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Welcome



Welcome to the November 2026 issue of RCM&E, a magazine I have grown to enjoy more and more in recent years, and whose readers and contributors I have gained a whole new level of respect for in these recent few weeks.

As observant readers of last month's welcome may realise (and as these few words may have revealed), this piece has not been penned by your wonderful editor Kevin – but still keep sending him all your thoughts on the magazine, ideas... and perhaps some speedy recovery wishes.

He has spent a few days recuperating after becoming a marvel of modern engineering in his own right; a knee replacement hopefully allowing him many more years of pain-free flying. Contrary to my suggestion, the new joint will not be next month's free pro-plan.

What I quickly realised – but I suspect really knew all along – is that Kevin has an army of dedicated experts writers, and readers, all equally passionate about a pastime that is absorbing, but requires so much ingenuity, while at the same time being collaborative (and at times competitive).

For just these few shorts weeks, it has truly been a pleasure.

However, enough of me gabbling, as you'll be keen to see what's inside the November issue of RCM&E.

The beautiful Tiger Moth build, which was started last month, comes to fruition as Tim Kearsley completes the DH.82 kit by building the wings and tail feathers.

On the aerobatics front there's plenty to admire as Keith Jackson reports from the BMFA Nationals at Buckminster, while Malcolm Balfour gives his take on the UK team's participation at the European Championships in France.

Harry Curzon looks at AviNationRC's small, twin EDF powered flying wing Horten Ho-229, while, bringing the silver screen to modelling life, Mike Freeman catches up with Steve Carr to learn about his huge scale model based on an aeroplane flown in the film Those Magnificent Men in Their Flying Machines. Yes, that song will now be stuck in your head.

In his second report from the FAI F4 Scale World Championship, Mike Freeman shows us the technical requirements, Dave Goodenough takes us inside his shed... and all this only scratches to surface of another jam-packed magazine.

Thanks to everyone involved for their patience with me, and hopefully Kevin will be back in the pilot's seat and at his workbench, next issue.

As Kevin says... happy flying!

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On the cover

Photo: Danny Fenton

The flying rounds at an FAI F4 Scale World Championships require the pilot/model to perform a series of scale manoeuvres which must be flown in a smooth and scale like manner, the so-called Mandatory Manoeuvres.

This picture by Danny Fenton shows the Grumman Bearcat flown by Hans Dieter Wahl of Germany in the F4C class.



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J-65 FURTHER FLIGHT TESTS





Following my review of the XFly-Model J-65 40 mm Twin EDF in the September issue, this is an update following more flights as the original wind conditions it was flown in were quite challenging.

I subsequently fitted the J-65 with a gyro placed in the gap in the fuselage behind the battery. The gyro has made flying the J-65 a lot smoother, take-offs were better and the aeroplane looked more scale-like in the air.

To be fair to the small J-65, it's not the model you would choose on a windy and blustery day anyway, but the publishing deadline was approaching. *(Sorry, Rob! - KC)*

I now had the confidence to see what the J-65 was capable of and so I performed some rolls (with higher rate needed on the ailerons), loops and inverted flight, all without issue. Inverted flight needed just a small push of down elevator, which is my preference, at the recommended C of G. Such manoeuvres are far from scale, but it does show what the J-65 is capable of.

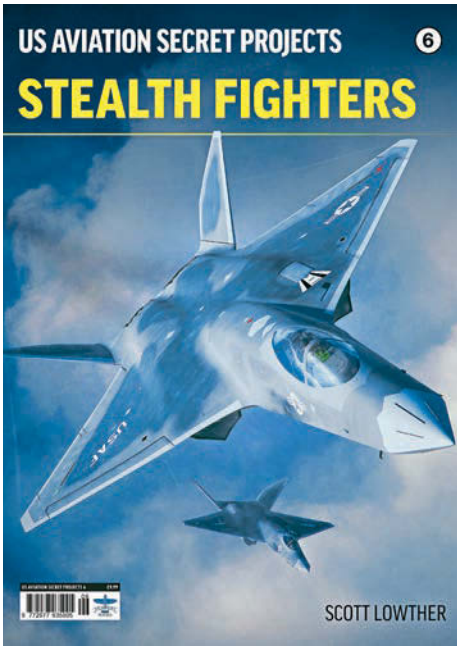
Landing needs patience to allow the mains to touch down first as arriving with the nose wheel first usually ends badly.

To sum up, a gyro is highly recommended as it now makes the J-65 a very pleasant electric ducted fan model to fly.

Rob Bennett



STEALTH FIGHTERS



For decades, American aircraft designers pursued one tantalising goal: To create a fighter the enemy couldn't see coming.

Long before the F-22 Raptor and F-35 Lightning II entered service, engineers at America's great aerospace companies were exploring extraordinary new shapes, materials and technologies intended to defeat radar and give their pilots a decisive advantage.

US Aviation Secret Projects 6 Stealth Fighters reveals the remarkable story of that quest, tracing the evolution of low-observable fighter design from the experimental concepts of the 1960s and 1970s through to the revolutionary Advanced Tactical Fighter and Joint Strike Fighter programmes.

Along the way came an astonishing array of proposals from Lockheed, Boeing, Rockwell and others.

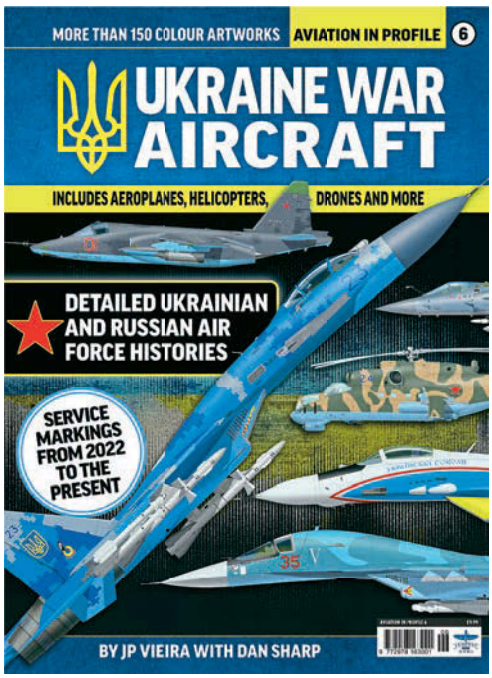
Drawing upon rare technical material and illustrated throughout with detailed drawings by author and artist Scott Lowther, this bookazine explores both celebrated designs and fascinating might-have-beens.

A WORLD OF INSPIRATION...

It doesn't always follow that those keen on modelling aircraft love the 'real thing' too, but chances are there really is a passion for both, and some new titles from RCM&E's parent company might just provide the ideal inspiration, and certainly hours of great reading:

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UKRAINE WAR AIRCRAFT



When Russia launched its full-scale invasion of Ukraine in February 2022, few expected the outnumbered and ageing Ukrainian Air Force to survive for long.

Instead, its pilots and ground crews defied the odds, denying Russia control of the skies and fighting a remarkable air war that has transformed modern military aviation.

Aviation in Profile 6 Ukraine War Aircraft tells the story of that conflict, from Ukraine's inheritance of a vast Soviet-era air arm in 1991 to the desperate battles fought against Russia's more numerous and modern combat aircraft following the invasion.

The story also encompasses Ukraine's transition to Western combat aircraft, the growing importance of NATO air power, the deadly contest between aircraft and increasingly sophisticated surface-to-air missiles, and the extraordinary rise of drones as one of the defining weapons of the war.

Illustrated throughout with outstanding specially commissioned profile artwork by aviation artist J P Vieira, this is a detailed guide to the aircraft, weapons and technology fighting for control of Ukraine's skies.

F-16 FIGHTING FALCON



Air Power 6: F-16 Fighting Falcon tells the story of this sleek, futuristic and deadly aircraft, which emerged from the crucible of Vietnam and a demand for a cheaper, lighter and more manoeuvrable fighter.

When it first flew in the 1970s, its powerful turbofan, relaxed static stability and revolutionary computer-controlled fly-by-wire system placed it at the cutting edge of combat-aircraft design.

More than half a century later, the F-16 remains in production and at war. Ukrainian Vipers have become crucial defenders against Russian missiles and drones and have even scored an air-to-air victory against a Russian fighter. Elsewhere, F-16s continue to fly frontline combat missions, demonstrating the extraordinary adaptability of a design conceived during the Cold War.

Today's advanced F-16 is light years removed from the original lightweight fighter.

Remarkably, the story could yet come full circle. With its fighter fleet shrinking, the US Air Force is considering buying newly-built F-16s again, while Lockheed Martin has proposed an enhanced Block 70 derivative dubbed the F-16G.

The Fighting Falcon has already made aviation history – but the Viper's story is far from over.



TONY RAY TIGER MOTH

PART 2

Tim Kearsley completes the well-detailed DH.82 kit by building the wings and tail feathers

Words & Photos : **Tim Kearsley**

The wings are straightforward and are built over the plan in conventional manner. The lower and upper wings are essentially similar except for the ailerons.

The ribs are threaded on to the main spar and are quite a sloppy fit, so care is needed when gluing these. Hard points for the interplane struts and metal attachments for rigging wires are incorporated. The ailerons are built as part of each lower wing and sawn out afterwards.

Tony has thoughtfully laser-cut slots for the hinges. At first sight, the attachment of the wings to the fuselage doesn't look very substantial – just short metal and ply tabs. However, remember that the rigging wires in this model are fully functional and it is they that take up the aerodynamic loads in flight.

TIME TO STRUT

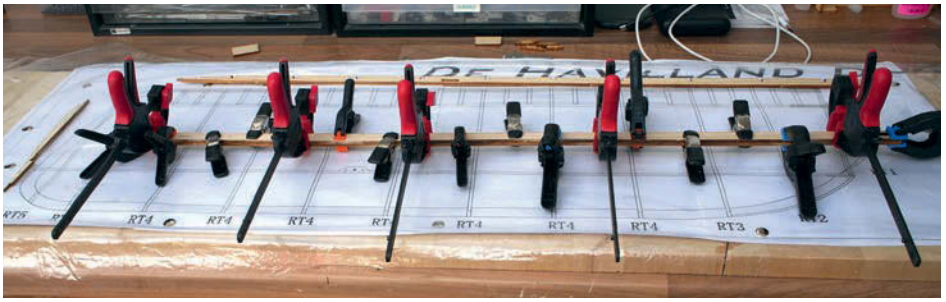
Okay, most of the major construction work is done now. The interplane struts are next up and these are laminated from two pieces of pine. Once dry, sand to a nice, rounded profile. The struts are attached to the wings with sheet metal tabs.

The final real construction work is to make the fin/rudder and tailplane/elevator. These are straightforward built-up items using laser-cut components and built over the plan. As with the ailerons, the elevator and rudder leading edges must be sanded to a nice, triangular profile. Hinge slots are, again, already cut for you.

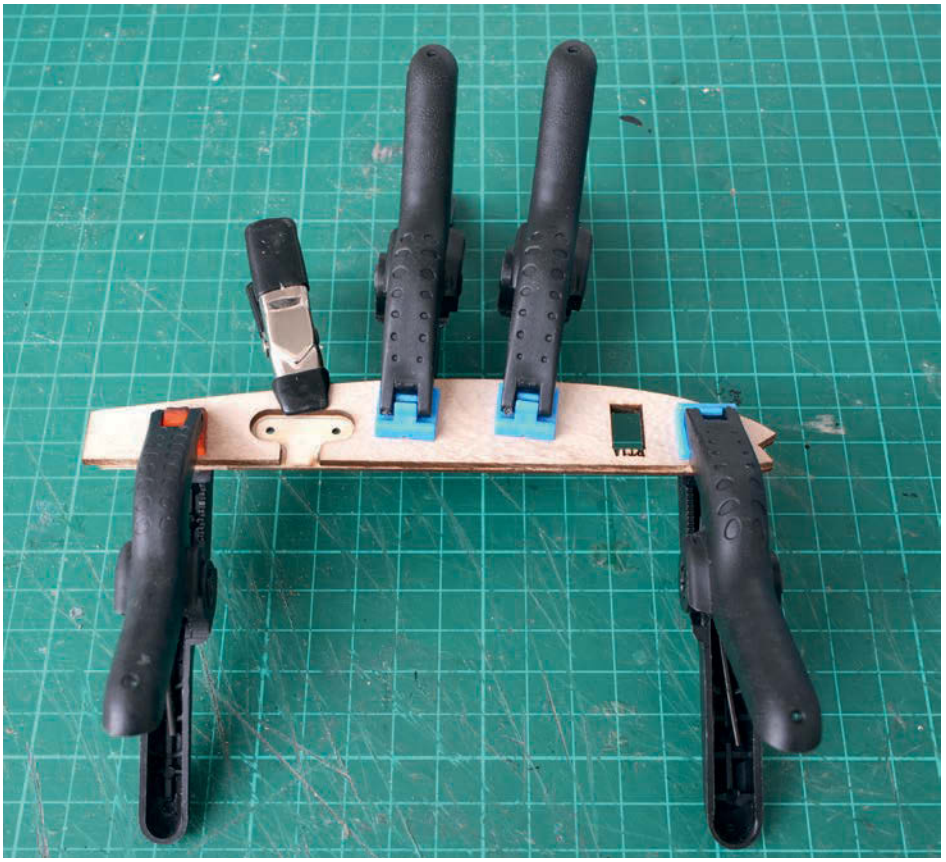
The tailplane is supported by two struts and there are two lengths of dowel and sheet metal tabs to implement these. The struts attach to hard points in the tailplane but only balsa sheet at the fuselage end. I don't like screwing into balsa – I just don't think it's secure enough. So I



Tony Ray's kit of the Tiger Moth builds into a highly detailed model of the famous biplane.



Laminating the main spar.



Laminating a root rib.

replaced a small section of the balsa with ply to give a more secure fixing.

COCKPIT DETAIL

One feature of this kit is the cockpit detail. The dashboards are simply exquisite!

Following the manual, I constructed these next. Each dashboard is formed from a backing sheet, a self-adhesive, beautifully printed instrument panel, a clear PVC sheet and, finally, a front fascia (which needs painting before assembly). On top of this 'sandwich' each instrument has a laser-cut bezel which is attached via tiny screws. These, of course, need painting before assembly also. It's fine, detailed work but the end result is really, really nice. A compass completes the structure.

The attention to detail continues with the headrests and bump pads above the dash. These are balsa components covered with very thin facsimile leather 'cloth'. The windscreens are laser-cut metal, with pre-cut plastic glazing. It all fits together very nicely and the completed screens are screwed to the fuselage. I added small squares of 3mm ply inside the fuselage to give a more secure attachment point for the screws.

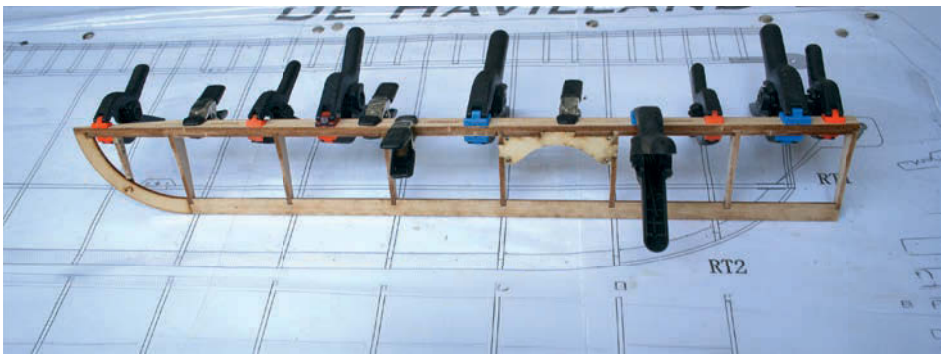
The review kit also came with the optional cockpit kit. This adds further realism with seats, joysticks and instruments. It has to be said that the 3D-printed seats are not of the best quality, with layer lines rather prominent. However, a few minutes with some sandpaper and a little filler fixes this, so it's no biggie.

One issue not covered in the instructions with the kit is the fact that the front cockpit seat completely covers the rudder and elevator servos. I like to keep access to servos so that they can be replaced in the event of failure. After a bit of head-scratching I decided that the answer was to make the front seat removable and held in place with a magnet. This was fiddly but worth it I think.

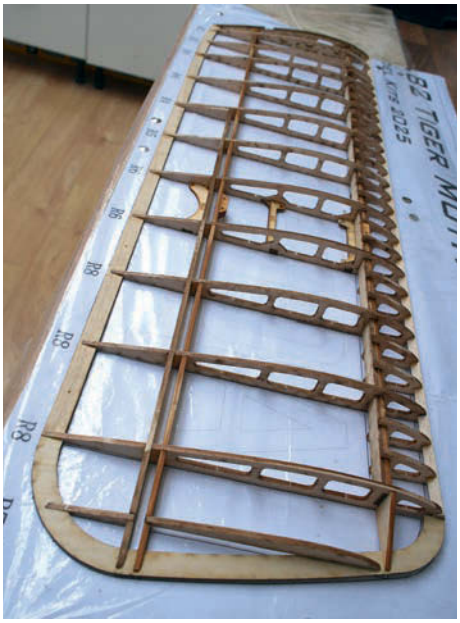
Talking of servos and the like, 25g servos are specified and I used 4 x ES3004 units. The aileron servos are fixed to the servo frame covers with hardwood blocks. A servo extension lead (I make my own) is run through the wing ribs with a few cm spare to connect to the Rx. The servo horns supplied are made of sheet metal. The aileron servos use a short, direct pushrod. I formed a 'Z' bend at the servo end and used the supplied ball-joint at the horn. The rudder and elevator servos connect to the control surfaces via 1.2mm steel pushrods. These have 'Z' bends pre-formed for the servo ends. At the control surfaces, Tony suggests attaching a short-threaded rod with a ball-joint to the pushrod by using Kevlar thread and epoxy. I didn't really like this idea and instead I used suitable threaded extenders soldered on to the pushrods and screwed the ball-joints on to these. I set up three rates on aileron and elevator, based around Tony's recommended throws as the middle rate. Rudder was set up with as much throw as possible. Initially, no expo was set up on any control surfaces. I used 50% differential on the ailerons, so that upward travel was double the downward travel.



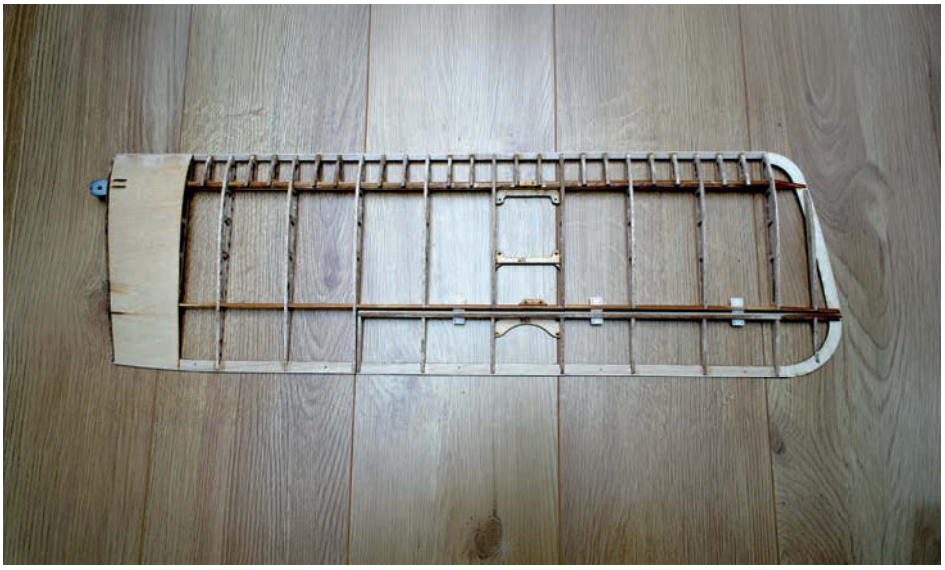
Starboard bottom wing under construction.



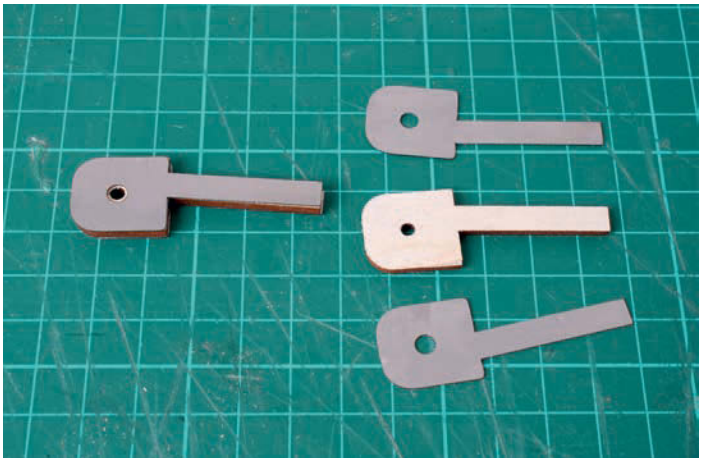
Adding the aileron leading edge.



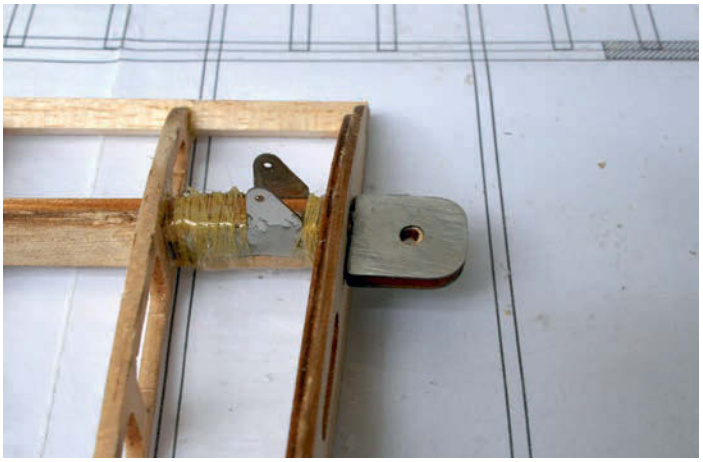
Completed starboard bottom wing before cutting out the aileron.



Complete lower wing with hinged aileron.



Wing mount components and completed wing mount.



Wing mount fitted to a bottom wing.



Completed strut with end fittings.

MANUAL DEVIATION

Talking now about the power-train, this is where I deviated again from the instruction manual.

Tony suggests a 3530 brushless motor and a 3S battery. However, I had read a number of opinions online which suggested that a lot of ballast was needed in the nose to balance this model. I hate, absolutely hate, adding dead weight to a model. Also, I like power available to spare rather than it being a bit marginal.

For these reasons I chose to use a slightly larger (heavier) motor and a 4S battery. Thus I used a 3541 size motor and added suitable standoffs to the ply motor mount to bring it to the right point to clear the cowl. Tony has designed the model with a hatch in the bottom of the fuselage to take the battery. Unfortunately, a 4S, 3300mAh battery will simply not fit through that hatch and turn 90 degrees to lie in the fuselage. So, I took a completely different route to solving this issue.

I reasoned that the battery would need to be as far forward as possible to get near the required CG. It seemed feasible that the cowl could have a section removed at the lower front, sawn along panel lines and held in place with strong magnets. This would allow the battery to be slid in from the front and get the weight as far forward as physically possible. I constructed a ply extension piece, glued to the fuselage bottom and extending forward to the front of the cowl.

A simple ply tray, held in place with Velcro, allows the battery to be very easily slid in. A catch on the front of the tray prevents the battery moving. An XT60 socket was expoxied at the base of the model to implement an arming plug to enable connecting up the battery in complete safety.

CLEAR YELLOW CHOICE

The time had arrived to decide on a colour scheme for the Tiggie. I settled on the yellow fuselage and silver wings of G-AOEI, the aircraft now owned and operated by the Cambridge Flying Group.

I covered the model using Cub Yellow Oratex. The cowl, central fuel tank, doors and undercarriage I sprayed using Guild Material Cub Yellow matt enamel. It's not a perfect match to the Oratex but pretty close.

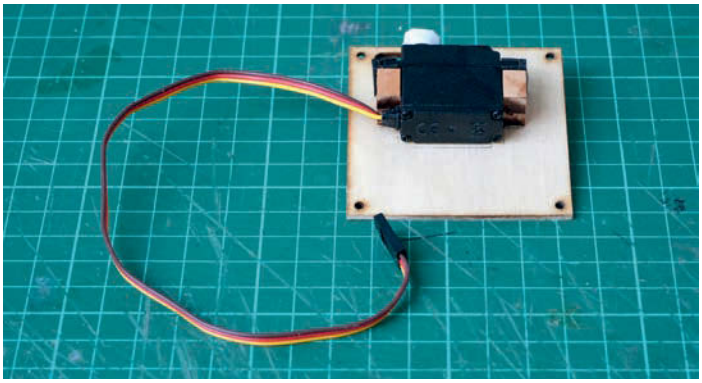
A coat of clear satin lacquer finished everything off. The registration legend on the fuselage was matt vinyl and the De Havilland logos on the hub caps were waterslide decals.

The final job in construction was attaching the fin and tailplane. For this I used 30-minute epoxy, which gives plenty of time to ensure everything is square. The tongues on the fin, which extend through the tailplane into the fuselage, make for a nice, strong joint.

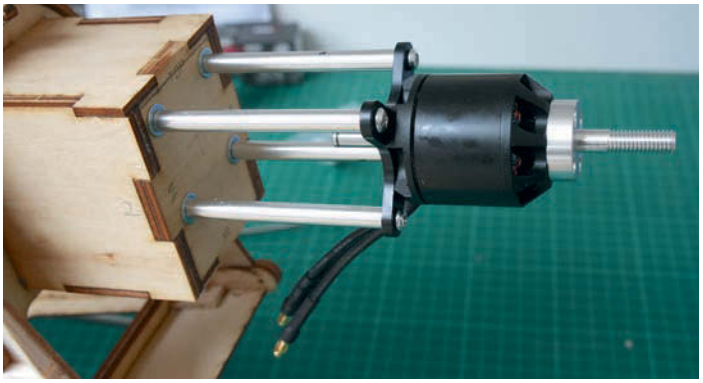
> "One feature of this kit is the cockpit detail. The dashboards are simply exquisite!"

One job remained and I was not looking forward to it. As mentioned earlier, the wire rigging is fully functional. The manual doesn't cover the rigging at all but I found a very useful review of the model on YouTube from Matthew and Gwen at ScaleMeDown. Even more useful, they have very generously provided files to 3D-print a pair of jigs which hold the wings at the right dihedral and incidence and make the rigging job far easier. See the acknowledgements at the end for details.

The centre of gravity on the plan seemed too far forward to me so I did some simple calculation and arrived at a starting point some 108mm back from the leading edge of the top wing. Despite using a larger motor and heavier battery I still had to add around 400g of lead around the motor mount to achieve balance at that point. The final flying weight then, with battery, was just over 2.6kg, or about 5.8lb. A test run at full throttle with a fully



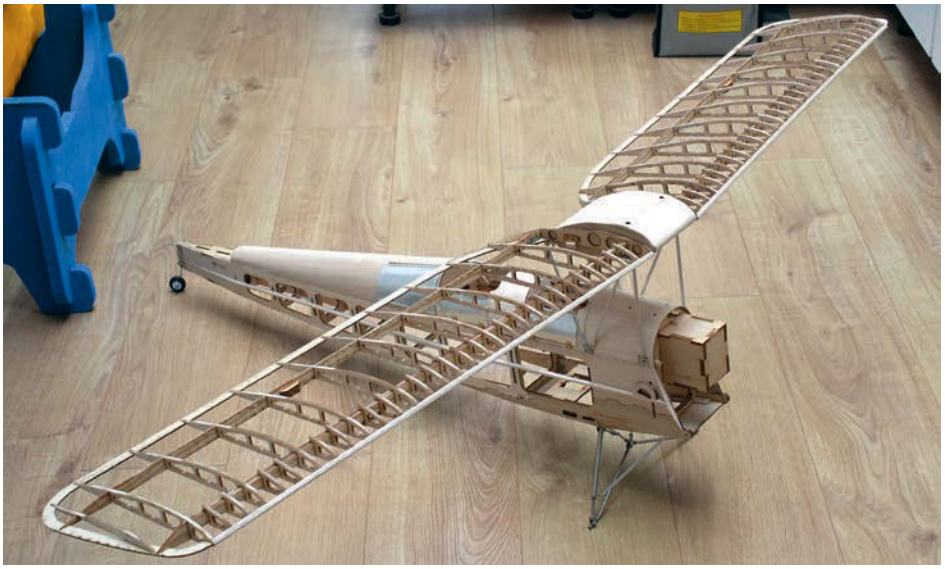
Aileron servo in position on ply mount.



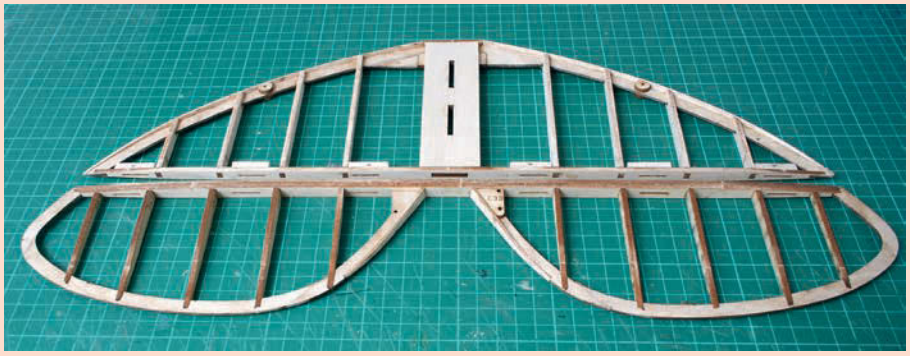
Motor in position on stand-offs.



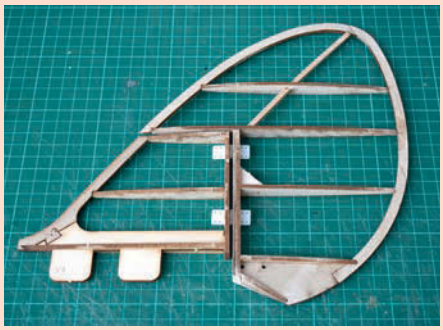
Strut end fitting detail.



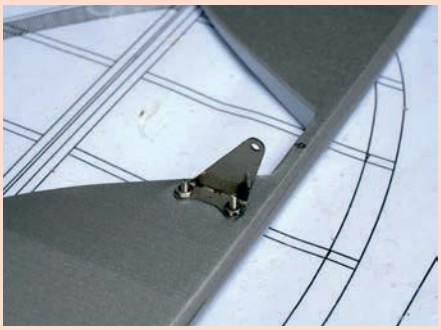
Upper wings in position.



Completed tailplane and elevator.



Completed fin and rudder assembly.



Metal elevator horn.

charged battery showed a current draw of 37A and power at a whisker under 600W, so about 100W/lb, which should be plenty for a scale biplane.

Once the model was complete and awaiting its maiden we seemed to enter a period of blustery winds.

TRICKY CONDITIONS

With a holiday fast approaching I needed to get the in-flight photos in the can and we were forced to carry out the maiden flight in less-than-ideal conditions, with a gusting SW wind. The assembled model is too big to transport in my car, so the wings had to be detached. One of the nice things about Tony's design is that each rigged wing is self-contained and attaches to the fuselage with just four screws. After a range check and a final check on the controls for throw and sense it was time to commit aviation.

I asked my trusty test pilot Jeff to do the honours for the first flight, partly so that I could get the photos but mainly because he is so much better a pilot than I am!

Our strip was dry and brown from weeks with no rain and the model accelerated well and was soon up and away.

A fair amount of elevator down trim was needed to stop her ballooning up but,



Front detached section of cowl following battery location modification.



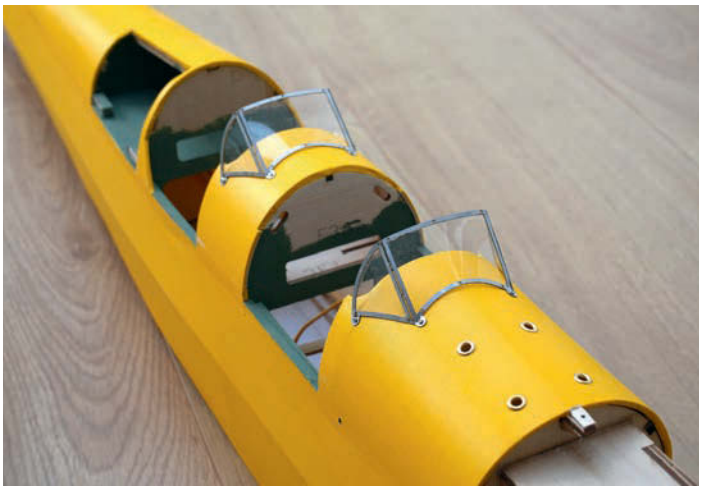
Modified front of cowl after the battery location modification.



Modified cowl in position.



Original battery hatch in bottom of fuselage.



Windscreens in place.



Standing on her wheels at last!



dH logo on wheel hubcap.



Completed cockpits with open doors.



Each wing pair is self-contained and detaches for transport.

encouragingly, no aileron or rudder trim was needed. It soon became obvious that there was adequate power available, though propping up slightly, to perhaps an 11 x 7 or 12 x 6 would probably enable cruising on half-throttle or less. With a few circuits under our belt and the model fully trimmed for straight and level flight it was time to take her up and examine the stall.

Jeff had noted a tendency for the model to want to tuck in a little on right hand turns and so we approached the stall with due caution. As expected, there was a tendency to drop the right wing slightly but we were prepared and it was easy to recover. With the wind tending to increase we didn't attempt too much aerobatic flight and contented ourselves with some nice, low passes and gentle manoeuvres.

I had set a timer for this first flight at six minutes and all too soon that was beeping its warning. Jeff brought the model in for, given the gusty wind, a very respectable landing, with the model just tipping on to its nose right at the end.

It's worth noting that we did find a tendency for the model to nose-over during ground handling. A quick check on the LiPo tester showed that the battery had 67% of capacity remaining, so that six minute flight could easily be extended to 10 minutes or more. We followed up the maiden with a couple more flights but by then the wind was making the flying, and landing, more challenging and we called it a day.

A number of club members commented on how good the model looked in the air and she certainly did look nice in her yellow/silver scheme against a bright blue sky. As you would expect with a biplane, turns should be initiated with rudder and aileron used to keep things tidy. She needs flying all the way down for landing with elevator on the rollout to prevent nosing over.



Completed dashboard.

Subsequently, I removed a little weight from the nose and as well as improving the handling it reduced the tendency to nose-over. The final CG position was at 115mm back from the upper wing leading edge.

CONCLUSION

This is very much a builder's kit and not for the beginner. Detail is excellent and the supplied materials and laser cutting are first rate.

I think it's fair to say that the manual could do with a revision as there are omissions and some inconsistencies and a little explanatory text in places would be a great help. The completed model looks superb and, provided care is taken with the rigging, is a capable flyer.

Acknowledgements

I must thank Cliff Harvey for his advice and help and his very detailed build log at https://youtu.be/sdQcwPd-U4w

Also Matthew and Gwen at ScaleMeDown have a review and a link to the rigging jigs at https://youtu.be/KmcEEy2IYN8

Finally, thanks to the lads at Northampton Model Aero Club and in particular to Jeff and Gareth for their help and advice. ■

DATAFILE

Model:	DH.82 Tiger Moth
Scale:	1:6
Model type:	Scale biplane
Manufacturer:	Tony Ray Aero Model
Available from:	Model Shop Leeds https://www.modelshopleeds.co.uk
RRP:	£299.99
Wingspan:	1500 mm (59.06")
Length:	1180 mm (46.46")
Weight (EP):	1.9 kg (4.19 lbs)
Motor/Engine:	3530 brushless or .52 - .70 four stroke glow



Powering away following the maiden take-off.



Tiger Moth looking good on a low pass.

A BUSY TIME OF YEAR

It's been a busy time of year for F3A enthusiasts. Let's join **Keith Jackson** as he files a report from the BMFA Nationals at Buckminster, plus Malcolm Balfour reports on the UK team's participation at the European Championships in France

Words : **Keith Jackson**

Photos : **Keith Jackson, Malcolm Balfour, Andy Ellison, Simon Clark, Arnaud Bossard**

The BMFA F3A Nationals championship took place over the weekend of August 22/3, one week earlier than most would normally expect as historically it was a three-day event held over the August bank holiday.

For many years the nationals was a huge, multi-disciplinary event located at Lincolnshire's RAF Barkston Heath, where the public could attend in their thousands to see a wealth of the nation's aeromodelling experience, bounded in one location.

Experiences would be passed down from the generations and regardless of whatever discipline you were involved with, simply everyone attended and enjoyed the mass free flight launch in the evening, where mayhem and panic ensued.

These days it is a different event, with the individual disciplines having their own individual championships held on separate dates, and in the case of F3A, being located at the BMFA's Buckminster site.

The opportunity for the public to see and possibly be inspired is very much lost, with the knock-on effect of the loss of potential new members.



Competition director extraordinaire, Yazz Madden



Pilot and models at this year's BMFA Nationals event

Moving beyond this sorry introduction, the actual F3A Nationals event was reasonably well attended with 16 pilots, although these were split among five separate classes ranging from Clubman, Intermediate, Advanced A27, FAI P27, to with just five entrants vying for the top class flying both P27 and F27 schedules.

The organisation and running of the event by Yazz Madden was superb, with the timing being adhered to throughout the two days of the event, ably assisted by father P & F pilot Peter Madden, along with a whole host of willing volunteers.

FIRST TO FLY

As with tradition, the first to fly at 9am were the Clubman class. This category uses a schedule directly aimed at those pilots who had not previously competed in F3A, and with the Nationals being a BMFA open event, it was ideal for anyone wishing to turn up and have a go.

Plane Crazy MFC pilot Richard McKenzie turned up and gave it a really good go with his Sebart Angel S 50, and despite being the only pilot in his class, flew well and obtained some great scores in what must have been a pretty daunting situation.



Richard McKenzie with his Sebart Angel S 50

INTERMEDIATE CLASS

Next to fly in the next category up, Intermediate Class, was BMFA North West area PRO Andy Ellison.

Andy has been edging closer to F3A in the last couple of years and in his other role as chairman of the Tyldesley MFC has facilitated the use of this superb site for several UK F3A competitions and team training events in recent years.

It was great to see him participating and flying the schedule well with his BJ Craft Epilogue Competition which was powered by an R220 series F3A outrunner motor, driving a Falcon 21.5 x 13 Carbon two blade propeller.

Andy scored well, achieving 84.5 % after only flying several rounds of this schedule previously. I look forward to seeing Andy's progression in next year's season.

ADVANCED A27

Simon Clark was similarly the only competitor to register in the Advanced A27 category.

This schedule is just one step down from the FAI classes and presents a real challenge for the pilot and model.

Simon flew an own-build Placebo mono plane which was designed by ex UK team pilot Tom David. Motive power came from a Dualsky contra v1 turning 22x20 falcon props front and back, using a D3 ESC and 10S Roaring Top 5000mAh lipos.

Simon mentioned he'd added canalysers with integrated airbrakes both on the top and bottom of the fuselage to help control airspeed, which was a change from the original design.



Andy Ellison, with his BJ Craft Epilogue, flew extremely well in Intermediate class



Simon Clark, pictured in a busy pits area, flew his Tom David-designed Placebo in the Advanced A27 class

FAI P-27

After a short break, the largest group flying the FAI P-27 schedule commenced their first round exactly on time, a testament to Yazz's organisation.

In total eight pilots flew through this 17 manoeuvre schedule and it was pretty obvious that the top pilot in the class was going to be ex UK team member Dave Matthias, who had dominated this category all year.



Dave Matthias receives the P-27 group Nationals award from Yazz

Dave was flying his usual BJ Craft Epilogue, now finally fitted with Falcon carbon fibre spats to complete the model.

Dave took first place winning all six rounds, although Steve Smithey flying his Futaba Skyleaf Leader A1 biplane was chasing hard and will no doubt break the 400 point mark as he progresses into next year's F3A season. A resurgent Eugene Anker took third place with his BJ Craft Anthem, now sold — as is the fate of many a good airframe at this point of the season.

The P-27 & F-27 class were the last group to fly and comprised five pilots who were to fly four rounds of P-27 and then two rounds of the fly-off schedule F-27.

It was noteworthy that all the models used by competitors in this group were modern biplanes with very similar features, notably with a fuselage mounted upper wing, swept wings, and also featuring large vertical fins to enhance directional stability.

First to fly was current UK team member Kevin Caton, freshly back from the European Championships which were held in France.

Kevin flew his Skyleaf Leader Ace with impeccable accuracy and style, as befitting an in-form team pilot, but was pipped to the first round post by Garry Peacock who took the round with a score of 454.25 points out of a possible 610 for the P-27 schedule. Garry was flying his Hui Yang Velar, designed by French pilot Stéphane Carrier and propelled by a Dualsky 3500 mk3 contra unit and PT 23x22 - 23x20 propellers.

Jim Fallowfield, who was the UK team manager in France, was next to fly and guided his beautiful v4 Glacial through an accurate and polished schedule, no doubt picking up on flying styles seen at the ECs.

Peter Madden, ably assisted by daughter Yazz, was the final pilot to fly in this group with his Skyleaf Leader Ace biplane, which although relatively new to him was performing well to eventually score 427 points.

An evening meal was arranged by Yazz for a large group of pilots, judges and helpers at the nearby Berkeley Arms pub for those who had the energy.



Kevin Caton took second place overall with his Skyleaf Leader biplane



Jim Fallowfield with his v4 Glacial biplane, designed by Lassi Nurilla and powered by a v4 Adverun contra drive



F3A Nationals champion Garry Peacock with his Velar biplane



Peter and Yazz Madden with their Skyleaf Leader Ace biplane

DAY TWO

Day Two began slightly earlier at 8.30am with rounds four to six being completed in good order.

The final two rounds in the P&F group comprised the fly-off schedule F-27 which added an extra dimension to the Nationals competition. It was good to see this sequence being flown to a high standard by all pilots in this group. When the dust settled, Garry Peacock had won five of the six rounds flown taking the title on UK F3A Nationals champion for 2026.

F3A EUROPEAN CHAMPIONSHIPS

The following report was submitted by UK Team pilot Malcolm Balfour:

Every two years the FAI runs the F3A European Championships, this brings together Europe's very best precision Aerobatic pilots to battle it out to become European Champion.

This year the honour of running the event came to France and the task was taken up by the RAM club situated in St Macaire about 30 miles from Nantes on the west coast of France.

This is a fantastic club site and a credit to a group of eager volunteers who have managed to secure excellent facilities allowing them to put on a large event like this. They had also managed to secure an impressive hospitality van which was put to good use providing shelter for the judges, allowing them the comfort to perform the daunting task of judging the flying.

BMFA National Championships 2026

Clubman

Number	Pilot	Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Result
988	Mckenzie Richard	156.75	133.75	162	168.5	157	163	650.5

Intermediate

Number	Pilot	Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Result
995	Ellison Andy	302.5	293.5	309.25	339	313	293.75	1255

Advanced A27

Number	Pilot	Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	Result
27	Clark Simon	350	344.25	333.75	350	360	363.25	1417.5

FAI P-27

Number	Pilot	Flight 1	Flight 2	Flight 3	Flight 4	Flight 5	Flight 6	
887	Matthias Dave	421	404	410.25	425	432.75	448.25	1716.25
36	Smithey Steven	392.25	380	329.75	380.75	382	395.5	1538.25
603	Anker Eugene	378.25	351	378.75	353.75	338.5	391.75	1475.25
78	Allen Mark	319.75	350.75	326	361.25	339.25	377.25	1428.5
31	Moss Ken	291	302.25	326.5	315.25	278.75	359	1303
87	Jenkins Peter	313.75	312.25	324.75	319	317.75	0	1273.75
54	Harrison Adrian	249.75	317.25	293	350.75	278.5	275.25	1239.5
92	Lewis Philip	256.75	255	258.25	300.5	244.75	328.5	1142.25

FAI P27 & F27

		P-27 Flights				F-27 Flights		
Number	Pilot	1	2	3	4	1	2	Result
14	Gary Peacock	1000	1000	1000	1000	983.9	1000	4000
81	Kevin Caton	996.7	963.65	978.37	974.32	1000	969.67	3949.39
75	Jim Fallowfield	984.04	973.96	995.14	966.83	973.95	959.41	3927.09
351	Keith Jackson	986.8	948.46	959.98	953.46	961.16	994.41	3894.65
808	Pete Madden	940.02	911.56	905.9	919.21	880.16	923.48	3694.27

It must be said the organisers put on a fabulous event, made even more enjoyable by a week of mainly sunshine in the beautiful French countryside.

Each country in Europe is allowed to put forward three competitors plus a junior and a female competitor. Interestingly this year there were also some 'wild card' competitors thrown into the mix, I believe this was to increase the revenue to the organisers to make the event more financially viable.

In total there were 53 competitors selected for this event, and all were of a veryw high standard.

F3A has developed massively over the last few decades, the general design of aircraft now tends to be biplanes with deep fuselages providing excellent rolling and knife edge characteristics.

This was the first International Championship at which there wasn't a single IC engine, these having been replaced by electric motors favoured for their quiet, reliable performance. In addition, the ability to use governor escs together with the option to use contra rotating propellers allows excellent downline braking such that the speed of the aeroplane is much more constant, allowing the level of control and presentation to be even higher.



Top three pilots at the Nats! From left, Jim Fallowfield, Kevin Caton and Garry Peacock



Impressive flightline at the European Championships showing flags from the 17 countries participating



The organisation behind the event. Superb support from members of the RAM club and the FFAM



The UK F3A team. From left team manager Jim Fallowfield, Brandon Ransley, Malcolm Balfour, Kevin Caton and team supporter Sally Caton

TEAM GB

The British Team had been selected last year and comprised of myself (Malcolm Balfour), plus two seasoned F3A competitors Brandon Ransley and Kevin Caton.

We all have competed in a number of championships before so knew roughly what to expect. We were also pleased to welcome on board James Fallowfield as team manager, who did a fantastic job with organisation and calling for all the UK pilots throughout the event. This allowed the pilots the ability to really focus on their flying preparation and to perform to the best of their ability.

From a personal point of view this was my third European Championships in a row and I was keen to keep building on previous successful performances. This was made possible by the excellent equipment I was utilising including Futaba Transmitter and servos.

I was flying a Velar Biplane which is manufactured by Hui Yang in China, and is a biplane with a long moment arm for stability and large fin for directional control, powered by a Plettenberg Advance electric motor with 3KW of power. I was one of the few pilots who was not using contra rotating propellers, instead I used a Ralph Schweizer three blade propeller. In addition to this I used crow braking with the ailerons splaying out in downlines to maintain constant speed.

To say it flies well would be an understatement! F3A has the advantage that our planes do not need to be based on a full-size design such that any modification or development the designers can think of can be fully utilised. This has developed the sport into what I see very much as the Formula 1 of Aeromodelling.

DON'T DRINK & FLY!

The format of the event uses the first two days for official practise for the teams and model processing, where size, weight etc are checked.

Of note this year is they were very keen to ensure nobody was using a gyro, and after every flight your plane would be taken aside to check stabilisation devices were not being used.

Unexpectantly the local French Constabulary was also in attendance at the site for a



Team manager Jim Fallowfield and UK pilot Brandon Ransley wait for their flight

few hours and was breathalysing all pilots immediately after their flight, a new experience for us! The BMFA will be pleased to hear that all the UK Pilots passed with flying colours.

We were then treated to an opening ceremony which included a mixture of full-size displays and model aeroplane/helicopter displays, which were superb.

I think at this point you realise the competition proper is about to start and the pressure noticeably increases. All competitors at these events have put a lot of effort and time into practise and are keen to perform as well as they can — I always find it quite nerve-wracking, particularly before the first flight.

The nerves are made no better when you realise you have an army of Judges sitting behind you critiquing the performance of your flight! It is worth noting that we had our own UK International judge Alan Williams at the Championships this year and he was doing a stand-up job alongside 10 other international judges.

PRELIMINARY ROUNDS

The first four days of competition are the Preliminary rounds, where all competitors fly one flight of the FAI P-27 schedule per day and this creates an initial ranking where the top 30 then progress through to the semi-finals.

In between flights, pilots go off to local practise areas, which are local club sites who have kindly given us use of for the week, and this was hugely appreciated.

After the first four days all three UK pilots had flown four good flights and placed well after the prelims; myself in 16th position, Kevin in 33rd and Brandon in 34th. Unfortunately, both Kevin and Brandon narrowly missed the cut for the semi-finals, but still represent very creditable positions given the standard of flying at this event.

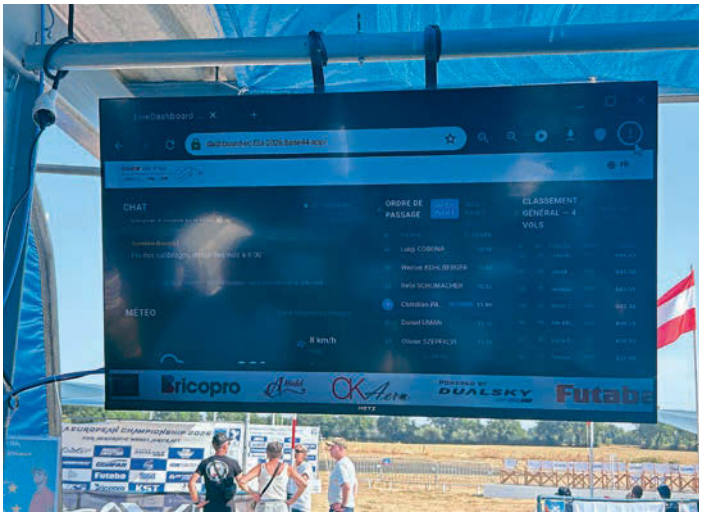
Of note was that Werner Kohlberger from Austria had really improved since the last Europeans flying his Andrew Jesky-designed Proteus biplane, this was in a bright green colour scheme which was rather eye catching. Werner now works for the Kavan Aeromodelling company and commits a significant amount of time to flying and is justifiably reaping the rewards.

Italian champion Andrea Cervi, who was previous European Junior Champion, was flying on rails, with a fairly slow flying style. He was using 24 inch contra rotating propellers, allowing him to fly close without it feeling rushed. Andrea was undoubtedly going to push hard for the title.

Father and son team Christophe and Antonin Paysant Le Roux are always a force to be reckoned with. Christophe has nine World Championship victories to his name and still flies with immense presence — he placed comfortably in the top 10. They were both flying their own design 'Atom' Biplane; this has a noticeably deep fuselage which in the air presents well and adds to the impact of the flight.



Kevin and Sally Caton with the ever-popular Skyleaf Leader Ace biplane



F3A is a serious business in many countries, as witnessed by the superb facilities and organisation. Online scores were displayed in real time



Team Switzerland was well represented at this year's Euros



Top 10 pilots in Europe. Few surprises with this line-up



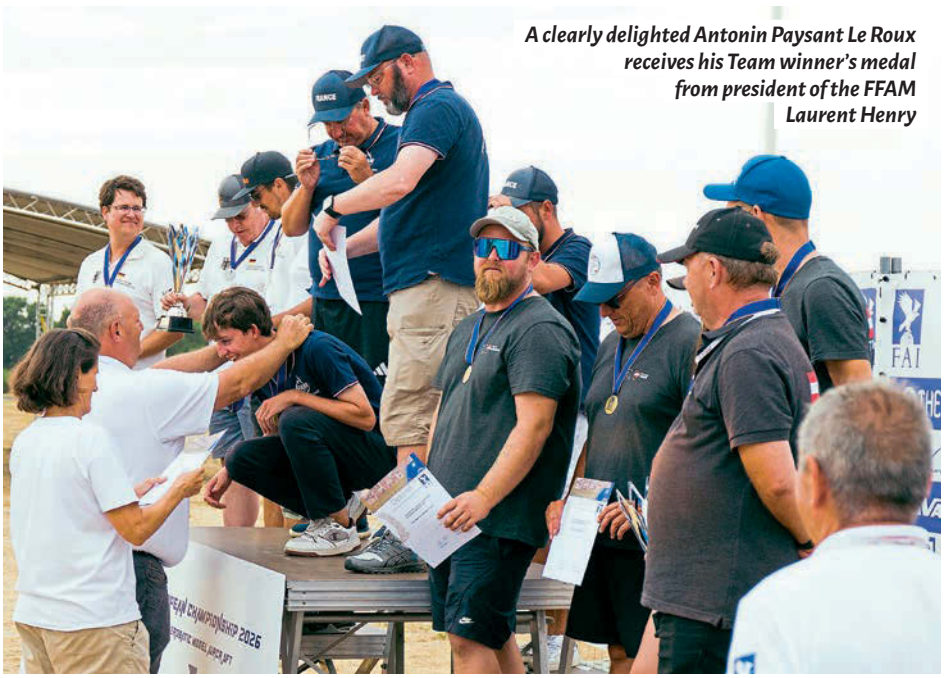
Junior ranking: Winner Rodito Nussbaumer (Sui), runner-up Daniel Uman (Cze) and third-placed Enzo Esposito (Fra)



Top teams: Winners France, runners-up Germany and third-placed Austria



Individual top three: Winner Gernot Bruckman, second placed Andrea Cervi and third placed Lassi Nurila



A clearly delighted Antonin Paysant Le Roux receives his Team winner's medal from president of the FFAM Laurent Henry



Very deserving top team at the European Championships. France!

Antonin has now overtaken his dad as French national champion and, although he didn't quite manage this year, I am sure he will push hard to become a future World or European Champion.

It is worth noting that the whole French team and the wild cards they entered were all of an impressively high standard, it does make you wonder how it is that they can consistently get pilots flying to such quality.

SEMI FINALS

The next two rounds of the competition were the semi final rounds, where the top 30 pilots fly the more difficult Finals F-27 Schedule.

This includes more snaps, a complex rolling circle and integrated loops all while trying to maintain perfect precision and depth control — it is a noticeable jump up in difficulty.

These two rounds are completed in one day (60 flights) and makes it one of the busiest days of the competition. I was very pleased with my first flight, the second one was a little less tidy, but overall I was happy to finish in 19th position — a good foundation for future events.

Gernot Bruckmann of Austria was flying an Equinox biplane and sailed into the top 10, securing him a place in the finals fly-off.

FINALS & CLOSING BANQUET

The final day of the event came and this saw the top 10 pilots fight it out for the title.

The finals day comprises three flights, two unknown schedules and one more of the finals schedule. To add even more spice to the event there were thunderstorms on the horizon and, as



Big representation from the Netherlands, placed sixth overall



Team Italy placed eighth, only just ahead of the UK team



Runners-up this year, team Austria



Two of the most popular models; the Skyleaf Leader Ace and The Glacial



The Atom design used by Christophe and Antonin Paysant Le Roux of France and produced by Hui Yang. Antonin overtook his father this year and is tipped to be a world champion in the very near future



F3A European champion, finally! Gernot Bruckmann with his Equinox biplane



Impressive silverware for the champions



Lassi Nurilla placed third overall this year with his Glacial v4 design, shown here alongside teammate Kimmo Kaukoranta who finished in 35th place

it turned out, some of the pilots had to complete some of their flights in rain. It was far from ideal but Gernot Bruckmann did this and performed exceptionally, a testament to his mental strength.

In the end the three pilots who were a cut above the rest were former European and World champion Lassi Nurilla — who travelled all the way from Finland flying his own design Glacial, Andrea Cervi and Gernot Bruckmann with slow and close styles.

With all three of these pilots it was very hard to fault their flying and indeed all three pilots scores were within 10 points of each other, it was very tight.

However, the final result placed Gernot Bruckmann in first position followed by Andrea and with Lassi third. In the Team Event, France won followed by Germany then Austria, a massive achievement for all involved.

To bring the event to a close, a banquet was held at a local village hall where we enjoyed some local cuisine and beverages.

This again was a superb event, and it is always great to take part in these international events after the years of building towards this with the grass roots events at home.

It is not set in stone yet where the next European Championships will be held but I certainly hope to be competing and moving up the ranks. There are many F3A events throughout the UK so feel free to get involved in this great discipline.

The UK Team would like to thank both the BMFA and the UKF3A association for support leading up to this event. Both these associations do an amazing job putting on a range of events for the benefit of all in aeromodelling. ■

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Short Kit (Set)	SET2104	£304.00

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



AUTOGYROS

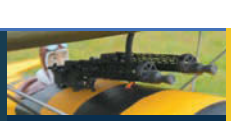
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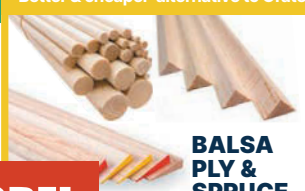
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Spektrum Smart G2 chargers will automatically start charging a Smart G2 LiPo soon after the power lead is plugged in. No set up required!

EASY CHARGING WITH SMART G2

We look at Spektrum's answer to a fuss-free battery charging solution

Words & Photos : **RCM&E**

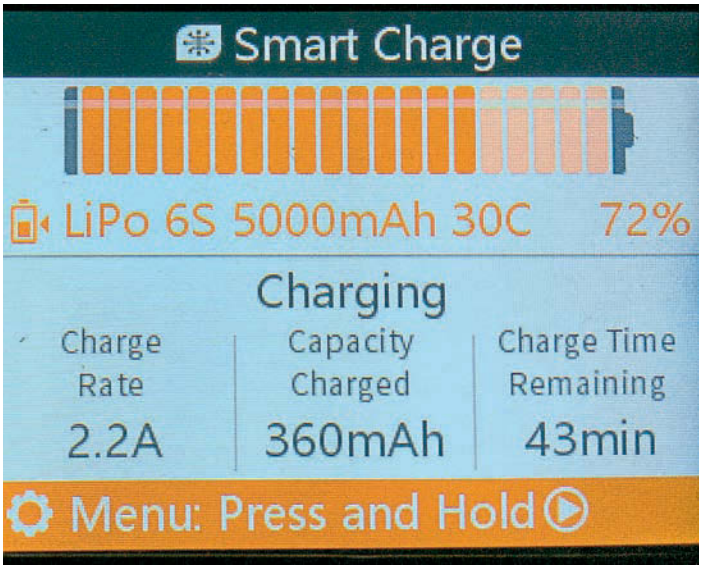
It has been a real pleasure to have been able to resume testing Horizon Hobby models in recent issues of *RCM&E* courtesy of its UK distributor Logic RC.

In order to maximise the performance of a couple of the models that were sent for review, when we didn't have suitable LiPos available, we requested samples of the recommended LiPo packs so that we could make sure that the aeroplanes were flown with fresh batteries of the correct size.

To get the best performance from its models Horizon recommends using batteries from its proprietary Smart G2 range of LiPo battery packs. This is understandable, but charging them requires a matching Smart G2 charger which we did not have access to, our selection of chargers all being of conventional types with separate output



When a Smart LiPo is connected to a Spektrum Smart charger via its orange IC connector its charging and health information is quickly uploaded to the charger from the battery's internal microchip.



After a few seconds auto charging the S1200 display displays the charge rate, capacity charged and the charge time remaining. The status bar on top lights up orange whilst charging and shows the state of charge as an incremental battery icon.

ports and requiring the use of balance leads.

Fortunately, although the models in question were fitted with distinctive orange IC connectors, as used by the Smart G2 system, it was still possible to match them up with equivalent blue EC connectors using freely available adapter leads, thus allowing conventional LiPos with EC connectors to be used instead of Smart G2 power packs.

However, it would have been a real shame not to have been able to charge the Smart G2 LiPos that had been supplied, so we asked for a basic G2 charger to be sent so that the reviews could be completed, powered by the recommended batteries.

At the time of asking Logic RC had a refurbished S1200 G2 charger available and this was sent over so that the flying parts of each review could be undertaken with the correct Smart G2 LiPos

WHAT IS SMART G2?

Spektrum Smart G2 is a matching system of R/C batteries and chargers that does away with traditional balance leads by routing balancing data through an innovative IC3 or IC5 connector. IC connectors are easily identifiable by being bright orange in colour.

It is a mature system, the first G2 products having been introduced to the market in early 2021.

Before this came the Smart G1 series of chargers and LiPos. However, Smart G1 LiPos still had balance leads, allowing them to be charged with a conventional charger if required. But charging them in this way meant that the benefits of Smart charging could not be fully realised, namely the automatic set up and auto charging of a Smart LiPo which begins just seconds after a battery pack is plugged in.

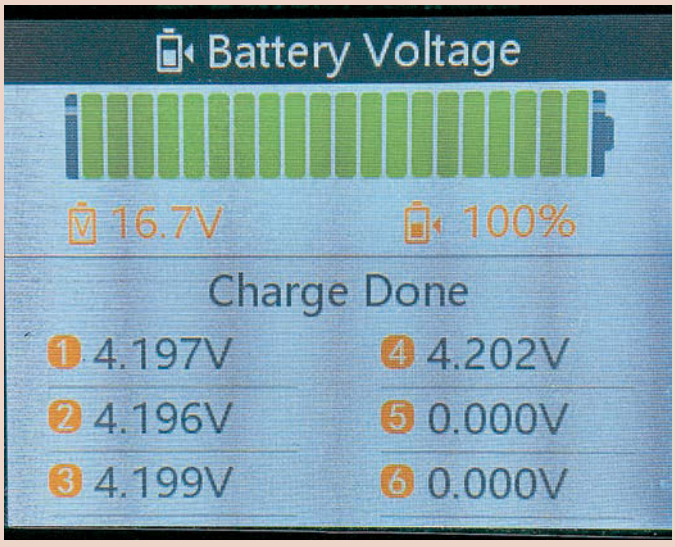
The Smart battery range currently consists of LiPo, LiHV and LiFe battery types.

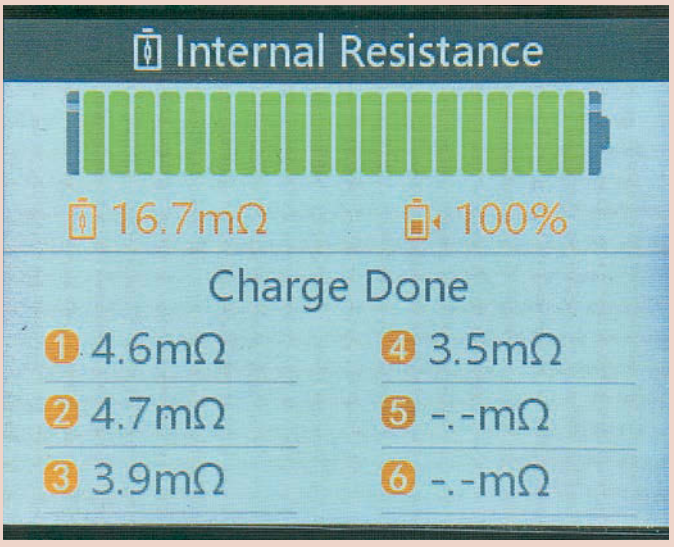
NO SET UP REQUIRED

When charging a Spektrum Smart G2 Battery the cell count, battery type, charge current rate and battery capacity are set automatically and the charger will begin charging soon after the power lead is plugged in.

That's it! Just sit back and relax and wait for the charge status bar at the top of the display screen to change from orange to green, which shows that the charge is complete.

With no possibility of human error being introduced during the charge set up





When charge is complete the status bar changes to green. User interface buttons below the screen can be toggled to display the voltage and internal resistance per cell. If IR across the cells reaches a level where the battery is no longer efficient the Smart charger will display a Battery Degradation error. High internal resistance often causes cells to charge/discharge unevenly. The microchip monitors this and gives a Cell Imbalance warning if the voltage between cells is too different. The microchip also records any over-charging, over-discharging or over-temperature events.



S1200 has a 6S balance lead input so it can also be used to charge/discharge Smart G1 packs as well as non-Smart batteries from other manufacturers.

procedure it's a stress-free way of enjoying electric flight for anyone who may be worried about charging lithium chemistry batteries or who may have suffered a battery failure (or worse!) after making a small mistake when setting up a conventional charger.

ON BALANCE

As mentioned previously, the Spektrum S1200 is also fitted with a balance lead port so it can also be used to auto charge a Smart G1 pack. Charging will start soon after both the power and balance leads of the pack are connected to the charger.

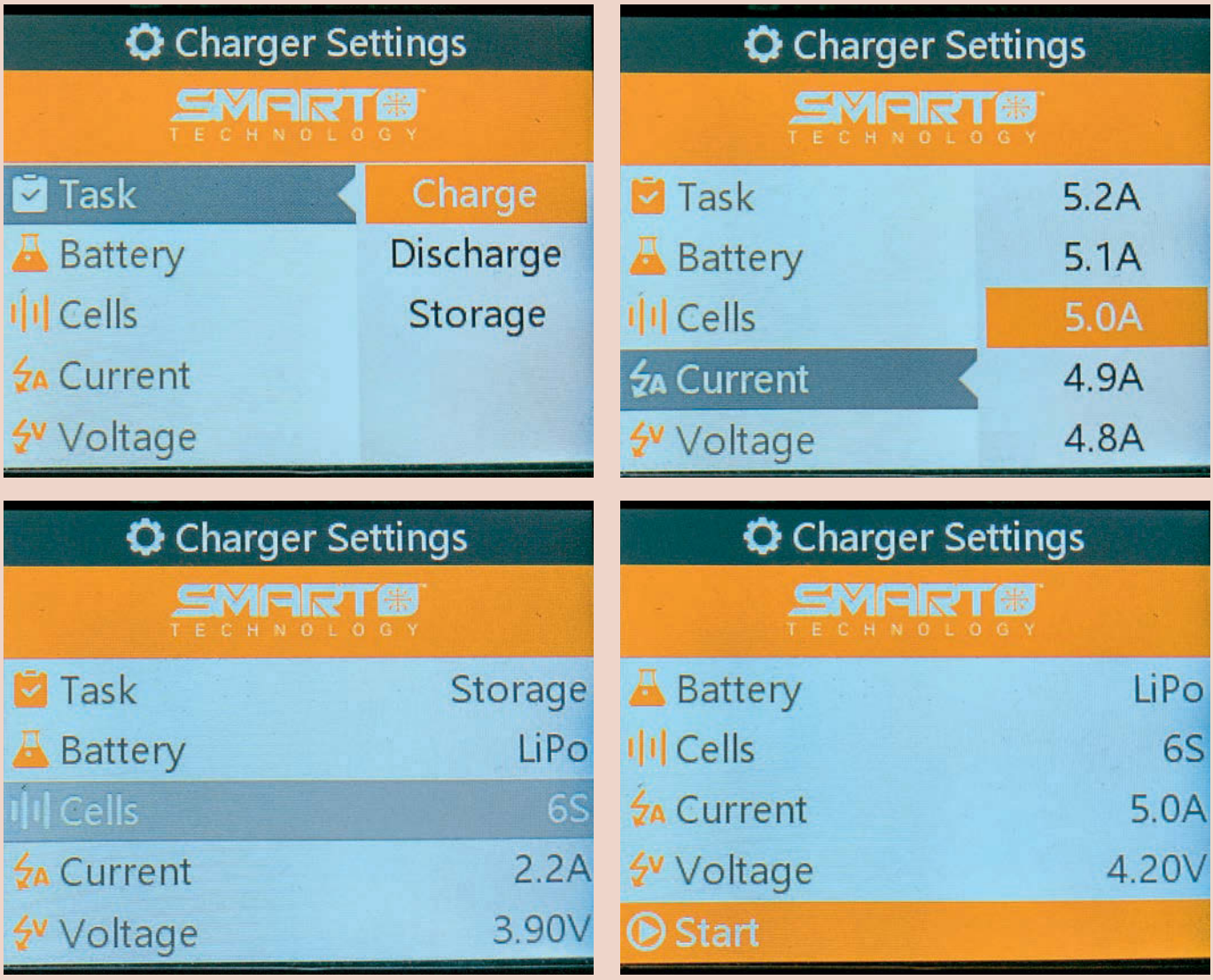
The balance port also means that it can be used to charge/discharge/storage charge any conventional lithium chemistry packs that you may have purchased before investing in the Smart G2 system.

The easy-to-use control panel, combined with menus on the display screen, mean that all the usual array of charger functions are available for manually setting up the charger to deal with all the popular types of lithium chemistry batteries fitted with XH balance leads and IC3 or 5 (orange) or EC3 or 5 (blue) power connectors.

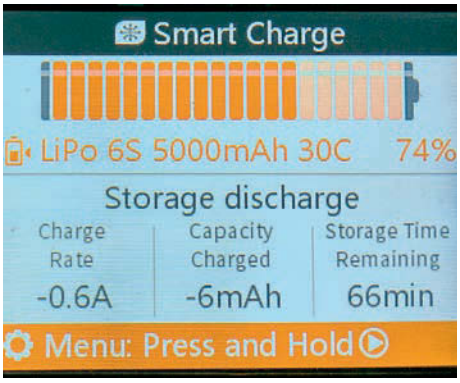
"…cell count, battery type, charge current rate and battery capacity are set automatically and the charger will begin charging soon after the power lead is plugged in"

OPERATION OVERVIEW

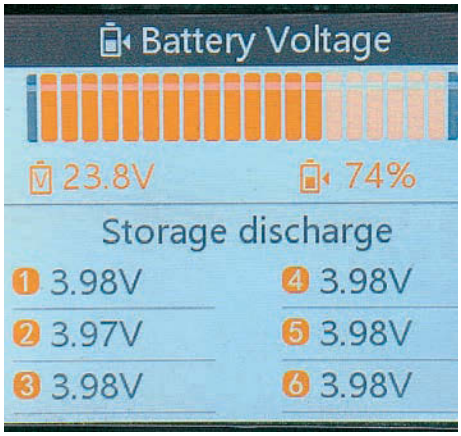
As you would expect from a charger supplied by such a well-established manufacturer of R/C products, the



By using the user interface buttons and the Charger Settings menus the S1200 acts as a conventional charger/discharger for non-Smart packs. Here it is being set up to charge a 6S LiPo at 5A. Charging will start when the rubberised grey Start button is pressed.



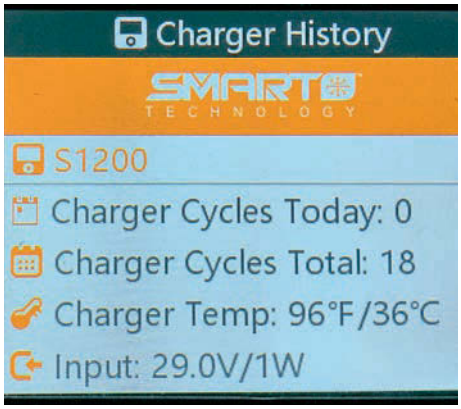
The same range of information displayed on screen is also available when discharging. Here our 6S 5000 mAh LiPo is being storage discharged with 66 minutes estimated to complete the task.



As during charging the voltage of each cell can be monitored while the pack is being discharged.



Smart LiPos store their history on their internal microchips and the data can be called up on a Smart charger's display. Nothing to see here as it is a brand-new pack.



Likewise, the charger's history is also available for scrutiny.



The Smart S1200 G2 charger is supplied with a manual and two AC power leads, one of which is to UK 3-pin standard.



Front panel showing the sliding door that covers the output power ports. IC3 on top and IC5 (covered) below. A 2S to 6S balance lead connection sits alongside.



Rear panel showing the large cooling fan grill, AC cord socket and On/Off switch.

Spektrum S1200 G2 AC charger is well made with modern styling.

The screen is clear and easy to read, and if any manual set up changes need to be made, for example when accessing the storage charge menu, then they can be easily accessed using the rubberised grey strip of user interface buttons mounted just beneath the screen.

Charge status is clearly shown on screen, with a segmented battery icon on top confirming the number of cells and pack capacity, plus the percentage of full charge achieved. Underneath is shown the charge rate, the capacity reached so far, and an estimate of the charge time remaining.

The S1200 is an AC (mains) charger but combined AC/DC versions are also available for field charging from suitable DC sources. It is a single port design, capable of delivering up to 200W and is quiet in operation thanks to the low-noise cooling fan. The compact case also incorporates USB input and output ports for updating firmware and charging secondary devices.

If you experience any trepidation when changing LiPos or other types of lithium chemistry batteries, then adopting the Spektrum Smart G2 charging system is highly recommended.

With only the battery's power lead needing to be plugged in any worries about getting parts of the set up wrong are removed. Just flip the slider covering the IC3 or IC5 output ports, plug in your G2 battery and charging will automatically begin.

Overall, the Spektrum S1200 is a pleasure to use and it has allowed us to start enjoying the worry-free benefits that are inherent when using Spektrum's Smart G2 charging system. ■

DATAFILE

Product name:	Spektrum S1200 G2 AC 1x200W Smart Charger
Product type:	Single output Smart battery charger
Distrubuted by:	Logic RC https://www.logicrc.com
RRP:	£154.99
Power:	200W
Power Source:	AC
Output Connector:	IC3, IC5
Battery Type:	Smart (or G1 or non-Smart with XH balance lead) LiFe (3.3V per cell) LiHV (3.8V per cell) LiIon (3.3V per cell) LiPo (3.7V per cell) NiCd (1.2V per cell) Pb (2.0V per cell) NiMH (1.2V per cell)
Display:	2.4" 320 x 240 IPS LCD
Input Voltage:	100 - 240V AC
Discharge:	0.1 - 1.5A (10W max.)
Charge Current:	0.1 - 15.0A, adjustable in 0.1A increments
Number of Cells:	1 - 6S Li-Ion/LiPo/LiFe 1 - 16S NiCd/NiMH 1 - 12S Pb

"The Smart battery range currently consists of LiPo, LiHV and LiFe battery types"

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



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



1948 Bernard Gross Flying Wing *Rapid Build*

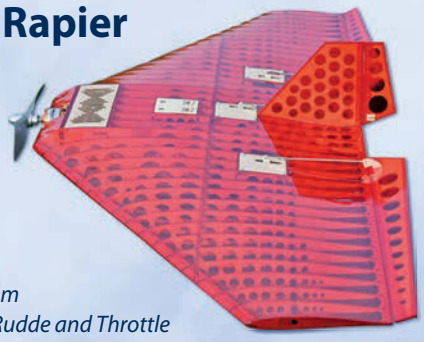
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MvM's mission is to breathe new life into some fascinating vintage models, redesigning them to better accommodate modern building techniques, materials and electronics while still maintaining the characteristics of these original models.

VICKERS TYPE 22

Mike Freeman catches up with Steve Carr to learn all about his huge 60% scale model based on an aeroplane flown in the film Those Magnificent Men in Their Flying Machines

Words & Photos : **Mike Freeman**

I imagine most aeromodellers will have seen or at least heard of the 1965 comedy classic Those Magnificent Men in Their Flying Machines, an aviation yarn about an aerial race from London to Paris set in 1910, just a year after Louis Bleriot's famous Channel crossing.

In the film the character Count Emilio Ponticelli, played by Alberto Sordi, flew a Bleriot look-alike monoplane in the race... and Steve Carr's 60% scale rendition of this very flying machine is on show here.



Ailerons were fitted to the full-size Vickers Type 22 replica to improve roll control while filming.

FULL SIZE

I say 'look-alike' because the aeroplane featured in the film is based on a Vickers Type 22 (aka Bleriot type) which was designed in 1910 for the Vickers Flying Club.



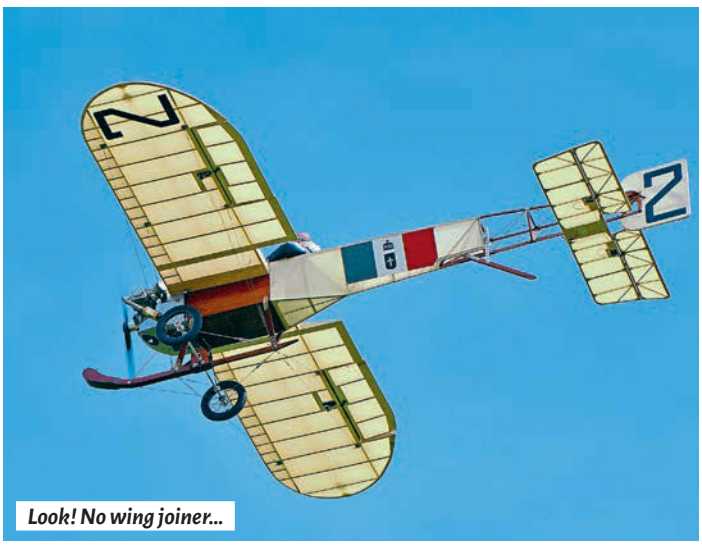




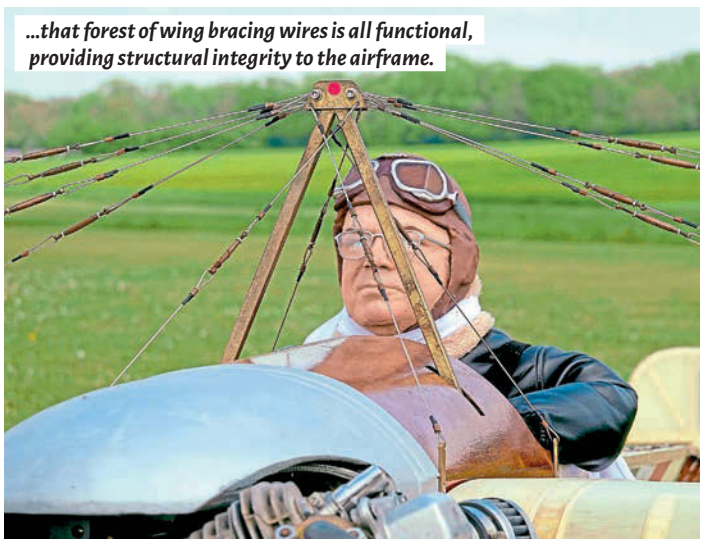
Wing finishing details. Note the rib tapes and stitching. You can't help but notice the enormous 'barn door' ailerons which are a true-scale feature of the full-size aeroplane.



Steve found the true-to-scale ailerons very helpful while flying in gusty conditions at the Popham 2025 Model Show.



Look! No wing joiner...



...that forest of wing bracing wires is all functional, providing structural integrity to the airframe.

The actual aeroplane flown during the making of the film was a replica Type 22 built by an engineer called Douglas Bianchi in 1960 using the original Vickers plans as a basis.

The film's maker, 20th Century Fox, purchased the airframe and carried out various modifications, mainly to improve the flight performance considering the close flying required for the film. Modifications included upgrading the original engine to a 75HP Continental flat-four and swapping the original wing warping roll control for traditional ailerons. When filming had finished, the aeroplane was sold to the Southward Car Museum in New Zealand.

THE MODEL

The model was originally built by Roy Salter in the early 2000s. Steve bought it from the late Dave Johnson's estate in 2025 and set about a complete restoration.

Its first public outing was at the Popham 2025 Model Show where Steve treated the crowd to a lovely nostalgic display, with the title music to Those Magnificent Men in Their Flying Machines playing over the PA system.

WINGS

Steve removed all the original covering and after beefing-up the aileron linkages to cope with those barn door ailerons, he recovered them



The unnaturally long nose skid was to protect the prop on the full-size Vickers...



... Steve made use of it to house the Type 22's LiPos, to get weight as far forward as possible to help the model's C of G.

in Antique Oratex to replicate the covering of the original. The rib tapes and stitching look very effective and consist of self-adhesive strips with raised vinyl lines to simulate the stitching simply stuck over the rib cap strips.

If you look carefully at the photo with the sun shining through the open structure you can see there is no wing joiner - that forest of rigging wires is all structurally functional.

FUSELAGE

Steve stripped the original covering, metalwork and structural wiring and replaced it all with new. All the metal parts have been brass-plated

> "When filming had finished, the aeroplane was sold to the Southward Car Museum in New Zealand"

for an authentic look and Steve reports the wirework adds an immense amount of rigidity to that long, flimsy looking fuselage.

The covered parts of the fuselage are covered in Antique Oratex again and all wooden parts were treated to a fresh coat of varnish. The unusually long nose skid (to protect the propeller on the full size) is put to good use on Steve's model as it houses the four LiPo packs used to power the model, helping to achieve the model's CG without the need for any lead.

The undercarriage has sprung suspension using bungee cord and the wheels are from a child's balance bike. The tail skid also has bungee suspension and is fixed; there is no steering which, while authentic, makes taxiing rather taxing!

The pilot is a 60% facsimile of Steve himself made by Scale Me Down. They scan you and produce a 3D printed version of yourself to whatever scale you want. The finished pilot is



The tail skid has bungee cord suspension but no steering, making taxiing difficult.



It was a tight squeeze in those early pioneering days of aviation!



Each elevator half has its own dedicated servo. The rudder uses a closed loop system. Steve says the model flies best using rudder as the primary control and trimming the bank angle with the ailerons.



Steve and his 60% scale 'Mini Me' pilot from Scale Me Down. The real Steve is the one at the back!

"The lower revs of the four-stroke meant Steve could fit a beautiful 32" x 10" Xoar scimitar beechwood wooden prop"

very realistic — it was quite bizarre seeing both Steves together!

TAIL FEATHERS

Steve stripped and recovered the tail feathers with more Antique Oratex and replaced the original elevator linkages, introducing a low-profile servo into each tailplane half to control each elevator to cope with their large surface areas.

A closed loop system is used on the rudder, with a hefty servo situated under the cockpit floor.

ENGINE

When Steve acquired the model, it had a screaming two-stroke engine up front which he thought spoilt the nostalgic ambiance. So, he swapped it for a single cylinder 160cc four-stroke Honda generator engine with Rexell electronic ignition.

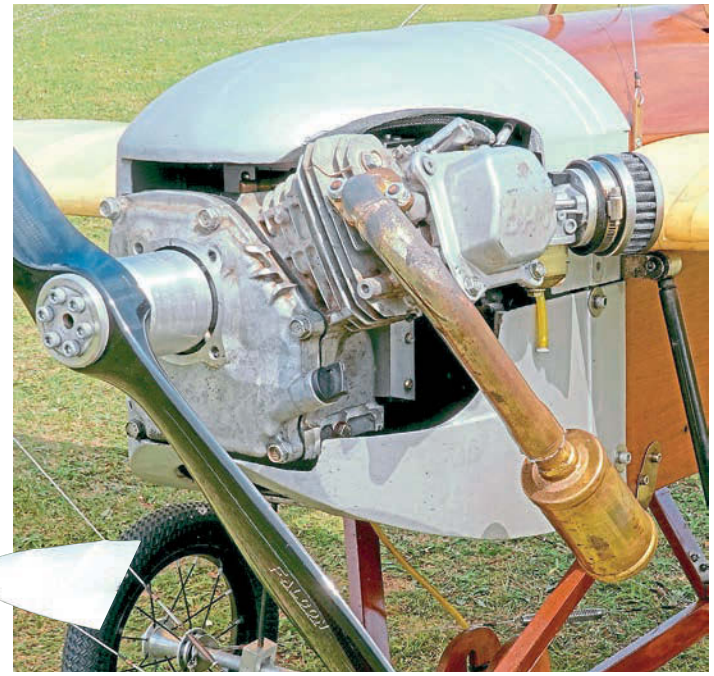
The lower revs of the four-stroke meant Steve could fit a beautiful 32" x 10" Xoar scimitar beechwood wooden prop which looked in keeping with the model, although it had mysteriously disappeared for the Popham 2026 Show and been replaced with the carbon alternative you might see in some of the photos.



Close up of the tail end. Note the closed loop rudder control and all the lovely metalwork and wire bracing which helps make the long fuselage nice and rigid.



The beautiful 32" x 10" scimitar shaped beechwood prop sets the front end off nicely.



Steve swapped the original two-stroke for this 160cc single cylinder four-stroke Honda generator engine.



Here's Steve preparing to fire up the engine for another nostalgic display at Popham 2025.



There was a strong crosswind at the Popham 2025 show, so Steve elected to take off across the runway. He just made it!



Steve brings the Vickers Type 22 safely in for a landing.

DATAFILE

Name:	Vickers Type 22 (Bleriot-type)
Built by:	Roy Salter
Owned by:	Steve Carr
Scale:	60%
Wingspan:	4.2 metres (165")
Length:	3.6 metres (142")
Weight:	40 kg (88 lb)
Engine:	160 cc four-stroke Honda generator
Prop:	32" x 10" Xoar Scimitar Beechwood
Radio:	Multiplex Profi Transmitter with 2 x Multiplex Pro Rx
Servos:	3 x Hitec 1/4 scale, ailerons x 2, rudder x 1
	2 x MacGregor low profile on elevators

The extra weight of the four-stroke engine, along with the forward mounted LiPos mentioned earlier, meant that Steve could remove 20lb of lead fitted behind the engine and now no additional nose weight is necessary to balance the model, which is quite impressive given the massive moment arm!

FLYING

Steve says it flies very well and while the ailerons are effective for coping with windy conditions, he mainly uses rudder when flying, just using the ailerons to keep the wings at a scale bank angle. The large scale of the model, along with the low revving 'put-put-put' of the four-stroke engine, give a very realistic display.

While it is unlikely the original was ever looped, Steve told me he has looped the model but he has to be careful as the Honda engine's fuel supply is via a carburettor with a float chamber and there is a risk of the engine cutting out as the model goes inverted! ■



The Honda engine sounded fabulous put-put-putting over the Popham airfield.

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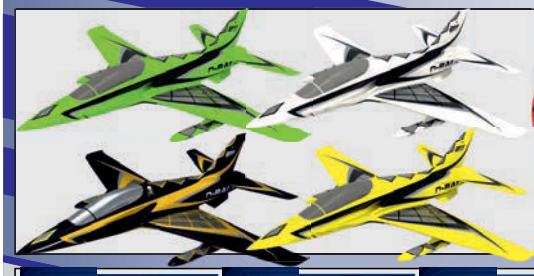
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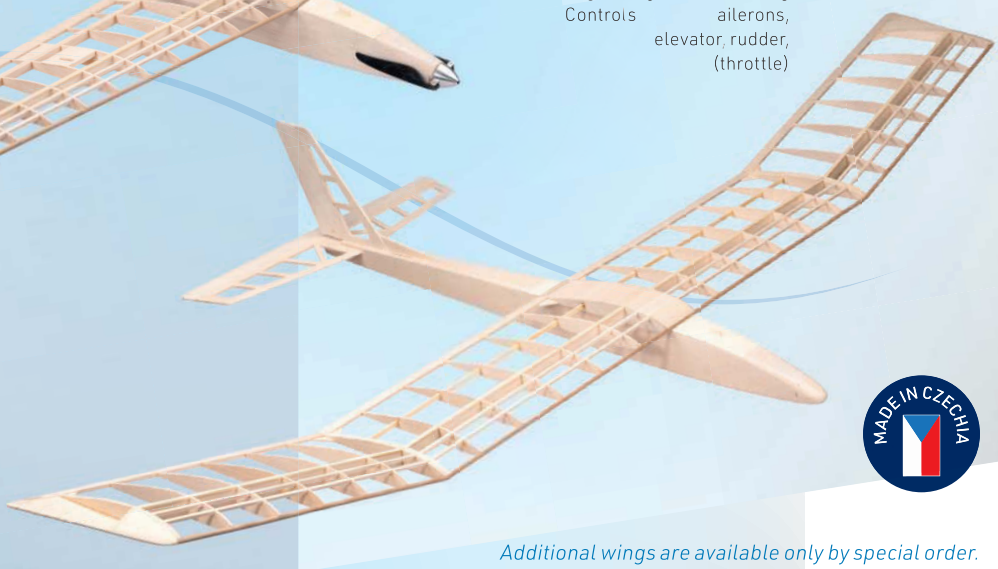


#KAV02.8017

KAVAN Redy

ACRO: 229.9 €

Wingspan	**1385** mm
Length	**1008** mm
Flight weight	**>600** g
Controls	ailerons, elevator, rudder, (throttle)



#KAV02.8016

KAVAN Redy

FIRST: 199.9 €

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Length	**1008** mm
Flight weight	**>600** g
Controls	elevator, rudder, (throttle)

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Harry shows off the small but nimble twin EDF flying wing just before its maiden flight.

HORTEN Ho-229

Harry Curzon commits aviation with AviNationRC's small, twin EDF powered flying wing

Words : **Harry Curzon**

Photos : **Harry Curzon, Rob Bennett**

In the 1930s the Horten brothers designed and built futuristic tailless gliders without a fin but relying on split ailerons acting as drag brakes to control the yaw.

Looking at a modern B-2 bomber we can see how far ahead the Hortens' thinking was, and they achieved it without computers to control the flight.

During the Second World War their design for a twin jet powered bomber, the Ho-229, was ordered by the Luftwaffe. Three prototypes were built and flown, reaching remarkable speeds, but a lack of materials and the end of the war meant they did not go into production.

So, this model is not a 'Raiders of the Lost Ark' fantasy. It is a scale model of a genuine aircraft that really did fly.

A NEW BRAND

AviNationRC, a new brand, has teamed up with CNHL, which is already known for



AVN's Horten is claimed to be the world's first mass produced R/C model of a Ho-229 at any size.



The box has a useful carry handle.



Contents of the box which doubles as a good storage and transport case for the model even after the fin is glued into the bottom of the fuselage.

A LIGHTER BATTERY

The first batch of Hortens, including *RCM&E's* review model, were mistakenly supplied with a 750 mAh 4S LiHV pack. While it still flies well, as Harry confirms, the heavier pack may cause it to nose down on launch - also discovered by Harry!

To help prevent this, CNHL has told us that all Hortens sold in the UK from mid-September were now being shipped with the lighter 550 mAh 4S LiHV pack. With mixed throttle use the team there says that this should give similar flight times of three minutes plus. **KC**

its LiPo batteries, and has entered the R/C model market with an adventurous and very rarely modelled subject. What a refreshing change to the usual repeat of a Spitfire, Cub etc.

As a minimum you need just three channels and a transmitter capable of elevon mixing. If you fit the undercarriage, you need a channel for the steering servo. And if you want differential thrust to control the yaw in flight you need a second throttle channel to control the two ESCs independently and a transmitter capable of mixing from the rudder stick to the two throttle channels.

The model is complete apart from a receiver and a battery charger for the included LiPo. It includes a fixed undercarriage for you to fit if you operate from tarmac and a servo for the nose steering is already built in. A CNHL 4S 750 mAh HV LiPo fitted with an XT30 was included with the model, which is handy. But this has now been changed to a lighter 550 mAh 4S LiHV - see the battery change note.

NEARLY FULLY ASSEMBLED

The Ho-229 comes almost fully assembled; your only task is to glue on the non-scale fin underneath.



Hatches removed, plus the bundles of micro extension leads and micro to normal servo conversion leads included with the model.



A full-size Jeti R5L receiver just squeezes into the receiver bay. Horten is supplied without a gyro as it is naturally very stable. However, those that wish to fit a gyro have plenty of space in the receiver bay.

Two fins are supplied, one painted and a clear one which at first glance appears to be opaque white, but that is just the protective film which should be removed.

The instructions suggest that the painted fin helps with orientation, although in flight I found that there are not many angles in which you can actually see it - and usually not when you need it when it is some distance away!

However, you must fit one of the fins as the model does not have split ailerons or fancy gyros to keep it going in a straight line.

SETTING UP

The model is designed for a micro receiver. I just managed to squeeze in a Jeti R5L.

The bag of accessories includes conversion leads from the fitted micro servo plugs to standard servo plugs. There is a conversion Y-lead if you want to connect both ESCs to one channel, but if you set two throttles and channels in your transmitter you can mix from the rudder stick to throttle to give differential thrust and therefore some yaw control.

There is not a printed instruction manual in the box but if you Google for CNHL Ho 229 you get to the model's web page which has an instruction manual that you can download. The web page also has a ready-made model file for Ethos radio systems for you to download to suitable transmitters.

The CG range is just 2mm, which is probably half the margin of error of balancing the model on a finger and thumb. But it worked!

The instructions say that using the 4S 750 mAh battery will require a few millimetres of up trim due to its heavier weight, which is odd because if the model is balanced then the battery weight does not make it nose heavy; if it is nose heavy then it is outside of that tiny 2mm CG range! Nevertheless, I gave it about 2mm of up trim to start with, and it needed it!

MAIDEN FLIGHT

I made the maiden flight with a little bit more travel than the low rates indicated by the instructions.



Follow the guidance for hand launching as some people struggle with this part of the flight. The Horten is not difficult to launch but it does require a certain technique.

"…if you give it lots of power you will be stirring the sticks constantly to bring it back - but also thoroughly enjoying its zippy performance!"

I attached bits of hook tape to the underside to provide some grip and took heed of the instructions to launch at three quarters throttle while holding in some up elevator.

My helper gave the Ho-229 a good clean throw, after which it roller-coastered down, up, then down again, bounced a wingtip off the ground, cartwheeled, then dived in vertically. (*Hence, the change to a lighter 550 mAh LiHV pack! KC*)

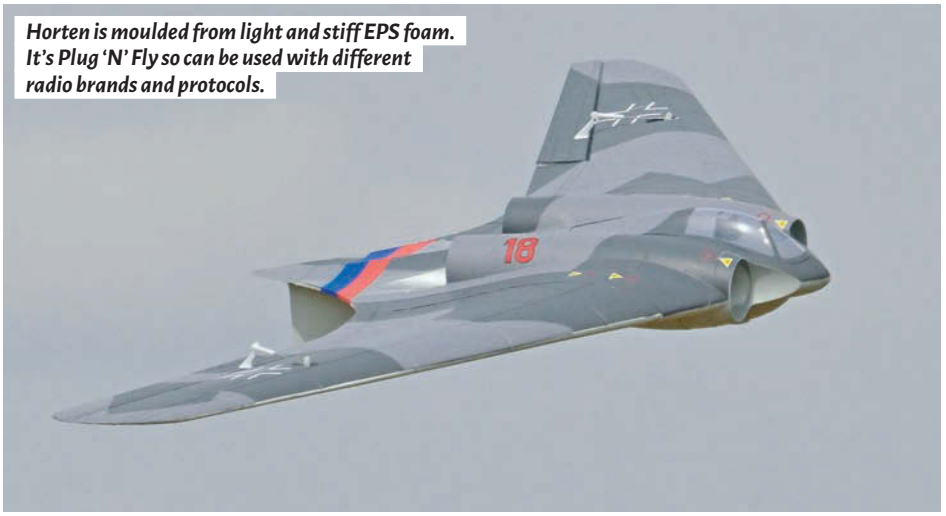
The only damage was a bit of foam lost from the port wingtip and aileron, so we tried again.

This time I held in even more up elevator and the model got cleanly away from the launch with no drama at all, as if the previous attempt had never happened. I took it to full power very quickly but just as quickly I throttled back a long way. It really is very highly powered on 4S!



If you find you struggle to hand launch her then use the 550 mAh 4S pack and later, once trimmed and dialled in, then the 750 mAh can be used. No problems with this throw!

It took a further two clicks of up trim and a few clicks of aileron trim to fly level and then I was happy to bring it lower for the in-flight photographs.



Horten is moulded from light and stiff EPS foam. It's Plug 'N' Fly so can be used with different radio brands and protocols.



Two vertical fins are supplied and are the only 'assembly' step. One is painted, the other clear and needs just a small amount of glue to install. Clear fin gives a more scale appearance, but the painted one gives a little additional benefit in terms of orientation in flight.

FLIGHT NOTES

The Ho-229 flies level on very low throttle but needs more power as soon as it banks to turn. As the instructions state: *"…the Ho-229 flies more like a compact missile than a casual foam park flyer!"* It can slow down but is better with a bit of speed - and full throttle gives it a lot of speed and huge vertical performance!

If you fly it at medium power, it gets small very quickly, but if you give it lots of power you will be stirring the sticks constantly to bring it back - but also thoroughly enjoying its zippy performance.

For my liking, I felt that a bit more travel than low rate was still not nearly enough; I was using 6mm rather than the 5mm for each of elevator and aileron as given in the instructions. On low rate the roll rate was too slow and the elevator did not pull around tight turns quickly enough.

Landing was straightforward. I cut the power completely at about head height and glided her down the rest of the way under full control despite the low rates.

SECOND FLIGHT

For the second flight I went to full rates of 10mm with 40% expo on aileron and 30% expo on elevator. Again, I set about three quarter throttle and held in half or more up elevator while my helper threw the Horten.

It went off in a perfectly straight, gentle climb, with no further intervention from me. It accelerates quickly so I was soon easing off up elevator and throttle and set out to explore its flying some more.

The controls were now much more responsive but not twitchy, and I felt happy



Ho-229 features counter rotating 35 mm fans which, when coupled with differential thrust, give a surprising amount of yaw control in flight.



On approach for landing.

Ho-229 ADDITIONAL NOTES



After supplying our review model from its initial batch of kits, CNHL sent some additional notes that it requested be published with the review:

Each model is supplied with a suitable CNHL LiHV 4S battery. See picture.

This model is stocked in CNHL's UK warehouse, along with most spare parts. 3DP files of some parts are available to download for free too.

The manual is available online and some important pre-flight notes/checks are listed which must be followed, including

'flexing' the control surfaces to loosen them up before moving them with radio control. It takes just seconds to do.

Some cases of loose fan mounting screws have been reported so it is strongly recommended to check the screws are tight before every flight. The cause of this issue has been identified and corrected, but it's always good to double check.

Rare cases of blades breaking have been reported on the first production batch. While a specific cause could not be identified, as a precaution fans on all models on sale in the UK from mid-September have been supplied with stronger, reinforced and better balanced EDF units.

Stand-off scale fixed landing gear is supplied for flying from a smooth surface. However, using the lighter 550 mah pack it's generally recommended just for static display.

A set up file for FR-Sky Ethos radios is available to download from the CNHL website so you can have the model set up and ready to go in minutes.

"…you must fit one of the fins as the model does not have split ailerons or fancy gyros to keep it going in a straight line"

to leave them permanently at this setting. A roll was completed briskly but not stupidly fast, while full throttle allowed for huge loops due to all the thrust available.

Initially, I mixed rudder stick to differential throttle at 20%. I tried it in level flight at medium power and a very small twitch in yaw could be seen, but it clearly needs to be set at a much bigger value.

AviNationRC states that no gyro is needed, and I must agree. It should desperately need a gyro as it is a tail-less, highly swept wing, very light weight foamy, yet it works just fine without one.

I normally fly until the telemetry tells me the battery capacity is used. But there is no room in the little Ho-229 for a sensor, so I set my flight timer to the 3 minutes 30 seconds suggested in the instructions for initial flights, typically landing at 3 minutes 50 seconds.

I used the re-charge to count the capacity used and found that there was well over 50% still remaining if flown around at modest power to help the cameraman track this speedy little model. That gives a good margin for flights using more power to enjoy the speed and agility.

FAST & NIMBLE

So, what we have here is a 'scale bomber', but it will not work if you try to fly it in a scale bomber manner. It is a fast, nimble little wing that looks beautiful and just happens to be in the shape of a Ho-229 bomber!

Give it some throttle, stir the sticks and fly it like a fighter. But be confident of your orientation and you will have lots of fun with the AviNationRC Ho-229! ■

DATAFILE

Model:	Horten Ho-229
Model type:	Twin EDF flying wing
Manufacturer:	AviNationRC
Distributed by:	CNHL
	chinahobbyline.com
Wingspan	813mm
Length:	360mm
Weight:	245g to 265g RTF
Motor:	2 x AVN 1311, 5600kV brushless outrunners
ESC:	2 x AVN 15A micro brushless
EDF:	2 x 35mm, 5-blade
LiPo:	3 to 4S, 550 to 750 mAh

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AERMACCHI IMPALA

Phil Stone completes his step-by-step guide into building his Power Scale Soaring Italian military jet trainer, and it takes to the air in North Wales

Part 2

Words: **Phil Stone** Photos: **Phil Stone, Phil Cooke, Mark Ollier**

A basic design for a very good flyer, I had a project that was really taking shape, and also had the 3-D printing aimed at enhancing the look of the Impala to come.

But first those essentials needed doing.

48: As with my recent Hawk build, I used torque rods to control the ailerons.

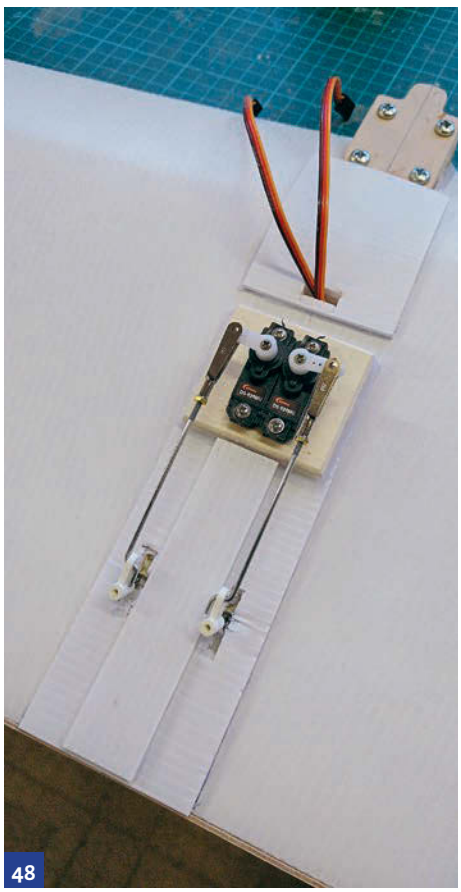
49 & 50: Using some 9mm ply I made a bracket assembly for the wing retaining nuts and glued it securely in place using a combination of wood and hot-melt glue.

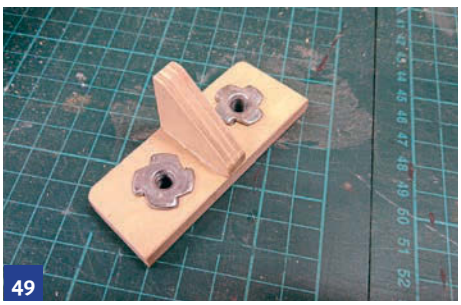
51 & 52: I then cut a matching piece of 3mm ply to act as a spreader plate and inset it within the lower skin of the wing.

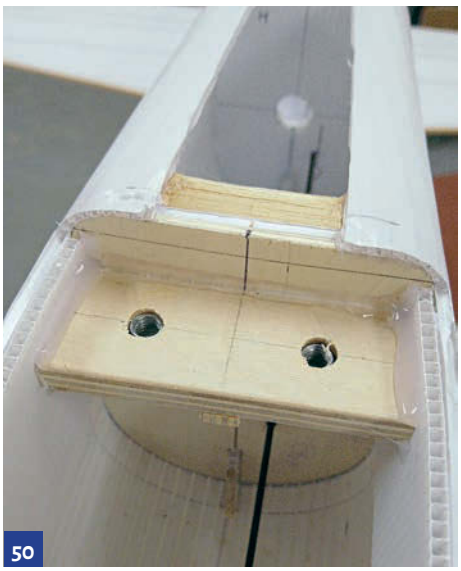
53: Happy there was nothing further to do within the fuselage I closed off the rear underside.

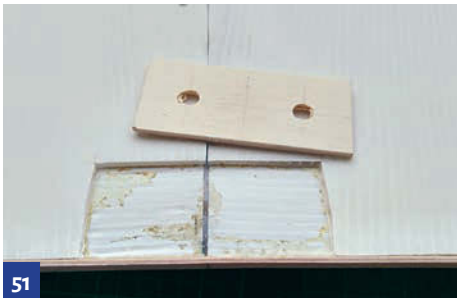
54 & 57: To help prevent damage, should the wing ever skew out of the fuselage during a heavy landing, I chose to add a 45 degree ramp for the rear wing seating and a corresponding piece of angled bead to the rear of the wing.

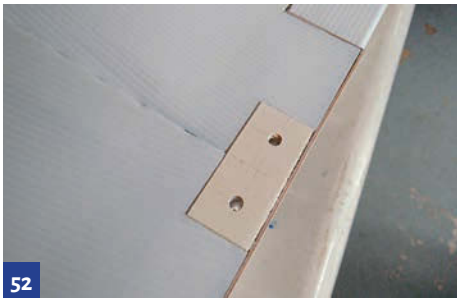
58 & 59: As something of an afterthought I then decided to add a bit more detail and made a ply tail skid which I inserted into the fuselage underside.

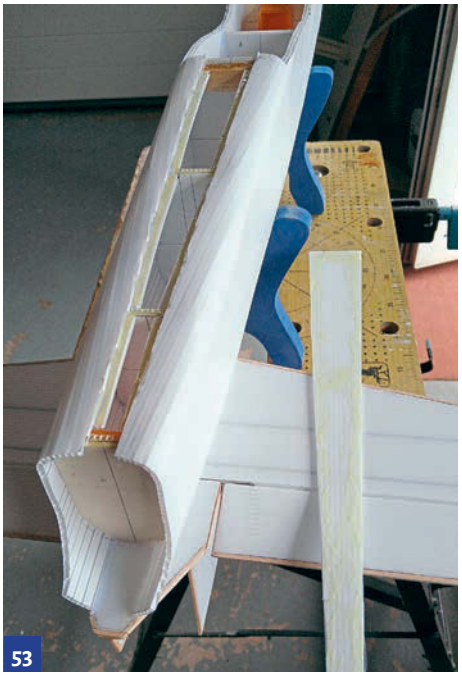

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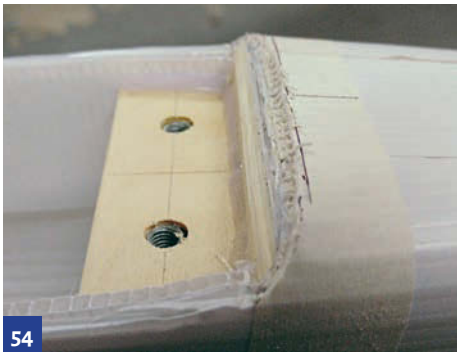

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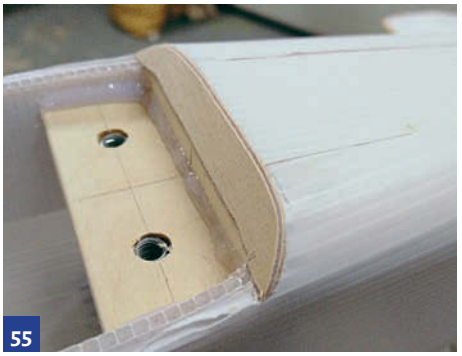

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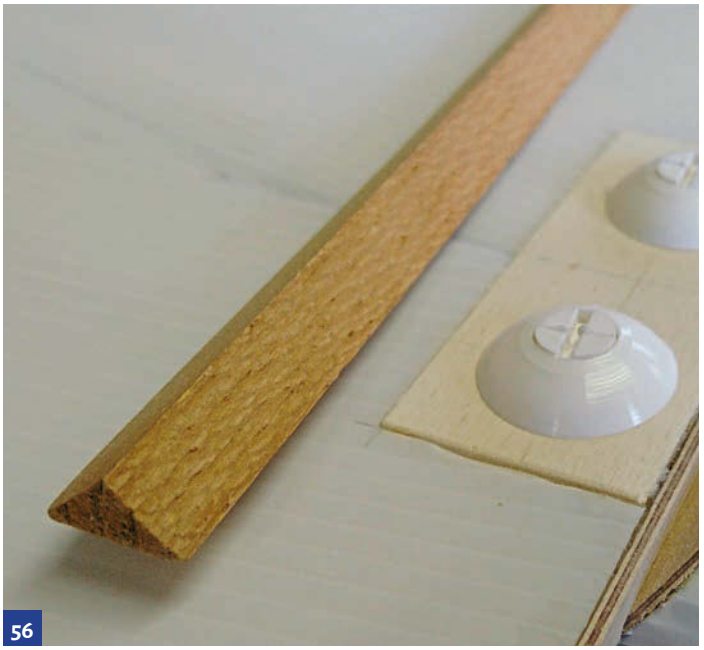

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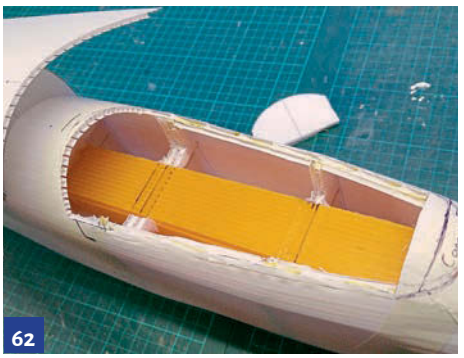

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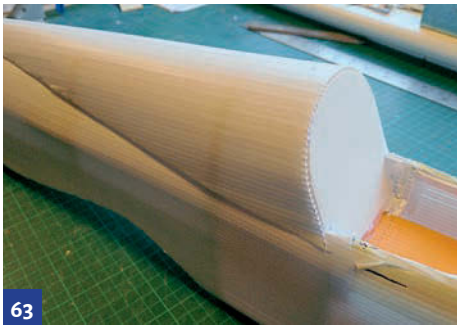

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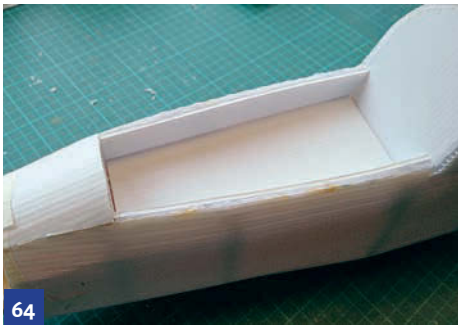

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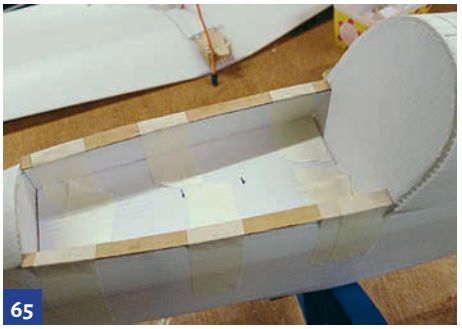




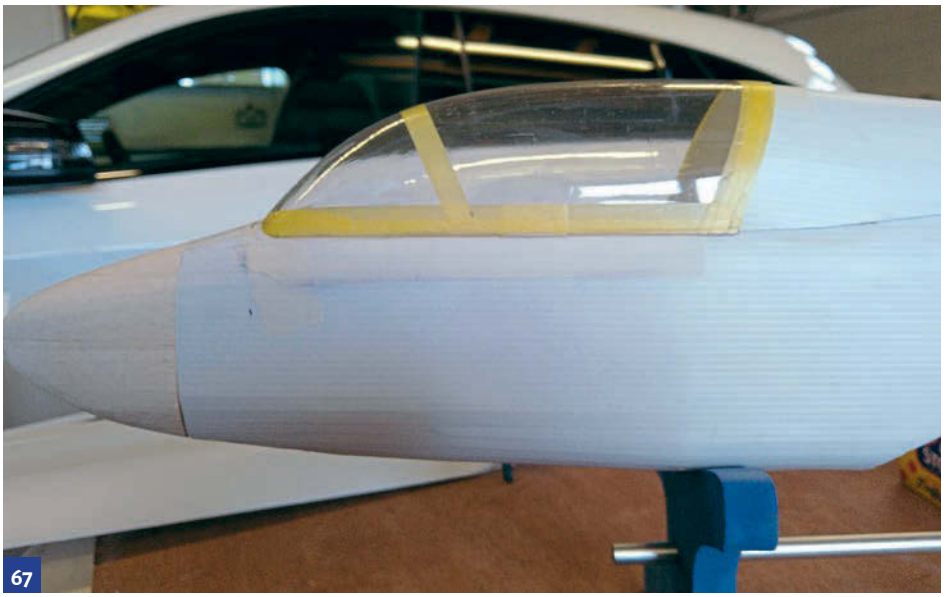












60: To neaten up the exhaust I cut a piece of thin ply to line the inside and cover all of the cut flutes.

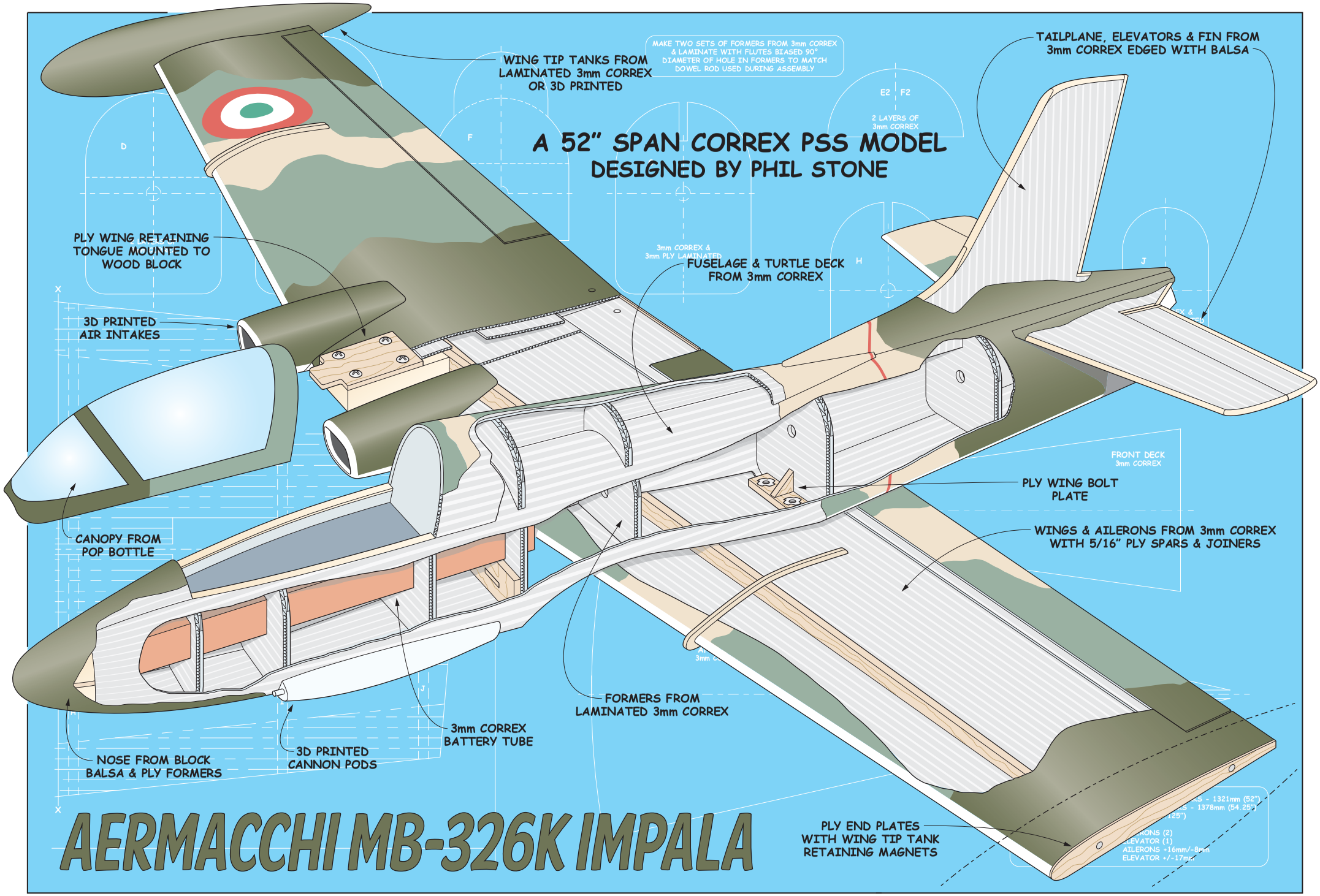
61: The Impala could be configured as a single seat aircraft or tandem. Since the version I was aiming to replicate was a single seater I needed to extend the turtle deck forward by around 12mm at TDC with the sides curving further forward by an additional 25mm.

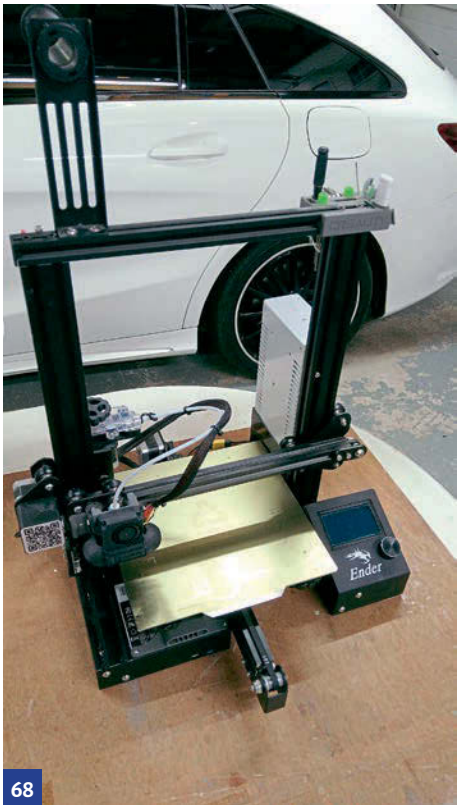
62 & 64: I cut the upper skin of the fuselage away and then locally cut the formers away too, down as low as the upper surface of the battery tube.

65: I made a new rear bulkhead and then glued the extended turtle deck in place. I was then able to glue in place the false cockpit floor and sides, and once again some pieces of thin ply tidied up the bare Correx edges.

66: After first carving a plug I was then able to mould a canopy from the usual two-litre pop bottle.

67: To finish things off I then blocked out and carved the nose to shape too.

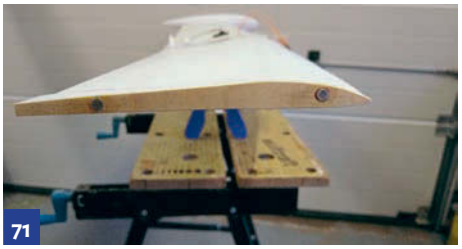

A 52" SPAN CORREX PSS MODEL
DESIGNED BY PHIL STONE
AERMACCHI MB-326K IMPALA
WING TIP TANKS FROM LAMINATED 3mm CORREX OR 3D PRINTED
MAKE TWO SETS OF FORMERS FROM 3mm CORREX & LAMINATE WITH FLUTES BIASED 90° DIAMETER OF HOLE IN FORMERS TO MATCH DOWEL ROD USED DURING ASSEMBLY
TAILPLANE, ELEVATORS & FIN FROM 3mm CORREX EDGED WITH BALSA
PLY WING RETAINING TONGUE MOUNTED TO WOOD BLOCK
3D PRINTED AIR INTAKES
FUSELAGE & TURTLE DECK FROM 3mm CORREX
FRONT DECK 3mm CORREX
PLY WING BOLT PLATE
CANOPY FROM POP BOTTLE
WINGS & AILERONS FROM 3mm CORREX WITH 5/16" PLY SPARS & JOINERS
FORMERS FROM LAMINATED 3mm CORREX
3mm CORREX BATTERY TUBE
3D PRINTED CANNON PODS
NOSE FROM BLOCK BALSA & PLY FORMERS
PLY END PLATES WITH WING TIP TANK RETAINING MAGNETS



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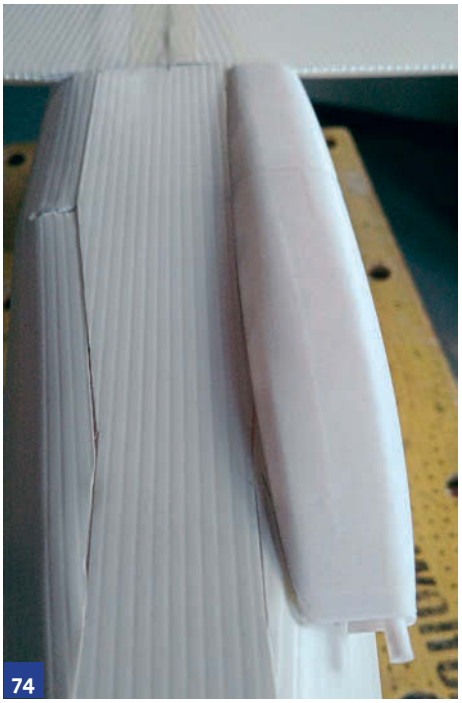

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68: So having completed the basic Correx build it was time to add some more detail and try out my 3D printer!

WING TIP TANKS

My first challenge was the wing tip tanks. I wanted to improve upon those shown on the plan which are fabricated from five layers of Correx. After a number of iterations I finally ended up with something that looked the part, was reasonably strong and not too heavy.

Because of their size I had to print each one in two halves. I included some 6mm and 8mm diameter pockets within them to accommodate 2mm thick neodymium magnets to help retain the tanks on to the wings. Without the magnets each tank weighed 52g.



69 & 72: With some matching magnets fitted into each wing tip the tanks were done. I only fitted the 6mm magnets but allowed myself the option of fitting the 8mm ones too if the 6mm ones didn't prove strong enough to hold the tanks in place. As it turned out my tanks would probably hold on by friction alone so the 6mm magnets have proved sufficient for me.

CANNONS

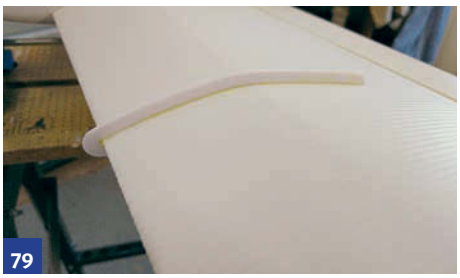
73 & 74: My particular Impala had cannons mounted on its underside so I had a go at modelling and printing some of those too. The shape of the Correx fuselage in that region made fitting them neatly quite a challenge for me but the plus point was that once fitted they did cover the unsightly Correx joints I had in that region. I decided to cut each cannon in half to make printing them easier.

AIR INTAKES

75 & 76: Each air intake is made in two halves, the lower halves being glued to the wing underside and the upper halves held in place by more neodymium magnets. That way they will easily detach should the wing ever part


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from the fuselage, rather than imprinting themselves into the fuselage sides.

77 & 78: By applying a dab of red paint to the magnets within the upper intake pieces I was then able to ascertain where in the wing to fit the corresponding magnets. By careful use of a flat bottomed drill it was then possible to remove just the outer skin of the wings upper surface and create a pocket into which the magnets could be glued.

WING FENCES

79: The wing fences were easier to produce, and while I thought they might be prone to getting knocked off thus far they seem to be fine, having glued them in place with EvoStik.

COCKPIT BINNACLE

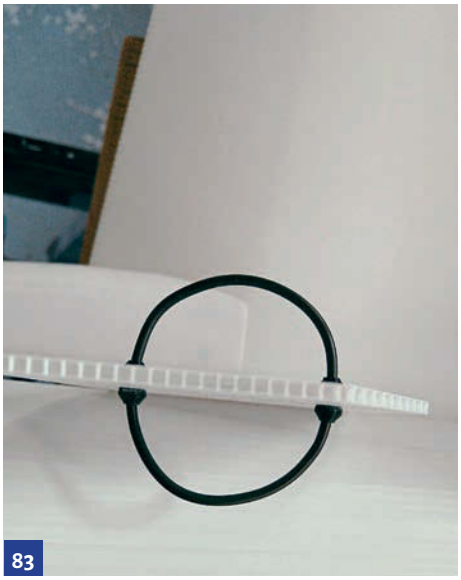
80 & 81: Making full use of my printer I also decided to make a simplified instrument binnacle for the cockpit and glued a suitably sized photo within it.

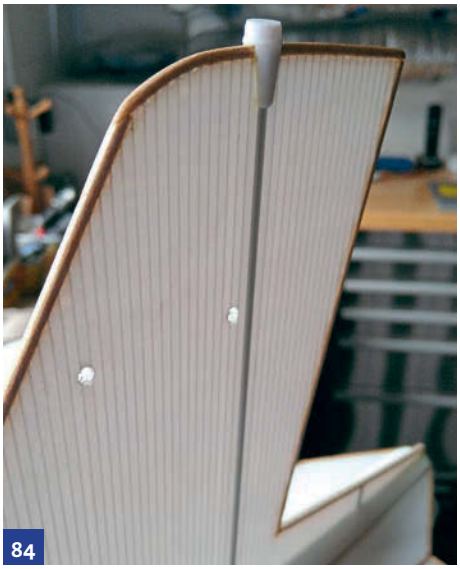
TAIL FIN RADAR HOOP

82 & 83: Again, something peculiar to my Impala is what I believe to be some kind of radar hoop on the tail fin. Recreating this would invariably result in something exceedingly prone to damage in transit so I wanted to make it detachable.
I ended up modelling some tiny grommet-like pieces that were glued together sandwiching the tail fin and having suitably sized holes to accommodate some black electrical wire sleeving (with the wire stripped out from inside). For anyone wishing to replicate this the wire diameter I used was 2.65mm, each length measured 75mm and the hole centres in the fin were 46mm.






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TAIL FIN LIGHT

84: One last piece of detail was the navigation light on top of the tail fin.

85: All my extra detail additions probably didn't help the situation but I found that I needed a couple of pieces of steel rod inserting into the balsa nose to bring the CG back to where it should be.

86: A bit of filler where necessary to tidy things up and we were ready for paint.

87 & 88: A first for me but I airbrushed the camouflage using foam masking to create the soft edging (thanks to Harry Twist for the recommendation). The decals are a mixture of cut vinyl and waterslide with a sealing spray coat of clear satin over the whole thing to finish.

89: All up weight once complete and flight ready was a not insubstantial 1.8kg but it flew superbly from the off and I'm sure that extra weight helps in keeping it so stable in flight.

90: I have made all the stl files of my 3D printed parts available to download for free from thingiverse.com. Just search 'PSS Impala' and you should easily find them. All were printed using PLA+ (which is more durable than PLA) and I've included the basic print settings I used for each part too. If you're looking to save some weight then using LWPLA instead of PLA should make a significant difference. Be aware though that PLA and PLA+ can be susceptible to distortion in hot weather, particularly single wall thickness items such as the wing tip tanks, so it's advisable to avoid leaving your model too long in direct sunlight or in a hot vehicle. Once it distorts there's no going back, so you'll be needing to print another otherwise.

Thanks must go out to Jim Beagle for allowing the publication of his plans within *RCM&E*. And also to Tim Mackey for his invaluable guidance and assistance with all things 3DP and to Phil Cooke of PSSA-online for providing the fabulous photos of me with my finished Impala ready for its maiden at the Great Orme and inflight over Hell's Mouth Bay on the Lleyn Peninsula, just two of the fantastic locations we get to fly at the 'Fly for Fun' events organised by PSSA-online.

Happy flying! ■

DATAFILE

Name:	MB-326K Impala
Model type:	Correx PSS glider
Designed By:	Jim Beagle Wingspan
Without tip tanks:	1.321m (52")
With tip tanks:	1.378m (54.25")
Length:	1070mm (42.125")
Weight:	1800g
Functions:	Ailerons (2), elevator (1)
Control movements:	Ailerons +16mm/-8mm. Elevator +/-17mm

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PPL-60C3S-2200	60C/120C, 3S (11.1V) 2200mAh	£24.00
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PPL-60C4S-2200	60C/120C, 4S (14.8V) 2200mAh	£33.50
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4-Max	4M-045DH-005	Sub Micro	4.5g	0.5Kg @ 4.8V - 0.10sec/60° 0.6Kg @ 6.0V - 0.08sec/60°	Digital, Light Weight, High Speed	1pcs £4.72ea 5pcs £4.25ea
EMAX	ES9051	Sub Micro	4.1g	0.8Kg @ 4.8V - 0.09sec/60°	Digital, High Torque, High Speed	1pcs £7.69ea 5pcs £6.92ea
4-Max	4M-056DHVMG-009	Sub Micro	5.6g	0.90Kg @ 4.8V - 0.14sec/60° 1.05Kg @ 6.0V - 0.12sec/60° 1.20Kg @ 7.4V - 0.10sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick	1pcs £9.94ea 5pcs £8.95ea
New 4-Max	4M-053HVDMG-010	Sub Micro	5.3g	1.0Kg @ 4.8V - 0.09sec/60° 1.5Kg @ 6.0V - 0.08sec/60° 1.8Kg @ 7.4V - 0..07sec/60°	Digital, High Voltage, Metal Geared, 8mm Thick, High Speed	1pcs £11.10ea 5pcs £9.99ea
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EMAX	ES08MA II	Micro	12g	1.2Kg @ 4.8V - 0.12sec/60° 1.8Kg @ 6.0V - 0.10sec/60°	Analog, Metal Geared	1pcs £8.35ea 5pcs £7.52ea
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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Andreas Paul from Germany entered his 1:3.3 scale, 2.77m (109") span Gipsy Moth DH60 in the F4H category.

MANDATORY MANOEUVRES

In the second of his reports from the FAI F4 Scale World Championship, **Mike Freeman** shows us the technical requirements

Words & Photos : **Mike Freeman**

The flying rounds at an FAI F4 Scale World Championship require the pilot/model to perform a series of scale manoeuvres which must be flown in a smooth and scale-like manner.

These consist of...

- A selection of six manoeuvres commensurate with the full size, chosen from a list provided by the FAI. These might include a lovely three-turn spin for a biplane or a four-point roll for an aerobatic jet.
- Four mandatory manoeuvres which all models must perform. These are: Take-off, landing, figure of eight and a 360° descending circle.

Of the mandatory manoeuvres, take-off, landing and the 360° descending circle enabled me to take my preferred style of photographs of a model in flight, namely, an interesting aspect and/or some blurry background and/or the top of the wing.

Over the following pages are a few examples taken during my visit to the 2026 F4 Scale





Andreas' DH60 coming into land.



Andreas seemed rather relieved his third flying slot had competed without a hitch.

World Champs held at BMFA Buckminster in July.

UPs and DOWNs

Take-off and landing are pretty self-explanatory – we all have to do them but there are some specific requirements for the World Championship.

Most importantly they must have scale realism. Points are lost on take-off for things like too rapid an acceleration or an incorrect climb rate (too steep or too shallow). Points are lost on landing for things like a dropped wing on finals or a bouncy arrival.



A close up of Andreas' DH60 back in the Hanger.



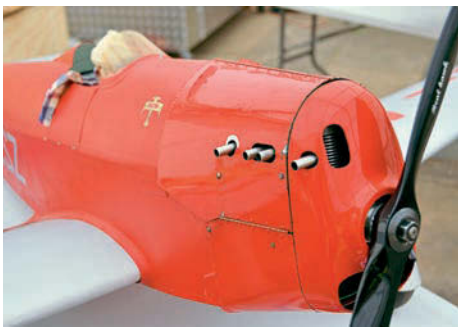
Thomas Nilsen from Norway entered his 1/3rd scale, 2.43m (95.6") span Chilton D.W.1 in the F4H category. The rhythmic purr of the Laser 180 seems to have sent the pilot to sleep!



Thomas Nilsen's Chilton D.W.1 on a low-level pass.



Thomas Nilsen's Chilton D.W.1 returns after its final flying round to land right in front of the judges.


The scale detailing in the F4H (Stand-off Scale) category is still very impressive.


Steve Jackson from the UK entered his ¼ scale, 2.75m (108.3") span Avro 504K in the F4C category. Power for this take-off is provided by a Laser 360V 60cc 2-cylinder 4-stroke engine.


Steve's Avro 504K drops in for a landing.



Steve's Avro 504K on a fly-by. Look at all those bracing wires.



Steve gives some scale to his 2.75m (108.3") span Avro 504K.



The dummy engine and cowl hide the Laser 360V with ease.



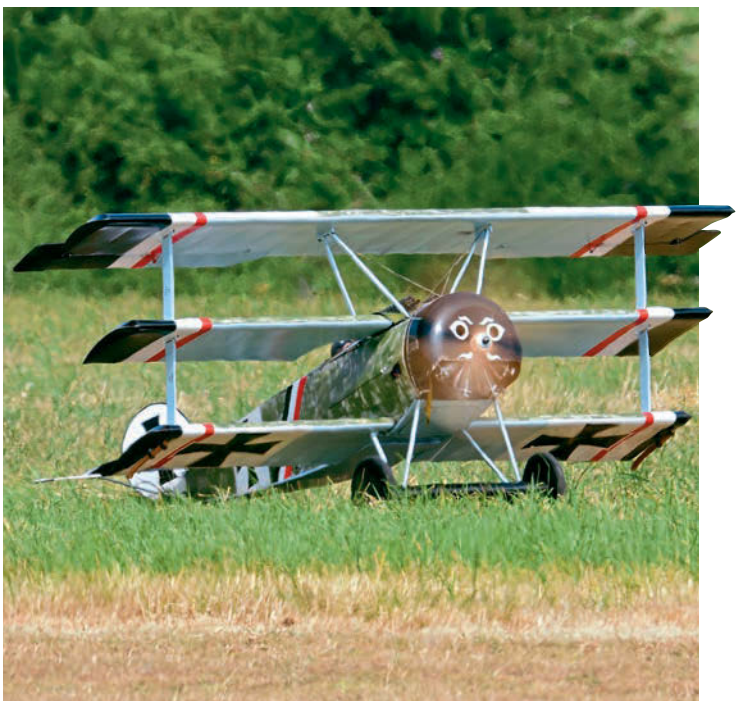
This 1930's ¼ scale, 1.7m (67") span Caudron C450 Racer was entered in the F4C category by Rytis Kalinauskas from Lithuania. Only one full size version was ever built. Rytis' model is powered by a Hyperion HP-Z4035-12F 343kv brushless motor, 100A ESC and 8S 4200mAh LiPo.



Radoslaw gives some scale to his DR1. Power is provided by a Saito FG-61TS.



Radoslaw Oleksy from Poland was flying his F4H category 1/3rd scale, 2.16m span Fokker DR1 triplane in a strong cross wind so chose to land into the wind, across the width of the strip....



.... but over-ran and ended up in the rough. The DR1 seemed rather cross.





Greg Lepp from Australia entered his 1/3rd scale 2.3m (90.5") span Bristol M1C in the F4H category. Powered by a Saito 60R3 this model has true-to-scale, fully functional, closed loop (pull-pull) controls on all flying surfaces.



A close-up of some of the scale detailing on Radoslaw's DR1.



As with all F4C models at the Championship the scale detailing inside Carlos' Jungmann is exemplary.



Spain's Carlos Escuder-Cano performed a perfect three-pointer on landing his F4C category, 1:3 scale, 2.47m (97.2") span Bücker 131 Jungmann which must have received a good score. Power is from a single cylinder, 2-stroke, DA-60 engine.



Mauro Pirotti from Italy was flying his 1:4 scale, 2.8m (110.2") span Spitfire Mk.V in the F4H category. Powered by a T-Motor AT8025 brushless and 12S 16000mAh the model got caught by a rogue gust which must have lost Mauro some points.



Under the hatch at the business end of Mauro's Spit.



A close up of the intricate detail of a Grumman F3F-2 undercarriage faithfully replicated here on David's 1:3.5 scale model.



Mauro's quick reflexes saved the day and he performed his own perfect three-pointer.



David Kopal from Czechia entered his 1:3.5 scale, 2.45m span Grumman F3F-2 in the F4C category. The full size has the nickname 'The Flying Barrel' and with the undercarriage retracted you can see why.



David brings his Grumman F3F-2 home for a textbook landing.



There isn't a lot of clearance underneath a landing de Havilland Venom FB Mk.4, even less under Frenchman Alexis Levy's 1:4.5 scale, 2.82m (111") span model which was entered in the F4H category. Power is from a JetCat P130 RxiB turbine.



The ROTO motor 85-FS 2-cyl 4-stroke fits snugly in the nose of Markus' Sopwith 1½ Strutter. Note the keyhole twist-'n-lock holes around the bulkhead for securing the cowl.



With the cowl fitted, the dummy Clerget 9B 9-cyl radial and the lovely wooden prop look superb. Note, Markus swaps the prop for flying.



Markus Günther from Switzerland photobombs the landing of his 1:3 scale, 3.4m (134") span Sopwith 1½ Strutter which he entered in the F4H category.



Marc Lumia from France brings his F4H entry 1/5th scale 1.89m (74.4") span Aero L39 Albatross in for a landing. A Xicoy 120 Turbojet is providing the thrust.



A close-up of Alexis Levy's Venom airbrakes.



More sublime scale detailing which is essential for good scoring in the F4C category. This time in Marcus' Stampe S.V.4C.

ROUND-ABOUTs

The 360° descending circle needs a brief introduction. The model must enter the manoeuvre in S&L flight over the landing area and then with constant low throttle turn away from the judges and descend at a constant rate and radius ending the manoeuvre after the 360° at a height of 6 metres or less and on the same line as the start of the manoeuvre, finishing off with more S&L flight. ■



Marcus Hausmann from Germany entered his 1:3rd scale, 2.79m (109.8") span Stampe S.V.4C biplane in the F4C category. Here it is at about 220° around its 360° descending circle showing off its lovely sunburst artwork on the top wing.



Radoslaw Oleksy's Fokker DR1 Triplane which we saw earlier at about 220° around its 360° descending circle.



David Knott from the UK had two Mk.1 Hawker Hurricanes at the Championship. One in F4C and one in F4H. Sadly, his F4C model had an electric motor failure and crashed, but here is his 1/6th scale, 2.03m (80") span F4H version which is powered by a Laser 120 engine. Check out the scale fuselage longerons, emulating the full size, highlighted by the sunlight.



I think Jan Doubrava from Czechia finished his 360° descending circle well below the 6m finishing height threshold! His F4H model is a 1:5 scale, 1.96m (77.2") span Lavochkin La-7 with Saito FG-84R3 power. With a shutter speed of 1/500th sec I nearly got a full prop ring on this one!



Jan's Lavochkin La-7 has a lovely matt finish and a patriotic spinner in the Czechia flag colours.



Another model to comfortably break the 6m height limit on a 360° descending circle was San Marino's Gianluca De Marchi and his F4H 1:4.9 scale, 2.04m (80.3") span AMX Ghibli with JetCat P150 turbine power.



A close-up of Gianluca's AMX Ghibli. There's an awful lot of detailing there for the F4H stand-off scale category.

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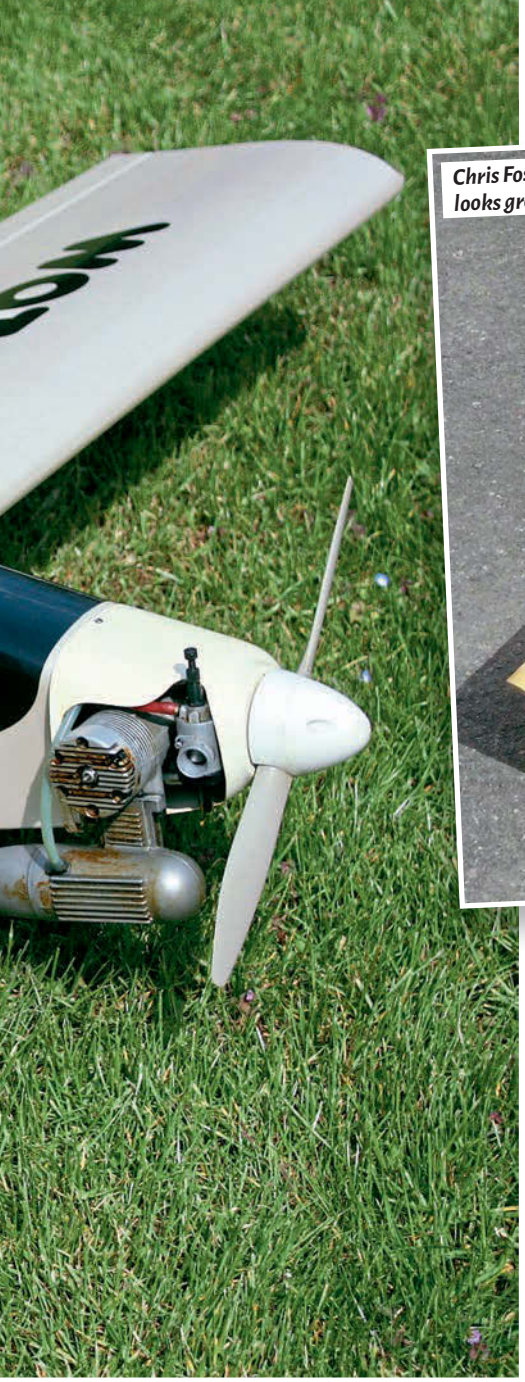


RCM&E's review of the WOT 4 Mk.3 was done using a pre-production prototype kit. Kit-wise it was all complete and just needed the box artwork signing off.

WOT AN ACHIEVEMENT

Kevin Crozier starts his latest column with a personal thank you to Chris Foss, who is currently celebrating the 50th anniversary of Chris Foss Designs

Words & Photos : **Kevin Crozier**





Chris Foss' latest Acro Wot for personal use looks great in its bare wood finish.

This year sees the 50th anniversary of Chris Foss Designs, the famous kit manufacturing business based in Shoreham-by-Sea, West Sussex. Over the course of the past halfcentury, Chris Foss has brought to market some of the most popular radio-controlled sport models to ever have graced the R/C model flying scene here in the UK, as well as being widely admired overseas. There can be very few British aeromodellers who cannot have laid claim to having built and flown at least one or two of his distinctively styled designs, me included.

Outwardly simple in design, his models have always had a little 'something extra' about them that makes them stand out from the crowd. The most obvious example of this has to be a strong contender for the 'Greatest Sport Model of All Time', the WOT 4.

In any other hands this .40 to .60 size high wing aerobat would be a rather boxy affair, but with Chris' design flair it becomes a rather sleek aircraft that almost everybody has wanted to fly at some stage in their model flying career.

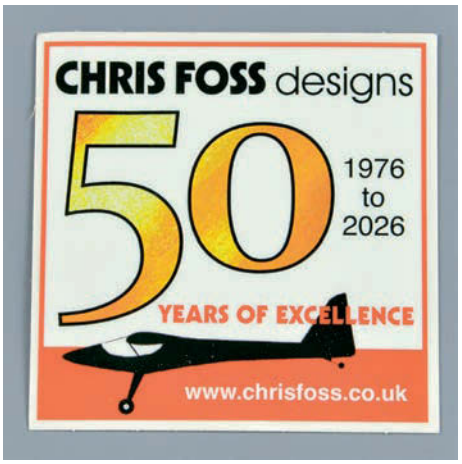
The WOT 4 has often been copied but never surpassed and the resulting designs, while sometimes making good models themselves, always seem to just be lacking that final missing piece of design flair and attention to detail that elevates the WOT 4 to the top of that particular genre of model aircraft.

If you want proof then take a look at the silhouette of the WOT 4 placed at the bottom of the 50 Years of Excellence sticker shown nearby. Show that profile to anyone who has been flying for more than a few years and without any further prompts they are highly likely to say: "*That's a WOT 4!*", probably closely followed by: "*I've got/had one of those!*"

ME TOO

Yes, I've had my fair share of WOT 4s too, starting with a Mk.2 soon after the updated kit was released sometime around 1980. Those were the days when a model was expected to last more than just a few weeks — more like a few years! My red and white version certainly had more than its fair share of airtime and I would probably still be trying to perfect square loops with it (my fav manoeuvre back then!) had not some other plane forced it into retirement. That next aeroplane was probably also my next Chris Foss kit, the gorgeous Acro Wot which I finished in broad sweeps of green and red film in an attempt to emulate the sweeping lines of trim shown on the box artwork.

After several years the Acro Wot found its way onto the ceiling hooks of a local model shop where it was sold for a reasonable sum. But the WOT 4 stayed with me and I have a sneaky feeling that the fuselage may still be lurking in a dark corner of my garage; the wings are definitely in there as they are stacked at one end of my workbench.



Act quickly and you might get one or two of these smart commemorative stickers, currently being shipped with Chris Foss kits. Note the unmistakeable side profile of the WOT 4.

For a long time, I also had a full wing and split fuselage from a crashed Mk.1, donated to me during my early years of R/C flying and intended as a refurb project that never happened.

MARK 3 PROTOTYPE

During my first occupancy of the RCM&E editor's chair back in the early to mid 1990s, I had the pleasure to spend a day with Chris, starting with a visit to his small but extremely well organised factory, admiring how he put together a fresh batch of kits for what was, back then, a very busy order book.

This was in the days before ARTF kits and foam models started taking such a heavy toll on traditional model kit manufacturing.

My abiding memory was how well Chris planned each of his kits so that





WOT 4 Mk.3 showing its tapered wing, designed for precision aerobatics. Also shown is the same model fitted with the parallel chord Classic wing.

even the smallest piece of spare balsa was destined to find its way back in as a small part in the construction of another design. Material wastage was kept to the minimal amount possible.

Chris then took me to his local flying field to show me his latest design, which was in the prototype stage of being kitted. But on the way we made a diversion to Shoreham Airport where his personal aircraft was hangered, a meticulously-restored Bucker Jungmann biplane.

By then Chris was a very experienced private pilot, having flown gliders, a Piper Cub, glider tow planes and more recently a Vans RV8 aerobatic kit plane.

At his local model club Chris unveiled his soon-to-be-new kit. My eyes went wide as he introduced me to the all-new WOT 4 Mk.3. Finished in lacquered bare wood, overlaid with tissue trim, the new model featured a more curvaceous, sleeker fuselage compared with the Mk.2, a swept back tail and a 56 inch tapered wing for more precise aerobatics. I was smitten!

Chris also had an interchangeable wing for the new Mk.3, this being a 52 inch parallel chord version called the Classic for anyone who wanted to blend the old-style wing with the sleek new tail and fuselage. On his Classic wing Chris was experimenting with in-board, almost square flaps, but I don't believe they ever found their way onto production kits.

The day ended in high style for me when Chris asked if I would like to have a pre-production WOT 4 Mk.3 kit to review for *RCM&E*, along with a Classic wing set so that I could test the old-style wing with the new fuselage and tail. Well, it would have been rude not to!

In a feat of fast building, which I'd never be able to replicate these days, the new WOT 4 and its additional wing were ready for testing and they duly appeared in the magazine. The same model was also pictured on the cover of a book released at around the same time, Introducing Radio Control Model Aircraft by Bill Burkinshaw. For some reason I am pictured holding an early electric glider aloft (wot, no belly!) while a colleague feigns attempts



Tapered and Classic wings side by side. Both options are still available.



Design changes of the WOT 4 Mk.3 over the Mk.2 included a swept back empennage.

to start the WOT 4 Mk.3 on the ground underneath. Ah, those were the days.

One winter a year or two after, I took the Mk.3 out to fly on a cold and frosty day. The undercarriage was retained by a pair of long plastic clamps held in place by two nylon bolts. However, a bouncy landing on the hard frost covered grass proved too much for the cold bolts to withstand and they sheared, with the poor WOT 4 ending its last flight sliding along on its belly. Yes, you did read that correctly; I am ashamed to say that this was indeed the model's final flight before it was consigned to the corner of my garage, awaiting two new undercarriage bolts.

There it stayed for a few years until our next house move, during which it was transferred to a local storage unit, along with both wings, where it still waits patiently to return to the sky. It'll happen one day, I promise...



A well-used .60 glow provided oodles of power for the WOT 4 Mk.3.

RIPMAX KITS

Many modellers will also have been able to enjoy flying a Chris Foss design but without having to glue together a veneered foam wing or a single piece of balsa.

I am, of course, referring to the Ripmax Foam-E kits.

Being a Foss fan, I simply had to have them and over the years I have owned two Wot 4s and an Acro Wot Foam-E. Smaller than the originals, these fast assembly models fly a treat on a single 3S 2200 mAh LiPo.

Working closely with Chris, Ripmax has also been responsible for introducing several ARTF versions of his most popular designs. I only have experience of one of these, the 74 inch span Phase 5, which went together very easily and flies really well on the recommended 4S motor set. My only concern with this kit is that due the modifications needed to fit the electric motor etc. the nose has altered somewhat and to my eyes it has lost that classic, sleek Chris Foss styling.

In all other respects it's a lovely looking model and flies really well, especially when stringing together a sequence of energy conserving aerobatics, diving from upon high and rolling low level along the flightline.

MIDDLE PHASE

Back in my formative days flying with Maidstone Model Flying Club in Kent, I went through a long period of enjoying regular slope soaring sessions with a couple of like-minded clubmates, Phil and Tim.

Modelling funds were very limited back then, so my airframe of choice was a second-hand, two-channel Chris Foss Middle Phase, purchased from a local model shop for a tenner.



Ripmax adapted several classic Chris Foss designs, giving them a new lease of life as Foam-E kits. Picture courtesy of David Ashby.



Talking to Chris in preparation for his forthcoming interview with Roy Thompson in the December issue made me realise that my bucket list needed a few more models...



...top of which was a new Middle Phase kit. My favourite slope soarer back in my early days of R/C flying.





In for a penny! As a youngster I always fancied a Phase 6. No excuses now.

I really wanted an aileron equipped slope soarer, so the wing was cut in two and the dihedral lowered to a minimal amount so that the almost flat wing didn't appear to be drooping in flight. Near full span ailerons were cut into the trailing edges, controlled by a single, centrally mounted servo via torque rods, as was common back then before small and affordable mini servos took over aileron duties when mounted inside each wing, as is the preference these days.

The resulting upgraded glider flew a treat and served me well for several years. I cannot recall what happened to it but it was lost over the course of several house moves and now I don't even have a photograph to remind me of those happy days with her slopeside. But she flew so well that a Middle Phase has been penciled in on my bucket list for quite some time.

It has taken a while, spanning several years, but I am pleased to say that a new Middle Phase kit is now residing in my storage unit, awaiting its turn on the building board.

It's not alone either, being accompanied by a Phase 6 kit (to fulfill an equally long-term yearning for the more advanced Chris Foss slope soarer), as well as a glorious Extra Wot kit. Somehow, I had managed to avoid getting hold of one of Chris' impressive enlargements of his most popular kits, but I had admired them from afar each and every time a big WOT 4 or Acro Wot turned up to fly at any of my local flying patches. With a wingspan of 71-inches the Xtra-Wot is probably destined to be flown under electric power.



Big build! Strangely, as a big Foss fan his enlarged kits somehow passed me by. I've now rectified that omission.



Expensive stuff! These three boxes of balsa and a box of ply, destined to be transformed into kits, cost Chris over £2000.



Another view of Chris' latest Acro Wot, soaking up the sun in bare wood finish.

FOSS STYLING

I have long been an admirer of the sweeping colour schemes that Chris applies to his personal and display models. So, in preparation for this article, I asked him for some details on how he finishes his models.

Regarding the box label models, the Middle Phase, Phase 6, Uno Wot, Wot4 mk2 [sic] and Acrowot were all flying models finished in either tissue and dope or glass cloth, or a combination of both, then spayed.

The Wot4 mk3 and Wots Wot were built as static models, purely for photographing and then hanging up at Sandown Park, and were covered in Solartex for quickness and then sprayed.

There's more to kitting then most people realise in this respect. The first prototype is for general flight testing, but do you spend time on the finish so it can be photographed if no mods are necessary and if it still looks presentable? But then you don't have a static model for the shows.

In the case of the original Wot4 mk2, it was a flying model finished in natural wood with colour trim, which was okay for the black and white photos on the original label. When I decided reprint it with colour photos, I completely resprayed the model in white and then reapplied the colour scheme. When I went to full colour kit sales shot up.



For his personal flying models Chris finishes them in natural wood with colour trim.

Acro Wot images are courtesy of Chris Foss.

WORTH EVERY PENNY

Have you wondered why traditional kits are so expensive? The boxes in the picture nearby, delivered to Chris for producing a small batch of kits and containing mainly balsa and some plywood, will easily fit into the boot of a Mondeo estate without folding the backs of the rear seats down.

And the cost? In excess of £2000!

But take a look inside either of the three kit boxes, also shown near here, and I'm sure that you will soon come to the same conclusion as me. They are worth every penny when you take into account the high cost of all the raw materials and the expertise by which Chris will have hand crafted each one from initial design right through to the finished components sitting inside each box.

If you would like to own your own little slice of aeromodelling history, then I wouldn't take too long to place your order. Chris didn't give me any indication that he is minded to retire any time soon, but since he has been steadily producing kits for 50 years no one could blame him if he called last orders.

All Chris Foss kits, with the exception of the Xtra WOT, are available throughout the UK via leading hobby shops and from selected distributors overseas. Catch up on his extensive range of kits by visiting his website at **https://www.chrisfoss.co.uk**

NEXT ISSUE

In the December issue we will be wrapping up 2026 in style as Roy Thompson visits Chris Foss and interviews him at his factory, watching as Chris puts the finishing touches to a batch of 25 Wot 4 kits. ■

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ABOVE PAR GULF

John Stennard finds it hard to resist this iconic passenger jet

Words & Photos : **John Stennard**

I'm starting this month with a small, scale, RTF foam jet model with an excellent performance. While this is an 'outsider' model, it fits perfectly into the small model category.

Proportional directional motor control models can fly extremely well and this model is no exception.

THE G 700 GULFSTREAM

In an earlier Insider feature I enthused about the Boeing 787 proportional directional motor control, RTF model, which I found fascinating to fly. However, I did feel that it was not really a plane for a novice pilot.

Careful and sensitive handling of the throttle, the proportional motor control and elevator achieved very good flying characteristic. But a novice could easily overcontrol then panic and shut off the motors, which would not be helpful!

When I spotted an attractive-looking G 700 Gulfstream using the same three-channel control system I had to give it a go. This model is slightly smaller than the 787 with a 440mm wingspan compared with 540mm. It has a slightly higher AUW of 68g compared to 60g for the 787.

It is a delightful-looking little model and includes a UC for use if you have a hard surface available. The 787 was not suitable for indoor use so I anticipated that the same would apply to the G 700. A calm day saw me at my local farmer's field for test flights and the G 700 flew away beautifully from a gentle hand launch. The elevator control can be used in conjunction with the throttle to control the height and smooth out the turns.

Although small the model looks extremely realistic in the air and, as ever with this size of model, it is best kept relatively close. At a distance the response to control inputs is not always so obvious and loss of orientation could be an issue. Rather surprisingly, the controls feature a 'roll' function. After a long button



The G-700 is another really attractive RTF jet model.



The size of the model can be gauged by my hand.



The G-700 flies by looking very realistic.



Some skill is required to fly the model well.

press full throttle and elevator produce a roll. However, I didn't try this as I felt that a G 700 rolling is not very appropriate and would upset the passengers!

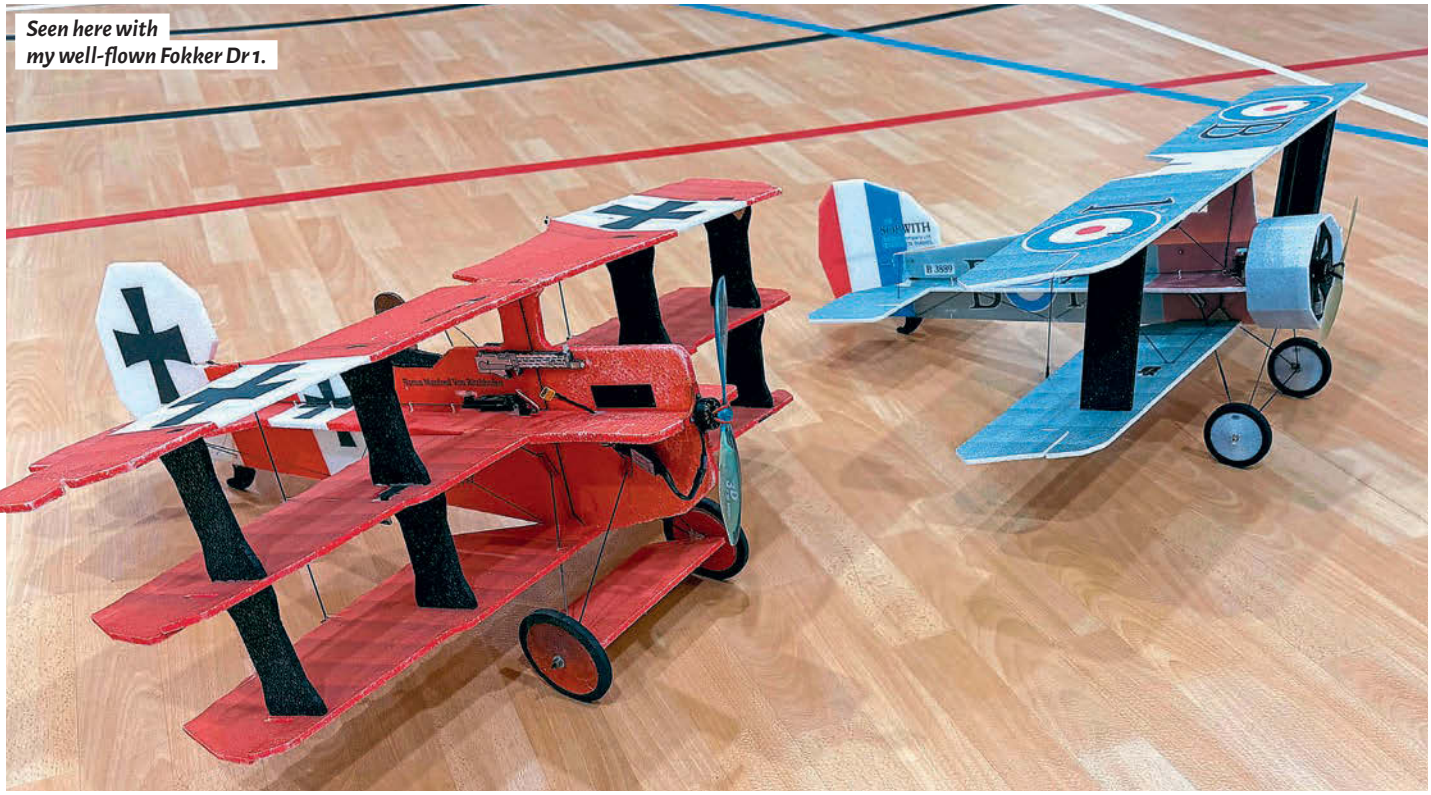
The G 700 was a touch faster than the 787 and smoother to fly, the elevator having much more of an effect, perhaps due to the T-tail design? After checking out the slower speeds and landing characteristics I was soon airborne again.

Like the 757 the G 700 requires sensitive handling but performs exceptionally well. I think that both the 757 and G 700 are very good value and very rewarding to pilot even for a well experienced one. The 1S 500 LiPo gives around five minutes of flying.

RC FACTORY WW I

Following on from the mention of the RC Factory, I've been flying my RC Factory


The Sopwith Camel is a nice indoor/outdoor model from the RC Factory.



Seen here with my well-flown Fokker Dr1.

Fokker Triplane Dr I for many years both indoors and outdoors. It's definitely worn and battle weary but still fights on.

This model is actually available in two sizes and I've tried both. The larger version has an 890mm wingspan and is available in three colours, while the smaller has a 680mm wingspan and is available in two colours.

With ailerons on all three wings, plus large tail end control surfaces, these are extremely agile models. The only vulnerable part of the model is the UC assembly; this tends to be a feature of many WW I aircraft and my Dr I has been repaired a few times.

If your TX can feature sounds then it's possible to download and install a machine gun sound, this can be quite effective in terrifying the opposition.

Ah now, the opposition... well, a Sopwith Camel in the same series is available with an 875mm wingspan and two different colour schemes. Clive brought along his new Camel to play, pretend fighting of course! To prove an earlier point the Camel was forced to retire early due to a broken UC. They look good in the air together, although the Dr I is definitely the more agile model. These models are a reminder that large, light models, with a good level of manoeuvrability are perfectly happy indoors. The snag is that they don't always mix well with other types of foam models.

"With ailerons on all three wings, plus large tail end control surfaces, these are extremely agile models"



I've built and flown both the large and small versions.



The Fokker is extremely agilie and is great fun to fly both indoors and outdoors.

SUMO REVIVAL

Back indoors, although an equally good performer outdoors, flies in the iconic Sumo. Some years ago, when we were flying in a two-court community hall, we often had six to eight Sumo models flying together.

This was the best streamer combat model ever, it took off vertically, had a wide speed and was immensely manoeuvrable. It could be a touch noisy due to the mid-fuselage mounted, pusher prop and needed to be tough as midair contact was inevitable.

Most owners fitted a ring around the prop slot. This was usually made by laminating very thin ply or CF into a circle using a mandrel made by one member.

At the time there were fewer quick- build EPP type models available so the fact that the Sumo is quite a complex and time-consuming build was not a factor. Eventually the Sumos literally died a death and no new ones were built.

Our four-court flying space would now be great for Sumos, but can I encourage club members to return to Sumo combat fold? Seeing is believing so I dug out my Sumo plan but ran into a problem. An essential component, 6-8mm EPP, had vanished from the shelves.

Undaunted I built one from 6mm Depron. As I mentioned it's quite a complex build with tricky gear installation issues. It is a compact model with a wingspan of just 620mm and a length of 540mm but the elevator and rudder servos are behind the prop slot so require long lead extensions go around this.

The aileron servos positioning requires some planning and again long leads or extensions are needed.

The Sumo has a very short nose so again the RX, ESC and battery positions need careful planning. There never seems to be a 'one size fits all' solution to these issues. Compared to getting an RC Factory Crack Wing into the air the Sumo is a 'big build'.

I mention the Crack Wing as I've flown this EPP model indoors with others, and while it's lively it can't compete with the extremely sharp manoeuvres that are typical of the Sumo.

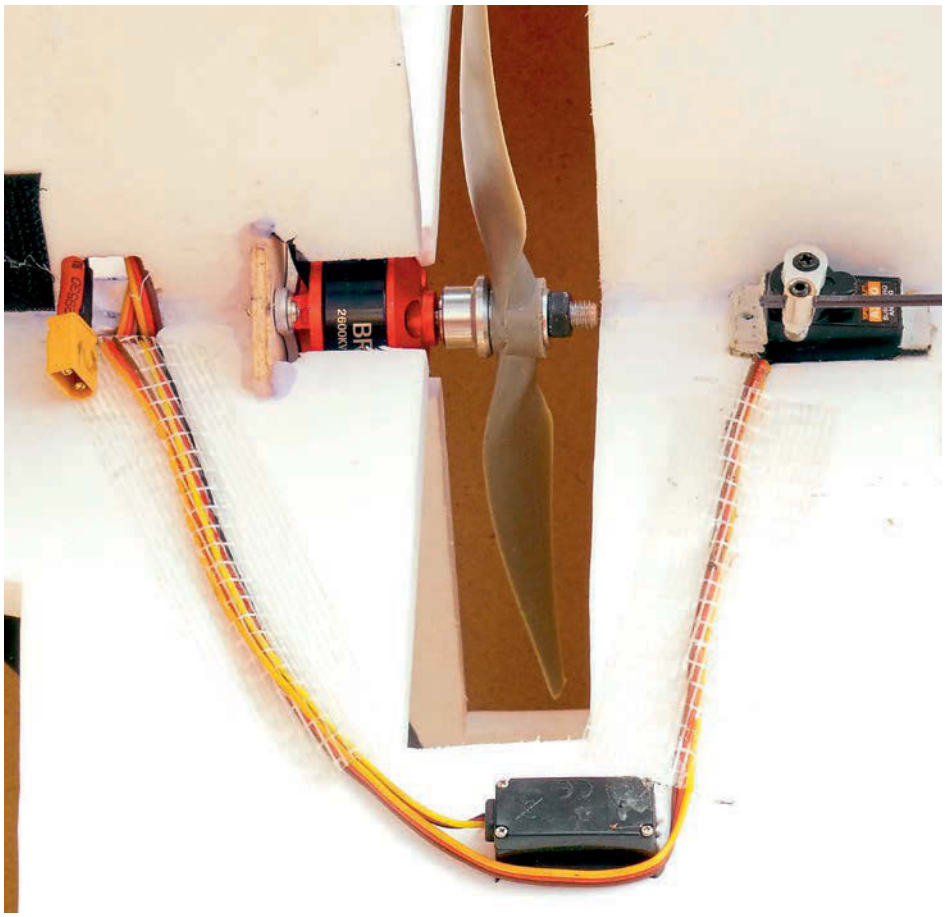
Sadly, after all the effort of building, the Depron Sumo, with a little help from me,



Another indoor/outdoor model is the iconic Sumo.



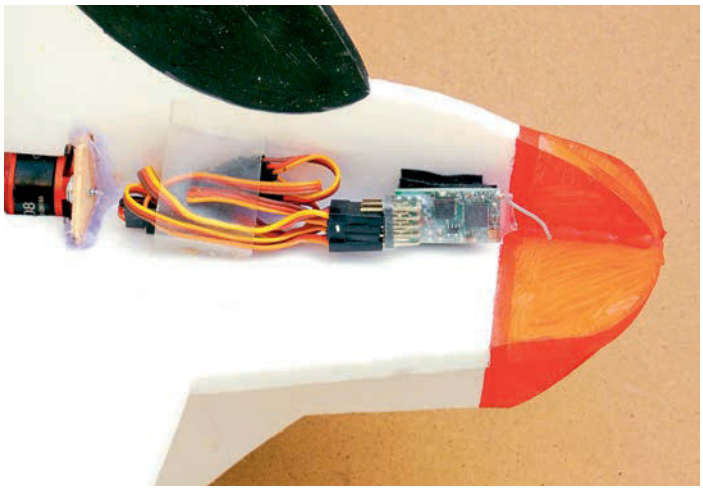
Indoor flying need firm hands on the sticks and nerve!



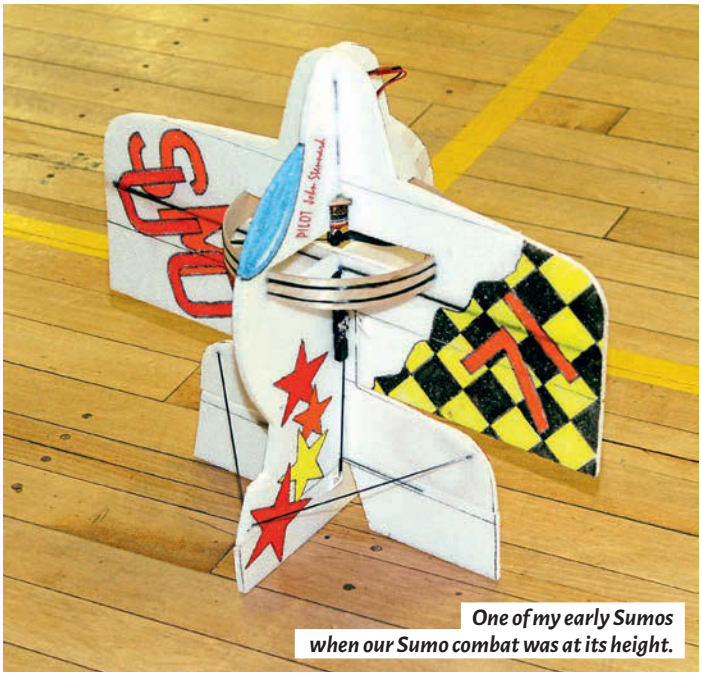
Leads to the rudder and elevator servos have to go around the prop slot.



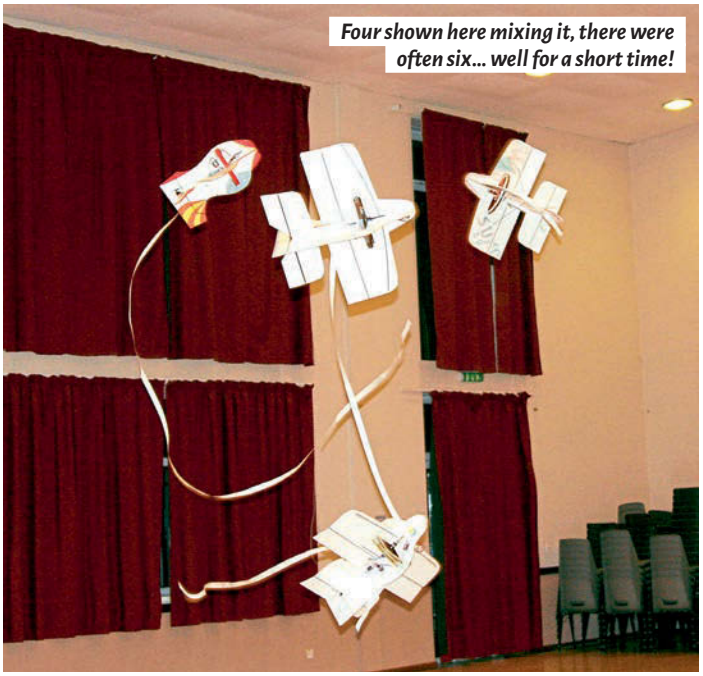
Careful planning for the RC parts is required due to the mid-motor design.



The nose area has to take RX while all the servos are in the wing or behind it.



One of my early Sumos when our Sumo combat was at its height.



Four shown here mixing it, there were often six... well for a short time!

disassembled itself on the first flight. So, the Sumo revival was shelved as a bad experience, however, no cash had been invested, just time and effort, both free at my age!

Moving onward, I had in my searching for EPP come across the German Pilcher Board from Leeds Models.

The specs sounded really good, rigid but flexible, easy to glue with almost any adhesive and easy to decorate. Hesitating whether to invest in a sheet or two, matters were taken out of my hands. A club member wishing to build some Airbug hovercraft had put in a multi-sheet order and was offering spare sheets at cost price. I bought a 6mm sheet with a new hovercraft in mind, but my thoughts soon reverted to the Sumo.

Unfortunately, the size of sheet only provided enough material for half a model but I started with what I had. I soon needed a second sheet and by now the popularity of this material had resulted in the club buying in bulk for resale to members.

Again, unfortunately, its popularity meant that only 8mm was available. So, I ended up with a fuselage of 6mm and a wing of 8 mm thickness. In retrospect it would have been better to have been all from 8mm.

The airframe came together quite quickly except for one problem. I forgot that wing strengthening was essential, so had to insert a length of edgewise, 3x1mm CF strip into the wing, not easy at a late stage of assembly!

I knew that the installation of the motor, ESC, servos and RX needed careful planning so there were no surprises. The completed airframe weighs 276g and my first flight was outdoors using a 3S 1000 LiPo. This showed the Sumo was nose heavy, so I changed to a 3S 650 and which made the model much easier to pilot. Agile manoeuvres with a Sumo are all about bursts of throttle combined with large control surface movements. Of course, it can be flown in a less aggressive manner but it's designed for extremes.

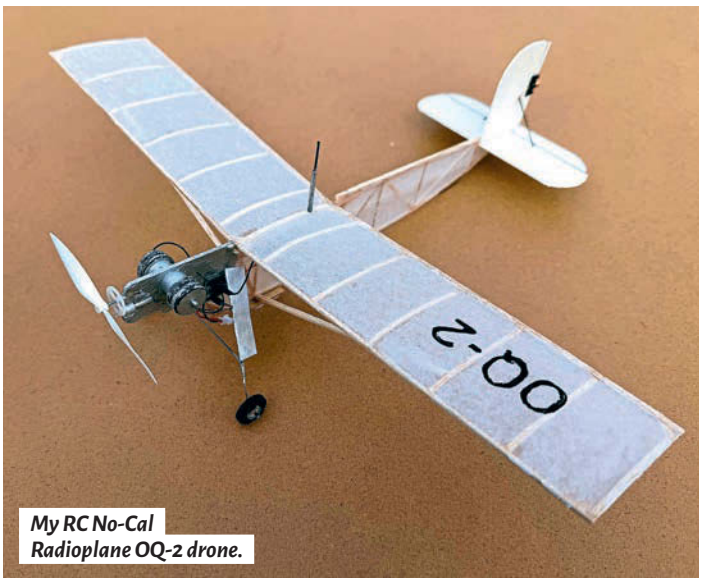
Once I was happy with the performance I added some colour to break up the plain white foam. The robustness of the Pitcher board was been tested during the early flights and it has passed with flying colours. We shall see whether any club members are inspired by my new Sumo, but I suspect the complexity might be a dampener.

While not in the same league for maneuverability, a RC Factory Crack Wing or similar will probably satisfy the needs of hooligan members! You may notice different numbers on the two Sumos. I always use my age for the number so it helps me keep track of when I built them.

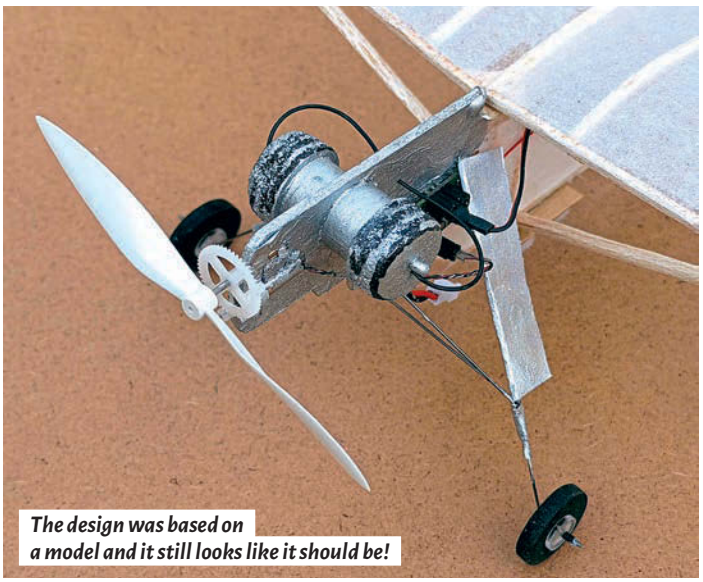
A RC NO-CAL DRONE

This is not a wind-up as the drone in this case is the American Radioplane OQ-2 target drone from 1939.

This drone was based on a model design from Walter Righter. The design was purchased by Reginald Denny who saw its potential



My RC No-Cal Radioplane OQ-2 drone.



The design was based on a model and it still looks like it should be!



The original often has a red fuselage and white wings, an early version here with an UC.



Most versions were launched from several different designs of catapult ramp launcher.20



The Germans had their own version of a target drone, the Argus As 292.

for development into a target drone. His investment paid off as eventually 15,000 were produced for the US Army and Navy.

The radio gear was made by Bendix and the 12ft 3in wingspan aircraft used a 7hp, two-stroke engine driving contra-rotating props to eliminate torque. Development versions were followed by demonstrations and in 1940 an initial order from the army for 53 of the RP 4 versions quickly led to further big orders.

The undercarriage was abandoned early in the programme and all future versions were catapult launched and retrieved using a parachute.

Interestingly the left and right wings were interchangeable, and it would be interesting to know the lifespan of one of these drones. The drones were built at a plant on Nuys Airport, Los Angeles. Not essential information but in 1945 a certain Norma Jean Dougherty worked on the engine assembly line. A visiting photographer spotted her and gave her some encouragement; the rest is history!

I downloaded a plan of the OQ-2 some while ago with the idea of building a model version. Originally I was thinking of a full-scale model with the triangular cross section fuselage. It would be great if the parachute recovery system could be incorporated.

Looking for a new RC No-Cal model, I realised that the OQ-2 was ideal, particularly as it had been based on a model design. I scaled the plan to give a 16in wingspan and decided on a built-up wing and 1mm Depron tail surfaces. I also decided on a hinge actuator rudder and not to include elevator control.

The build went well but unfortunately I did not do further research until I had finished the model. If I had I would have found out about the production versions having no UC. The UC was actually quite complex and had been tricky to make, plus of course it added weight and drag.

I also found that the fuselage was painted red and the wings white. I had covered the whole model in white tissue but had some red I could have used. I fitted a Cassiopeia RX so was able to mount this flat on the fuselage as far forward as possible, the hinge actuator required a short extension lead. The battery mount was also fitted as far forward as practical. The airframe weight is 8g which gives a flying weight of 9g with a 1S 30mAH LiPo.

I found, as I have with other similar models, that elevator trim tabs are very useful so I incorporated these. Needing a little more power, I changed the motor to a geared 6mm type and this has increased the flying weight to 12g with a 1S 50 LiPo. Maybe I'll also remove the UC as this would reduce the weight and drag, but I do like the ROG and landing experience.

The Germans also produced a small drone, the Argus As 292 and this design had ailerons. It might also make an interesting No-Cal RC model. Check it out, it's an interesting design.

That's all this month, next time I'll be looking at a few changes I made post review to my Aerix FP3 model and I hopefully I should have a UK alternative to the Ares Jet flying. ■

PILOT-RC EXTRA NG

£249.95 I www.macgregor.co.uk

Bringing a giant-size scale flying feeling to a compact, laminate and carbon fibre reinforced foam package, this new 1.2m span Extra from Pilot-RC is sure to find favour with any red-blooded 3D aerobatic pilot.

Available in two attractive colour schemes with plastic painted cowl and 'electric cooling' style spinner, the model features a quick-release wing and removable side force generators.

Supplied with some basic hardware, extension wires, u/c and pre-prepared pushrods with ball links, a Dualsky GA800 or XM3548EA motor & prop', 4x 3kg (min.) micro servos, 6S 1800mAh LiPo and 4-channel r/c are required.





HOBBYKING HALL CHEROKEE V2

£148.33 I www.hobbyking.com

An upgrade of the original Cherokee motor glider, the most notable improvement with this1700mm span V2 is the replacement of the original's wing-mounted EDF power unit with a retractable power pod fitted with a 6 x 4" prop, making the airframe far more efficient.

Powered by a 2300Kv brushless motor, the pod deploys automatically when throttle is applied and retracts when powered off, a drag bearing making for smooth 'rise & fall' transitions.

Other improvements include carbon and aluminium-reinforced removable wing panels and larger horizontal stabiliser (also removable) for improved stability and easier transport/storage.

A hardened nose cone helps protect the EPO foam fuselage, with further protection



provided by a tow hook-equipped plastic skid to the front underside of the fuselage.

Hand-launching is straightforward, and the single u/c wheel makes ROG (and touch and goes) possible from short grass. A versatile flight envelope exhibits good power-off gliding capability, with power-on performance bringing loops, rolls, wingovers, and inverted flight to your fingertips.

Supplied with pre-installed motor, ESC and servos, 4-channel r/c and a 2200mAh 3S 25–40C Shorty LiPo are needed to complete.

ROK SPORTJET

€249 I www.rbckits.com

If you're in the market for a 'builders' EDF, how about this lovely 1520mm span jet from RBC Kits?

Suitable for a 100mm Midi Evo fan, the Rok is suitable for 6S and 8S power systems (HET 700-75-1750Kv motor & 2x 3S HV 6000mAh LiPo or HET 700-75-1400Kv motor & 2x 4S HV 6000mAh LiPo recommended).



An absorbing, traditional build, the kit includes 172 cnc-cut balsa and ply parts, all the required supplementary wood, a vac-formed canopy, outlet duct and full-size rolled CAD plans.

Instructions and construction pictures are available for download from RBC's website, as are 3D print files for a cockpit, seat and 'drop in' fan system. No hardware is included, so you'll need to source control horns, hinges, control runs etc.

For 8-channel r/c - aileron, elevator, flaps, throttle, retracts, rudder & nosewheel steering - time invested in building the Rok will be rewarded with a superb flight performance that experienced pilots are sure to enjoy.

BLADE INFUSION 210

£359.99 I www.logicrc.com

Supplied fully assembled, the InFusion 210 heli' combines an oversized direct-drive motor, with metal and carbon fibre construction to deliver outstanding performance and durability as a smooth-hovering sport flyer for intermediate pilots and advanced all-out 3D aerobat for experienced pilots.

Brushless main and tail motors, digital metal-geared servos, Spektrum Smart Lite ESC, Spektrum AR6250MHXF flybarless control system and a SAFE / AS3X receiver are all pre-fitted, with an all-aluminium head and composite 210mm main rotor blades delivering reliable and precise control.

The direct-drive tail motor and oversized aluminium tail boom keep the 210 firmly locked-in through aggressive manoeuvres, with an optional belt drive conversion kit (BLH-2929, sold separately) providing even more precise, powerful and symmetrical tail control if required.

Alternate colour aluminium parts, canopies, fins, and landing gear are also available.

Requires a Spektrum 6+ channel DSMX/ DSM2 compatible programmable transmitter and 3S 850-1000mAh LiPo.



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PRESSED FOR TIME

From arbor press to arborial interference, with crochet lessons too, **Dave Goodenough** passes on practical wisdom

Words & Photos : **Dave Goodenough**

Harking back to my previous tinkering with IC engines and the need to be careful when reassembling them, especially when using new ball-bearing sets, I'd long hankered for a small bench mounted arbor press.

For the very limited use it was likely to see, it made no sense to 'invest' the £35+ needed to purchase a 140mm throat, 1000kg press capacity, 20kg of cast Iron lump that was likely to spend most of its time as a door stop. I had considered crafting one from scratch, but then cast my eye back to t'interweb and those canny 3D designers.

Just a few minutes later I'd downloaded the .stl files for a 100mm throat, geared press ram device with a stated capacity of 200kg. A couple of days of my better half muttering about "that infernal machine making its strange noises" and just a half-reel of filament later, saw the little machine ready to render service to future engine rebuilds – with not a hammer in sight! The result may flex a bit under heavy use, but it's not broken – yet.



My printed geared-ram press is simple and light, yet gives 200kg of pressure without breaking.

KNIT ONE?

My better half is a crafty soul, with needlework and knitting figuring large over the passing years. I was watching her tussle with her latest 'favourite' knitting method – Tunisian crochet – and wondered what the brightly coloured tags were, hooked through the knitted wool in specific places.

A tentative enquiry (interrupting a wife in full-on concentration mode is dangerous!) brought forth a terse "it's a crochet marker!" She had a box of them and, when distracted, I 'half-inched' some, simply for evaluation purposes you understand.

Only 19x12mm (3/4x1/2in) and 1.5mm thick, the clips resemble a truncated plastic safety pin, with one loop end filled in. One's 'what can I use that for?' glands began to twitch and I scuttled off to the workshop with brain in active, post-coffee configuration and markers in hand.

With a glider part-built on the bench and beginning to sprout wires electronical, the 'dim as a Toc-H lamp' brain spat out an idea. Those little clips are just right for tidying the errant wires, instead of the larger and clumsier 'hook on an adhesive pad that fails and falls off after 6 months' restraints I've used before.

Either drilled though the filled loop end and secured with a servo screw, or again drilled, but secured with a dob of cyano; you can then simply drape the wires in place and close the spring leg. I found a box of 120 on Fleabay for less than £3, including delivery.

GIVEN THE BRUSH-OFF

My brush compendium is comprised of a multitude of both hair-based and nylon bristles, all of varying softness and stiffness – until now.

Having seen a chap laying on acrylic varnish with a foam brush and noting both the steadiness of application and lack of loose bits being shed, I had to give them a try.

Supposedly 'disposable', there's nothing wrong with rinsing them under the tap and washing out residue, just as you would a bristle brush. I used a 50mm (2in) size when laying Eze-Tissue covering over Doculam, finding the heavier 'loading' of the brush gave a very consistent and controllable deposition of varnish onto both the tautened Doculam base covering to prime it, then the tissue as it was laid/brushed into place.

Surprised at how easy and quick the process was, I ordered an assorted 15 brush



They may be sold as crochet markers but they're very useful in tidying servo and other wires.

pack (25, 50 and 75mm) from 'that online auction/purchase site' for just a little over a fiver. I've no doubt that I'll find other uses for them.

CUT AND DRIED

Perusing that certain store, whose name rhymes with diddle, I was in the 'middle aisle' and came across a craft knife set.

Cast your eyes back to the first piece in this epistle and you'll read that I was thinking of a die cutter to use with my 3D printed press. The knife set wasn't needed for itself, rather the fact that the 'square' blades were great for a die tool, the angled blades would suit my existing knife handle, the new handle was a handy bit of Duralumin for lathe use and finally, the box would make a handy small tool receptacle for the field box.



'Disposable' foam brushes are for controlled acrylic varnish/dope deposition and can be washed for reuse.



3D printed 4.0mm tube clamps that can be paired or used singly to hold control snakes in place.

I think it was something like £3 to £5; just the Duralumin alone would have cost that from a metal supplier, once post was added. I just need the time to think up a die cut jig...



Dead cheap and very handy, but not as a modelling knife. I have nefarious designs upon the various contents.

A-TISSUE

Last month I bought some coloured tissues from Carnival Tissue, intending to use them on a forthcoming model as a tissue-over-Doculam finish, using my favoured water-based satin varnish.

A first test wasn't a great success, as the tissue proved to have little wet strength and if 'worked' only a little, began to break down. Another try with cellulose solvent-based dope and gentle application with a soft artists 'mop' brush worked very well indeed.

The tissue 'wetted-out' well and gave a lovely finish over the initial liteply test piece without falling apart. The beige 'linen' colour worked well over Doculam while covering the 'Bat on the bench'. It's strange how previous industrial work reminded me that water will dissolve some things (it's 'ionic'), but that the same thing will not fall apart when using some other aromatic solvents (non-ionic). Oh well, that's life, and chemistry.

PUSH-PULL

Playing with the 'toy of the moment' 3D printer I was fitting an insulating/isolating enclosure on it, which entailed releasing the filament feed tubes.

Peering at the cross-section of 4mm OD and 2mm ID, I realised that these PTFE tubes would be perfect as flexible control snake outers for most sizes up to 1.5mm diameter. I ordered a 5m coil and found that when allowed to relax and straighten a bit, it could be fed along a fuselage with appropriate supports added cross-fuselage to stop it from flexing under push-pull loads.

PTFE is 'self-lubricating' to a point where control pushrod wires slide easily within the tube negating the friction bind that some tubes seem to have. Glues do not adhere well to PTFE so it's best to hold them in place with a few turns of Dacron fishing line, cyanoed to harden, or if you have the space, use plastic saddle clamps.

On the recently finished and tested 'Fantasia' I used virtually straight control runs down the fuselage to the tail feathers. Carbon-fibre tubes were the outer of choice – 3mm OD, 2mm ID – with a 1.2mm diameter piano wire inner. As with the PTFE tube mentioned previously, the carbon tube gives very little friction drag, even with a slight curve built in them along the fuselage. There is no friction loading on the servos worth mentioning.





Although not 'water safe', carnival tissue – after adhering all around the wing periphery – can be 'spritzed' with water mist to pre-shrink before cellulose doping over Doculam.



I buy my small diameter piano wire in multiples of five or six per tube – 0.8, 1.0, 1.2 & 1.5mm diameter, from Macclesfield Model Engineering Supplies – very competitively priced.



Carbon tube 'snakes' – great for minimal friction and rigidity. Cheaper than 'proper' snakes and virtually immune from flexing.



Feed tube for 3D printer filament is usually 4mm OD x 2mm ID, great for use as flexible snakes and slippery for free pushrod movement.



A centre-finder does just that – mark three or four lines and there you have it, 'middle for diddle' every time on round items.

MIDDLE FOR DIDDLE

Have you cursed yourself for fiddling with a round component, attempting to find the 'dead centre'? Did you know that there's a simple tool that'll do the job with little fuss and great accuracy?

What you need is, not surprisingly, called what it is and does – a centre-finder. There are umpteen sizes and constructions in plastics and metals but all are used in the same way; place the centre finder over the round item and draw a line along the arm. Move it around the circumference about 120 degrees, mark another line, then repeat again at another position. You'll end up with a 'star', your accurate centre is where all the lines cross; simple and accurate every time. I printed mine on the 3D jobbie, but you can find them on Fleabay for very little cost.

There's a similar device to find the centreline on the edge of a plank or sheet, still a centre-finder but this one allows you to draw an accurate line down the centre very simply and quickly. Place it over the edge of a plank or board, twist to rest the stops on either side of the board and the marker hole will be dead on the centreline. With a pencil tip through the hole, move it side-to-side to mark your centreline accurately.





A straight line edge centre-finder gives an accurate centre-line to work from very easily and quickly.

NOT QUITE A BEGINNER'S BUNDLE...

I mentioned a while back that I'd drawn out a model plan for a scale flying wing that I found in the dusty crevices of the internet. A full set of components were cut, the plan laid out and then I basically 'fell at the first hurdle'.

I thought I'd got the measurements/alignments wrong, cursed myself roundly, then disgustedly tossed the 'pack-of-bits' in a corner. Only a few days ago as I tap this into the laptop, I had a clear bench and more surprisingly, a brain in 'active' mode; out came the 'Zin' box (Zin there somewhere!) and I realised that I'd 'mixed my metaphoricals' so-to-speak. I'd been looking at the plan the wrong way up, as I'd designed the model to be built inverted, and then forgot!

With a renewed sense of purpose I began to toss reason aside and parts onto the bench, but before I go further, there's a short tale...

In 1928 a certain Mr Poschinger emigrated from Graz, Austria and alighted in Australia, settling in Cronulla, New South Wales, a suburb of Sydney.

Virtually unknown nowadays, our Mr Poschinger became Anglicised (it wasn't too painful) and was thereafter known as Alfred Paul Pelton.

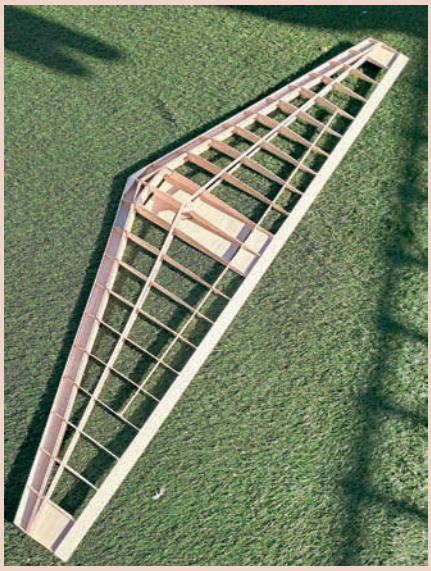
He was instrumental in starting a gliding club in his suburb in 1930, plus being active and inventive, Alf constructed a beginner's glider – the 'Bronzewing'; he would have already known the type, it having been built in several countries and known in the UK as the 'Dagling', or 'Zogling' primary. It was an inauspicious beginning, but it was a start, followed by the 'Bat' tailless glider and later still, the 'Hawk'.

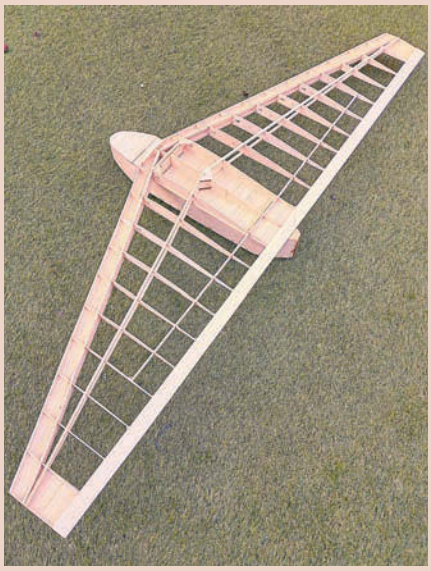
Information is scant, but the 7m span 'Bat' was based on Lippisch's design ideas and apparently existed from 1932 until 1939. The First flights on May 21, 1932 were at Cronulla where he made 15 shaky flights in all.

In 1933, the glider was sold to the University of Sydney where it was modified by gliding club by adding a stern-mounted rudder and a front-mounted horizontal stabiliser. Attempts to fly the modified glider were unsuccessful, with its only excursion into the air ending in a heavy landing and minor injuries to the pilot. The 'Bat' ended its days in an outbuilding of a farm in Macquarie Fields near Ingleburn.

What I put together here is a 'best guess', approximately 1/6 scale model, based on an available three-view and the photo of a 1932 model made by Alf himself and held by the Museum of Applied Arts and Sciences.

With no information regarding any future development of the Bat, I opted to design the model to be a glider, or gently invigorated electric power model, being as many prototype aircraft of





The basic 'Bat' wing before fitting the top leading edge sheeting. All simple stuff, after I remembered to construct it inverted!



The 'Bat' centre section shows the leading edge reinforcement and the sub-spar that the fuselage attaches to.

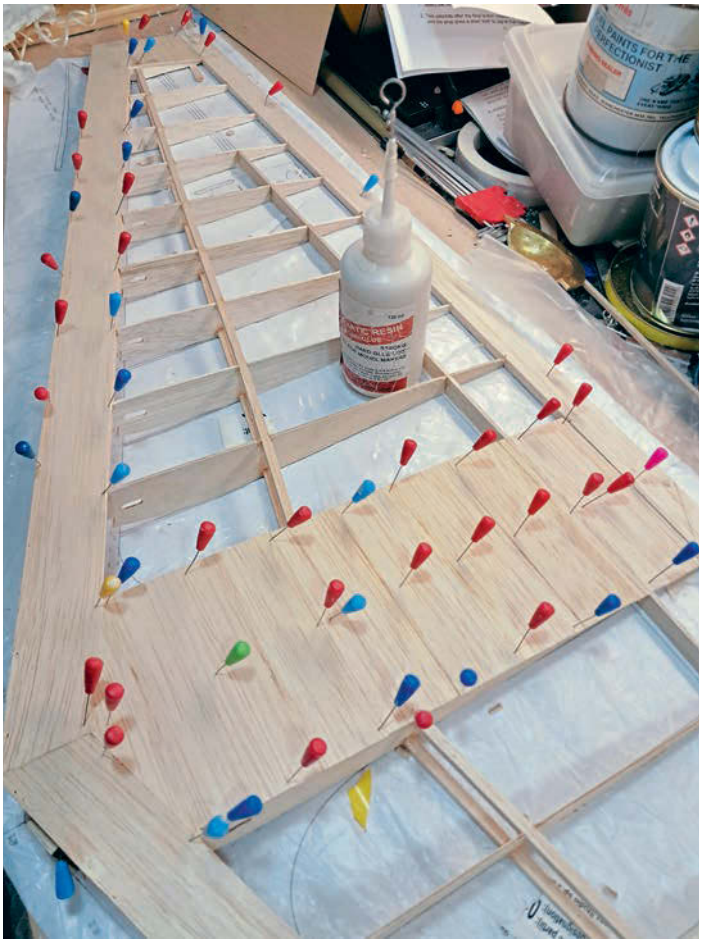


The slots under the 'Bat' wing are for the two extended fuselage formers to glue to the wing spars.





There's not much of the fuselage 'coffin'. The extended formers glue to the front and rear wing spars. That snub nose could easily hide a small outrunner.



The simple 'Bat' wing was quick to assemble, once I got my head around which way up to construct it!



10ft of 6mm hardwood dowel for just a pound! It's got to be a bargain buy for the wood stock.



'That' tree at the Dilhorne patch – the 'hat' on the very top is our nameless pilot's foamie model!

the time would often be modified for power if the initial tow/glide testing proved successful.

Desecration of the original design or not, I think it makes the model more adaptable. I'll continue faffing with the device, as it's one of those models I've only part-drawn on the plan, the rest of the design was 'make it up as I go along'. Construction changes will no doubt be needed, but that's part of the fun of designing and building a model that's a bit different to the norm.

More to come in the future if I manage to finish it and (a quick genuflect here) fly it. If it's a total disaster you can have a chuckle later when you see the impact photos...

AMBULATORY ARBRE

It's well known that those big wooden things that border some flying fields are like the Ents we saw in The Lord of The Rings. They wander about ceaselessly, hunting for innocent model planes that venture too close and are snared, just like jellyfish dangling their dooh-dahs to gather in food.

So it was that, on one pre-spring day, some of the Dilhorne lads were testing the skies and their newly-awakened post-winter transmitter skills. Banking for an approach and unaware of depth perception problems adjacent to the leafless monster, the model was cruelly snatched from its chosen element and used as a 'fascinator' by the obviously female tree.

Thankfully, the lumpen lady was convinced that the foam model was most definitely not 'on trend', fashionably speaking, and the plane was returned with no more than 'handling rash'. The final rub? There's only one tree adjacent to the club's Clamgoose runway and there's always someone who unwittingly finds it, every single year!

STICKS AND STONES

Well, only the sticks. Mate Glyn was in crafty mood and visited that nationwide arts and craft store, The Works. His fingers found a pack of dowels for general hobby use and they were quickly flicked into the basket for purchase while his handler wasn't looking. As he said, 3m (10ft) of 6mm hardwood dowel for just a single of His Majesty's pounds sterling has got to be a bargain. Methinks I must visit my local store again!

TAILSKID

As I found out when revisiting the pile of bits I'd prepared for a model, then discarded – don't despair! Wait a bit, take another look and rethink the 'problem' (we don't have problems as engineers, only challenges) to find a new perspective and solution.

As the captain of the NSEA Protector Jason Nesmith in Galaxy Quest said: "Never give up, never surrender!" By Grabthar's hammer, I think he was right. ■

USEFUL LINKS

3D parts
Thingiverse, Cults, etc.
Crochet markers, foam brushes, 3D filament feed tube, centre finders
Ebay
Cheap coloured tissue
Carnival Tissues
Carbon fibre tube
Easy Composites
6mm hardwood dowel @ 305mm
The Works

Going Places

Diary dates for the coming season

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

OCTOBER

Oct 13

PMAC Swapmeet at Chelford Village Hall, Knutsford Road, Chelford, Macclesfield SK11 9AS. This is the very popular Swapmeet that used to be held at the Deanwater. From 7pm to 9pm, doors open for table holders at 6.30pm. Tables £10 each (includes entry for one person). Entry £3 per person. Tables limited to 30 only, table booking required. Vehicles greater than 2.1m tall will need to be advised to the organiser (below) due to parking restrictions. For table bookings contact 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. what3words: charmingly.costly.repaying. Doors open for sellers 8.30am, buyers 9am. Table price £3 with plenty of tables available. Entry for buyers and browsers £1. 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

Beverley and District MAC Autumn Swapmeet at Tickton Village Hall, Tickton, Beverley, East Yorks, HU17 9RZ. Doors open at 9am, teas and coffees available, entry fee £2 on the door. Tables £5 which includes 1 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 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 Swapmeet
at the John Godber Centre, Ogle Street, Hucknall, Nottingham NG15 7FQ. Just a few minutes away from Junctions 26 and 27 of the M1. We are returning to this fantastic venue with lots of free parking and easy access for what we are sure will be our best swapmeet yet. Set up from 9am and entry at 10am until 1pm 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 swapmeets in Southern England with over 50 tables. Sellers with a booking admitted from 8am. Buyers from 8.30am onwards. Noon finish. Admission £5, under 16s free. First table costs £10 (including one admission), additional tables £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, 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 King's Rochester Sports Centre, 601 Maidstone Road, Rochester ME1 3QJ. From 6.30pm until 10pm. Freeflight, Lightweight RC and 3D RC 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 8am-12 noon with a table and one person costing £9. Buyers, £3 from 9am to 12 noon. 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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VIKING

Next issue



PULL-OUT PRO-PLAN GYROO II

It seems hard to believe that the original Gyroo autogyro first graced the pages of RCM&E back in May 2022. Encouraged by the positive feedback received, a pusher variant, the 'Gyroo II', has now been designed by Rich Harris to complement the original.

The same straightforward construction has been retained, featuring a profile fuselage into which the boom and mast slot. Just as importantly, Rich has retained as many of the major components as possible, making them interchangeable between the two versions.

Shared components include the tailplane, blades, head unit, flexible blade mounting plate and servos.



CHRIS FOSS DESIGNS AT 50

This year marks the 50th anniversary of Chris Foss Designs, a special milestone in the history of possibly this country's oldest, and arguably the UK's most well-known, kit manufacturer, a business which has been under the ownership of Chris Foss the whole time and in continuous production since 1976.

Roy Thompson was apprehensive about taking on our assignment to interview Chris Foss on his mammoth anniversary, but then again how often do you get the chance to talk to one of this hobby's greats?

So having programmed Chris' Shoreham-by-Sea factory address into Roy's sat-nav, off he went.



SEAGULL BY VALUE PLANES

George Worley at 4-Max has been to Mike Roach's float flying site at Longham Lakes several times and both have enjoyed the superb flying opportunities there.

So, when George sent Mike a long, stout box full of balsa and ply, as well as all the hardware needed for this rather attractive model, he was fortunately 'between jobs' and started straight away.

The finished model sits nicely in the water and from the first flight she flew cleanly with no trim changes and performed really well. Landing was very smooth with no tendency for the tip floats to catch.

Later Mike took the Seagull to his club's grass field and to his surprise she took off very easily and after landing he was able to taxi round and back to the edge of the field using rudder to steer.

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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 3300mah batteries with charger in fire retardant carry bag. Two 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).

TOPFLITE 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 Cox 30s, 2 Paw, 3 ED, 1 King Cat, 2 AM, 2 Mills, 3DC, 1 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, 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).

¼ 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 Eleven, also built and requires covering, engine and radio. Offers. Delivery possible. 01508 970541 (Norfolk).

BEECH CRAFT D17 stagger wing, unstarted scale bi-plane project, complete kit, aluminium cowling, plans and all balsa parts, 1422mm wingspan, rare kit - £275 plus P&P. Call Rob on 07791 268498 (Telford).

HOBIE CAT GLIDER ready to fly, very rare, made by the maker of Hobie Cat 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 a/c, never built or flown. Battery included, 140cm wingspan. A lot of plane - £240. Call Adrian on 07593 364486 (Bucks).

WANTED

ARROW ACTIVE MK II G-ABEV original drawings or copies urgently wanted. The drawings are required to enable restoration work of the full-size aircraft forward fuselage structure. Please call with any information 07703 190845 or email dstarkey@acro-services.co.uk

RADIO MODELLER AND SILENT FLIGHT MAGAZINE issues between 1985-1998. Email Anthony on ajtremlett@hotmail.com or call 07971 979441 (Oxfordshire).

EDMONDS MODEL PRODUCTS (EMP) ALGEBRA 2.5m MK2 / 3m MK3 kit, with preferably a glass fibre fuselage and the standard foam wings and original instructions & plans. Other Algebra types and built-up planes considered too. Email Anthony on ajtremlett@hotmail.com or call 07971 979441 (Oxfordshire).

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

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PARTING SHOT

COASTAL DUTIES

Following our review in the September issue of the Fly Wing Jayhawk helicopter in U.S. Coast Guard colours, we though you may like to see another similarly decorated model constructed by Kenny Morton, although this one is a much more comprehensively detailed model.

Kenny says: "I am an accomplished builder of scale helicopters and for approximately two years I worked on this project which is a highly detailed 1/7th scale model of an H.M Coastguard AW139.

"This aircraft is based on a Vario kit and weighs in at approximately 18kg. It is just a smidge under two metres without blades."

Kenny Morton

DATAFILE

Camera:	Panasonic DMC-GH4
Aperture:	f/6.3
Shutter Speed:	1/320 s
Exposure Mode:	Auto
Focal Length:	73 mm
ISO:	200
Metering:	Pattern



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MGB8555HV

SLOW START
METAL GEARS
BRUSHLESS MOTOR
5.0-8.4V



S:	0.12sec/60° (8.4V)
T:	54.7kg.cm (8.4V)
D:	40 x 20 x 39.1mm
W:	85g

£134.95

MGB8346HV

SLOW START
METAL GEARS
BRUSHLESS MOTOR
5.0-8.4V



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

METAL GEARS
BRUSHLESS MOTOR
5.0-8.4V



S:	0.05sec/60° (8.4V)
T:	28.0kg.cm (8.4V)
D:	40 x 20 x 39.8mm
W:	89g

£109.95

MGB5216HV

SLOW START
METAL GEARS
BRUSHLESS MOTOR
5.0-8.4V



S:	0.08sec/60° (8.4V)
T:	16kg.cm (8.4V)
D:	36 x 15 x 33mm
W:	52g

£89.95

MG7232HV

METAL GEARS
CORELESS MOTOR
6.0-8.4V



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

METAL GEARS
CORELESS MOTOR
6.0-8.4V



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

METAL GEARS
CORELESS MOTOR
5.0-8.4V



S:	0.07s/60° (8.4V)
T:	10.0kg.cm (8.4V)
D:	35 x 15 x 29mm
W:	28g

£38.95

MG1609HV

METAL GEARS
CORELESS MOTOR
4.8-8.4V

NEW



S:	0.07s/60° (8.4V)
T:	8.9kg.cm (8.4V)
D:	23 x 12 x 27.5mm
W:	16g

£21.95

MG2611WHV

METAL GEARS
CORELESS MOTOR
WING SERVO
5.0-8.4V



S:	0.10sec/60° (8.4V)
T:	11.0kg.cm (8.4V)
D:	30 x 10 x 35.5mm
W:	26g

£42.95

MG2107WHV

METAL GEARS
CORELESS MOTOR
WING SERVO
5.0-8.4V



S:	0.10sec/60° (8.4V)
T:	6.6kg.cm (8.4V)
D:	25 x 8 x 34.3mm
W:	21g

£44.95

MG5510DS

METAL GEARS
BRUSHED MOTOR
4.8-6.0V



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

METAL GEARS
MINI SERVO
4.8-6.0V



S:	0.10sec/60° (6.0V)
T:	3.3kg.cm (6.0V)
D:	30 x 12 x 32mm
W:	17g

£14.95

MG1003DS

METAL GEARS
MICRO SERVO
4.8-6.0V



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

PLASTIC GEARS
STANDARD SERVO
4.8-6.0V



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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IN ACTION! SEE IT

SPECIFICATIONS:

- Wingspan: 1000mm (39.5")
- Length: 1063mm (41.8")
- Weight (RTF): approx. 750g
- Wing Area: 485 sq.in
- Wing Loading: 7.85 oz/sq.ft

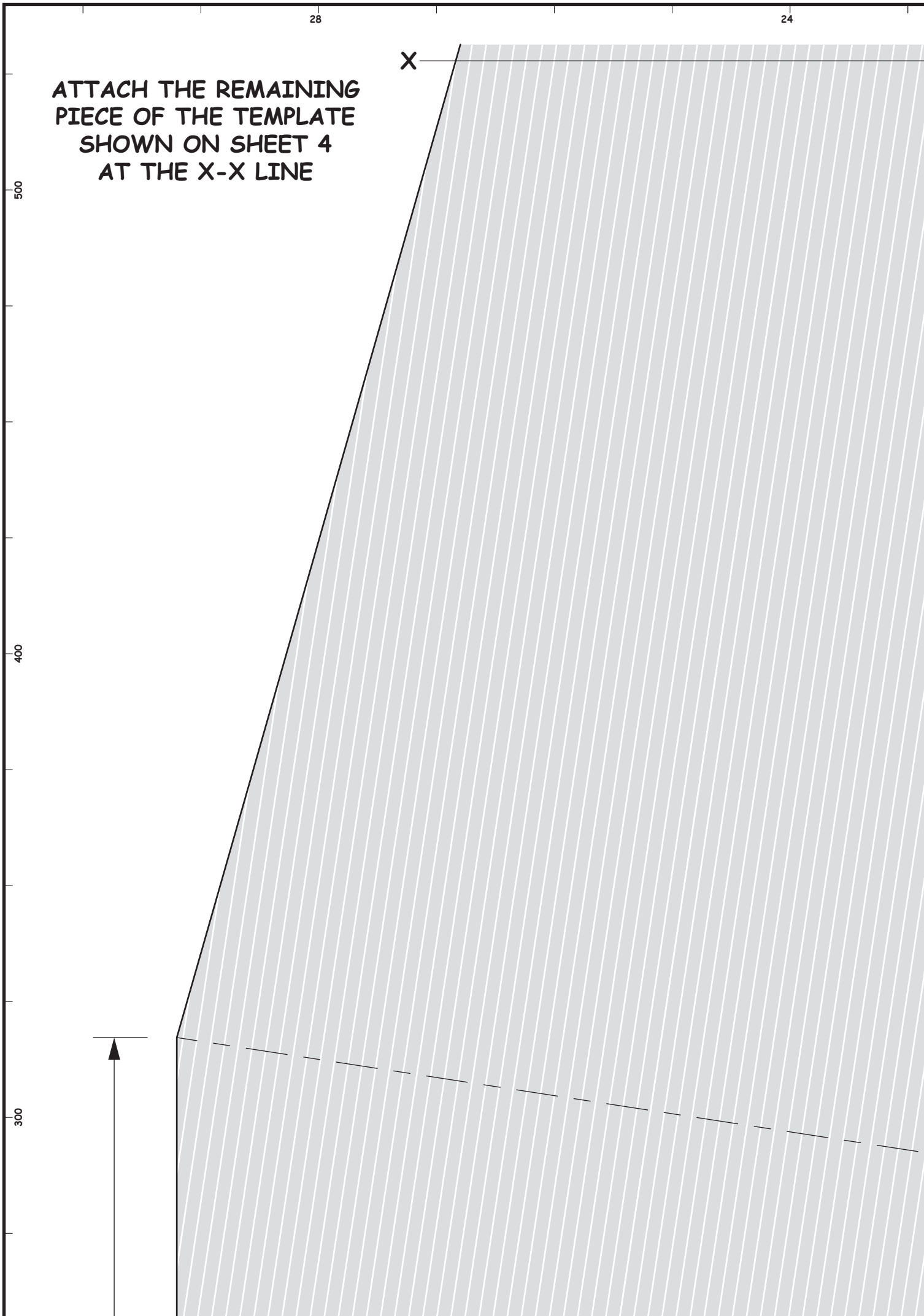
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PL-1036V3-G (Green) PL-1036V3-R (Red)

RRP: £309.99

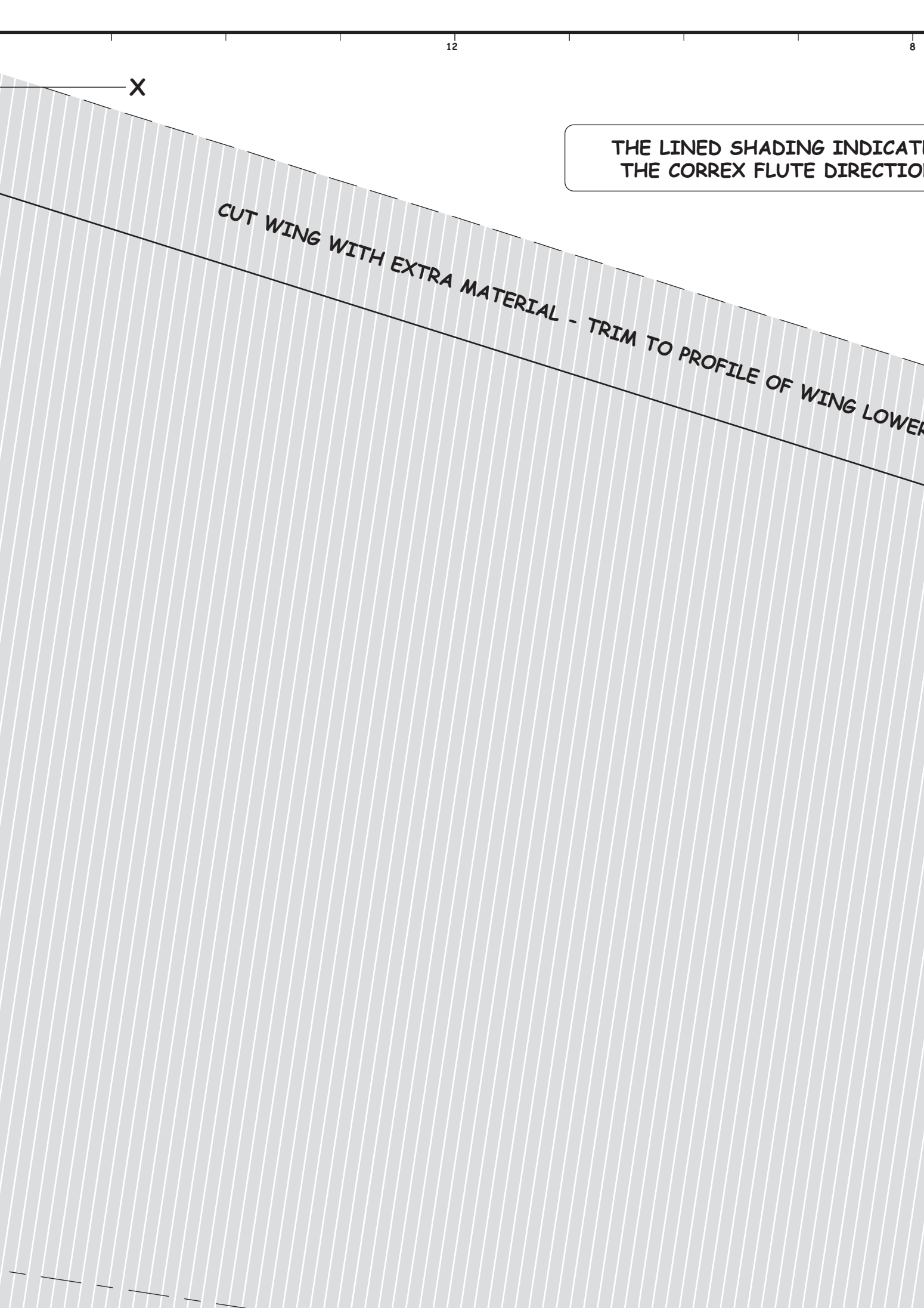
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28
24
X
ATTACH THE REMAINING
PIECE OF THE TEMPLATE
SHOWN ON SHEET 4
AT THE X-X LINE
500
400
300


20
16
FOLD LINE


12
8
X
THE LINED SHADING INDICAT
THE CORREX FLUTE DIRECTIO
CUT WING WITH EXTRA MATERIAL - TRIM TO PROFILE OF WING LOWE

ES
N

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IMPALA

DESIGNED BY JIM BEAGLE

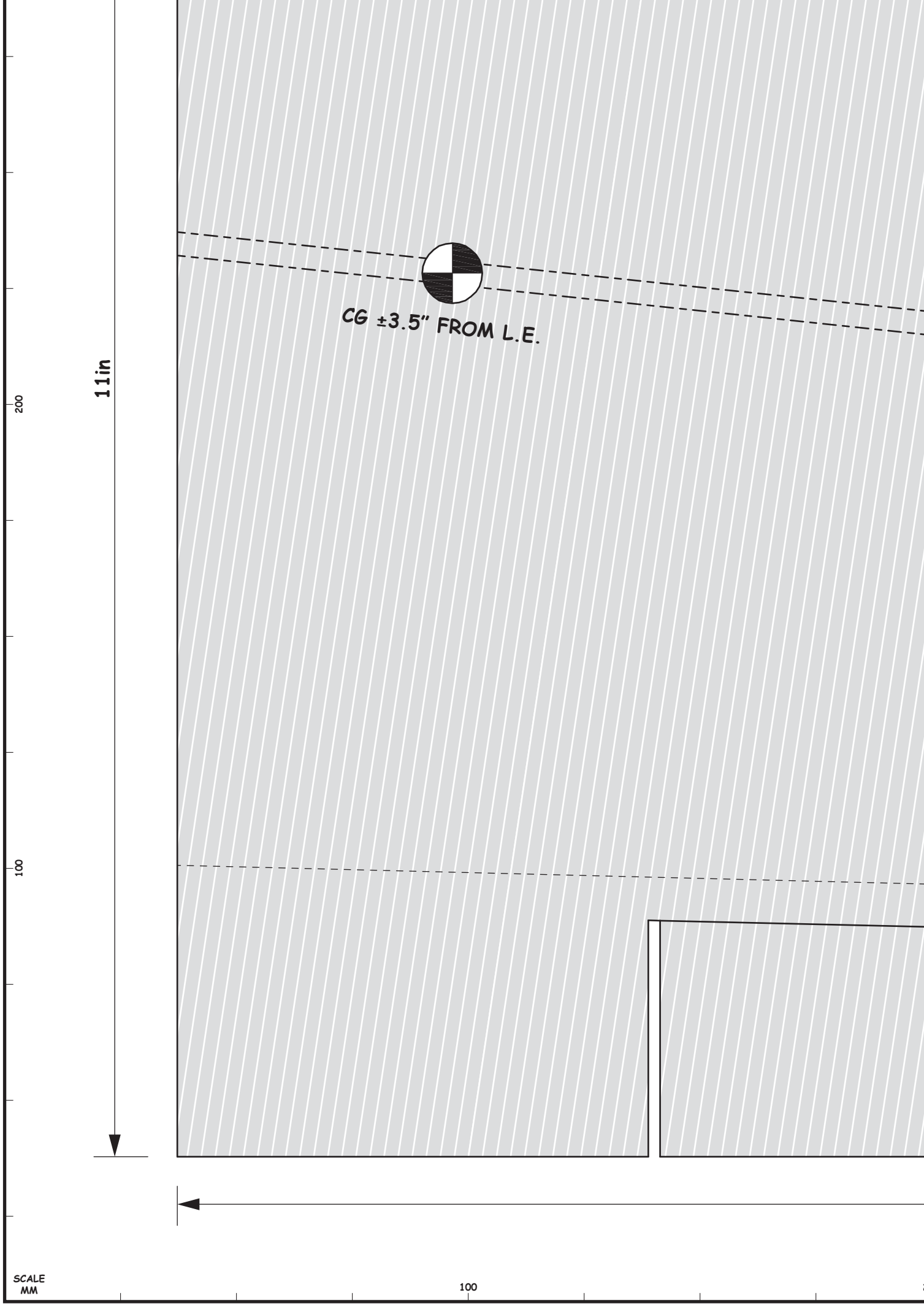
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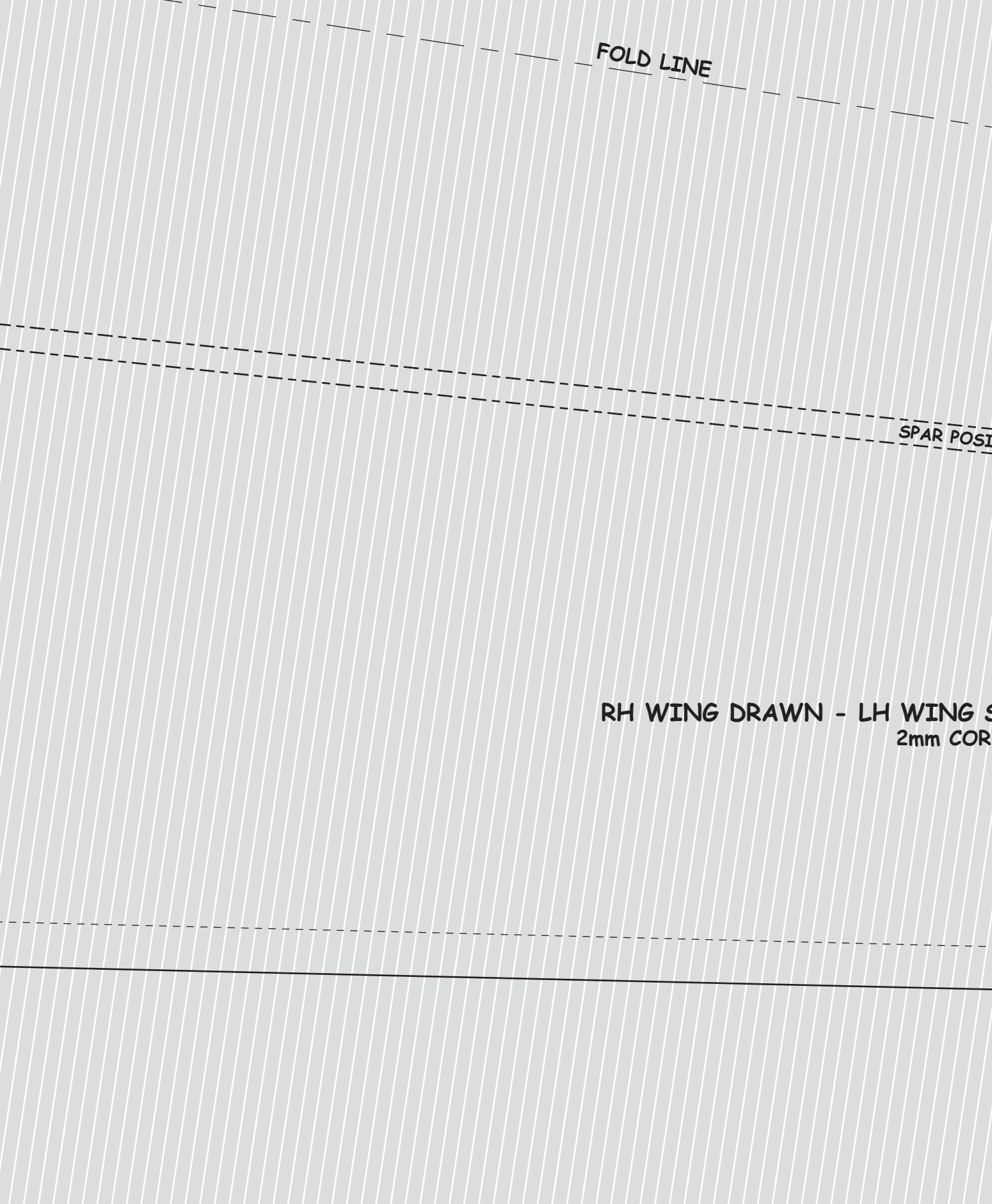
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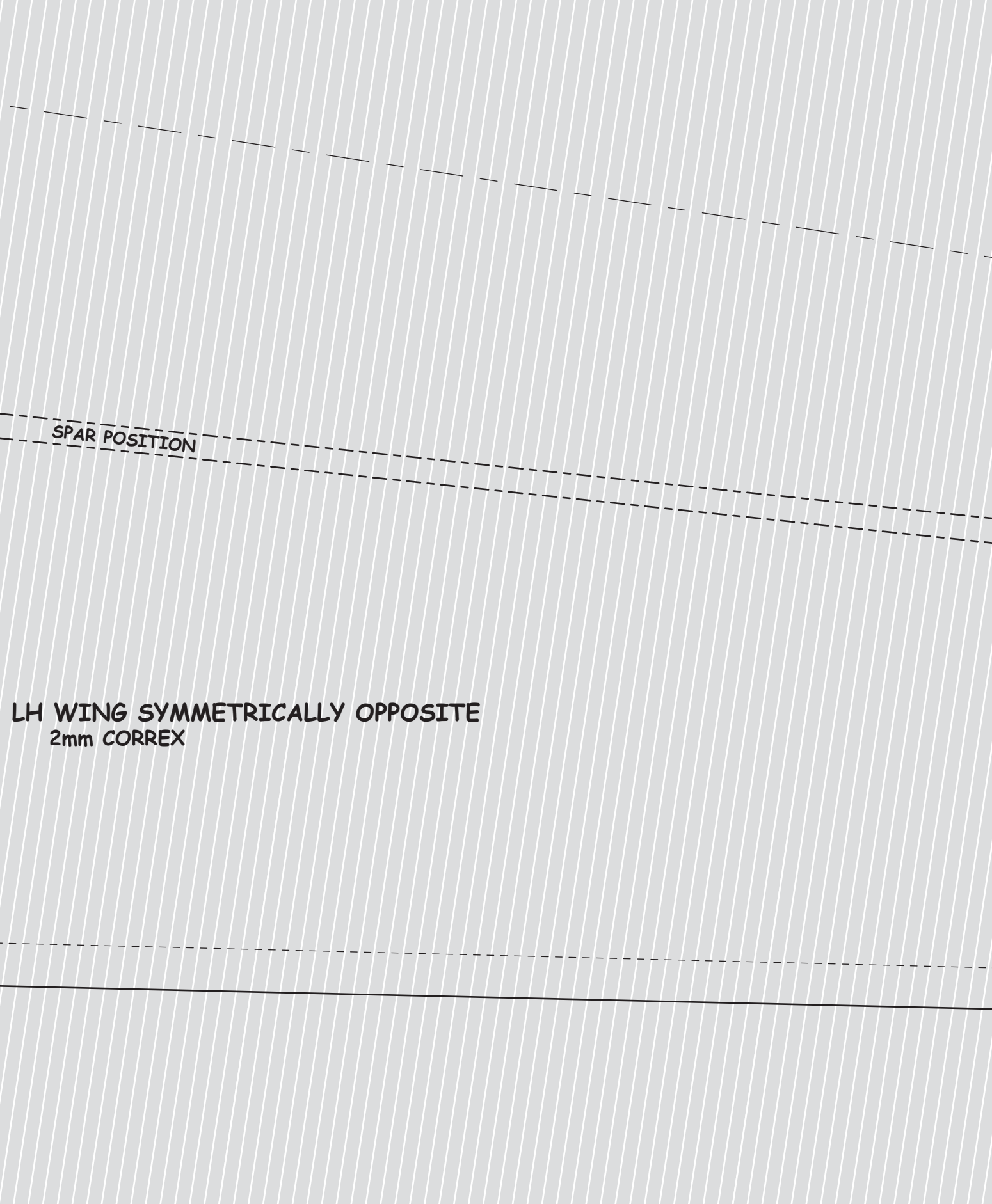
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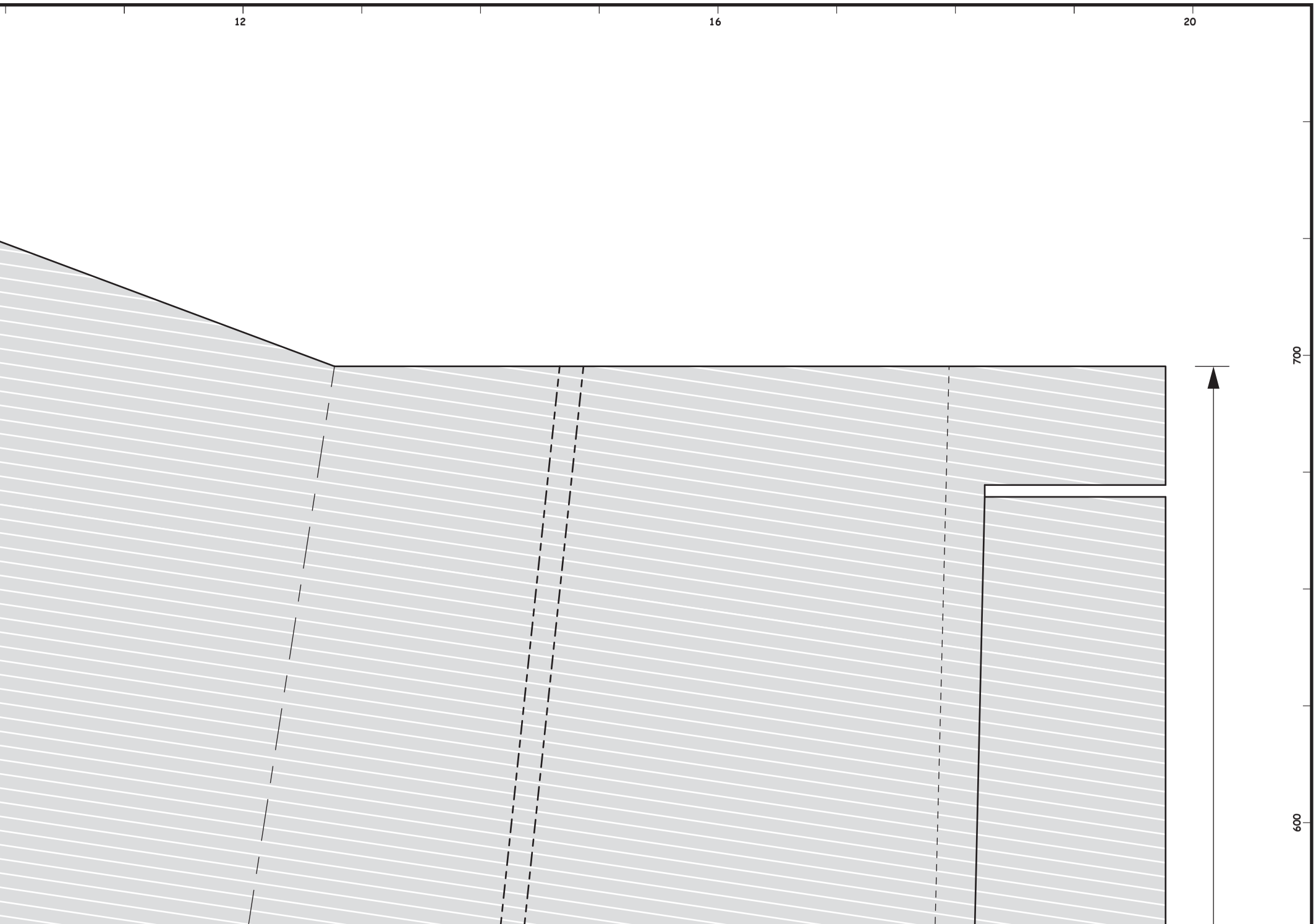
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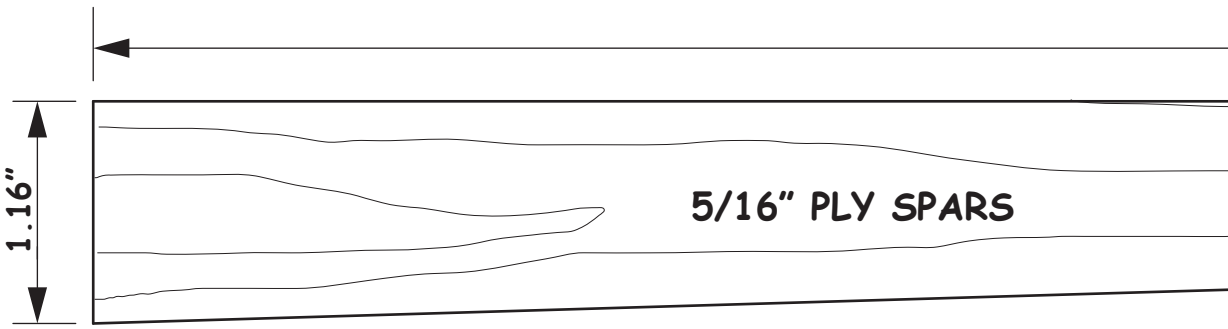
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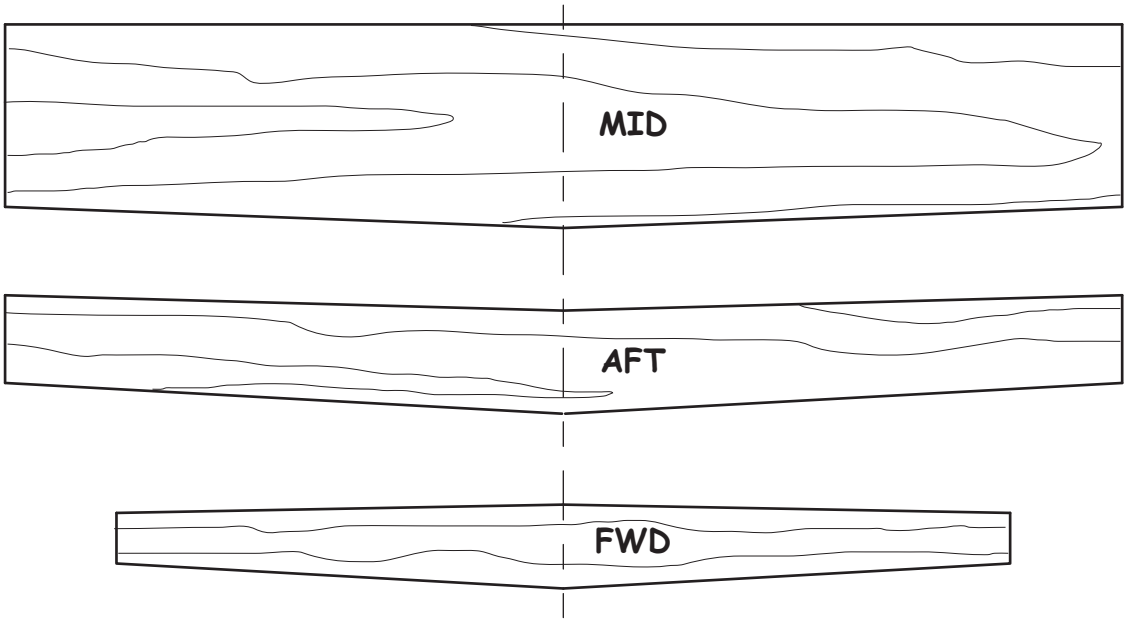

CG ±3.5" FROM L.E.
11in
200
100
SCALE
MM
100


FOLD LINE
SPAR POSI
RH WING DRAWN - LH WING S
2mm COR
26in
200
300
400

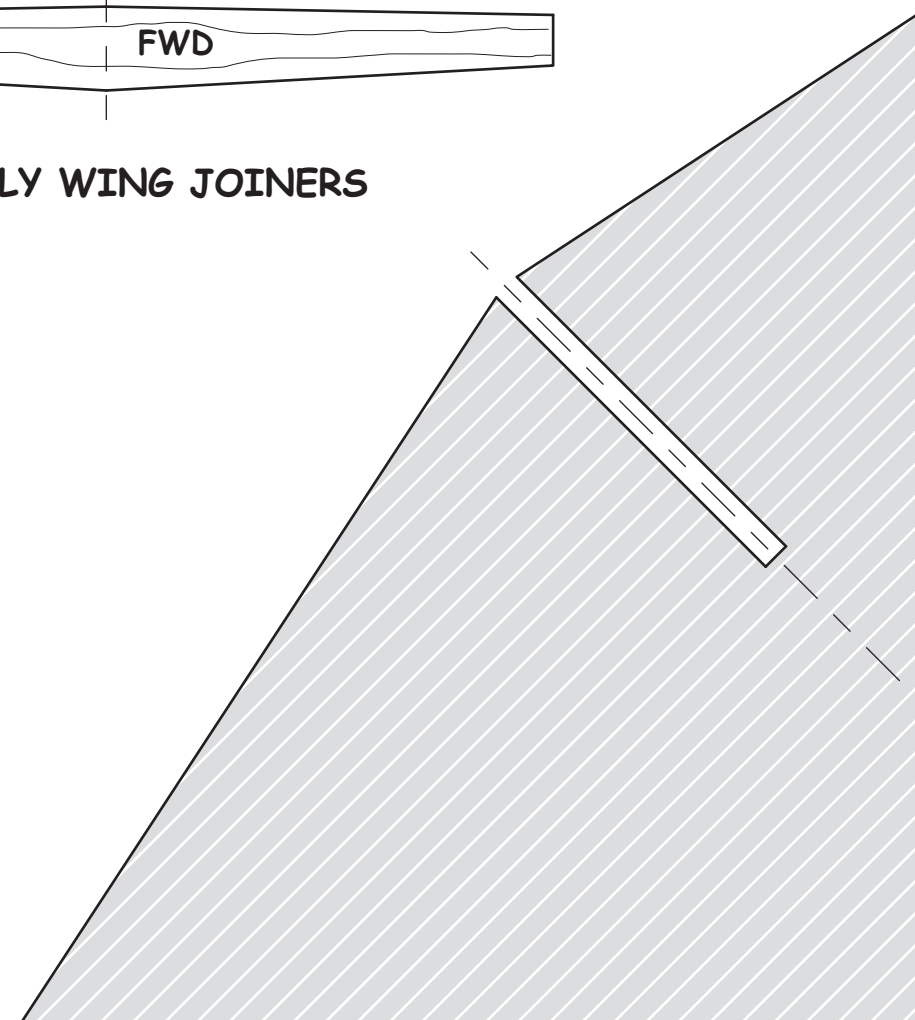

SPAR POSITION
LH WING SYMMETRICALLY OPPOSITE
2mm CORREX
400
500

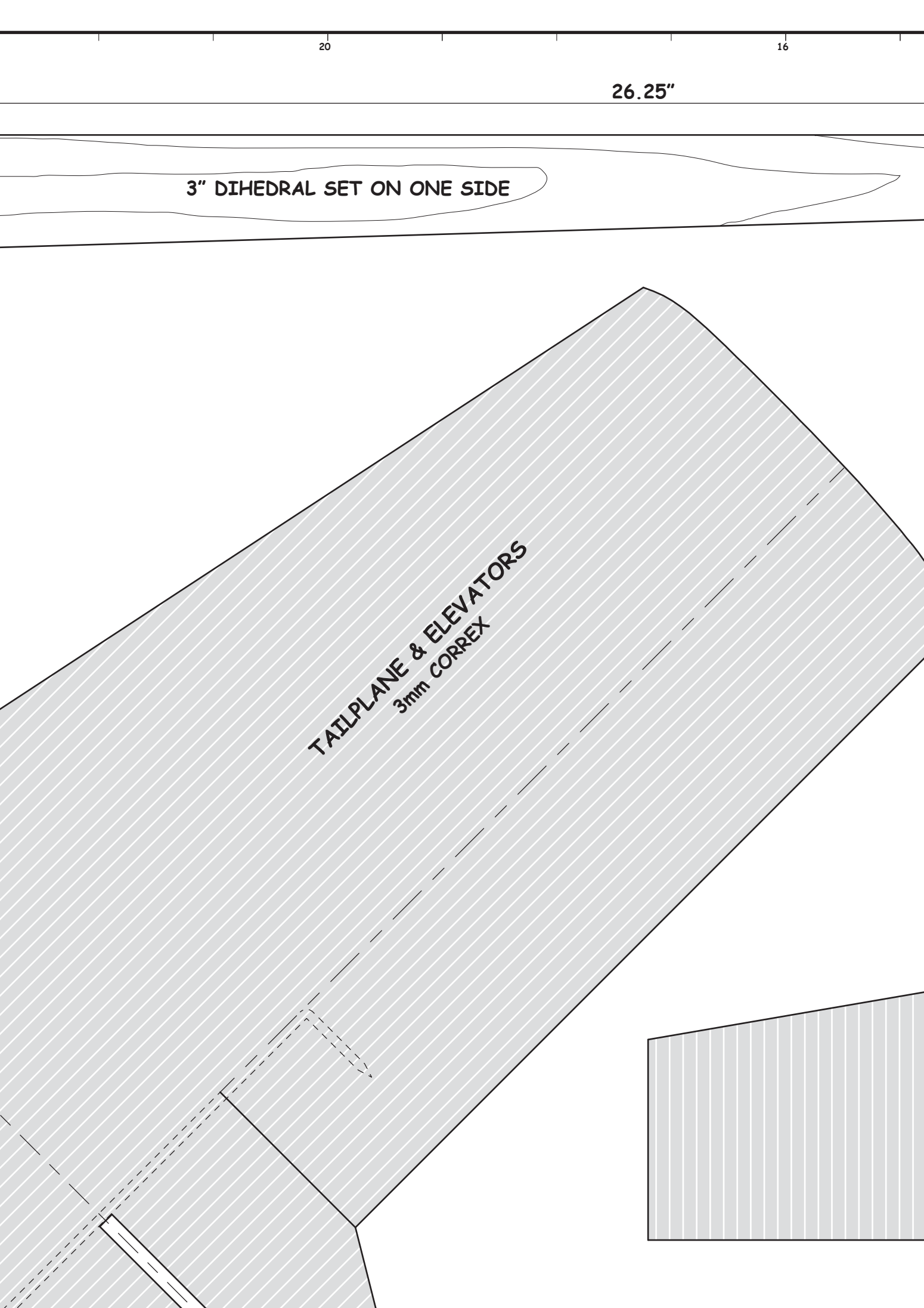

12
16
20
700
600





5/16in PLY WING JOINERS




20
16
26.25"
3" DIHEDRAL SET ON ONE SIDE
TAILPLANE & ELEVATORS
3mm CORREX

RCM&E

IMPALA

DESIGNED BY JIM BEAGLE

PLAN No: RC2286	No. OF SHEETS: 4 OF 4	First published in RCM&E November 2026

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FIN
3mm CORREX

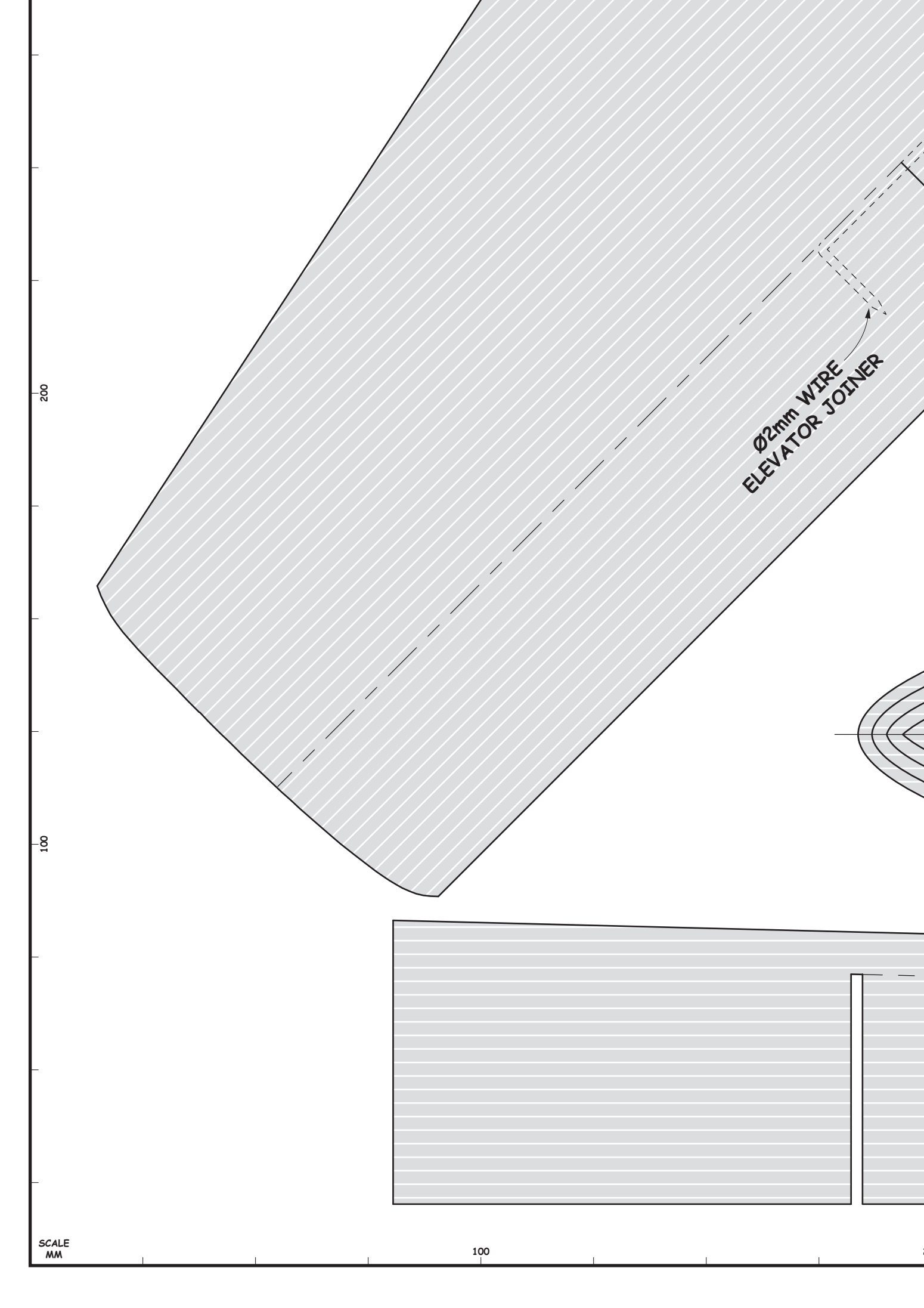
SCALE
INCHES

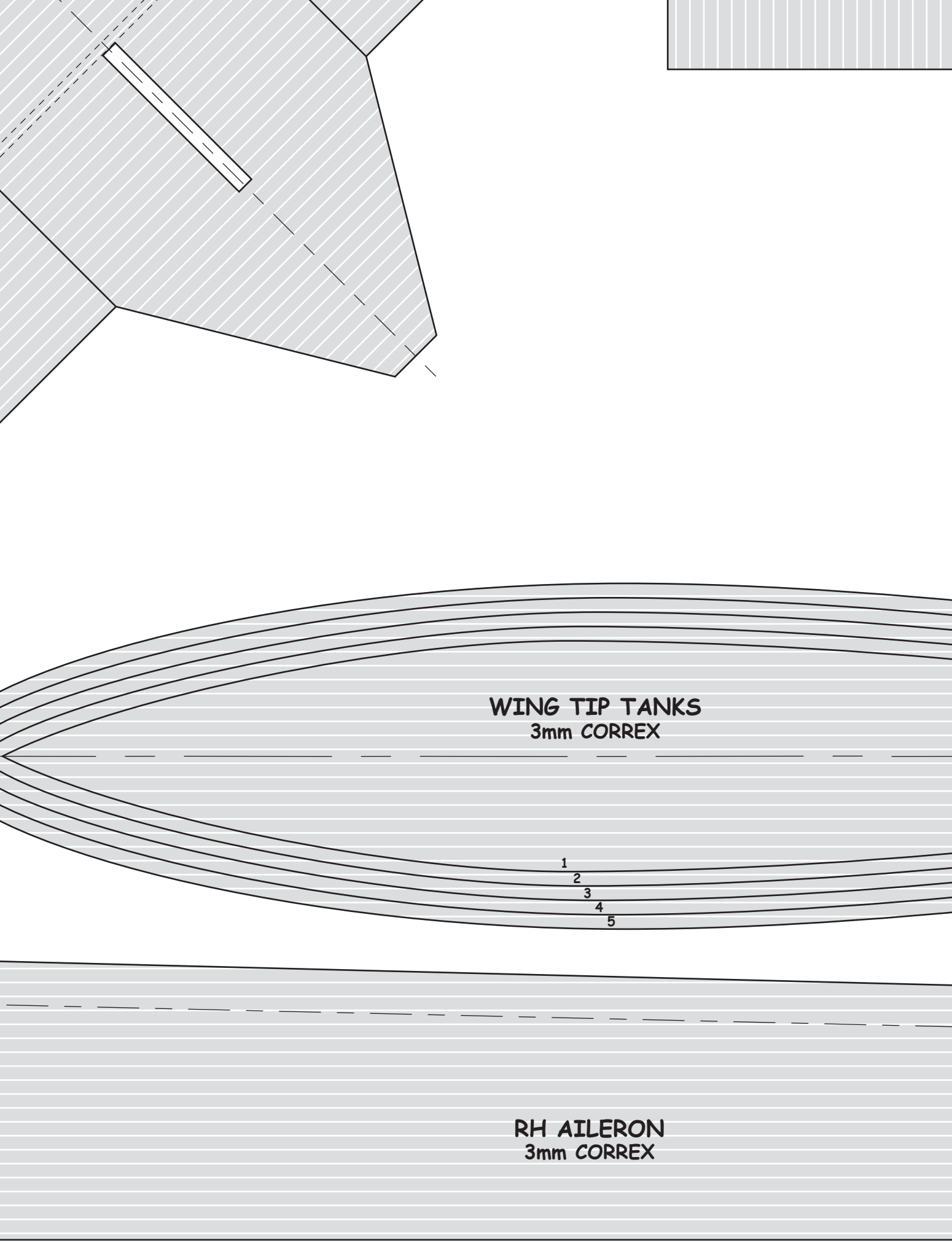
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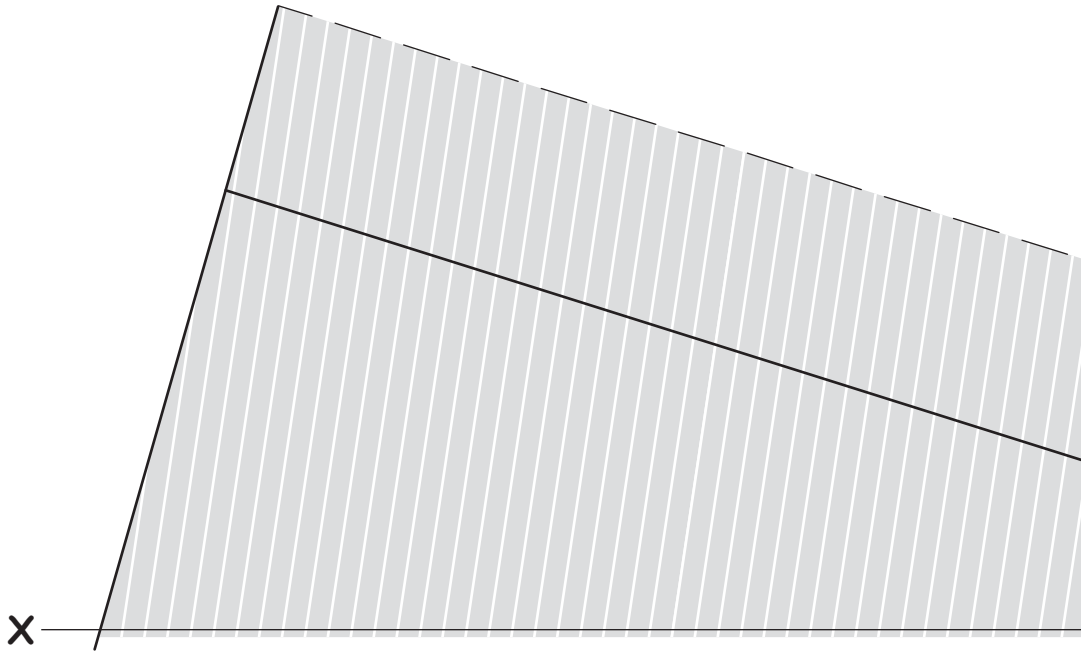
0.38"

4

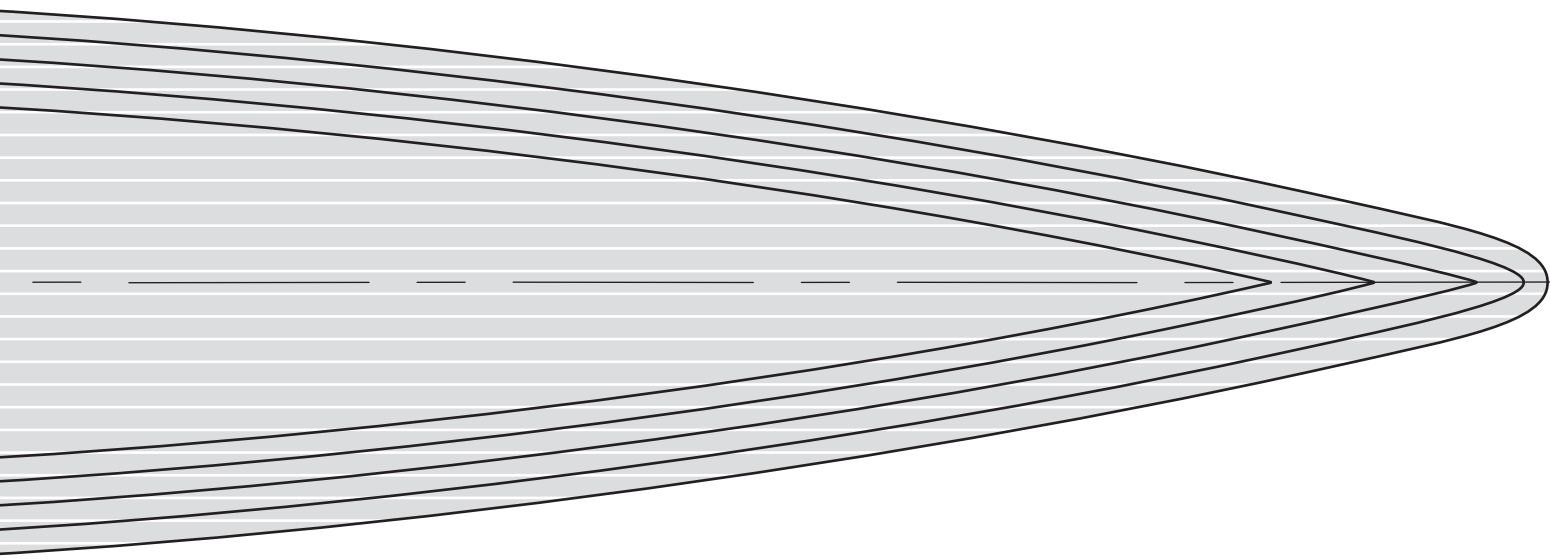
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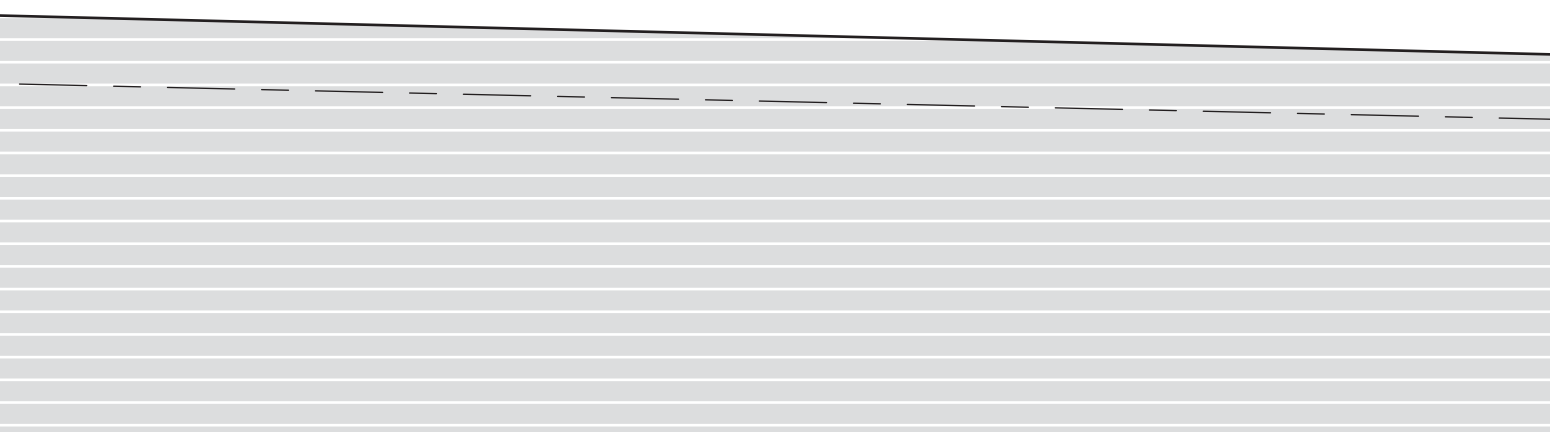

Ø2mm WIRE
ELEVATOR JOINER
200
100
SCALE
MM
100

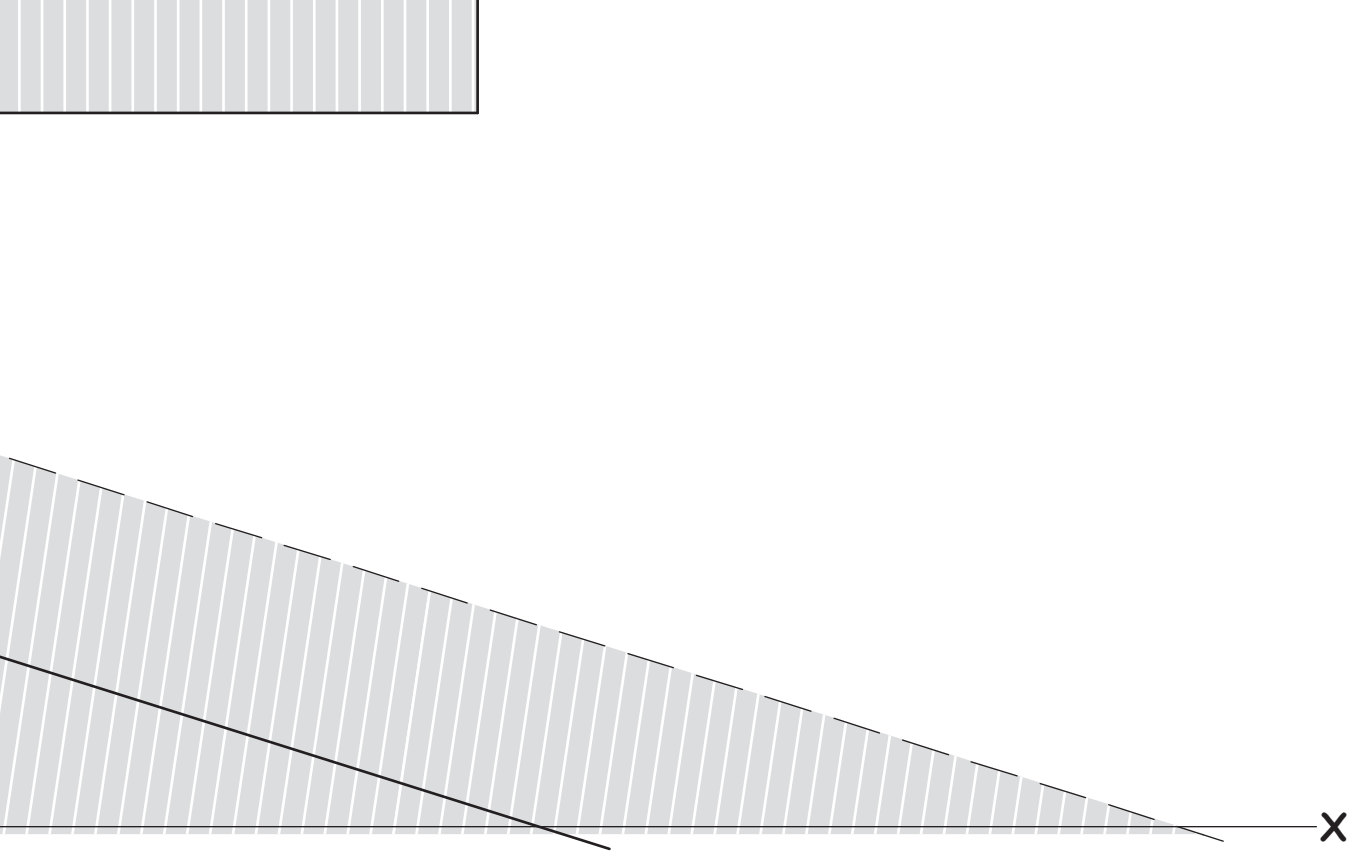

WING TIP TANKS
3mm CORREX
1
2
3
4
5
RH AILERON
3mm CORREX
200
300
400



ATTACH THIS PART TO THE W

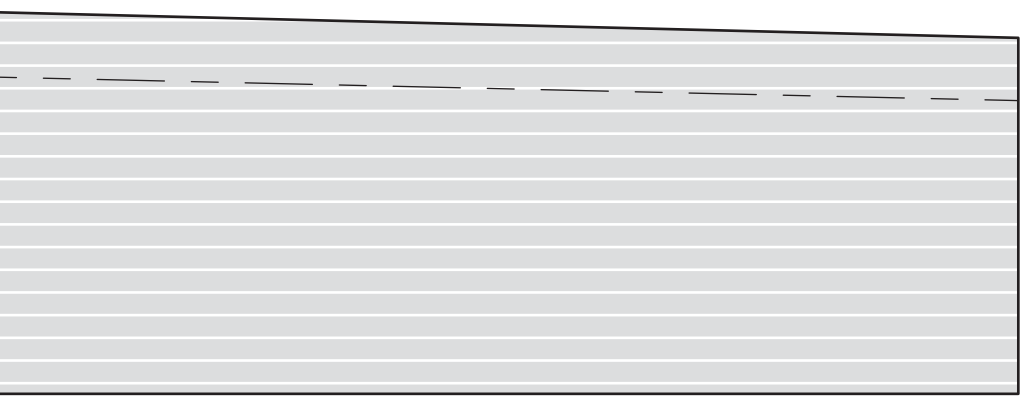






VING TEMPLATE SHOWN ON SHEET 3

THE LINED SHADING INDICATES
THE CORREX FLUTE DIRECTION



12

16

20

600

700