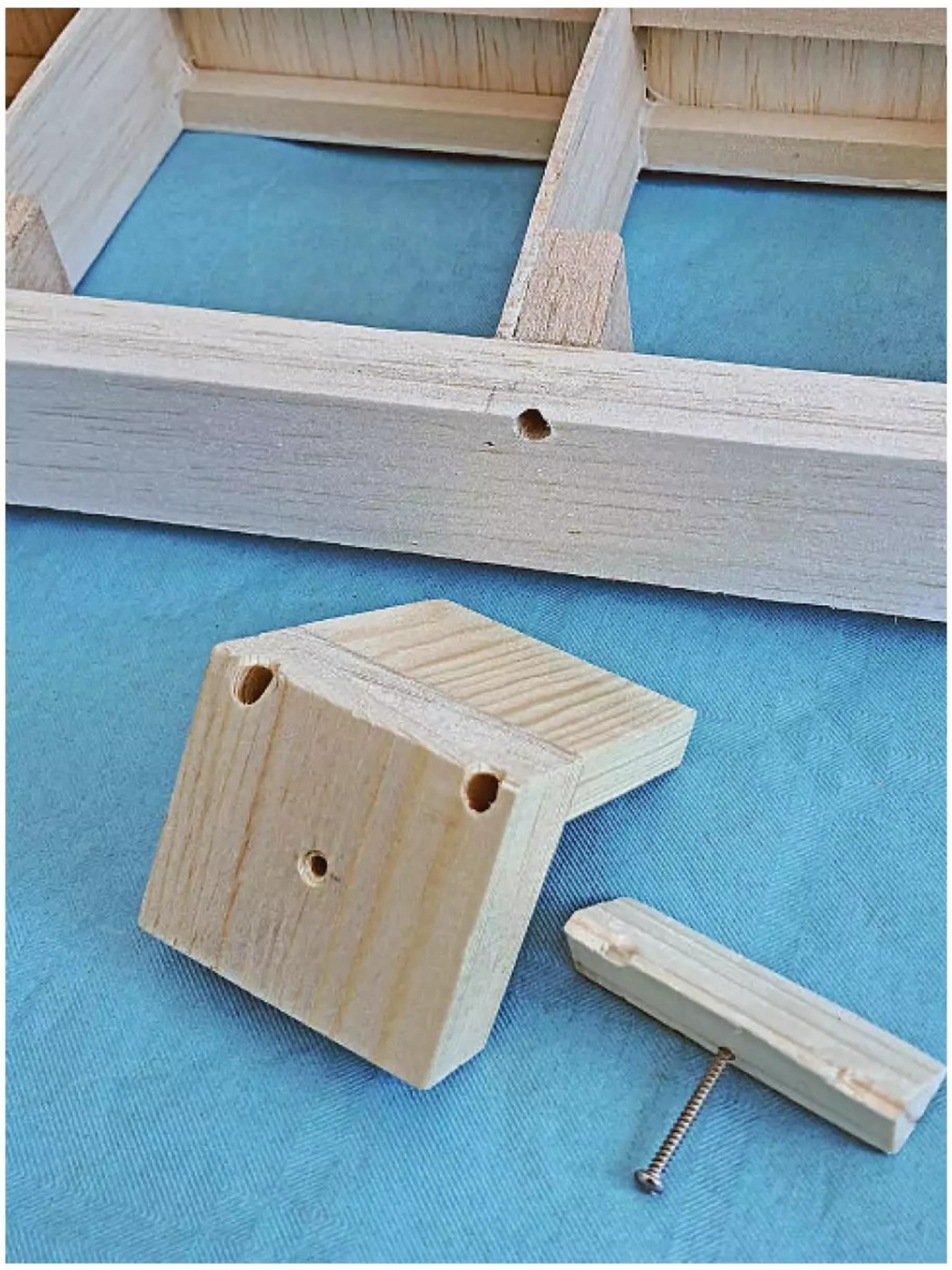


An aerial tube in use, cutting the servo extension lead slots in the ribs of my latest project. No messy/hairy holes here!

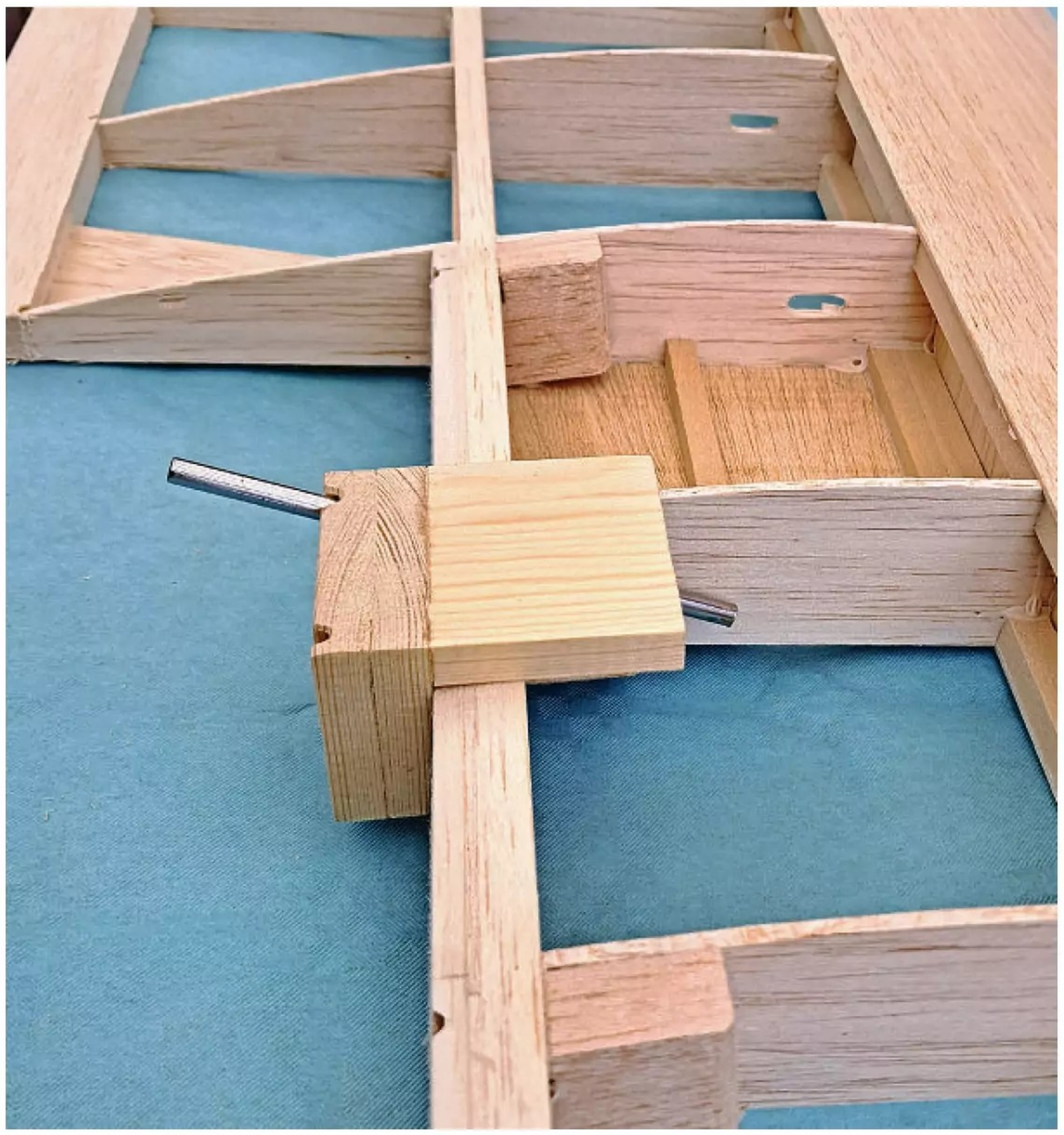
Supplied by Hiesbok in the Czech Republic, I bought the 1420 mm span 'Bambi 3-XL'. The little 'Rookie mini' was included in the package.



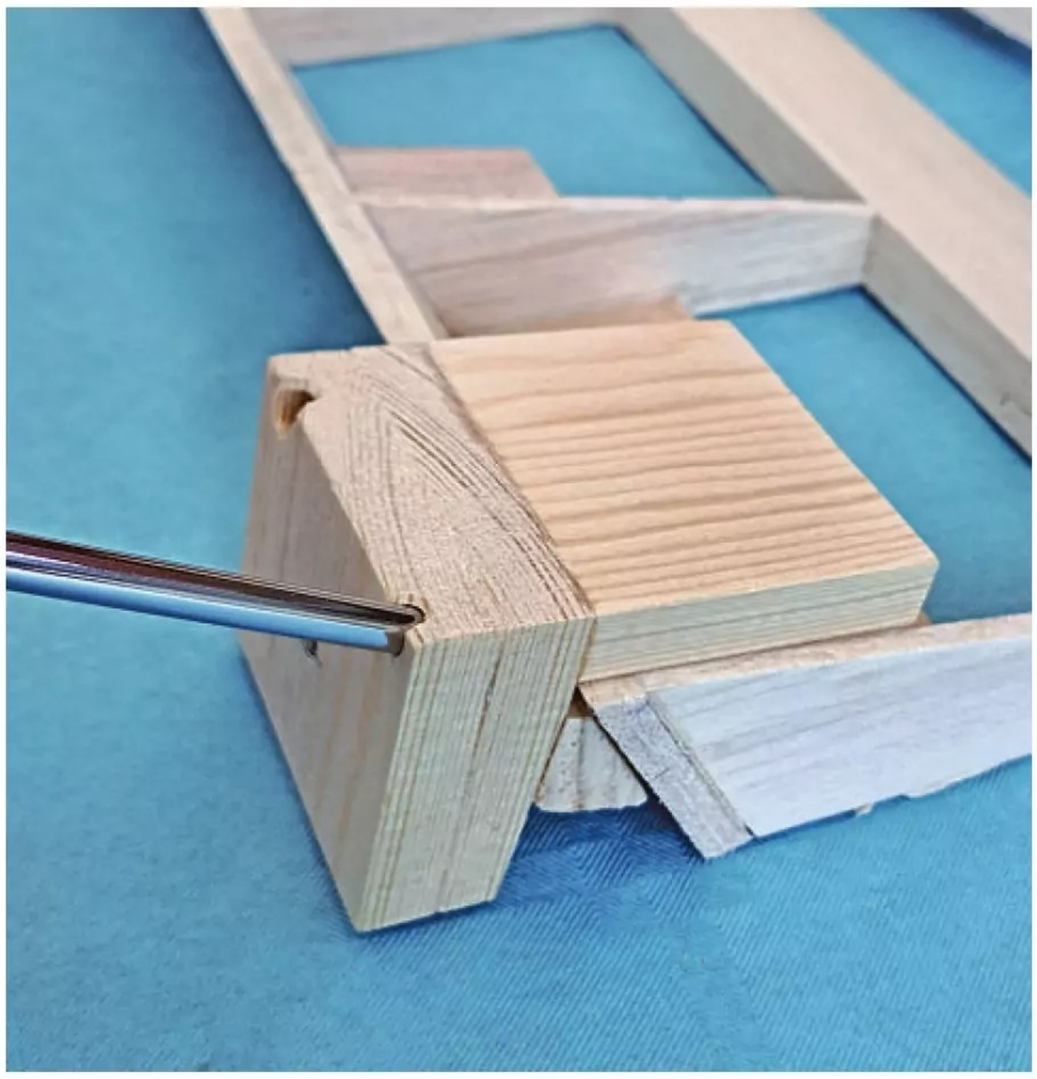
'Rookie mini' chuck/discus launch glider kit. Absolutely remarkable quality and preparation.



My pin hinge drilling jig may be simple, but it does the job. The 'wedge' is the adjuster piece to allow drilling of aileron leading edges.



Jig in use. Held in place and with the aerial tube 'drill' rotated it cuts a pin hinge hole accurately every time.



With the adjustment wedge in place the aerial tube cuts 'true' every time.

An aileron underside shows the tidy fit achieved by using a drilling jig.

I thought I'd share it. There is a bit of planning and jig-making involved but stay with it and don't fall asleep.

To ensure you fix the idea and angles involved I've found it best to draw a cross-section of the wing/aileron hinge line. Whether it's a fag packet, drawing board or computer-generated image, 'a picture paints a thousand words'. Once sketched/drawn/printed you can overlay the hinge pivot and pin and decide where to 'drill' the hole that will take the pin hinge stem. Also, what angle to use to ensure a good solid glued anchor. The photos of my current project, cutting-in ailerons to a previously 'plain' wing, will illustrate the procedure.

With the mind's eye focused and your drawing finished it's time to make a drilling jig. No gasps of horror or a touch of the vapours, it's a simple job within the grasp of any modeller used to hacking wood. For my jig(s) I use small sections of cheap Deal offcuts, the stuff we buy in DIY shops for household jobs as it's tougher than balsa and doesn't deform when you're wiggling the drill/boring tube. Make stepped guides to match the wing and aileron angles and use your drawing to mark the correct position of the hole to be drilled. Carefully (this is critical) present your drill to the jig at the right angle and drill through the jig from the inside. If your measurements are correct and your angle/hand are steady you now have a jig that will allow you to fit pin hinges with precision.

Self-adhesive vinyl logos can be sourced cheaply online. This is for an upcoming review model.

"Lightly 'doping' a simple model will give a touch of weather resistance"

The position of your hinges is your choice but remember that the more stress you intend to put on your model the more hinges you will need to share the stress loads. For really 'thrash it about' flying I use the all-metal pin hinges from MP-Jet as under normal circumstances you'll destroy your model before they break.

Stick low-tack masking tape along the wing and aileron hinge lines, marking where you intend to drill/bore through. Align the jig and with a boring tube or drill, pass it through the jig and into the wing structure and the hinge support block within. If you're at all doubtful practice on a scrap assembly made up to mirror the wing/aileron structures. Lastly, slip a pin hinge into the drilled holes and check for the hinge line alignment. If all has gone as you planned the parts will slip together 'as if by magic'. With the parts fit 'proved', I've found it both beneficial and scale-looking to cut a recess pocket for the 'knuckle' of the hinge. Also, after covering and before the final glue-in of the pins, use the tip of a pin or needle to drop a tiny amount of oil onto the hinge knuckle. It prevents binding if you're a little overenthusiastic with the glue.

BEGINNER'S BUNDLE

The little Hiesbok 'Rookie Mini' mentioned earlier takes you back to basics and the 'how to' of imparting a little extra finishing work to a relatively simple model to both improve the finish of a build, but to also improve the aerodynamics, albeit to only a small degree.

Lightly 'doping' a simple model (I use satin finish acrylic varnish) will give a touch of weather resistance and the addition of tissue trim during the process takes the model beyond the simplest 'build it and bung it' stage. 'Finessing' a small plaything model might seem nonsensical but work to improve even the most basic of aerodynes is time never wasted. The skills honed whilst working on a small and delicate model can only prove beneficial in the long run.

I was passed a kit to review, the Vintage Model Company 'Cinnabar' glider of 63" (1600 mm) wingspan. It's 'traditional' in that it's of balsa and ply construction, following the 'look' of models from the 1950s and 60s, and is adaptable, being designed to fly either as a glider or have a low power motor fitted. Although a basic beginner's model it too has benefitted from that kind of attention to detail - a final fine sanding of the structure and flattening of the myriad tiny lumps and bumps that creep into a model build. Final rounding of flying surface edges, often ignored, improves both 'look' and aerodynamics. It's well worth the extra effort. Once covered, a bit of 'dressing' oft lifts a model from bland to decorative. It's a difficult thing to define clearly but anything is usually better than nothing. For the 'Cinnabar' I searched eBay for a supplier of self-adhesive vinyl lettering/script, opting to produce the model name in rose gold, to compliment the wine-red wing/tail covering. It's a simple detail, and cheap, but it adds that extra... something.

TAILSKID

You may remember my 'redrawn from advert and memory' 150% rendition of the Performance Kits Cosmic Cloud, published in this very magazine a few months ago. Lo and behold, soon after publication I was contacted by David Corcoran who informed me that an original plan of the 33" (840 mm) Mk.5 'Cloud' had just been made available online. I had to take a look.

Other than the later versions distinctive 'Fisher' nose shape, I'd managed to get the original earlier design mark just about right. Phew, that was a relief!

The tiddly model continues to entertain clubmates, a testament to its simple original premise of some 65 years ago. It brought to mind Walt Disney's words, *"If you can dream it, you can do it."* Don't just think about a model design, get drawing! ■

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

USEFUL LINKS

PAW engine spares	www.eifflaender.com
Mayatech engine mount	eBay
British Association (B.A.) screws	eBay
Hiesbok models	www.hiesbok.cz

My dream machine! Here's Dick Spreadbury's scarlet red rendition of the Keil Kraft Fleetwing.

MY BUCKET LIST

Kevin Crozier looks forward to returning to the building board

Words & Photos: **Kevin Crozier**

As my I approach my mid-sixties my thoughts sometimes wander towards what I would do with myself when the time comes to hand over the Editor's baton to someone else. I've often heard it said that some retired folk find themselves even busier at that stage in their lives than when they were working. There is certainly no shortage of things that I would like to do when the time to draw my pension eventually comes, with more aeromodelling firmly at the top of a list of a handful of other hobbies. My dear wife, of course, has plenty of other ideas, mostly concerning jobs around the house and sorting out the garden. Unfortunately for her my headspace doesn't allow for too much of that. Instead, it's full of lots of lovely modelling ideas, some of which I'd like to share with you in this and future editions of RTFM.

A GOOD CLEAR OUT

One thing we both agree on is the need for me to have a good clear out. She, rather morbidly, harks on about what she and my sons would do with all my stuff, modelling and otherwise, if I suddenly shuffled off this mortal coil. I, on the other hand, prefer to look at things more optimistically, savouring the opportunity to rediscover lost tools, build models from long saved plans and to collect all my glow engines into one big box, perhaps making up a nice test stand so that I can bring them back to life, one by one, at the local flying field.

Sure, my office is stacked to the gunnels (or gunwhales, if you are of a nautical disposition) with books, files and magazines (plus a fish tank) whilst my storage unit in a nearby industrial estate is bursting at the seams with more models than I could ever reasonably manage to fly. But on top of those, with my rose-tinted glasses pushed firmly over my nose, I can easily envisage a few more, this time made by my own fair hands.

You see, like a lot of model flyers these days, my model collection has increasingly swayed towards the foam ARTF variety. But when retired I'd like to get back to my roots and spend a heck of a lot more time actually building some models. It'll probably never happen and I'll be dragging out the same handful of well-flown foamies as happens now. But one can dream...

IN THE BEGINNING

Given half a chance I'd like to join the retro model brigade and build some of those R/C kits that I coveted as an early teenager. For me they are pretty much all Keil Kraft designs, bringing to life those models that I lusted after from within the pages of various editions of KK handbooks.

Stored high on a shelf in a cupboard in my bedroom was a veritable treasure trove, seemingly abandoned by my father. This consisted of a fully built, but yet to be covered KK Chief glider and 'new in box' Phantom Mite control liner, complete with a DC Merlin engine, also in its box. There was also a copy of a Keil Kraft Handbook, the one with a red and white Elmira glider on the cover. I devoured that handbook until it literally started to fall

Also high on my bucket list is the Keil Kraft Elmira glider. This one is by Pete Bree and features ailerons and a modified tail to help it turn better.

I had a well-thumbed copy of this edition of the Keil Kraft Handbook – until it fell apart!

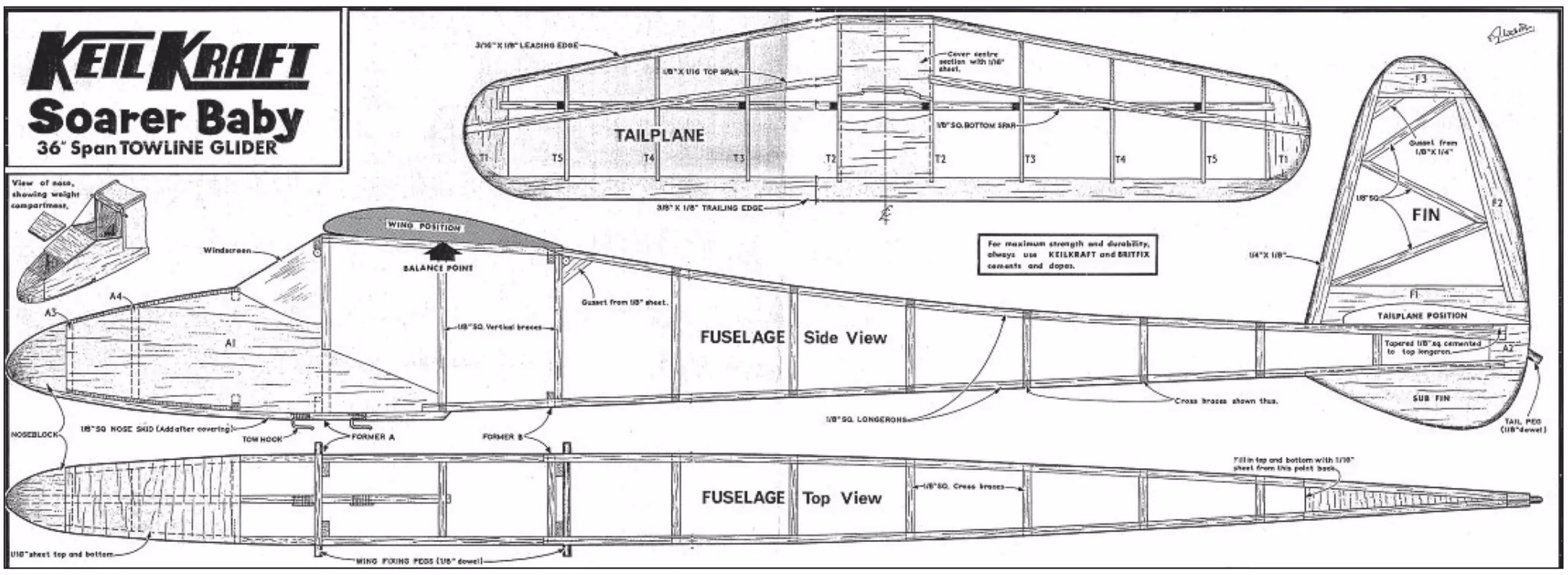
"Come the glorious day, I was presented with a lovingly wrapped but somewhat disappointingly small box"

apart, leading my parents (but probably just Dad) to visit the local model shop to purchase the latest edition, this time with a red and silver Super 60 on the cover. To make it last longer they also invested in a Ripmax catalogue, full of lovely Graupner and Mick Reeves kits, plus lots of pages of O.S. engines and Futaba radios. However, for some reason it was always the KK Handbook that I always picked up first.

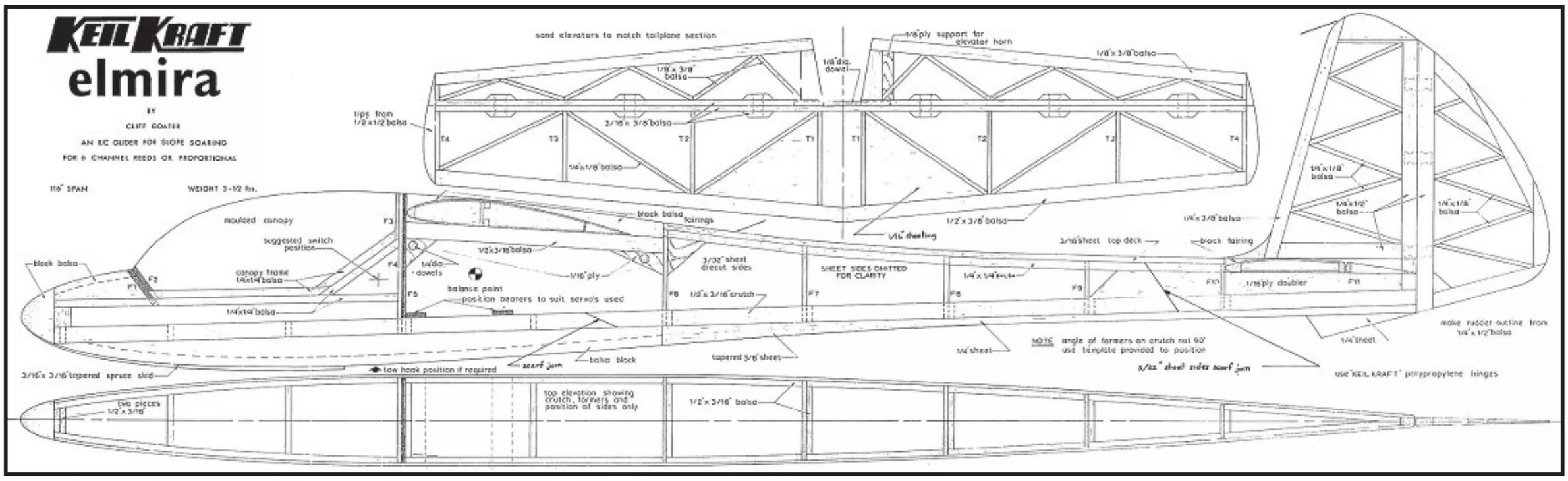
For a while just having these catalogues was enough and I was content to continue assembling and painting plastic kits. I was probably put off by the price of 'real' model aeroplanes to be brutally honest and so continued to spend my pocket money on Airfix kits. But from time to time, I would lovingly remove the Chief glider, still with its box and plan, and the PM kit from their lofty shelf and wistfully look through the contents, unfolding the plans and dreaming of the time when I could build something similar.

Eventually those magic words, *'What would you like for Christmas'* were heard and I instantly requested, *'A Keil Kraft Elmira kit, please.'*

Come the glorious day, I was presented with a lovingly wrapped but somewhat disappointingly small box. Inside was a Keil Kraft Soarer Baby free flight glider kit, which the model shop proprietor wisely counselled was a far more appropriate model to start my



We all had to start with something. For me it was the KK Soarer Baby. I still have my original model but it's badly in need of recovering. I might build a new version someday for micro-R/C!



I long thought of Cliff Goater's Elmira glider design as being the epitome of elegance in model form.

Another view of Dick Spreadbury's lovely all-red Fleetwing.

You wait years for one Fleetwing to come along... Suddenly quite a few are starting to make an appearance. Here's Steve Holland's version, pictured at the recent Chedworth retro meet by Dick Spreadbury.

aeromodelling career with. He was 100% right of course and the rest, as they say, is history!

KK FAVOURITES

No prizes, then, for guessing which model is high on my 'To Do' list. Yes, it's the KK Elmira, a high aspect ratio slope soarer designed by Cliff Goater.

In one of my previous jobs, as Editor of the much-missed RC Model World magazine, The Sport Channel column was penned each month by Gray. I happened to mention to him my desire to build all those KK designs from my youth and he kindly sent me a CD containing a wide range of KK model plans, including the Elmira and many other designs. These days, of course, many of the plans are readily available to download from the internet, but I've long had the files from Gray's CD loaded up on various computers, just waiting for the chance to make a start.

It won't be the Elmira though. Instead, my first KK build will be the 54" span Fleetwing aerobatic

RADIO CONTROL MODELS & ELECTRONICS

R.C.M.&E. Kit Review No. 19

KEIL KRAFT Fleetwing

Built and flown by
Jack and Richard Barnard

BUILDING this very pretty model was a joint project, 'self and son. To be truthful, I intended to let him build it himself; but after opening the box and seeing all those pieces, I just had to have a go!

The model was built as per the plan, except for minor details. For instance, we found that by substituting the block upper fuselage portion ahead of the cockpit with formers and 1/16th sheet we had more room to mount the receiver vertically. We did not like the idea of the boxed-in elevator horn, so brought the push-rod out through the side of the fuselage with the horn under the left elevator so that adjustments were made easier. The DEAC had to be boxed in under the floor of the tank-bay; I normally don't like things built in out of sight, but there would be no difficulty in modifying the tank-bay floor to a removable one.

The junior partner in the project had firmly fixed the nose-leg to the rear of the front bulkhead, as per plan, so it was left thus. But why not have it on the front of the bulkhead, there is plenty of room for it and it could be simply removed without a lot of knife work?

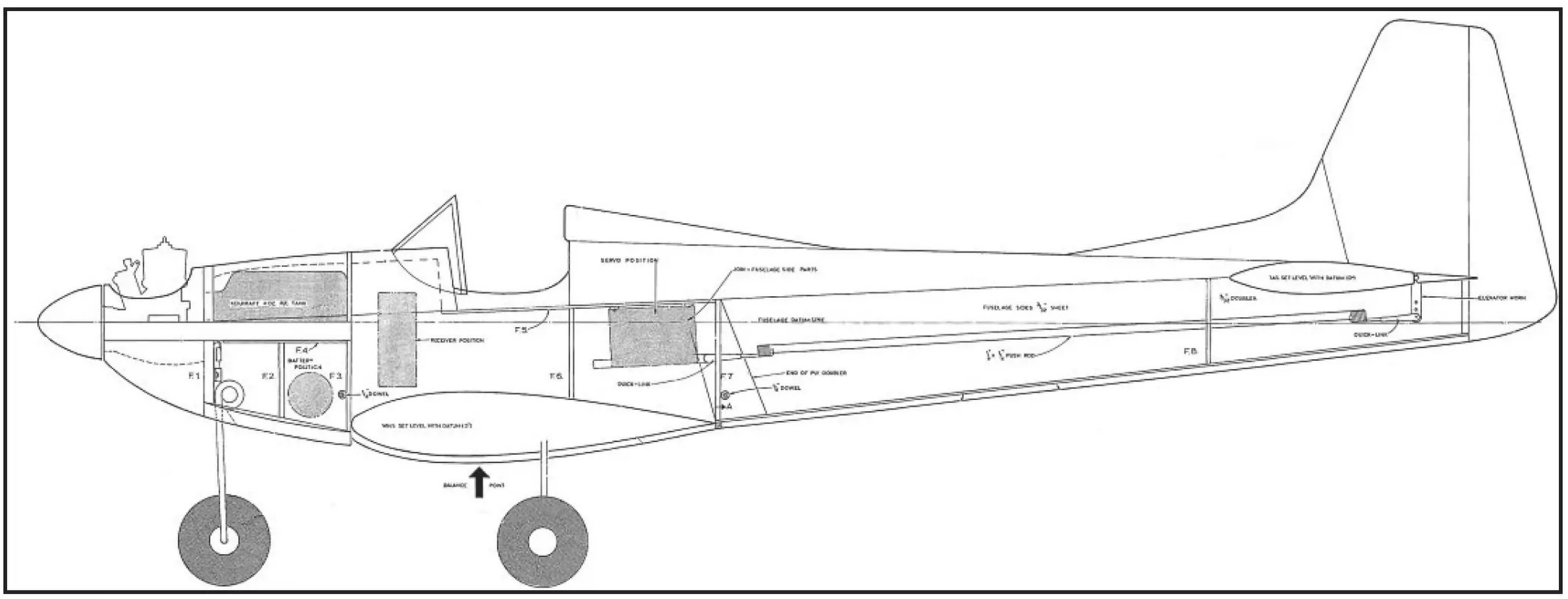
We started to build as per the instructions and found we had half-finished pieces all over the place, as the instructions jump from fuselage to wing to tail and back to fuselage, I personally would like to see the instructions in sequence, i.e. full instructions for fuselage in one block. However, it is quite easy to build from the very clear plan, without the instruction booklet.

The kit is very complete, and first class materials are used throughout, except for the elevator joiner, which was discarded as it was thought to be too soft and easily bent. A little knife-work was required to tidy up the bulkheads and wing ribs, but on the whole, everything fitted perfectly. It was just a case of putting it in place and gluing it.

Heading: running up the Merco 29 motor for preliminary checks on the Fleetwing before first flight. Second down: underside of model showing widely spaced main U/C legs – should stop tip dragging. Third down: close-up of Merco 29 installation. Merco silencer. Left: dummy pilot looks at dummy veneer dash board surround.

Keil Kraft's Fleetwing was reviewed in the November 1968 issue of this esteemed journal.

Steve's Fleetwing lines up for landing at a breezy Chedworth.



Dave Platt is probably better known for his scale models, but he penned a corker when he sat down to draw the Fleetwing.

low winger designed by Dave Platt. Soon after learning to fly radio control in the 1970s, and when piloting any model aeroplane seemingly offered no fear, I willingly accepted any transmitter offered to me. This used to happen quite a lot, especially from one elderly but new club member who obviously loved to build models but equally disliked flying them! He crafted some lovely aeroplanes and two that have stuck in my mind over the years were a KK Fleetwing and a Flair Puppeteer. Both were really fun to fly, but in different ways and so I have harboured the desire to build and own my versions of each design ever since. Sadly, the opportunity has never presented itself, but recent developments have brought doing so a heck of a lot closer to fruition.

ALL SEWN UP

For several years, I have been meaning to get reprints made of all KK plans that Gray sent to me on CD. First up would be the Fleetwing, followed by the Elmira, and then a reboot of my dear father's Chief (although the Chief and Elmira may swap places). I also have an 'old in box' Flair Puppeteer in storage which will be high on the build list.

Last year I was approached by Mark Townsend, who runs a company called Patternsy with his wife, Su. Patternsy has been printing sewing patterns for many years but recently they decided to widen their customer base to include aeromodellers, who often resort to taping together tiled plans made from several sheets of A4 paper printed on home printers. Instead of those cumbersome taped together plans, which are often slightly misaligned, Patternsy can offer prints of those same plans but stitched together properly and all on one sheet. Print width is 1047 mm and paper length is, to all practical purposes, infinite. The paper used is 22 gsm so the resulting plans are lightweight and cost far less to post than the heavier weight plans we are used to. Despite being printed on sewing pattern paper the material is quite durable and when covered in protective plastic film, to stop glue sticking to it during a build, it is more than tough enough to build over.

Mark kindly offered to print a couple of plans for me so that I could assess Patternsy's products, so I sent him the Elmira and Fleetwing files. The plans were quickly produced and what a joy they are to behold, being crisply printed and neatly folded. Unfolding them took me right back to unfolding those KK Chief and Phantom Mite drawings all those many years ago!

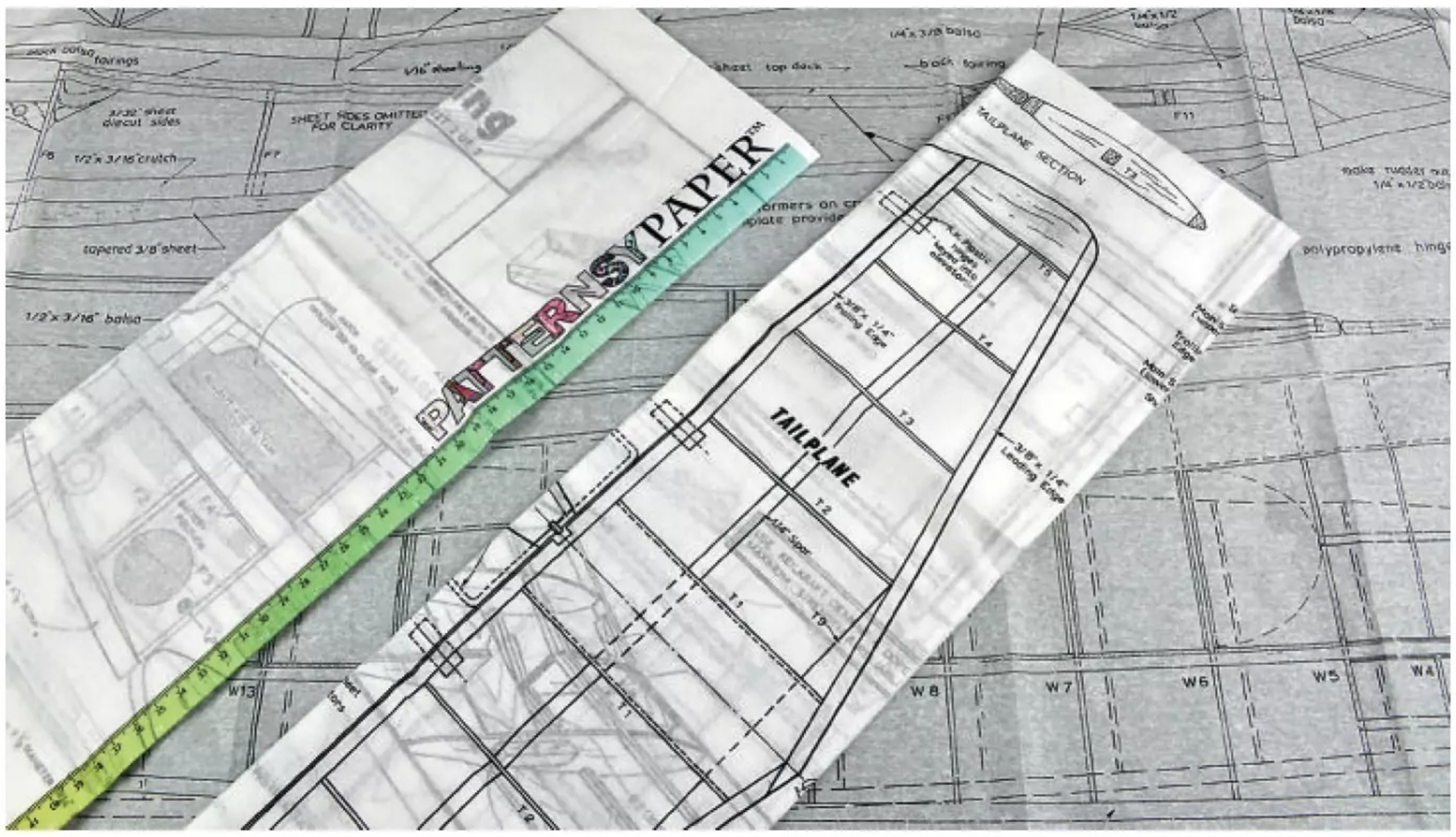
You can learn more about Patternsy plans from their website: **https://patternsy.com**

CHIEF KIT

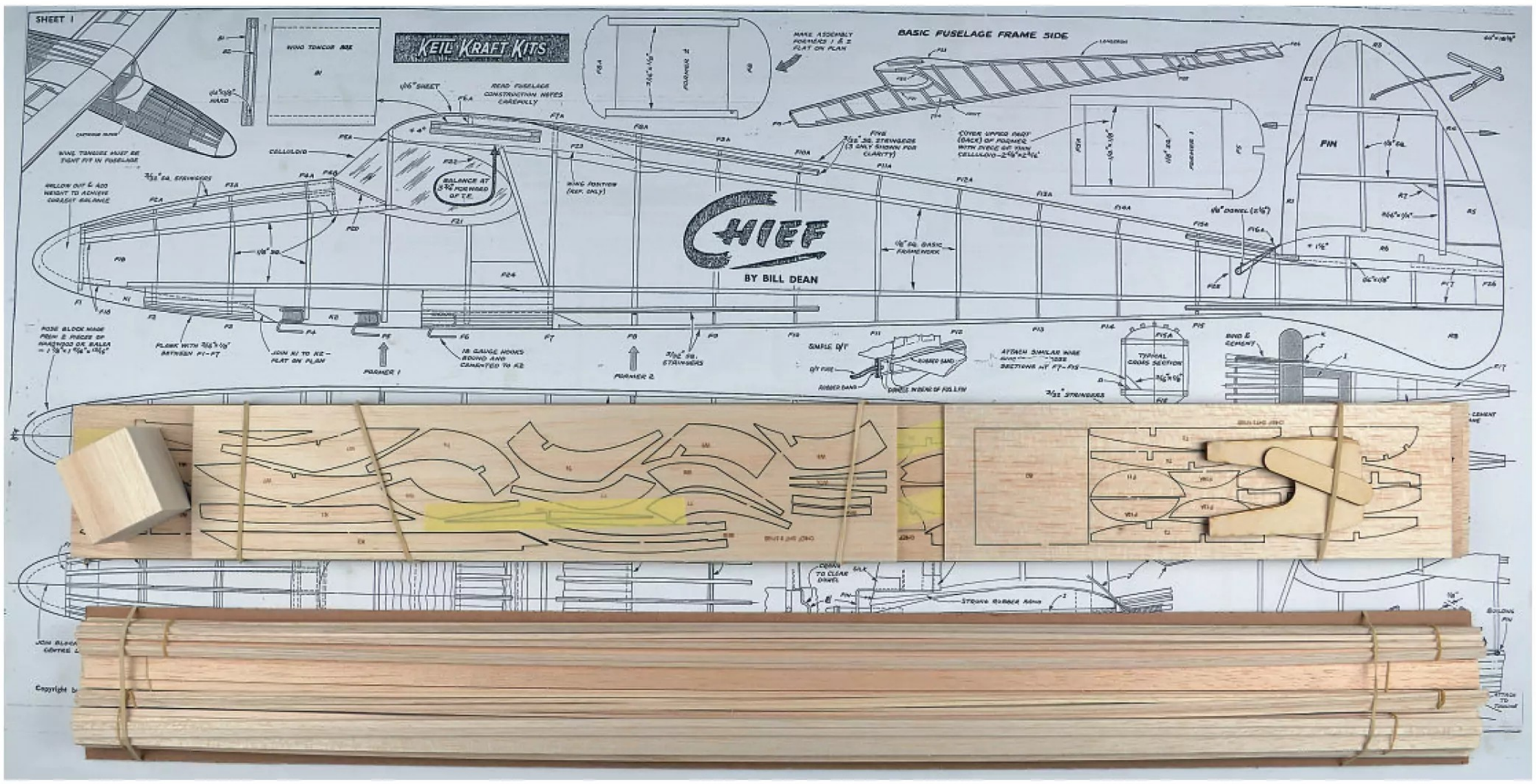
At around the same time that I received the plans from Patternsy, I also received a full kit of KK Chief parts from SLEC, as displayed in the Glider Designs section of their Belair website: https://belairdigital.co.uk/detail.asp?id=1135

This kit contains a full set of laser cut ply and balsa parts for the 64" span glider, plus another set of plans, this time rolled instead of folded. The laser cut parts are big step up in quality from the die-cut parts supplied in the original KK kits where thinner balsa parts could sometimes be squash-cut rather than die-cut!

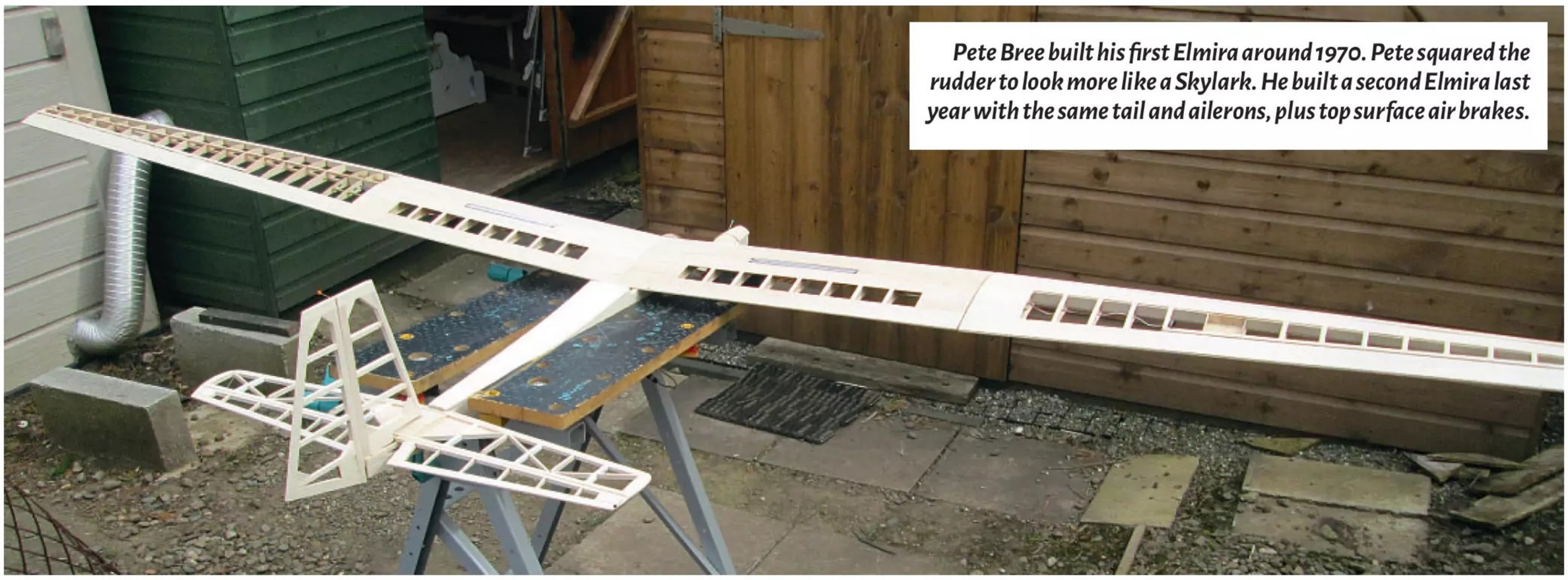
I also ordered the complete sheet and strip wood set so that I would have all the necessary wood to hand when the time comes to start building my new version of Bill Dean's A-2 free flight glider, although mine is destined to remain under full control with two-channel R/C.



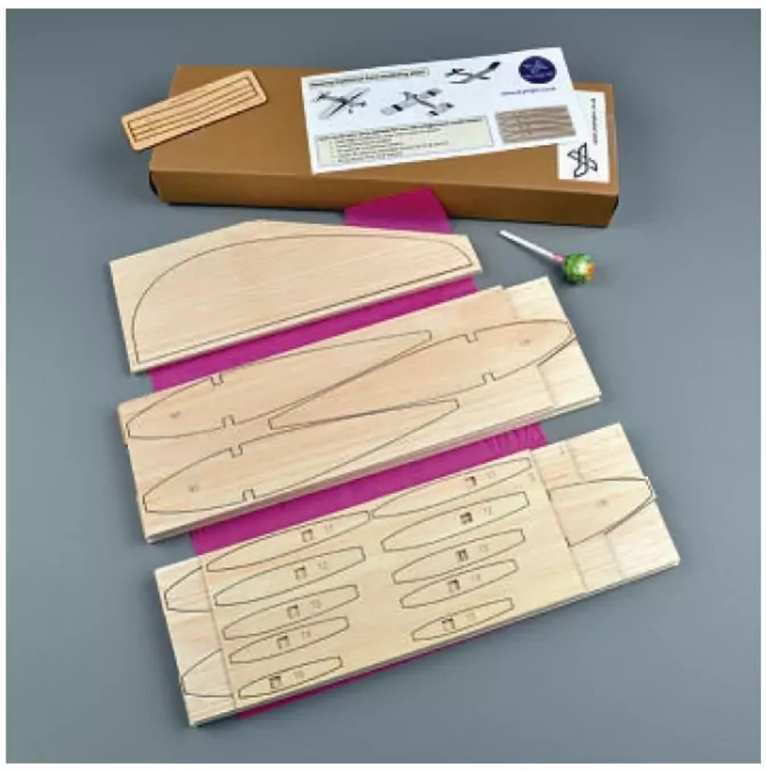
Patternsy plans are nicely printed on sewing pattern paper. Neatly folded they take up very little room and are ideal to file away if, like me, you don't intend to build from them for a while.



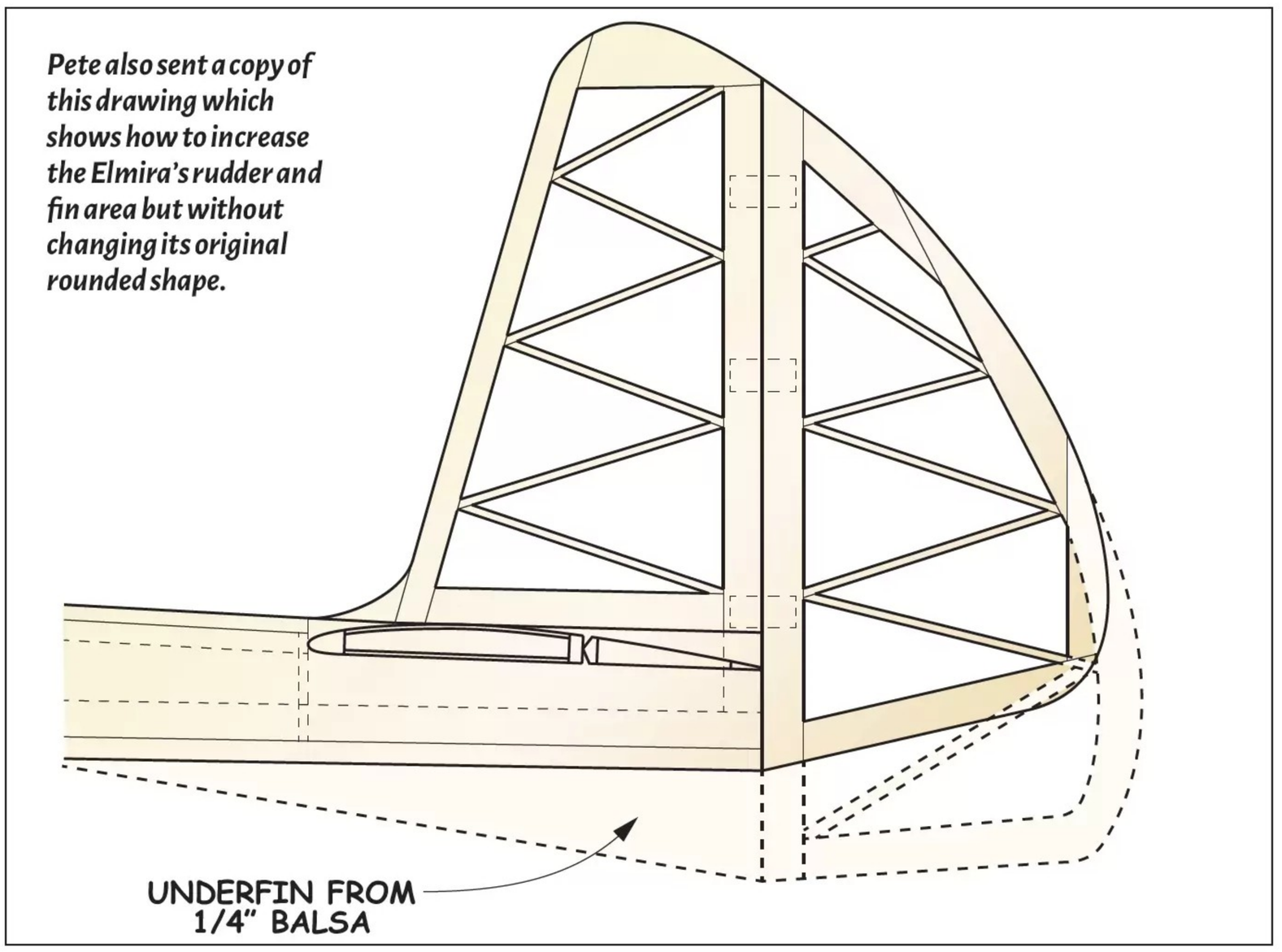
SLEC offer a complete plan and parts set for the Keil Kraft Chief glider, just like the one my dad built! I finished and flew it, but I cannot remember what happened to it.



Pete Bree built his first Elmira around 1970. Pete squared the rudder to look more like a Skylark. He built a second Elmira last year with the same tail and ailerons, plus top surface air brakes.



Contents spread of a laser cut Sky High RC parts set. Very good quality and so well presented.



Pete also sent a copy of this drawing which shows how to increase the Elmira's rudder and fin area but without changing its original rounded shape.

MORE LASER KITS

To complete my bucket list set of Keil Kraft models I just needed to put into store as many parts sets as I could muster for my dream collection. Fortunately, Sky High RC had my full wish list primed and ready to go from within their vast library of laser cut parts sets. I placed my order with Sky High's proprietor, Steve Hayley, who many of you will recognise as one of the UK's leading thermal soaring pilots, and waited a short while for them to arrive.

My order included sets for the Elmira and Fleetwing, plus parts so I can make another Soarer Baby to take me right back to my roots! I also asked Steve for another set of Chief parts, mainly so I can make an alternative fuselage, this time for an electric powered conversion.

> "I also ordered the complete sheet and strip wood set so that I would have all the necessary wood to hand"

When the Sky High RC packs arrived, I have to say that I was very impressed. The laser cutting is first class, with all the carrier sheets neatly trimmed to avoid wastage. The sheets are then wrapped in tissue paper to keep them neatly stacked before being slid into cardboard boxes. The boxes are made to match the different stacks of balsa so there's no possibility of any parts working loose and rattling around inside and possibly suffering damage. To cap it all off a lollypop was also included, I guess as a thank you for placing the order.

You can see all of Steve's current range of laser cut parts sets here: https://skyhighrc.co.uk

READY TO BUILD

So, my Keil Kraft collection is almost complete. Now I just need to sit down and work out the sheet and strip needed to complete the Fleetwing and Elmira airframes. (Just lately I have seen quite a few Fleetwing models popping up so if anyone has made such a list already then please let me know!)

You may have noticed that the Flair Puppeteer has been absent in recent paragraphs. But don't worry, I have that classic biplane well in hand too. More on that in a future RTFM. ■

RM TEST REPORT
by DAVE HUGHES

Elmira

elegant new Keilkraft sailplane

"IT LOOKS much nicer than it does in the adverts"—was one of the most frequent comments that came to my ears, when I took my newly completed *Elmira* to the slope. And when it was seen soaring majestically above the "kippers," several of the lads made up their minds on the spot to get the kit, which was all rather gratifying.

Indeed, this is certainly an impressive model—all 9ft. 8in. of it—and it looks like "a real sailplane" in the air. It is, as we mentioned in our initial Trade News inspection of the kit (Sept. '70 issue) in fact a sort of semi-scale *Skylark*. (The name, *Elmira*, incidentally, is taken from the famous American gliding centre.) Let's reverse the time-honoured procedure, and talk about the model's flight performance first. . . .

Flying characteristics

For the first test-flight we dashed out to Colley Hill, Reigate—a half-hour's drive from the office—as soon as the wind was at 230°, the best direction for this bowl-type site. With the Dwyer wind meter reading around 18 mph I launched off, and the *Elmira* soared away, penetrating easily and making height very rapidly. There was no need to touch the elevator trim, which I had at neutral, with the c.g. at the specified position.

Response to rudder seemed quite good at first, bearing in mind that there is not over-much dihedral, and I tacked the model to and fro for several minutes, all the time gaining height, and getting the feel of its handling qualities. With a cross-wind, however, I soon found that heading the model back into wind was more difficult—response was sluggish and it tended to slide sideways. The only way to get a really sharp turn was to dive quite steeply, so as to increase the airspeed, to get the rudder to "bite." This showed up even more on landing as, when slowed down, it was impossible to combat with rudder any rolling tendency caused through turbulence. Result—I got my new model into a tree! We got it down quite safely, though, with only a few tears in the tissue covering, thanks to springy trees.

Further flights were made at the weekend (after patching the tissue), at treeless Ivinghoe, this time in a 12-15 mph north-westerly. Again, more compliments about the model's attractive appearance and—again—the lack of rudder response *in certain conditions* (i.e., "with the wind under one wing," so to say, and attempting to get it facing back into wind). Several times I had to force myself to push in down-elevator to build up speed for a turn—and only just got response in time to clear the hillside.

Once aware of this characteristic, however, I began to "loosen up"

First flight was at Colley Hill (Map Ref. 428E, 420N, Sheet 170) where you can sit and soar! But beware those trees!

Pete's new square rudder vastly increased the surface's area and so he has never suffered from the lack of response noted in Dave Hughes' kit review from Radio Modeller, January 1971.

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@artichokehq.com**

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

OCTOBER

Oct 14

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

Oct 18-19

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

Oct 19

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

Oct 26

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

NOVEMBER

Nov 2

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

Nov 2

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

Nov 8

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

Nov 9

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

Nov 16

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

Nov 16

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

Nov 23

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

DECEMBER

Dec 7

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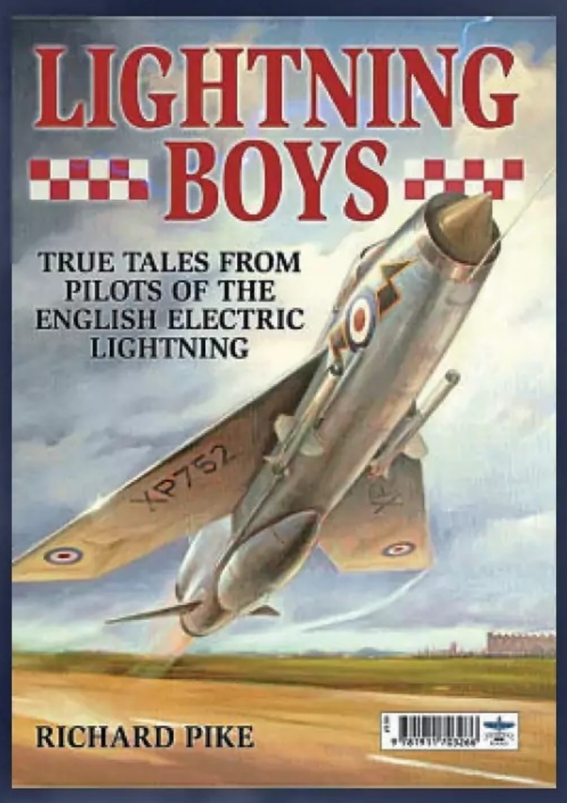

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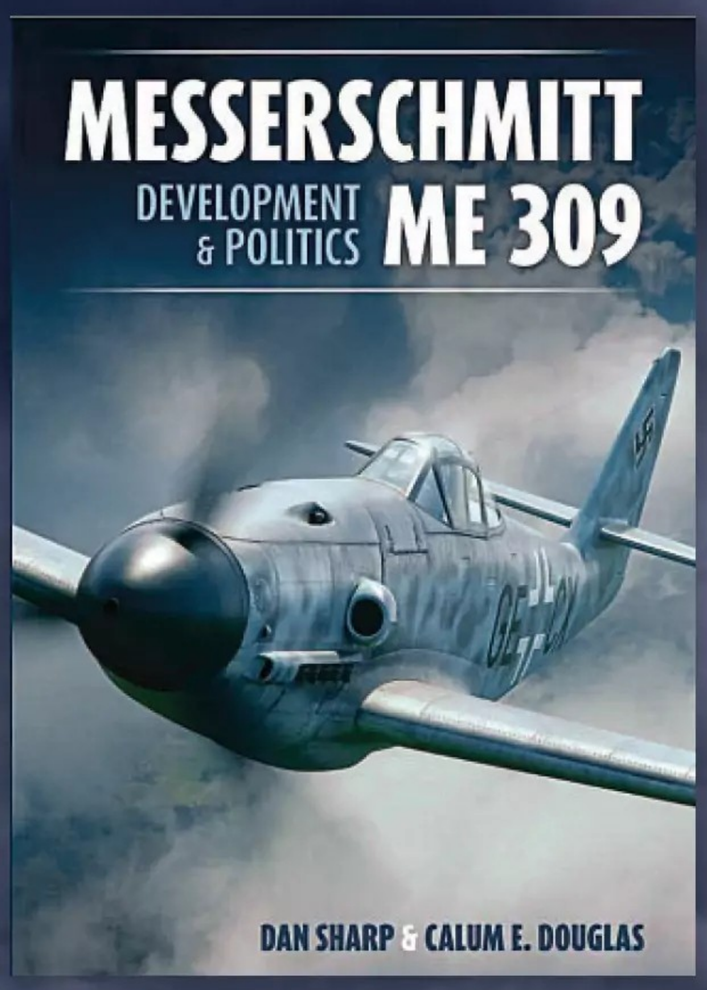

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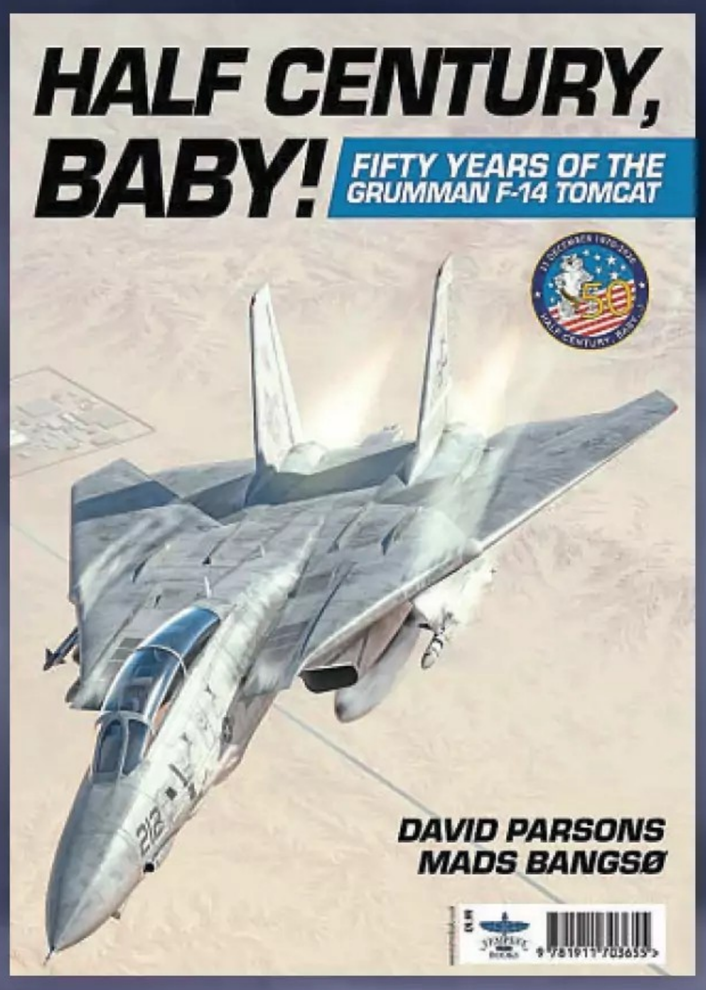

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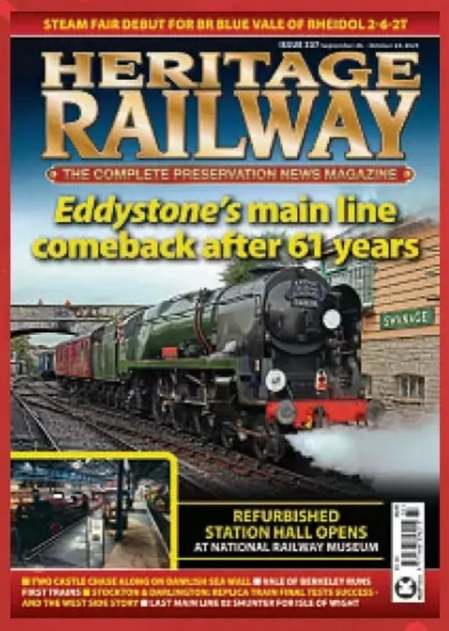

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Next issue

JAGUAR GR.1

For December's pull-out Pro-Plan, Tony Nijhuis introduces the second of three new models to be published in RCM&E, the Jaguar-GR.1. Tony says, "*I have decided in recent years to concentrate on my particular favourite kinds of aeroplane - and the new Jaguar is just that!*"

Tony's 29" span EDF jet has been in the pipeline for some years now and started off being designed for a pair of 50 mm 4S fan units. Having had so much success with the recent 70 mm 4S Powerfun unit, Tony was going to convert the design to a single 70 mm unit but having reviewed the difficult design alteration it seemed appropriate to leave well alone and stick with the trusted twin fan version. "*This really is a cracking little model!", says Tony.*

ALPINE ANTEATER

Whilst perusing the pits at model shows Mike Freeman invariably finds a model that jumps out and says, '*Look at me!*' and Weston Park 2025 was no exception. Thomas Hoffmann from Switzerland displayed his rather distinctive looking 30% scale model of the Farner Werke C-3605, a target towing plane used by the Swiss Air Force to train their fighter pilots. The model is totally scratch built and has a wingspan of 3.95 metres (155"), with a 3.7 metre (145") long fuselage. The two-piece wings are made from obechi covered styrofoam and the fuselage sides are made from a GRP sandwich monocoque construction in home-made moulds using a vacuum process. Thomas found it necessary to build the unusually long fuselage in two halves to ease transport.

MIKE BIRCH'S CAPRICORN

Given the prominence of R/C aerobatics in the late 1960s and early 1970s it is fair to say that Mike Birch was one the aerobatic 'superstars' of that time. So, it's a great tribute to see a plane designed and built by him still flying again today in the hands of regular RCM&E contributor, Stuart Mackay. Stuart found the model in Lincolnshire on a well-known internet auction site. He remembered the model from his formative teenage years, where the likes of Mike Birch, Dennis Hammant, Clive Weller and Dave Hardaker were setting the standard for excellence in the UK R/C aerobatic scene. The Capricorn featured in the back page magazine advertisements of the time for Skyleader Radio Control. Luckily, the seller had the original HP61 engine and silencer available so this was purchased too so that Stuart could re-unite them some 50 plus years from when the model was built.

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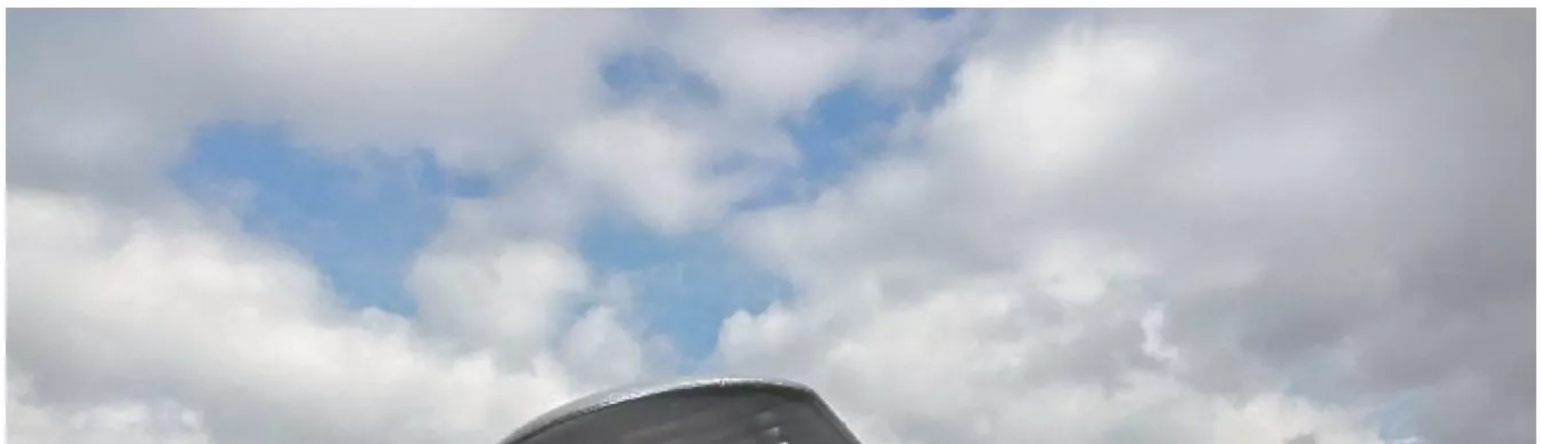
PARTING SHOT

At County MAC there has been an outbreak of Gloster Gladiators! They are from the Durafly Gloster Gladiator Mk 1 biplane kit. With a wingspan of 1100 mm they are powered by a 770 kV brushless outrunner motor turning an 11 x 7 prop. Using a 2200 mAh 4S LiPo flights in the order of 10 minutes duration are perfectly feasible. Two of the aircraft are in the markings of No. 73 Sqn. The third is in the markings of No. 56 Sqn. The models in the line up are owned by myself, Gordon Libbey and Robin Acton.
The action shot is of Chris Montagu's version.
Chris Williams



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VQA125

Wingspan: 85in (2.17m)
Electric or Glow Power

~~£374.95~~
£269.95

DOUGLAS DC-3
'Lufthansa'

£75 OFF

VQA129

Wingspan: 70.8in (1.8m)
Electric or Glow Power

~~£299.95~~
£224.95

PILATUS PC-6
'Skydive Marche/Tiger'

£60 OFF

VQA0361

Wingspan: 62in (1.58m)
Electric or Glow Power

~~£229.95~~
£169.95

YAK-9
'Soviet - Winter Camo'

£50 OFF

VQA055

Wingspan: 59in (1.52m)
Electric or Glow Power

~~£249.95~~
£199.95

PIPER PA-18 SUPER CUB
'Burda'

£130 OFF

VQA084

Wingspan: 106in (2.7m)
Electric or Petrol/Gas

~~£599.95~~
£469.95

L-4A GRASSHOPPER

£70 OFF

VQA159

Wingspan: 95in (2.4m)
Electric or Glow Power

~~£469.95~~
£399.95

SIAI MARCHETTI SF-260

£70 OFF

VQA143GE

Wingspan: 65in (1.64m)
Electric or Glow Power

~~£339.95~~
£269.95

DHC-6 TWIN OTTER
'Nature Air'

£50 OFF

VQA138NA

Wingspan: 65in (1.64m)
Electric or Glow Power

~~£299.95~~
£249.95

T-28 TROJAN
'Camo'

£70 OFF

VQA162C

Wingspan: 69.7in (1.7m)
Electric, Glow or Gas

~~£399.95~~
£329.95

T-28 TROJAN
'US Airforce - Red/ White'

£70 OFF

VQA162RW

Wingspan: 69.7in (1.7m)
Electric, Glow or Gas

~~£399.95~~
£329.95

T-28 TROJAN
'US Airforce - Silver'

£70 OFF

VQA162S

Wingspan: 69.7in (1.7m)
Electric, Glow or Gas

~~£399.95~~
£329.95

FOCKE-WULF FW190D-9

£40 OFF

VQA0452

Wingspan: 59in (1.5m)
Electric or Glow Power

~~£229.95~~
£189.95

P-39Q AIRACOBRA

£50 OFF

VQA09

Wingspan: 62in (1.58m)
Electric or Glow Power

~~£249.95~~
£199.95

JUNKERS JU-52
'Olympia'

£60 OFF

VQA113

Wingspan: 64in (1.63m)
Electric or Glow Power

~~£229.95~~
£169.95

VOLKSPLANE
'US'

£50 OFF

VQA0133

Wingspan: 62.9in (1.6m)
Electric or Glow Power

~~£249.95~~
£199.95

GRUNAU BABY V3

£50 OFF

VQA069

Wingspan: 82.7in (2.1m)
Length: 44in (1.12m)

~~£249.95~~
£199.95

Optional e-retracts, struts and accessories are available to purchase separately.

SUPERMARINE SPITFIRE

VQA158

Wingspan: 60in (1.5m)
Electric or Glow Power

£269.95

DH-82 TIGER MOTH

VQA139R

Wingspan: 55in (1.4m)
Electric or Glow Power

£279.95

P-51B MUSTANG
'Tuskagee Airman'

VQA05

Wingspan: 58in (1.47m)
Electric or Glow Power

£249.95

AT-6 TEXAN

VQA02

Wingspan: 60in (1.54m)
Electric or Glow Power

£259.95

A-24 BANSHEE

VQA120BS

Wingspan: 60in (1.54m)
Electric or Glow Power

£249.95

PIPER PA-38 TOMAHAWK

VQA163US

Wingspan: 74.8in (1.9m)
Electric or Glow Power

£359.95

WASP TRAINER

VQA012W

Wingspan: 60in (1.5m)
Electric or Glow Power

£169.95

YAK-1
'Green Camo'

VQA054

Wingspan: 59.8in (1.5m)
Electric or Glow Power

£249.95

GIANT STICK
'Swiss'

VQA061S

Wingspan: 76in (1.94m)
Electric, Glow or Gas

£329.95

DHC-6 TWIN OTTER
'Canadian Airforce'

VQA138CA

Wingspan: 72in (1.84m)
Electric or Glow Power

£299.95

KA-7

VQA058

Wingspan: 100in (2.5m)
Length: 51.18in (1.3m)

£239.95

FOKKER D.VII
'Red/Blue'

VQA167RB

Wingspan: 68in (1.73m)
Electric, Glow or Gas

£359.95

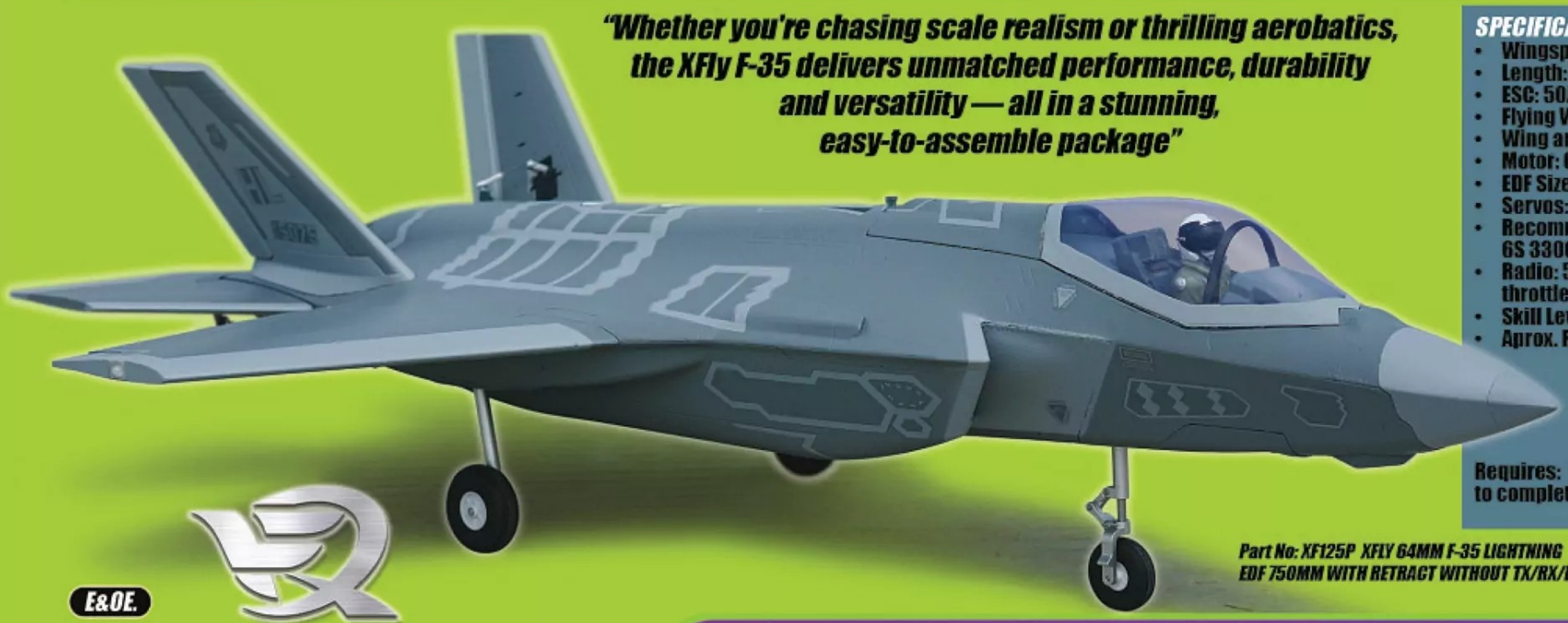
LOCKHEED MARTIN F-35A LIGHTNING II

XFly Model proudly presents the F-35 64mm EDF jet, a meticulously scaled-down replica of the legendary F-35A. Every detail, from the authentic cockpit and LED lights to the nozzle and retractable landing gear system, has been faithfully recreated for maximum realism.

FEATURES:

- Full flying horizontal stabilizers
- Spacious battery bay fits 6S 3300-5200mAh LiPo battery
- No-glue assembly — ready to fly in minutes with just 6 screws
- Easily upgradeable to 70mm EDF for higher thrust-to-weight ratio
- CNC-machined aluminum landing gears with electronic retracts
- High-performance 6S 64mm EDF system and 50A ESC with thrust reversing
- Optional hand-launch version (no landing gear) for grass-field operation.

"Whether you're chasing scale realism or thrilling aerobatics, the XFly F-35 delivers unmatched performance, durability and versatility — all in a stunning, easy-to-assemble package"



SPECIFICATIONS:

- Wingspan: 750mm/29.5in
- Length: 1100mm/43.3in
- ESC: 50A with thrust reversing
- Flying Weight: 1800g
- Wing area: 11.5dm²
- Motor: 6S 2840-KV2300
- EDF Size: 64mm EDF 12-Blade
- Servos: 9g servos x5, 13g servos x2
- Recommended Battery: 6S 3300mAh (3300-5200)
- Radio: 5CH- aileron, elevator, throttle, rudder, retract
- Skill Level: Intermediate
- Aprox. Flying Duration: 6 - 8 mins

Requires: Radio, battery and charger to complete

Part No: XF125P XFLY 64MM F-35 LIGHTNING EDF 750MM WITH RETRACT WITHOUT TX/RX/BAT.

RRP £279.99

E&OE.

XFLY-MODEL

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

CML WWW.CMLDISTRIBUTION.CO.UK

28

24

500

F2
1/8" PLY

F1
1/8" PLY

F1 ANGLED TO TAKE MOTOR IF POWERED MODEL IS DESIRED. SHAPE NOSEBLOCK TO SUIT INSTALLATION

0.4mm PLY

H1

H2

H3

400

1/8" BALSA INFILL SHOWN SHADED

F1

F2

BATTERY TRAY

SOFT BALSA INFILL

1/8" PLY SPINE

1/16" PLY FA

300

1/4" BALSA

20

16

1/16" PLY WHEEL
MOUNT/REINFORCEMENT
2 REQ'D

1/8" HA

SOFT BALSA BLOCK
COCKPIT FAIRING
FIXED TO WING

1/16" BALSA INFILL

H4

CG 50mm L.E.

F3A

1/8" HARD BALSA DOUBLER

12g
METAL GEAR
SERVOS

SERVO TRAY

F3

F4

1/16" BALSA INFILL

1/16" PLY WHEEL
MOUNT/REINFORCEMENT

SOFT FOAM LIGHTWEIGHT
WHEEL, Ø45mm TO Ø48mm

ACING

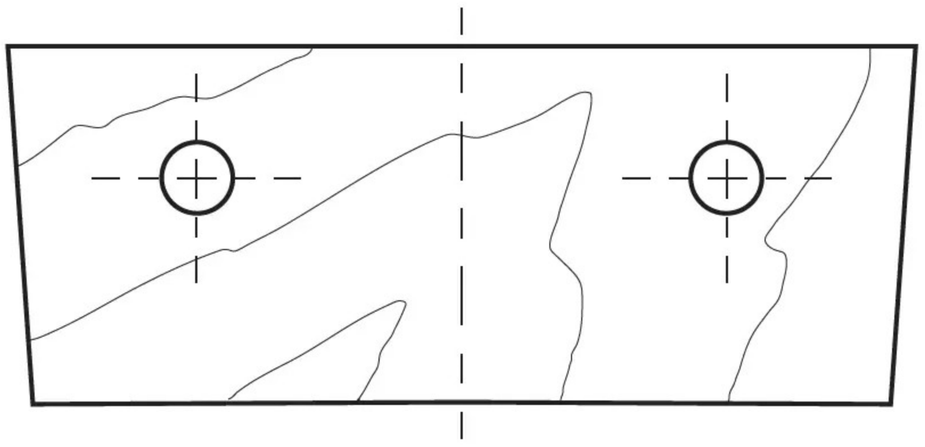
1/4" SQ. BALSA

1/4" SQ. HARD

1/4" BAL

SU

6 12 8



1/8" PLY
WING ANCHOR PLATE
FIT M4 T-NUTS

1/8" HARD BALSA DOUBLERS
2 REQ'D

A INFILL

ALL CORNER REINFORCING PLUS TOP & BOTTOM SPINE
FROM 1/8" x 1/4" BALSA, PLANED/SANDED TO SHAPE

1/8" BALSA INFILL

LINE INDICATES CONTROL SNAKES

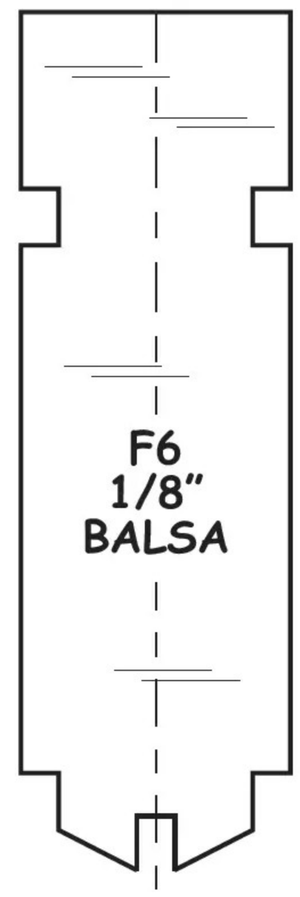
1/16" HARD BALSA FUSELAGE SIDES TO △

F4

F5

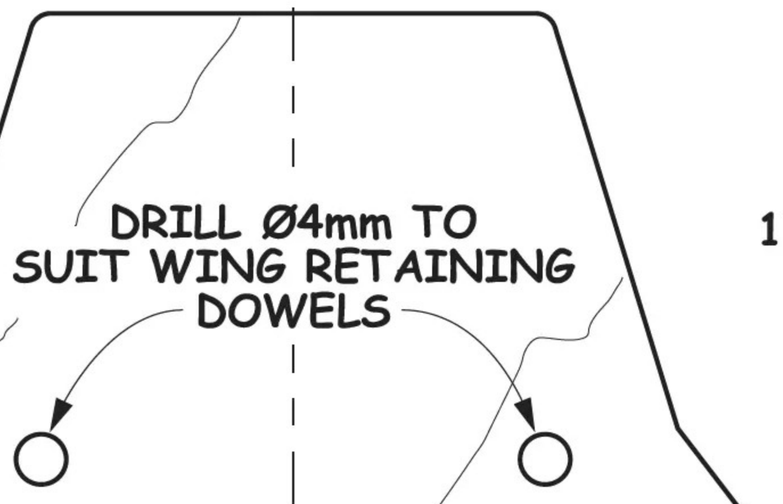
FRONT

REAR



1\16" PLY WHEEL WELL FORMERS

/ WHEEL
NFORCEMENT



1/8

SCALE
INCHES

RCM&E

1939 NIPPON 'TOMBO' OR 'TONBO' (DRAGONFLY)

BY DAVE GOODENOUGH

PLAN No: RC2277	No. OF SHEETS: 1 OF 2	First published in RCM&E November 2025

1/4" BALSA

1/

B

3/16" x 1/2"
BALSA

F1

F2

1/8" BALSA

BATTERY TRAY

MAGNET

Ø4mm HOL
(L.E. BRACE

MAINSPAR
DIHEDRAL BRACES
2 REQ'D

L.E. DIHEDRAL BRACE

DIHEDRAL BRACES FROM
1.5mm (1/16") PC BOARD

SCALE
MM

100

200

100

1/4" SQ. BALSA

1/4" SQ. HARD
BALSA OR BASS

1/4" BALSA TIPS

4" SQ.
ALSA

SU

F3A

F3

SERVO TRAY

F4

F3
1/8" PLY

1/16" PLY WHEEL
MOUNT/REINFORCEMENT

LES
ONLY)

200

300

400

1\16" PLY WHEEL WELL FORMERS

DRILL Ø4mm TO SUIT WING RETAINING DOWELS

F3A
1/8" PLY
TO THIS LINE

F3
1/8" PLY

F4
1/8" LITE PLY

F4

1/8" BALSA INFILL

F5

1/8" PLY SPINE

400

500

FIN & RUDDER ALL 1/4"
MED/HARD BALSA EXCEPT
FIN TAILPOST FROM
VERY HARD BALSA OR BASS

1/8" BALSA INFILL
UNDER TAILPLANE

1/16" PLY SKID

1/16" BALSA INFILL

F6

12

16

20

600

700

28

24

500

R1A

R2A

R3

R4

HOLE IN LOWER
SHEET FOR
SERVO WIRE

R1B

R2B

1/8" LIT

400

1/4" x 3/4" BALSA T.E.

1/16" BALSA FAIRING
SHAPED TO FIT FUSELAGE TOP

R1B TO
HERE

R1A &
R2A

R2B

300

R1 TO R11

R11 TO R19

R10A TO R19A

R3 TO R10

20

16

R5

R6

R7

R8

ALL WING RIBS
1/16" HARD BALSA

TE PLY BATTERY TRAY

R8

R7

R6

R5

6 12 8

R9 R10 R11 R12

1/16" PLY
SERVO MOUNT

1/8" BALSA

1/8" PLY
INFILL

R10A R11A R12A

Ø4mm CARBON OR
HARDWOOD DOWELS

R5 R4 R3 R2A R1A

OUTLINE OF
COCKPIT FAIRING

SCALE
INCHES

1/8" x 3/8" BALSA
L.E. CAP

3/16" x 3/8"
BALSA L.E.

R13

R14

R15

R16

3/16" SQ. SPARS
HARD BALSA OR BASS

1/16" BALSA WEBS
GRAIN VERTICAL

1/8" BALSA
AILERON L.E.

1/8" BALSA
AILERON SPAR

R13A

R14A

R15A

R16A

RACES

25mm (1") DIHEDRAL
UNDER EACH TIP

R17

R18

R19

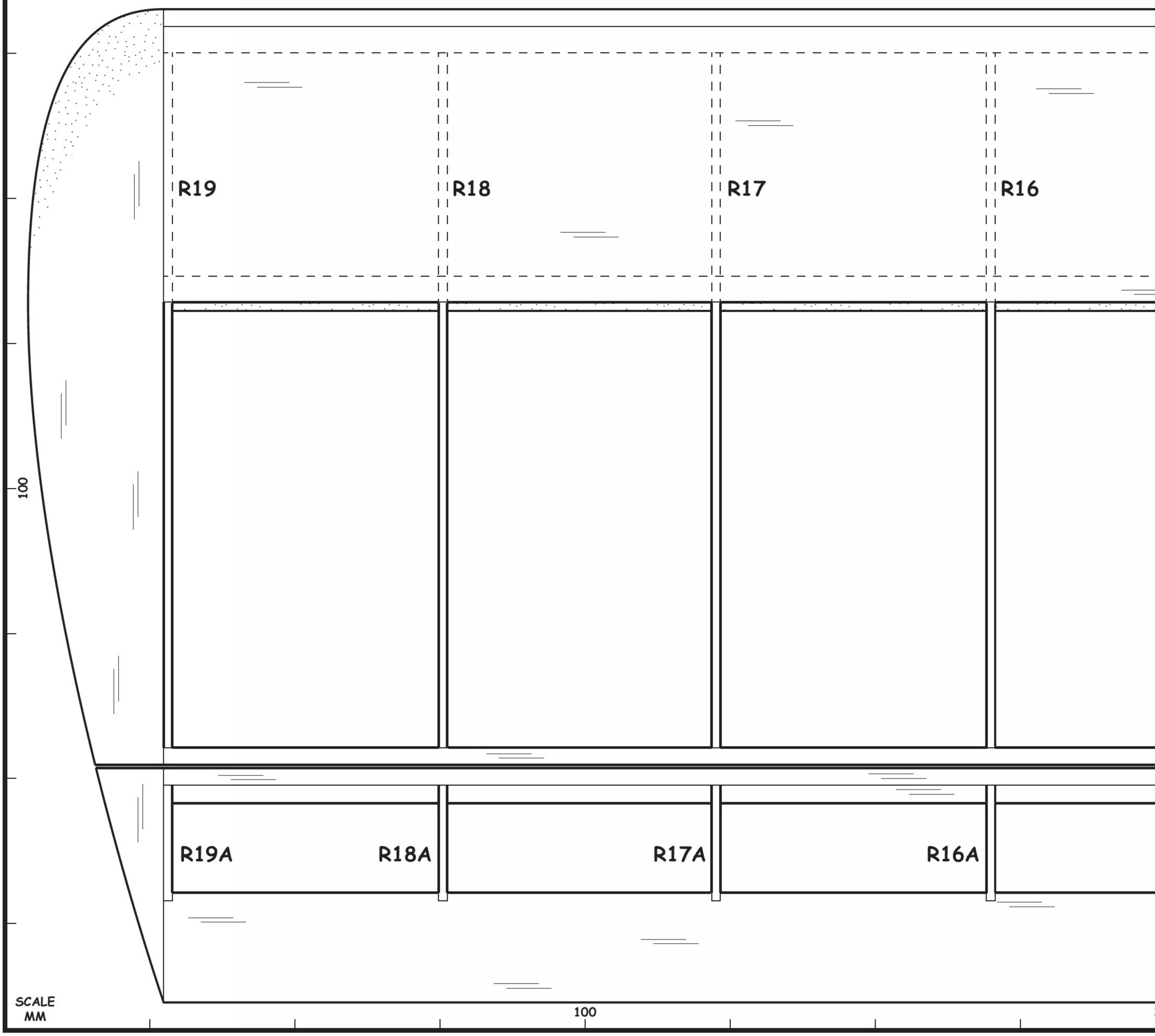
SECTION
THROUGH TIP

RCM&E

1939 NIPPON 'TOMBO' OR 'TONBO' (DRAGONFLY)

BY DAVE GOODENOUGH

PLAN No: RC2277	No. OF SHEETS: 2 OF 2	First published in RCM&E November 2025



1/8" LITE PLY SERVO TRAY

R15

R14

R13

R12

12g
METAL GEAR
SERVOS

R15A

R14A

R13A

R12A

R1

200

300

400

TO TRAY

R2B

R1B

1/4" HARD BALSA
REINFORCEMENT

R11

R10

R9

H4
3/16" BALSA

12g
METAL GEAR
SERVOS

H3

H2

H1

H1, H
1/8"

R11A

R10A

400

500

SECTION
THROUGH TIP

SOFT LIGHT
BALSA TIPS

R17A

R18A

R19A

1/8" BALSA
WITH MAGNET
ON UNDERSIDE

H1

H2

H3

H4

Ø2mm
RETAINING
PIN

H2 & H3
BALSA

1/8" BALSA
RAILS ON
UNDERSIDE

VAC-FORMED CANOPY

1/16" PLY BASE

12

16

20

600

700