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03 / LED Light for Scale



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Welcome

Welcome to the September 2026 issue of RCM&E.

Well, that's the end of a beautiful forty-plus year friendship. I have a lovely relationship with my dear mother-in-law, but I've always suspected that she has never quite got to grips with my aeromodelling hobby, let alone truly accepted it when it turned into my career path a few short years after I married her daughter. (Who, it could sometimes be said, doesn't fully appreciate my model aeroplanes either!)

On a recent visit, being aware that I am soon to undergo knee surgery, she offered me an unused 'perching stool' that my father-in-law is no longer able to use in his bathroom at his nursing home. Would I like to take home said stool, she offered. No, thanks, said I. Her reply left me speechless... *"I thought it would be useful when you are playing aeroplanes."* Ouch!

On the way home I raised the subject with my wife, who said, *"I thought you wouldn't be very pleased when she said that!"* Playing aeroplanes, indeed!

It was a different matter many years ago when she befriended a chap called Dick Edmonds on one of her regular cruises, whom she had a lovely time with discussing his competition winning and best-selling model glider kits. 'Playing aeroplanes' was definitely an acceptable pursuit when undertaken by a fellow cruise passenger.

She's such a lovely lady though that I guess I'll have to forgive her the next time we visit. I may even take a copy of one Dick's 'Algebra' plans, to jog her memory of her meeting with one of aeromodelling's greatest model designers.

Now, let's take a quick look at what's inside the September issue of RCM&E. We start this month with Rob Bennett's build and flying report of Pilot-RC's colourful Slick 84" aerobatic model. The Slick's large control surfaces need careful setting up and so would benefit from the use of the Control Throw Gauge described by Mike Freeman in the subsequent article. Mike continues on the next few pages, this time with his report from the Weston Park Model Airshow. Then it's over to David Ashby for



another 'Just For Fun' column; amongst the topics discussed this time are a 3D printed seagull and the importance of practising proper circuits. Next, Rob Bennett is back with another flight test, this time with XFly-Models' stylish twin 40 mm EDF powered J-65 biz jet. The first half of this issue concludes with Part 2 of the Sperber Junior 'Pro-Plan' build feature from the CAD files of prolific classic glider designer, Chris Williams.

We start the second half of this issue with a review of another Fly Wing GPS scale helicopter, the easy to fly MH-60 Jayhawk in US Coast Guard livery, before taking a good look at E-flite's enlarged version of their popular Conscendo glider design, now spanning two metres and fitted with an optional spatted undercarriage. In Dave Goodenough's (One Man & His Shed) latest column, he discovers the joys of 3D printing. Yours truly polishes off this issue with another RTFM column, in which I carry on the control throw measurement discussion and show how cloth tape can be used to ward off the sharp edges of the thin carbon sheet parts used in modern aerobatic aircraft like the aforementioned Slick 84.

I hope you enjoy reading it all.
Happy Flying!

Kevin Crozier

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



On the cover

Photo: Barry Atkinson

After reading our review this month, we have no doubt that a good number of our readers will be heading to Logic RC's website to learn more about this elegant two-metre span electric glider. It's a winner both in terms of its good looks and flying capabilities. Other smaller versions of the Conscendo design (802mm UMX and 1.5m Evolution) have been on the scene for quite some time now so join us as we take a look and see how this new larger version stacks up.





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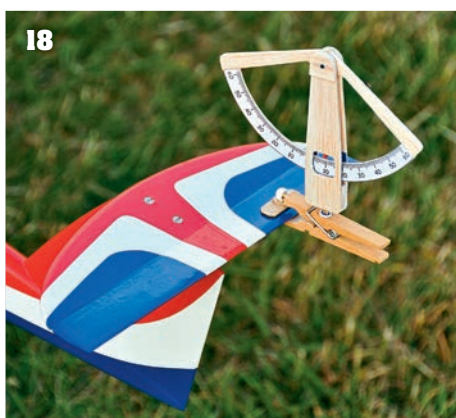
Free Pro-Plan

- 48 SPERBER JUNIOR**
Chris Williams presents the second of two articles about building from his latest two-part Pro-Plan for a 1:4.5 scale classic glider



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... and receive SPITFIRE REVISITED, an enthusiast's guide to plastic modelling of the Spitfire and Seafire FREE! See page 68 for details



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BLUE SKY AEROMODELLERS

Following a successful day a few years ago, giving Clay Cross ATC the chance to get a taste of flying radio control models, the Blue Sky Aeromodellers repeated this with the Air Scouts and Air Explorers from the 230th Sheffield (Gleadless) Scout Group at the club's Beeley flying field. There was a good turnout of scouts and leaders on the day which was blessed with great weather and blue skies.

Using the club's trainers and a buddy system the club instructor, Mark, was able to give individual scouts a great experience controlling the aircraft. To minimise downtime other members prepared the models for the next session. During breaks in the dual flying other members flew various models to give the scouts a flavour of the range of models that could be flown.

When asked, their feedback was, "We had a great day and all the young people really enjoyed having a go at flying the model aircraft." There was definitely hope that we are seeing some future aeromodellers. I would like to thank all involved on both sides and especially the scouts and their leaders for being such good representatives of the scouting movement.

Blue Sky Aeromodellers is based in the Chesterfield area and boasts three flying



fields around the town. All aspects of radio controlled flying are catered for subject to local site rules. Training is provided free for all members, who are encouraged to take the tests in the British Model Flying Association achievement scheme to ensure safe and responsible flying.

For more details of Blue Sky Aeromodellers visit our website at www.blueskyaeromodellers.org or contact the secretary at secretary@blueskyaeromodellers.org

To find out more about scouting visit <https://www.scouts.org.uk/>
Colin Bernard



SECRET BOMBER PROJECTS



Secret Projects of the Luftwaffe - Vol 2 - Bombers 1939-1945

Dozens of top-secret bomber designs were drawn up by the Germans during the Second World War, including gigantic flying wings, sleek jet bombers, asymmetrical bombers with the cockpit and weapons turrets on the ends of their wings and even enormous carriers for single-seat suicide bombers.

Starting with Heinkel's He 177, the most advanced bomber design of its day in 1936, author Dan Sharp looks at the huge variety of bomber projects produced during the days of the Third Reich, uncovering a host of original and previously unseen documents to offer an unrivalled look at bombers such as the Arado E 470, E 555 and previously unknown Arado



types, Junkers Ju 488, Focke-Wulf Ta 400 and Fw 300, Blohm & Voss P 163 and BV 250, Messerschmitt P 1107 and P 1108, He 343 and the so-called Daimler-Benz projects.

Secret Projects of the Luftwaffe Volume 2: Bombers 1939-1945 is a companion volume for Secret Projects of the Luftwaffe Volume 1: Jet Fighters 1939-1945 and includes numerous new and period illustrations.

Priced at £39.99 (approx. \$52.93 or €46.41) this hefty 380-page volume, covering close to 214,000 words and 478 images, is available from all good book sellers. Please quote ISBN 9781911658092 if it needs ordering.

Alternatively, you can purchase a copy direct from the publisher, plus delivery, at: <https://shop.kelsey.co.uk/LUFTWAFFE-VOL2>

A few of the aircraft featured in this expansive book will be familiar to model aircraft enthusiasts as some have already been built as radio-controlled models. However, by using this book as inspiration, we are sure that we will see some of the even more unusual designs take to the air, helped along by advancements in R/C technology, not the least being gyro assistance and electric ducted fans in a wide variety of sizes.

SARIK 'LIMIT EX' WOOD PACK

Limit EX is a fun and simple to build V-tail slope soarer designed by Julian Beckett. It was first featured in the November 2004 edition of RCM&E. At just 18" wingspan and with an all-up-weight of under 227 grams this nippy little glider recently garnered more interest when David Ashby revealed his new version in his 'Just For Fun' column in the March 2025 issue. In his article, David says:

"Julian's build notes are online at modelflying.co.uk (just pop the name in the search box) and for good reason he mentions the perils you'll encounter with even a slightly rearward C of G.

One thing to appreciate with small models is how very fine C of G adjustments can make a big difference to the flight performance. Long grass saved my model during its first flight. One moment it was banking gently across the slope front, then, with a smidgeon too much elevator, it wasn't. Five grams in the nose brought the stability required, although it remains a very agile little thing with a particularly zippy roll rate. It doesn't bounce like a Lidl glider but with an 'all-up' of 180 grams there's little mass to carry to the crash site and it's balsa, so easy to repair. It seems to prefer smoother air and I've learned to avoid the slope edge where even a smidgeon of turbulence can spoil the day.

Dave's little Limit EX drew several enquires to Sarik Hobbies asking about the availability of a wood pack. So, they went ahead and made a kit of parts which small model aficionados can now buy from the



Sarik website:

<https://www.sarikhobbies.com/product/limit-ex/>

Options include the plan, a laser cut wood pack and an additional wood pack as separate items, but the most economical way is to buy all three as a Short Kit and save 15%. Even better, the 'Limit EX (18") - Short Kit' (order code: SETRC2051/EX) is on sale at the time of writing for £67.00.



SLICK 84

Rob Bennett assembles a dazzling 84-inch span semi-scale aerobatic model from Pilot-RC

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

In the January issue the editor published an unboxing preview of his still to be built Slick 84 aerobatic kit from Pilot-RC. There's little doubt that this big and beautiful example of top class ARTF manufacturing would still be in its component parts if 'procrastinator-in-chief' KC hadn't had a kind offer from his clubmate Rob

Bennett to put it all together. Kevin didn't need asking twice, so here's how Rob got on.

DUALSKY MOTOR

The first job for me was to sand the fibreglass horns to give a good key and then fix them in the control surfaces with epoxy glue.

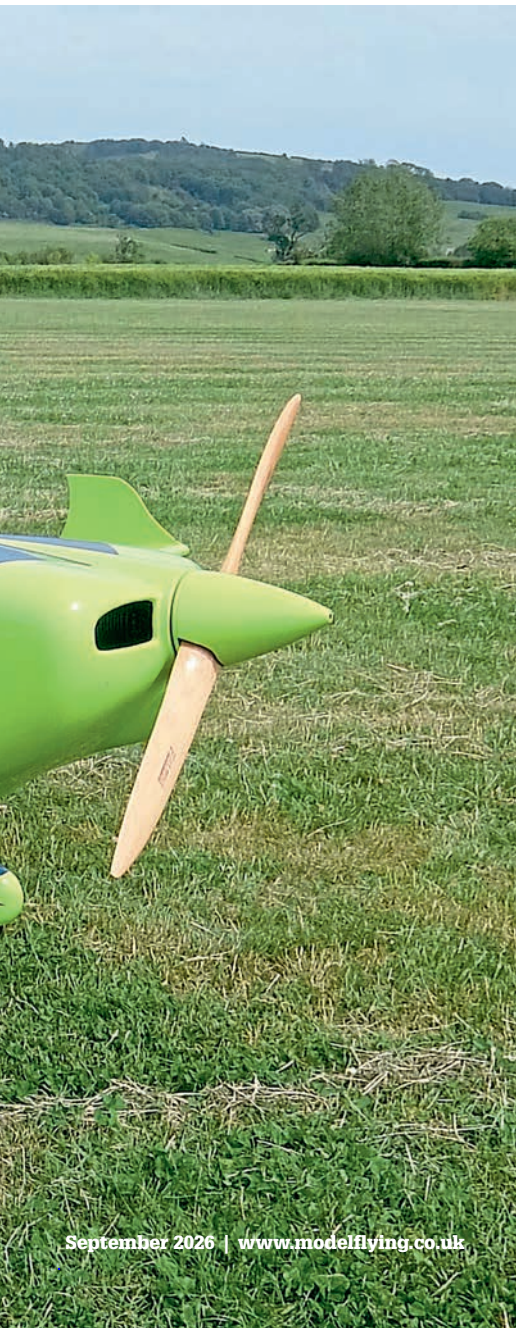
While I was waiting for them to set, I began fitting the motor. This was a Dualsky 6000 electric motor (50 - 60 cc petrol equivalent) in conjunction with a Castle Creations 160-amp ESC.

One of the things I like about Pilot-RC is that they mark the front bulkhead with a

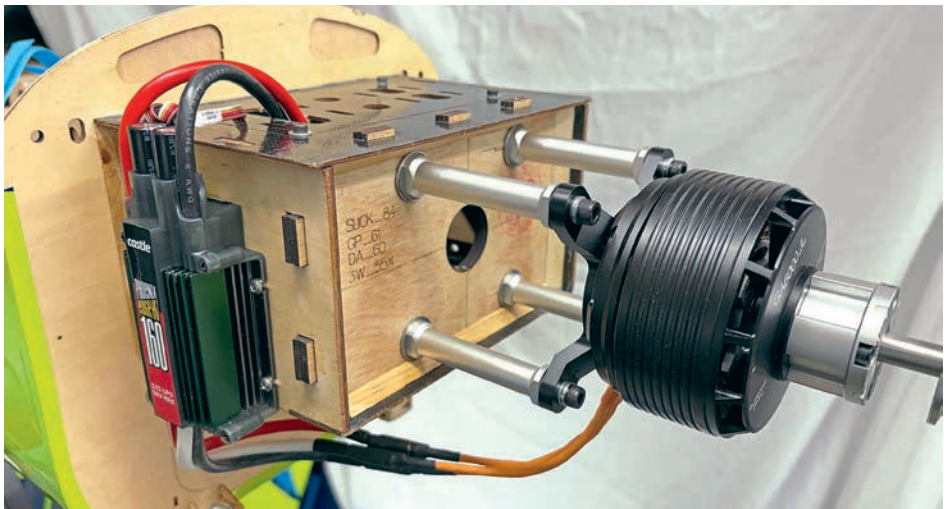




Pilot-RC's Slick is available in a variety of sizes and different colour schemes.



First order of business is to glue in the epoxy glass control horns, a pair on each surface. Don't forget to fit the flat plate before doing so, easily overlooked.



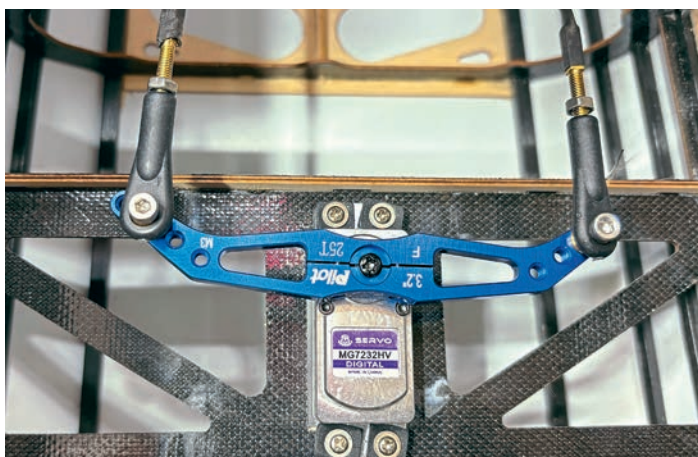
GA6000.9 160 kV motor on its stand-offs, with a 160A Castle ESC side mounted on the engine box. There's an argument for boxing in the spacers when using a powerful motor like this one so KC has it on his post-maiden 'To Do' list.



Offsetting the mounts keeps the motor neatly lined up with the front opening of the cowl, although a small amount of parallax suggests otherwise in this picture.



Just to underline the point, note how well the spinner is aligned with the cowl in this shot.



MG7232HV Digital servo as used for the rudder, complete with a 3.2-inch double servo arm from Pilot-RC distributed, like the model, by MacGregor Industries.



A few interesting details in this pic, including the full-length rudder pin secured with a collet and the neat steerable tailwheel. Note the use of a cut down ball-link to connect the rudder to the wheel-post via a piece of wire.



One of the elevator servos buried inside a tailplane half. It's easier to fit without a servo arm already in place.

centreline that takes into account the offset side-thrust needed so that the propeller and spinner will be centred nicely in the cowl, and the Slick was no different.

The motor comes supplied with stand-offs and thin spacers so getting a nice gap between the spinner and cowl was made very easy.

SETTING UP THE SURFACES

The chosen servos for the Slick were MacGregor MG7232HVs all-round with 26–31 kg of torque available depending on voltage.

I threaded the pull-pull rudder wires down the length of the fuselage after opening up the slots that are just under the elevator. I fixed the servo in place with a Pilot-RC 3.2-inch double arm horn on the spline. The closed loop wires were fixed to the horn with the supplied 3 mm screws and ball joints. Two crimps per end and heat shrink tubes to cover the wires are provided, giving a secure and tidy installation.

Two long extension leads for the elevators were then threaded down a clear plastic tube, which was already in place, leading to the rear of the fuselage.



Chunky turnbuckle style pushrods are used to connect the ailerons and elevators to their servos. Short one on the wings and longer ones at the tail.

“...getting a nice gap between the spinner and cowl was made very easy”

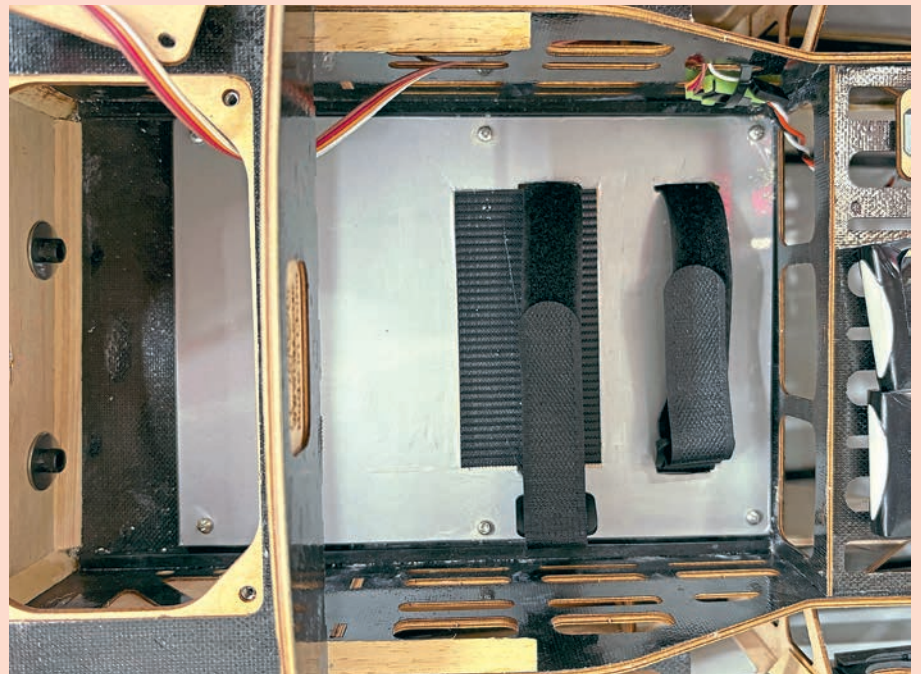
The rudder is removable via a long piece of piano wire that is threaded through the hinges and held in place by a collet at the bottom. Once in place the pull-pull wires were trimmed so that a firm tension was made, with plenty of adjustment available to take up any stretch in the wires further down the line.

Fixing the servos in the horizontal stabilisers is a little tricky but I found it easier in the end to remove the servo horn first to give a little more room. Using the steel pushrods provided, fitted with a 3 mm ball joint at each end, the servo arms were connected to the elevator horns. The same system is used to link up the ailerons. Pilot-RC use a reverse thread on one end of the connecting rods, with a hexagon machined in the middle which if turned will lengthen or shorten the rod depending on which way you turn it. A small spanner is provided for this which makes it very easy to adjust the trim on all the horizontal control surfaces.

(It's important to note that the aileron and elevator pushrods are of slightly different lengths. Short ones are used for the ailerons and longer ones for the elevators. KC)

On to the wings and again it was very easy to install the servos, using similar style pushrods as for the elevators. A couple of short extension leads were added to extend the wires to the wing roots. I used some heat shrink tubing on the joints to prevent them coming adrift.

I then set about arranging the electronics... ✈



Rob fabricated a LiPo tray to fit in the space where the back of the IC fuel tank would normally be, expecting the Slick to need weight forward of the undercarriage.



The original battery placements with two 6S 5000 LiPos on the forward tray and twin LiFe R/C packs on the middle tray behind. Far too nose heavy!



Moving the packs around to achieve the correct CG resulted in one 6S LiPo up front with the other strapped on the middle tray immediately behind. The two R/C packs now straddle the receiver at the rear.



Slick looking pretty in Rob's garden after putting it all together post-build. It needs a big patio to do this!



Rob lends some scale to this impressively large aerobatic model.

RADIO & BATTERY BAY

My initial thoughts were to put the two 6S 5000 mAh batteries all the way forward and so I made a battery tray to accommodate them in the area usually used for the fuel tank in the petrol version as I thought the Slick would need a fair amount of weight up front. But this proved to be a mistake, so you'll see from the photo hereabouts that one battery was kept forward, with the other mounted behind on the raised platform above the wing tube. Two LiFe batteries were used for the flight controls, fed through a PowerBox V3 sensor switch, and these were placed either side of the Futaba R7208 receiver on the rear platform. This set up allowed me to get the C of G on the recommended spot without any additional weight needed.

There are two recommended balance points printed on the inside of the fuselage sidewalls. Pilot-RC provide two short pieces of carbon tube that go through holes in the fuselage and into the wings at the recommended balance points. It's your choice which you use; in my case I went for the forward marks. If a small gap is left between the wings and body, then strong string

can be looped around the tubes on each side and it's then quite easy to lift the aeroplane to check the balance. This model is far too big and heavy to try to balance on your fingers!

MAIDEN FLIGHT

The initial flight was to take place at my local patch. Range and fail-safe checks were carried



View of the very generous sized tail feathers. Apart from a few clicks of up elevator no other trims were required.

"The Slick flies in a very predictable way with no nasty surprises"

out and the model was given a last 'once over' to make sure everything was good to go.

An ammeter was used to find out how much power was being used and at maximum throttle we got 83 amps using a Falcon 22 x 10 wood propeller. The wind was 12 - 14 mph and quite blustery, so I kept the take-off gentle and quickly had to add some up elevator trim. I flew her around a circuit and added a few more clicks of elevator trim, nine in total. No other trim was needed on either the ailerons or rudder.

The timer was set for an initial five minutes. Rolls, loops, bunts and knife edge were as smooth as you'd want. I expect that 3D will be no problem with the available throws on high rates, but I'll leave that to fliers who are much more accomplished than me!

The first landing was okay but not as smooth as I would like. I'm blaming the wind for that and any other excuse I can think of! The two 6S 5000 mAh LiPos came back with 48% remaining so seven-minute flights should be on the cards.

The Slick flies in a very predictable way with no nasty surprises and is very similar to my own 88-inch Pilot-RC Laser. Flying her is an enjoyable experience. The 12S set up provides plenty of power



Wheels are enclosed in a pair of smart moulded spats.



On a roll for the first take-off..



Maiden climb out, needing a swift few clicks of up elevator trim.



The huge canopy is retained in Pilot-RC's usual way via a bent wire crossing the fuselage. Red knurled knobs at either end of the wire are moved in curved slots on either side to release it.



Big SFGs can be quickly fitted for improved 3D and knife edge performance.

DATAFILE

Model:	Slick 84in
Model type:	Semi-scale aerobatic
Manufacturer:	Pilot-RC
Distributed by:	MacGregor Industries https://www.macgregor.co.uk
Wingspan:	2.13 m (84")
Length:	2.04 m (80.6")
Weight:	7.7 kg (19.94 lbs)
Engine/motor:	50 - 60 cc or equivalent electric
Functions (servos):	Ailerons (2), Elevator (2), Rudder (1), ESC or Throttle. All servos HV digitals.



KC prefers the look of his new aerobatic steed without the wing end plates. It seems to knife edge very well indeed without them!



Powering through on a low pass.



A final look at this large and brightly coloured R/C aeroplane. Orientation shouldn't be a problem!

and I never felt that it needed to be flown flat out other than in climbing manoeuvres. With the power available loops can be as big as you want.

The next flight was down to the editor, so I'll pass things over to him for his comments.

FEEL THE SIDE FORCE

Thanks, Rob, and a big thank you from me personally for putting together this lovely aeroplane for me to enjoy flying. As I said at the start of this review, if it hadn't been for you then the Slick would still be in my storage unit, left in its component parts!

I was happy to pass on the maiden flight duties to Rob. After all, he was the one who had put the graft in to build it, so the least he deserved was to enjoy a go at flying it. He's also more experienced with the larger Pilot-RC models than I am, so I knew it would be in good hands.

You may notice that our pictures of the finished Slick 84 are a mix with and without the wing end plates fitted. Otherwise known as Side Force Generators these vertical appendages are said to help improve knife-edge flight and prevent the tail from dropping when the model is on its side. They also help in high-alpha manoeuvres, helping to keep the aircraft responsive even when being flown at slow speeds. But...

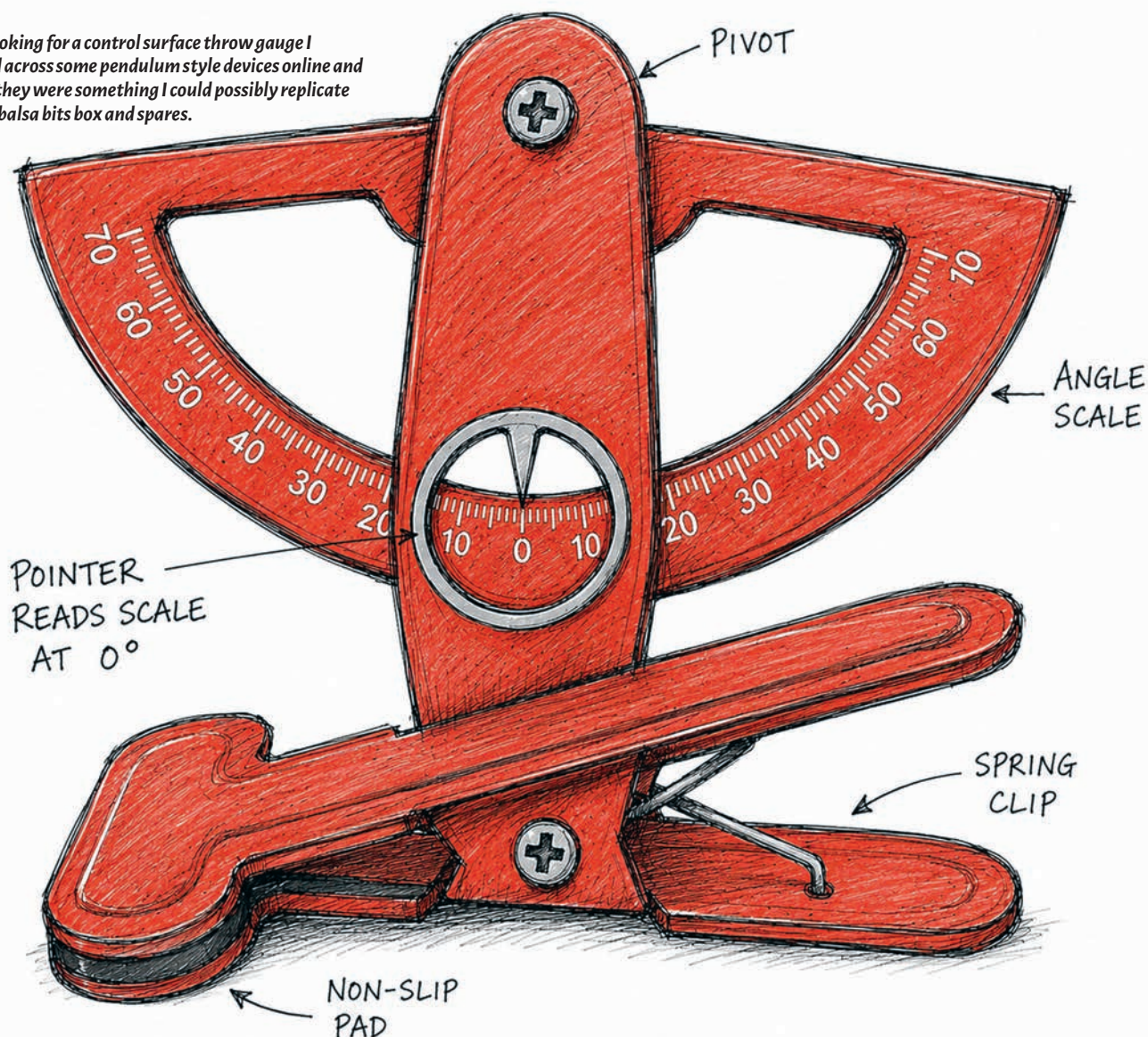
I don't know about you, but I think they detract from the good looks of the Slick and other similar semi-scale models of full-size aerobatic aircraft. The real things do not use them so why spoil the good looks of their smaller radio-controlled counterparts? But, like Rob, I'm no 3D pilot, so my need for them is less, it being smooth 'pattern' style aerobatics that I'm more interested in exploring with the Slick. Hence, for my first flight I opted to leave the SFGs off. However, I'm fast becoming a knife-edge junkie, so I'll pop them back on sometime in the near future to see if they improve my own knife-edge experience. I'll let you know how I get on in a future RTFM column.

JUST LOVELY!

Those two words neatly sum up my first encounter with the Pilot-RC Slick 84. From take-off to landing, she was everything I hoped she would be, replicating the smooth and graceful aerobatics that I have enjoyed previously when flying her slightly smaller sibling, the Extra 78 NG from the same stable. What a cracking model!

And yes, the knife-edge passes were pretty good too, even without the SFGs! ■

Whilst looking for a control surface throw gauge I stumbled across some pendulum style devices online and thought they were something I could possibly replicate from my balsa bits box and spares.



CONTROL THROW GAUGE

Mike Freeman shows how to make a simple pendulum gauge for checking control throws

Words & Photos: **Mike Freeman**

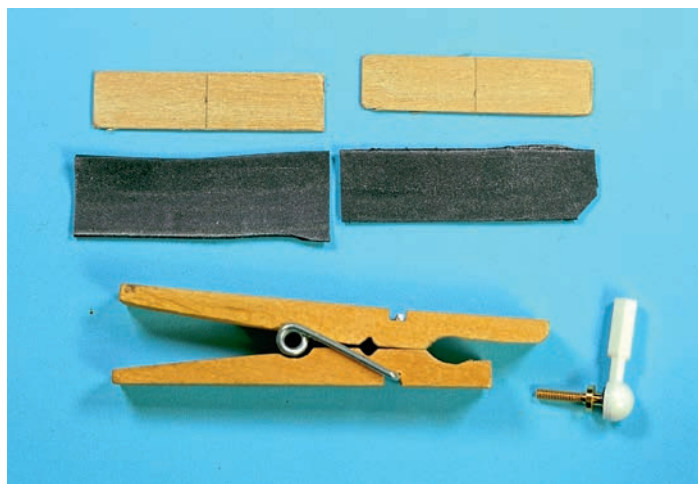
When it comes to measuring the throws on the surfaces of a new model, I invariably end up juggling with a ruler and trying to move the stick, hold the model and line up

what I think is the centre line of the surface with the ruler and then memorise the distance. I've made specific throw gauges for various models before but wanted something a bit more universal and easier to use.

After a brief internet search, I found some pendulum devices online which looked ideal, the basic components of which were easy to replicate from bits from my scrap box. After a brief spell on my CAD, I had a sketch drawn up



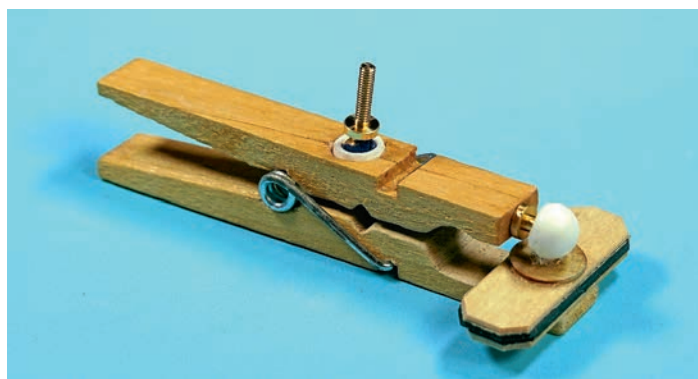
All the components laid out ready for assembly.



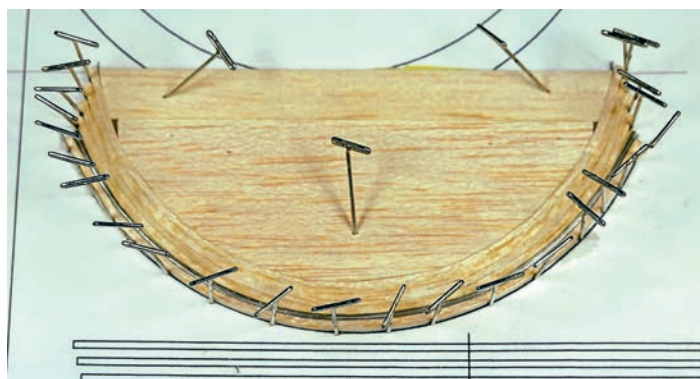
A typical domestic peg is used. The jaws are trimmed and sanded as shown on the plan.



Friction of the ball and socket joint for the pendulum frame is increased by trapping a piece of covering in the joint and trimming away the excess.



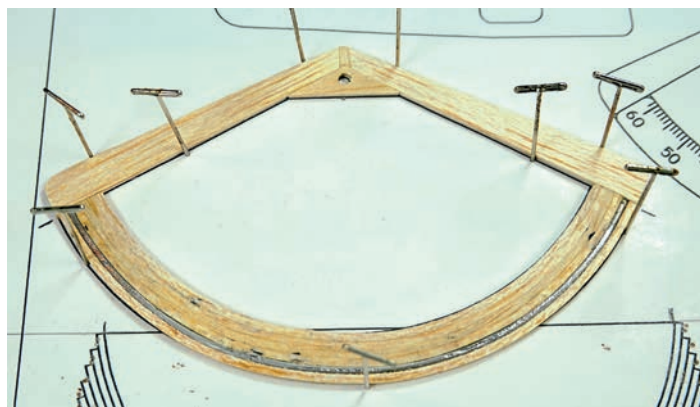
Finished peg with the surface clamp jaws fitted. The lower jaw is glued to the peg and the upper one with the ball socket is clipped to the ball & socket ball. This enables the clamp to be used on parallel or tapered control surfaces.



Here the 1.6 mm x 1.6 mm strips and solder are glued around the former to form the curved section of the pendulum.



Once the glue has dried sand any high spots down. I taped some 1.6 mm sheet to the ends of my sanding block to act as spacers. Keep turning the curved section over and sanding until both sides are smooth.



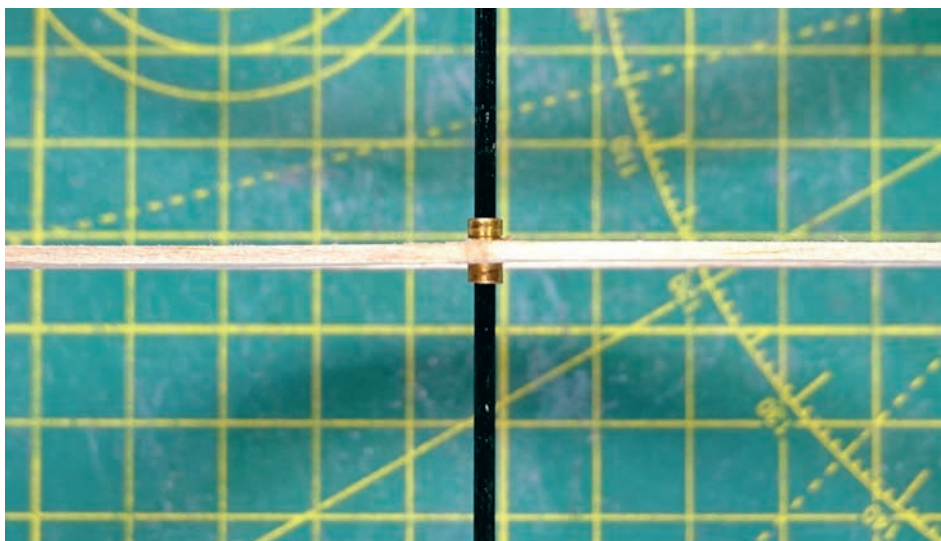
The pendulum is built up over the plan.

and soon after a basic prototype was assembled and ready for testing. After a few tweaks to the design here is the finished article if you'd like to have a go yourself. Assembly is quite straightforward and the accompanying photos and associated captions show the details.

IN USE

Using the throw gauge is quite straightforward:

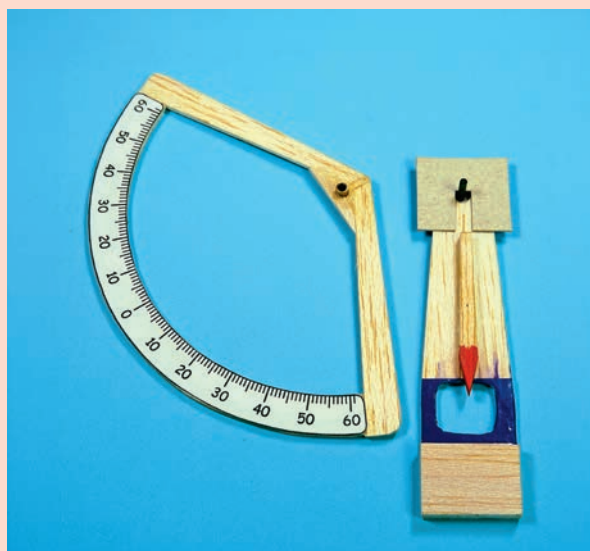
- Make sure the hinge line is approximately horizontal. If setting a rudder or V-tail throw, support the model as necessary.
- It doesn't matter if the control surface chord isn't perfectly horizontal (as on a tail dragger, for example) as the gauge can be set to 0° once fitted.
- Adjust the frame to either 0° or preload the scale if more than 60° is required.
- Do a quick end to end check to ensure free movement of the pendulum. Tweak the vertical angle of the frame as necessary.
- Establish the angle required. If the plan or instructions only give



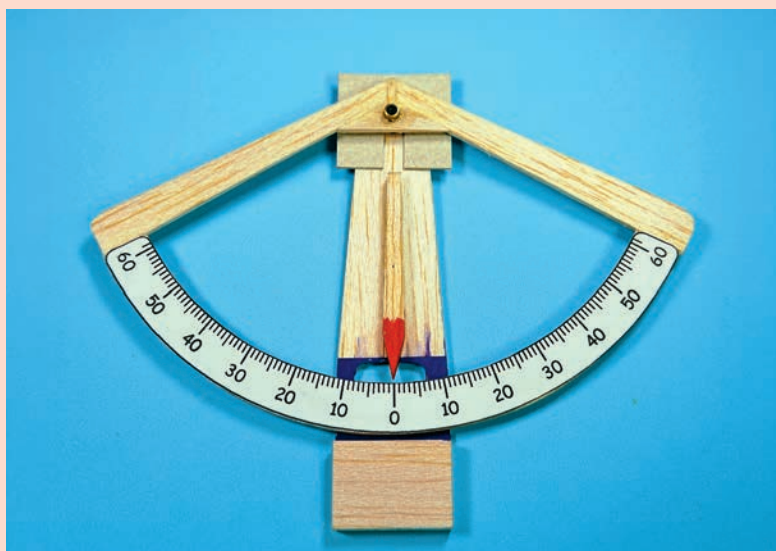
Make sure the pivot tube is square to the pendulum both vertically and horizontally whilst gluing in place. I used a piece of brass tube. Check the ends of the tube are at 90° and are perfectly smooth with no burrs. Dry fit the tube between the frame sides to ensure free movement before gluing into the pendulum.



Throw Gauge fitted to the elevator of my Twizzle design which has an elevator chord of 25 mm. The model needs to be stable with the control hinge approximately horizontal. Once set up the pendulum's frame can be moved around to zero the scale and ensure free movement of the pendulum through the full range.



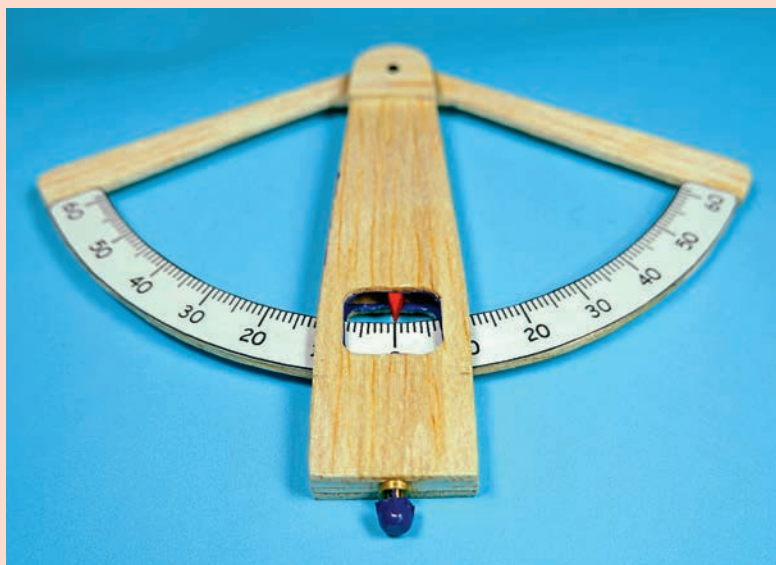
Stage 1 of final assembly: Carbon fibre pivot is inserted into the doubler and a card spacer is laid on the side at the pivot location.



Stage 2: Pendulum is slid onto the pivot.

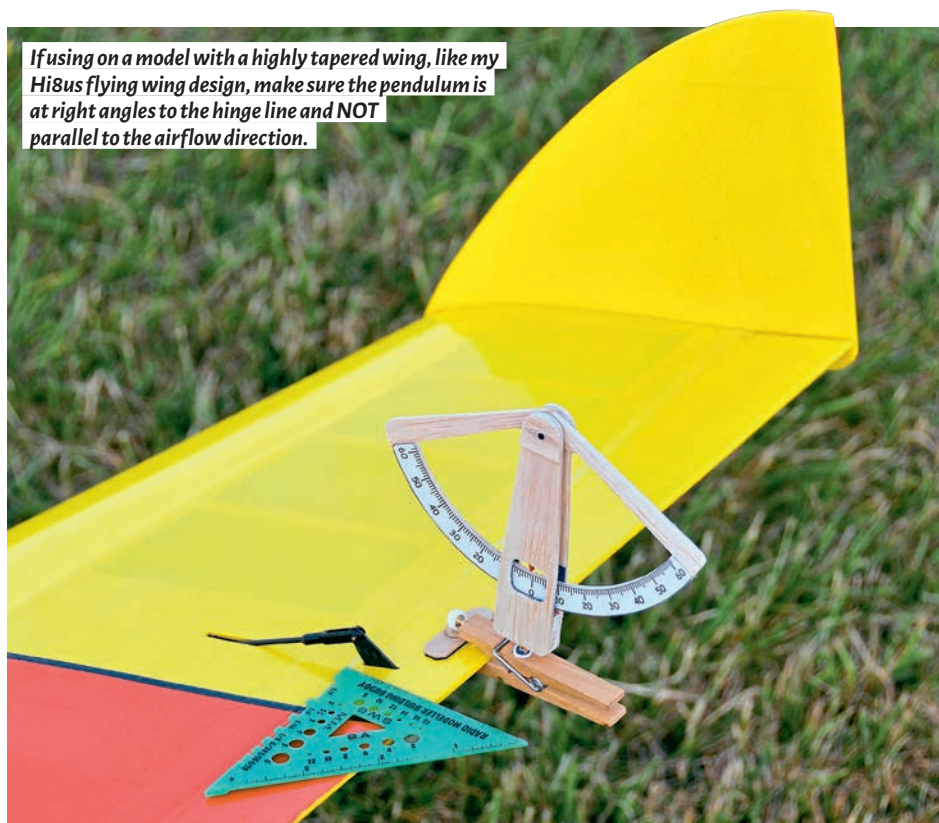


Stage 3: Another card spacer is laid in place and....



Stage 4: ...the second side is glued to the spacers. Check for correct alignment and free movement before the glue dries. Once dry remove the card spacers.

If using on a model with a highly tapered wing, like my Hi8us flying wing design, make sure the pendulum is at right angles to the hinge line and NOT parallel to the airflow direction.



the surface throw in mm use the Conversion Chart shown in Fig. 1 to get the angle required. If the throws are not known a good starting point is:

O Scale & Sports models:

- Ailerons $\pm 15^\circ$ to 20°
- Elevators $\pm 10^\circ$ to 15°
- Rudder $\pm 20^\circ$ to 30°

O Aerobatic Models:

- Ailerons $\pm 20^\circ$ to 30°
- Elevators $\pm 15^\circ$ to 20°
- Rudder $\pm 30^\circ$ to 40°

O 3D & Extreme Aerobatics

- Ailerons $\pm 45^\circ$ +
- Elevators $\pm 45^\circ$ +
- Rudder $\pm 45^\circ$ +

- Adjust the end points on your Tx to achieve the desired throws.
- Repeat for all other surfaces.

CHECKUP

I've been through all my models with my Throw Gauge and it was surprising how many had differential throws on the ailerons and flaps. These have all now been set to match on either side and having flown some of them since adjustment I find them more balanced and enjoyable to fly! The most satisfying thing though is that my Throw Gauge was built entirely from my bits box and the spare parts I had which were looking for a good home! ■



Here down elevator has been applied showing a deflection of 10° down.



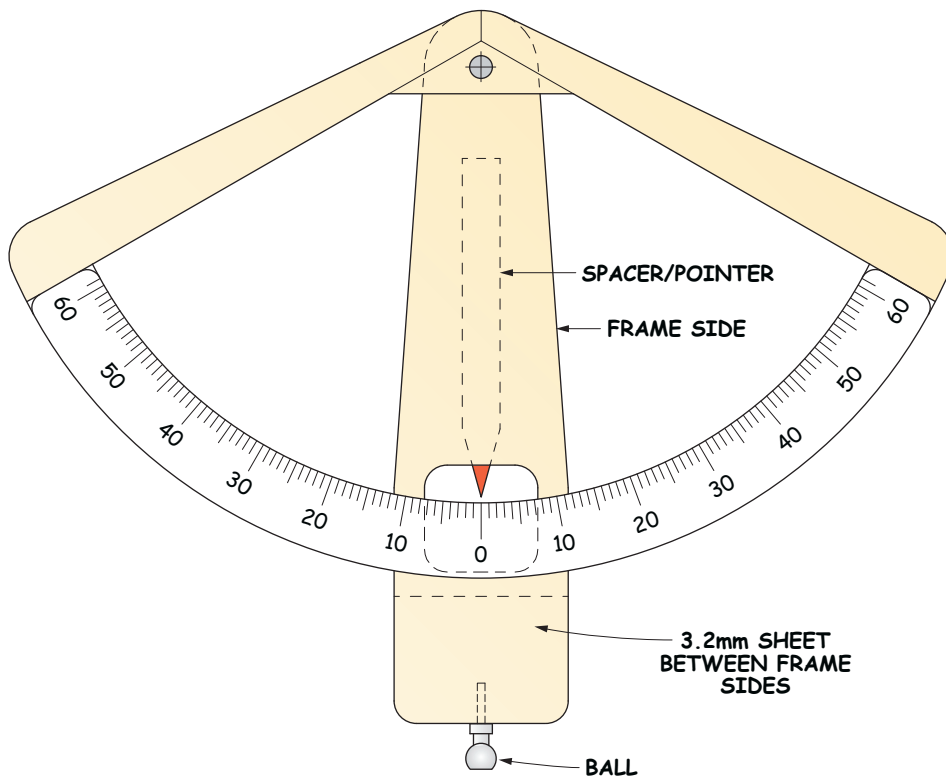
Now with up elevator, showing a deflection of 9° up.



If angles of more than 60° are required (for flaps, say) pre-load the Throw Gauge with the additional degrees required. My Bush Cub requires 70° down flap deflection so I have pre-loaded the gauge with 10° and...



...the 60° shown on the gauge at full down flap means the desired 70° deflection has been achieved! ($10^\circ + 60^\circ$)



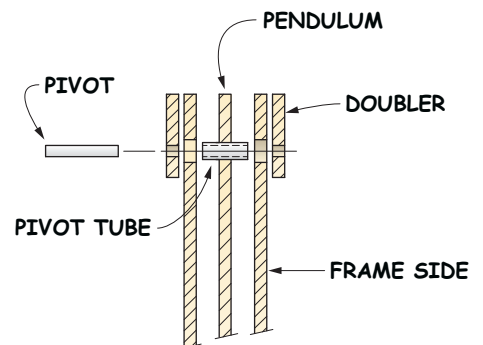
**SPACER/POINTER
FROM 3.2mm SHEET
(PAINT POINT RED)**

CLEARANCE HOLE
FOR PIVOT TUBE

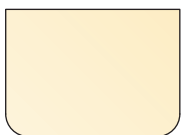
DOUBLERS GO ON
OUTSIDE FACE

HOLE IN DOUBLER
TO SUIT PIVOT

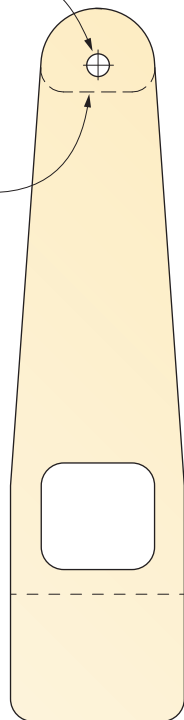
**DOUBLERS
FROM 1.6mm SHEET
(2 OFF)**



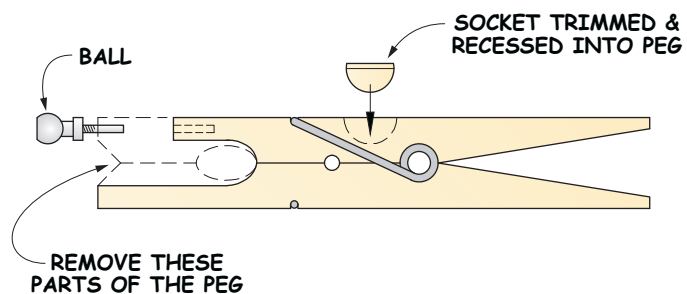
SECTION AT PIVOT



**SPACER
FROM 3.2mm SHEET**

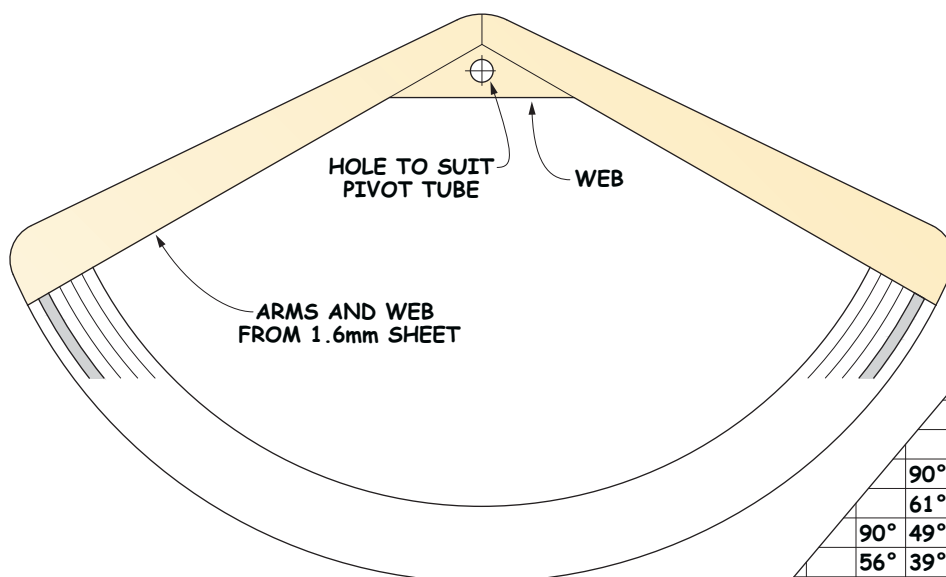
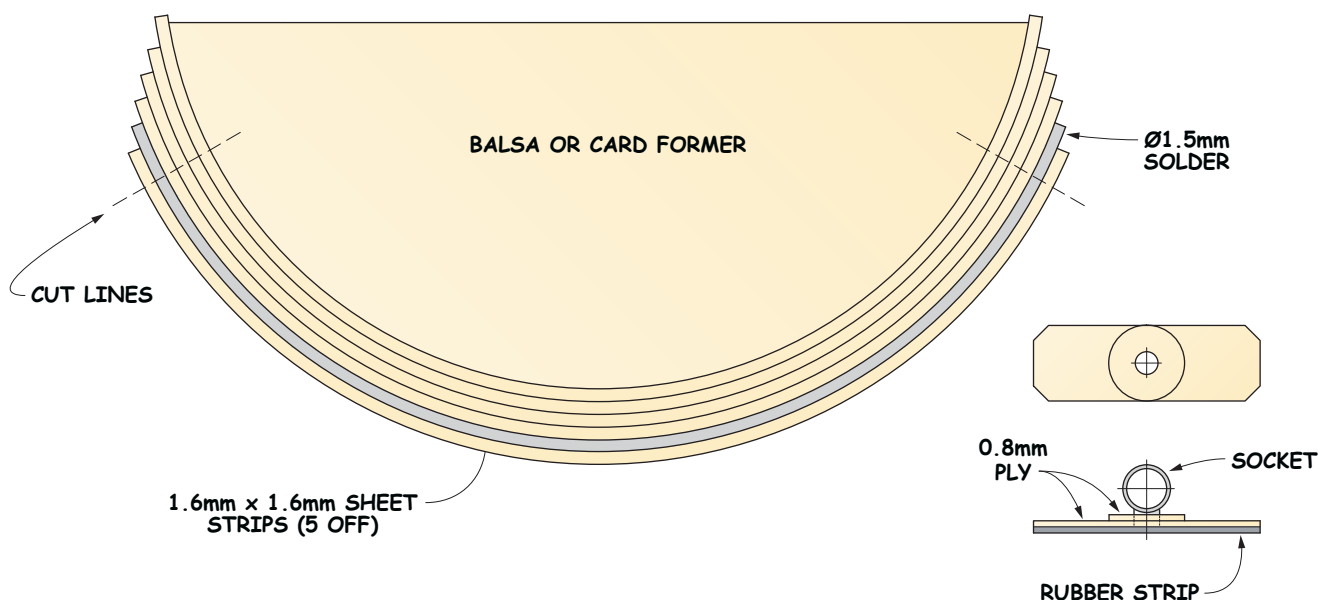
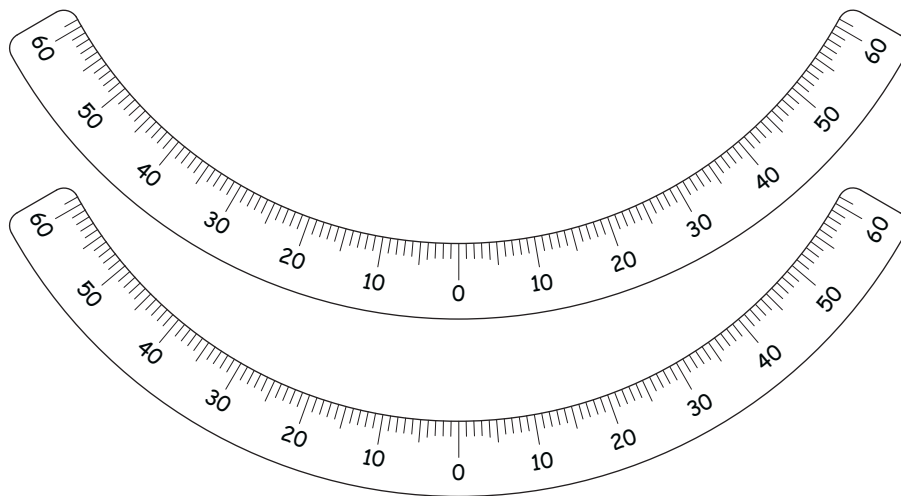


**FRAME SIDES
1.6mm SHEET
(2 OFF)**



CONTROL SURFACE THROW GAUGE

BY MIKE FREEMAN



									90°	100	CONTROL SURFACE THROW (mm)
									72°	95	
									90°	64°	
									71°	58°	
									90°	63°	
									70°	56°	
									90°	61°	
									68°	54°	
									90°	59°	
									66°	52°	
									90°	56°	CONTROL SURFACE CHORD (mm)
									64°	49°	
									90°	53°	
									61°	44°	
									90°	49°	
									56°	39°	
									90°	42°	
									49°	30°	
									90°	30°	
									30°	14°	

FIG.1 THROW mm TO ° CONVERSION CHART



WONDERFUL WESTON

Mike Freeman reports from Weston Park to cover the hugely popular West Midlands model show

Words: **Mike Freeman**

Photos: **Mike Freeman, Al Freeman**

I think it's safe to say that the Weston Park Model Show is one of the largest UK model shows of the season and the 2026 offering was no exception. Crammed with three days of non-stop flying and a bumper trade presence it also offered lots of extra activities and attractions for the non-modelling visitors to enjoy including an epic firework display on the Saturday night.

Al and I went along on the Saturday and fired off more than 3,000 shots between us! It's impossible to include all the fabulous models we saw so rather than include models seen in previous Weston reports, or my Popham report in the August issue again, here are some fresh ones to enjoy...

XXXL

There were several extra-large models that couldn't help but impress the crowd. The most imposing of the bunch was Steve Kilbon's immense five metre span, 1/6th scale Avro Vulcan which is currently the largest flying Vulcan in the world! This is a scaled-up version of the Tony Nijhuis plan and is built entirely from good old traditional balsa and ply, with a smidge of 3D printing thrown in. Two Jet Italia



Lion 220N turbines power the beast. It looked impressive as Steve wheeled it along the flightline and was just as fabulous flying over the Weston Park skyline, winning Steve the 'Model of the Show' award. You'll be seeing a

lot more of this model in a future Model Magic feature in these pages.

The largest prop driven model, and another wooden wonder, was the 1/3rd scale, six metre span B-25 Mitchell owned and flown by Roland



Steve Kilbon gives a scale perspective to his immense 1/6th scale Avro Vulcan bomber. All wood construction with a pair of Jet Italia Lion 220N turbines providing the thrust.



The Legendary Fighters Team from Germany wheel their massive 1/3rd scale, six-metre span B-25 Mitchell along to the starting box. Owner and pilot, Roland Sabatschus guides the tail fin.

Sabatschus of the Legendary Fighters Team from Germany. Roland's wife gave him two Moki 400 five-cylinder radial engines as a gift and Roland chose to build at 1/3rd scale to suit the engines. The model took around four years to build. The wooden airframe is glass skinned and the finish is a combination of paint and decals, along with some realistic weathering. Final flying weight is 145 kg.

Azza Stephens' 1:2.5 scale BAe Hawk is more high-tech with composite construction and beautiful detailing. This model is available as a kit from Tomahawk Aviation and was reported on the day to have a take-off price of around £80k, all in! It has a wingspan of 3.8 metres and is powered by a KingTech K-450 turbine.

YOUNG BLOOD

AzAerospots and new team, Team FCB Aviation, have Junior Team schemes to enable young pilots to display at shows and hopefully inspire youngsters in the crowd to get involved. The youngsters shared a group slot and put on an entertaining display.

The junior group slot was followed by a solo slot by 16-year-old Oliver Alcock from Team FCB Aviation with his FTL Innovations Lancer 2.8.



The twin Moki 400 radials sounded very scale like as the B-25 Mitchell made its flypasts along the strip.

Oliver has been flying R/C models for six years and he put on a very accomplished 3D display for the crowd. The model has a 2.6 metre wingspan and a take-off weight of 23 kg. Thrust is provided by a KingTech K-320G5 turbine. Oliver's displays over the weekend won him the 'Best Junior Pilot' award.

FULL SIZE

There were several full-size slots at this year's show including an autogyro, a lovely sounding Havard and the Global Stars Aerobatic Display Team. But the most unorthodox full-size display was by Rowan Poulter from Gravity Industries and her turbine powered Jet Suit. ➔



Azza Stephens' 1:2.5 scale Hawk looks super impressive against Weston's tree lined backdrop.



It's great to see youngsters getting involved in aeromodelling. Here are some of the Junior Display Pilots from Team FCB Aviation and AzAerosports. L-R: Will Lawrence (16), Kasey Walker-Catchpole (9), Harrison Collins (17), Jackson Gadikor (10), Harrison Bull (17), Joe Hampson (Ruby's Tutor), Ruby Hampson (7) and Teddy Williams (9).



9-year-old Teddy Williams and Dad Danny give the thumbs up before firing up Teddy's Seagull Models 3.1 metre span Extreme Decathlon. Mike Alcock stands ready to assist.

The Jet Suit consists of seven JetCat P250's, three in the backpack and two in each hand-held thruster. The backpack also carries 14 litres of fuel, which gives Rowan around three minutes flight time or 3.5 km range.

Rowan is the only female Jet Suit pilot in the world at the moment and says she enjoys showing off the suit at shows. She particularly enjoys seeing

the excitement in young girls when they realise women can do this stuff too!

Rowan is currently leading a drive to implement Jet Suits for First Responders in the Mountain Rescue Sector and told us her favourite flights are in the mountains during mountain rescue test flights, but says, whilst flying low over fences and hedgerows, she must remember... she has feet! ✈



Oliver Alcock gave an accomplished display with his FTL Innovations Lancer. It's performances like this that earned Oliver the 'Best Junior Pilot' award.



Oliver handles media attention very well. Here he is being interviewed by commentator Kevin Watson.



Jet Girl, Rowan Poulter, defies gravity thanks to her Gravity Industries Jet Suit consisting of three jet turbines in the backpack and two in each hand-held thruster.



Rowan Poulter and her Gravity Industries Jet Suit on a Farnborough Pass.



Gregg Veasey built this 1/5th scale Bearcat from the Zivoli plan in 2021 in 'Beetle Bomb' livery. Gregg said it's known locally as Bananacat! The model is 2.2 metre span and is powered by a 3W 70cc engine and a 24 x 10 wooden Falcon prop.



Rob Gardner from Team FCB Aviation flew his Elite Aerospots BDX in team colours. The model is based on the iconic Bede BD5. It's three metre span, with a KingTech 210G5 turbine.



Max Chrubasik of CARF Models knows how to put on a display! Here is his 1:4.5 scale, 2.65 metre span F-4 Phantom in 'Red Baron' livery. The model houses two KingTech K-235 turbines, each supplied by its own 5.5 litre fuel tank.



Loudest model at the show, by far, was Hans Litjens' Pulse Jet. It was also the fastest, flying at 250 mph+ with no throttle control. I only got this shot as it was landing!

Flex Innovations foamies with internal illumination are really effective for night-time flying.



EYE CATCHERS

There were too many marvellous models to include so dotted around is just a sample of what we were treated to. Some interesting gadgets and flying machines were also at the show this year.

The captions give the details.

POSE OF THE DAY

I hope the display pilots of Power & Sailplane International don't mind but the angles and perfect orientation in the posed shot at the end of this article really amused me! The models are the latest V2 version of their Delta Daggers which are available in electric or IC flavours. Check out their website for details.



CARF Models MiG-17 climbing out after a dirty pass. 2.65 m span, 1:3.7 scale, typically powered by a 220 to 240N size turbine.



CARF Models also displayed their 2.83 m span, 1:2.9 scale SIAI Marchetti SF-260 powered by a JetCat SPT-5 Turboprop and a beautiful Falcon five-bladed carbon prop.



Fly Wing's X-Wing Fighter is an interesting concept. It takes off like a traditional drone...



Gunter Zielke's CARF Extra 330LX is powered by a Hacker Q100/8 electric motor, 30 x 12 prop and a 14S 7000 mAh LiPo pack. As such it has no exhaust to generate smoke, so Gunter invented his own smoke system called 'Smoke-EL' which uses standard smoke oil and switchable heater tubes on the wingtips, running off the flight battery, to generate smoke.

FINAL ANALYSIS

The Weston Park Model Show 2026 turned out to be another bumper event. Every year the 'Wow Factor' seems to move up a notch or two. Steve Bishop and the rest of the WP team have their work cut out for next year – good luck! ■



Pose of the Day goes to the Power & Sailplanes International display pilots. L-R: Matthew How, Lee Waples, Lucas Waples with their Delta Dagger V2s.

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Thanks for all your support!



Tony Ray Aero Model

Our Tony Ray range of balsa model kits is set to expand further this year. Firstly, with a 1/5" Bucker Jungmeister BU133, then with a 1/6" FW190 and later this year with a famous British WWII model.



Micro series

Tony's range of 11 micro models are designed for indoor flying using micro servos and receivers compatible with Spektrum & Futaba.

Kavan Radios

Kavan are expanding their range of radios that are manufactured by FrSky but to Kavan's specification - their latest budget programmable set is about £95.00



Hacker CZ

Hacker's range of EPP indoor & outdoor models continues to expand! Their latest Aerix F3P will be featured in RCM&E shortly.



Brand Focus

A selection of old school brands from the US:



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SUMMER BREEZES

In another sport flying potpourri **David Ashby** visits an old flying spot and finds some new seagulls

Words & Photos: **David Ashby**

I've just returned from a few very pleasant days of soaring in the Brean Sands/Weston-super-Mare area. It must be nearly 30 years since I was last down that way, back when the family and friends attended the Model Makers Festival held at Pontins, Brean Sands. It brought back good memories of flying from the fields and beach, along with all the other activities around the camp. We made some good friends and returned year after year.

Pontins Brean Sands is closed and derelict now but, apart from a few extra caravans, little else has changed. The hills and miles of sandy beaches remain of course, not least Brean Down, the 318 feet tall ridge that rises from the Axe estuary, running East-West for a mile and half. There's a stiff climb up, made easier by good steps, with excellent views north and south along miles of sand that stretch to the horizon. The hill suits northerly and southerly winds, and anything a few points either side. That said, one of the most memorable examples of slope flying I've ever seen was off

the western tip of Brean Down during one of the festival weeks in what must've been an incredibly narrow lift band.

Back to 2026 and with a heatwave in full swing and a modest breeze forecast my Weasel Trek seemed like the best flying option. The Dreamflight model is one of my all-time favourites. Aside from being an excellent flyer, it's cleverly designed to break back down into its sturdy shipping box for transport. It'll handle surprisingly strong winds too, helped by a neat little ballast compartment that'll accept a few 10g car wheel weights. If you ask me, every soarer should have one. Some folks prefer Dreamflight's Alula-Trek and while it's certainly lighter at 156 - 170 g and can be hand-launched from a flat field, the 312 - 395 g Weasel flies nicer all round on the slope.

My Weasel is a holiday and travel model that rarely gets flown at home. It last came out of its box two years ago during a break near Weymouth. The same can be said for my Multiplex EasyGlider 4. Like the Weasel it breaks down for transport thanks to bolt-on

tail feathers, although employing grub screws to retain the push rod wires always runs the risk that the control surfaces won't be set quite where they should be.

Enough has been written about the EasyGlider over the couple of decades since it appeared. It's an all-time classic that's forgiving to fly, a good slope hack in lighter winds and, in the right hands, a decent thermal catcher at the flat field. It kickstarted the 2 m span foamie motor glider genre and still compares favourably to its contemporary peers. Mine is always packed when we go away.

STEVEN SEAGULL

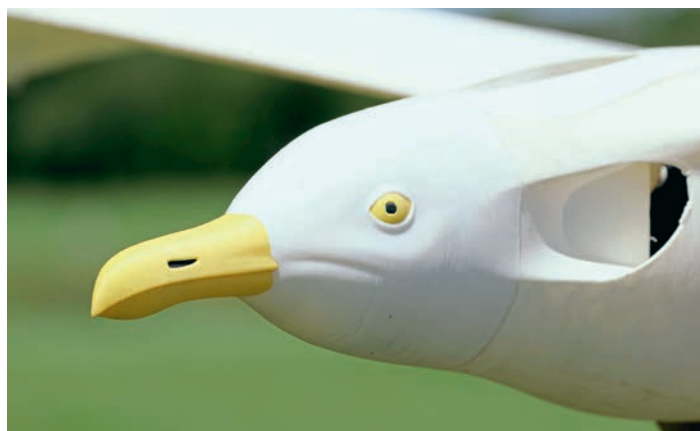
What else would you call it? An electric ducted fan powered, 3D-printed, seagull shaped glider sounds like a recipe for disaster (and a load of wasted filament) but this one is superb. Flying buddy Bert brought his down to the patch a few weeks ago and our scepticism quickly turned to awe when it flew. It just looks so... well, like a seagull, especially as the 50 mm EDF unit is so inconspicuous, the intakes and thrust outlet



Easy Glider 4 at the flat field. It's a great all-rounder...



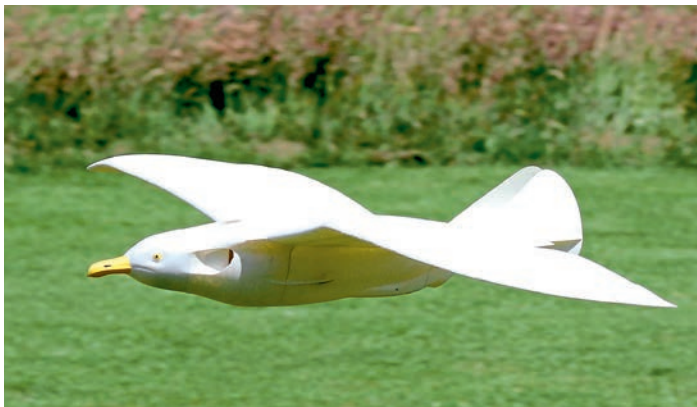
...although these grub screws aren't the best way of reconnecting control surfaces.



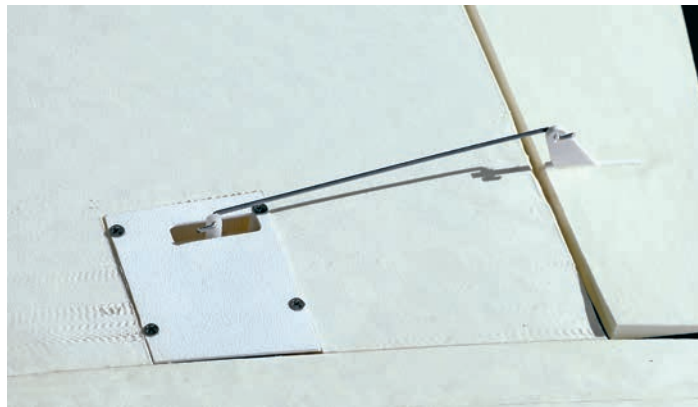
An EDF 3D-printed Seagull soarer?



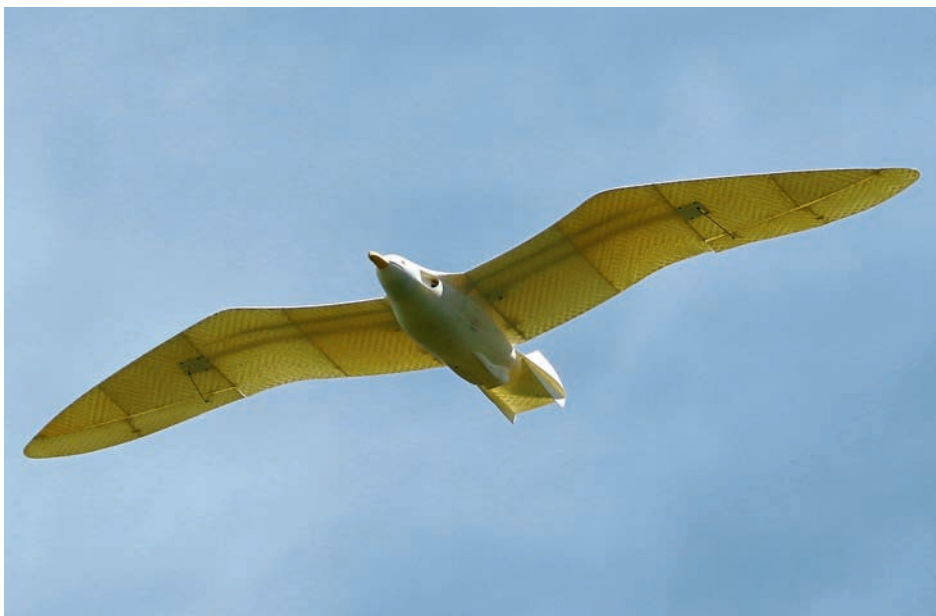
It's certainly realistic in flight.



On the hunt for chips!



Elevons do the steering.



Now if only someone could produce a foamie version.

having been cleverly incorporated. Spanning 1.8 m (71"), it weighs around 1030 g ready to fly and comes as a download for around £50 from planeprint.com. It can be flown as a pure glider or with the EDF unit providing the thrust needed for flat field flying. Either way it looks superbly realistic cruising around under elevon control.

Downsides? Well, like a lot of other 3D printed models it's not particularly strong. Just picking it up needs care to prevent a finger puncturing the material. Likewise, gripping

it for a launch. Heavy landings will inevitably leave their mark although new sections can always be printed, I suppose.

Still, everyone who saw it loved it and, at times and from certain angles, that EDF noise sounded just a little bit like a seagull. Better still, this one won't steal your chips!

CIRCUIT TRAINING

Getting a model back on the ground in one piece is the most difficult manoeuvre to master.

Plenty of articles have been written about the subject over the years but Donald Windsor really hit the nail on the head writing in the 'RC Planes for Beginners' Facebook group recently. As he says, "...one of the biggest mistakes beginners make in R/C flying is treating landing like an afterthought - something you just figure out once you're ready to come down." Which is why many flyers overshoot the runway, dump it in short, or worse. "A proper circuit is the difference between controlled flying and hoping for the best."

He adds, "...flying a circuit - upwind, crosswind, downwind, base, final - means you're doing a few critical things whether you realise it or not."

- You're setting up early, not reacting late.
- You're keeping the model in a predictable position relative to yourself.
- You're managing height and speed gradually, not all at once.
- And most importantly, you're giving yourself time to think.

This resonates with me because it was how I was taught to fly. The downwind leg is where the landing phase begins. It's where you check your height, reduce power and decide if things look right. Full size pilots do it this way so why should model flyers be any different?

You shouldn't even be thinking about landing until you can fly a consistent circuit every time simply because landing isn't a separate skill, it's just the last part of a good circuit. Three-axis gyro stabilisation systems of the sort fitted to training models can hide bad habits for a while by keeping the wings level and smoothing things out. And as Don adds, "...they won't teach a pilot spacing, timing,



Circuit training, nail this...



...and those landings will (almost) take care of themselves.



Remember this little Seagull Decathlon?

or judgement. That only comes from flying proper circuits repeatedly."

As Don neatly summarises, "...stop focusing on the landing itself and start focusing on the circuit. Get that right, and the landing almost takes care of itself."

MORE SEAGULLS

I've touched on the Seagull model brand recently. Made in Vietnam, the business produces balsa/ply ARTF kits and the range has steadily grown over the last couple of decades,

in recent times focussing on larger petrol models. Lately they've returned to Sunday club subjects and some classic acrobats such as the Kwik Fly Mk. 3.

Go back 20 years and the adoption of electric power systems was well on the way to maturity. In 2006 Seagull responded with a number of lightweight models specifically for electric power that sold very well. Pricing helped, initially they were around £50 each which was cheap even back then. The range included a 1.3 m span Decathlon, an Extra 300, Spacewalker,

a PC-9 and the X-Ray 3D aerobat. I knew someone who owned four X-Rays over the years, he loved them so much, always having a kit in reserve.

Then they changed direction and decided to make models that were compatible with both IC and electric power. Which was fine except the result tended to be models that were always strong and well-made but a tad heavy too.

So, you can imagine how pleased I was to see the brand has released a Laser 3D 30E, a 1.2 m (48") span aerobat for electric power. It's available in one of three attractive schemes and they all come with a metal back-plate spinner and carbon fibre undercarriage no less! I have one on order and I'll tell you all about it next time.

GONE IN AN INSTANT

People are sometimes left nonplussed when their models perish. It tends to be a foamy something or other, with little emotional attachment. Nice to fly but easily replaced, sometimes in the post from the shop before they've packed up and left the flying field. And there's nothing wrong with that.

Then there are those occasions when a trad' kit or plan-built model dies - something big or impressive representing hours of workbench time - and the sense of loss is palpable among all present.

A clubmate lost his Dane-RC Leprechaun a few months ago. On its second flight everything stopped working and in it went. ✈



Good news, Seagull have decided to revisit their 'E' range and this Laser is the first release.



If you're going to build one of these then you owe it to yourself to measure the power system and think about Rx power redundancy options.

It was beautifully made and covered, better than my own model, and used internal lighting that gave it a spaceship like appearance as it potted across the summer evening sky. One wing survived largely unscathed but that was about all, the rest will do for kindling.

Postmortem examination revealed a fried ESC, a 30A unit from a 1.5 m span foamy glider that met

a bad end a few months before. With a Hacker A-20 6XL 2500kV outrunner and 4:1 reduction gearbox spinning a 16 x 8" folding prop that 30A unit simply wasn't up to the job. At the very least a 60A (possibly bigger) ESC was required. The pilot, a relative newcomer, had just assumed that all would be fine while blissfully unaware of a wattmeter, let alone the essential value of what it could do by measuring power system



Tony getting to grips with control line flying. He assures me he's enjoying himself here.

current draw. There are several power redundancy options that could've saved the model too.

It can be a cruel hobby sometimes but in an age when good information is so readily available, what strikes me as unfortunate is how a diet of ready-to-fly models leave some newcomers assuming they've nothing to learn. And help, even when forthcoming, can sometimes be treated with scepticism. Some flyers don't seem to realise that model flying is a journey; there's always something new to try and you never ever stop learning.

It reminds me of a friend, Tony, a very experienced flyer who took up control line flying just after the first pandemic lockdown. (Incidentally, did you know that control line models take off downwind? I certainly didn't.) Anyway, a proper old rabbit hole that's been. He had to very quickly accept that decades of R/C flying experience counted for nowt and only an open and receptive mind would ensure success. His largest source of help and information? A dusty old copy of Ron Moulton's 'Control Line Manual'!

MODELFLYING.CO.UK AT 20

Talking of information, can you believe that RCM&E's online home will be 20 years old in a couple of months? I mean the forum of course. It has changed over the years, both visually and in terms of ambience, yet remains a safe, friendly place to talk, ask questions and socialise. The stats are impressive; 196,000 photos have been uploaded to the gallery, there are over 53,000 topics, well over a million posts and so on. Many fantastic friends have helped with its development during this time, some, sadly, no longer with us. The present moderator/admin team - John, John, Martin and Beth do a fantastic job by keeping things ticking over smoothly in the background. So, a massive thank you to them and to everyone who has contributed in some way, big or small, over the years. Here's to the next 20!

I'll see you next time and, as always, justforfunrcme@gmail.com is where you'll find me. ■

The screenshot shows the homepage of the Model Flying website. At the top is a navigation bar with links for Settings, Inbox, Friends, Albums, Magazines, Bookmarks, Feed, My Posts, Logout, Admin, and a search bar. Below this is a banner for the February 2021 issue of RCM&E magazine, featuring articles on Vans RV-4 plans, VMC Simple Cub, and making cockpit detail. The main content area is divided into several sections: 'Recent Activity' with a welcome message and a link to '10 ways to encourage youngsters into aeromodeling'; 'Latest News and Articles' with links to RCM&E content archives and a new platform announcement; 'Latest Issue' featuring the February 2021 issue of RCM&E; 'Social Media' with links to Facebook and Twitter; and 'Support Our Partners' with a 'Subscribe Now!' button. The right sidebar includes a 'My Friends' list with names like David Ashby, Piet Timmermans, and Beth Ashby, and a 'Latest Forum Posts' section with various topics and timestamps.

It's difficult to believe that RCM&E's web home, seen here on the older platform, is approaching 20!



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SAVE

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Top letter

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



SCALE WORLD CHAMPS



I attended the Scale World Championships at Buckminster on the 13th of July. It was a great day out, well organised and run by the BMFA.

I was really impressed by the Silver Spitfire. The detailing and finish are amazing, and the flying was really good. I managed to capture the wheel coming off on landing, but the pilot managed to keep the wing up and land. Absolutely brilliant.

Could you tell me who the pilot was please?

Mick Cunningham

Thank you, Mick, for sending your pictures of the Silver Spitfire at the Scale World Championships. We had three photographers/reporters at the event and they have taken well over 5,000 pictures so it's a bit of a mammoth task to sort them out. At this time, I am not certain who the

aeroplane belongs to, but when I find it then I will try to let you know. In the meantime, you can find a list of all the registered pilots here:

<https://bmfa.escribe.ch/events.aspx?event=9862&Lang=EN&tab=funktionaere>

If you click on the blue box, it shows their aeroplanes.

In a later email, you say that you managed to find him. "Thanks for your help. I've been on the website and found the (very young) pilot: Lange Konrad, Germany, 12 years old." Well done, Lange, for staying so cool under pressure and completing a successful landing. We have shown Mick's picture of Lange's Spitfire with the wheel coming off, preceded by another picture by Barry Atkinson taken just moments before of the same landing. KC

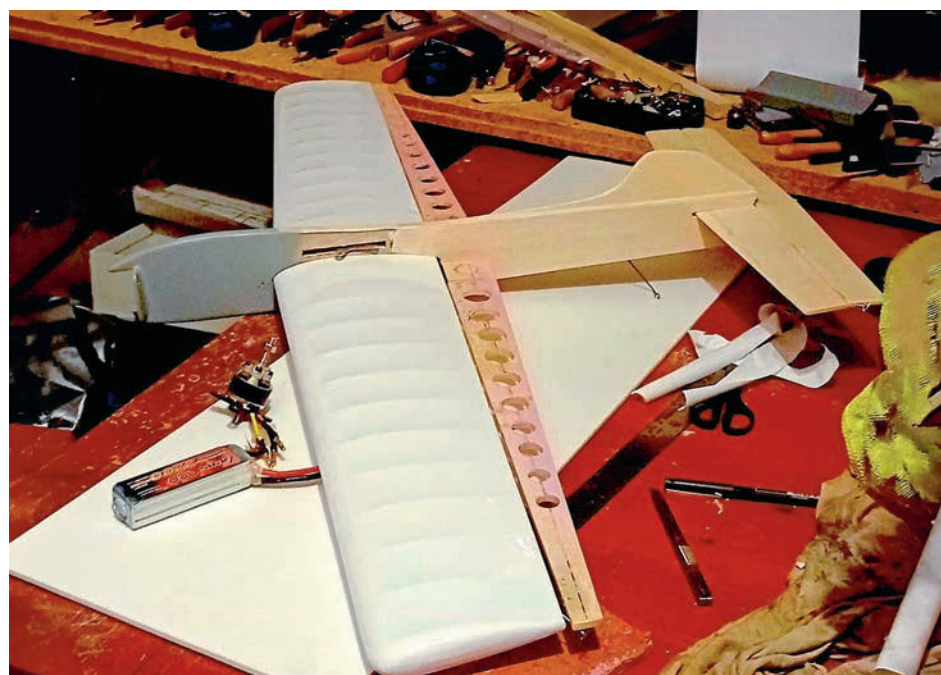
URANI CONTROL LINER

I am glad that ZIG-ZAG will eventually travel the world. (See Alex's plan in the July issue of RCM&E.)

I'm currently working on another model aeroplane plan/construction of which I'm including some pictures. It is an acrobatic control line model of 44-inch wingspan, electric powered by a Rimfire .10 of 1250 kV on a 10 x 4 or

10 x 6 propeller, using a 2200 mAh 3 cell battery and an E-Zee control line timer. It will be flown on around 16 metre length lines. The model is almost ready, as you can see from the pics, and I hope to have it finished for its first flight tests soon.

Alex Dalidis



GET A GRIP

I don't quite know what to do with this; maybe ask around your readers to make sure I'm not the only numpty in town.

I hate to admit when I started flying radio, and I'm even more embarrassed that I only noticed this last Thursday. At risk of exhibiting my own stupidity, has anyone else noticed that as you unplug servos from a connector block, they come out much easier if you hold the connector block by the narrow sides instead of the flat bits.

Pete Bree

That's not stupid at all, Pete. I think we all grab and pull on servo leads the wrong way from time to time. Far worse is pulling on the wires themselves! KC

GO TO MODELS

With this flying season well under way, I thought I would send a picture of myself with my go-to model of the moment, the E-flite Sportix. Flying it on Futaba radio, it doesn't really need gyros, in my opinion. It's a good sports model, though I do fly it in the 1980s style with loops, rolls, spins and no inverted (well, sometimes). I am using a slotted spinner from 4-Max in the hope of increasing cooling, which seems to be working okay. The only other comment I have on the Sportix is that the undercarriage is surprisingly tough and it handles hard surfaces well. The picture was taken by Montrose club chairman, Gus Coombe at one of the club sites. I have included a picture of Gus with his Curare at last year's Montrose fly-in.



I was out yesterday so I took the opportunity of taking some pics of the Sportix and my Phoenix S. The reason for including the Phoenix is that I was tired of the decals always going 'off' so I painted it. The blue could just as well be black at a distance, but I thought it was a change and the yellow shows up well in turns and banks. I used 'hobby' spray cans as they work well on foam and plastic. The best flight I've had with the Phoenix on the flat was around an hour. I tried it on the slope, but the wind was a bit strong for it and it did not penetrate well.

Graham McIntosh.



3D TRIALS & TRIBULATIONS

In the April edition I saw that there will be an article on 3D printing in the next issue. That's something I've been trying to get to grips with since 2019 when I sold all my models to fund the purchase of a 3D printer. Over the years the printer has been upgraded and has done everything demanded of it. Unfortunately, despite my best efforts, I still haven't built and flown a 3D printed model. There always seems to be something unforeseen that gets in the way. There is without doubt a mystic formula that produces lightweight parts that are strong enough and accurate enough to be assembled into an airframe, but I haven't found that elusive set of instructions that enables the printer to produce the goods.

Initially, the printed parts were made from PLA filament. This produced nice shiny parts that were accurate and fitted together. Unfortunately, the parts weren't dimensionally stable which made assembly difficult and the finished models continued to warp. Changing the material to Lightweight PLA made a huge difference to the weight and

stability of the printed parts, but there was a drawback. The lightweight material doesn't produce robust models. It's very disappointing to see your latest creation turn neatly onto finals and drift gently down to the field, then in the blink of an eye the model catches on a small tuft of grass and stops. Unfortunately, the LiPo doesn't. The result is that the battery compartment, battery, canopy moulding and most of the front of the fuselage is scattered in an untidy heap. Similarly, if a wing catches during landing the model ends up in several pieces.

I read somewhere that printed models are easy to repair but I've never been able to do that. The printed panels are held together with copious quantities of Super Glue. It is almost impossible to get the panels apart, so the only way is to reprint the whole model.

Fortunately, I still have my old building board and tools, and people publish plans and other people are happy to supply the wood and the endless assortment of bits that go into a model aeroplane. So, model building and flying goes on as usual.

At the moment, I'm printing a design called Venom. I've watched the video of its maiden flight several times and found it quite encouraging, especially as the model is being flown from a patch very similar to ours.

3D printing is a journey of continuous discovery and with a bit of luck, the latest print will be the one that flies and survives more than one 'arrival'.

Brian Jackson

Hi Brian. I would say the main things that have changed in the last few years are the materials and the printing techniques. PLA+ is now a lot more tolerant of abuse than PLA was and can help a lot. A lot of modern designs (like the PlanePrint Paper Plane shown in my article) use a technique called gyroid infill which, in effect, gives you a solid structure rather than a single skin. The gyroid based design is easy to repair and I did it myself on that very plane when it nose-dived into the ground. I only needed to cut the front nose section off and glue a new printed one on. Here's hoping your Venom build is a great success!

Kev Scott



XFLY J-65

Rob Bennett spends a scant few minutes putting together XFly-Model's small biz jet

Words: **Rob Bennett** Photos: **Rob Bennett, RCM&E**

The XFly-Model J-65 Twin 40mm business jet comes well packaged to protect the airframe from damage. The fuselage is held in place firmly and the wings and tail are prevented from moving in their slots with soft foam sheet.

FAST BUILD

I had a quick read of the assembly manual. The wing is in two pieces and has a short carbon rod on one side that locates into a plastic housing on

the other which, when attached to the wing with the provided four countersunk screws and joining strips, makes for a strong wing set up. I joined the aileron servo leads with the provided Y-lead and dropped the receiver end through the adjacent gap provided before fixing the wing in place.

The elevator/stabiliser is attached with two more of the countersunk screws. The elevator servos are wired together and are plugged into a fixed socket in the fin, which the manufacturers have thoughtfully labelled

to make sure you get it the right way round. The only problem I had was spreading the wiring around so that the stabiliser would seat properly without pinching any of the wires. It's a little fiddly but nothing more.

The steerable nose leg, fitted with twin wheels, is already in place and the two main legs, also fitted with twin wheels, simply clip into plates mounted on the underside of the wings.

No tools were needed as Allen keys are provided.





This sleek and stylish model takes just a few minutes to put together.



It has reverse thrust too for extra braking on smooth runways.



Ailerons are surprisingly effective, even on low rates. Note the short, direct pushrods fitted with ball-links.



Elevator servos in detail. Take care to not trap any of the wires when nipping up the screws that hold the horizontal stab.



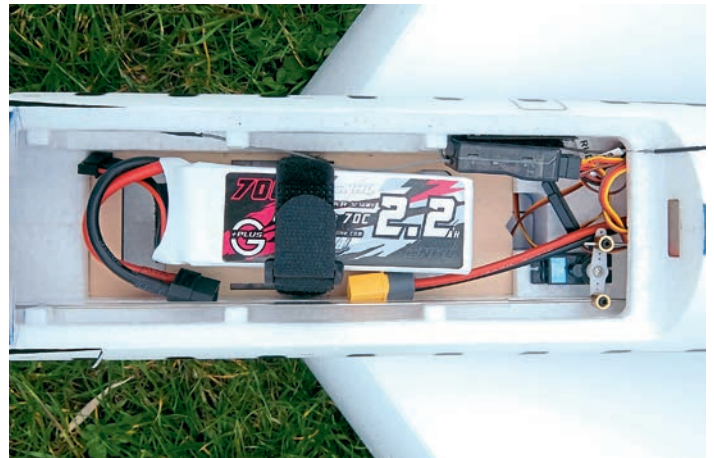
Twin wheel steerable nose-leg is connected to the rudder servo.



The undercarriage clips in and can be removed for belly landings in longer grass, as can the nose-leg. Power scale soaring, anyone?



Twin 40 mm, 12-bladed fan units are hidden in the nacelles, powered by two 1413-5000kV motors. The 20A ESCs can provide reverse thrust, with the set up fully explained in the comprehensive manual.



Plenty of room in the spacious battery bay for a variety of 4S LiPos.



This concrete pad might look like it has potential but it's on a busy approach road to a neighbouring farm. So, no flying from here!



J-65 gets away for her maiden flight with a slight dip following a hand launch.

GOOD IMPRESSIONS

I was impressed with the instructions as while this is a very simple model to assemble, they give full instructions on programming the two ESCs should you want to play with them. However, they work just fine as supplied.

ALSO, IN WHITE

This stylish 1030 mm span swept wing jet is available in either blue or red liveries. But for those who like to do their own thing when decorating their aeroplanes then CML also offer an undecorated plain white version, with a full decal set included. This allows pilots to personalise their model with a custom paint scheme. Useful if there is more than one J-65 in each colour at your local flying field!

There's a critical step in the manual about how to set up the reverse thrust system which requires paying attention to. Although reverse thrust would certainly help on hard runways, it is unlikely to affect me as I fly off grass. But I will probably have a play with it.

If your J-65 appears to have low levels of thrust and/or the fans seem to be running in reverse, then make sure you read that step in the manual and follow the sequence listed which will restore full power.

The other thing that struck me as very useful was that the C of G was measured in the usual way at 170 mm back from the wing root. But XFLy also give the distance along the leading edge, in this case 289 mm, which, with the swept back wing, makes getting the balance point very easy by moving the battery around.

A hook and loop strap is already in place to secure a 4S 1800 - 2600 mAh LiPo under the top

"No tools were needed as Allen keys are provided"

mounted battery hatch, with some more strips provided to anchor the battery to the tray.

ROCK & ROLL

On the day of the maiden flight, I had to stand in as the photographer, so Harry Curzon very kindly offered to fly the J-65. This was going to be a challenge as the grass runway was a little rough and the wheels are quite small. The wind was also gusting higher than would be ideal for this small business jet.

We decided that a hand launch would be the best option. A quick burst of full throttle showed that there was more than enough power. On Harry's prompt, I gave the J-65 a firm launch and it got away with a slight dip but picked up speed quickly.

It's safe to say that in the gusty conditions this was a twitchy flight, particularly turning across the wind when the pilot suddenly found the J-65 being flicked up into knife edge. Aileron response, however, was strong, so this was quick to correct.

With a good few circuits flown and enough flying photos taken, Harry called landing as the wind was starting to get very bumpy. As he was piloting her on finals the J-65 pitched up and rolled suddenly, making him work hard to keep her level. But with a last second blip of throttle Harry got the sleek model down safely.

CONCLUSION

The XFLy-Model J-65 Twin 40mm EDF Business Jet is an attractive, well finished model. When powered by a four cell 2200 mAh LiPo a 



Fitted with powerful twin fan units and ample controls this one-metre span jet is capable of all the usual manoeuvres. But it looks best cruising around in the circuit, ensuring that the occupants' champers are not disturbed!



Lining up on finals.



Well caught, sirs! Both the pilot and photographer reacted well to a hefty gust when landing, necessitating a speedy go-around.



That's much better, but this picture belies the gusty wind encountered on test flight day. Rob is going to fit a gyro to make it more comfortable to fly in bumpy flying conditions.



XFly's small J-65 is an attractive little jet, we think you will agree.

"I gave the J-65 a firm launch and it got away with a slight dip but picked up speed quickly"

five-minute flight time should be achievable. It's very quick and easy to assemble, supported by excellent instructions. It was flown on the recommended low rates and these were fine, even in gusty conditions.

On a tarmac runway this model will get in the air quickly as the two ducted fans have plenty of power. It should also be fine on smooth grass fields; unfortunately, our field has suffered with the very dry weather recently hence the hand launch.

On calm days this is a fun plane to fly and is unusual in that it's a commercial/private jet type which makes a welcome change from all the military offerings available.

I am going to fit a simple gyro in the J-65 as I think it will help on windier days and see how that goes. ■

DATAFILE

Model:	Twin 40mm J-65 PNP
Model type:	EDF business jet
Manufacturer:	XFly-Model
Distributed by:	CML Distribution https://www.cmldistribution.co.uk
RRP:	£179.99 PNP
Wingspan:	1030 mm (40.6")
Length:	1087 mm (42.8")
Weight:	900 g (31.75 oz)
Wing Loading:	72 g / dm ²
Wing Area:	12.5 dm ²
EDFs:	2 x 40 mm, 12-blades
Motors:	2 x 1413-5000kV
ESC:	2 x 20A with reverse thrust
Functions:	Ailerons, elevator, rudder & nosewheel steering, ESC
Servos:	3 x 9 g, 2 x 4.3 g
LiPo:	4S 1800 - 2600 mAh

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CIG81216	4.9 x 3.7 x 2.5m	140613574	£358.00	£338.00
CIG81020	6.1 x 3 x 2.4m	140613572	£406.80	£382.80
CIG81220	6.1 x 3.7 x 2.5m	140613576	£466.80	£442.80
CIG81224	7.3 x 3.7 x 2.5m	140613578	£574.80	£550.80
CIG1432	9.7 x 3.3 x 3.65m	140613594	£1294.80	£1282.80
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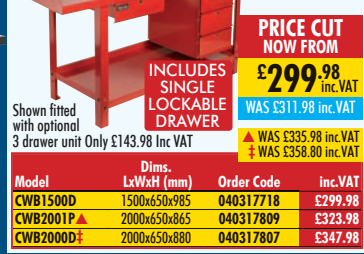
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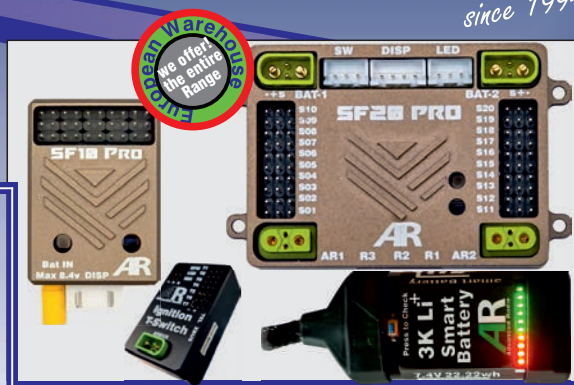
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Sperber Junior soaring above CMFC after an aerotow launch.



SPERBER JUNIOR

Chris Williams presents the second of two articles about his latest two-part Pro-Plan for a 1:4.5 scale classic glider

Words and Photos: **Chris Williams**

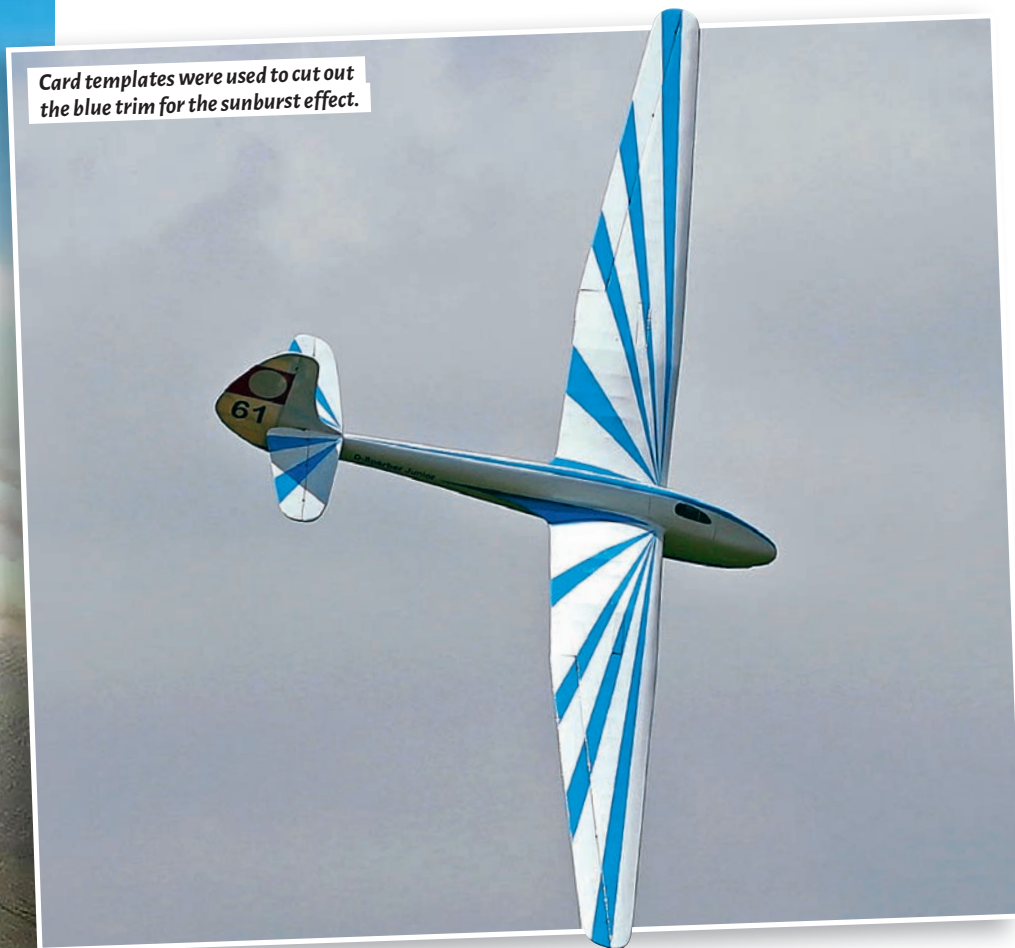
The Sperber's wings are next in the building sequence. Pin the initial triangular jiggling supports over the plan and tape the lower spar over them. Add the trailing edge (TE) and aileron spar supports, then pin the laminated TE over its support. Make up the TE first by pinning the spruce to the support and adding the 6 mm sq. balsa strip with cyano to help lock the bend into it.

INNER PANELS FIRST

Start by adding the inner panel ribs. On the prototype CA was used on the rib slots and the rib TEs were cyano'd in place as the use of pins would not be practicable. Set the ribs vertical to the spar rather than vertical to the board. Now add the outer panel ribs with the aileron spar, using PVA to give you time to line up the ribs properly. Now the top spar can be added, once again using PVA.

With the false leading edge (LE) added you can now add some of the web plates to lock the spars together. Note that the use of 5 mm balsa for the longitudinal jig supports allows for an overlap of the lower spar, which also allows you to rest the ply blank against the support to make the marking out of the web plate easier. If you have enough suitable clamps most of the webbing plates can be added whilst the wing is on the jig, taking care that the plates are flush

Card templates were used to cut out the blue trim for the sunburst effect.



with the lower spar when clamped. Now the wing can be removed from the board and the wing joiner box inserted between the spars at the root, closing off with 0.6 mm ply plates on either side.

Cut the slots for the sub spars, in front of the web plates, and PVA the spars in place one at a time. Lower sheeting can be added in one

piece: line up the sheet with the spar and mark out along the false LE. Fix a straight edge to the aileron spar to keep it straight. Clamp the sheet to the spar first, then clamp down the LE.

WINGSHEETING

The top sheeting can also be added in one piece, but this time you will need to offer up 

Slope soaring above White Sheet hill. Glorious!



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THE WING SH... & CAP STRIPS ARE 1

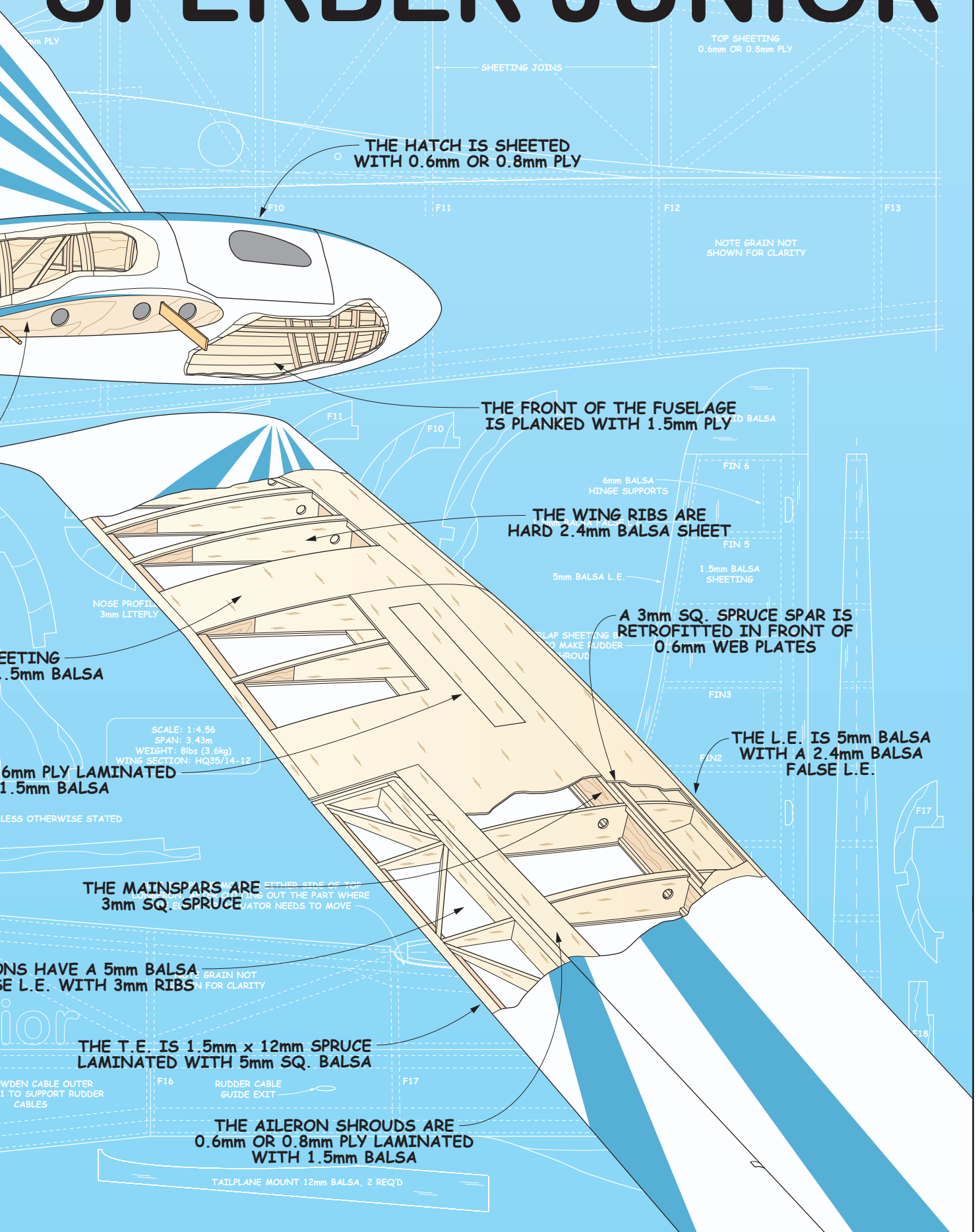
THE SPOILERS ARE FROM 0. BOTH SIDES WITH

DETAIL OF THE WING JOINER BOX COMPRISING 1.5mm PLY, 3mm PLY & 13mm BRASS BOX SECTION

THE AILERON L.E. & FALS

A 1:4.5 SCALE SAILPLANE DESIGNED BY CHRIS WILLIAMS

SPERBER JUNIOR





First stage of wing construction with the gull jigs.

the balsa sheet and mark out along both the spar and the false LE. Set the wing down on the jiggling supports J1-J5 and weigh it down, but not too fiercely. Once again, clamp the sheet to the spar first, then clamp the LE. The sheeting will put up a bit of a fight at the gull joint so clamp this area first, then move out to the rest of the wing. Once the glue has dried level up the sheeting on the false leading edge with a razor plane and a long sanding block before adding the 5 mm balsa final LE. Don't forget to add the 3 mm ply plate to the front of the root rib before adding the top sheeting.

Add the 5 mm sq. balsa diagonal strips to support the sheeting at the rear of spar at the root, add the lower sheeting and make up the 10 g brass tube, enclosing it with 3 mm balsa. Make up the wiring loom for the aileron and spoiler



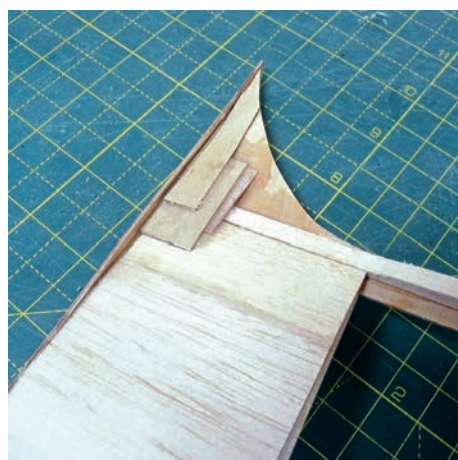
View of the brass joiner box in the wing.

servos. Add the rear ply plate for the rubber band retention hook and PVA in place the top sheeting.

The curved 1.5 mm ply fairing at the root TE is quite vulnerable and will need to be made



Ribs are set at 90 degrees to whichever part of the spar they are being attached to.



Reinforcing the wing TE at the root.



Adding the secondary sub spar.

strong enough to resist handling damage. Clamp a ruler to the root TE, about 40 mm in, and use this as a support for epoxying in the ply fairing. Epoxy two laminations of scrap thin ply over the join for the purposes of reinforcement. Using a thin plastic card the area can now be filled with polyester filler and sanded to shape.

Make up the aileron shrouds with 0.6 mm ply and 1.5 mm balsa.

The wing is now ready for the central sheeting.

SPOLERS

On the full size the spoilers are fitted directly over the gull bend, with the spoiler bent to follow the shape of the wing. As this would involve some complicated geometry things have been simplified by moving the spoilers outboard to the nearest flat part of the wing.

Start by cutting the slots for the 5 mm sq. strips that will delineate the position of the spoiler in the wing. Once in place remove excess wood from the centre two ribs and make up the top sheeting, marking out from underneath the slot for the spoiler aperture. As this sheeting also encompasses both the gull bend and the aileron root area, this will be quite a large piece.

Once this has been applied the spoiler blade can be made up from a centre of 0.6 mm

ply and two pieces of 1.5 mm balsa. Cut out the slots for the flat hinges and laminate the parts together with cyano. Insert the hinges, offer the spoiler up to the wing and cut slots for the hinges in the front spoiler balsa strip. A budget servo was used on the prototype, glued to a piece of 0.8 mm ply and screwed to two 6 x 3 mm spruce strips between two of the ribs.

Once the spoiler is fitted and working the lower sheeting can be added, leaving an aperture for access to the servo.

AILERONS

The ailerons are built flat to the board and can be quickly assembled with the judicious use of cyano (CA). First, after making up the false LE, offer it up to the wing and mark out where the four Robart-style hinges are going to go. The false LE should be 19 mm wide at the root and 14 mm at the tip. The ribs should be glued flush to the bottom edge. The diagonals are drawn over-size and are trimmed to fit as you go along.

Once all ribs and diagonals have been glued in place the aileron can be removed from the board and the final 5 mm balsa LE added, with 5 mm slots being cut afterwards for the hinges. Drill 6 mm holes in the wing

aileron spar to accept the 6 mm hardwood dowels that will support the hinges. Wrap a little masking tape around the dowel to prevent splitting before drilling out the 3 mm holes for the hinges. CA the dowels into the wing, ensuring that the holes are central, then offer up the aileron to the wing and sand flush.

But first, sand the composite ply/balsa aileron shrouds down to the ply for a nice, thin edge. Remove the aileron and round off the LE, fitting and refitting until it rotates satisfactorily within the shrouds.

Now, add the balsa tips to the wing and aileron and sand to shape at the same time to ensure that they meet nicely at the hinge line.

WINGS TO FUSELAGE FIT

This is probably the most critical part of the construction process as the wings will have to line up both in relation to the tailplane and also in relation to each other.

Commence by making up the 1.5 mm ply wing root profile by cutting out the slot for the joiner box in a ply blank, offering up a wing to mark out the rear incidence peg, drilling out and then drawing around the wing root to obtain the correct profile. This is not drawn on the plan as anything complex made by hand will vary in dimension, so it's best to obtain an accurate profile this way.

Now glue the 1.5 mm ply wing root spacer template to the ply root profile with CA. Offer up the assembly to the fuselage, noting that the profile will sit at right angles to the joiner box. Mark out the excess on the brass box and trim to match the profile. Now offer up the wing to the fuselage so that it sits flush against the ply wing root profile. Rig the tailplane and tape the TE of the profile to the fuselage, just below the ply sheeting join line on the fuselage.

By this stage you should have the elevator servo installed and connected to the elevator. With an incidence gauge jack up the rear ✈



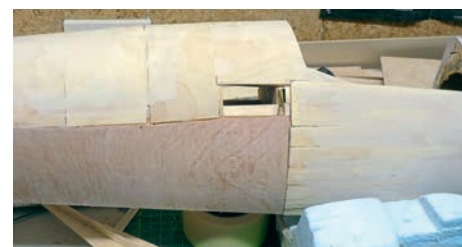
Dropping in the support spars for the spoiler.



Setting up the wings to the fuselage.



View of an aileron servo and linkage.



Fuselage ply sheeting completed, leaving a gap for the joiner box.



Separating the wings whilst the filler is at the 'cheesy' state.



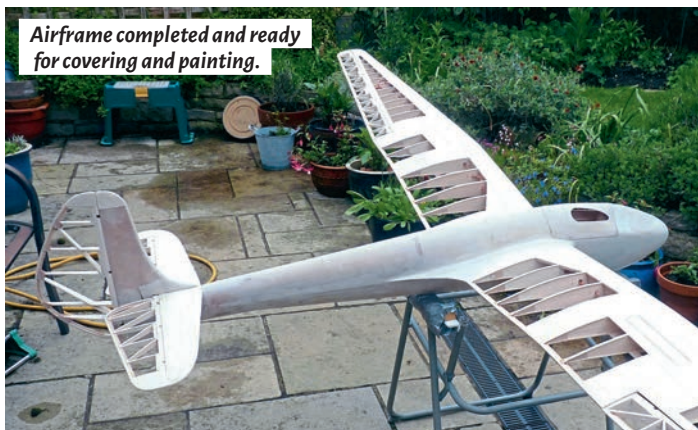
Adding hardwood dowel pieces to accept screws for the aileron servo horn.

"If you have enough suitable clamps most of the webbing plates can be added whilst the wing is on the jig"

of the fuselage until the tailplane incidence reads zero. Check that the wing is set at around 1.5 to 2 degrees positive incidence, adjusting the rear of the profile if necessary



Sleek and serene before her first aerotow flights at CMFC.



Airframe completed and ready for covering and painting.

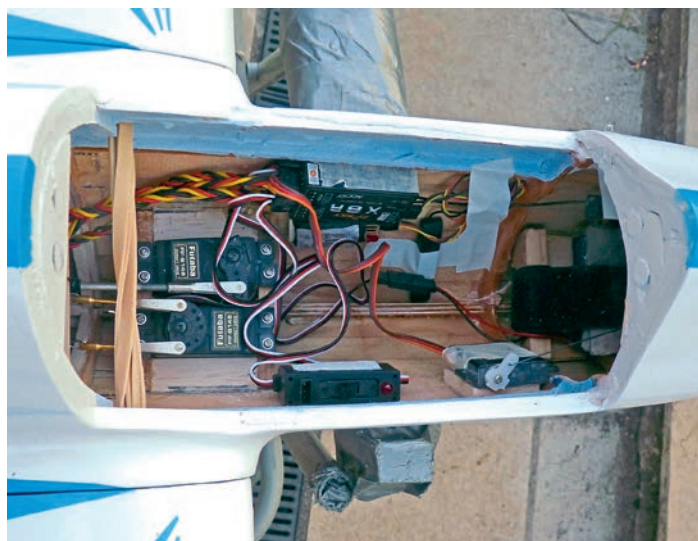
and marking its position. Cyano the root fairing assembly in place and offer up the wing flush to the fairing. Start to fill in the upper half of the fairing with lengths of 12 mm balsa, shaped to fit, making sure that the root facing stays flush to the wing. Don't force the balsa in place to avoid distorting the fairing's straight line.

Repeat the process for the other wing, checking that the wings are correctly aligned with each other. You can use the incidence gauge but I prefer to use the Mk.1 eyeball. Lift up the rear of the fuselage and sight up along the wing, lifting until the TE merges with the front of the wing. Now look at the other wing and see if it looks identically aligned, lifting the fuselage up and down slightly to be sure. If not, adjust the rear of the fairing until satisfied before adding the balsa infill.

Once you have filled in most of the gaps on both sides offer up the wings and mask out the wing roots with wide masking tape. Smooth car body filler over the fairings with a plastic spreader, using the wing root as a guide. It's best to set the balsa infills slightly below the



View of finished canopy.



Servo and receiver arrangement.



Coming in for landing with spoilers and ailerons raised.



Aerotow action at CMFC.

DATAFILE

Name:	DFS Sperber Junior
Model type:	Mid 1930s scale glider
Designed by:	Chris Williams
Scale:	1:4.5
Wingspan:	3.43 m (135 in)
Wing section:	HQ35/14-12
Weight:	3.6 kg (4 lbs)
Functions:	Rudder, elevator, ailerons, spoilers, tow release



Top & bottom views of Sperber Junior, just finished and ready for her maiden flight.



profile to allow for a smooth application. Remove the masking tape and when cured flat the fairings smooth and shape up the rear of the fairing where it blends into the fuselage. It's unlikely that you will achieve the desired result with one application; filling in the inevitable hollows will need to be addressed.

Now for the holes for the rubber band retention and servo leads. Lay two layers of masking tape between the wing joiner and the rear incidence peg hole on the root fairing. Drill out 1 mm holes in the wing root for the fore and aft holes and insert a small screw. Offer up the wing to the fuselage, pushing the screws into the masking tape, thus marking out the position of the subsequent holes. Remove the two screws and add the centre screw, repeating the process. Holes can then be made in the fuselage with the use of a stepped conical drill and the hooks screwed into the wing.

COVERING & FINISH

The prototype's fuselage was covered with Solartex. The compound curves at the nose and wing roots were left uncovered and the joins hidden by means of brushing six or seven coats of two-pack primer over those areas, then flattening dry with 120 grit paper, followed by 320 grit. The whole fuselage was then sprayed with two-pack primer, flattened wet with 600 wet and dry paper, before being sprayed with a two-pack topcoat.

The flying surfaces were covered with Hobby King film. The open structure areas were covered with matt clear film, with a 35 mm overlap. The white trim film was then added to get a good grip on the clear film before carefully shrinking it, being careful not to use too much heat! Card templates were made up and used to cut out the blue trim for

Author gives scale to the Sperber Junior during a slopeside launch.



Underside view. The finish here is a lot simpler than on the top!



On tow with the line pennant just visible far left.

the sunburst effect to ensure that they were equally dimensioned both sides.

SET UP & FLYING

After double checking the decalage and Centre of Gravity, perform all the usual checks: controls working the correct way, tow release working under tension, failsafe set, etc.

In flight, the Junior should be stable, predictable and without vices.

You can see the Sperber in action here: <https://www.youtube.com/watch?v=yAUcbP9GZK8>

A full set of build photographs and parts PDFs is available FOC from the designer: c_williams30@sky.com ■

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PPL-60C3S-2600	60C/120C, 3S (11.1V) 2600mAh	£30.00
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4-Max	4M-037AH-0045	Sub Micro	3.7g	0.45Kg @ 4.8V - 0.10sec/60° 0.55Kg @ 6.0V - 0.08sec/60°	Analog, Light Weight, High Speed	1pcs £6.84ea 5pcs £6.16ea
4-Max	4M-045DH-005	Sub Micro	4.5g	0.5Kg @ 4.8V - 0.10sec/60° 0.6Kg @ 6.0V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £4.72ea 5pcs £4.25ea
EMAX	ES9051	Sub Micro	4.1g	0.8Kg @ 4.8V - 0.09sec/60°	Digital, High Torque, High Speed	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-056DHVMG-009	Sub Micro	5.6g	0.90Kg @ 4.8V - 0.14sec/60° 1.05Kg @ 6.0V - 0.12sec/60° 1.20Kg @ 7.4V - 0.10sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick	1pcs £9.94ea 5pcs £8.95ea
New 4-Max	4M-053HVDMG-010	Sub Micro	5.3g	1.0Kg @ 4.8V - 0.09sec/60° 1.5Kg @ 6.0V - 0.08sec/60° 1.8Kg @ 7.4V - 0.07sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick, High Speed	1pcs £11.10ea 5pcs £9.99ea
EMAX	ES9052MD	Sub Micro	5.5g	1.1Kg @ 4.8V - 0.11sec/60° 1.3Kg @ 6.0V - 0.09sec/60°	Digital, Metal Geared, Coreless Motor	1pcs £13.83ea 5pcs £12.45ea
4-Max	4M-094DMGB-014	Wing	9.4g	1.4Kg @ 4.8V - 0.12sec/60° 1.9Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, Ball Raced, Wing, 8mm Thick	1pcs £11.54ea 5pcs £10.39ea
EMAX	ES08A II	Micro	8.6g	1.5Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Light Weight, Great Value	1pcs £5.34ea 5pcs £4.81ea
EMAX	ES08MA II	Micro	12g	1.2Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared	1pcs £8.35ea 5pcs £7.52ea
4-Max	4M-090AH-017	Micro	9.0g	1.7Kg @ 4.8V - 0.09sec/60° 1.9Kg @ 6.0V - 0.07sec/60°	Analog, Basic 9g Servo	1pcs £3.99ea 5pcs £3.59ea
EMAX	ES3301	Micro	10.6g	2.0Kg @ 4.8V - 0.12sec/60° 2.2Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, 9mm Thick	1pcs £8.79ea 5pcs £7.91ea
4-Max	4M-100AMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared, High Torque	1pcs £7.49ea 5pcs £6.74ea
4-Max	4M-100DMG-022	Micro	10g	2.2Kg @ 4.8V - 0.12sec/60° 2.5Kg @ 6.0V - 0.10sec/60°	Digital, Metal Geared, High Torque	1pcs £9.05ea 5pcs £8.15ea
New 4-Max	4M-125HVDMG-028	Micro	12.5g	2.8Kg.cm @ 4.8V - 0.144sec/60° 3.4Kg.cm @ 6.0V - 0.111sec/60° 4.5Kg.cm @ 7.4V - 0.105sec/60°	Digital, High Voltage, Metal Geared, High Speed, Dual Ball Raced	1pcs £12.21ea 5pcs £10.99ea
New 4-Max	4M-130HVDMG-040	Micro	13g	3.8Kg.cm @ 5.0V - 0.112sec/60° 4.0Kg.cm @ 6.0V - 0.096sec/60° 4.5Kg.cm @ 7.4V - 0.083sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque, Very Low Play in Gears	1pcs £11.10ea 5pcs £8.15ea
4-Max	4M-094DHVMG-026	Mini	9.4g	2.0Kg @ 6.0V - 0.09sec/60° 2.6Kg @ 7.4V - 0.07sec/60°	Digital, High Voltage, Metal Geared, Ball Raced, 8mm Thick	1pcs £14.99ea 5pcs £14.17ea
4-Max	4M-160AH-027	Mini	16g	2.7Kg @ 4.8V - 0.13sec/60° 3.0Kg @ 6.0V - 0.11sec/60°	Analog, Great Value Mini Servo	1pcs £6.29ea 5pcs £5.66ea
4-Max	4M-175AMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared	1pcs £8.73ea 5pcs £7.86ea
4-Max	4M-175DMG-030	Mini	17.5g	3.0Kg @ 4.8V - 0.13sec/60° 3.5Kg @ 6.0V - 0.11sec/60°	Digital, Metal Geared	1pcs £9.99ea 5pcs £8.99ea
New 4-Max	4M-183HVDMG-044	Mini	18.3g	4.4Kg @ 4.8V - 0.101sec/60° 6.5Kg @ 6.0V - 0.078sec/60° 7.3Kg @ 7.4V - 0.059sec/60°	Digital, High Voltage, Metal Geared, High Speed, High Torque	1pcs £14.99ea 5pcs £13.49ea
4-Max	4M-253AB-028	Standard/Mini	25.3g	2.8Kg @ 4.8V - 0.12sec/60° 3.3Kg @ 6.0V - 0.10sec/60°	Analog, Ball raced	1pcs £6.79ea 5pcs £6.11ea
EMAX	ES3004	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared, Ball Raced	1pcs £12.09ea 5pcs £10.88ea
EMAX	ES3054	Mini	17g	3.0Kg @ 4.8V - 0.15sec/60° 3.5Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared, Ball Raced	1pcs £17.59ea 5pcs £15.83ea
4-Max	4M-455AH-033	Standard	45.5g	3.3Kg @ 4.8V - 0.15sec/60° 4.0Kg @ 6.0V - 0.12sec/60°	Analog, Great Value Standard Servo	1pcs £6.99ea 5pcs £6.29ea
EMAX	ES3001	Standard	37g	3.5Kg @ 4.8V - 0.17sec/60° 4.8Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-410ABH-052	Standard	41g	5.2Kg @ 4.8V - 0.20sec/60° 6.5Kg @ 6.0V - 0.16sec/60°	Analog, High Torque	1pcs £4.73ea 5pcs £4.26ea
4-Max	4M-556AMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Analog, Metal Geared	1pcs £12.59ea 5pcs £11.33ea
4-Max	4M-556DMG-087	Standard	55.6g	8.7Kg @ 4.8V - 0.15sec/60° 9.4Kg @ 6.0V - 0.13sec/60°	Digital, Metal Geared	1pcs £15.74ea 5pcs £14.17ea
New 4-Max	4M-490AMG-108	Standard	49g	10.8Kg @ 4.8V - 0.13sec/60° 13.8Kg @ 6.0V - 0.11sec/60°	Analog, Metal Geared, Waterproof	1pcs £17.76ea 5pcs £15.98ea
4-Max	4M-620DHVMG-112	Standard	62g	9.35Kg @ 6.0V - 0.15sec/60° 11.2Kg @ 7.4V - 0.13sec/60°	Digital, High Voltage, Metal Geared, Dual Ball Raced	1pcs £18.89ea 5pcs £17.00ea
EMAX	ES3005	Standard	42g	10Kg @ 4.8V - 0.16sec/60° 12Kg @ 6.0V - 0.14sec/60°	Analog, Ball Raced, Waterproof	1pcs £27.49ea 5pcs £24.74ea
4-Max	4M-556AMG-118	Standard	55.6g	11.8Kg @ 4.8V - 0.20sec/60° 13.2Kg @ 6.0V - 0.18sec/60°	Analog, Metal Geared	1pcs £14.69ea 5pcs £13.22ea
4-Max	4M-556DMG-173	Standard	55.6g	17.3Kg @ 4.8V - 0.18sec/60° 20.4Kg @ 6.0V - 0.16sec/60°	Digital, Metal Geared	1pcs £17.84ea 5pcs £16.06ea

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Battery 3S 2200mAh - 3S 3700mAh (Supplied Separately)



£139.99

Super Sinbad

Wingspan 2500mm/98" Weight 1900g/4.2lbs
Battery 3S 2200mAh - 3S 3700mAh (Supplied Separately)



£49.99

Micro Sinbad

Wingspan 1230mm/48.4" Weight 190g/6.7oz
Battery 2S 350mAh (Supplied Separately)



£169.99

Leprechaun

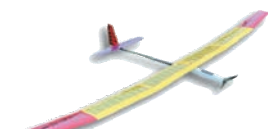
Wingspan 2600mm/102" Weight 1650g/3.6lbs
Battery 3S 2200mAh - 3S 3700mAh (Supplied Separately)



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Wingspan 1200mm/27.25" Weight 350g/12.3oz
Battery 2S 450mAh (Supplied Separately)



£169.99 Kit
£299.99 ARTF

VP2600 Glider

Wingspan 2600mm/102" Weight 850g/1.9lbs
Battery 3S 1300mAh (Supplied Separately)

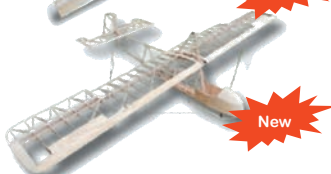


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E-FLITE HABU SS

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(BNF) | www.logicrc.com

An upgrade of the original high-performance E-flite Habu SS 50mm EDF, this new version features a reinforced EPO airframe that's optimised for both exceptional low-speed handling and high-speed aerobatic performance. Powered by a 3S / 4S compatible power system

(Spektrum 2628-4000Kv brushless outrunner / Avian 30A Smart Lite ESC) that delivers improved performance and flexibility using 1300 – 2200 mAh LiPos, the model is both ROG and hand-launch / belly landing capable thanks to a removable tricycle U/C, the wide

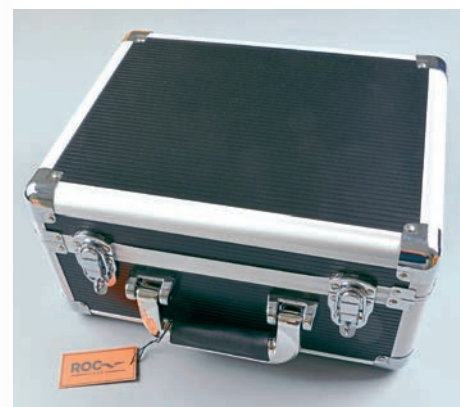


stance of which makes for easy take-offs and landings from smooth surfaces or short grass. Available in PNP and BNF versions, both include the power system and 4 x servos; the BNF also includes a Spektrum AR631+ receiver which features AS3X+ and SAFE Select.

ROC FLIGHT CASES

£ Various | www.cases-and-enclosures.co.uk

Besides the model itself, one of the most vulnerable and expensive elements in our hobby is the transmitter. Stored at home, then packed into the car and transported to and from the flying field, there's always a risk of it being knocked or dropped and sustaining damage. To that end, Cases and Enclosures offer a range of tough, versatile cases that are perfect for not only your Tx, but any other equipment in need of protection from knocks, dust and moisture. The medium-sized ROC 0304 black & silver flight case, for example, measures 475mm(L) x 325mm(W) x 170mm(H) externally (450/300/100/lid depth 45mm internally) and can be supplied without an insert (£20.90), with a plain foam insert (£28.25), or with a cubed foam insert (£29.44) where small, pre-cut foam blocks can be easily removed to suit the profile of the item being stored. Lightweight, durable and well-priced, these high-quality cases make for a very sensible investment. Check out www.cases-and-enclosures.co.uk for the full range.



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£9.95 | www.deluxematerials.co.uk

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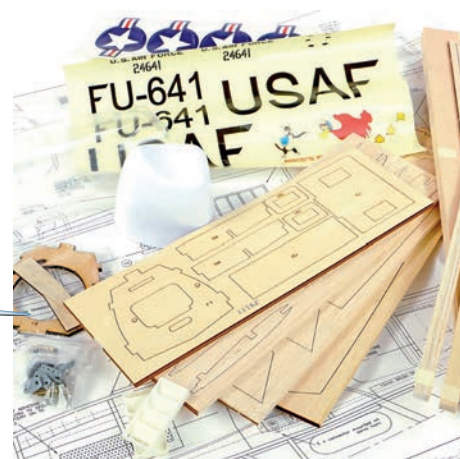
DPR SABRE

£88.99 | www.jperkins.com



Designed by Tony Nijhuis and manufactured by DPR this traditional kit of North American Aviation's late 1940s jet fighter is based around a

50 mm fan and 3S 2200mAh LiPo. It builds well and flies beautifully. Constructed using CNC-cut balsa and ply parts over an accurate full-size plan,



assembly is both straightforward and quick. Offering a unique blend of strength, lightness and efficiency this F-86 can be hand-launched with ease and flies with all the speed and prominence of the famous Korean War veteran.



MH-60T JAYHAWK

The editor puts another four-bladed scale heli from Fly Wing through its paces

Words: **Kevin Crozier** Photos: **Kevin Crozier, Rob Bennett**

The Sikorsky MH-60T Jayhawk is a twin-engine, four-blade, medium-range helicopter that is used by the United States Coast Guard for search and rescue, law enforcement and marine environmental protection. The aircraft's vivid white and red banded colour scheme certainly

stands out and makes for an eye-catching livery on Fly Wing's 850 mm long scale model of the type.

This is the third Fly Wing GPS heli that we have reviewed, the last being the slightly smaller Bell 412 that was featured in the June issue. This model follows the same format

and is supplied fully assembled inside a full-colour box, safely ensconced in a large foam sandwich made from firm but pliable sheets of soft protective material. Pockets in the surrounding foam contain the usual selection of accessories including the all-important drone-style ACE transmitter, a 4S 5000 mAh



Bright and bold, the U.S. Coast Guard livery really stands out. A grey and red military scheme is also available.

is moulded with an L-shaped slot at the root, allowing them to be fitted with a quick 'push & twist' action. Fitting all four blades takes just a few seconds, after which the 4S 5000 mAh LiPo supplied can be placed on its ply tray under the removable front canopy and secured by the thin hook & loop strap provided, backed up by factory applied hook & loop tape on both the LiPo and battery tray.

The previous Bell JetRanger and Bell 412 models that we have reviewed were both a little nose heavy CG wise, resulting in us placing their LiPo packs as rearwards as possible on their battery tray. But the Jayhawk is the opposite so the battery pack can be placed further forward on its tray, making sure not to

"...they were able to take off and perform low circuits and figures of eights within minutes of starting their very first R/C helicopter flights"

interfere with the canopy latch. It's no big deal as the clever electronics fitted to these models seems to cope very well wherever the 4S LiPo is fitted on its tray.

QUICK START

After fitting four AA batteries inside the battery box at the rear of the transmitter it can be switched on and the model moved to the flightline ready for powering up and take off. It's important to make sure that you connect the LiPo to the model well away from any pit and car parking areas as the Return To Home (RTH) function, if used, will try to return the model to where it was powered up from.

I make no apologies in repeating the ACE Heli Start procedure that we printed with the Bell 412 review as having a good understanding of the steps required will make all the difference between having a lot of fun with any Fly Wing GPS helicopter and having to abandon a flying session due to not being able to get the motors started due to the in-built safety features.

If you have one of these helicopters then I would strongly suggest making a copy of the Start Procedure, which you will find printed 

LiPo, a matching 4S charger with AC cord, foldable Allen key set and a USB data cable.

The only difference in the accessories supplied, compared with the Bell 412, is the tip shape of the four rotor blades which are styled to replicate the swept and tapered tips fitted to the full-size MH-60T's blades. As with the Bell each blade (385 mm long from root to tip)



Close up on the cabin area reveals oodles of scale details including the sprung wheeled undercarriage.

Assembly of the model takes just a few seconds thanks to the quick fit rotor blades.



A pair of rotor blades showing the swept and tapered tips which replicate those fitted to the full-size MH-60T's blades, although the real ones have a touch of anhedral too.



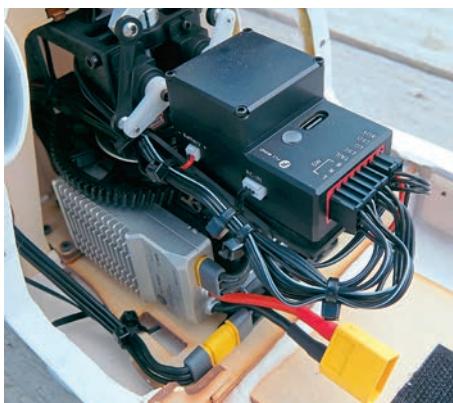
Close up on the four blade rotor head fitted with push & twist blade grips.



Drone style ACE transmitter.



Situated under the CNC rotor head, the all-metal swashplate is a lovely piece of engineering too.

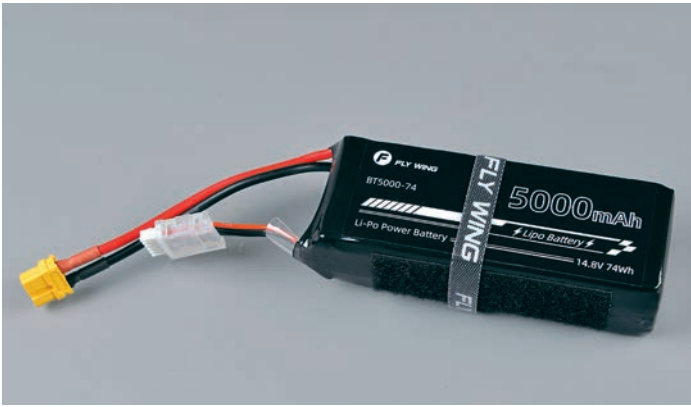


At the heart of the model is the avionics suite, all neatly installed at the Fly Wing factory.

nearby, and keeping it with your transmitter. I have taped the list to the back of the battery cover on all our Fly Wing controllers so it's always close to hand in case I forget any of the all-important steps if I haven't flown one of these helicopters for a while. Thankfully, having only flown the Bell 412 a short while before performing the maiden flight of the Jayhawk, I was able to remember the correct steps and the MH-60T's blades started to spin as soon as I flicked the Run switch.

ON PATROL

From prior experience with the Bell 412, and the JetRanger before that, I was comfortable in the knowledge that these GPS and gyro stabilised machines can be flown in quite a strong breeze.



A 4S 5000 mAh LiPo is supplied and is a standard fit across all the Fly Wing models we have tested so far.



Lots of room on the spacious battery tray. The LiPo is best fitted towards the front of the tray to bring the balance point forward. But mind the canopy latch!



The direct drive tail rotors fitted to these GPS models all make quite a harsh noise as they constantly adjust speed. But the one fitted to the Jayhawk seems louder, maybe due to its high mounted position.

Fly Wing ACE Heli Start Procedure

1. Flick all shoulder switches up, away from the pilot.
2. Switch on the controller (transmitter).
3. Plug in the helicopter's LiPo.
4. Flight controller light goes Purple (Return To Home) because switch 3 is in the up, Home, position. Replace canopy.
5. Put switch 3 in middle GPS position and wait until flight controller light turns solid Green. This may take several seconds.
6. Put both Tx sticks in bottom outer corners for several seconds (min. 5) to unlock controller. Servos will twitch and swashplate should now respond to stick movements. (Note: If H1 controller instead of ACE, the swashplate doesn't move in GPS mode.)
7. Green light on flight controller will flash so good to fly. Nav lights (if fitted) will also flash.
8. Move switch A from Stop to Run and main and tail rotors will start.

And such was the state of the air on the day chosen for the Jayhawk's maiden flights, with the wind gusting at over 20 mph.

In these kinds of conditions it is best to leave the model in GPS mode and let the electronics take the strain of keeping the helicopter in the same position when hovering. In calmer conditions the Home/GPS/ATT switch can be moved to the



On the bench, awaiting its maiden flight.



Revised soft take off sequence allows the MH-60T to lift off slowly and smoothly. Our original JetRanger fairly leapt into the air by comparison!



During a slow pirouette the MHT-60T Jayhawk shows off its colourful paint scheme and copious scale details.

“...in Sport mode these delightful models can really gain a fair turn of speed”

ATT position which allows the helicopter to drift like a conventional R/C helicopter and so allows for more realistic flying, including nicely co-ordinated banked turns when used in conjunction with yaw provided by the high-revving tail motor and its short 6-inch diameter propeller.

On such as breezy day, however, GPS mode was the sensible choice and with this selected one can only but be amazed at how stable these helicopters are in such difficult conditions. As usual forward flight was equally well controlled, but speed is constrained somewhat whenever GPS is selected, especially at the lowest (Soft) of the three speed levels; these are selected with the long 3-position switch on the left shoulder of the Tx. Other speed options are Normal and Sport and these really come into their own in calmer conditions when ATT mode can be engaged. Indeed, in Sport mode these delightful models can really gain a fair turn of speed.

But such hooning around is not really what you would normally want a nice scale model helicopter to be used for. There are plenty of sport and 3D helis that you can use for that, so keep things to a reasonable pace so that the fine scale details applied to each Fly Wing machine can be fully appreciated.

SCALE EFFECT

This aircraft has oodles of fine scale details, from its neatly applied decals to all the well-defined rivets and a plethora of clear windows throughout the cabin area. The most eye-catching though, apart from that very nicely machined all-metal, four-blade rotor head, is the three wheeled undercarriage, complete with spring struts. On a smooth surface it might even be possible to do roller take offs and landings although the automated take off and landing sequences might make that a bit tricky. This model benefits from recently added 'slow'



Heading off downwind. It handled the 25 mph wind gusts encountered during the maiden flights with ease.

take-off and landing functions to make those tricky parts of the flight envelope less harsh and more realistic.

C-TURN

As with the Bell 412, the far right two-position switch on the Jayhawk transmitter sports a sticker showing OFF and C-Turn. When C-Turn is switched on the yaw (rudder) stick is used for turning. To quote Fly Wing, “The flight controller automatically increases roll (aileron) control helping the heli to turn in a smaller radius and with a more realistic posture.” In use this does work but when flying a normal R/C heli the rudder stick is not used to roll the aircraft so it feels a bit strange using it when you should be using the aileron stick to make banked turns. It also tends to raise the nose in turns when really you want the opposite to happen, although during a subsequent Jayhawk sortie on a calmer day it didn't seem to raise the nose nearly as much as with the Bell 412.

It's an interesting idea but it won't help you to progress to a conventional R/C helicopter if that's your eventual aim.

BUZZ WORD

It's all very positive so far but one thing you do notice with these helicopters, compared with a normal model heli with a rod or belt driven tail rotor running off the main motor or engine, is the harsh noise that the small diameter tail rotor makes. This is more akin to a conventional

aeroplane propeller than a two-bladed tail rotor and since it is directly driven by the small brushless motor onto which it is mounted then it makes quite a harsh noise as it changes speed in response to yaw demands from either the pilot or the on-board stabilisation system. In strong winds this is exacerbated so you can expect some friendly banter from your clubmates about the noise coming from the tail, especially from anyone who still flies models with conventional tail rotors.

IN THE BEGINNING

It may run against conventional wisdom, which usually recommends steering well clear of a scale machine when you first start to fly a model helicopter, but with a Fly Wing scale chopper, if left in GPS and Soft speed modes, I would be quite happy to recommend them for basic training. They are so well behaved and neutrally stable that even raw beginners can fly them without much fear of crashing. (Never say never though as there's always someone out there who will push things past sensible limits!)

I have witnessed this twice now, although both gents involved were very experienced fixed wing pilots, so they had a good understanding of what each of the sticks on their transmitters were likely to do. Nonetheless, they were able to take off and perform low circuits and figures of eights within minutes of starting their very first



R/C helicopter flights. Strangely, both opted to perform nose-in landings, which would be the last thing you would want to do if learning with a normal helicopter! It was quite amazing to watch as it would probably have taken months, if not years, for them to reach a similar standard with a conventional R/C machine.

So, if you have tried to fly R/C helicopter in the past and have given up either because of the dedication to learning the art of flying them

that is usually involved or due to the likely cost of all those spare parts, then why not take a look at one of these Fly Wing GPS models. I think you will be very impressed.

COAST GUARD

Let's finish with a final few words about this particular Fly Wing model. In its eye-catching Coast Guard livery, the colourful Sikorsky MH-60T Jayhawk is sure to catch the attention

of fellow modellers whenever it is flown, and most will be amazed at the stability and realistic flight performance that it offers. Yes, it does make a bit of a racket at the back end compared to a traditional model helicopter but that's more than outweighed by the Jayhawk's excellent scale appearance and detailing, and the sound of those eye-catching four-blade rotors. You will love floating this model around and being the centre of attention!

Add to that all the benefits of the state-of-the-art drone technology contained in that gorgeous scale body set, such as GPS stabilisation, Return To Home at the flick of a switch should you get disorientated whilst flying her (also initiated when the battery voltage drops too low), and the more realistic banked turns offered by the improved ACE control system.

Finally, if you prefer your scale helicopters to have a military look then the same model is available finished in grey and red, with 'Scorpion' markings, replicating the closely related MH-60R Seahawk as used by the US Navy. ■

DATAFILE

Model:	MH-60T Jayhawk
Model type:	Scale helicopter
Manufacturer:	Fly Wing https://www.flywingrc.com
Main rotor length:	385 mm, root to tip
Fuselage length:	850 mm
Height:	270 mm
Weight:	1328 g (without LiPo)
LiPo:	4S 5000 mAh





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Kevin Crozier

Editor

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CONSCENDO 2.0m

We put together and fly the latest variant in E-Flite's popular range of electric soarers

Words: RCM&E Photos: Rob Bennett

After reading this review, we have no doubt that a large number of our readers will be heading to Logic RC's website to learn more about this elegant two-metre span electric glider. It's a winner both in terms of its good looks and flying capabilities.

In their Product Overview about E-Flite's new glider it says:

"Many low time to experienced pilots appreciate the one-of-a-kind blend of smooth soaring, sport, high-speed, and aerobatic flight performance the incredibly popular UMX and Conscendo Evolution 1.5m models offer. So much so that they've often asked for an even larger version. The E-flite Conscendo 2.0m is now the largest, most powerful, capable, and feature-rich Conscendo yet!"

Those various iterations of the Conscendo design (802mm UMX and 1.5m Evolution) have been on the scene for quite some time now so



Conscendo 2.0m continues the good looks inherited from smaller versions of this popular E-flite powered glider.



It takes just a couple of minutes to plug in the wing and tail panels, slot in the wheels and she's ready to fly.

our preferred way of doing things, so we opted to copy across a pre-existing model from a previous review model, set it up in our usual fashion, making sure any model specific settings like trims, sub-trims and mixes etc. were neutralised before setting up the Conscendo.

What little assembly there is to do is fully explained in the comprehensive 84-page multi-language manual, with the first 22 pages being in English. In brief (and this will take much longer to write than to do!) the assembly sequence is as follows:

- Insert the 6 mm diameter tailplane joiner tube into the rear fuselage and slide the tail halves into place until built-in latches engage. (To remove simply press down on the ridged areas of the underside latch covers and pull.)
- Connect ball link at the end of the elevator pushrod to the ball fitted to the control horn.

“...the BNF Basic version of this model also comes with Hand Launch Assist Mode to level the wings after a hand launch”

(The rudder is connected at the factory, as is the steerable tailwheel assembly.)

- Insert 12 mm front and 8 mm rear carbon wing joiner tubes into the wing seats in

let's take a look and see how this new larger version stacks up.

ASSEMBLY - IS THAT IT!

You don't so much as assemble this aeroplane so much as prepare it for flight. With the BNF version being reviewed pretty much everything is done for you at the factory before separate parts of the finished model are placed in a protective tray in a large colourful box.

We don't usually hold with those claims which say a model was taken straight to the flying field, assembled, radio set up and flown, all in a matter of minutes. But with the Conscendo 2.0m that really could be possible if you own a Spektrum NX or iX transmitter and use the Smart Transmitter Model File that comes pre-loaded in the factory-installed Spektrum AR8360T+ receiver.

For the purposes of this review we did try the Smart Tx file, downloading it to our NX8+ transmitter, and it all worked just fine. However, Spektrum's chosen switch configurations and some other set up preferences don't tally with



Awaiting her maiden flight, taking off from the smooth, well-prepared strip behind.



Close up on the narrow gauge pushrods and small ball-links at the rear. We will glue the rods and links together once flight testing is finished to prevent them from pulling apart. Note the connector for the optional LED night light set.



Wing panels are supported on a pair of sturdy joiner tubes.

the fuselage. Slide wing panels into place until built-in latches engage. To remove each wing, press down on the release buttons on the top of each wing seat.

- Fit two-piece landing gear supplied or leave wheels off if preferred.
- Install receiver in the underbelly servo/Rx bay in the PNP version. A Spektrum AR8360T+ receiver is ready fitted to the BNF version.
- Load Smart Tx File (STF), check set up and controls, and fly!

WHEELS ON, WHEELS OFF

Perhaps the biggest decision to take with this model is whether to fit the wheels or simply leave them off and fly it as a 'pure' electric glider. However, they are so easy to fit and

remove again then it's a no-brainer to try both options. We actually prefer it with the wheels on as they turn the Consendo 2.0m into something a little more interesting, emulating a full-size motor glider. Of course, with the wheels fitted you'll need a flying strip to take off and land on, but most club sites will be suitable for that. However, if you want to fly the Consendo over, say, long grass or from the slope then removing the wheels is just button press away. The release button is sited centrally between the landing gear pockets.

Each undercarriage leg, cut and folded from strong plastic, is fitted with a smooth running 65 mm diameter wheel fitted with a dense foam tyre. Close fitting foam spats enclose each wheel.

WEIGH IN

Since this airframe is moulded from high-density EPO foam with composite reinforcements throughout it's no lightweight when compared with a similar sized model moulded from 'normal' foam, let alone one made from more traditional materials. But such construction does result in a lovely smooth finish and a very strong airframe.

The downside is the weight, with the completed model topping the scales at 2127 grams according to Logic RC's website. Ours is a tad heavier still, coming in at 2380 grams without a battery. Add to this the largest of the recommended 4S to 6S LiPo packs and she will definitely flex your muscles when she is picked up! Logic RC kindly supplied a 5000 mAh 6S 30C Smart LiPo for us to test the Consendo ✈



Wing root and wing seat in detail showing the plug-in servo connectors and metal latch at the front.



All wing servos are neatly covered by screw down covers.



Undercarriage legs and wheels take just a few seconds to fit.



6.5 cm diameter wheels are ensconced in moulded foam spats.



Tail servos and Spektrum receiver are factory fitted in the BNFBasic version. Neatly done!



The max. recommended 6S 5000 mAh Smart G2 LiPo pack is a snug fit in the battery bay. It needs to be strapped in at the rear to achieve the correct CG.



Removing the undercarriage simply requires pushing the locking button located between the legs.



We tried the old trick of using a rubber band to hold the folding prop closed but the motor is so powerful it just spun off on the first motor start!



Colourful graphics are pre-applied, apart from black triangles on the underside of the tail panels. We left ours off, just in case Logic want the optional LED Night Lights fitted for a future review!





This slippery design can pick up speed on even quite moderate power settings.



Full flap requires little in the way of down elevator compensation.

with, which weighs 655 g, so the ready to fly weight is a shade over 3 kg.

On recent trips to the flying field, it has become a bit of a 'thing' for our clubmates to wander over and pick up the glider, exclaiming surprise over its weight. But when they see it fly their friendly banter invariably turns very positive indeed.

With the 6S Smart LiPo installed the recommended balance point of 90 mm from the leading edge of the wing is achieved by placing it well back in the battery bay, as can be seen in a nearby picture.

STABILISATION & SAFE

Conscendo's maiden flight was with its wheels fitted on a sunny but blustery day. Thankfully, the BNF Basic version being reviewed is

supplied with AS3X+ stabilisation, so she was able to absorb a lot of the buffeting going on around her, making piloting an enjoyable experience despite the adverse conditions.

As well as AS3X+, Conscendo 2.0m comes with SAFE Select. This includes angle limits in flight as well as automatic self-levelling. Although of use to assist, say, those with relatively low flying experience, or even experienced modellers whose flying skills may be starting to wane, this is a mode that we don't generally use with Spektrum equipped models. However, the BNF Basic version of this model also comes with Hand Launch Assist Mode to level the wings after a hand launch, as well as putting it into a positive climbing attitude. Your editor is quite keen to try this as following surgery on both his wrists a few years ago his

hand launches are well past their best. So, Kevin will be following up on this feature in his RTFM column in the near future.

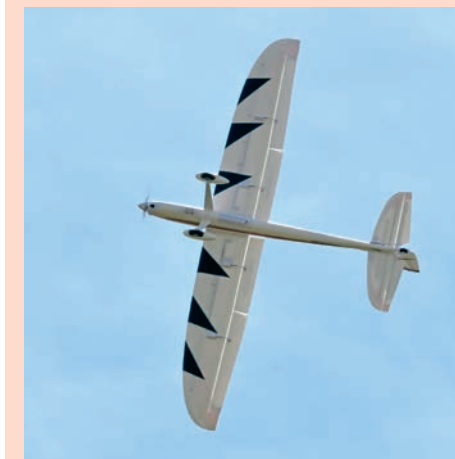
AIRBORNE

As mentioned, conditions on the day available for testing this model were not good, with wind gusts of close to 25 mph. We have the stabilisation options available on a three-position switch: Off, AS3X+ and SAFE. With the windsock bouncing around, in between periods of being horizontal, it was a no-brainer to chose AS3X+ to assist the pilot, especially with a view to keeping those wide apart wingtips from digging in should the model catch a gust. As it happens the first take off was an anticlimax and even without any flap selected, Conscendo was up and away after a very short roll, with the wings staying nice and level, assisted by the avionics.

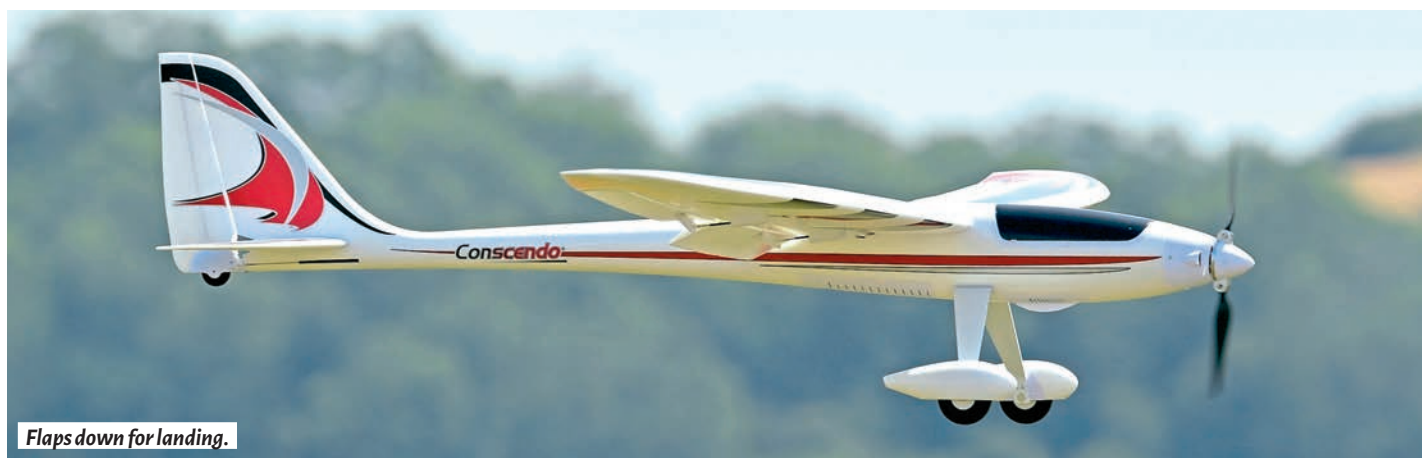
Indeed, she was flying so well that we decreed that no trims were needed and promptly dropped her down low for some in-flight photos, as captured on clubmate Rob's trusty Nikon.

After a few passes, which were not blisteringly fast considering the pent-up potential of the 6S pack and the 3130-480KV outrunner motor (more on that later), Rob called for some pics with the flaps deployed. It's a good job he said something as we were enjoying zooming the Conscendo around so much that we had quite forgotten to try the large flaps that she is equipped with. Half and full flap settings were set as per the manual with a small amount of 'guesstimate' down elevator compensation added at each setting. These were found to be quite close when each stage of flap was selected and no substantial ballooning was seen during either deployment. As expected, full flap is the most effective and it has proved a boon to slowing this slippery model down during its approach to landing.

During our most recent session with the Conscendo quite a few approaches were made to test the effectiveness of those large flaps, coming into land on a short crosswind strip. With an efficient model like this, which can slip by until all the available grass is used up, with only a hedge to capture any overshoot, it certainly concentrates the mind when flying such an approach. But with full flap it proved easy to hop her over the threshold formed by a cereal crop and smoothly and gently drop the Conscendo onto its wheels for a short roll-out. Lovely!



Smooth, slow rolls are on the agenda.



Flaps down for landing.

LOOPS & ROLLS

Subsequent flying sessions have allowed us to fine tune the trims on this model. Aileron and rudder have remained at zero, but a small amount of up elevator has been found to be beneficial as we have started to wind up the speed of this sleek design during aerobatics.

This kind of design lends itself to performing large, smooth and open

manoeuvres, using power during climbs, say during the first half of a loop, and then returning to glide mode when diving to pick up speed for an elegant motor off or low power follow though, say into a long roll.

A clubmate, who has a Conscondo 1.5m, commented that he thought that his model was faster than the two-metre variant being tested here. But we've been deliberately

holding her back until after a few flying sessions had been completed. The reason for this is that the linkages to the control surface are all made using small ball-links. We really approve of ball-links but the gauge of wire used for the pushrods is quite small and the ball-links are quite a loose fit and can be turned easily by hand. Our intention is to make sure that the model is well trimmed and then we will permanently fix the ball-links onto the pushrods, probably using 30-minute epoxy, hopefully ensuring that they won't pull out in any high-speed, high-G manoeuvres when we eventually push her closer to the limit.

In the meantime, please be assured that the Conscondo 2.0m is no slouch straight out of the box and when flown in a smooth and flowing style those small ball-links seem to be coping well.

FINAL ANALYSIS

We like this sleek looking powered glider a lot. We prefer to call her a motor glider as with the wheels fitted that's what she reminds us of.

Whilst we have flown her power off as a glider - and even caught a thermal whilst doing so - it's as a smooth flying aerobat, performing glider style aeros, that she excels.

Conscondo 2.0m is set to be another sure-fire winner from the Horizon Hobby stable. ■



About to touch down with the AS3X+ stabilisation system doing a fine job of keeping the wings level despite the very stiff breeze.



KC has commandeered the Conscondo 2.0m to follow up on its Hand Launch Assist mode. Sounds interesting!

DATAFILE

Model:	Conscondo 2.0m
Model type:	Electric sport aircraft
Manufacturer:	E-flite
Distributed by:	Logic RC https://www.logicrc.com
SRP:	£489.99 BNF Basic w/AS3X+ & SAFE Select £449.99 PNP
Wingspan:	2000 mm (78.75")
Length:	1344 mm (52.91")
Weight:	2127 g (4.69 lbs)
Motor:	3130-480KV brushless outrunner
ESC:	70A Smart Lite Brushless ESC, 3S-6S, IC5, Ver.G
Functions (servos):	Ailerons (2), Elevator (1), Rudder (1), Flaps (2), ESC
LiPo:	4-6S, 3200-5000 mAh

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FAI F4 World Championships for Scale Model Aircraft,
Great Britain Buckminster, United Kingdom
09 Jul - 18 Jul 2026

KAVAN GO servos made it to the podium at this year's FAI F4 World Championships for Scale Model Aircraft in Buckminster. Our team pilots excelled in F4H and F4C categories, both also contributing to the team results and bringing home the medals from each category.

Congratulations to all pilots.

kavanrc.com



Jan Doubrava (CZ) – Bronze in F4C individual
His freshly built Aero L-29 Delfin achieved a great 3rd place, equipped with GO-1035MG Plus, GO-1053MG, and GO-1070MG servos.



Vladimír Ryneš Jr. (CZ) – Silver in F4H individual
Secured the silver medal in the F4H individual category with his Van's Aircraft RV-7, equipped with GO-1035MG Plus and GO-1070MG servos.

#KAV20.1035MGP - **KAVAN GO-1035MG Plus - 79.9 €**
#KAV20.1070MG - **KAVAN GO-1070MG - 79.9 €**
#KAV20.1053MG - **KAVAN GO-1053MG - 31.9 €**



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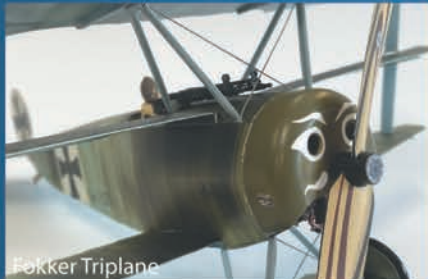
Albatros D.V



Aviatik Berg D.1



Nieuport 17



Fokker Triplane



Sopwith Triplane



Sopwith F.1 Camel



R.A.F SE5a

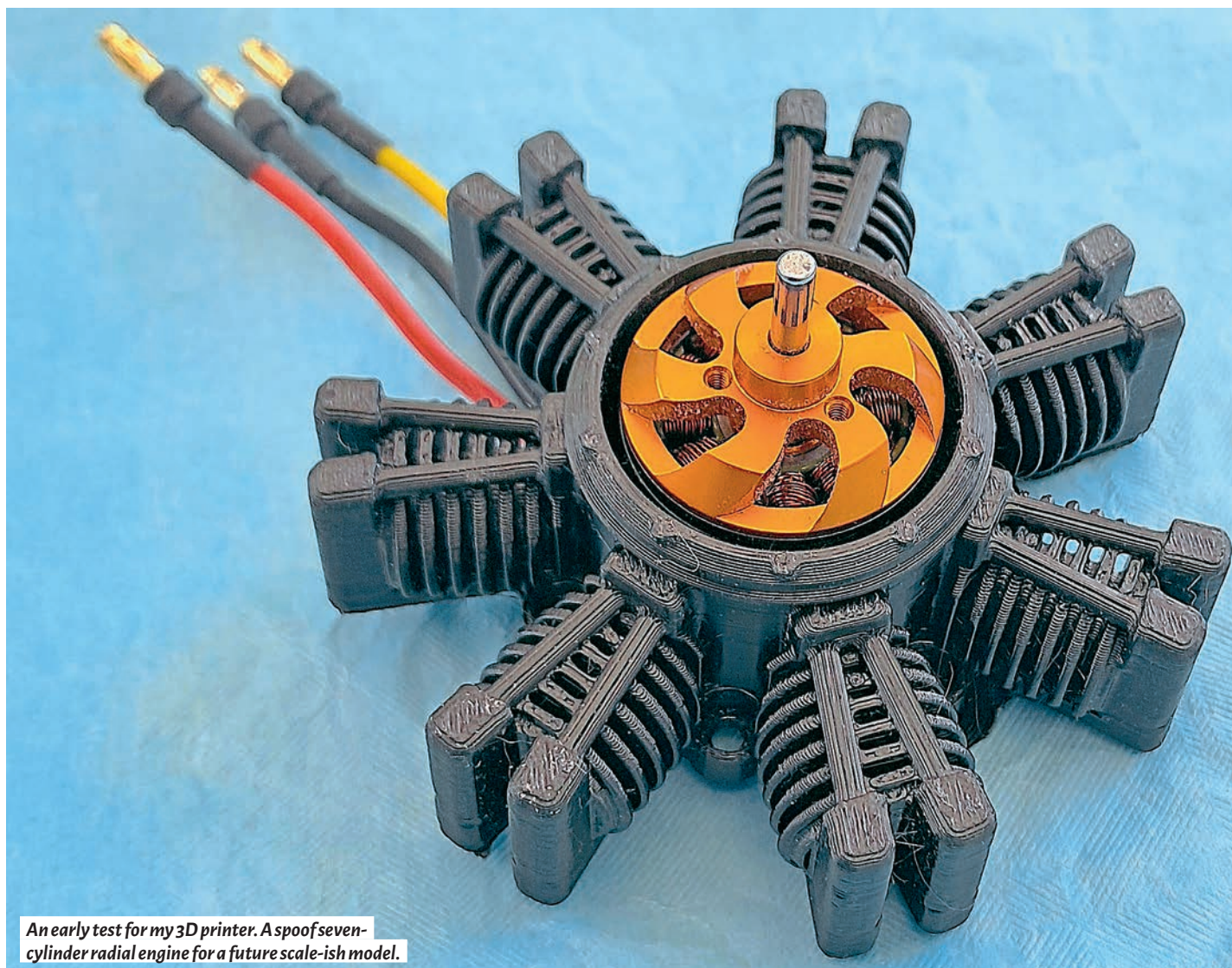


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An early test for my 3D printer. A spoof seven-cylinder radial engine for a future scale-ish model.

OLD DOG?

Joining the multitude of 3D printer owners, **Dave Goodenough** shows that you're never too old to learn something new

Words & Photos: **Dave Goodenough**

Many of you will be aware of the benefits of 3D printing or may even have own your machine. My eldest son enthused about his two devices and I succumbed, digging deep into the moth-infested depths of my pocket and purchasing a four-colour Flashforge printer on a Black Friday deal. After all, if you're going to do it, go all-in!

Those in the know will understand my trepidation, or even fear of this 'new' technology, but my initial fiddling has brought forth a couple of 'pilots' and dummy engines for future models, plus other bits-n-pieces. Currently producing parts for

a protection enclosure, I've uncovered a couple of gremlins that caused me to halt print jobs, scratch my head and delve for answers. Once I'm more comfortable with the dark arts of programming I'll dive into printing out a little R/C model I've seen and lusted after. If it works, you'll see it here.

PAGE TURNING

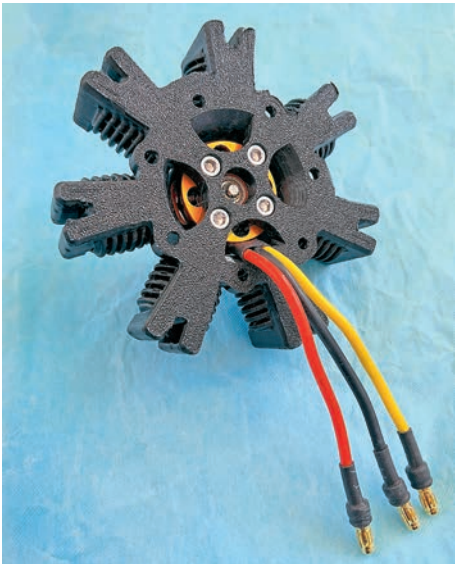
In a previous 'One Man' I'd begun preparing the old, donated Zaic 'Thermic 100' glider wings and tail feathers for re-covering by cutting out the inter-rib tissue, much of it being age-brittled and split. This left the underside framework outlined in black, where the old tissue couldn't

be removed. It's not easy to cover or disguise with more tissue and I didn't want a solid black underside again so I bought some Deluxe Materials Eze-Tissue in black/white check, hoping that this would work like the WW2 ship 'dazzle' camouflage and break up the old black outline.

But first I needed to cover the open structure with 40 Micron 'Doculam' plastic film, a first for me and a new thing for my old digits to grapple with.

TWICE LAMINATED

Starting with the tailplane halves, I anointed the edges with Cover Grip and cut/placed



That's a 28 mm dia. outrunner motor nestled inside.

a section of Doculam into position. A dab with my film iron resulted in... nothing. But I remembered that Doculam has two requirements - a hotter iron and being laid on as wrinkle-free as possible. Raising the temperature saw it begin to adhere and I worked around the edges of each half.

As supplied, Doculam is translucent/milky in appearance (the adhesive layer), turning crystal clear when the glue surface is activated. The glue takes longer to activate than ordinary covering film, so a degree of patience is needed. Once fully adhered, I passed the iron over the film rib-by-rib and the film tautened and turned transparent.

One thing to note is that as Doculam doesn't shrink as much as ordinary model film care is needed to remove as many wrinkles as possible when it is first adhered. Tensioning the edges being ironed brought my fingers rather too close to the hotter-than-normal iron and after one singe too many I wore a thin cotton glove as



Acrylic doping the Eze-Tissue onto the Doculam covered Thermic wing. Very easy to do if you take things steadily.

protection whilst pulling/smoothing the film. You might want to do so as well.

With both tailplane halves covered with film, I cut a section of chequered Eze-Tissue ready for overlaying. A coat of acrylic satin varnish was painted on one surface and the tissue laid over it, with a varnish wetted soft brush used to ensure a flat and wrinkle/bubble free finish. More varnish was used as the tissue demanded and care was taken to ensure adhesion right up the tailplane outline edge. It all went well.

The top surface was tried with 'normal' coloured tissue, which was a disaster. Wrinkling and with little wet strength, it began to fall apart. Still wetted, I peeled and swabbed it off, then reverted to the easier to use Eze-Tissue. That was it, done!

When dry, I carefully trimmed around the edges and was very pleased with the result. It gives a tissue 'look' to the old model, with the previous frame covering disguised and a



Your scribe with the 'ready to rock' Thermic 100. By the time you read this it will have had its return to the skies and have completed testing - again!

tough covering that wouldn't brittle with age. Result!

The wing undercamber worried me but painting Cover Grip along the wing spars and rib undersides proved that I worried too much. The film stuck like effluent to a blanket! Nothing released when I heat tautened the Doculam. Tissue covering was just as with the tailplane, being simple and with a great finish.

Have a look at the photos and make your own mind up. I'll certainly be using the method again on vintage and traditional models.

GRIPPING YARNS

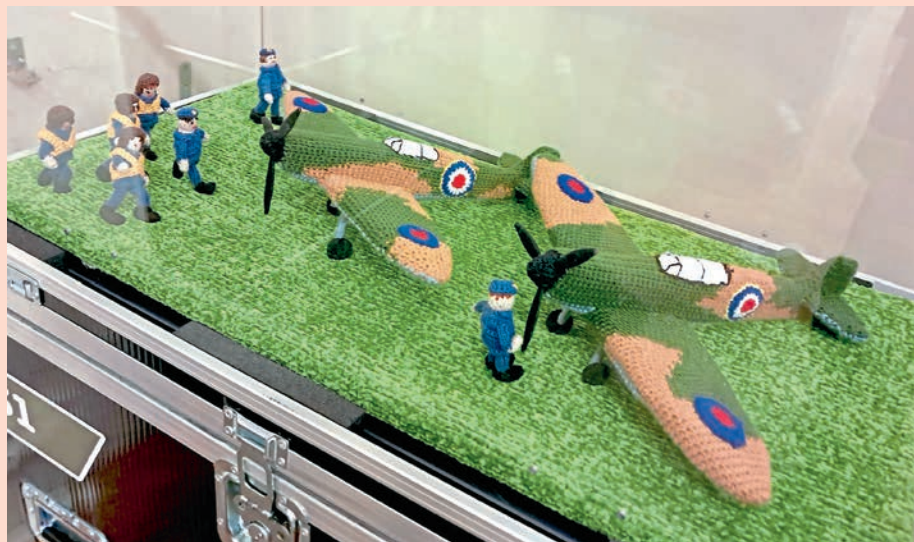
Early in December '25, I caught an internet 'flyer' about an exhibition nearby, 'The Longest Yarn 2'. It was a series of dioramas about WW2, 80 ➔



Finished Thermic 100 tail feathers look just-so, despite being laid over old tissue remnants already on the structure.



The old girl in her new frock, showing the newly chequered undersides.



Our visit to see 'The Longest Yarn' exhibition was a revelation that stirred memories. It's an amazing collection of knitted dioramas.

in total, along with some full-size figures; the difference was that they were all knitted! Being 'crafty' people, my better half was enthused enough to demand we attend and thank goodness we did! Booking an entry time was done online and although a 'free entry' event, a donation of £2 was requested. I happily paid up.

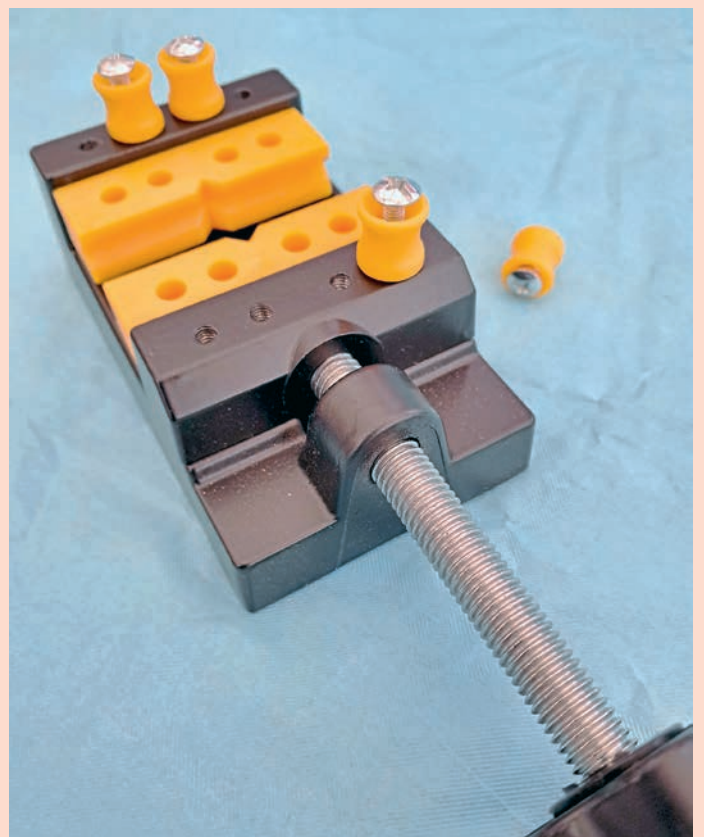
Arriving at Great Wood Community Hall in Tean we toured the exhibits and were equally amazed and amused, especially about the 'aircraft' ones. Many rattled loose memories of our parents and grandparents telling us of their wartime tales. Pat's mum was in the Land Army as a 'Land Girl', whilst my dad was part of the team assembling the Mulberry Harbour at Arromanches after D-Day, and grandfather was an ARP warden. All the dioramas had their story to tell of the conflict and were highly appreciated by the visitors. Meeting one of the knitters was a high point and we learned that she's a WW2 're-enactor'.

'The Longest Yarn 2' is a travelling exhibition and you can find future venues online.

BEGINNER'S BUNDLE

Sometimes you need a third hand, or at least something to lightly hold a part whilst you work on it. I got fed up with fumbling yet again and bought a low-cost 'adaptable' vice for the bench. Yes, it's cheap and cheerful but after only a few days use, I've already muttered the phrase, 'Why didn't I buy one years ago?' for use whilst working on small parts.

I already have a steel multi-angle 2" (52 mm) machine vice with tilt and rotate functions but that is total overkill for anything other than accurate milling or drilling. The little aluminium vice is



This two jaw multi-angle vice is somewhat OTT for normal use. But the similarly sized cheapie unit with orange jaws is perfectly adequate for holding most model parts.

already seeing more use than I ever imagined and for less than a tenner it was a bargain.

Although a straightforward mini-machine vice, it has detachable top-mounted 'pins', so can nip onto awkwardly shaped parts. I found them very handy and you might too.

PUSH-ME-PULL-YOU?

Needing a pair of control snakes for a new model, I cast around my favourite model engineering suppliers and found that semi-rigid PTFE and PVC tube is available cheaply and similar in flexibility to 'normal' control snakes. So, I ordered some at 4 mm OD.

No inner, I hear you say... Well, that's easy; use 1.0 to 1.6 mm piano wire. I sourced a five-pack of 1.2 mm dia. for £5.22, plus post, from Macclesfield Model Engineering Supplies. Even allowing for the postal costs, that equated to just £3.50 per complete one-metre snake.

Taking the idea further, a one-metre length of 3.0 mm OD x 2.0 mm ID carbon tube is around £4 and could be used as strengthening within a structure whilst carrying a wire pushrod within, something that I will likely use in a future model. Contact Easy Composites for a free catalogue. So, if you're minded trying to put together your own 'snakes', it just takes a sniff through the interweb to find the bits.

SAW POINT

Slotting wing and tail edges for sliding in and gluing Mylar tape has been a trial for many and despite having a 'slotting kit' to help with the process, I've always found the job a bit of an awkward drudge. A method outlined here a while ago was the 'hinge recess and cap' system that VMC use in their 'Cinnabar' glider, but I was still after a simple, minimal tool use way of cutting those pesky slots. And then I found a couple of new-to-me tools, both small and both very handy.

The small craft handle with its three small and narrow blades has been very useful. Instead of using my old slotting kit, which always seemed a complete faff to use and never resulted in good slots, the little saw works differently. Drill a hole of around 2 mm to 3

USEFUL LINKS

Eze-Tissue & Cover Grip:
40 Micron Doculam, per metre:
The Longest Yarn 2:
Mini-machine vice:
Cured carbon sections:
Various size piano wire multi-packs:
PTFE and 'rigid' PVC tube:

Model shops
 Retromodeller
 Search the heading online
 eBay
 Easy Composites
 Macclesfield Model Engineering Supplies
 eBay



Two recently purchased sets of fine saws.

mm dia., central to the hinge position, insert the narrow pull-to-cut sawblade and cut along the line of the hinge to the width needed. The reverse cut of the teeth means that the sawdust is pulled from the slot, rather than into it. Once the slot is cut, slide in the Mylar hinge - I use 'hairy' hinges for preference - and wick cyano into the original centrally drilled hole on both sides of the tape. The glue will be drawn right

in by capillary action. I've never had a joint fail, except in a crash, but in that situation it was the wood that failed, not the glued hinge.

The other 'saw' is the smallest, thinnest and finest device I've ever found. I bought it simply as a bit of fun, thinking it was little more than an ornament. Oh, how wrong I was! In fact, it's been a very handy razor saw that I keep finding new uses for. Ultra-fine teeth, extremely thin, very flexible and able to be used in tight spaces, I now wonder why I'd never come across it before and bought one. In fact, I bought two, passing one to mate Glyn who, after puzzling over it, has now begun to find 'couldn't do that before' uses for it. You might find that it'll become an 'I couldn't do without it' tool in your own armoury.

TAILSKID

To quote Mark Lawrence, from his science-fantasy novel 'The Book That Wouldn't Burn', "Old dogs can teach us new tricks. An old dog shuffles on, relentlessly happy, still interested in the world. Even when they're too worn out to run it's still there - no bitterness, no regret, no looking back, just on to the next thing with amiable confusion."

He could have been describing 'The Old Guard' in this fine hobby, in which category I now find myself. Many of us have a wealth of experience that we're only too happy to share. We just need to be poked awake now and then!

Send me an email: coetquidan@yahoo.com



Using the fine pull-saw to cut hinge slots is easy and quick. The pilot hole is perfect for wicking-in cyano for a good hinge/wood bond.



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Designed & Manufactured in England.

MvM Boomer Bus *Rapid Build*

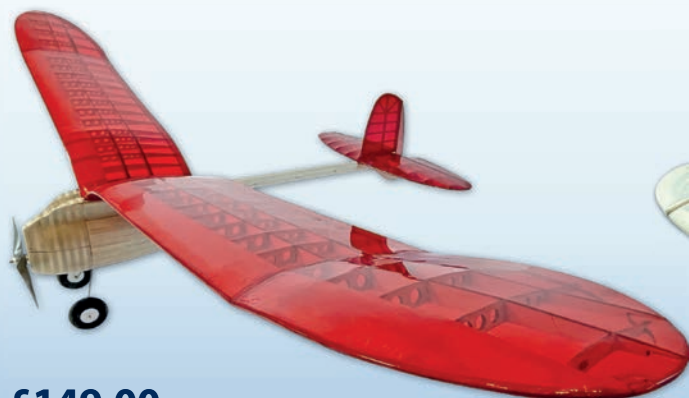
A truly sophisticated and gentle lady, with lines that could only have been created in the 1940s. Updated to use the latest electronics.

MvM's "Rapid-Build" building experience – This kit can be built in as little as two days (plus covering)

- Wingspan ~54" or 1370mm
- 3 channel – Elevator, Rudder and Throttle

Suggested Electronics – NOT INCLUDED

- Motor – D3536 – 1000-1450KV
- Esc 30A



£149.00

MvM SG38 Training Glider *Rapid Build*

This MvM kit is a semi-scale representation of the SG38 training glider. It includes all the wood, hardware, pilot and tissue covering needed to complete this amazing model.

- Wingspan – 1300mm – ~51"
- Slope Soarer or Powered Glider – with optional power pod
- 3-4 channel – Elevator, Rudder, Throttle (with optional Power Pod)

Suggested Electronics – NOT INCLUDED

- Motor 2406-2506
- Esc-20A



Available NOW!

£169.00

Vic Smeeds' Shove Ha'Penny

Traditional Build



£69.99

- Wingspan ~50" or 1270mm
- 2-3 Channel – Throttle, Rud, Elev

MvM Oldtimer *Rapid Build*

**from
£64.99**



- Wingspan ~42" or 1060mm
- 3 channel – Elevator, Rudder, and Throttle

MvM Oldtimer IC *Rapid Build*

**from
£64.99**



- Wingspan ~42" or 1060mm
- 2-3 channel – Elevator, Rudder, and potentially Throttle

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.



MvM Colonel Bowden Midget

Traditional Build

Get ready to wow your friends with this quick to build lovely plane.

Includes all the wood, acetate and hardware needed to complete this wonderful model. Although, you will need adhesives, tools motor, electronics etc.

- Wingspan ~23" - ~600mm
- Power 0.5cc Diesel or Equiv
- Free flight or Radio Controlled
- 2-3 Channel - Throttle, Rud, Elev

£69.00



MvM Cumulus v2 *Rapid Build*

Designed to be a powered glider, a thermal soarer or even a slope soarer, it ticks all the boxes.

Full wood pack and carbon pack. Requires hardware, electronics and coverings etc. to finish.

- Wingspan ~65.5" - ~1670mm
- Glider, Powered Glider, Slope Soarer
- 2-3 Channel - Throttle, Rud, Elev



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Introductory Offer
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MvM Howard DGA-3 Pete *Rapid Build*

£165.00



- Wingspan ~40" or 1000mm
- 4 channel - Ailerons, Elevator, Rudder and Throttle

1948 Bernard Gross Flying Wing *Rapid Build*

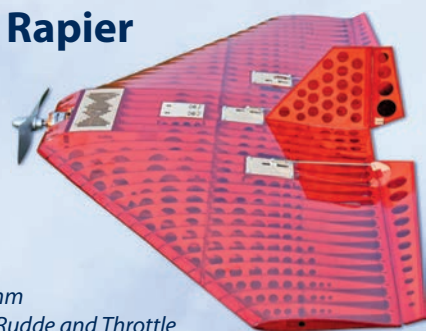
New V3.5
£255.00



Wingspan 94" - 2388mm 4 Channel - Elevons, Rudder and Throttle

MvM Delta Rapier *Rapid Build*

£129.00



- Wingspan 38" - 965mm
- 4 Channel - Elevons, Rudder and Throttle

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.

SEVENTY-ONE YEARS LATER



Do you remember getting one of your readers to identify a model from a 1954 copy of Radio Modeller? It was a 45-inch low wing free flight model called The

Linnet. I decided to build one. Seventy-one years after it was first published, I commenced building this twice size version.

John Taylor

LE TIMIDE

I am currently finishing up a very special R/C project. My model was built based on the original plans for Le Timide model, designed by Rene Jossien in 1949 and featured in the French MRA magazine. I converted it to R/C and installed some very lightweight electronics. The entire construction was done using manual cutting techniques, as was common at the time.

Pedro Luiz, Brazil



IN THE SWING

This is a Swinger 2, designed by Keith Jones, awaiting its first flight. The one I had in 1972 flew perfectly. What can go wrong!

Ken Rolph



DOUBLE DAUNTLESS

Jeff Barringer and I were both able to maiden our Nexa 81" wingspan SBS Dauntless models recently. Jeff had repaired the fuselage from an unfortunate crash I had on landing last season and he then scratch built a complete set of wings for it. Amazing job, Jeff!

I replaced the damaged fuselage with a new one and paired it with the original wings.

Both flew really well and we even managed a little loose formation flying. We are looking forward to more airtime with these models

David Ovenden



BUTTERFLY RESTORATIONS



I'm 26 and I've been involved in the world of model aircraft for 20 years. I own two very special models called the Parpar (Butterfly). These were developed and manufactured in Israel back in the 1980s. I have two of them; one is ready for its maiden flight and the other is currently undergoing restoration. I really connected with these models because I'm a fan of vintage aircraft and vintage O.S. engines. I'm attaching a few photos of the

blue model, the first Parpar, which is fitted with an O.S. 15 LA.

The second Parpar sat in an aviation club for five years. I've gradually started restoring the wings, removing the old covering and the engine. I'm about to build a new fuselage and refurbish the engine, an O.S. 25 FSR.

Tom Baron



URANI COMPLETED

I'm sending you a few pictures of the control line model I had talked to you about previously. (See construction photos of this model in this month's All Write letters pages. KC) It is ready but hasn't been flown yet. I will also have a go at converting it to R/C.

Alex Dalidis



MIX & MATCH

Kevin Crozier plays catch up on a variety of modelling topics

Words & Photos: Kevin Crozier

The review pages in RCM&E are invariably given over to model kits and larger items but as I wander through my modelling life, I invariably come across smaller bits and bobs that I think would be worth writing about. If I see something of interest then I try to take a picture or two of it to file in my ever-expanding RTFM folder. For this edition of 'Read The Flippin' Manual' I'm going to pick a

few subjects and hopefully they will be of interest to a good number of our readers.

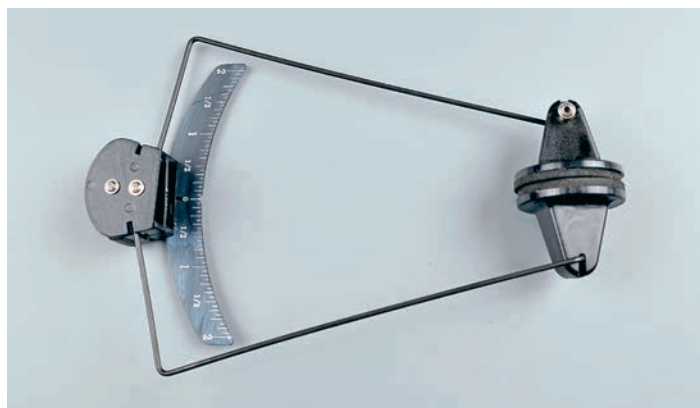
PENDULUM GAUGES

Mike Freeman's article earlier in this issue about making a pendulum style control throw gauge rang a few bells (see page 18). Looking inside said RTFM folder revealed that I had started a sub-folder on the very same subject back in late 2024. How time flies!

Inside were pictures of two control surface gauges. The first is a simple clip-on device which clamps onto the trailing edge of a wing, tailplane or fin, with the control surface to be measured sitting inside the arc of the device. The control throws can then be easily read off the curved rule which has metric and imperial markings on either side. These are widely available online, not least from several UK model retailers. Two examples are the Surface

Rob Bennett gives scale to the 80 inch plus long Slick 84 from Pilot-RC. Try swinging that fuselage around on its nose inside the average size house! See 'Prop Saver'.





Clip-on control surface gauge showing imperial measurements on one side of the arc.



Same gauge but this time showing the metric measurements on the other side which most modellers will probably opt to use.



Build it yourself pendulum gauge purchased via eBay but similar in style to Mike Freeman's DIY version shown on page 18.



Hip-Val square next to my father's well-used combination square. Although the original measurements are indistinct, they show up well on the modern 'see through' plastic ruler.

Deflection Indicator from 4-Max and the Pichler Surface Throw Meter C3360 from Model Shop Leeds. MSL also sell the Robbe Surface Deflection Indicator - Small 50611 which is similar in appearance but with measurements laser cut onto a plywood arc.

The second gauge is similar in style to Mike's home-made version but is a DIY assembly version that reader Hugh McQuiston put me onto when this topic was first discussed in an 'All Write' reader's letter from Fred Hodson in the October '24 issue. Hugh said, "...the device is a standard commercial product. (I've just bought two!) Search eBay and you'll get it."

Search eBay I did and there it was! However, Hugh concluded his message with the note, "The only problem is that the supplier is out of stock at the moment." Sad to say, getting on for two years later and at the time of writing, that still seems to be the case. I must have been lucky enough to have bought one when it was still in stock all those months ago.

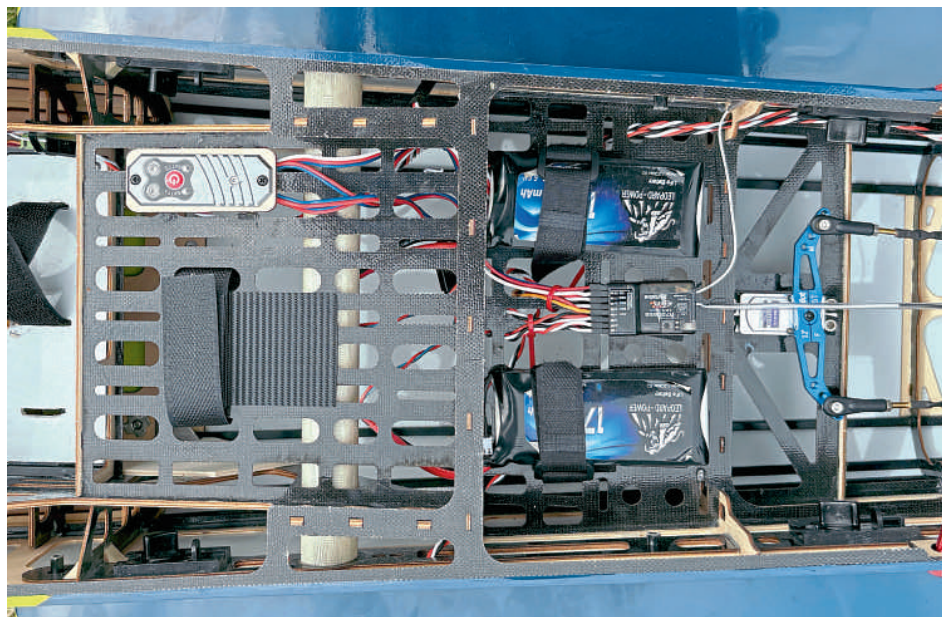
ALL SQUARE

However, having just discussed these gauges, and also championing Mike's neat home-made version, I must confess that I haven't actually put either of my gauges to good use. Indeed, the DIY one is still in pieces in its bag!

You see, for my simple purposes I still favour a good old-fashioned 'square' tool. For many years I marked the recommend control throws for a new model onto a lolly stick and rubber banded it to my late father's Combination Square, reversed so that the metal rule could be placed vertically close behind the control surface to be measured, with the heavy 'head' providing a broad base to keep the tool upright. Dad's tool was well used during his years as a coach builder so the measurements on the rule have become more than a bit indistinct, hence the use of a lolly stick banded to it marked with the required deflections. The rubber bands are useful in allowing the stick to be easily moved up and down so that the neutral mark sits



Hip-Val in use checking the aileron movements of the recently reviewed E-flite Sportix. Vertical measurements show up well whilst the T-beam base provides a flat support, raised to a suitable level on top of a can of coffee!



Modern composite aerobatic models make good use of fretted out carbon sheet parts. But each one of those holes could be a potential wire cutter!

directly behind the control surface when also at neutral. A picture close by shows it fitted with a cheap and cheerful plastic rule, which is another way of showing the measurements.

With the relatively small control movements needed for most sports models this simple solution works well, although some degree of accuracy is obviously lost when the control surface being measured arcs away from the straight edge of the rule.

Then, during one of my occasional visits to a local supermarket with its famous 'middle aisle' and their often-interesting tool offerings, I spotted a handy 'square' tool. Known as a Hip-Val or Rafter's Square it's main use is for marking angles on beams and rafters when making roofs. Hip-Val stands for Hips and Valleys. If you are interested in buying one, then you don't need to wait for the seasonal stock in your local supermarket as Hip-Val's are readily available from tool stockists.

A quick Google soon had me watching a video on how the angles are marked on roof beams, which is a simple process that may come in useful when marking out tricky angles on parts for a model. However, it was the clearly marked rule on the Adjacent side of the triangular tool that caught my eye, plus the broad beam on the Opposite side that would allow it to sit flat on a support when offered up to measure control throws.

The picture nearby shows it in use when I was setting up the ailerons on the recently reviewed E-flite Sportix. I simply use one of the main centimetre marks as my neutral reference point (8 in this case) and then read the deflections off, up and down, from there. Simple, eh?

For the rudder the scale can be laid flat underneath the trailing edge with neutral position lined up on number 8 and the control deflections noted as the rudder passes by on either side.

This method works well at settings of up to +/- 20 mm and with a bit of careful eye-balling it's fine up to, say, +/- 40 mm. This range more than covers the average sport model, but anything above that and you're probably into more specialist set ups such as the barn door settings used for 3D aerobatic models. So, for those, and where real accuracy is required such as when setting up a competition standard F3A aerobatic model, then it's probably time to invest in a proper deflection gauge.

Or even make one yourself using Mike's article, starting on page 18!

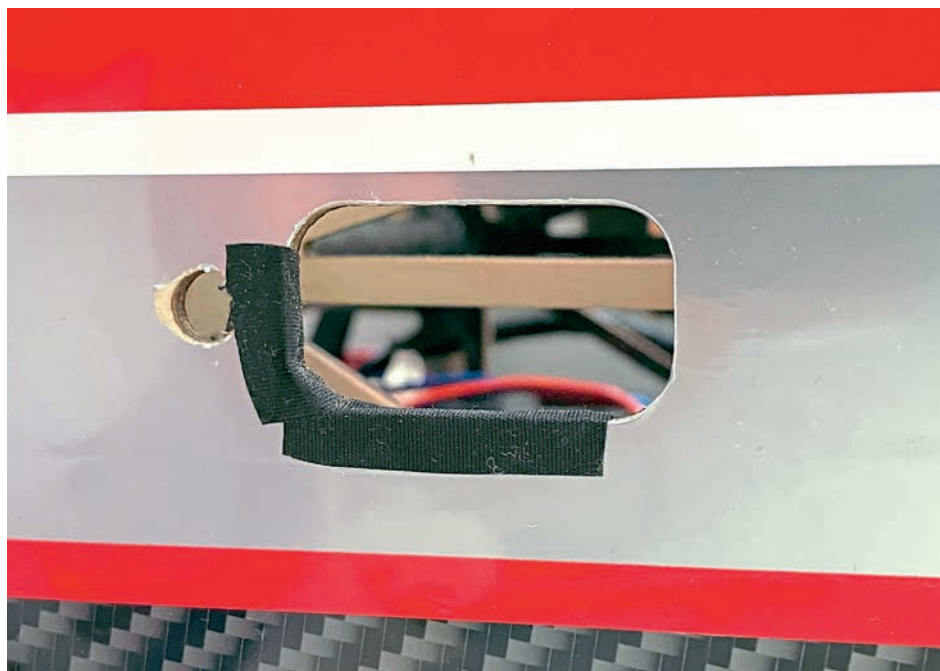
GUARD TAPE

Also in this issue is Rob Bennett's review of the Pilot-RC Slick 84 aerobatic model. Like many of its ilk the Slick uses a lot of hollowed out carbon panels in its fuselage construction. This is great for adding strength and reducing weight but the edges of all those holes in the 'black stuff' can be quite sharp. However, those same holes are also handy for dropping wires into or feeding battery straps through. All may be fine for a good few flights but there's a very real danger of the sharp edges starting to cut through anything that might rub up against them, including the relatively soft insulation surrounding servo extension wires.



After over a decade of use protecting the sharp edges of carbon model parts my roll of Nittotape is nearing its end. An excellent product while it lasted!

The best way to avoid this is to gently sand off any sharp edges of carbon that could come into contact with wires or retaining straps, as I always do when assembling the carbon mainframes of model helicopters. However, as I haven't assembled any helis for quite some time now, I haven't needed to do that onerous

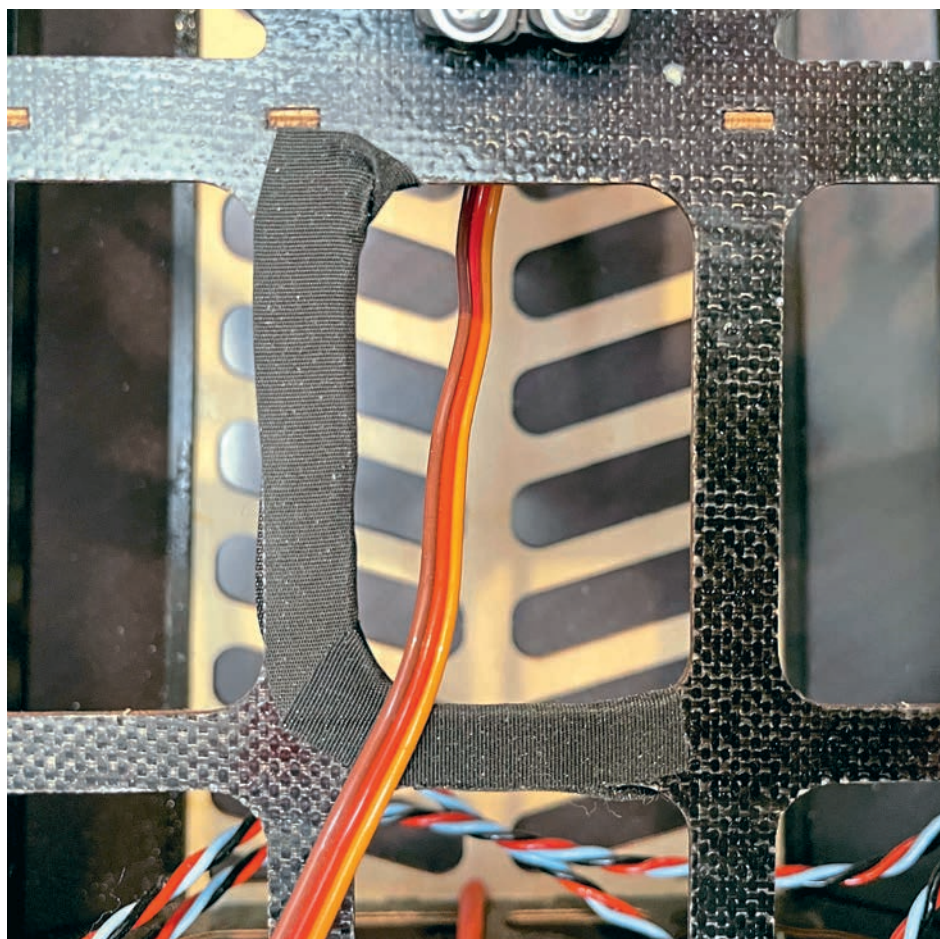


Guard tape in use wrapped around the edges of an aileron servo wire hole of an aerobatic model.

task, thank goodness. In any case, the hollowed out, lightweight construction of carbon parts used in a modern aerobatic model like the Slick tends to lead to many more holes than you'd ever come across in a model helicopter, in a wide variety of shapes and sizes. You'd be hard pressed to sand the edges of most of those

holes, even if you had the will power to try in the first place. So, what can be done?

The answer is Guard Tape, perhaps better known as wiring loom tape. Small strips of this can be folded over the edges of holes in the carbon sheet where you wish to pass wires or straps through, as can be seen in the pictures nearby. My favourite type of tape for this is a cloth tape called Nitto Tape from Japan. It sticks really well but, alas, as you can see in the picture of my roll, it is getting desperately near its end. I have had this roll in my heli toolbox for many years and it was originally supplied as a spare part by JR Heli Division when their helicopters were being distributed by MacGregor Industries. Sadly, it's no longer available from that source and the only place I can find it for sale in the UK now is on Amazon at a tidy £20 plus for a single roll! ➔



With all that tape offering protection this rudder servo wire is unlikely to get chaffed.



My trial box of Halfords Cloth Wiring Tape. Does what it says on the tin, err... box. It's good for wrapping wires but I'll leave it for guard tape duties for now.

Even then, I can't be sure that the tape shown in the picture is the cloth variety rather than Nitto's plastic insulation tape, so buying a roll at that price would be a bit of a leap in the dark.

This led me to look at other wiring loom tapes, beginning with a trip to my local branch of Halfords to check out their own brand of 'Cloth Wiring Tape'. However, this, like many other wiring tapes I have seen pictures of, has an open weave and is a lot thinner than the Nitto version. It was reasonably priced though, so I purchased a roll. I have yet to try it for 'guarding' holes in carbon parts, but it has come in handy for wrapping around servo wires where they pass through said holes - that's what it's designed for, after all! It seems less sticky than the Japanese tape, hence my reluctance to use it to protect the holes themselves, but it seems fine when wrapped around wires and stuck back onto itself.

I've just spotted another likely contender in the form of Tesa Extra Power Cloth Tape at just under £6 per roll. I've ordered some of that too, so I'll let you know how it goes as a protective guard tape for taking the edges off carbon sheet parts.

PROP SAVER

The Slick 84" is just over 80 inches long and it just about fits in the rear of my estate car with the back seats down. Things get even more interesting when moving it around indoors as there is little vertical space before the massive rudder starts hitting light fittings or the top

of door frames. This necessitates angling the fuselage a bit, at which point the large, spatted undercarriage is sure to catch on something, as will the prop blades, sounding their displeasure with a loud 'ping' as they are released from whichever object they find themselves caught on. So, models of this size and above are not for the faint-hearted. But, boy, do they fly nice!

Due to its size the Slick, along with a couple of other large models (well, they are large to me!), is far too big to leave in my house so they are hangared in self-storage. However, these large planes need to be dragged back to Chez Crozier from time to time, say to be prepped the night before a flying session or to make any set up changes, so they invariably spend a few hours cluttering up the hall or a spare bedroom at which time their big prop blades pose a bit of a danger, sticking out like a couple of blunt weapons ready to snare a passing leg. Previously, I have covered them with improvised sleeves made from loo roll centres with their ends folded inwards. The Slick's prop blades stick out more than most as it's quite a tall aeroplane, so I decided it was high time to treat myself to a few sets of properly made propeller sleeves.

The obvious place to start was the Hobbyplastic website, which is the retail arm of Pilot-RC's UK distributor, MacGregor Industries. On the Pilot-RC pages I espied

some nice-looking neoprene prop covers in bright colours: green for 18 – 20-inch props, orange for 26 – 29-inch props and red for 30 – 34-inch props. Supplied in pairs, they are very nicely made, being strongly sewn along their lengths and with neatly applied cuffs in contrasting colours to stop the open ends from fraying. Since I was really only interested in stopping the outermost ends of the propeller blades from jabbing into anyone as they passed by, I thought that the smallest covers would do just fine and so I ordered three sets, one for each of my largest models.

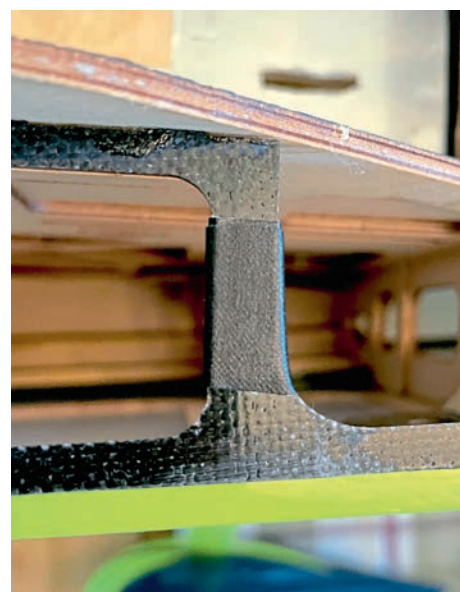
However, whilst the length of each prop blade is almost covered there is a bit of a problem in that the cuff area is waisted, meaning that the covers will not slip over the widest chord of each blade. They stop part way even when being fitted over large diameter, narrow chord APC e-props.

Some drastic action was required and so I fetched a pair of sharp scissors from the kitchen to cut the seams open until roughly halfway along each one. Sorry, Pilot-RC! This allows them to slide onto all the prop blades that I am worried about, those which could stick into people whilst their parent models are indoors, with the still sewn up sections covering up the sharp tips at each end.

What is needed, as well as quoting the diameters of each propeller that the various sizes are designed for, is the cuff widths too.



That big wooden prop looks lovely on the front end of the Slick 84, but those sharp ended blades need covering up whilst being moved around indoors.



It's a shame but needs must! After cutting the covers open along their seams up to mid-length each cover now reaches and protects the tips of each prop blade.



End to end shot of two Pilot-RC prop covers. Note how the cuffs are sewn to a smaller width than the mid chord of each cover.

I have asked MacGregor Industries for those measurements and will pass them on when I receive them.

Despite this set back I am very pleased with these soft neoprene covers and I can relax safe in the knowledge that whenever one of my big models is in residence its prop blades won't be the cause of a potentially nasty injury.

TESA, TRIED & TESTED

The Tesa Extra Power cloth tape that I mentioned earlier as a possible contender for guard tape duties has just arrived so I had a quick try at wrapping it around one of the multitude of holes in the Slick 84's carbon airframe. And it seems to work really well as shown in the picture above.

It's more the kind of tape that you would see reinforcing the binding of an old book. Indeed, that's one of the suggested uses shown on the box. The cloth weave is not so visible as with the Nitto tape but it's the stickiness that really counts and this tape seems just as good in that respect.

The only downside is that it comes in a disappointingly small roll. In the picture on Amazon, where I purchased my roll, the packaging looks much bigger than in real life. However you'll only need to cut it into small strips so at 38 mm wide and 2.75 metres in length it should last a good while.

Best of all, at £5.99 it's a lot more affordable than Nitto tape purchased via the same shopping website. ■

If you are planning an aeromodelling event over the next few months, then please send details - up to 100 words maximum - to Beth Ashby at: beth.ashby-njiiri@kelsey.co.uk
If you intend to visit any events listed, then please check with the organisers before travelling in case of any last-minute changes.

AUGUST

Aug 15-16

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

Aug 15-16

PSSA Fly-In at The Bwlch, Nant-y-Moel, Bridgend, South Wales. Kindly supported by the SWSA: <http://a470soaring.blogspot.co.uk/>. Meet at the 'Ice-Cream' car park for 10 am each day. Proof of BMFA (or equivalent) Insurance and Pilot Competency certificate required. All models to be fitted with compliant CAA OpID number. For more information contact Phil Cooke on 07772 224719, email webmaster@pssaonline.co.uk or visit <https://www.pssaonline.co.uk/about-us/events/>

August 16

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

Aug 22-23

Flair Fly Weekend at Banbury Model Flying Club, near Moreton Pinkney, North of Banbury. Rolled grass strip, plenty of parking and pits. Celebrating Flair Models kits with two days of relaxed flying, nostalgia and chatter. Camping available from Friday 21st. Any and all Flair designs from wellflown veterans to fresh restorations, plus other scale and sport models welcome. Free entry for all pilots and spectators this year supported by provisional funding from the BMFA for toilet facilities. Camping on site at £5 per night with running water and toilets but no electric hookup. BMFA insurance and proof of competence required to fly. Soft drinks, tea, coffee hot dogs and burgers will be available, proceeds to club funds. No LiPo charging facilities, but generators allowed. We hope to once again welcome Dudley and Jane Patterson, along with Flair designer Pete Nicholson, to join us over the weekend. For more information or to book camping, please contact Stuart at Banbury Model Flying Club: stuart.bmfc@gmail.com

Aug 22-23

14th Single Channel & Retro R/C Fly-in at the Pontefract Racecourse, WF8 4QD. what3words location: mostly.deed.token. Gates open at 8:30 am on both days and free camping available (email for details: aeromodeller@gmail.com). 22nd is an open fun-flying day (IC & electric) whilst the 23rd sees the actual S/C and Retro R/C event. Bring and buy on both days for modelling related goods (bring your own table). The theme this year for Sunday (if you want to get involved) is simply any model kitted in the 60s or 70s with a special category for unorthodox models such as canards, ornithopters, washboards, broomstick witches etc. of any size, scaled up or down, balsa or Depron, e-power or I/C. Get creative, get building and we can have a mass launch. Our club website is www.pandas.bmfa.org and more details available on www.mode-zero.uk and www.singlechannel.co.uk

Aug 22 - 23

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

Aug 29

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

Aug 30

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

SEPTEMBER

Sept 5

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

Sept 5 - 6

LMA Much Marcle Airshow at Much Marcle, Ledbury, HR8 2LX. Large Model Airshow with over

20 traders, swap meet, food/drink stalls, camping available onsite with evening entertainment (live music, bar and informal night flying). Children under 16 go free! Purchase advance tickets online now. Follow the LMA social media accounts or check the events page on LMA website for all updates and announcements.

Sept 5 - 6

Southern Model Show at Headcorn Aerodrome, Kent. Bring the whole family to the South East's best R/C model show, with something for all ages. Gates open between 9:30 am to 17:30 pm. Enjoy stunning flying displays throughout the day featuring expertly piloted model aircraft. On Saturday evening don't miss the Pyrotechnic Flying Display followed by fireworks. Our Bring & Buy will be operating both days; bring along your old models for us to sell. Alongside this there is a wide range of R/C model stalls, selling models, kits, tools and parts, plus plenty of food and drink options. Model cars and trucks will also be on display, with opportunities for everyone to have a go. Weekend camping is available, with facilities including showers, toilets (including accessible), water points and waste disposal. Well-behaved dogs are welcome on lead. For more information visit <https://headcornsouthernmodelshow.uk/about/>

Sept 6

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

Sept 6

Basingstoke MAC 21st Electric Fly-In. Gates open 9:00a m with a pilots' briefing 10:00 am and then the fun starts. Free entry, BBQ, hot & cold drinks plus an on-site loo, but we hope to get you to buy some raffle tickets. BMFA proof of insurance required, location and contact details at bmac.club/events or [@basingstokemac](https://www.facebook.com/basingstokemac) on Facebook.

Sept 12

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

Sept 13

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



Sept 19 - 20

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

Sept 20

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

Sept 20

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

Sept 25

UKCAA @ Buckminster (Classic Aerobatics) at BMFA NFC, Buckminster, Lincolnshire, NG33 5RW. Primarily a fly-in for pre-1996 aerobatic and similar airframes. There will be the usual Pick5 and Pick7 contests over the lunch break.

Sept 27

Marston Green Model Flying Club Autumn Swapmeet at Nether Whitacre Village Hall, B46 2EH. Well attended by well-known swapmeet traders and local club members. 30+ tables with hot food and refreshments available. Ample parking and easy access from the M42 and M6 motorway junctions. To book email mgmfc.committee@protonmail.com or visit our website mgmfc.bmfa.club

OCTOBER

Oct 4

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

Oct 10

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

Oct 11

LMA Gaydon Indoor Static Show at British Motor Museum, Gaydon, Lighthorne Heath, Warwick, CV35 0BJ. Large Model Static Indoor Display. Multiple traders, small swap meet, access to the British Motor Museum included in entrance ticket, onsite café. Tickets will be available online nearer the time via the British Motor Museum website. BMFA and LMA members receive

discounted entry when paying on arrival. Follow the LMA social media accounts or check the events page on LMA website for all updates and announcements.

Oct 11

White Sheet Radio Flying Club Scale Event. Back up date 18th October. Weather call will be the Friday before. For more information visit <https://whitesheet.bmfa.club/>

Oct 13

PMAC Swapmeet at Chelford Village Hall, Knutsford Rd, Chelford, Macclesfield, SK11 9AS. This is the very popular swap meet 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 on tim.cheal@btinternet.com

Oct 17

Delyn MFC Autumn Swapmeet at Halkyn Parish Hall and Library, just off the A55, junction 32B, CH8 8ES. wot3words: charmingly.costly.repaying. Doors open for sellers 8:30am, buyers 9:00am. Table price £3.00 with plenty of tables available. Entry for buyers and browsers £1.00. Loads of bargains, come and fill your boots. Unlimited parking. For table booking ring Bill Lowes on 07811 159191 or email Peter on Knaus321@gmail.com.

Oct 18

Beverly and District MAC Autumn Swapmeet at Tickton Village Hall, Tickton, Beverley, East Yorks, HU17 9RZ. Doors open at 9:00am, teas and coffees available, entry fee £2 on the door. Tables £5 which includes one helper. To book a table contact Simon Tweedale on simontweedale66@gmail.com or call 07753 856758.

Oct 17-18

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

Oct 25

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

Oct 25

Rolls Royce (Hucknall) Model Aircraft Club Swap Meet at the John Godber Centre, Ogle St., Hucknall, Nottingham, NG15 7FQ, just a few minutes away from Junctions 26 and 27 on the M1 motorway. We are returning to this fantastic venue with lots of free parking and easy access for what we are sure will be our best swap meet yet. Set up from 9:00 am and entry at 10:00 am until 1:00 pm, with refreshments available. Traders are £5 per table with one person and

normal entry is £2. Book your table now by calling Ivan on 07858 913525.

NOVEMBER

Nov 1

Southern Counties Autumn Swapmeet at Mountbatten School, Romsey, Hampshire, SO51 5SY. One of the largest swap meets in Southern England with over 50 tables. Sellers with a booking admitted from 8:00am. Buyers from 8:30am onwards. Noon finish. Admission only £5, 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 1

Retford Winter Swapmeet at Carlton-in-Lindrick Civic Centre, Oakham Drive, Carlton-in-Lindrick, Worksop, S81 9RE. (what3words: blog.otherwise.nurse). Table set up from 8:30am till 9:15am, tables supplied. Pre-booked tables £7. On the day £8. Admission £3. Doors open at 9:30am till 11:45am. Hot sandwiches, tea and coffee available. For further information and booking contact Lee Davies on 07900 156803 or email lee301269@gmail.com or visit www.rmfc.bmfa.uk

Nov 1

White Sheet Radio Flying Club Scale Event. Back up date 22nd November. Weather call will be the Friday before. For more information visit <https://whitesheet.bmfa.club/>

Nov 14

Tonbridge Gassers and Rubber Fanciers Indoor Flying at Kings Sport Centre, 601 Maidstone Road, Rochester, ME1 3QJ. From 6:30pm until 10:00pm. 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 15

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

Nov 15

Horam Swap Meeting at the Horam Village Hall. Horam East Sussex TN21 0JE. What3Words: self.planting.brave. Doors open to sellers 08:00-12:00 with a table and one person costing £9.00. Buyers, £3.00 from 09:00-12:00. Usual refreshments and delicious bacon rolls. Come and grab a bargain or catch up with friends. Booking ESSENTIAL. Contact Robert Richardson: rob.richardson@talktalk.net

Nov 29

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

DECEMBER

Dec 6

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

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Next issue



MB-326K IMPALA

Back in the September 2024 issue of RCM&E, Phil Stone wrote a build article for a Correx PSS Hawk T1 which stretched over the subsequent two issues. If you found it of interest, or have just discovered Correx as a building material, and are looking for something new to build then you might like to have a go at an

Aermacchi MB-326K Impala. This time, to make things even easier, the designer of the model, Jim Beagle, has very kindly allowed RCM&E to publish his drawings as a pull-out plan. Phil says, "You should find the Impala a relatively straightforward build and one that flies remarkably well given its basic construction."



SCALE WORLD CHAMPIONSHIPS

With the editor unable to undertake long journeys due to a hopefully soon to be resolved knee condition, he asked a group of three reporters and photographers to cover the Scale World Championships which were hosted at BMFA Buckminster in mid-summer. With over 5,000 pictures taken by RCM&E's intrepid team, manned by Danny Fenton, Mike Freeman and Barry Atkinson, then it will take a bit of time to whittle them down and submit articles from the Championships, which we will feature over the coming few issues. At the time of writing, we are still eagerly awaiting the first articles from Danny and Mike (we already have Barry's pictures!). But we will publish them as soon as we can, hopefully starting in the October issue.

TONY RAY TIGER MOTH

When Tim Kearsley was asked by the editor if he would like to review what, in his words, was a "real builder's kit", Tim was immediately interested. Not being familiar with the kits coming out of Tony Ray's workshop he was rather intrigued and quickly said yes. Supplied by Model Shop Leeds the kit is a 1.5 metre span, sixth scale, detailed model of the de Havilland DH82 Tiger Moth. The laser cutting is good and the other varied materials are of equally good quality. Tony makes use of Pawlonia wood, something that Tim wasn't familiar with. There's a comprehensive 108-page instruction manual online and two large plan sheets complete the kit contents. For the review the optional cockpit kit was also included.



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Marketplace is a free ad service (no commercial advertising please) for our readers to sell modelling related items such as models, kits, engines and R/C gear etc. Each ad should include a short description of each item, up to 150 words, along with your best contact number, the price you would like and the county you live in. Wanted ads are also welcome. Please send your Marketplace ads to: beth.ashby-nijiri@kelsey.co.uk

FOR SALE

RCM&E 2014 PLAN RC2137, Jocasta N25400, 1.76m wingspan built and RTF but never flown. Includes Spektrum DX6 transmitter in metal carry case. 3 x 3S 3300 mah batteries with charger in fire retard carry bag. 2 spare props. Fully wired ESC, motor, Rx, 4 servos. No elastic bands to hold wing on. As seen £150 ono, buyer to collect. Pictures available. Please email peter@prussell.f9.co.uk (Gloucestershire).

MAGAZINES FOR SALE, RCM&E, RCMW, Radio Control Scale Aircraft, Radio Modeller, Silent Flight, Tamiya Modellers Magazine, Scale AMI, SAM – offers? 07596 541919 (Bedford).

HANGAR-9 PIPER PAWNEE, 80" span, electric. Just add battery and transmitter - £200. Augusta 109 helicopter, Hirobo Freya mechanics, OS91 engine, digital servos, flybarless AR7200BX retracts - £600, buyer to collect. 07955 766244 (East Anglia).

DREAM FLIGHT WEASEL slope soarer requires receiver pack and receiver good condition £45 / £5 P&P. Call Steve on 07757 277166 (York).

TOP FLITE CORSAIR 60", unflown, retracts, servos and plan - £175. Fitted with RCV90SP four-stroke, run in only, original box - £125. Can sell airframe and engine separately if required. Buyer to collect, photos available. 07818 481941 (Berkshire).

22 VINTAGE & OLD AERO ENGINES & PROPS, all will need cleaning and recommissioning. 5 x Cox 30s, 2 x PAW, 3 x ED, 1 x King Cat, 2 x AM, 2 x Mills, 3 x DC, 1 x Irvine 20 ABC with tuned pipe – offers? Balsa Cabin Sonata 3 in 1 kit - £75. Call Keith on 07548 203834 (Wilts).

SPITFIRE MK IX TOP-FLITE USA, for 0.61 - 0.91 engine, RAF camouflage Futaba servos, Robart retracts, Pete's Pilot, glass skinned. Good flyer. For details and photos call David Smith on 07720 848548 (Lincs).

QUARTER SCALE STAMPE, built, just needs covering, radio and engine. Set up for Laser 150, engine available. Stampe kit now sells for £362 – offers? Proctor Nieuport 11, also built and requires covering, engine and radio – offers? Delivery possible. 01508 970541 (Norfolk).

STEARMAN PT-17 STERLING MODELS USA, trainer colour scheme, 64", tex covered, good detail, excellent flyer, fitted Laser engine - £275 ono. For details and photos call David Smith on 07720 848548 (Lincs).

BEECHCRAFT D17 stagger wing, unstarted scale biplane project. Complete kit, aluminium cowlings, plans and all balsa parts, 1422 mm wingspan, rare kit - £275 plus P&P. Call Rob on 07791 268498 (Telford).

HOBY CAT GLIDER ready to fly, very rare, made by the makers of Hoby Cats full sized catamaran sailing boats. Never seen another. Polystyrene protection box. Photos available – offers? 07718 464066 (Poole).

RUDDER BUG vintage electric plane, outrunner motor, red and white by engineer. Photos available. Several beautiful seaplanes, all electric and with 4ft span – offers? 07718 464066 (Poole).

MAX THRUST V2 electric aircraft, never built or flown. Battery included, 140 cm wingspan. A lot of aeroplane - £240. Call Adrian on 07593 364486 (Bucks).

HIROBO SHUTTLE PLUS 95% built, Irvine 36H, Sanwa R06000 Sport 35 MHz. Everything included to finish. Field box, power panel, training undercarriage, head loaders, instructions and manuals. All new and unused - £120. Buyer to collect. Call Mick on 07539 572200 (Kent).

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

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

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

WANTED

GOLDBERG JUNG MANN kit, in box. Great Planes Super Skybolt ARTF in any condition. Great Planes Shoe String, fibreglass version. Top prices plus postage paid! Call Conor on 08573 17939 (Dublin).

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

ALL R/C MODELS WANTED, new or old, planes, gliders, kits, engines, boats, cars, radios, complete collections or job lots, countrywide collection. No hassle, cash buyer. Call David on 07940 791959 or email desertteagle357@hotmail.com (Clevedon).

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

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

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PARTING SHOT



GET OFF THE STRIP!

It was fabulous to see Steve Kilbon's 1/6th scale, five metre wingspan Avro Vulcan flying at the 2026 Weston Park Model Show - the model's first public outing.

As I was going through the photos I had taken, I was amused by this shot where Steve was having to yaw the model into a feisty crosswind. Although Steve had the model lined up on the strip's centreline the yaw

made it look like it was flying straight at me... RUN!

In the lower picture, Steve gets plenty of exercise pushing the 91 kg Vulcan along the Weston Park flight line. This awesome model will be the subject of a 'Model Magic' feature in a forthcoming issue of RCM&E.

Mike Freeman



DATAFILE

Camera:	Nikon D500
Lens:	Nikon VR 70-200mm f/2.8E with 1.4 x teleconverter
Aperture:	f/4
Shutter Speed:	1/1600 s
Exposure Mode:	Shutter Priority
Focal Length:	270 mm
ISO:	400
Focus Mode:	AF-C
Metering:	Centre Weighted
Exposure Comp:	0 EV



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MGB8555HV



S: 0.12sec/60° (8.4V)

T: 54.7kg.cm (8.4V)

D: 40 x 20 x 39.1mm

W: 85g

£134.95

MGB8346HV



S: 0.10sec/60° (8.4V)

T: 38.0kg.cm (8.4V)

D: 40.6 x 21 x 37.6mm

W: 83.7g

£114.95

MGB6928HV2



S: 0.05sec/60° (8.4V)

T: 28.0kg.cm (8.4V)

D: 40 x 20 x 39.8mm

W: 89g

£109.95

MGB5216HV



S: 0.08sec/60° (8.4V)

T: 16kg.cm (8.4V)

D: 36 x 15 x 33mm

W: 52g

£89.95

MG7232HV



S: 0.09sec/60° (8.4V)

T: 31.5kg.cm (8.4V)

D: 40.5 x 20.5 x 36mm

W: 72g

£73.95

MG5921HV



S: 0.123sec/60° (8.4V)

T: 20.32kg.cm (8.4V)

D: 40.5 x 20.5 x 36.5mm

W: 59.3g

£38.95

MG2810HV



S: 0.07s/60° (8.4V)

T: 10.0kg.cm (8.4V)

D: 35 x 15 x 29mm

W: 28g

£38.95

MG2611WHV



S: 0.10sec/60° (8.4V)

T: 11.0kg.cm (8.4V)

D: 30 x 10 x 35.5mm

W: 26g

£42.95

MG2107WHV



S: 0.10sec/60° (8.4V)

T: 6.6kg.cm (8.4V)

D: 25 x 8 x 34.3mm

W: 21g

£44.95

MG5510DS



S: 0.12sec/60° (6.0V)

T: 9.98kg.cm (6.0V)

D: 40.5 x 20.2 x 40.5mm

W: 55.6g

£23.95

MG1703DS



S: 0.10sec/60° (6.0V)

T: 3.3kg.cm (6.0V)

D: 30 x 12 x 32mm

W: 17g

£14.95

MG1003DS



S: 0.10sec/60° (6.0V)

T: 2.5kg.cm (6.0V)

D: 23.2 x 12 x 25.5mm

W: 11g

£8.95

PG4906DS



S: 0.12sec/60° (6.0V)

T: 6.2kg.cm (6.0V)

D: 40.5 x 20.2 x 38mm

W: 49g

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The Venture is equipped with a 3536-KV1050 brushless motor and a 40A ESC, compatible with 4S LiPo batteries. With a thrust-to-weight ratio of 1.5, it can easily perform vertical climbs, loops, knife-edge flight and other maneuvers. The aircraft comes standard with flaps, enabling ultra-short takeoff and landing capabilities. Navigation LED lights on both sides of the wing deliver a cool visual flying experience even in low-visibility conditions. The front landing gear features a CNC-machined shock-absorbing structure with wear-resistant tires, ensuring solid build quality and long-term durability. The two-piece fuselage design keeps the packaging size significantly smaller than other models in its class, helping to reduce shipping costs. The wing features a segmented design with quick-lock mechanism and detachable struts, allowing for fast field assembly and disassembly, which greatly enhances portability and ease of use.

SPECIFICATIONS:

Wingspan:	1300mm/51in
Overall length:	1010mm/40in
Flying weight:	1580g
Motor size:	3536-KV1050
ESC:	40A
Servo:	9g MG servos x7
Channels:	5CH - aileron, elevator, throttle, rudder, flap
CG:	65mm from the leading edge
Wing load:	63g/dm ²
Wing area:	25dm ²
Recommended battery:	4S 2600-3300mAh
Approx flying duration:	10 mins
Assembly time:	15 mins
Skill level:	Intermediate
Age level:	14 years +
Flap:	Yes
Retract:	No
Propeller Size:	10x6 2-blade



Part Number: PN XF128P 1.3m Venture

RRP: £219.99

IN ACTION!



SEE IT



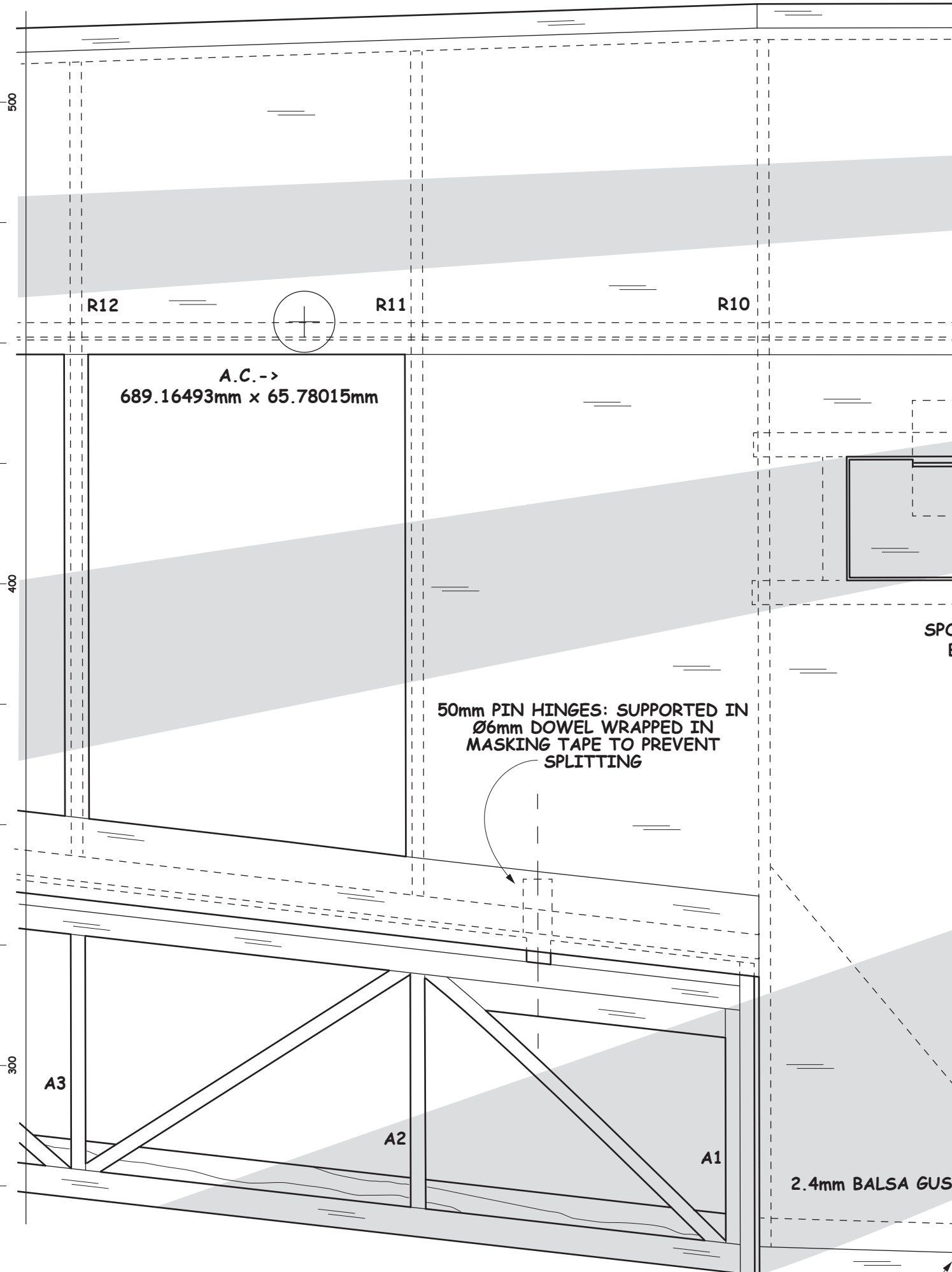
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GULL BREAK HERE

3mm SQ. SPRUCE SPAR
RETROFITTED IN FRONT OF
THE 0.6mm WEB PLATES

R9

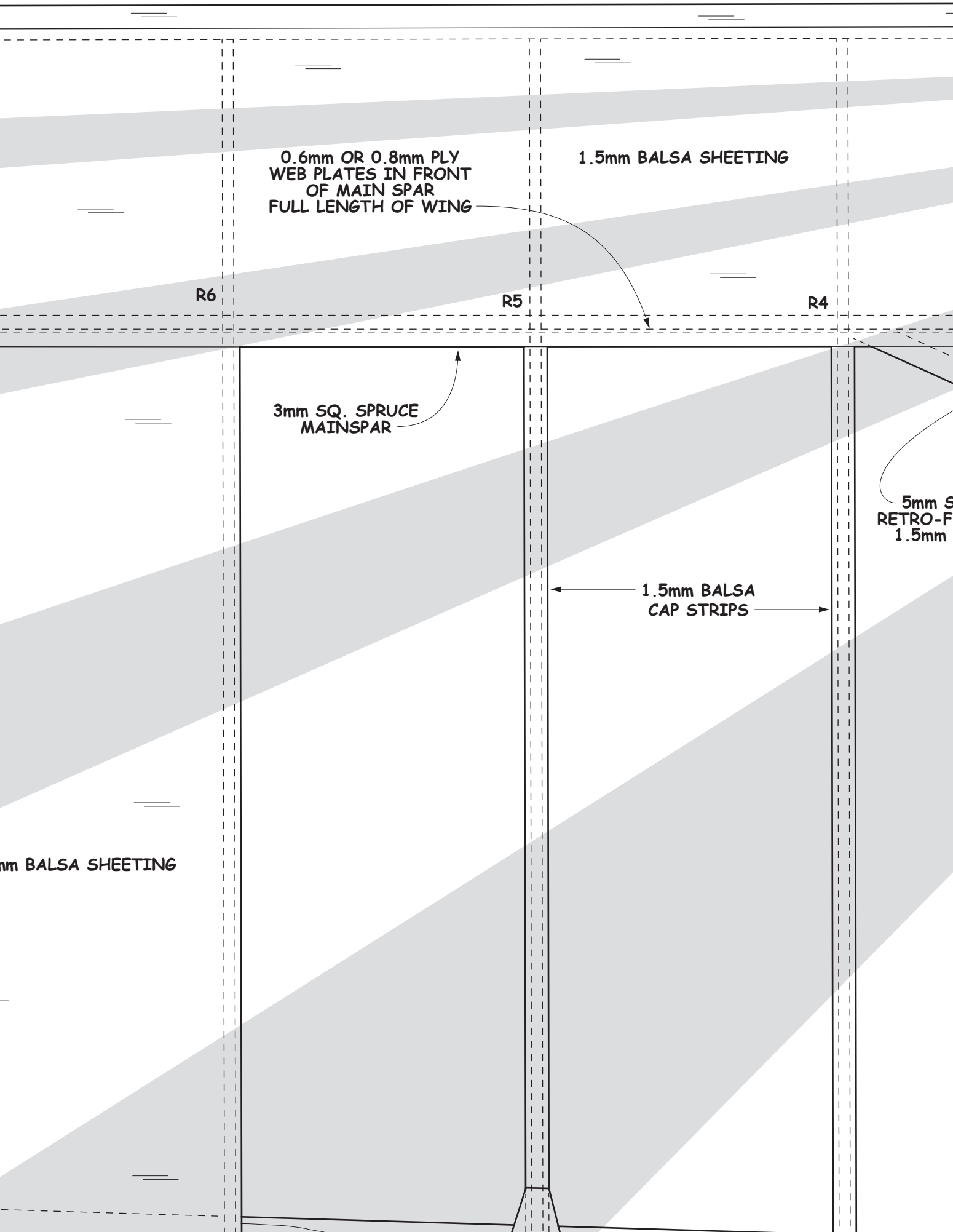
R8

R7

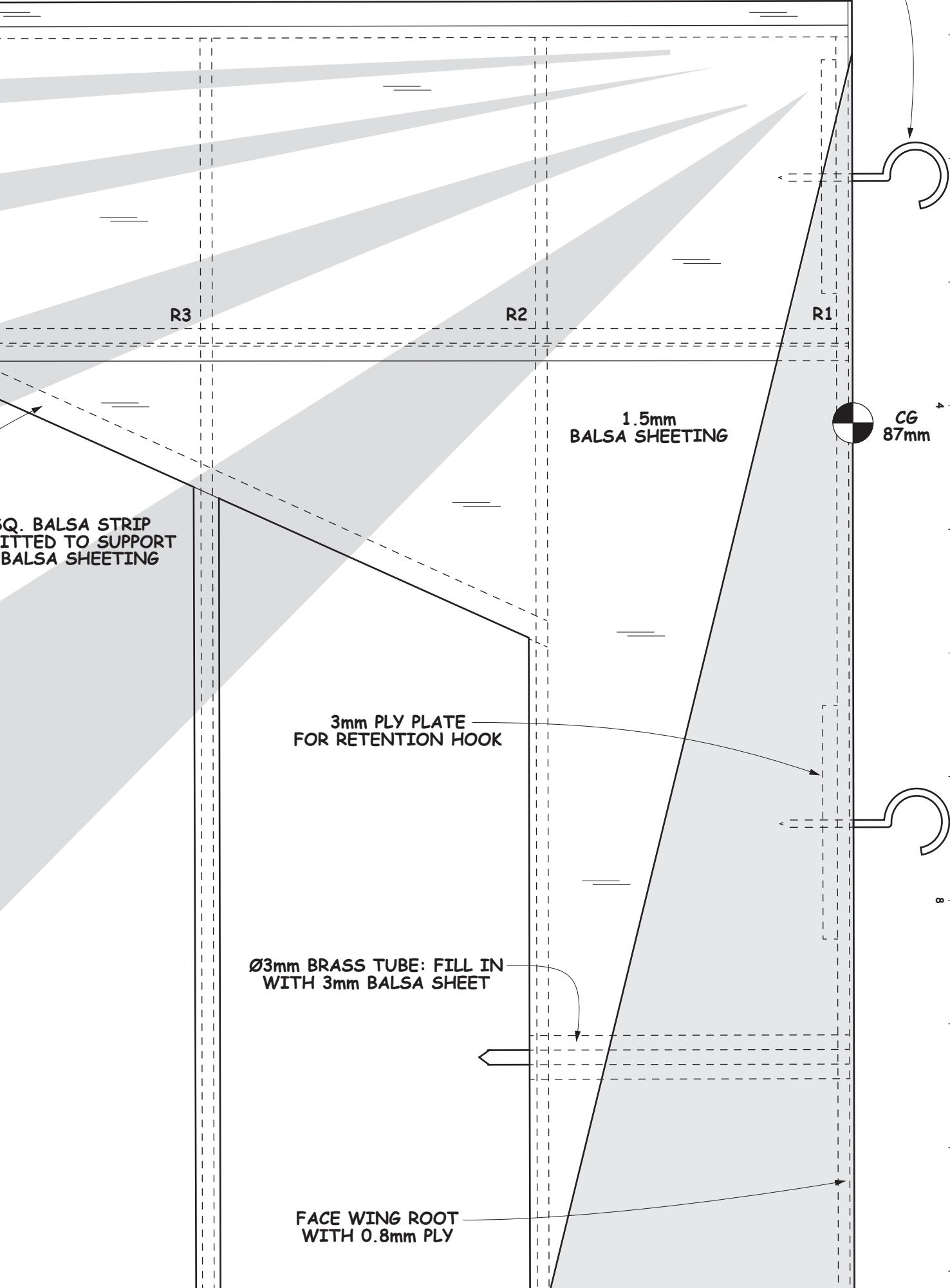
MODIFIER FROM 0.6mm PLY LAMINATED
BOTH SIDES WITH 1.5mm BALSA

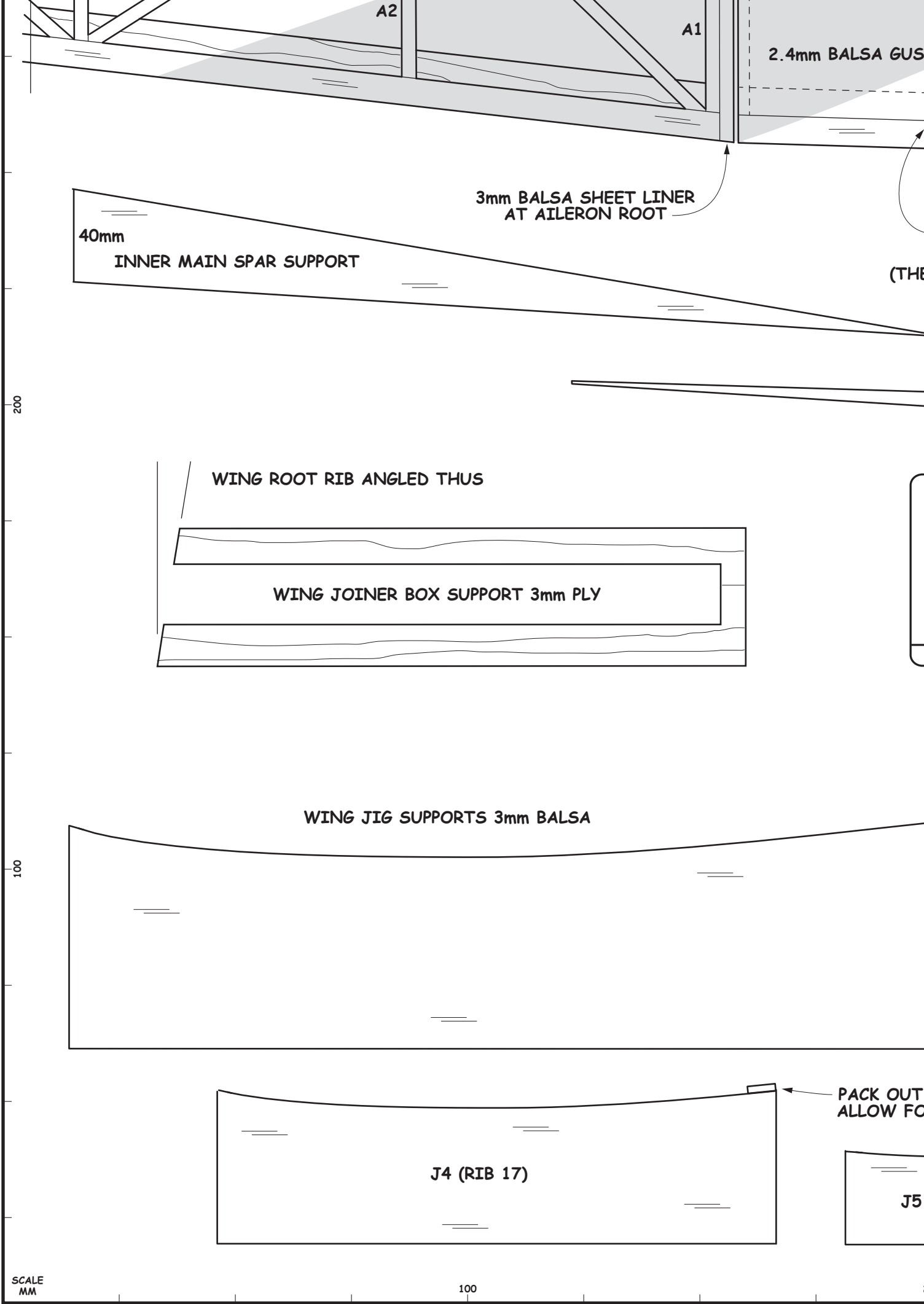
1.5mm BALSA SHEET

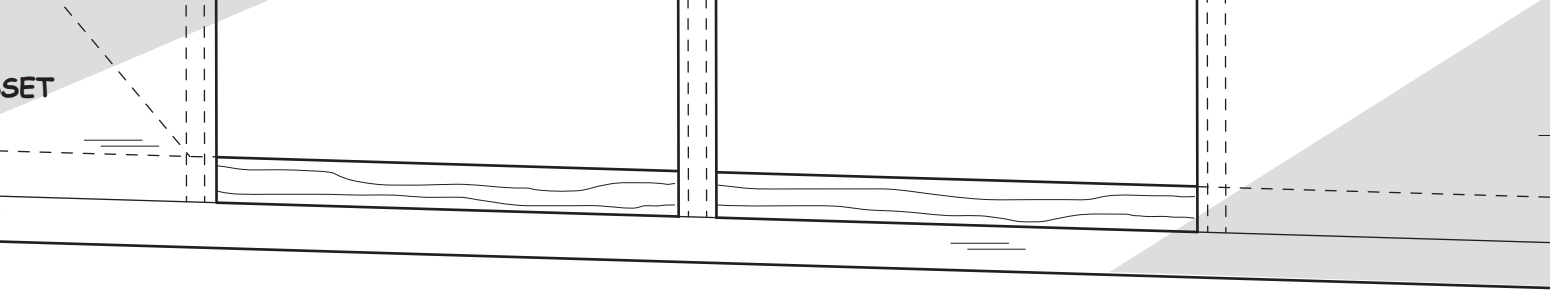
SET



HOOKS FOR RUBBER BAND
WING RETENTION







— T.E. 1.5mm x 12mm SPRUCE LAMINATED WITH 5mm SQ. BALSA. PIN TO GULL SUPPORT
AFTER STEAMING IN THE BEND & ADD BALSA STRIP TO FORM MOST OF THE GULL SHAPE.
E T.E. WILL ASSUME ITS FINAL CORRECT SHAPE AT THE END OF THE CONSTRUCTION PROCESS)

RCM&E

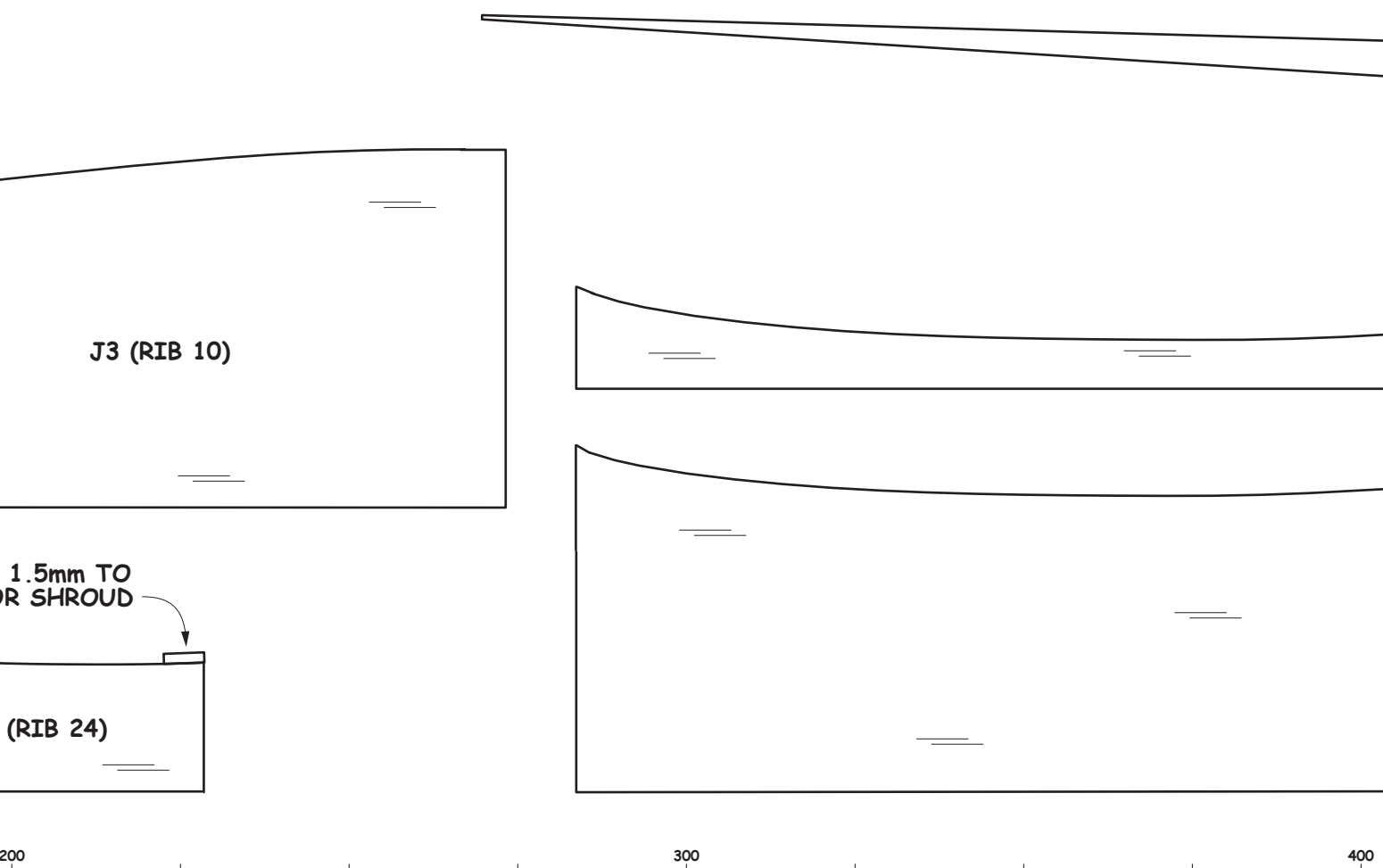
SPERBER JUNIOR

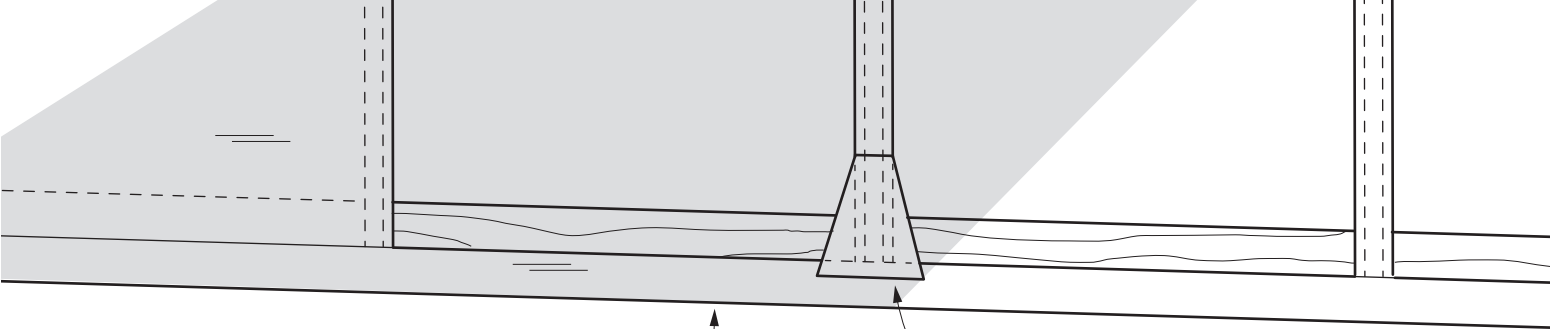
DESIGNED BY CHRIS WILLIAMS

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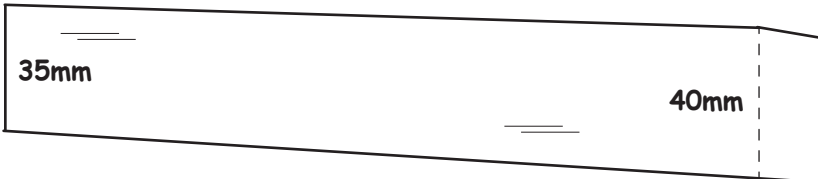
SS)

PACK UP T.E. 3mm DURING INITIAL CONSTRUCTION

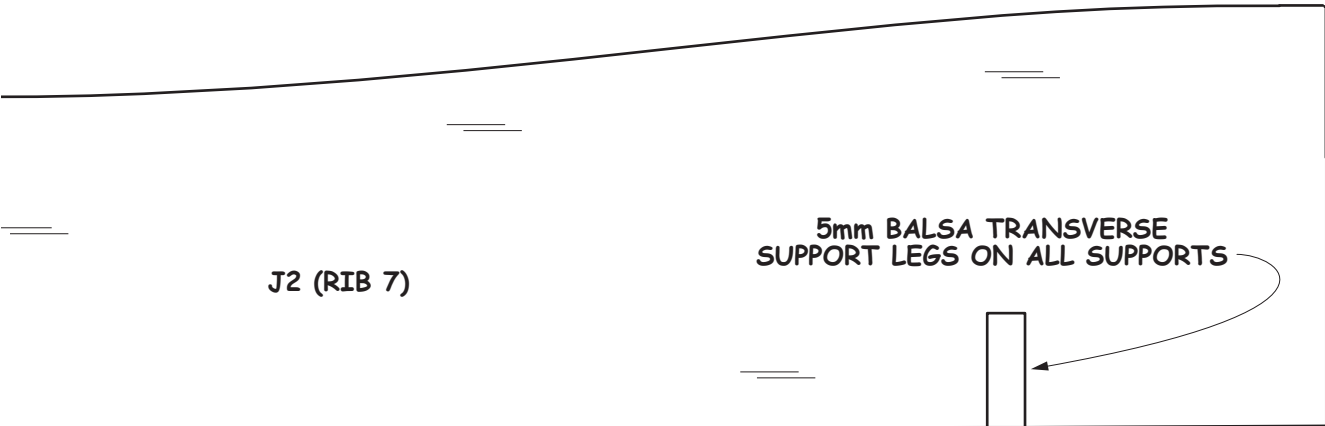
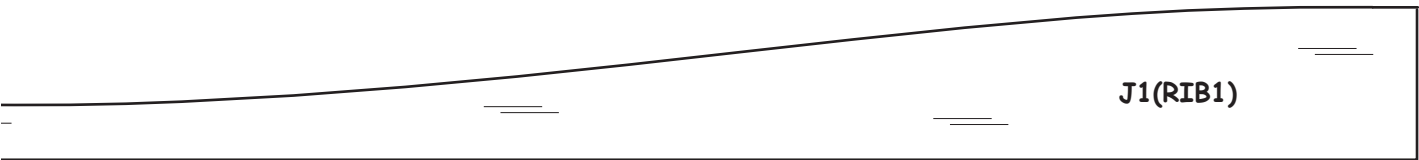
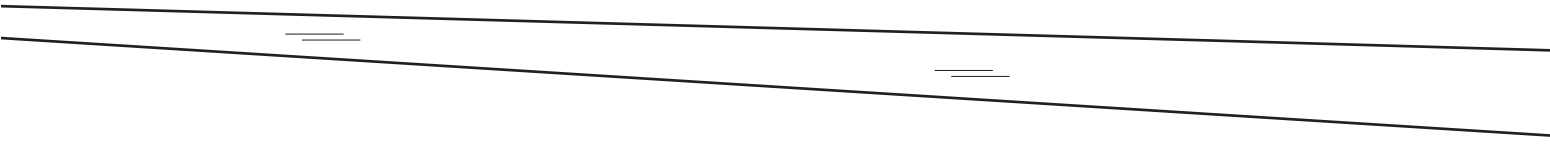
OPTIONAL 0.6mm OR 0.8mm PLY GU...
FEATHER OUT ON TE

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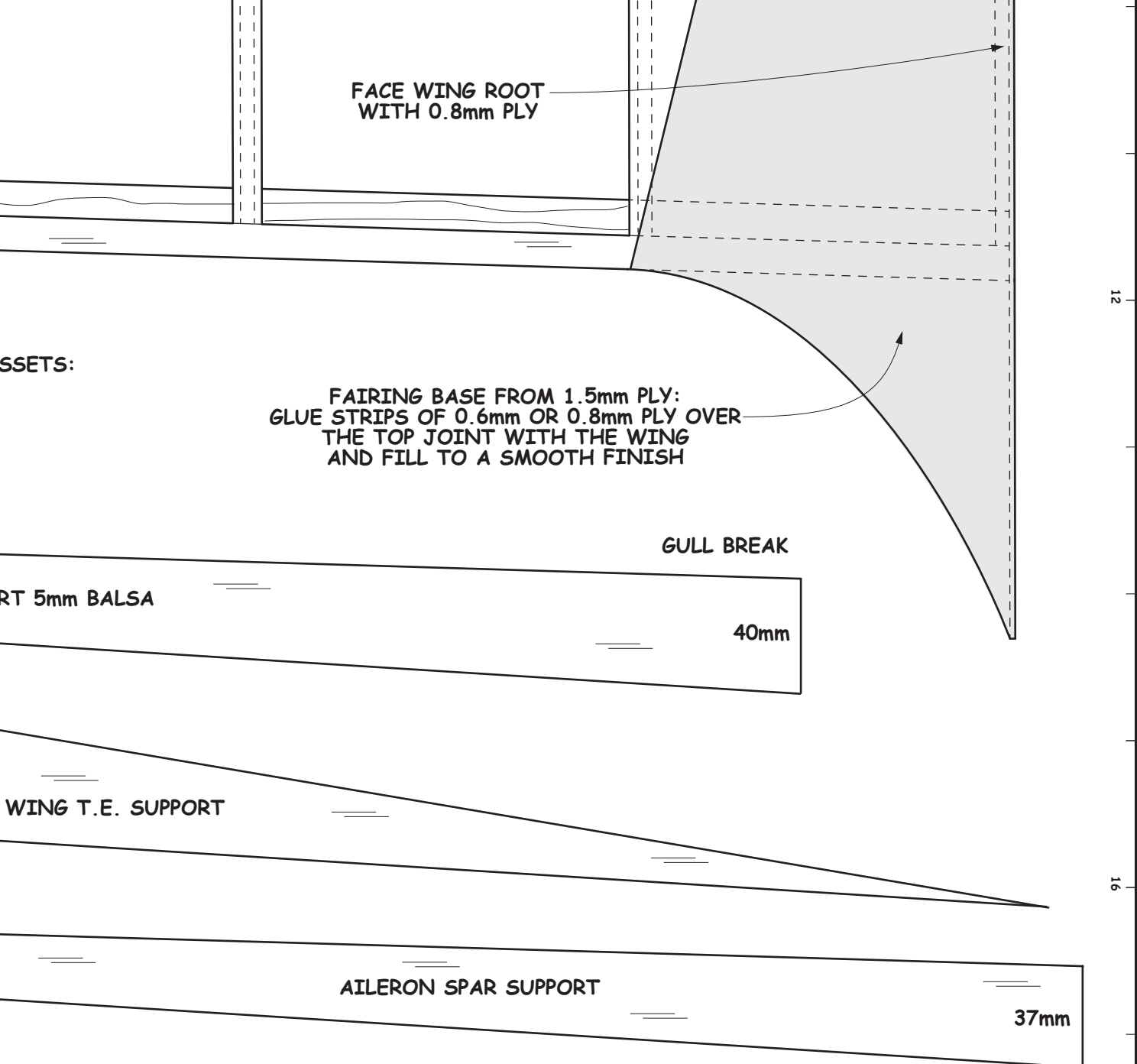


OUTER MAIN SPAR SUPPORT



400

500



BASIC WING CONSTRUCTION SEQUENCE

NOTE: THE WING IS DESIGNED TO BE BUILT WITH NO JOINS IN ANY OF THE MATERIALS AT THE GULL BREAK. THE ONLY SPLICED JOINS REQUIRED ARE TOWARDS THE TIP, WHERE STOCK LENGTHS OF 3mm SPRUCE FINISH

- 1: PIN T.E. TO PLAN, ADD LOWER SPAR FLAT TO THE PLAN AND RIBS
- 2: LAY LOWER SPAR & T.E. OVER GULL JIGGING SUPPORTS AND ADD UPPER SPAR
- 3: ADD 6 OFF 0.6mm OR 0.8mm PLY WEBBING PLATES TO LOCK THE SPARS TOGETHER, WITH 2 EITHER SIDE OF THE GULL BREAK
- 4: ADD THE REMAINING WEBBING PLATES AND THE WING JOINER BOX
- 5: CUT NOTCHES IN THE RIBS AND RETROFIT THE 3mm SQ. SPRUCE SUB-SPARS IN FRONT OF THE WEBBING PLATES TO FORM A SPAR WITH WITH A VERY STRONG 'H' SECTION
NOTE: SUB SPAR NEEDS ONLY BE STOCK LENGTH, FINISHING BEFORE THE TIP
- 6: ADD LOWER D-SECTION SHEETING
- 7: PLACE WING ON JIGGING SUPPORTS AND ADD REMAINING TOP D-SECTION SHEETING

28

24

D2

D1

TRIM DIAGONAL RIBS TO FIT

R22

R21

ROUNDED OFF L.E. ROTARY
INSIDE AILERON SHROUD

5mm Balsa L.E.

A13

A12

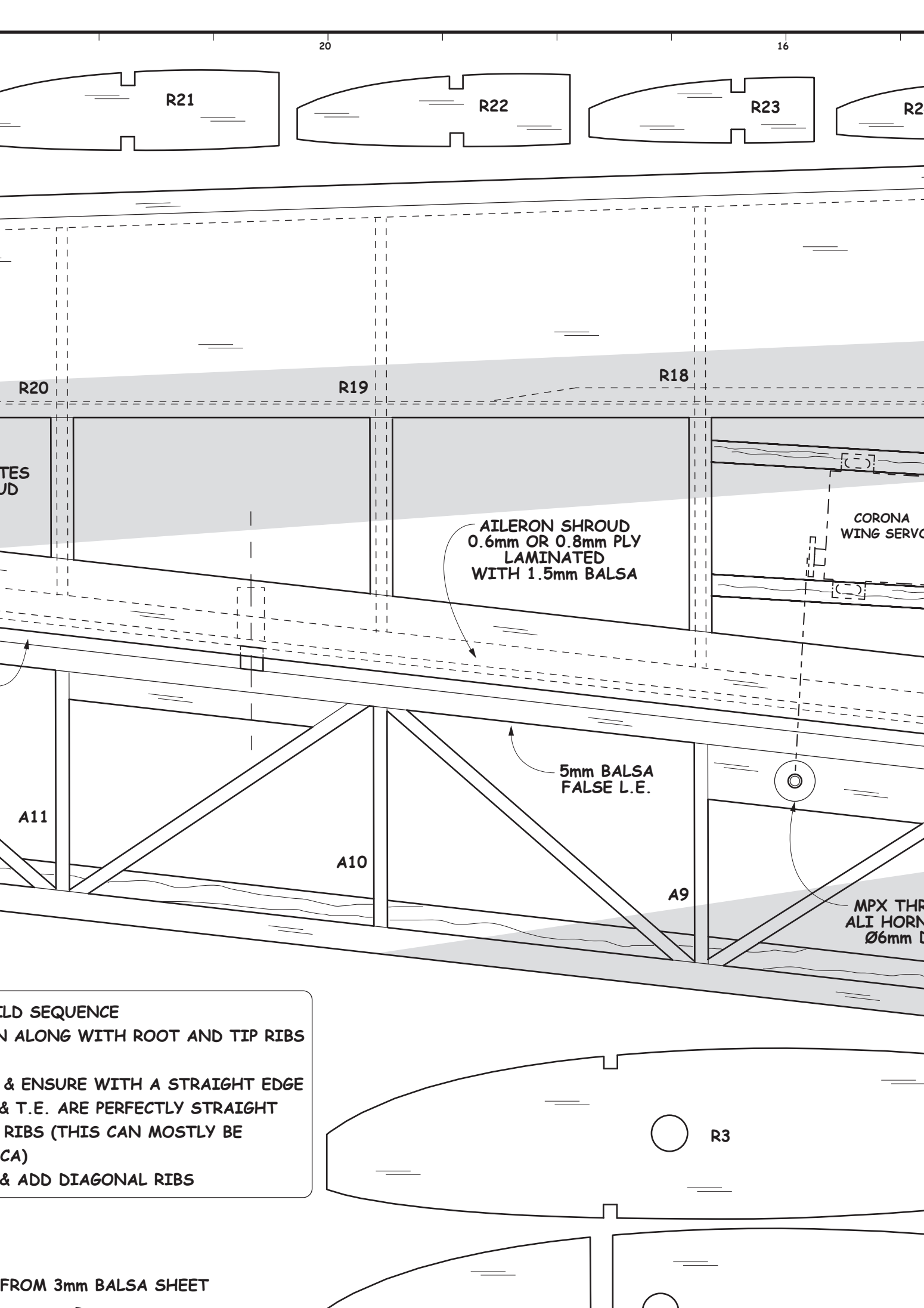
SOLID Balsa TIPS

R24

R23

- BASIC AILERON BUILD**
- 1: PIN T.E. TO PLANESHEET
THEN ADD L.E.
 - 2: ADD CENTRE RIB
THAT BOTH L.E. & T.E.
 - 3: ADD REMAINING
ACHIEVED WITH
 - 4: OFFER UP, TRIM

AILERON RIBS



20

16

R21

R22

R23

R2

R20

R19

R18

TES
UD

AILERON SHROUD
0.6mm OR 0.8mm PLY
LAMINATED
WITH 1.5mm Balsa

CORONA
WING SERV

A11

A10

5mm Balsa
FALSE L.E.

A9

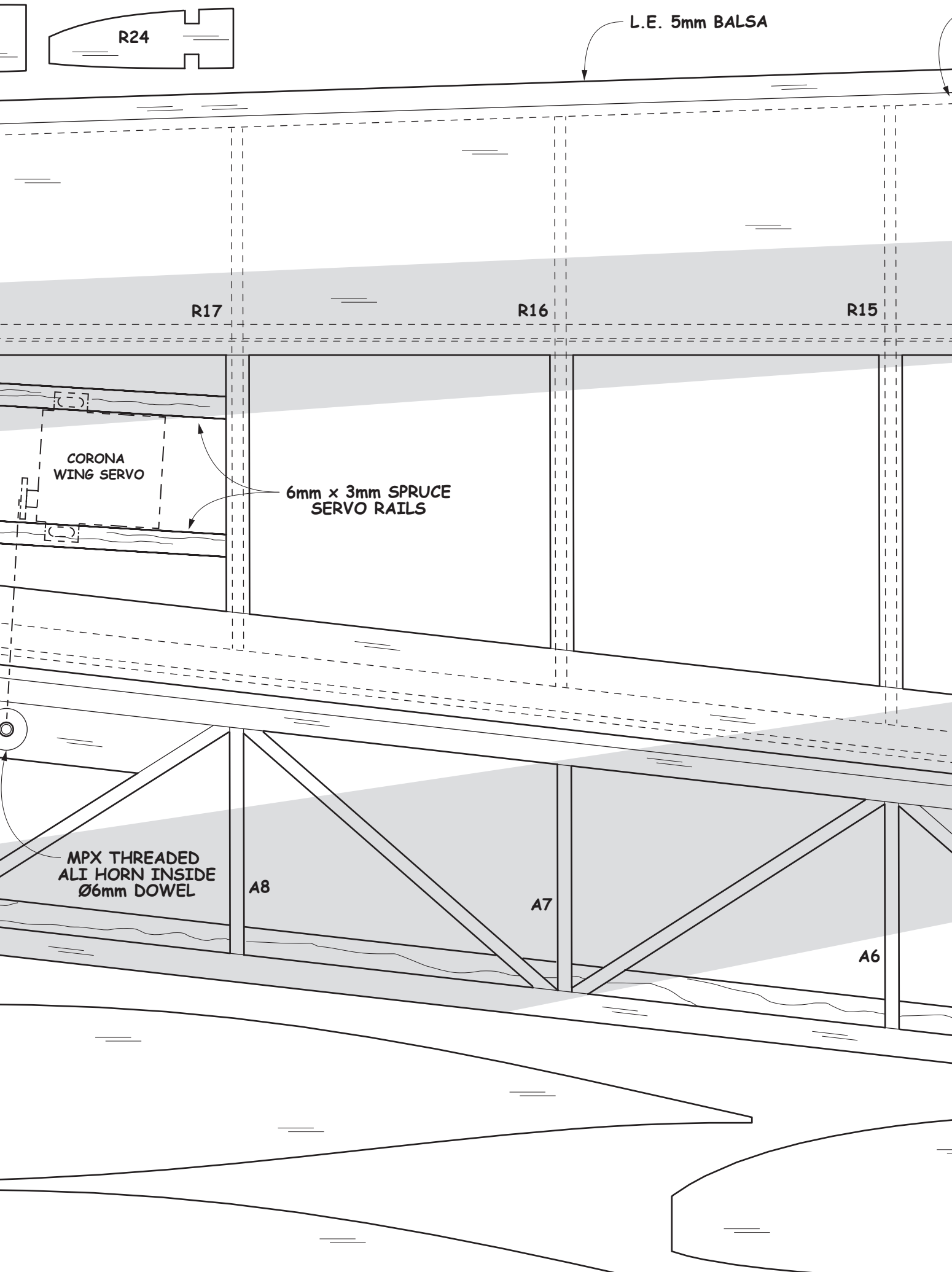
MPX THR
ALI HORN
Ø6mm

BUILD SEQUENCE
N ALONG WITH ROOT AND TIP RIBS

& ENSURE WITH A STRAIGHT EDGE
& T.E. ARE PERFECTLY STRAIGHT
RIBS (THIS CAN MOSTLY BE
CA)
& ADD DIAGONAL RIBS

FROM 3mm Balsa SHEET

R3





—

A4



AILERON RIBS

A8

A9

A10

A11

A12

A13

A14

A15

A15

A14

R20

R19

R18

R17

R16

R15

R14

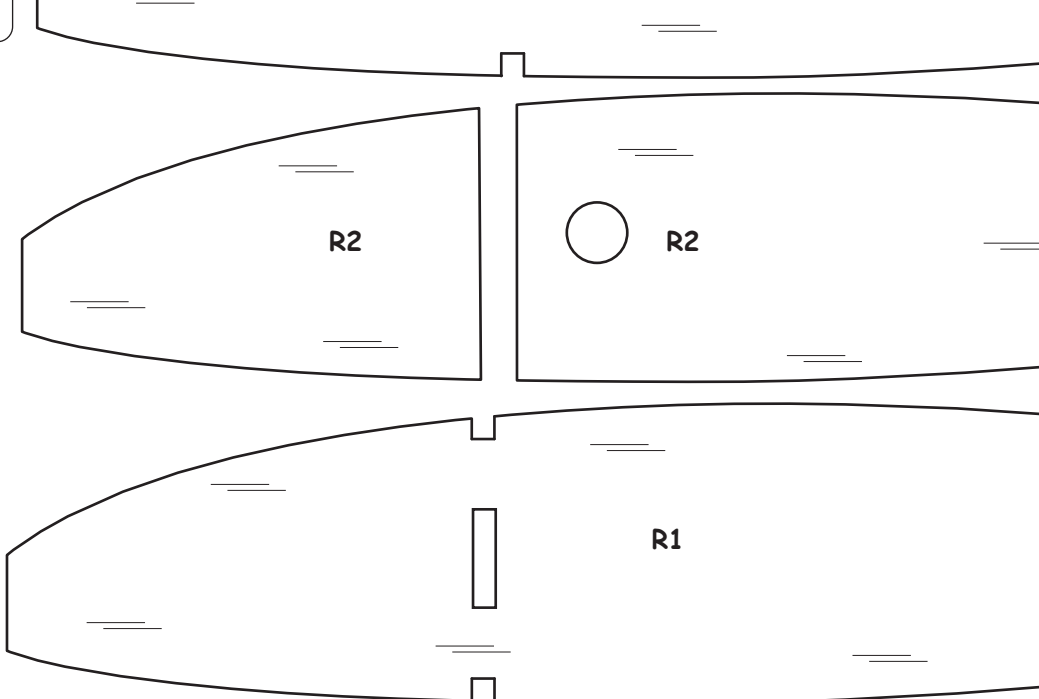
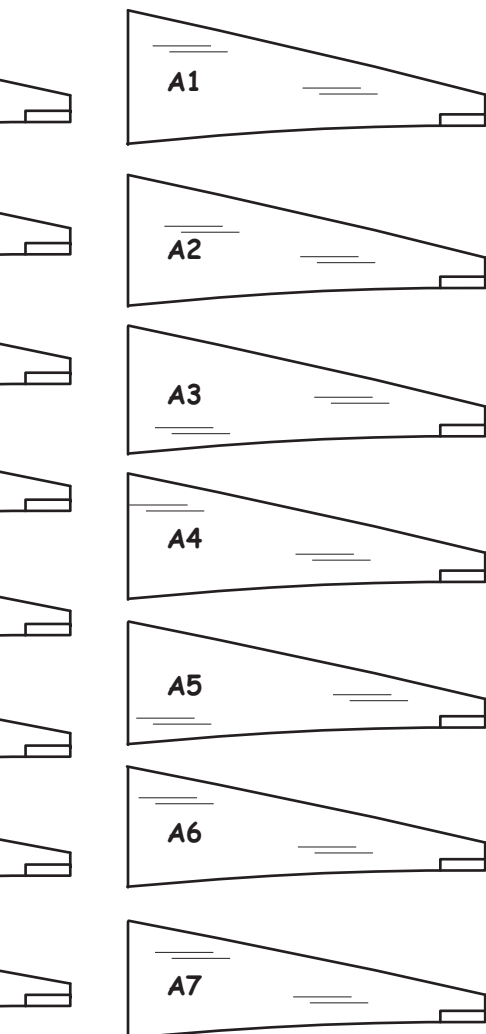
200

100

SCALE
MM

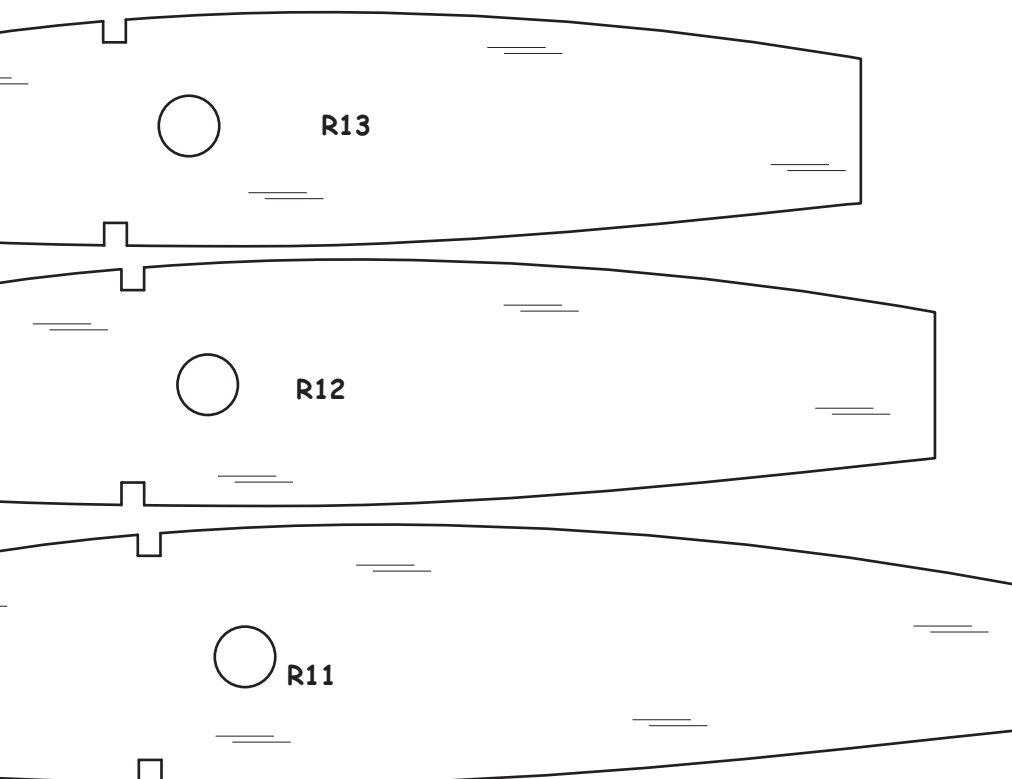
100

FROM 3mm BALSA SHEET

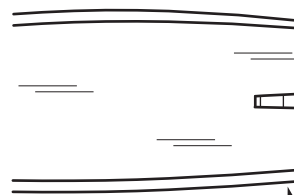


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0.6mm OR 0.8mm PLY SHRO



1.5mm BALSA CAPSTRIPS

ROBART HINGE



Ø6mm HARDWOOD DOWEL:
WRAP WITH MASKING TAPE
TO PREVENT SPLITTING

TYPICAL SECTION

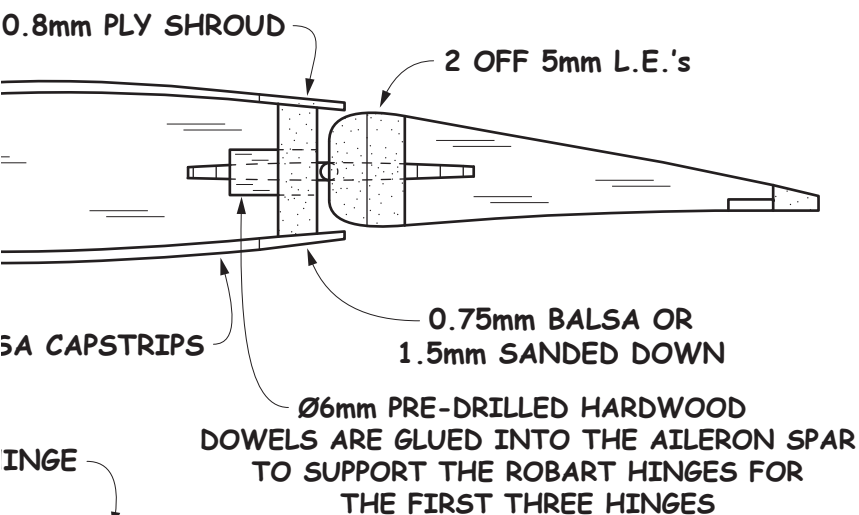
RCM&E SPERBER JUNIOR

DESIGNED BY CHRIS WILLIAMS

PLAN No: RC2285

No. OF SHEETS: 4 OF 4

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CROSS SECTION THROUGH AILERON/WING INTERFACE

R10

WING RIBS FROM HARD 2.4mm BALSA SHEET

R9

R8

R7

R6

R5

R4

600

700

12

16

20