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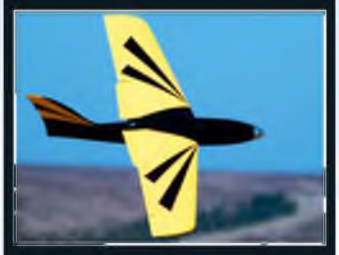

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BOEING PEASHOOTER

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Contents

SEPTEMBER 2016 • ISSUE #392

FRONT COVER

The Boeing P-26A represented a great leap forwards in the early 1930s, from the biplanes of the period, as it was a monoplane, albeit wire-braced, with huge spatted undercarriage legs. It was powered by a 500 horsepower Pratt and Whitney R-1340-27 nine-cylinder radial engine. Soon the monoplane fighter became the 'norm'.

Chris Golds had long wanted to model the P-26A, following on from his 50" span Curtiss A-12 'Shrike' (Traplet plan MW3404), which had borne the yellow/blue colour scheme of the period. And now he has taken the opportunity to model the 'Peashooter'. You can read how he went about modelling this most striking of aeroplanes, starting on page 22

REGULARS

REVIEWS

FEATURES

Pre-flight

Kevin Crozier
Editor | Radio Control Model World
Contact me either by post:
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Traplet Publications Ltd
Willow End Park, Blackmore Park Rd,
Malvern WR13 6NN. UK
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Welcome to the September issue of RC Model World. I recently had my first go at flying with FPV goggles, which is something that I've not actively pursued, having a somewhat delicate constitution when it comes to anything that interferes with that delicate balance between what the eyes see and what the ears do to your stomach! I detest wobbly camera work on the TV. And when they starting spinning the camera around things – forget it! I'm a pretty lousy sailor too for the same reasons, although strangely I can bounce around in an aeroplane without any undue effects, which seems a bit contradictory.

My first go with video glasses was on a calm day at the Traplet flying patch with a small FPV drone. I found the effect to be interesting, and thankfully with no queasiness, but it does give you tunnel vision so objects coming into the field of view from the side can seem to intrude very quickly. The temptation is to bang the aileron stick quickly in the opposite direction. But with a little drone like the one I was flying this quickly leads to over control and a wild chase from side to side.

Unfortunately my first true FPV flight was over all too soon as the little LiPo inside the model ran out of juice. However, I was happy that I had managed to guide her safely (if a bit erratically!) down the length of the flying strip.

My second outing was at a local model flying field and this time I seemed to have a bit more trouble with orientation. I realised I needed to have something in the background to reference the position of the model against rather than just grass and hedges. For my first flight this was inadvertently provided by my son and his girlfriend standing on the edge of the patch. So, I needed something large and static for reference – and the back end of my car was perfect for this. I was now able to sweep the quadcopter from side to side, with the car sliding gently around in the background and providing a useful 'safe point' to return to.

Just as I was getting the hang of things the display started to break up and there were short periods where I had no vision at all. I'm reliably informed that break up of the video feed can occur quite often with lower cost FPV gear, but it is a bit of a concern when the picture goes black!

It was good fun though and this basic combination has given me a taster of what true FPV flying is all about. As a lifelong aeromodeller I don't think that it will ever take over from 'line of sight' flying for me, at least until we can get a more IMAX type of viewpoint – I like 'big sky' flying too much for that – but it has opened up a new area for me in which to improve my R/C flying skills, much like model helicopters did when I first tried to fly them about 25 years ago!

Time now to look at a few of the main articles in this month's issue. Let's start with the Feature Plan, which is for Chris Golds' chunky P-26 Peashooter. Chris has foresaken his favourite foam building material and this one is all wood! We've also been getting a good response to pictures of Pipedream on the RCMW Facebook page, an electric powered tail-less aerobatic glider designed by Mike White, which is this month's Free Plan.

On review we have a great basic trainer, the Flyzone Sensei FS, which features a Goldilocks gyro stabilisation system (it's actually called WISE), which offers 'just about right' levels of assistance. We also preview a pair of fabulous looking retro R/C systems from JR Propo, the C.O.L.T. and Mercury.

As we are well into the summer show season event reports are flowing in thick and fast. This month sees coverage of Wings & Wheels, Weston Park and the Red Flag jet event in Florida. And we also have an entertaining report of the weight lifting classes at the BMFA's School & University Payload Challenge – look no further for some really whacky model aeroplanes!

Plenty then to read through as you sip a glass of Pimms in the summer sunshine! Until next time...

Happy flying!

Kevin

RC MODEL WORLD

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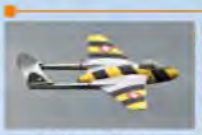

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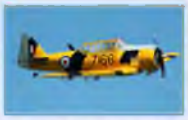

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Take Off R/C News and Views

If you have any news or special interest announcements to make, or even a recently completed RCMW plan design, then why not drop RCMW a line or email RCMW@traplet.com

Retirement News #1

While standing on the flight-line at Wings and Wheels, and with my eye firmly glued to the viewfinder of my camera, I was gently tapped on the shoulder. Standing next to me were David and Janine Rawlins, the Directors of Flying Toys, who surprised me with news of their retirement after almost 40 years of trading, first as DPR Models and then Flying Toys Limited. Their company has now ceased trading.

I asked David to write a short piece for the magazine, which he kindly obliged with:

"Established as DPR Models, a traditional balsa wood kit manufacturer, in May 1978, the company became well known for holding regular children's competitions using their rubber powered Spitfires and catapult launched Concordes at the British National Model Flying Championships and Pontins Model Makers Festivals. The National Chuckie Championship became an annual event for adult enthusiasts too, being held on New Year's Day at the Model Engineering Exhibition.

Following a change of trading name to Flying Toys Ltd in 2003, the company ceased production after manufacturing well over one million models, to concentrate on the marketing and distribution of some leading brands.

Flying Toys have been particularly proud to distribute the Silverlit Picoo Z indoor helicopter, which became one of the best selling toys of all time. The Parrot AR.Drone also proved to be another phenomenon.

David and Janine would like to take this opportunity to thank the Flying Toys Team, their suppliers and customers, plus the press and media who have provided so much support over so many years."

In closing, they told RC Model World: *"We are looking forward to our retirement, and our daughter, Jenilee's wedding to Stuart in December."*

On behalf of all our readers, David and Janine, we wish you all the best in your well earned retirement. And congratulations to Jenilee and Stuart too.

PICTURE CREDIT: Barry Atkinson

Retirement News #2

Near to the end of my visit to Wings & Wheels, I heard from several people that this year's event was to be Dave Bishop's last at compering the show, after commentating at every one in the past 30 years! Surely it could not be true? There was only one way to find out, and that was to ask the man himself, who said:

"Yes, it is true that 2016 will be my last year at presenting aeroplane shows after some 64 years of 'doing it' at home and abroad."

After asking if we would still see him at the model shows, Dave went on to say:

"I have been kindly asked by all of the show organisers where I have worked in past years to come back as a guest after I have retired, which is very kind of them."

And would he be continuing with his On With The Show column for RC Model World?

"I have so many stories to tell about the hundreds of aeroplane shows and people that I have presented to audiences at home and abroad over so many years and I'll be in touch with you about them."

So there we have it. You'll be really missed, Dave. The show organisers are going to have a bit of a problem as we've seldom heard anyone entertain the crowds like you do. Again, on behalf of all RC Model World's readers and everyone here at Traplet Publications, may I wish both you and Jan our very best wishes for a long and happy retirement.

Peashooter Instrument Panel

One of the first places that people look at on any scale model is in 'the office'. And to go with Chris Gold's superb new plan of the Boeing P-26A Peashooter, as featured in this issue, we've specially designed a superb scale instrument panel kit that will really bring the cockpit of your model to life. Details include: ammeter/voltmeter, airspeed indicator, altimeter, manifold pressure gauge, oil/fuel gauge, tachometer, chronometer, compass, turn & slip, magneto selector, clutch & booster lever and the main power switch.

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Fokker Flying Indoors

Portuguese correspondent, Arnaldo Correia has written a few words to supplement our outdoor flying review of Ares' delightful Fokker DVII in the August issue:

"When I first saw photos of this model it was love at first sight! I like the Fokker DVII very much, but that 'printed lozenge' camouflage… no way! To be able to buy such a model off-the-shelf was a dream come true. I have flown the Ares' 'Ultra-Micro' Tiger Moth and Sopwith Pup and found both very easy, not to say delightful, to fly in an indoor environment, the Pup being almost like a 3-channel trainer.

For anyone able to fly a three channel model competently indoors, these models hold no bad surprises, even with the basic Tx supplied with the RTF version. With its generous dihedral and thin, undercambered wings the DVII seemed like a worthy complement to the Pup – and it is. However, I would not even dream of attempting to fly this 29 g (1 oz) model outdoors...

I have flown it with both its proprietary 70 mAh battery, as well as with a larger 130 mAh one, and they both flew it well, although the larger one naturally has more 'oomph'. The change in the C of G position due to the greater weight (+1.4 g) of the larger battery is negligible; if anything it is beneficial. The model responds well to both rudder and elevator, turning nicely left and right. Landings are easy, especially if one keeps some power on, due to the drag of those undercambered wings. And the model looks beautiful in the air, where one forgets about all that dihedral.

Problems? Well, the wheels are a bit hard for a gym floor, with no 'give' whatsoever. So 'greaser' landings are highly advisable. And the small, scale-like rudder sometimes loses authority, but only at slow speeds and high angles of attack. Just give it more power and the rudder will recover its 'bite' fast.

Would I recommend this DVII to anyone for indoor flying? YES! The quality of the model is very good and any modeller would be hard pressed to reproduce such an intricate colour scheme at this scale (1/23) and at such a light weight. Also, essential details for a scale model, like a pilot and the Spandau machine guns are there. And the model DOES look the part, especially when you look at it from any angle that makes the dihedral less noticeable.

If one of your friends has a Pup, tell them to watch out for 'the Hun in the Sun!' Well, in the gym lights, at least..."

Many thanks for your indoor flying notes, Arnaldo. Graham Ashby at J Perkins Distribution, who supplied the review kit, also recommends that the model is best flown indoors. You can see both the Ares Fokker and Pup in action at this YouTube link:

www.youtube.com/watch?v=ZcTadn7fjrM&feature=youtu.be

Home Hangars

Dorset based reader, Kevin Murray, writes:

"Kevin,

In response to your July 'Pre Flight', please find attached my own solution to aircraft storage.

Yes, it's a shed! But no ordinary shed. I designed and built it from scratch to house my collection of finished 'planes and other bits and pieces. It is fully insulated to give a stable internal temperature. The inside is lined with 'sterling board' and the outside clad with weatherboard. It has quality locks and a framed, ledged and braced door for security, and rainwater from the roof is collected in butts around the back. Cost was over £1000, so not cheap. But building it was one of those things 'a man has to do'."

Many thanks for sharing your home hangar with us, Kevin. We recently heard of a local modeller who lost some valuable modelling gear after an opportunist break-in. (Opportunist because the perpetrator was known to the police and not a rogue modeller! No guesses what happened to him – or rather didn't happen – sad to say...) So your efforts in making it as secure as possible are to be applauded. Our local friend has now taken similar security measures too!

Skyhawk Update

Anyone building the A-4 Skyhawk power scale soarer from our recent plan feature (MW3775), hopefully in preparation for the PSSA A-4 Skyhawk Mass Build Fly-In at The Great Orme, Llandudno on 10th & 11th September, will be interested in the following correspondence. Mike Austin, who is building three (yes, three!) A-4s, writes:

"Dear Kevin,

I am in the process of completing three Skyhawks from the February and March articles, and plan number MW3775, and have just noticed that the throws given seem excessive. Are they correct? Also details of the pen used for marking out the panel lines would be very helpful as I'm having difficulty in finding one that doesn't smudge!"

We passed Mike's query straight onto Phil Cooke, the author of the Skyhawk articles:

"Hi Mike,

I had no idea you were building three – wow! Will you be at the Orme in September?

Yes, I'm afraid the throws quoted in both issues of the magazine are in error.

Truth be told, the A-4 is quite responsive in pitch and roll, and you only need small throws to produce a sprightly performance. I would suggest the following as a starter:

Elevator +/- 10 mm at the T/E, tamed with 30% expo

Aileron +/- 12 mm at the T/E, tamed with 30% expo

This is how the prototype flew.

As to the panel lines, any fine-nibbed permanent marker should do. It has to be permanent ink. I apply it with a plastic rule (used inverted) to avoid any bleed under the edge. Where complex curves are in need of panel lines, I cut a piece of 1/16" balsa to suit as a mask and use that as a bespoke rule. If applying on gloss film excessive handling with greasy fingers (sun tan lotion is the worst) can smudge the lines and I find myself having to touch up and maintain the lines throughout the season. But if handled appropriately the lines are fully weatherproof using these pens.

Looking forward to seeing your three A-4s when finished!

Phil Cooke"

Franz Frank's Moth

"Hello! I am pleased to show you my Duncan Hutson Tiger Moth (quarter scale) that I have built and now flown with a most satisfying result!

Greetings to you from Sweden. My name is Franz Frank"

Many thanks for sending pictures of your new model, Franz. Any readers who may be interested in building their own 88" span Tiggie from Duncan's drawing can find more details about the plan (MW3208) on the Traplet Shop website, plus information on a matching selection of moulded parts. This model is designed for 1.20-1.80 cu in four-stroke engines. Please visit:

gb.trapletshop.com/dh82a-tiger-moth-2

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New kits and accessories

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Hubsan's H502E is sure to be a hit with quadcopter fans looking to upgrade from a basic entry level toy. Supplied ready-to-fly, this four-channel quad features a 6-axis gyro for more stable flight and easier control. The built-in 720P HD camera allows the pilot to capture great images and video from up in the sky. And GPS positioning and altitude hold help provide further stability for filming decent aerial videos, which are benefits that are rarely offered in a quadcopter with the Desire's price bracket of just over £100.

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The H502S is the latest in Hubsan's new intermediate range of quadcopters that provide a whole host of the latest drone features at a more affordable price. The perfect entry to aerial photography and video without a hefty price tag, the 502S lets you hone your skills with the same flying features associated with larger, more expensive quads. GPS positioning provides not only altitude hold, but also the one key return to home feature for those moments of panic when you might be disoriented (or just plain lazy to land it yourself!). Once airborne you can film video and take still pictures directly from the transmitter, and view it all from the integrated FPV screen.

www.cmldistribution.co.uk

POWERBOX iGYRO 3e UPDATE

The latest update, V3, for the iGyro 3e raises the 'little one' into a new class! All iGyro 3e pilots receive the V3 update at no extra charge and benefit immediately from the ability to connect the GPS II to the MISC output. This means that the iGyro 3e can now vary the gyro effect proportionally to airspeed, enabling the user to exploit the unit's full performance even when the model is flying at low speed. This advance eliminates the need to switch manually between different speed modes at the transmitter. No major conversion work is required: simply update the iGyro 3e with the USB cable or the BlueCom, plug-in the GPS II and repeat the test-flight procedure. The GPS II (Order No. 3520) can be ordered from any of PowerBox's dealers or their on-line shop.

www.powerbox-systems.com

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www.horizonhobby.co.uk

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www.airbrushes.com

PICHLER JOKER 2

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Pichler have put special emphasis into the development of this Piper PA-18. The result is a beautiful scale Piper model that is especially convincing in the air, aided by its excellent flight characteristics. The ARF model has a wingspan of 1630 mm and is ideal for electric power. The PA-18 can also be fitted with a 7.5 to 11 cc glow engine.

www.pichler-modellbau.de

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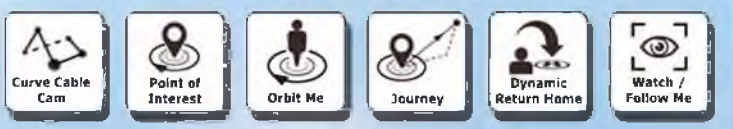

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Lessons From A Wise SENSEI

Jordan Harding describes her first foray into building a fixed wing model with Flyzone's gyro stabilised trainer

Sensei FS is an attractive high wing trainer – but with some clever tricks up its sleeve!

The RTF version comes complete with a well-proven Tactic 6-channel SLT transmitter

Sensei is quite possibly the most apt name for a trainer; it's a Japanese word that usually means 'teacher'. So it's no surprise that the latest fixed-wing machine from Hobbico's Flyzone series excels at helping beginner pilots learn to fly.

As a bit of a background, I have been R/C flying on and off for the past few years. However, this has mainly been with drones and while those skills are obviously transferable, they are much more suited to moving onto helicopters rather than aeroplanes.

Despite this, I have chosen to learn to fly fixed wing next, as I have become quite interested in aeroplanes. One day I would like to eventually be able to own and fly my own R/C jet after seeing an F35-B at the Farnborough Air Show this year!

I do have some very limited experience flying fixed wing R/C models on a buddy box set up with a small powered glider type machine. But the Sensei has been my first real step on the 'aeroplane ladder' because I have had to put it together myself (in the RTF sense of the term).

First Impressions

I was very excited to learn from my boyfriend, James (who is the Editor of Traplet's drone magazine, RC Flight Camera Action) that he would be bringing home the Sensei FS for me to use as my first fixed wing model.

Everything needed to get in the air was included in the one big box, which has cardboard divisions to keep things like the transmitter safe during transit. The model is split up into the wings, fuselage (with all electronics already installed), tailplane and undercarriage, as well as the propeller and spinner. Also included is a smaller box with all the screws and extra parts you'll need, as well as a 2100 mAh LiPo battery, plus an accompanying charger and the previously mentioned Tactic TTX610 transmitter.

While everything is included in the box it's worth mentioning that you will need some basic tools to assemble the model. If you plan to get into any sort of R/C modelling it's worth building up a tool kit anyway so it is assumed that you have at least a set of needle nose pliers, a Phillips screwdriver and a small adjustable wrench or spanners.

Yes, the undercarriage is meant to be raked forward!

Above:
Inside the colourful RTF box is a complete R/C model – everything is included!

Additional parts in the RTF kit include a 2100 mAh LiPo and matching charger. Four AA cells are also provided to power the Tactic transmitter

Putting It Together

Despite being a novice in terms of building models I found that putting the Sensei FS together was both fairly easy, as well as a lot of fun. Commendations have to go to Flyzone for creating a very easy to use instruction manual and, of course, for making a model that a true beginner can put together.

First, you will need to attach the landing gear. This is done by using two 3 x 16 mm metal screws to fix it into place. There is a cut-out section of the fuselage with two pre-drilled holes already done for you, so you know exactly where it goes. One thing to note here is that the undercarriage is angled forwards (this is mentioned in the instructions), which at first glance seems wrong but do not ignore this step.

Next, you need to assemble the tailplane. Firstly, you'll need to move the elevators up and down to loosen the hinges up a bit. This also needs to be done with the rudder. You then need to push the rudder control arm through the elevator joiner wire. This is a bit tricky to do and you do need a bit of creative angling of the rudder section for it to go through; basically, if you're forcing it try a slightly different angle and it should slot through with ease.

The rudder is then simply pushed down onto the elevator section into three recesses; there's no need to apply any sort of glue. Then, slide the whole assembly onto the back part of the fuselage. Again, you need to find the right angle for this and apply a combination of pushing forces in both forward and down directions to get it to sit properly. There is a hole at the bottom of this part of the fuselage that allows you to insert a 3 x 25 mm screw, which holds the whole tailplane together and adds a lot more extra strength to the tail section.

Now the rudder and elevator controls need to be connected. This is done by using pliers to unsnap the pushrod connectors from their respective pushrods. You then need to insert the pushrod into one of the holes on the control horns. For the rudder this is the inside hole, whereas you need to insert the pushrod into the outside hole for the elevator. Then, it is just a case of re-snapping the connectors back onto the the pushrods.

After this, you need to install the wing joiner. This is done by pushing it into the slot that is cut into the left wing until the hole in the joiner lines up with the bolt hole through the wing. You then need to repeat this step for the other wing, making sure that the aileron servo wires come out of the bottom of the wing so that they can be plugged in.

All that's left is to attach the wing connecting plate on the top of the wing; there is only one way that this can be installed and you'll be able to tell because the plate will be flush with the wing.

As this was the RTF version there was no need to set up the receiver or program the transmitter. However, instructions are supplied to explore this in-depth if you decide to opt for the Rx-R (receiver ready) version.

Now it's time to check the radio system. The 6-channel Tactic TTX610 transmitter that comes with the Sensei takes four AA batteries, also supplied, and at the same time as installing them you should check that the servo reversing switches are selected the same way as in the instruction manual. Then, put the throttle to zero and all the trims at their central positions, then turn it on. You can then connect up the battery and test the controls. If this doesn't work you'll need to bind the receiver to the transmitter, which you can find more details for in the instruction manual.

The control throws are already set up at the factory but it is worth checking them just in case. The recommended throws are 15 mm for the elevator and ailerons and 16 mm for the rudder. Again, check the manual for detailed instructions.

Now you will need to check the stabilisation system. The Sensei features a gyro stabilisation system called WISE to help with stability when you are learning to fly. Essentially, it will attempt to make 'soft' corrections in an effort to help with over compensating on the controls from the pilot. For example, the more you command the model to bank left, the more the WISE system will put the ailerons in the opposite direction to return the plane to level flight. This affects all the controls but can be reduced or turned off depending on what mode you are flying in. What you will need to do is check each of the flight controls – ailerons, elevator and rudder – and make sure that the opposite correction is being put in by the WISE gyro system.

So, for example, pointing the plane down (simulating down elevator) should make the elevator automatically go slightly up. There is also a climb assist function that will apply elevator whilst the model is taking-off, allowing the pilot to focus on controlling the Sensei's direction.

Next, it's time to install the propeller, which is simply a case of sliding the collet type prop adapter onto the motor shaft and installing the spinner backplate, followed by the propeller, washer and nut. Tighten it all up, then all that's left to do is to attach the spinner cone. You will also need to check the

A recess in the fuselage just aft of the 'bomb drop' doors shows where the undercarriage is meant to fit. Two screws hold it securely in place

The tail parts are neatly moulded. They jig together and lock into place at the rear of the fuselage

Tail pushrods use swing keepers to connect to the control horns

Jordan's first try at fitting the tail retaining bolt left it a bit loose. So be sure to use a correctly sized cross-head screwdriver and screw it fully home

The wing panels are fully finished and fitted with shrouded servos

Centre of Gravity, which again is explained in full in the manual.

Before we found out what the Sensei is like in the air, I handed the model over to Kevin Crozier (James' father) to check her over and to perform the first test flights.

Check Over

Although assembly of the Sensei is a fairly simple procedure, Jordan had no problem in putting together a nice, straight airframe, aided by the clear instruction manual. Since this was her first 'solo' project she had done a good job of getting everything in the right place and making sure all the screws were done up properly. My only concern was that the tail group seemed a little bit loose, but having checked that the single retaining bolt was tight I moved onto checking the rest of the airframe.

The model balanced correctly and all the control throws were as 'per the book', but that tail bolt was still bothering me. So I decided to unscrew it and reinsert it myself. By doing this I was able to feel that the bolt went through a brief stiff period before freeing up for a few more turns, thus allowing the tail to be properly tightened up.

With everything fully checked over it was time to take the Flyzone Sensei to the flying field.

First Flights

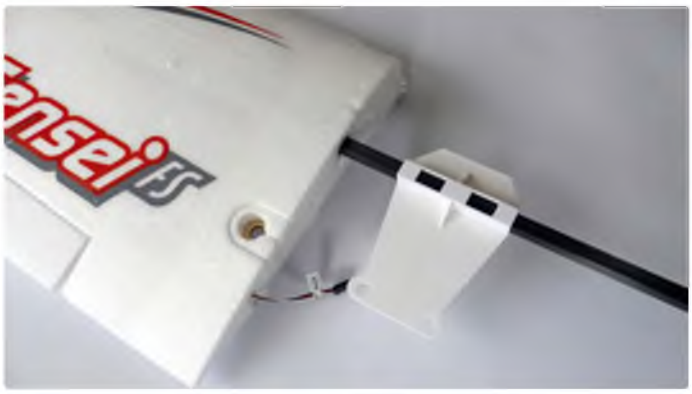
The first flight was with the WISE stabilisation system turned off (Advanced Mode). Being a trainer of conventional high wing configuration I was expecting to find the Sensei easy to fly. And she didn't disappoint; the controls were well harmonised and the stall was a very sedate affair. I was also very pleased to find that she required very little trim. After a few fly-pasts to allow James to take some in-flight pictures, I opened the throttle to try a few club style aerobatics.

Sensei will perform loops and rolls with ease and inverted was very rewarding too, requiring just slight a small hint of down elevator to maintain altitude.

Sensei comes ready fitted with a working 'bomb drop' facility and the small cargo bay is perfect for dropping a few sweets over the runway or a light parachutist or two. The bomb drop doors worked well during our test flights and while I wouldn't recommend that new pilots get distracted by this it does add a fun element for more experienced modellers.

Before landing for a fresh LiPo, I thought I ought to try out the various WISE options. The stabilisation system is operated using the Tactic transmitter's CH6 Flap switch, just above the left stick. In the up position (0), WISE is in Advanced Mode, giving experienced pilots full control of the model.

Putting the switch in the middle (1) engages Intermediate Mode, which allows you to input quite large bank and pitch commands but



The square joiner and integral plate provide a secure fixing for the wing panels

A flush mounted connecting plate holds the two panels together – no glue required!

At the heart of the Sensei is the WISE 3-axis flight stabilisation system

Handy tip! Clothes pegs and lolly stick splints were used to hold the control surfaces at neutral while the screw-lock connectors at the servo ends of the pushrods were fully tightened up

Sensei FS lifts off for her maiden flight

In Beginner Mode the WISE system quickly trains tyro pilots to make gentle turns

Bombs away! The cargo bay doors add an extra element of interest to this super stable model aeroplane – perfect for toffee bombing at family days at the model club!

the WISE system will attempt to return the model to level flight if you try to tighten turns too much or pull the nose up too steeply. You'll know when WISE kicks in as the model will start to porpoise gently either laterally or horizontally, depending on the control that it is trying to correct. So if this happens just relax the controls a bit until you have full control once again.

This mode is great for relatively new pilots who have had a few R/C flights and who can basically fly unaided, but who have a tendency to over-control, especially during turns.

The forward switch position (2), Beginner Mode, applies an even greater limit to bank and pitch and unless the model is flown very gently the WISE system will engage and will attempt to correct the flight path. To regain control all you need to do is to release sticks to return to straight and level flight. Using this mode a new R/C pilot will soon learn that only very slight movements of the sticks are needed to guide their model aeroplane around the sky.

Finally, it's very easy for beginners of all levels to get a bit disorientated and find that their new R/C model is spiralling downwards, with no idea of how to correct things. If this happens with the Sensei then just hit the Bailout Switch on the left shoulder of the Tx, which automatically returns the model to level flight, regardless of the WISE mode that you are flying in. Works well!

With the WISE tests completed it was time to land the Sensei and to give Jordan a go with her new model. In the circuit the Sensei's easy handling makes lining up for landing both easy and a real pleasure; if I had been on my own a few 'circuits and bumps' would surely have ensued! But my turn was nearly over, so as the Sensei practically flew herself down the final leg, I eased off the power and flared gently using a touch of up elevator, setting the model up for a soft touch down.

I have test flown quite a few R/C trainers over my many years in the hobby and the Sensei rates very highly. It is easy and rewarding to fly, and the additional safety measures provided by the WISE stabilisation system provide just enough 'assistance' to allow the model to be flown safely on their own by low-time pilots like Jordan.

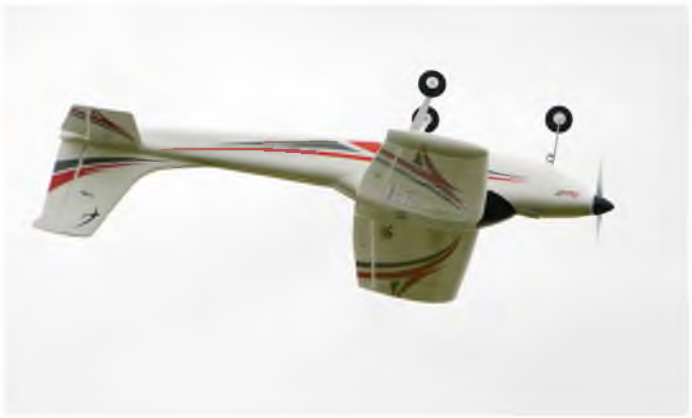
However, I would still advise that an experienced pilot stands close by in order to offer advice and to act as a spotter. They should also be ready to regain control if the pilot needs a break, even if the Bailout feature has been successfully deployed!

Last Word From Jordan

With the Sensei checked over and test flown it was time for my first flying session.

As previously mentioned I did have a small amount of experience flying on a buddy box

With the bomb doors safely tucked away the cleaned up Sensei shows her sensible proportions. Black stripes under the wings provide a simple but clear means of orientation



This model is easy to fly inverted. Look closely and you can see that the battery hatch is starting to lift on the nose. It pays to check this is properly secured after fitting the LiPo!

Sensei FS is surprisingly agile in Advanced Mode and is seen here mid-way through a roll

A small tad of up elevator settles her into the flare for a smooth touch down

system. But when we arrived at the flying field I found out that I would be flying the Sensei by myself – the reason being that with the WISE system switched on the plane can't easily crash. I was nervous as it was my first solo flying session but I was excited to get stuck in.

Luckily it was a sunny day with lovely blue skies, which was perfect for me as there was not a lot of wind or the threat of rain to worry about and so I could focus entirely on flying.

James got the Sensei airborne for me, although with WISE fully switched on the model can almost take-off itself, so next time I will definitely attempt this. Once the plane was at a decent height and was nice and level he passed the transmitter over to me.

From the get-go I felt much less worried flying the Sensei than I had with the other fixed wing models that I have flown. While we only had the medium-level assists on, it put my mind at ease as any over correction was automatically rectified. I was able to perform smooth figure-eights without having to worry about anything going wrong and when I did get into trouble I used the Bailout switch to automatically re-position the aeroplane back to level.

The model handles just as I would like it too: it's docile enough that I don't have to be extremely precise with my stick movement but is still responsive – it doesn't feel 'laggy'. The power is also just right and I wasn't worried about it going too fast.

Now that I have the basics down I will try to fly without the assists next time. However, as the WISE assists are only a switch away it means I have much more confidence. I'm looking forward to my next flying session and I am not as nervous as I was at the beginning.

All in all, I feel that the Sensei will be a fantastic model to learn to fly fixed wing on. The WISE system has helped me feel more confident when I am flying so that I can put all my focus into piloting the model properly and this will help me become a better pilot in the long run. ***RCMW***

RC MODEL WORLD

MODEL INFORMATION

NAME:	Sensei FS
MANUFACTURER:	Flyzone
DISTRIBUTOR:	Hobbico in the UK
WEBSITE:	www.hobbico.de/en (search for Sensei)
UK RETAIL PRICE (RTF):	£244.99
UK RETAIL PRICE (Rx-R):	£160.99
MODEL TYPE:	Electric R/C trainer with gyro stabilisation and cargo bay
CONSTRUCTION:	Moulded foam
PARTS SUPPLIED:	Everything is included in RTF version, including a 6-channel transmitter
PARTS REQUIRED (Rx-R VERSION):	Four channel minimum R/C system, 2100-2200 mAh 11.1 V LiPo and charger

R/C FUNCTIONS

1: Throttle
2: Ailerons
3: Elevator
4: Rudder
5: Cargo bay doors

MODEL SPECIFICATIONS

WINGSPAN:	58 in (1475 mm)
LENGTH:	48 in (1220 mm)
FLYING WEIGHT:	3.2 lb (1450 g)

Dislikes

Contact covers on Star connectors fitted to ESC and LiPo can slip off when being pulled apart

Likes

Easy to assemble • Well produced instruction manual • Looks like a trainer and flies like a trainer should! • WISE system provides a good level of flight stabilisation • Cargo bay function is fun to use – when you have cracked flying the aeroplane!

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Feature Plan

Boeing P-26A Peashooter

From the design board of master model builder Chris Golds comes this 76" span USAAF 'Pursuit Fighter' for a C63-32 outrunner and an 8S 5000 mA LiPo. The P-26A requires four function R/C

RC MODEL WORLD

At A Glance

SCALE:	1:4.5
CONSTRUCTION:	All balsa and plywood
WINGSPAN:	76" (1930 mm)
LENGTH:	62" (1575 mm)
WEIGHT:	220 oz (6.16 kg)
WING LOADING:	28 oz/sq ft
POWER LOADING:	94 watts/lb
POWER:	1025 watts

Motive Power (Prototype)

MOTOR:	JP EnErG C63-32 brushless outrunner (5040KV)
ESC:	100 A HV Pro OPTO
PROP:	APC 20" x 10" two blade
BATTERY:	Two 4S 5000 mAh LiPos

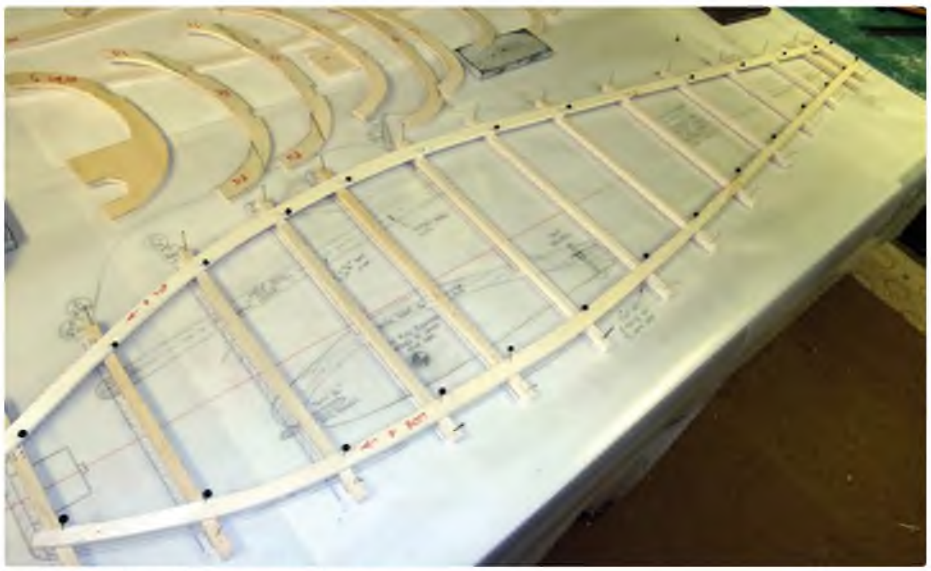
Wheels and compression legs

Port leg unit

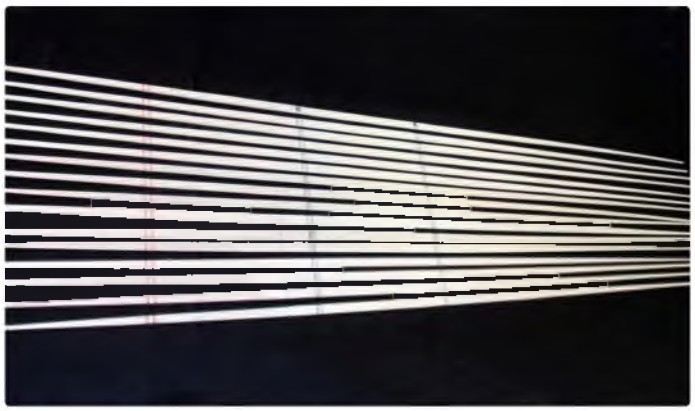
A Potted History

In 1931 the Royal Air Force was being equipped with the latest and most up-to-date fighter aircraft, which was capable of 200 miles per hour, a huge increase over the previous in-service aircraft. But the new Hawker Fury was a biplane and it was fitted with just two .303 machine guns, not much better than the fighters at the end of the Great War that had ended just thirteen years before.

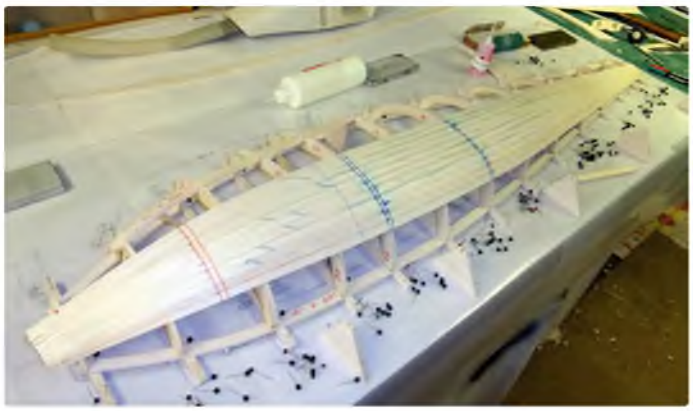
The United States Army Air Corps (in the same year) was quite strapped for cash but desperately needed new pursuit machines if it was to achieve parity with Europe, from whence came disturbing news of monoplane fighter development. The Boeing Company was asked to provide these new aircraft – at its own expense! But the USAAC would provide the engines and instruments, and the new aeroplanes would remain the property of the company.



Fuselage keels on 3/8" square stand-offs



Some of the 64 inch long planks

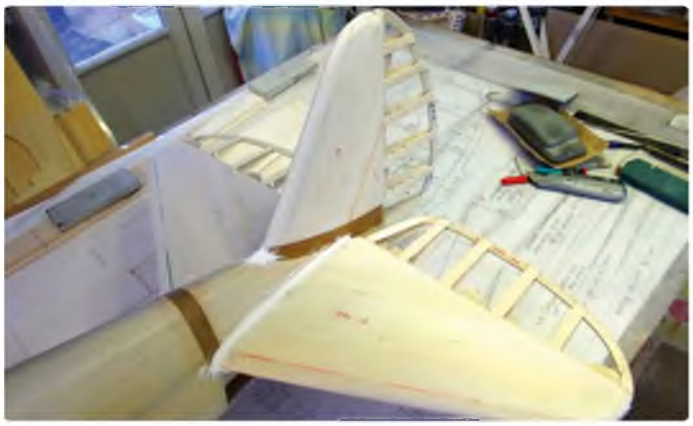


Planking has begun!

Left and right half-shells

The whole fuselage shell weighs just 23 ounces

Tailplane frame



Tailplane with fin and rudder fitted

Boeing had a long history with the American military and had produced 'pursuits' from the Thomas Morse of 1918 onwards. So the Company pressed ahead at great speed, beginning the design in January 1932 and first-flying the machine on 20th March, 1932. The product was a great leap forwards from the biplanes of the period as it was a monoplane, albeit wire-braced, with huge spatted undercarriage legs. It was powered by a 500 horsepower Pratt and Whitney R-1340-27 nine-cylinder radial engine. Thus was born the Boeing P-26A 'Peashooter'; a great step forwards in the early 1930s, as the monoplane fighter became the 'norm'.

I had long wanted to model the P-26 but the closest that I had come had been the 50 inch span Curtiss A-12 'Shrike' (Traplet plan no. MW3404 of RCMW June 2009), which had borne the yellow/blue colour scheme of the period. So now was my opportunity to model the Peashooter, this most colourful of aeroplanes, and to see how it would fly.

Design

Increasing years bring decreasing eyesight and despite having had both cataracts splendidly expunged, I now avoid the small fast models that were my mainstay just ten years ago. So I chose to model at 76 inches span, hoping for a weight of about 12 pounds, a wing loading of around 28 ounces per square foot and a power loading of at least 75 watts per pound.

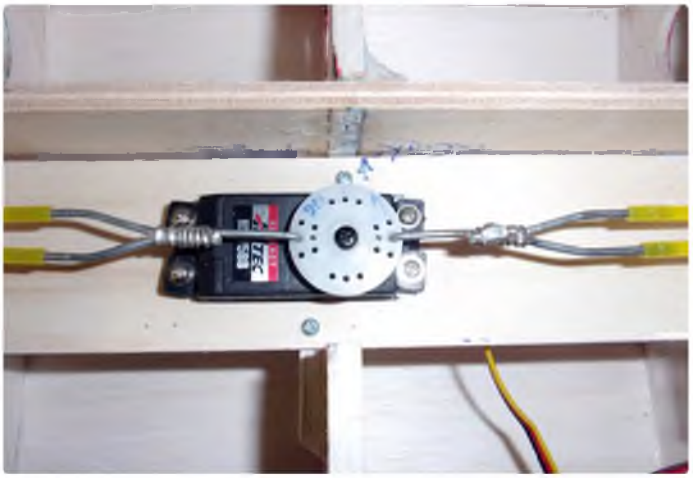
The shape of the fuselage is all curved and the rounded flying surfaces add up to a model with few straight lines in its design. Thus I had to choose between a framed box, clad in foam and carved/sanded to section, and a fully planked fuselage of 62 inches length. I have often been assailed by the cry, "But I don't like foam!", although this argument has lately been quashed by the increasing number of ARTF 'foamies' coming on to the market.

So I chose (as a penance) to go the 'planking' route, even though this would require some 64 planks of 64 inches length, tapered fore and aft, cut from soft 1/8" sheet balsa to half-inch width and scarfed to length.

Here I must stress that electric models need to be light and this means good quality LIGHT but regular density balsa in both sheet and strip form. For me that means balsa from Balsa Cabin, where Vanda delivers really excellent balsa of all densities and sizes. All you need to do is specify what you require and Balsa Cabin will ensure that you receive it; I have never had a 'bum' delivery. Did you know that balsa is defined as a Hardwood! Sounds daft, does it not?

One piece wing frame

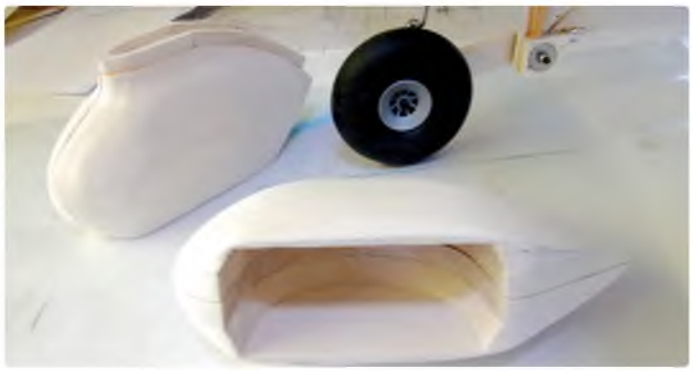
Four section flaps fitted



Flap servo with twin snake connectors

Undercarriage legs fitted

Laminated spats in production



Spats shaped

Construction

I thought that I had better conquer the fuselage first and I am NOT a planker, though I may be other things! So I set to and produced about seventy planks, double tapered and scarf-joined, because even a 48 inch plank of balsa would not reach to both front and rear. With all the bulkhead halves cut and pinned onto the top and bottom keels, which are raised from the plan surface (see the building instructions for details of the process), I began the long and weary task (compared to my beloved blue foam!) of planking.

It took me three sessions to plank just one side of the fuselage but I was pleased with the result, being light, VERY strong and warp-resistant. When both halves were joined I held in my hands a giant balsa cucumber that promised rewards for my planking work.

The 'tail-feathers' were conventional and not difficult to build. The wings also were conventional and simple, except where the undercarriage was to fit. The legs took quite a bit of 'fettling' as they provide the 'oleo' effects needed to prevent bouncing on landing. (Bounce? Whoever accused me of bouncing?)

The 'engine' was a labour of love, to provide a nine-cylinder Pratt and Whitney that looked reasonably like a real one, provided you stand well away!

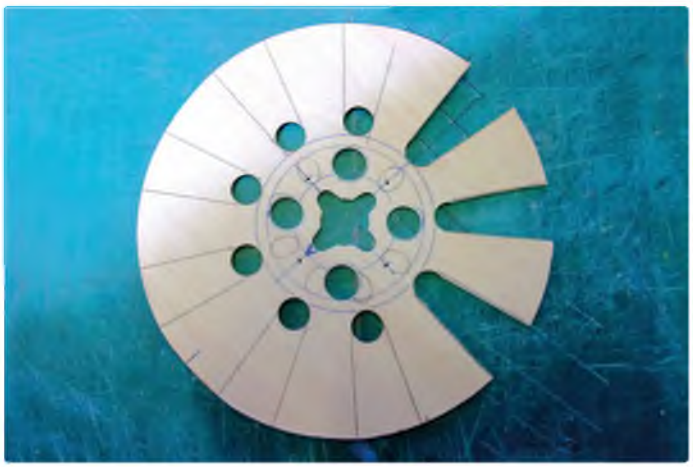
I fitted nine exhausts 'tails', with a Townend cowling ring made from thin ply covered with a foam ring (see building instruction for details) and added a ply scoop for cooling air to the ESC.

The power train was to be a JP EnErG brushless motor (C63-32) turning an APC 20" x 10" two-blade prop (5040 KV) from an 8S 5000 (two 4S 5000) LiPo via an EnErG 100 Amp HV Pro Opto ESC. This train gave bench-run figures of 1,250 watts at 49 amps from a 29.6 volt supply, providing about 98 watts per pound.

The colour scheme that I chose was that of P-26A number 35 of the 94th Pursuit Squadron, 1st Pursuit Group, based at Selfridge Field in Michigan during 1934. The fuselage and undercarriage (sorry – gear!) were painted in Halford's Rover Pageant Light Blue spray and the flying surfaces were to be covered with Cub Yellow Profilm. An extremely attractive and bright colour finish, and one that I hoped would help my ageing eyesight to stay in firm visual contact throughout each sortie.

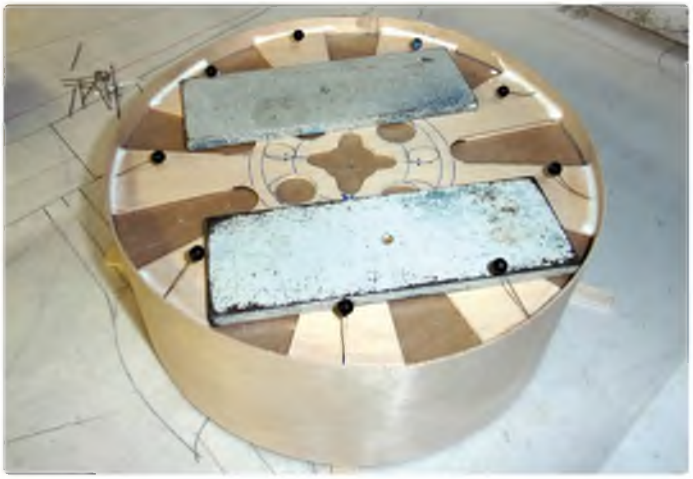
The final figures came to 211 ounces all-up-weight, 28 ounces per square foot wing loading and about 98 watts per pound. I was disappointed to have to carry 12 ounces of church roof right up forward in the nose,

Spats and trousers fitted



'Engine' back-plate being cut out

Cowling building frame



Ply cowling ring and 'engine' fitted

Foam cowling ring and balsa 'crankcase' fitted

'Crankcase' shaped and rocker boxes fitted

The completed dummy 500 HP Pratt & Whitney radial engine

despite my best efforts to keep the rear end light. SO BE WARNED! The C of G is at 34 percent of the centre line chord.

Flying

David Brock (video), Rob May (still photos) and I gathered at our club site during the afternoon of Thursday, 21st May, 2015 at 14.00 hours.

Rob and David did their photo 'things' whilst I waited as patiently as I could (not very). Then a visiting military helicopter started up so we had to wait for it to clear the airfield – another fifteen minutes of very little remaining patience.

Suddenly all was quiet and I had no more excuses. I feared that she might be a bit tail heavy despite all my calculations of the C of G.

With thumbs up from the photo twins I started my Tx timer and eased on the power. The Peashooter simply leapt off the ground (in about 1½ seconds from reviewing the video) and climbed healthily, if erratically! Slightly tail heavy was my judgement, so I reduced my control column movements sufficient to calm down the pitching of the aircraft. I turned left and immediately felt a lack in the aileron department but there was plenty of left thumb (rudder) available, so I made a mental note to raise the proportion of C.A.R. (Coupled Aileron & Rudder) by about 20 percent for the next trip – provided of course that I could survive this roller coaster ride!

I positioned the model coming into wind (about 12 – 14 knots by now) at about 200 feet altitude and tested the flaps to fully down. I had set too much auto-elevator down compensation, so I made another mental note to halve the amount. However, the timing delay for flaps down while the elevator changed trim, of about 1.5 seconds, proved to be correct so I had at least got something right! And there was plenty of power available, so that was another thing correctly achieved.

After some photo passes for Rob, I set up for a landing, but without flaps (to avoid the problem of running out of 'stick-back' with a lot of nose down elevator-trim effect) and struggled down finals in the by now obvious turbulence from the increasing surface wind. I have seen lots of historic photos of the P-26 aircraft standing on their noses at the end of their landing runs so I was not surprised to find myself in the same predicament, and Rob cheerfully recorded the moment with a shower of balsa bits being blown away. Ah well, you cannot win them all!

And I was glad to get down with such little damage after flying an out of balance model. As the designer, builder and flyer

Indian Chief's head of 94th Pursuit Squadron

Port side spat and trouser ready for closure

A happy Peashooter pilot 'in the office'!

Ready for the maiden flight. Note the plain '35' on the fin

of the aeroplane, as well as the Squadron Commander too, perhaps I should give myself a right rocket for damaging a serviceable aeroplane! But I thoroughly enjoyed flying her and her colour scheme really does show up thus helping an old pilot's orientation.

A couple of hours of repair work, plus moving the C of G forwards by about four percent (30% instead of 34% M.A.C.), plus increasing the C.A.R., plus reducing the auto elevator down trim by about half and we were all set to try again.

Next Try

We waited until 4th June, 2015 in order to achieve better weather for flight number two, with all the mods in place. She was heavier by nine ounces of added church-roof and thus the wing loading was up to 29 ounces per square foot and the power loading down to about 94 watts per pound – all quite reasonable, to be sure.

I started up my Tx stopwatch and poured on the coal. She was off in a trice and climbed hard until I got a little nose-down trim into her. She felt much more balanced but she was still twitchy on the elevators. The ailerons were still a little 'soft' so a fraction more C.A.R. (perhaps another 15%) is indicated. However, adding left-thumb gave all the roll control I needed, and I suspect that the real aeroplane would need to be flown on rudder all the time.

I climbed up and levelled her in order to lower the flaps to check for the correct amount of elevator auto-down trim to oppose the flaps trying to raise the nose. This time we were almost exactly right with the amount of auto-down trim, being just half of what I had set for sortie number one.

All-in-all, very much nicer and easier to fly clean or with flaps down. I left them down and flew a couple of low approaches to get more used to the model, then set up for a final landing – with my heart in my mouth!

It was turbulent on finals (coming from the hangars next to our runway), but she responded well in bank and I remembered to keep some power on right down to touch down. Good thing I did too, as she tried to stand up on her toes and I had to pull the tail down with some back stick. She seemed to conform to all that I had read about the real pursuit-ship's ground manners, which is summed up as 'concentrate really hard until you are safely on your chocks!'

Great fun. I hope you enjoy your P-26A Peashooter. And FLY SAFE!

RCMW

'Engine' at tick over and ready to taxi

Overhead with full down 'split' flaps. Note the position of buzz number '35' under the rear fuselage

Keep the nose high and some power on when landing. And try to ensure a good three pointer to avoid it 'standing on its nose'

Model Builder's Note

A full set of building instructions for the Boeing P-26A Peashooter are included with the plan.

CONTACTS

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Down safely (this time!) A happy pilot, Chris shows size next to the 1:4.5 scale 'Peashooter'

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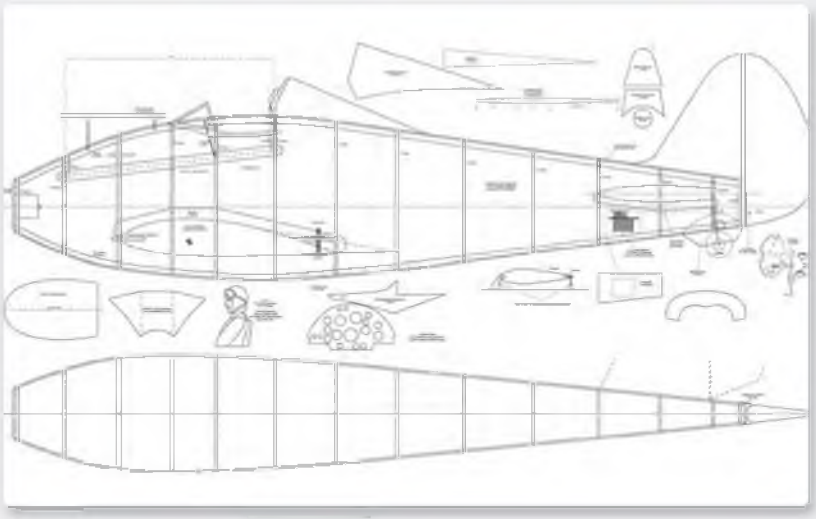

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JR Retro Radios

Do you remember when R/C sets had folded metal cases but maybe the electronics inside only gave marginal levels of control? JR Propo's new pair of retro radios hark back to the days of classic transmitter design but with 2016 levels of reliability

Left: A classic MacGregor Digimac series transmitter with its blue anodised folded aluminium case, typical of the kind of styling that JR's retro radios seek to emulate. From the days when 'Wee MacGregor was in control!' – well, sort of!

It probably has not escaped you that in design circles the retro look is highly fashionable. From digital sensors inside old fashioned camera bodies to 1970s style furniture and tableware, classically styled products from 50 or so years ago are now all the rage.

This trend has obviously not gone unnoticed by leading R/C manufacturer JR Propo, who have now produced this delightful pair of retro looking radios and which look just like the folded metal case sets that R/C modellers were using back in the mid-60s and through the 70s, until moulded plastic Tx cases came along. The styling reminds us of the early sets from the likes of Kraft and Skyleader etc.

And it is also apt that JR Propo's long-term distributor in the UK is MacGregor Industries, who were R/C manufacturers in their own right during this period and who were well-known for their own brushed blue aluminium transmitter cases, one of which is pictured close by.

Classic aerobatic models from this period are also becoming very popular, in the same way that vintage models have been filling the skies for the past 30 or so years. So what better way to fly a classic or vintage model than to guide it around the sky with a period looking transmitter?

C.O.L.T.

First we will take a look at the limited edition C.O.L.T., whose name is an abbreviation for...

Well, it looks as if even JR could not make up their minds on that one as Classic Oval Light Transmitter is shown on both the box artwork and the surround of the Tx's hidden LCD display. Meanwhile, Classic Old Looking Transmitter is printed on the manual, which makes a lot more sense as nothing about the C.O.L.T. is oval, and it is not particularly light!

The case of this smart looking transmitter is painted light blue and it features a mottled effect that is slightly rough and hence provides a good level of grip to the otherwise straight sided box – no clever ergo-dynamics here! The radio is hand built using neat period touches like slotted bolt heads instead of ubiquitous cross-headed screws.

Hidden inside the vintage looking case is a thoroughly modern six-channel 2.4 GHz radio control system that uses JR's well-proven DMSS (Dual Modulation Spread Spectrum) protocol with telemetry. It offers 20 model memories and three model types (aeroplane, helicopter and glider). The menus are accessed by lifting up a large hinged flap that is situated just underneath the two main stick units, where you will find a large LCD display and a scroll bar.

The scroll bar is rotated to run briskly through selected menus and to increment or decrement settings, and it is pushed to confirm settings. This system has been the mainstay of JR radios for many years and will be familiar to both JR and Spektrum users. The menus and other displays are also typical of JR's clear-minded thinking and both experienced users and newcomers alike should have no problem in setting the C.O.L.T. up to fly the kinds of retro style models that these systems are designed to complement.

Aside from the LCD cover and the main stick units and digital trims, the front of the Tx is kept plain and simple, apart from two short

R/C modellers of a certain age will love the look of the C.O.L.T. transmitter

No polystyrene here! Both radios come in shoebox style cardboard boxes

Well-illustrated manuals tell you all you need to know about these DMSS radio sets

Lifting the flap reveals a thoroughly modern LCD display and scroll bar

Stick units are to JR's normal high standards. Matching blue stick ends are a nice touch

Top panel showing the offset antenna location, the power switch and Timer button. Note the slotted bolt heads

The other side of the top panel is home to the Trainer button, charging and trainer jacks, and the power lamp

Rear case, showing the neat and flush fitting battery cover

A 2S 1400 mAh Li-Fe battery comes plugged in to both sets as standard

Main display screen. The icon changes depending on the aircraft type. It also shows receiver voltage via telemetry when the model is switched on

switches mounted above each stick. The left one is the Flap/Motor/Throttle Hold switch in Aircraft/Glider/Heli modes respectively, while the one on the right is the Gear/Flight Mode/Flight Mode switch for the same three model types.

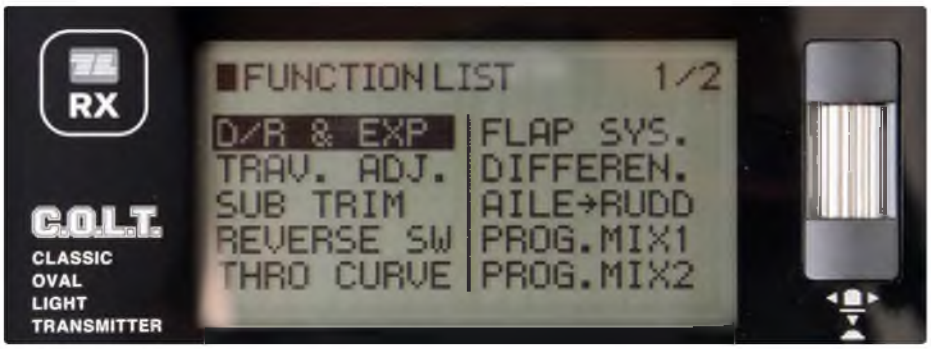
The top panel features an off-centre antenna, which in typical JR fashion needs to be pointed downwards for the strongest signal radiation when flying aeroplanes or helicopters. Interestingly, the manual shows an alternative position for the antenna when flying gliders near vertically above the pilot, such as a thermal soarer in strong lift, in which case it can be left folded along the top of the Tx case, as it would be for storage.

Alongside the antenna is the main power switch, whilst to its right is a Throttle Cut/Timer button. On the left hand side of the top panel is found the Trainer button; buddy box training on this radio is via an optional training lead. Between the Trainer button and antenna are found the charging and training lead jacks, and a pilot lamp that glows red when the radio is switched on and green when it is charging.

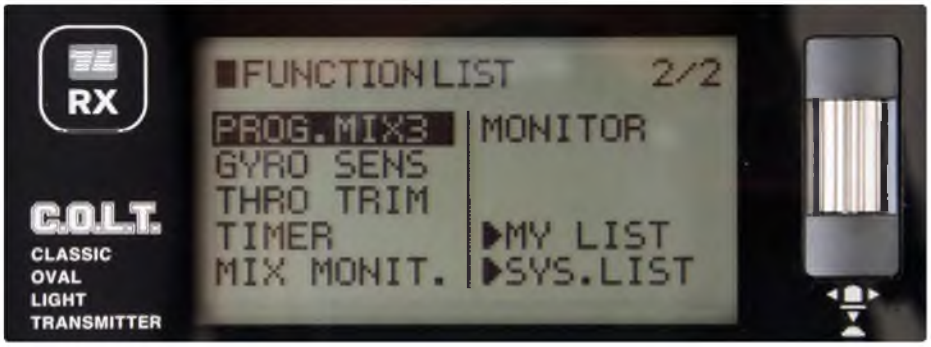
Round the back is a very neat battery cover that is opened using a recessed flip up latch. Underneath will be found the standard fit 1400 mAh 2S 6.4 V Lithium Ferrite (LiFe) battery, which is charged using the included 15 V 30W AC adapter. If the standard battery proves to be insufficient then you can fit JR's optional Lithium Ion battery of 3200 mAh capacity.

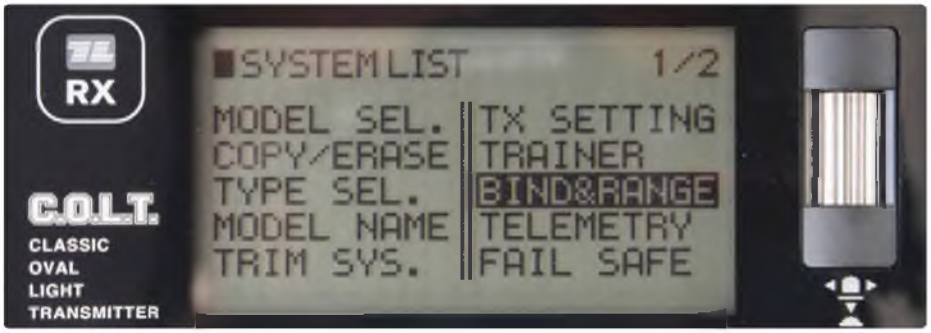
Gently easing the battery out of its recess reveals the hinged Micro SD cardholder. A FAT formatted memory card of 16 GB or less (not supplied) can be inserted for additional model memory storage, telemetry recording and for performing firmware upgrades.

In addition to the AC adapter (and a selection of international plug adapters), each C.O.L.T. set is shipped with an RG613BX 6-channel DMSS receiver.

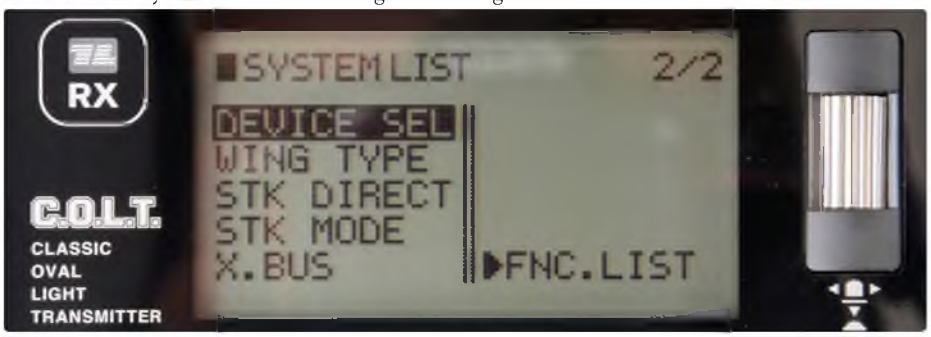


Above & below: Two stage Function List using the standard JR menu structure





Above & below: Two stage System List. This is where you set up model memories and fail safe, as well as extra telemetry sensors and switch assignments using Device Select. Enter here for XBus too!



Mercury

The Mercury has a much more retro sounding name and this one sports a stylish dark purple anodised aluminium body, complete with an analogue voltage meter and auxiliary knobs. Tucked away inside is a 14-channel computer radio with state of the art programming. As with the C.O.L.T. it uses JR's own DMSS 2.4 GHz technology, but this one is based on XG14 software and is XBus compatible, as well as supporting JR's proprietary Telemetry System. It would probably be overkill to use one to fly a turbine-powered jet, but it would certainly be capable of doing so!

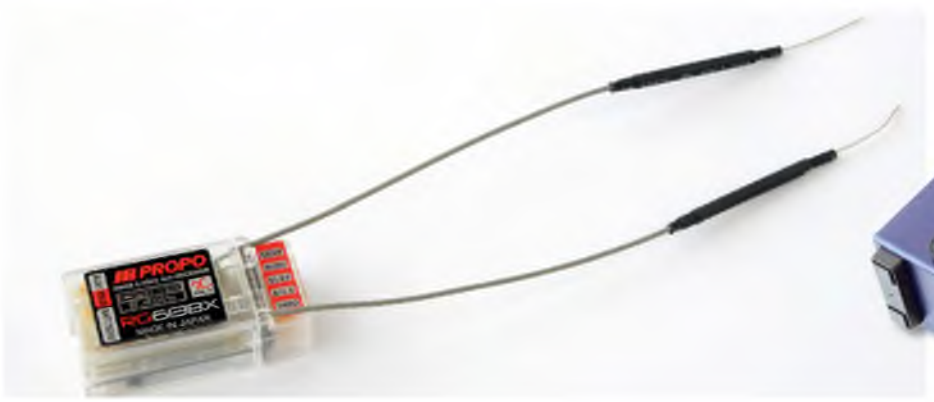
Round the back is the same style of battery hatch, complete with the series standard 1400 mAh LiFe pack, which can also be upgraded to the 3200 mAh Lithium-ion pack. As with the previous radio, a Micro SD card slot sits beneath the battery pack.

The set is shipped with the same AC adapter, but with a nod to its higher functionality the Mercury comes with an RG812BX 8-channel DMSS receiver.

The anodised finish of this set is much smoother than that of the C.O.L.T., so if you fly vintage models with suitably vintage diesel or glow engines then you may find that holding it with oil streaked fingers may get a bit slippery. To help you maintain a firm grip JR have thoughtfully supplied a pair of self-adhesive rubber grips and these are shown as being wrapped around the back corners of the set. However, in promo pictures these look a bit 'stuck on' (which they are!) and it would have been neater to have the option to fit moulded finger grips, similar to those used on other JR sets, although having modern curvy bits glued on does perhaps fly in the face of the concept of this particular Tx...

The front of this stylish transmitter is dominated by the two high precision gimbals and rectangular chrome bezels. Your eyes are also quickly drawn to the old school analogue voltage meter, the needle of which jigs around in suitably vintage style as you hold the transmitter. Fortunately, more modern methods of battery management are also included, so users are no longer totally reliant on this device to gauge the remaining state of their Tx battery. But it begs the question: how did we ever get by with such meters in the 'good old days' before LCD displays?

As with the C.O.L.T. full access to the XG14 menus and settings is via the large LCD display and scroll bar that is hidden under the front flap. This radio also sports four push



C.O.L.T. is supplied with an RG613BX XBus receiver. It says 'Made In Japan' on the label, which is a good indicator of production quality

Deep purple! JR's Mercury set oozes quality

This set comes in an eco-friendly cardboard box too

Lifting the flap reveals the LCD screen, scroll bar and four input keys

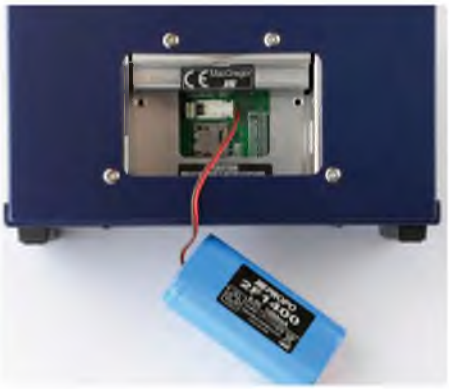
The stick layout, with a rotary trim knob and two short switches is repeated symmetrically on the other side. Device Select provides switch assign-ability – or just leave them as set up by JR!

The analogue voltage meter is a neat touch

Top panel showing two more rotary knobs, another two switches, power and charging indicators and the charging and trainer jacks

There are another two switches on the other side. The 2.4 GHz antenna should be pointed downwards in use, but maybe not at such an acute angle as shown here!

Close-up on the neat battery hatch and flip up latch



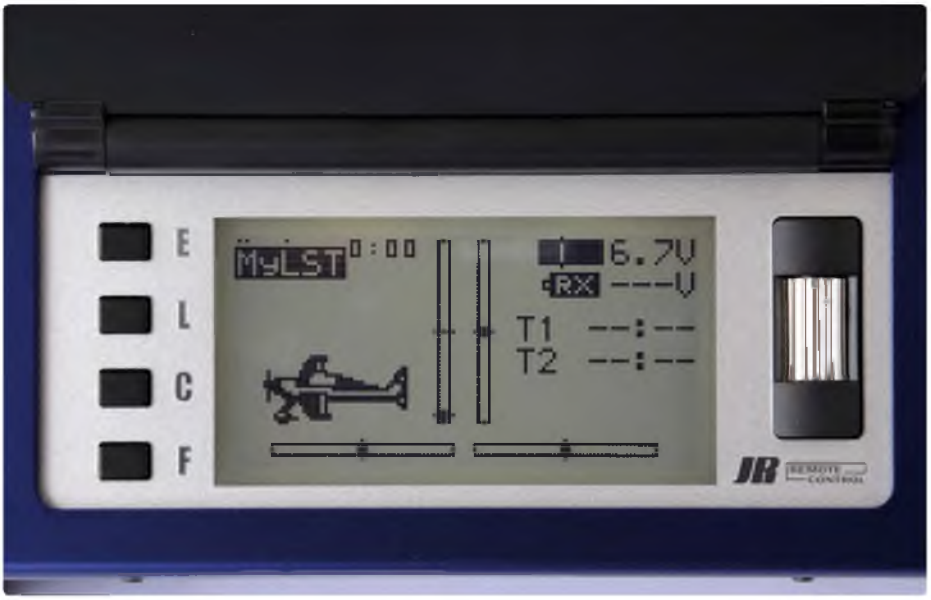
Gently removing the Li-Fe battery reveals the hinged Micro SD card slot (underneath the lead)

buttons on the left hand side of the display; these are used as Enter, List, Clear and Function keys.

Moving back to the top of the front panel, on either side of the analogue meter are found a pair of rotary trim knobs, whose functions vary depending on the which of the three model types you are using – Airplane, Glider or Helicopter. Next to each trim knob are a pair of switches, which can be either left to operate predetermined controls, such as Dual Rates and Flight Modes etc. Or they can be reassigned using the Device Select function, which is useful if you come to a JR set from an alternative radio manufacturer that uses alternative switch positions.

Similarly, the four switches and two rotary knobs mounted on the top panel can also be either left to perform predefined functions, depending on model type, or changed to suit personal preference using the Device Select function. The 2.4 GHz antenna of the Mercury is also offset from centre but it should be used in the downward position when flying most model types, as is traditional with other radios using JR's DMSS protocol.

As with the 6-channel Tx the top panel also houses the power switch, as well as charging and trainer jacks. The power indicator of this set glows blue when the radio is transmitting, and flashes when the output is low. And when transmission stops it turns red. A separate charge indicator glows green when the Tx is being charged, but turns red if there is a charging error.



Main display is the same as the C.O.L.T. but note the additional Enter, List, Clear and Function keys on the left side

The RG812BX eight channel XBus receiver supplied makes a good starting point to use with the 14-channel transmitter

Conclusions

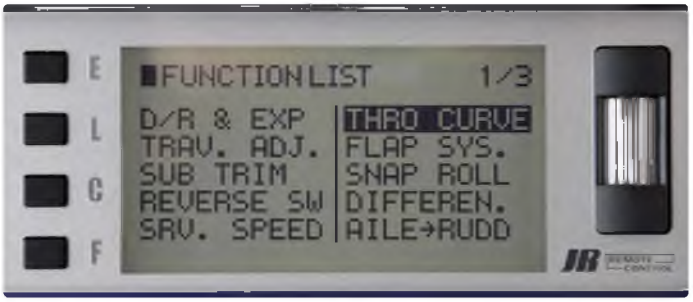
Here in the Traplet editorial office we use radio control sets from several of the major R/C manufacturers. And whilst all offer much higher levels of reliability than we would have expected from radios of the period that the C.O.L.T. and Mercury seek to emulate, we do tend to find ourselves reaching for our Japanese made JR Propo sets when setting up more expensive aircraft.

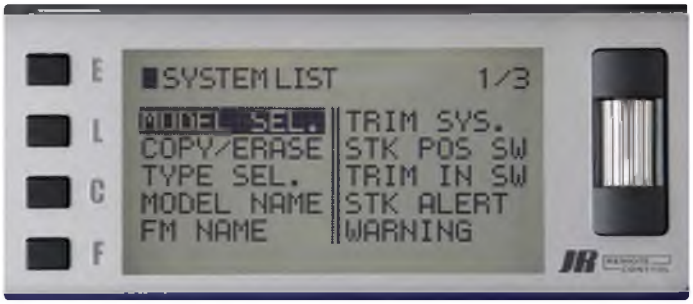
But such quality and reliability does not come cheap, especially to those who may be satisfied with the far lower cost R/C products from China and neighbouring countries. These retro radios are also somewhat expensive compared to the JR radio systems that they are based on; the C.O.L.T. currently retails at £469.95, compared to JR's XG6 at £134.95, while the Mercury retails at £644.95, compared to the similar spec XG14 at £474.95

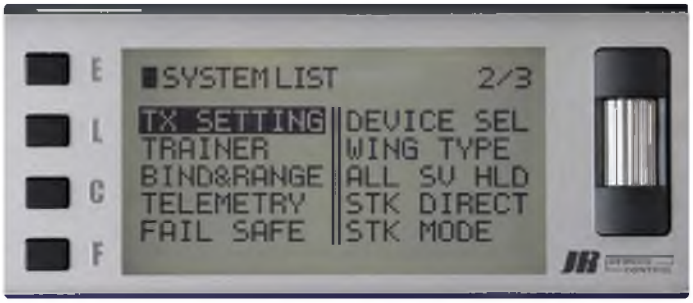
But as with most things in life you tend to get what you pay for and these two hand-built, limited edition radio sets are premium products that are aimed at a fairly niche sector of the modelling population. As such, we doubt if the allocation that MacGregor Industries have will last long. So our advice to retro, classic and vintage modellers, whichever type of model you fly, would be to get hold of one as soon as you can!

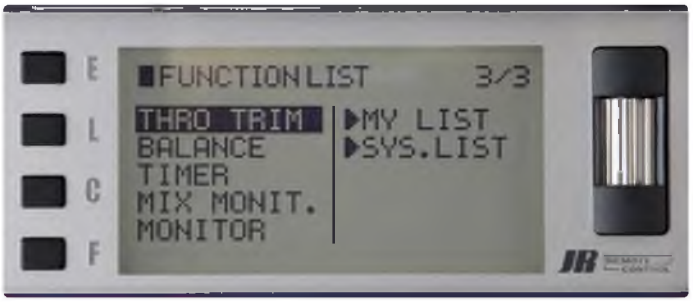
Our thanks go to MacGregor Industries for lending us these innovative R/C sets to examine. If you would like to read more about them then please visit their website at: www.macgregor.co.uk/jrpropo/radio.htm

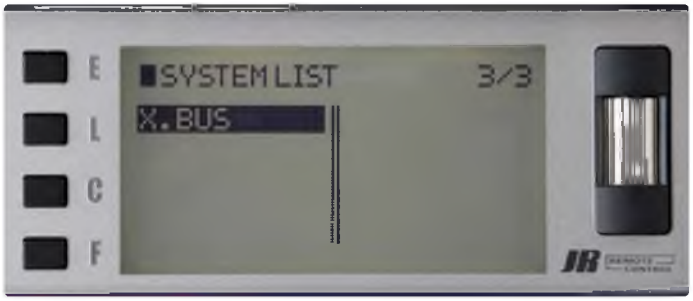
RCMW











Top, middle, bottom:
The Function List is now three pages long, with several more programmable mixes available

Top, middle, bottom:
The System List also extends to three pages – just!

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Foxy G2 4120-750	£86.95
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Foxy G2 1800mAh 36/70C 11.1V	£19.95
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Foxy G2 3300mAh 36/70C 14.8V	£49.95
Foxy G2 4500mAh 36/70C 14.81V	£59.95
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Thirty years! How time flies, especially when we remember visiting the original W&W shows on the other side of North Weald airfield in Essex. Here's a taster of the 30th Anniversary event, which was held over the weekend of 25-26th June

Paul Smith flew this stunning BAe Hawk 100, which he built from the Tomahawk Design kit. Power is courtesy of a Kingtech 210 turbine, while Futaba S-Bus radio and a PowerBox system take care of the controls

30th Anniversary Wings & Wheels Model Spectacular

Steve Johnson flew another Tomahawk Hawk 100, but this time in Canadian CT-155 markings. Steve recently changed to JR Propo XBus radio all round to fly his 1:3.5 scale, 2.85 metre wingspan jet, which is powered by a Behotec 220 turbine

Billed as the 'Longest running R/C Model Show in the UK', the thirtieth anniversary of the North Weald based Model Spectacular followed a well-established format. During our visit the weather even played ball, being largely dry, despite a few hard showers and brief gusts of strong wind – much better than the dismal forecast! This show has a knack of avoiding the worst of the weather so it's well worth getting out of bed for even if the met reports are not very encouraging.

The long queue at the gates, following the traditional long drive up and back down the perimeter road, certainly seemed to suggest that many other modellers had decided to pack a rain mac and pay the show a visit. When we arrived the second-hand area on the mound close to the entrance (the Bring & Buy Bump?) was packed and despite the early hour many satisfied bargain hunters were heading back to their cars to deposit newly acquired used airframes and engines etc. before heading back into the showground to top up on some new gear.

The trade line at this show fronts onto hard standing, so provided that you wear sensible shoes there's little danger of getting your feet wet. The usual long line of model traders were present and the majority we spoke to seemed quite encouraged about the level of business in the early stages of the 2016 show season. There were a good selection of new aircraft kits and products to mull over, some of which we will cover in this report, together with a few pictures of the action from the flight-line. So let's get cracking with this year's Wings & Wheels report!

RCMW

The JR/MacGregor Display Team put on a great display with a variety of 3D ARF kits from the Pilot RC range

Simon Wright gets the controls working overtime on his Pilot RC Extra 300

JR/MacGregor team photo, including pilots (L to R, holding their JR transmitters) Simon Wright, Steve Roberts, Toby Newton and Chris Bransbury. Models are all Pilot RC Extra 300 variants

While many shows understandably give preference to the larger display teams, Shane Harding is one of a band of solo display pilots who regularly turn up at events to fill spare slots with a varied range of model aircraft. Model show displays would be much less interesting without the support of guys like Shane

Occasionally model-flying stops to allow one of the full-size historic aircraft based at North Weald to land. Here's 'Tall In The Saddle', the P-51D of the Hangar 11 Collection, as she prepares to touch down just upwind of the model show audience

Even the experts can have trouble starting their engines! Neil Tidey struggles to fire up the Laser 180 in his Tiger Moth. The problem was quickly traced to a broken remote glow lead

For the Laser Engines display, using Flair Tiger Moths powered by Laser 180 four-stroke engines, Neil was accompanied by Roger Godley (centre) and Darrin Bonfield

Steve Carr lends a sense of scale to his mighty 55% Yak 54, assembled from the Pilot RC kit. The 4.6 metre span model is operated using 22 Hitec servos and four Multiplex receivers, with telemetry. Power is by Steve's own design four-cylinder boxer two-stroke engine of 550 cc capacity

Close up on the wingtip mounted smoke cannisters

This Bell 47 helicopter in MASH livery (Medical Army Surgical Hospital) made some pleasing scale-like flights in the helicopter slots

The TJD Display Team wait patiently for their turn on North Weald's runway

When the call to fly comes you have to be well prepared to ensure a quick start

With flaps and undercarriage down TJD's King 70 cc powered Bearcat floats in for landing

Mark Latter stops by on his way back to the pits with the Grumman Hellcat built from the Nick Ziroli plans. Power is supplied by a 3W 70 cc petrol engine

Over in the boating section this two-man mini sub and crew shrugged off the summer showers

The large boat pool saw many fine marine models on display. This container ship is able to load and unload containers using its working crane – great to watch for young and old alike!

New on the Gashanger.com stand were AJ Aircraft's latest Laser 230z kits. Available in a range of sizes, from 56 to 105 inch wingspans, these smart aerobatic aeroplanes also come in two colour schemes. Retro Scale is white with red stripes and a red wing band (shown hand held), while Patriot has red top decks on its fuselage (shown on a stand)

Andy Hinton-Lever from Optipower reports a good response to the new Ultra Racing Drone Packs (inset), which are high performance LiPo batteries for FPV racing

Hobbyplastic.co.uk were displaying a pair of new models by Premier Aircraft, both designed by top aerobatic ace Quique Somenzini. Dave Stickley (left) is holding the QQ Extra 300, a 47.8" span moulded foam model with an innovative ply sub-frame that connects the firewall to the wing spar.
Paul Roberts (right) is holding the Ventique 60E, which is Quique's latest all-out 3D ship for 6S power

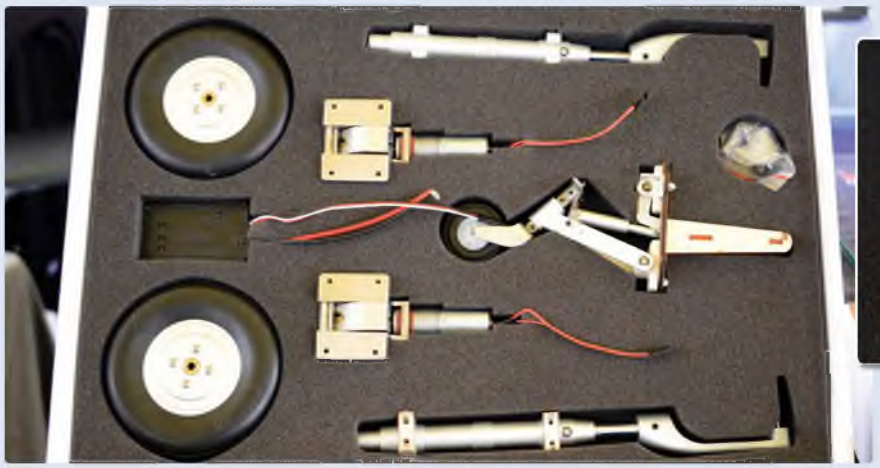
Interested in a high performance glow engine? Alan Greenfield of Weston UK is passionate about IC engines and is still breaking high speed records to prove it – see certificate

Among the many new models on display on the YT International stand was Ventrix, a 1990 mm wingspan all built-up jet model for 19-22 lb turbines

Aspire is a 93 inch span all-composite jet for 12-16 kg turbines. It comes highly prefabricated from the factory

Caelus by Top RC Model is a smart F3A aerobatic model of 1830 mm wingspan

YT are well known for their WW2 warbirds. This is their new 93 inch Zero fighter for 60-80 cc engines



To complement YT's WW2 fighters several different types of matching electric retract sets are available. The quality can be seen from the inset picture of a tailwheel assembly

It was very late in the day before we managed to get to see the Bring & Buy sale. But even then there were a good number of visitors examining the remaining aircraft

Nexus Modelling Supplies are now selling the full range of R/C jets from T-One Models, including this rather nice Fortune 2M sports jet – top quality build and finish

FISHER DELTA 3D PRINTER

IMAGINE PRINTING YOUR OWN PARTS AND ACCESSORIES AS AND WHEN YOU NEED THEM

At £349 the Fisher Delta makes quality 3D printers affordable

Includes free roll of white filament so that you can begin printing straight away using one of the many free software packages online. This amazing printer is designed in the UK so quality and durability are guaranteed and upgrades and UK support are readily available. Traplet also gives you access to free video download of instructional information on building your printer and guidance on beginning to print. Get a taste of what your printer can do by visiting www.trapletshop.com and click on our '3D Printing' tab – there are five fascinating videos to watch before you buy.

Printing your own 3D objects, parts and components is easier than you might think – if you can imagine it, chances are you can print it! Make your model as detailed as possible, without having to search for those elusive and expensive parts.
Replace those broken parts without having to send your item back to the manufacturer, or pay a fortune for components.

So versatile you will wonder how you managed without it!

Assembly
The Fisher Delta is supplied in kit form with component parts which are quick and easy to assemble by following the comprehensive online instructions, requiring only a few basic tools. All electronics are supplied ready to use with pre-made wiring harnesses – no soldering is required. Also available as a fully assembled unit at an extra cost.

The complete printer fits neatly into a corner of your desk or workbench, is quiet and odour free in operation and requires only a standard mains socket for power. An Ethernet port on the printer provides control via an easy to use website interface.

Parts
Parts printed from the supplied roll of PLA filament are very light and extremely strong, perfect for all modelling applications; whether structural or decorative.

3D printing is the perfect way to make bespoke scale details for all types of models. The builder of this big 1:3 scale RC model of a Druine D-31 Turbulent aircraft needed to represent the parts of the VW engine that protrude from the side of the cowling. He was able to supply reference photos and drawings of the full-size engine, so creating a 3D printable model was fairly straightforward. He'll need to do some sanding/filling/finishing before painting and detailing it, but it should look just right when installed in the model.

SPECIFICATIONS

Firmware
- Calibration:automatic bed levelling and machine calibration routine
- Layer resolution:0.3mm 0.05mm
- Build surface: Removable bed, uncooled Buildtak print surface (For printing with PLA). Heated aluminium plate available as an upgrade, (allows printing with ABS,PETG, PC, HIPS, and many more).
- Print speed:0.4mm nozzle, up to 16mm3/s
- Motion:Up to 250mm/s, 4000mm/s2 acceleration, segmentation free real time delta movement
- Nozzle:0.4mm diameter, maximum operating temperature 300oC, warm up time ⊠ 60secs.
- Power adapter:100V/240V, 60W.
- Software:Machine control: On board web interface available via ethernet, USB control also available
- Standalone printing from onboard microSD card

Software
- 3D model processing:Slic3r open source software (free download - no license required) can generate G Codes for the Fisher Delta from .stl or .obj 3D model files.
- Supported platforms:Windows/Mac/Linux
- Prints G Code files generated by Slic3r and other open source slicing software

Materials
- Standard 175mm diameter filament (PLA Plastic)

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Weight Lifters

Bruce Corfe reports from the British Model Flying Association's University and Schools Payload Challenge 2016

West Bridford School's Distance entry used duct tape to retain the massive balsa block payload

Tsing Hua High School's Distance entry was only the second-ever tailless model to score. It came a close second in Distance

Ollie Harris' (University of South Wales) highly conventional Quantity entry. A great flyer but it had a small tennis ball payload and a slow loading system

Sleek twin-boom entry from Brockford Barn won the Distance challenge convincingly

The BMFA Payload University and Schools Challenges are a fantastic way for school and university students to demonstrate their design and engineering skills in a variety of areas by designing a model aircraft which will lift a payload and win points for their report, drawings and presentations, as well as for the success of their model in the Challenge.

The organisers are BMFA Development Officer, Manny Williamson (overall Competition Organiser and Director) and Club Support Officer, Andy Symons (Flight Line Controller), with helpers from the BMFA and local clubs, especially York Model Aircraft Society and their Chairman, Adrian Barker.

The main sponsors are BAE Systems and, this year, the Royal Aeronautical Society, the oldest aerospace society in the world, who, on their 150th anniversary, have donated a prize of £400 per category for innovation in design in addition to the prizes for class winners.

This year 25 teams took part, including the winners from last year (Germany) and the year before (China). So it promised to be another exciting contest!

The event is held each year at Elvington Airfield near York. With a judging panel of professional engineers, plus scrutineers, led by Mike Colling of the BMFA Education Working Group, presentations and reports are given in a big marquee on the airfield. All classes now have a standard electric power train, IC engines having been replaced two years ago. There are three classes:

Awesome! Stade Team Hydra's hugely high-tech, but ill-fated X-Wing project

Stade Team Hydra's X-Wing tail surfaces are all 3D printed

Balls! Sheffield Hallam University's fast-flying Quantity model has a landing incident on its way to fifth place in class

Priestley College's ambitious ground-effect Ekranoplan. Steering is by a gimballed motor-mount

Strathclyde University 'C' team's frantic pit efforts took them to an excellent second place in Quantity

1. Challenge 1 (D for Distance) for schools and youth organisations, is less rigorous than the senior challenges. Models have to be loaded with and carry an enormous half-kilo balsa block and complete as many laps as possible in five minutes.

2. Challenge 2 (Q for Quantity). The payload here is tennis balls and teams have to load as many balls as possible, complete a circuit, unload and repeat until the 10 minute time slot is up.

3. Challenge 3 (W for Weight). Teams have to fly a circuit carrying a water payload. The hemispherical tennis ball 'sensor' has been replaced this year with a large polystyrene sphere – a simulated optical sensor – located inside the fuselage of the aircraft, allowing a clear 60 degree conical view vertically down, which is more representative of a UAV/UAS camera requirement. Light models will score more points under a payload handicap system.

Challenge 1 – Distance

In the junior category, West Bridgford School's pink V-Tail model was fast and noisy but completed an excellent 11 laps on its best round. Priestley College's big blue foam craft was flown by Arthur Griffiths of Warrington M.C., who has flown own-built jet turbines since the nineties and helps Priestley College students each week with their two Challenge entries. It completed three laps before a heavy landing and other problems prevented a score in the second round.

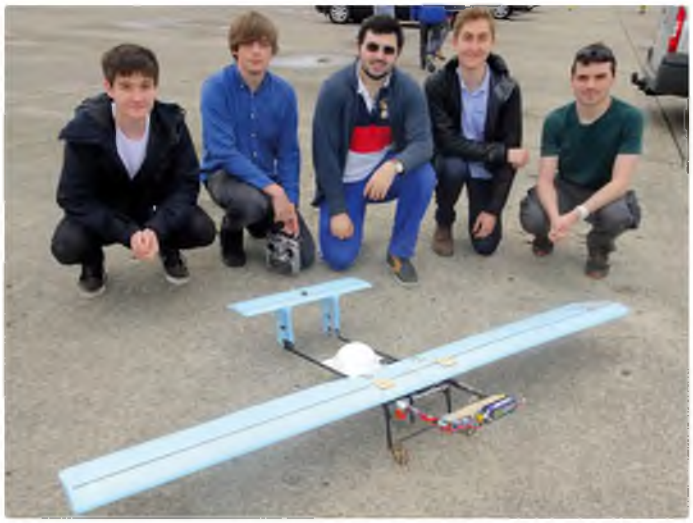
From China, Beihang Tsing Hua High School's tailless Distance entry was quite lightly built using traditional balsa. It flew fast and smoothly on elevons and rudder to post nine laps, with an excellent 11 laps in Round 2, becoming only the second tailless model ever to score.

Brockford Barn, Suffolk, is a learning community for students finding difficulties with mainstream education. Their twin boom model with a streamlined tear-drop fuselage completed 10 exciting laps at their first attempt, followed by another 11 in Round 2. On combined marks Brockford Barn won the (very close) Distance category.

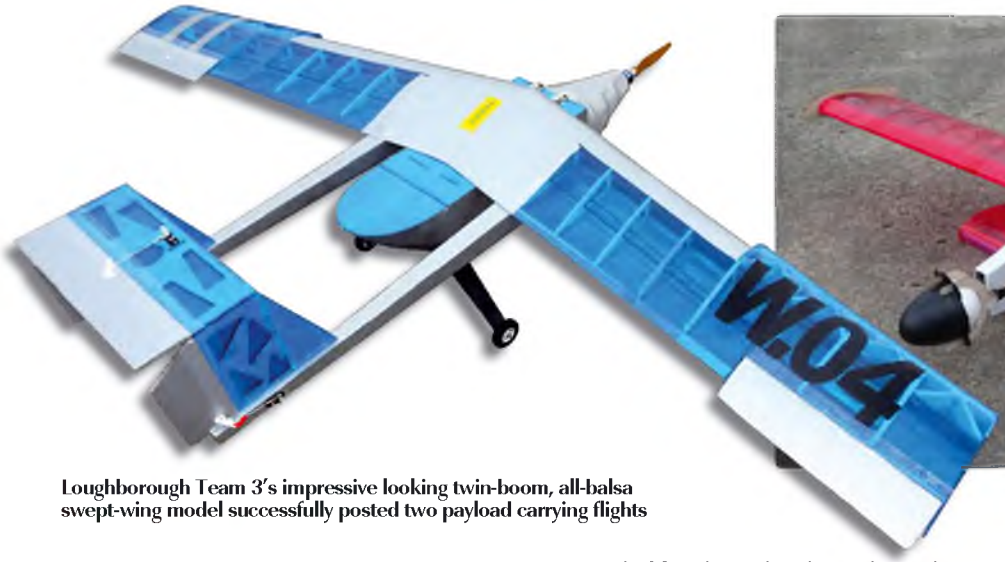
Away she goes! Ten balls in each of five load tubes on their way to Beihang's best Quantity total – an amazing 280 balls in 6 laps and 10 minutes

Instantaneous release of 50 balls with Beihang's ingenious load system

In Weight, Hertfordshire University's A-Tail model had an own/design gearbox and a huge prop



Loughborough University's autonomous GPS guided model unfortunately failed to post a payload score



Loughborough Team 3's impressive looking twin-boom, all-balsa swept-wing model successfully posted two payload carrying flights

Lancaster University's sesquiplane before its terminal brush with the tarmac in Weight

Challenge 2 – Quantity

The University of South Wales' entry was the most conventional present. Aeromodeller, Ollie Harris based his design on a Veron Cardinal wing and a Piper Cub tail. It worked very well but had a minimal (10 ball) load capacity, plus slow loading, so they only notched up a best round score of 68 balls carried.

Chinese Beihang University team's pod-and-boom model was of largely carbon construction and contained five 10-capacity ball tubes! It also had a load point behind a hinged nose carrying the electronics, motor and a simple O/D gearbox. They also had an amazing quick-load system and good teamwork. After damaging the undercarriage on the first flight, but using Kevlar string and cyano, the team did a great repair job and still managed 120 balls for the round. They then improved to an incredible Round 2 total of 280.

Priestly College's entry was an ambitious ground-effect 'Ekranoplan', which attempted to exploit the rules and 'fly' 10 cm above the ground! It was not to be; several crashes later it reared up in the final round and was destroyed in a shower of tennis balls – spectacular!

Sheffield Hallam had a twitchy model, which gave the flag marshals a fright. But they managed two scoring rounds, with a best of 77 balls, despite scattering them all over the airfield!

The German 'Hydra' Airbus Industries apprentices team from Stade, near Hamburg, had another ambitious model – a beautiful carbon and laser cut 'X-Wing' creation with 3D printed plastic tail surfaces. Gorgeous. Sadly it was very unstable and crashed terminally at the first flag. Stade would not be taking any pots home this year.

Queens University Belfast's twin-boom model had a few problems. But BMFA designated pilot Stuart Lodge slowly got to grips with it and posted an excellent second round 186 on Sunday.

Alasdair Sutherland pilots all the (many)

Unfortunately Beihang's Weight entry crashed and failed to post a third round score, relegating them from a likely win to second place

Brockford Barn cleaned up in Distance with first place and the Jetex Trophy for best performance

Stade team 'Helios' from Germany had an impressive carbon Weight model. Note the 'UAV camera' ball at the rear

Minus payload on its proving flight, Stade's Weight competition winner shows its minimalist construction and clean lines

Two streamlined drinks bottles carry the payload on Stade's victorious Weight entry – nicknamed 'Madonna' by the Brits...

Strathclyde University entries – their 'C' team's craft had a massive wingspan and ball capacity. After spraying balls over the tarmac (twice!) they posted a brilliant 222 on Sunday, prompting Alasdair to do an aerobatic display after the event. Strathclyde 'D' also did well with their twin-boom model, completing few laps in the allotted time but still posting 161 on Sunday. A good effort.

Challenge 3 – Weight

In the premier league of the event, Lancaster University brought an enormous pusher balsa sesquiplane, which exhibited many issues before eventually rearing up, stalling and destroying itself. Similarly, Loughborough University Team 2's blue foam and orange covering 'Firefly' model had a succession of undercarriage issues and failed to get air under its wings. However, Loughborough Team 3's impressive looking blue/silver twin-boom, all-balsa swept-wing model successfully posted two (increasing) payload carrying flights. Loughborough University 'Bluejay' Team's blue foam model had telemetry gear and could be controlled manually with a Tx, or could follow a pre-programmed GPS way-point route monitored from a laptop PC. Sadly, a host of problems with the airframe meant it posted no payload score.

On a different level, Beihang University (China) Aeronautics Department's Weight entry was the lightest in the class at 650 g, with carbon framing round the enormous foam 'UAV camera' and carbon/ balsa/ ply construction. The model looked excellent in the air when empty. Its first laden attempt carried the maximum 2 kg payload successfully. In the second round it didn't fare well as the model lost a wheel, but after a brilliant Kevlar string and cyano repair job the model took off again but spiralled in, in a shower of payload water, prompting much angst in the team. However, a great score had been achieved. But would it be enough?

Sheffield Hallam University's 'Pinocchio' entry wouldn't bind to the Tx. Then, with a new Tx, all the trim settings were lost. More problems ensued but the team did eventually post a payload score. Hertfordshire University's A-Tail model had an own/design gearbox and a huge prop. After losing props and nosing-over, the team eventually got a good empty flight then successfully carried 1236 g of water.

Strathclyde University 'A' Team's blue/ silver entry had a huge wingspan. The model had servo-reversal issues then exhibited too much pitch sensitivity on its unladen flight, piloted by Alasdair, and crashed. No payload posted. Strathclyde 'E' Team's model suffered aileron flutter and went in from height – three times – and no payload was posted. Strathclyde G's 'Bumble Bee' entry made a successful empty flight, despite a bouncy landing. The model struggled in the air laden and spun into the ground – again no payload points gained.

Team PFH Gottingen 'Helios', also from Stade, brought the second-lightest airframe, weighing only 884 g. The beautifully constructed carbon/ balsa V-tail model made a first laden flight (2127 g) with a streamlined water container and a second flight carried a huge payload of 3253 g – the biggest of the weekend. So the German team were successful once again and celebrated with an excellent aerobatic display.

Beihang University display both of their entries. They won first place and innovation award for Quantity, and were second in Weight. Mike Colling on the right, BMFA pilot Stuart Knowles and Andy Symons on the left

Stade team 'Helios' were victorious again in the premier league Weight competition. Basically they did everything right!

Results And Conclusions

Prizes were presented by BMFA Chairman Chris Moynihan. The winning teams were:

Challenge 1 Distance – Team D04, Brockford Barn, Suffolk – 139.60 points
Challenge 2 Quantity – Team Q02, Beihang University – 167.20 points
Challenge 3 Weight – Team W11, Team Helios from Stade, Germany – 627.08 points

In addition, Brockford Barn were again awarded the Jetex cup by Manny Williamson for overall effort. The RAeS awards for innovation awards went to Beihang Tsing Hua High School for their tailless Distance entry and Beihang University in Quantity and PFH Gottingen in Weight.

The Challenge is a brilliant way for students to show off their prowess in a range of skills – designing, drawing, reporting, constructing and, in many cases, flying their creations and demonstrating teamwork.

The BMFA organisers and others involved put in a huge amount of effort, ensuring that the event runs smoothly. This year the weather was kind and the teams from China, Germany (and Brockford Barn) repeated their earlier successes.

Time now for some of the other UK entrants to up their game and challenge the status quo! (Mind you, I said that last year...) ***RCMW***

LINKS

FULL RESULTS
Facebook – BMFA Heavy Lift

MORE PHOTOS:
tinyurl.com/ElvingtonChallenge

TECHY JOHN'S VIDEOS
tinyurl.com/TechyJohn

ROGUES' GALLERY – CRASHES
tinyurl.com/RoguesG

The Electric Flight Specialist


Brushless Inrunners


Brushless Outrunners


Bell Motors


Micro Brushless Motors


Brushless Speed Controllers


UBEC's/Voltage Regulators


EDF Units

High Performance LiPo Batteries


NiMh Eneloop Rx Batteries


Spektrum LiPo Tx Batteries


Chargers


Power Supplies

Meters, Testers & Analysers


Wattmeters


Silicone Wire


Heatshrink Tubing


APC Electric Props


JXF High Performance Props


Folding Props


Spinners


Prop Balancers


Prop Drivers


Rear Mount Sets


Cage/Rack Mounts


Connectors


Spektrum Transmitters

Spektrum Receivers


Large Model Accessories


Servos


Servo Extensions & Y Leads


Servo Testers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Pipedream

Free Plan

We hope you enjoy this month's free pull-out plan and use it to build this 1330 mm span electric powered, sport aerobatic tail-less flying wing designed by Mike White for four function R/C

RC MODEL WORLD

At a Glance

SPAN:	1320 mm (52 in)
WEIGHT:	1316 g (2 lb 12 oz approx.)
WING SECTION:	RG15
WING LOADING:	13 oz/sq ft
RADIO CONTROL:	3-4 functions (Elevator, Ailerons, Throttle, Optional Rudder)
SERVOS USED:	4 x TowerPro MG16R (18 g) digital or similar with 2.5-3 kg torque
MOTOR:	Tornado Thumper 3536/08 1000 KV
ESC:	40+ amp
PROP:	10" x 6" folding prop
BATTERY:	3S-4S 2000-3000 mAh LiPo
POWER LOADING:	140 watts/lb

Discovering A Hidden Wing & Model Concept

Every now and then I have to have a tidy up in my workshop in an effort to find what is in there. And sometimes even to make room for another model! Very often a jewel is uncovered in the form of a long forgotten model or piece of electronic gizmo that has fallen off the shelf when it sagged from the burden it was carrying – or rather, failed to carry! But it would take too long for me to redesign my playpen so that there was a place for everything in it, so it must stay as it is.

Anyway, while having the recent clear out I found an obeche veneer covered foam wing left over from a design I did in Spring 1998. This was a sloper called the Scimitar, which was published in another magazine. The wing was complete, except for the covering, and as I was 'between models' so to speak, I wondered if there was a new design lurking in a corner of my mind – or was it just another pipedream?

During the past few years I have become very interested in tail-less designs. I think that some of the swept wing types are the most graceful shapes to be seen in the air and I have designed a few up to 95 inch span, such as the Falcon (Q&EFI, May, 2008) and recently another called 'Isn't This A Lovely Day' (hopefully soon to be a plan offering in this illustrious magazine soon). I now have three other swept wing tail-less designs on my building boards, one of 150 inch, another of 82 inches and another of 109 inches. But I also needed a little simpler build, so that when I am getting too deep into the big ones I can cross over and relax for a few hours.

This thinking eventually led me to thoughts of a different tail-less model in the form of an un-swept wing – a plank – where I could use the wings that I just found. The aerofoil was not an ideal one to use but I thought that with a little, or a lot, of aileron reflex and enough power it might work.

The one thing against success was that the L.E was swept back when, instead for a plank, it should have been straight. Anyway, it would only mean building a simple box fuselage and attaching an electric outrunner motor. Nothing ventured…!

So, I weighed the wings, added the weight of a 4S 2450 mAh LiPo, which I had in stock, added a few more ounces for the motor, ESC, servos and covering and came up with a ready to fly estimate of 2 lb 12 oz. As I intended the model to be a fast-ish aerobatic sports machine the power required was 125 watts per pound of model, and that required a motor capable of producing about 350 watts.

Start of the wing build. Laser cut false LE, mainspar and false TE set up

Wing construction at LE and centre section

Overall wing construction seen from the underside with top sheeting in place. Note elevator and aileron servo mounting

An Outlandishly Fast Aerobat!

Searching through the Internet and my favourite dot coms I found the Turnigy 3536/8, 1000 KV, a 30 amp maximum load motor that will give out the required watts on a 4S battery. Adding a 10" x 6" folding prop and a 50 amp ESC would give the urge needed. This combination results in a bench load of 33 amps and 410 watts, which will be slightly lower when airborne. Overlander Batteries also have this motor in stock, named the Tornado Thumper 3536/08, and that is the power train for an outlandishly fast aerobat.

However, a 3S 3000 mAh battery flies the model extremely well using an 11" x 8" folder and with this set-up you can still expect an excitingly fast flyer. Definitely not for a beginner!

I would recommend that the output of the power system that you install should be verified by use of a Wattmeter and props changed to ensure that the maximum limits of the motor, ESC and battery are not exceeded.

I have not included an undercarriage as there is very little room in the fuselage, so it will mean a hand launch every time. With the motors recommended this will be no trouble as there is an abundance of power available. An alternative would be to build a simple three or four-wheeled 'dolly' similar to the one shown in one of the photos. This one has a receiver, battery and servo for steering, which is not necessary as, even with a 3S LiPo, the model will be airborne in about three feet!

The Maiden Flight?

A total 'disaahhster, dhahling!' It hit the ground 25 yards from the launch pad, bounced and came to rest with a split fuselage. Thankfully only the fuselage was split, with no wing damage. It was saved by the heather carpeted area in which I do the majority of my test flights! The balance was too far aft so I moved it forward. The next flight was a little better but with the same results, except that the impact point was about 40 yards further on...

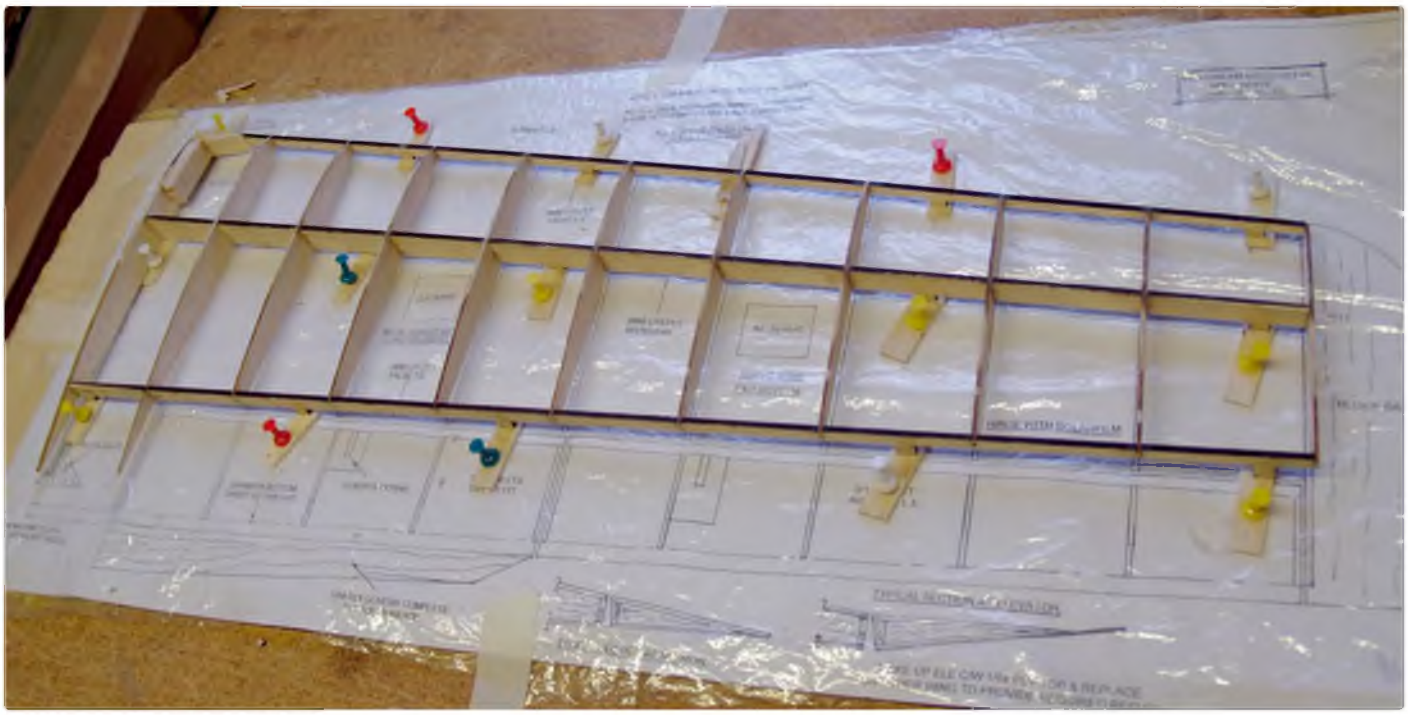
For the next attempt I strapped a sheet of lead to the nose and, thanks to my flying buddy Peter's launching arm, it went out straight as a die and with very little trim required anywhere. Yesss! After a few circuits at an extremely high speed, I slowed it down to half throttle, did some loops and rolls, and called it a day.

I must admit that I had made a careless mistake in my measurements for the original balance point. So on the next fuselage (the one on the plan), I increased the nose length and extended the rear fuselage by a couple of inches and threw away the lead. In the event this gave a flying weight of 2 lb 10 oz, a wing loading of about 13 ounces per square foot and, with a 4S battery, a power loading of about 140 watts per pound. The result? Extreme!

Foam Wing Version

My foam/obeche wings were obtained from Phillip Knight at Cloud Models, who produces a nicely finished, reasonably priced set. When you have them, epoxy them together with half inch dihedral under each wingtip and reinforce the centre section with the usual 4" wide fibreglass bandage and epoxy resin. Templates for the root and tips are included on the plans for those who wish to cut their own cores.

As I mentioned earlier, although the wings are not the ideal choice for this type of model they can be modified resulting in a wing that is more than adequate. The problem is that the aerofoil section is the RG15, which has a cusped trailing edge and for aerodynamic reasons this has to be reversed. To do this cut the ailerons and elevators away and change each one to the other wing so that



This shows initial set up to secure the construction over plastic film. The 1/8″ balsa sheet tabs are held by the pins and the spar tabs are glued to them. The pieces under the mainspar must be removed before sheeting commences

Initial set up to ensure straight spars. The mainspar is laid alongside aluminium angle and then glued to balsa sheet tabs

Elevator and aileron under construction. Top sheeting to be applied

they are now upside down. This will have the effect of adding a little reflex, which is just what is needed.

For those who like to know a little about such things I will be as brief as possible: The RG15 is an aerofoil that produces a negative moment coefficient (Cm), which is the reverse of what is required for this type of wing (due to the cusped TE producing some flap effect). The negative Cm results in the wing-pitching nose down as lift is produced. As there is no tailplane down force on a tail-less design to counteract this, an aerofoil with a zero or slightly positive Cm is needed, which results in zero or a small nose up pitching. By reversing the cusped TE a reflex is introduced that alters the Cm to what we require, or nearly so.

Fill the top side with some lightweight filler from the TE to 1.25 inches into the surface. Carefully sand and fair this until you have an acceptable curve. All surfaces are hinged with Solarfilm, or similar, as a continuous hinge.

Understanding A Tail-Less Wing

In tail-less wing lore it is sometimes said to be better to control the model using elevons instead of ailerons and elevators. It is said that elevators can cause flow problems that can cause the wing to stall and snap. This may be true of machines intended for competition/sport thermal flying but for fast flying sport aerobatic planes this is not relevant.

This has happened to this model only once. I was flying a very large loop and allowed the speed to drop off while there was too much throttle applied. The snap occurred but the model recovered instantly as the throttle was closed. Don't be put off by this as it can happen to any aircraft in the situation above. The full - size Harvard did it too!

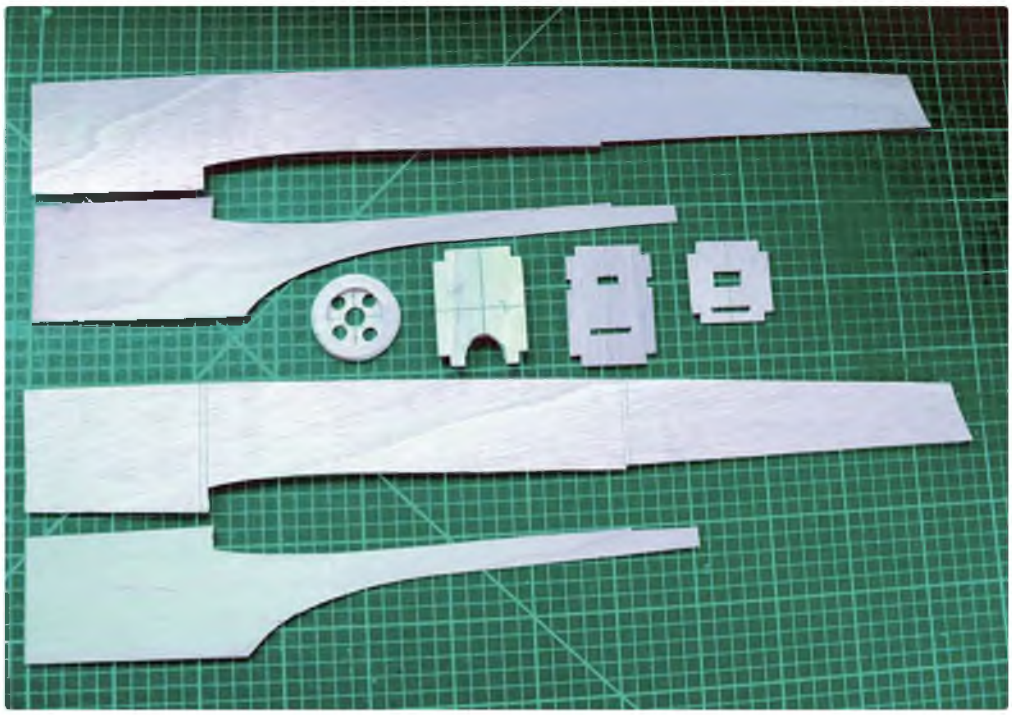
Reflex is needed on all surfaces and must be set with the radio switched on, the transmitter trims and sub-trims set to zero, the servo arms at 90 degrees to the pushrods and the control surfaces set using the template shown on the plans. This setting is with the balance at the forward position for the first flights and may be adjusted to suit your own requirements after the trimming flights are complete. Balance may be moved rearwards in very small increments as experience is gained and that will require the reflex to be reduced slightly.

One's first impression on seeing the balance position may be that it is too far forward. Tail-less, swept wing and delta models all need this forward position and 'planks' even more so. Balancing the model on fingertips is not recommended as the range is very small (less than the width of the fingers) and therefore accuracy will suffer. Tape a piece of 3/8" dowel onto the bottom of the fuselage at the required balance spot, place the model on a flat surface and adjust the battery until the nose just drops and stays there. DO NOT put the balance point further back than indicated!

Built-Up Wing

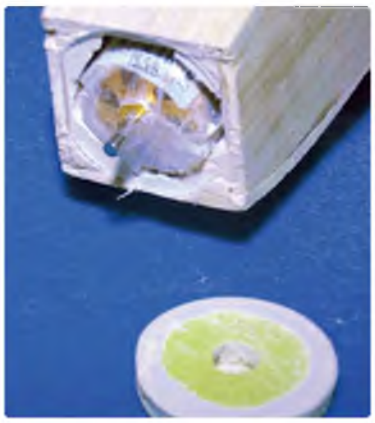
A set of accurately cut laser cut ribs, false LEs and a main spar are obtainable from Traplet Publications and make for a very quickly built and strong wing. Tabs on the spars make for an accurately built wing. There is no washout.

Due to the sweep on the LE and mainspar each rib slot will have to be eased slightly to allow the ribs to sit at the correct angle. At each tab position pin a piece of 1/8" sheet balsa to the board and glue each tab to it. Add the ribs followed by the top sheeting.

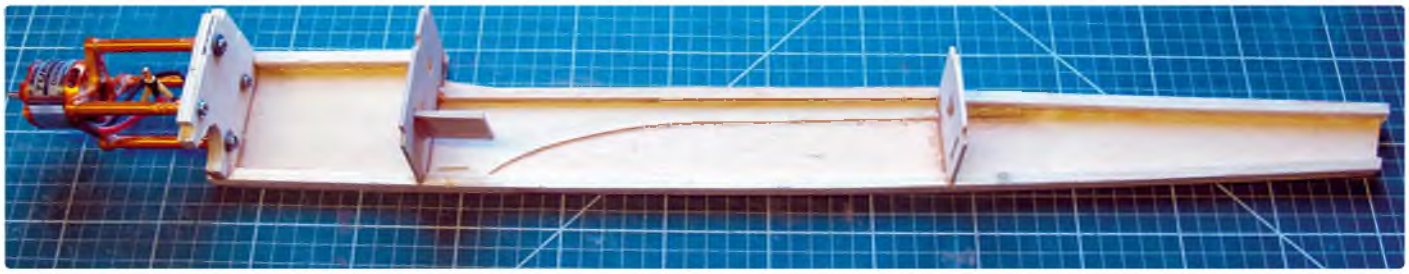


Fuselage parts with ply doublers, fuselage sides, fuselage formers and battery mount

Alternative cowl. This is from blue or pink foam carved to shape and covered with glass cloth and epoxy resin



Motor in place, covered in protective plastic. Note the disc with sandpaper fitted, which is the same diameter as the spinner



Port fuselage side to be fitted

Remove from the board, build the servo mountings and thread the servo wires through the wing. Now complete the bottom sheeting. Complete the other wing panel in the same manner. Glue the two panels together, not forgetting the dihedral, and add the glass fibre and resin reinforcing at the centre-section.

The elevators are built flat on the plans. After removing them add the 1/64" ply to the bottom surface using lightweight filler to fair off the ply/balsa join. The aileron is also built flat on the plans.

The servos are wrapped with masking tape and epoxied to 1/16" ply, which is also the cover, and this is secured to hard points inside the servo box.

Control surface hinging is with a continuous strip of Solarfilm or similar.

Fuselage

This is a simple box affair in which the sides are lite-ply reinforced with 1/32" ply doublers at the front and 1/4" square balsa at the corners. From F1 to F3 the sides are parallel making construction straightforward. When the two sides are attached to the formers pull in the tail-post, glue and make sure that you have not built in a banana shaped tail end. Fit the motor mount, complete with the motor, and add the top and bottom sheeting, leaving the top sheeting in front of the wing until the wing is offered up for drilling the dowel at its LE.

The battery mount slots into a recess in F3 and is then bolted to a ply piece glued to the rear of F2. After the balance has been determined, by moving the battery around, it is taped permanently onto its mount and removed for charging complete with the mount. If you have two or more batteries they may all be on similar mounts in the same positions. This ensures that the balance is correct after each battery change without having to rebalance the model.

The wing is secured with a 3 mm bolt at the rear and a dowel at the front that goes into F2. Place the wing and temporarily mount it in place ensuring that it is square to the fuselage. Drill through F2 and into the wing, followed by drilling into the wing, through the bolt plate. (Don't do as I did on the Scimitar model and drill right through the bottom of the fuselage!) Epoxy the dowel in place.

Making The Cowl

The cowl is from the lost foam method. I carved the cowl from pink foam and used the motor mount as a jig on which to lay the foam. The parts are then epoxied together as shown in some of the images. Use the spinner to position N1 whilst gluing. Carve and sand the foam to shape and then remove by sliding it off the motor mount.

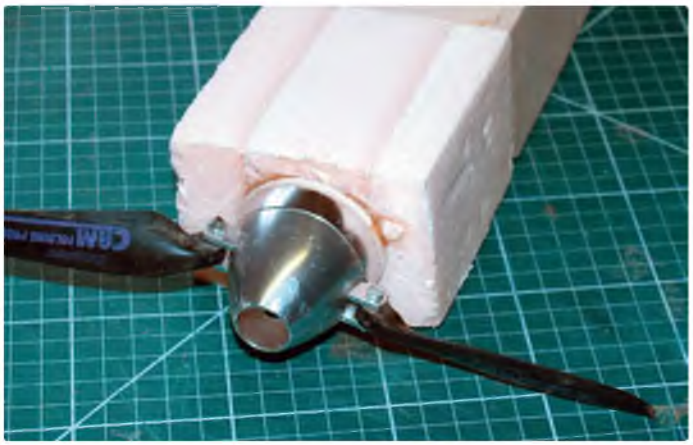
One of the images will show that the end of the cowl facing N2 is now reduced slightly, so that the thickness of the fibreglass cowl sides are in line with the fuselage. Set the cowl form on a bottle or something so that when you are applying the epoxy resin and cloth you will not have to touch the work in progress.

Cut the 1 ounce glass cloth into pieces of about 4½" x 2½" and lay onto the foam with epoxy resin mixed with slow hardener. Do not use polyester resin as it will melt the foam! Small pieces of cloth will be easier to handle than larger pieces. You will need two layers of the cloth to start with and use as little resin as is needed to wet out the cloth. While the resin in still 'green' and only a little tacky, trim off the excess cloth. Leave overnight to cure completely.

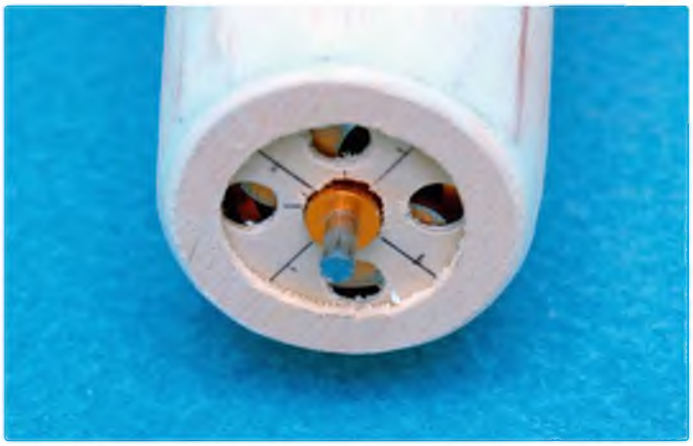
After clearing some foam away from behind F1 (to allow a clearway for incoming cooling air) I decided to leave some of the foam in place as it would then direct the incoming air directly onto and around the motor. As the resin cures a wax residue forms on the surface. This must be washed off with warm water and some washing-up liquid. If the cowl is still too flimsy key off with sandpaper and add some more cloth and resin until you are satisfied. When this has cured wash off again and lay on some car body filler and sand/grind down until you are satisfied with the result. Secure to the fuselage with screws into hardwood blocks glued to F2. This procedure sounds a long-winded way to make a cowl but it really is quicker than you might think!

Sandpaper disc bolted to drill to obtain a true spinner outline

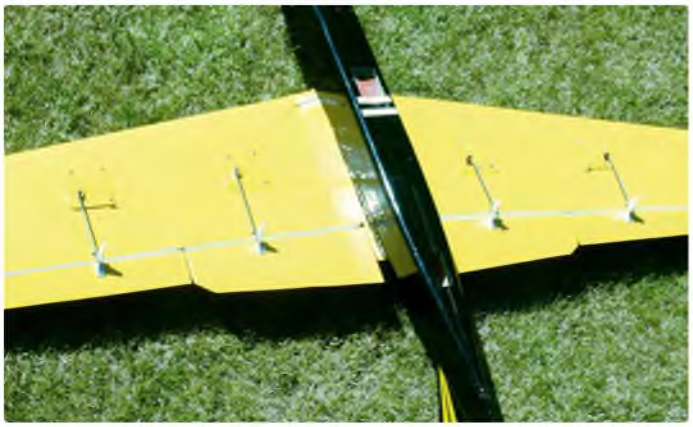
Note disc impression. The wood is now carved to this line



Cowl ready for shaping. Note the headless spinner



Nose complete. Cooling holes are only needed if a headless spinner is used. If a standard spinner is used other cooling must be provided, such as NACA style ducts



Servo positions on wing underside

Pipedream mounted on launching trolly as an alternative to hand launching

Servos

These should be metal-geared with a torque rating of about 2.5 to 3 kg and here I used four TowerPro MG16R (18 gram) digital servos that have proved more than adequate. Pair off the servos for the elevators and ailerons and make sure that the throws and speeds of each pair are the same. Cut out or use a hot wire form to remove the foam sized to fit your servos and line the box with 3/32" scrap balsa. Wrap the servos in one layer of masking tape and epoxy to a 1/16" ply plate. This will become the cover and is screwed into hard-points set inside the box. Cut a channel in the underside of the foam wing to take the servo wires and cover with some scrap balsa and the chosen covering material.

The battery position is adjustable for balancing. The ESC is mounted under the battery mount, with the receiver under the wing.

Flying

Carry out a full radio range check with and without the motor running and set the failsafe. As with all models it is best to get a flying buddy to do the first few launches until the trims are properly adjusted.

For the first launch set a click or two of up elevator trim to ensure a good clean climb out, set full throttle and give a good positive push out, slightly nose up. With the power systems mentioned there will be no sagging at launch time. When you have the trims set up you will find that the Pipedream is very responsive to control inputs and will do all the aerobatics that a rudderless model will do.

If the model is set up as noted on the plans there should be no drama at the first launch. Just be certain of the balance position, the amount of control movements and the exponential set. On my models I set about 50% expo to soften the movement in the middle. Orientation may be a little disconcerting at first but if the fin has bright colouring this will help immensely.

I have assumed that the model will be flown flat out most of the time but it behaves very well at all speeds, so don't forget that there is a throttle if you get into difficulties.

Slope Soaring

The model version shown in the images does not have a rudder fitted but the original two crashed models did. For those who might like to include one, details are included on the plans.

All the construction images are for the two original short nosed versions but construction is identical to all, with the exception of enlarged cooling air passageways on the long nosed version.

Need Some Help?

Should you have any questions or comments, good or bad, regarding the build or flying of the Pipedream please phone me (Mike White) before 9 pm or email me (see Contacts). ***RCMW***

Hand launching off the slope

Enjoying a few fast fly pasts with some lively aerobatics thrown in just for fun!

Author and designer Mike White gives his model a sense of scale after enjoying the first flights

CONTACTS

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01624 813654

FOAM WINGS
Email: sales@cloudmodels.com

MOTOR AND BATTERIES
www.overlander.co uk
optipower.co.uk

PLAN DETAILS

BUILD CATEGORY:	Intermediate-Advanced
FLYING ABILITY:	Intermediate upwards
PLAN NUMBER:	MW3785
PLAN PRICE:	£11.99
LASER WOOD PACK*:	POA (WP3785)

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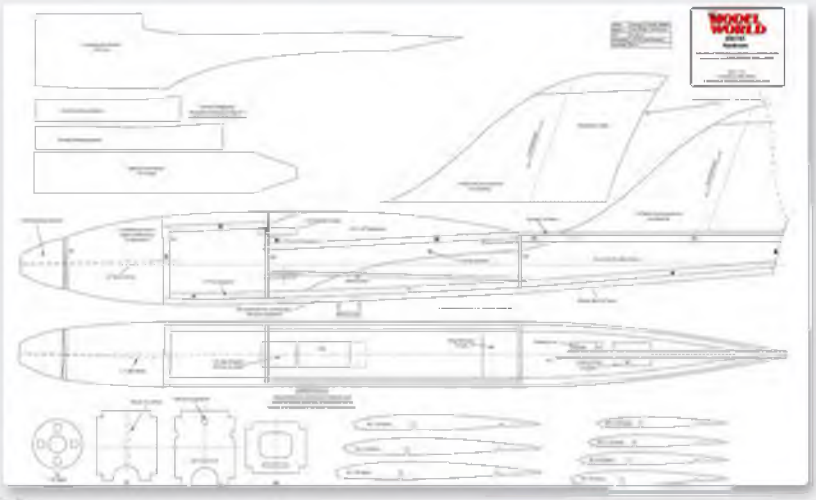

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Slingsby T42 Eagle

Chris Williams completes the build of his 174 inch span, quarter scale vintage sailplane for five function R/C

RC MODEL WORLD

At a Glance

SCALE:	1:4
SPAN:	4416 mm (174")
LENGTH:	2127 mm (87")
WEIGHT:	8.6 kg (19 lb)
WING SECTION:	HQ35/14 centre section to HQ35/12 at the tips
RADIO FUNCTIONS:	Elevator, Rudder, Ailerons (2 separate channels), Airbrakes, Tow Release
WING AREA:	Approx. 14 sq ft
WING LOADING:	20 oz/sq ft

In Part 1 last month we covered the construction of the fuselage and canopies. We continue the construction now with the flying surfaces, covering and maiden flight.

Fin Fairing

Start by offering up a piece of 3 mm balsa to the underside of the fin, draw around and cut it out. Use a ruler against the LE of the fin to mark where it would otherwise meet the tailplane and then pin Fairing 1 to the tailplane. Make up a wedge of 3 mm balsa and wedge the top and bottom ribs in the correct place between the tailplane and the fin, before cyanoing in place.

Cut out the 0.8 mm ply that will wrap around the structure. Wet it, fold it over and apply a hot iron to force the tight curve at the front that will wrap around the fin. Remove the balsa structure from beneath the fin and mask out the areas that might otherwise get glue on them. Do this with cellophane or

The Eagle in action at White Sheet Hill

similar, taping it over the to-be-glued areas. Replace the fairing structure and glue, clamp and tape the ply in place.

Remove the fairing once again and remove all the masking. Place the fairing back in position and add the centre part of the 6 mm balsa extra fairing to the front, which will blend the fairing into the tailplane. Now add one more 6 mm balsa piece either side, sand roughly to shape and then add car body filler to smooth out the shape.

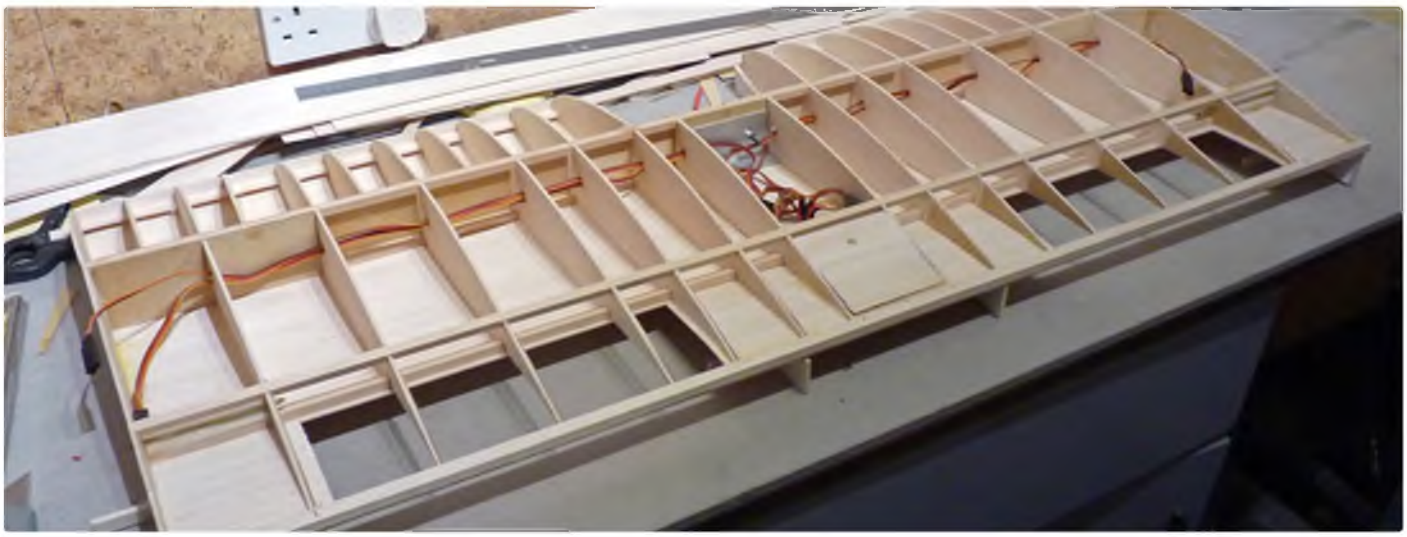
Wing Tips And Ailerons

Before the ailerons can be constructed the wingtips must first be made. Offer up the 3 mm balsa wingtip template, which should slide in between the protruding ends of the wing spars. Use the shape of the rear of the template to cut out two 12 mm balsa blanks and epoxy the template and the blanks to the wing. Use a straight edge along the TE of the wing, extending out to the tip, and draw a line on the wingtip TE that will give you a line to sand to later. Glue the two 12 mm balsa tip blanks together and epoxy to the wing. Then sand to roughly the final shape.

Make up the aileron LE from 6 mm balsa by offering up the wood to the wing and drawing around it. Cut it slightly oversize and also allow for the fact that the edges will be chamfered to allow for the angle at which it will sit. Now, hinge the aileron LE in three places with Mylar strip, then clamp the TE between the tip and root positions.

Making up the fin fairing

View of fin fairing structure



Centre section ready for top sheeting

Centre section with top sheeting added and weighed down on jigging supports

Cyano in place the root and tip aileron ribs, bringing the LE up to meet the front face of the ribs.

Now for the important bit: cyano in one of the ribs in the centre of the aileron and check carefully along the TE to ensure that it is straight, adjusting if necessary before adding the remaining ribs. The diagonals are non-scale but are important to ensure that the ailerons do not warp, being completely ply covered on the full size. Block sand the aileron LE flush to the wing, before carving and sanding the TE down to the spruce base. Now face off the ends of the aileron with balsa and trim until a good fit is achieved.

Airbrakes

Make up the parts as shown on the plan. The airbrake arms are made oversize to prevent breakage when landing on rough ground. Paint the arms before final assembly. A return spring was fitted on the prototype to aid closing (it's easy to make airbrakes open but fiendishly difficult to make them close properly!) The return spring is pretty small: you might find something suitable from the sticks in an old transmitter.

Once assembled test the airbrakes to see that they open and close properly. The arms pivot on a countersunk self tapper: tighten up until the arm becomes stiff, then loosen off slightly.

Two things to note: the airbrake frame goes into the wing with the head of the pivot screw showing to the rear; this allows access after fitting, and if necessary, the whole thing can be disassembled. It will be necessary to make the two sets of airbrakes so that there is a left hand and right hand set, otherwise the blades will be in front of the arms on one wing and behind the arms on the other.

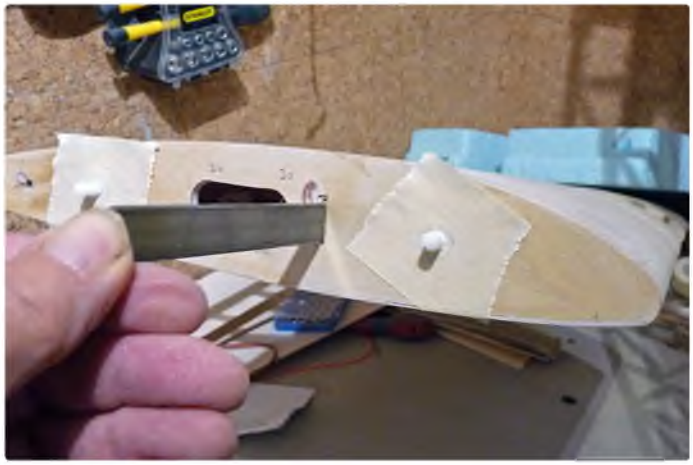
Now attention must turn to the wing. Cut out slots with a junior hacksaw for the 6 mm framework. Glue in the 6 mm square spruce rails and cut through the wing ribs where the airbrake assembly will go. Offer up the airbrake assembly and check for fit. Cut a hole in R3 for the 2 mm actuation rod to pass

View of brass wing joiner box placement

Tailplane final sheeting added

Wingtip blocks added

Initial stage of building the aileron



Masking out the MPX wing retaining system

Airbrake assembly

through. Now is a good time to make up the 1.5 mm balsa sheeting top and bottom, as you can mark through the aperture to cut out for the airbrakes. Don't forget to allow for the 3 mm thickness of the airbrake base! When satisfied, epoxy the assembly to the rear spar. Now you should be able to glue in place the top sheeting.

When the PVA is dry make up the capping strip for the top airbrake from 0.8 mm ply and 1.5 mm balsa, and epoxy in place, with the balsa on top. Sand the brake flush with the wing and check for correct operation. Now the airbrake servo will need to be fitted. Corona DS-239 servos were used due to the convenience of fitting.

Once you have fitted and connected the servo and checked the operation of the airbrakes, make an aperture in the lower sheeting to allow access to the servo and glue the sheeting in place. Now you can cap and sand flush the lower airbrake. Finish off the wing by capping the wing root with 0.8 mm ply, opening out an aperture for the servo leads.

Connecting The Wings

On the prototype the Multiplex wing retaining Unilock system was used. Two sets were used, one in front and one behind the joiner. It's important to know that there are three strengths available for the retaining force and it's best to use the weakest, otherwise you will never get the wings apart!

Drill out the holes for the female coupling first and epoxy the locks in place. Insert the male parts, place three of four layers of masking tape in the appropriate place on the opposing wing and push the wings together. Use the dents in the tape to locate the holes for the male parts and drill them out. Now mask out both wing roots, coat the protruding parts with epoxy and join the wing together until the epoxy sets.

On the prototype the procedure had to be repeated more than once before the system finally worked.

Retro-cutting the slots for the airbrake aperture

Test fit of the airbrake assembly

Airframe ready for covering

Pre-painted airbrake assembly in position

Motley Crew launches the Eagle for the maiden flight

Covering And Finish

The prototype was covered in natural Solartex. Note that the most part of a ten metre roll will be required. The nose area and the compound curves behind the wing mount on the fuselage, and the fairing on the front of the tailplane, were left uncovered. The 'tex edges were sealed with thin cyano and then six or seven layers of two pack primer were brushed on and left to cure (Churchill Paints do an excellent two pack primer!) This was initially flatted dry with 120 grit paper, then finished off with 320 grit. For a cellulose, air-dry type finish a 600 grit paper would be more appropriate.

The airframe was then treated to a succession of two pack topcoats, with a heck of a lot of masking in between to achieve the finished result.

Setting Up And Flying

Despite the lead built into the nose under the filler, a little more lead was required to bring the C of G to the point specified on the plan. For posing purposes, if you want to photograph the canopies open, for the rear canopy you will need to make up a stay from 6 mm dowel to wedge the canopy open, as per the full size. The front canopy needs a wire with a loop on one end attached to the canopy framework, the loop being attached to a screw suitably placed in the cockpit.

After a long wait the maiden flight took place in less than ideal conditions, with wind gusts measuring 42 mph, proving that the model is capable of flying in a wide range of conditions! The stall should be a safe procedure, with little in the way of height loss when one wing or other finally drops after the application of full up-elevator.

A dive test is recommended to establish longitudinal stability: the model should gradually pull out of the dive by itself after the elevator has been returned too neutral. The airbrakes, coupled to up going ailerons, are very effective and they allow for high approaches with a steep descent if so desired.

A week or two after the maiden flight the opportunity came for some flights in very different conditions on the slope. This time the wind was very light but the Eagle had no difficulty in staying aloft.

The Eagle has proved to be a simple and vice free model to fly, whilst the construction is challenging enough to keep the builder well occupied during all those all-too-familiar periods when inclement weather makes flying impossible! ***RCMW***

Eagle over White Sheet Hill

The mixing of brakes and ailerons is shown nicely in this on-board shot

A closing picture of the Eagle in action at White Sheet Hill

View of the open canopy arrangements

Author's Note

For those who like to cut their own parts, I have saved all the parts drawings in PDF format. Most are in A4 and printable from a standard desktop printer but some of the larger parts are in A3 format and might need to go to a suitable shop for printing. Just email me for copies:

CHRIS WILLIAMS
c_williams30@sky.com

Scan this code with your smart device and see the Eagle fly!

PLAN DETAILS

BUILD CATEGORY:	Intermediate-Advanced
PLAN NUMBER:	MW3792
PLAN PRICE:	£31.50 ($53.99)
CLEAR CANOPY:	CA3792CY
CANOPY PRICE:	£23.50
***LASER WOOD PACK:**	£154.99 (WP3792)

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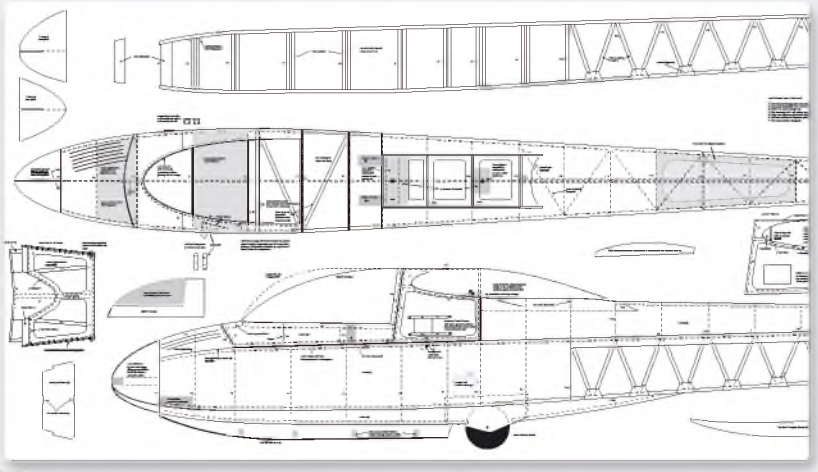

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Roban Bell 407

Jon Tanner finishes and flies Roban's 700-size Bell 407

Having finished the mechanics with the 3-axis set up, it's time to install them into the fuselage. But first two spacers need to be glued to the rear mounting point, which tilts the main shaft forward as per the full size. With the tail rotor gearbox removed the boom slides into the body and with a little fiddling the mechanics drop into place. The fuselage tail section is slid over the boom, making sure it passes through the foam positioner and you then attach the tail gearbox. But you may need to move the tail section about to make space and access the fixing screws. With the mechanics and tail section secured it looks like a real helicopter.

This leaves the job of fitting the ESC and, in my case, the Emcotec SPS switch, which I positioned on either side of the mechanics so the battery connections were at the front. Talking of which…

The full size has a structural vertical box section running floor to ceiling through which the control rods run and this is nicknamed the 'broom cupboard'. Roban have cleverly enlarged this so one of the 6S LiPo packs can slide into it and the second lies across the top on a support plate. A photo shows the convenient layout and you'll also see how I mounted the SPS switch.

Scale Bits

We start with the console, with its illuminated dials. All you do is glue it place, add an extension lead to the LED control panel and it's done. Next you glue in place the joy sticks and pedals, followed by the cup holder (!) and seats. The seats looked a bit plain so I painted the seat belts. The front screen is cut to shape and a couple of screws hold it place; a hole needs drilling through the top, coinciding with the wire cutter that is fitted later. I made this a slot so I can slide the screen out without disturbing the cutter.

Next shown were the mock U/C clamps that I'd already fitted, followed by the step rails that use 90º plastic mouldings with plastic brackets that make a good job of securing them. I used a general purpose adhesive for all these scale fittings. Antenna are added to the top and sides and then the two wire cutters. A pitot tube is included and I took the trouble to paint the nozzle black. The last detail to add is the steps just behind the passenger doors.

This leaves the decals, which I find the easiest job to mess up! The good thing is that Roban have improved the quality of these water slides and they are now pre-cut with a transparent clear film on top. So cut out each one oversize, soak it in water until it's ready to slide, position it and gently slide the backing out, leaving it in place. Now use a soft cloth to squeeze out excess water and air bubbles, then leave it alone to dry completely! You can peel off the top layer from each decal but be aware the decal itself is very thin and so could be easily damaged – no need to explain how I found out!

The main 700 mm semi-symmetrical rotor blades are supplied ready painted. I checked the weights using a very accurate set of scales: 143.8 g, 143.5 g, 143.8 g and 144 g, which is good enough.

The finished model with rotor blades but no LiPo came out at 6.7 kg. I intend to fly it using two OptiPOWER 6S 4300 mAh packs, which will bring the flying weight to a very reasonable 7,275 g.

Flying

I had to wait ages for the weather to cooperate. Late winter was very windy and wet. And when it wasn't, it was too cold! Eventually a suitable day arrived and I met Denis Stretton for the first test flights. I didn't fit the top cowls for this as I wanted access to the tuning 'pots' on the AR7200BX. Freshly charged OptiPOWER 6S 4300 packs were fitted but when I removed the magnetic plug

These spacers are best glued in place; they raise the back of the mechanics

The enlarged 'broom cupboard' that carries one of the LiPo packs

Tail gearbox in place

Kontronik JIVE Pro ESC on its side. The included heatsink wouldn't fit but the 120 A ESC won't be hard pushed

Safety Power Switch (SPS) on the right, with the power connectors close to the LiPo packs

Packs in place and the SPS magnetic switch conveniently placed

from the EMCOTEC SPS nothing happened! It had worked on the workbench, so what had gone wrong?

The short-term solution was to bypass the SPS and Denis kindly made up a wiring harness to achieve this. Back home I discovered that when I fitted the SPS magnetic switch, I had mounted it too close to one of the canopy magnets, which meant the switch was permanently off! I tuned the switch round and all is now fine!

The rotors spooled up smoothly, the tracking looked pretty good and up she came into the hover. The head gyro gain felt a bit low, so this was increased using the 'pot' and this time it felt more locked in. However, when moving it around the tail power was found to be lacking and changing the gain didn't seem to help. I decided to increase the rotor rpm, which helped to some extent, and it also improved the rotor head control. So I returned the gyro 'pot' to the stock position.

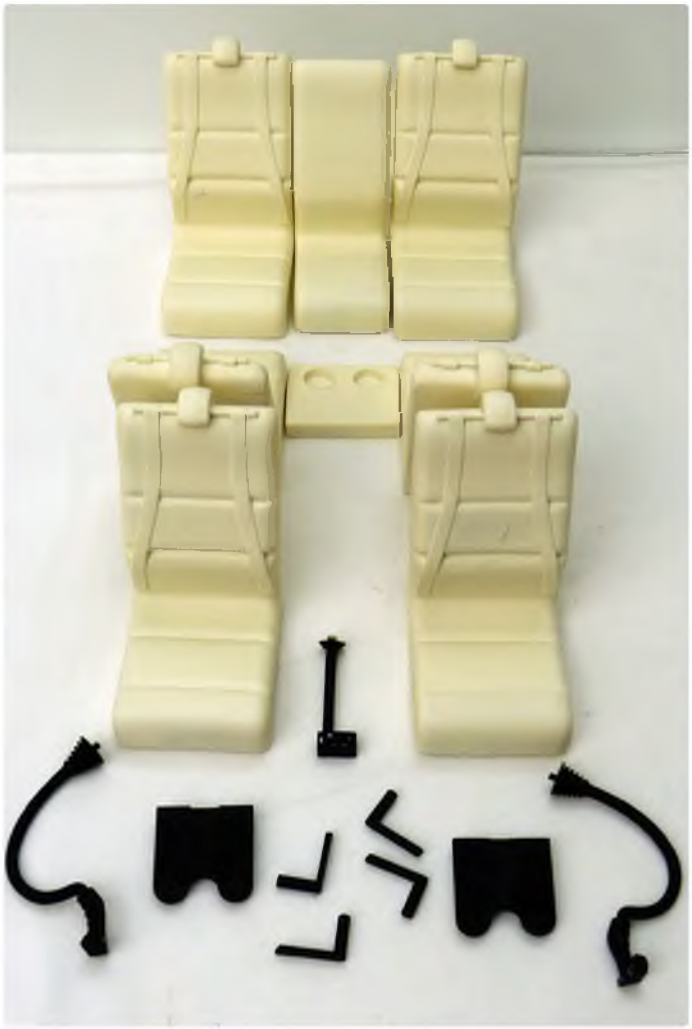
The conclusion with these first test flights was that the mechanics were running smoothly and well. The AR7200BX was a good choice but longer tail blades were needed to increase the tail power.

For the next flights I replaced the supplied 105 mm tail blades with a pair of NHP 110 mm blades, which improved matters somewhat. So I then decided to try a pair of NHP 120 mm blades and these made the tail control much more solid, with the tail easily holding side on to the stiff breeze.

At this point we checked the main rotor speed. It was quite low at 1180 rpm, so I increased this to 1240 rpm and now the whole model felt properly locked in with a good feel to the rotor head and a powerful tail. The final 'setting up' was to find the blade that was slightly out of track!

This was a couple of weeks before the UK's first main heli fly-in at Charmouth and so this would be its first public viewing. It was a matter of dodging the rain, but when the sun

Console as it arrives, ready to glue in place. The dials are backlit with LEDs

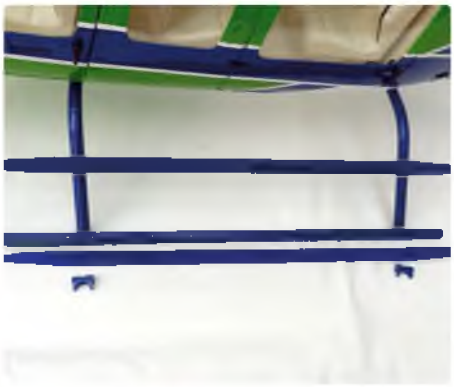


Control sticks, seven seats and a cup holder!

The seats needed brightening up so I painted the seat belts and head rests black

The pedals are a nice detail and I love the map!

Rear facing seats, with a narrow one in the middle



Skids with the step bar and showing the brackets that hold it in place

Top cowling with the wire cutters and the aerial that come with the kit

This is the luggage compartment where the lighting cables live. I used it for the LED control board

Lots more scale detail is moulded into the body

Tail rotor cover in place. It just slips over the rotor hub and you can also see the rear anti-collision light

Take your time when applying the decals. They are a lot better than previously but are still a bit fragile

End fin with navigation light – red on left, green on right

That's me flying it at LHC, with a very trusting Nigel Cartwright taking the photos

came out it was lovely and as I wanted more photos I asked Kevin Lever to fly the model for me while I snapped away. Kevin is well acquainted with Roban models and he felt very 'at home' with the set up, pronouncing the tail response as excellent. He didn't want to hand the controls over and by the time he did it was raining again!

Summing Up

Roban Models have a real winner with this model and it should be attractive to anyone wanting a practical scale model that isn't complicated. The SM2 mechanics were introduced quite a while ago and have stood up well to the test of time. The quality of the fuselage is stunning and the bright Denver AirLife colour scheme makes it stand out that much more. As is usual with Roban there are other colour schemes to choose from as well.

I do think tail power in its standard form is lacking, which I fixed using longer tail blades. But a higher speed tail would also provide more power; knowing Roban I am sure they will take notice.

One comment on flying the 407 is that the forward rake of the main shaft means it takes a little getting used to, as in fast forward flight the fuselage is level, but the tail sits low in the hover. As I say, it's just a matter of getting used to the orientation.

So there we are, a great scale model that stands out from the crowd. It is easy and straightforward to assemble and will fly really well with one of the simplest 3-axis gyros. I am really impressed. However, I now see that Roban have released more models in the range, adding 800 versions of the Bell 212 and Bell 412. What next!.. **RCMW**

Wire cutters top and bottom, pitot tube and U/C step all help to make this a stand out model

First public outing at a stormy Charmouth. Longer tail blades and 1240 rpm made all the difference!

The forward raked mast means it hovers tail down

MODEL WORLD

MODEL INFORMATION

MANUFACTURER:	Roban Model
WEBSITE:	www.robanmodel.com
DISTRIBUTOR:	Quick UK – www.quickuk.co.uk
MODEL TYPE:	700-size scale model
MAIN ROTOR DIAMETER:	1560 mm
TAIL ROTOR DIAMETER:	280 mm
OVERALL LENGTH:	1680 mm
OVERALL WIDTH:	415 mm
WEIGHT, INCLUDING FLIGHT PACKS AND BLADES:	7822 g (17 lb 4 oz)
GEAR RATIO, USING SUPPLIED 22T PINION PULLEY:	13.82:1:4.68
UK RRP:	£1349.99

MODEL SPECIFICATIONS

BODY LENGTH:	1680 mm
WIDTH:	415 mm
HEIGHT:	510 mm
MAIN ROTOR DIAMETER:	1560 mm
MAIN BLADE LENGTH:	700 mm
TAIL ROTOR DIAMETER:	280 mm
TAIL BLADE LENGTH:	105 mm
MAIN SHAFT DIAMETER:	12 mm
TAIL SHAFT DIAMETER:	5 mm
SPINDLE DIAMETER:	8 mm
BATTERY COMPARTMENT:	120 x 60 x 180 mm
FLIGHT TIME:	+ 5 minutes
TAKE OFF WEIGHT:	8500 g

ADDITIONAL/OPTIONAL PARTS:

MOTOR:	750MX 450 KV brushless outrunner, 12S capable
SPEED CONTROLLER:	120 A brushless, 12S capable
SERVOS:	3 x metal gear cyclic, 1 x metal gear tail servo
LIPO:	44.4 V 5000 mAh 35C
FLIGHT STABILISATION:	3-axis flybarless gyro
RADIO CONTROL:	Minimum six channel with pitch and throttle curves

We make our annual pilgrimage to the popular Midlands model air show, held from 17-19th June

Weston Park 2016

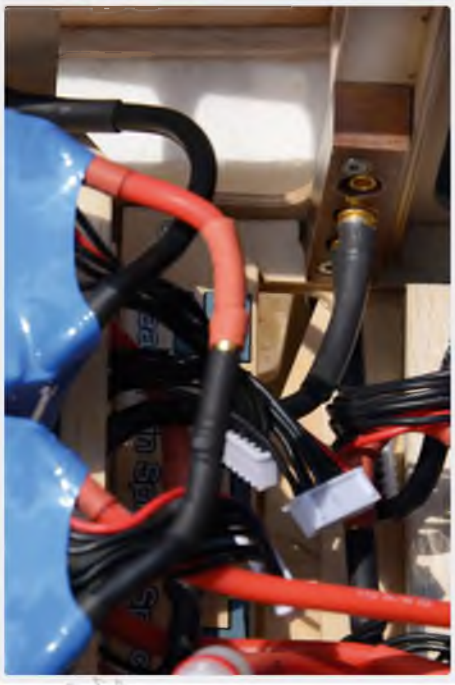
Above: Steve Holland's huge OV-10 Bronco frames a group of pilots as they concentrate on providing another of Weston Park's sizzling displays above (and in some cases around!) the trees

Right: Matthew Poots puts his Carden Extra 300 Pro on its tail during his solo slot for Team Horizon Hobby UK

Judging by comments that we've heard since the Weston Park International Model Air Show this year's event was well received by both visitors and traders alike. This despite a rather soggy start that left some areas around (and in!) the trade stands a bit like a moorland bog. The Traplet tent was particularly hard hit and our colleagues Angela and Barry found themselves squelching around in mud as they set up the racks of magazines, tables to show a selection of Traplet's laser cut wood packs and the increasingly popular 3D printer displays.

Out on the flight line Dave Bishop was keeping the crowds entertained in his usual style while a wide range of models put on a series of impressive display flights. Whether it is jet models, warbirds, 3D stunters or pulse jets that you've come to see, there's always something new and exciting to watch at Weston Park.

All this, plus model boats, FPV racing and model helicopter flight lines, together with a selection of other family attractions mean that the Weston Park show provides great value for the cost of an entry ticket. Congratulations to Steve Bishop and the rest of the Weston Park crew for putting on yet another great model show. ***RCMW***



Right: Six Optipower 7S 5300 mAh 50C packs are wired together in series/parallel to give 14 cells and 15900 mAh of power! Two blocks of Paxolin bus bars are mounted at the front of the battery bay to handle the connections – negative rail seen here (top right)

Matthew powers the big aerobat with a Plettenberg 37/6 motor and controls it with a Spektrum DX18 radio. Spektrum High Voltage servos all round. Matt is supported at shows and competitions by his father, Trevor

This pair of 22% P-51 Mustangs, based on the 'Precious Metal' Reno racer, were flown by Markus Rummer and Hannes Lutzenberger. Custom built contra-rotating Hacker Q80 motors provide plenty of punch up front

The FPV quadcopter racing course combined high gates, low gates and tunnels for plenty of thrills and spills. Fast reactions are needed to get a good start

Gunter Zielke demonstrated his Smoke-EL system for electric models. Clouds of dense smoke issued from the wingtip mounted pipes, activated from the transmitter or when a pre-set G-force occurs

Horizon Hobby's display tents were back on the trade line for this show. Pride of place went to the Hangar 9 Extra 300X 120 cc ARF, a 35% scale version of the mid-wing aerobat. It features foam core balsa sheeted wings with dual carbon-fibre wing spars. The huge rudder is fitted with flat hinges so it can be removed for storage when the long hinge pin is pulled out

We always like to stop by for a look at the model boats in action on the pond at the very top of the flight line. The high banking provides a great view

Visitors are guaranteed to see some of Europe's top jet modellers in action at the Weston Park show

Model jets, many of which have colourful smoke systems, drop down from above the trees to roar along the flight line just inches above the ground

When asked which Horizon model is selling well at the moment, Jim Davis had no hesitation in picking up the E-flite Carbon-Z P2 Prometheus, based on the aerobatic biplane flown by Skip Stewart

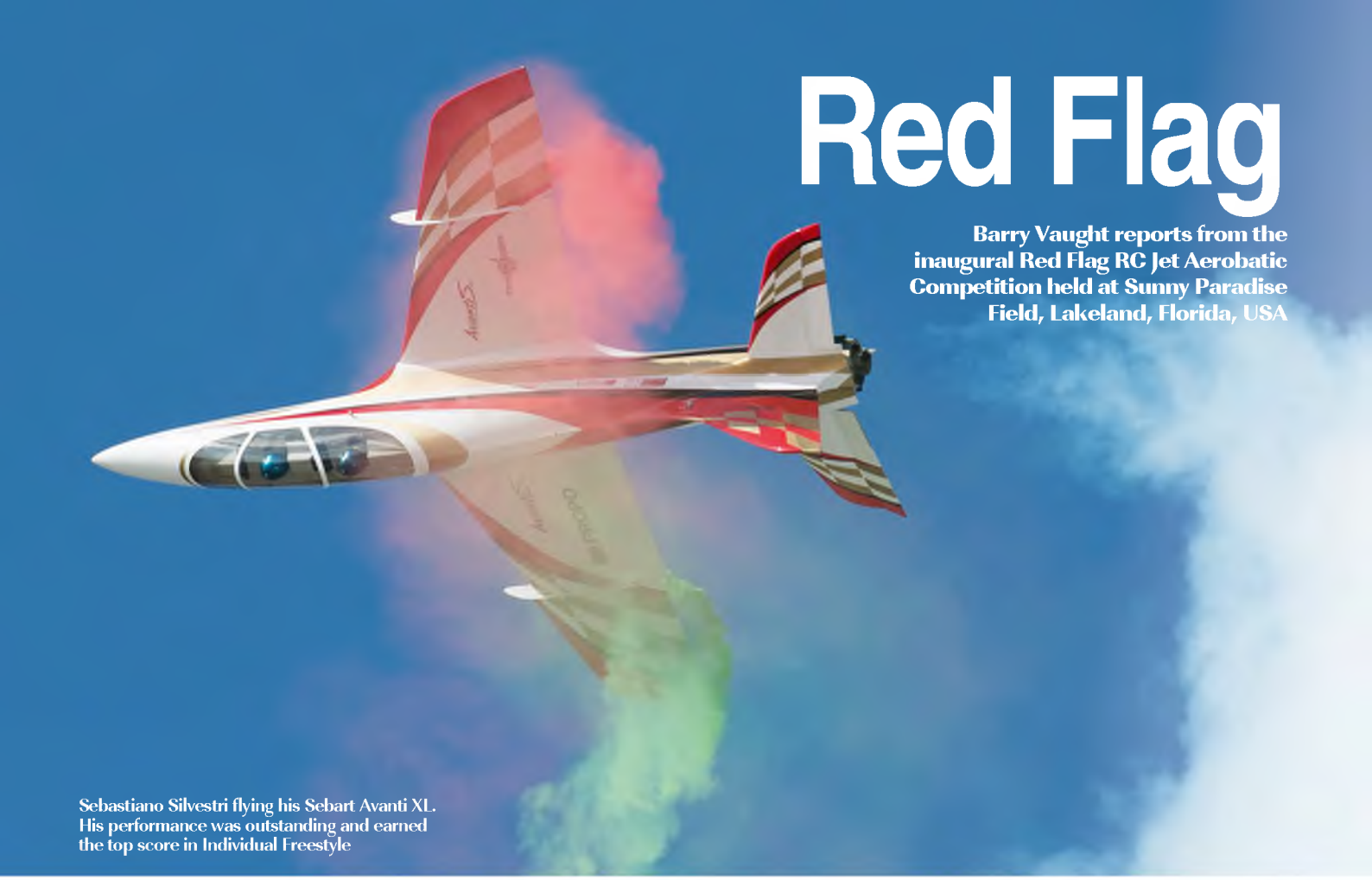
Spectacular night flying is becoming a regular fixture of the Weston Park show. Picture courtesy of Trevor Poots

This well-flown model closed the show on Friday. The side on shot shows the kind of control throws that are necessary if you want to emulate the top 3D pilots

Rob Garforth's 'Ultima-Tun' from the Jet Model Factory lines up for its display slot

Red Flag

Barry Vaught reports from the inaugural Red Flag RC Jet Aerobatic Competition held at Sunny Paradise Field, Lakeland, Florida, USA



Sebastiano Silvestri flying his Sebart Avanti XL. His performance was outstanding and earned the top score in Individual Freestyle

Imagine your favourite opera music playing in the background while an Avanti S XXL turbine jet is dancing like a ballerina and filling the sky with red, white and green smoke trails. The pilot, Sebastiano Silvestri from Italy, was just one of the 46 pilots in the inaugural Red Flag RC Jet Aerobatic Competition at Paradise Field, Lakeland, Florida.

Frank Tiano wanted to create interest in flying jets in people who don't normally fly jets. He also wanted to attract prop pattern pilots and have something unique for the fans to see and appreciate. Ray LaBonte would manage the competition, while Frank would take care of everything else. The team approach worked very smoothly and Red Flag, a name thought up by Peter Goldsmith, was a huge success.

There were individual Scale, Sport, Electric and Intro Jet Classes in the mornings. Peter Goldsmith earned the top score in the Aerobatic Scale Jet Class. Jason Shulman earned the top score in the Aerobatic Sport Jet Class. Jason, one of the USA's top F3A pattern pilots, was excited to fly pattern with turbine jets. Carlos Silva earned the top score in The Electric Jet Class and Jose Melendes earned the top score in the Aerobat Intro Class.

In the afternoons were Team and Individual Freestyle Jet Classes. Californians Mike Adams and Ken McSpadden (Team Viper) earned the top score in the Aerobatic Team Freestyle Class. Germany's Marc Petrak and Stefan Wurm (Team Horizon) earned the second place Team score and flew some very tight formations. They wrote a heart in the sky for everyone to enjoy during their Freestyle class!

Italy's Sebastiano Silvestri, 15-time Italian Champion and two-time World Cup F3A Champion, earned the top score in the Individual Freestyle Class. There were some very entertaining music and sound effects during the Freestyle classes, such as an actual recording of A-10 Warthogs in combat, opera music, the band Queen, more rock and roll music and marches, etc.

The competition and crosswinds were strong and the talent was even stronger. Some of the pilots flew in multiple classes. The fans participated in the judging on-line through patternscoring.com, and live scores were displayed on a giant screen monitor.

Congratulations to Frank Tiano, Ray Labonte, Peter Goldsmith and everyone involved for a very entertaining inaugural Red Flag, which will be remembered as one of the epic International R/C Jet events of 2016.

Red Flag 2017 is planned for November 1st-4th, 2017. For more information, please go to franktiano.com.

R/C aeroplanes brought all of us together; it's the people that keep us coming back!

RCMW

Red Flag Freestyle Champions, Team Viper, consisting of Californians Mike Adams and Ken McSpadden flying their 1/5 scale Skymaster Viper Jets. 102 in wingspan, 39 lb, JetCat P-180 RX turbines, Spektrum DX-18 radios

Germany's Team Horizon, Marc Petrak and Stefan Wurm flying their Tomahawk L-39s. JetCat P-180 RX turbines, Spektrum DX-18 radios

Red Flag Scale Jet Champion, Peter Goldsmith's Skymaster F-9F Cougar. 1/5 scale, Kingtech K-210 turbine, Spektrum DX-18 radio

Jack Diaz's BVM F-86. JR12X, JetCat P-180

Bob Violett's BVM E-Bandit. Spektrum DX-18, BVM EVF (Electric VioFan)

Jose Melendez's Dolphin. Jet Central Rhino 200SE turbine, Spektrum DX-18 radio. 'Frozen' colour scheme. Jose earned a first place score in the Aerobat Intro class

James Martin's Skymaster F-14 at 1/7th scale. Jet Central Cheetah turbines, Spektrum DX-18 radio

2016 Red Flag organisers, Frank Tiano and Ray LaBonte

Franco di Mauro's Skymaster F-16. Spektrum DX-18, Jet Central Mammoth turbine

Jeff Stubbs' Comp ARF BAe Hawk, 1:375 scale, 98 in wingspan. Kingtech 210G turbine, Spektrum DX-18 radio, RAF Red Arrow colour scheme

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Red Flag Final Standings

Sport Jet
1st Jason Shulman
2nd Sebastiano Silvestri
3rd Archie Stafford

Scale Jet
1st Peter Goldsmith
2nd Bernhard Kager
3rd Mathias Hocke

Electric
1st Carlos Silva
2nd Tyler McCormack
3rd Bob Violett

Aerobat 'Intro' Category
1st Jose Melendes
2nd David Malchione Sr
3rd Shneider Fajardo

Freestyle
1st Sebastiano Silvestri
2nd Quique Somenzini
3rd Azza Stevens

Team Freestyle
1st Team Viper – Mike Adams, Ken McSpadden
2nd Team Horizon – Marc Petrak, Stefan Wurm
3rd The Ultra Bandits – David Malchione Jr, David Malchione Sr

Quique Somenzini's QQ F-16. JetCat P-180 RX turbine, Futaba MZ 18 radio. Quique earned a second place score in the Individual Freestyle class

Jean Pierre Zardini's ZN Line Wizard L. JetCat P-220RX1 turbine, Futaba T8 radio

Archie Stafford's Tomahawk Futura 2.5M, 35 lb. IQ Hammer 200 turbine, Futaba 18 MZ radio. Archie earned third place in the Sport Jet Class

Azza Stevens' Rebel Pro. JetCat P-180 turbine, Spektrum DX-18 radio. Azza earned third place in The Individual Freestyle Class

Pablo Fernandez's Shockwave Rebel. JetCat P-180 turbine, Spektrum DX-18 radio. Striking Thunderbirds colour scheme

Matt Balazs' Tomahawk Futura 2.5M, 37 lb. IQ Hammer 200+ turbine, JR28X radio

Frankie Mirandes' Provost T5. JetCat P-160 turbine, JR 12X radio

Sebastiano Silvestri's Sebart Avanti S XXL. 2.6M wingspan, 40 lb, BF-350 turbine, JR28X radio. Second place in Red Flag Sport Jet

Scott Geller's Mibo A-10 Warthog. 1:5.5 scale, 118 in wingspan, 55 lb, JetCat P-160 turbines, Futaba MZ 18 radio

L-39 XXXL. 1:2.7 scale, 12 ft wingspan, 176 lb, JetCat P-400RX turbine. Built by Joseph Kager in Germany, the L-39 was not in the competition

Mitch Buckley's Air World F-9F Cougar. JetCat P-180 turbine, JR12X radio

David Malchione Jr's BVM Ultra Bandit. JetCat P-200 turbine, Spektrum DX-18 radio

Rod Snyder's BVM E Bandit, 72 in wingspan, 18.5 lb. 3 x LiPo (4-cell 7700 mAh), BVM F12 Electric Power, Spektrum DX-18 radio. The winglets help decrease the landing speed and give you just a little more simulated lift

Columbian, Shneider Fajardo's Rebel Pro. 40 lb, Kingtech K-210 turbine, Spektrum DX-18 radio

Jason Shulman piloting a ZN Line Wizard L. Kingtech K-210 turbine, Futaba MZ-18 radio. Jason earned the top score in the Sport Jet Class

John Redman landing his BVM Ultra Bandit. JetCat P-220RX1 turbine, Futaba MZ 18 radio

Rod Snyder's Krill Avanti S. Jet Central 200SP turbine, Spektrum DX-18 radio

Gerardo Diaz's Skymaster F9F Cougar, 1/5th scale, 90 in wingspan, 34 lb. JetCat P-180RX1 turbine, Spektrum DX-18 radio

First Red Flag Scale Jet Pattern Champion, Peter Goldsmith with his Skymaster F-9F Cougar

First Red Flag Individual Freestyle Champion Sebastiano Silvestri and Daniela Salinetti. Sebastiano also earned second place in the Sport Jet Class

First Red Flag Team Freestyle Champions Kenny McSpadden and Mike Adams with their Skymaster Vipers

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FAI Scale World Championships Preview

Neil Tidey takes a brief look back at past Scale World Champs before going to Romania for the 2016 FAI F4 World Championships for Scale Model Aircraft, to be held over 20th - 28th August near Ploiești

Second, first and third pilots in F4C, 2014: Andreas Luthi (Switzerland, Bucker Jungmeister), Marc Levy (France, Fouga Magister) and David Law (Australia, Pitts Special)

In 1992 I travelled to the USA with the GB Scale Team of Chris Foss, Mick Reeves and Pete McDermott. It was held at the AMA (Academy of Model Aviation) site at Muncie. The organisation was amazing and included a BBQ provided by the Mayor, and a huge banquet where the prizes were given.

Pete McDermott won the World Championship and the GB team won Gold. The euphoria on the journey back was unforgettable and the champagne flowed!

Vive la France

The World Championships are held bi-annually and I have been to 11. The last was held in France in 2014.

The highlight had to be on the last day when La Patrouille de France (the French equivalent to the Red Arrows) gave a spectacular display in the afternoon. All the Patrouille pilots then joined the 350 competitors, organisers and helpers for the banquet in the evening. Such is the status of the event and aeromodelling in Europe.

Romania Rocks

Romania is the venue for the 2016 F4 World Championships. It is being held near Ploiești, where WW2 historians will know about the huge air raid named 'Tidal Wave' on the oil fields.

The GB team is represented by Richard Crapp, Dave Toyer and Mick Reeves for the F4H event (we gained silver in France). Models will be boxed up and flown by DHL to the event; we will also fly to Romania. Our thanks go to the BMFA for sponsoring the team members and manager.

What Lies Ahead?

We really do not know. But all will be revealed in RC Model World soon after the event... ***RCMW***

The GB Team at the opening ceremony in France

La Patrouille de France display

The Patrouille pilots before the closing banquet

CONTACTS

www.fai.org/events
(search for Sport: Aeromodelling, Country: Romania) frmd.ro

Spirit Flight

Mark Wilkins reports on the first public flight of Old Rhinebeck Aerodrome's replica of Charles Lindberg's famous aeroplane, the Spirit of St. Louis

The Spirit replica two years ago, showing the finished fuselage and wing. The sheet metal cowling and shock absorber fairings have yet to be done. The strut fairings are made from balsa wood!

ORA's Curtiss Robin, which was used by Ken Cassens to train for flying the Spirit

The Lunkenheimer valve or 'Gascolator'. This valve contained a trap to drain away any water in the gas before it reached the engine. The funnel and tube drain directly through the floor. This valve was supplied by the Smithsonian's National Air & Space Museum, along with a tachometer, and oil pressure and oil temperature gauges

After a fitful night's sleep, he could stand it no longer. It was time; he pulled on his flying suit and descended the stairs from his hotel room into the rainy overcast morning. His silver Ryan monoplane was loaded down with fuel and when rolled to the flight line it kept sinking into the mud. It looked as if it simply couldn't fly. His name was Charles Lindberg and his plane, the Spirit of St. Louis, was his ride for what he hoped would be the first transatlantic flight in all of history. Others had tried and failed.

After thirty-three and a third hours in the air he touched down at Le Bourget airport in Paris. His success was earth-shattering and for a brief time the people of this now smaller planet were united in their affection and adoration of this slight and self-effacing aviator from Little Falls, Minnesota. His story and historic flight captivated the imaginations of countless young people and Cole Palen was one of them.

Ken Cassens flew the replica Spirit in lazy circles and performed a few low passes over Old Rhinebeck Aerodrome for about 20 minutes

The J-5 Wright 'Whirlwind' engine on the finished replica

Old Rhinebeck Replica

Cole Palen was the founder and the driving force of the Old Rhinebeck Aerodrome in Rhinebeck, New York. His dream of owning and operating a working airfield dedicated to WW1 and Golden Age aircraft became a reality in the late 1950s. His dedication to these early aircraft generated a pull that continues with ever growing appeal to the present day. His many friends and followers stated that he said he always wanted to build a replica of Lindberg's famous aircraft, which now resides in the permanent collection of the National Air & Space Museum in Washington D.C.

The genesis of the replica Spirit occurred when Cole acquired the pieces of six New Standard biplanes in the 1970s, including a complete Wright J-5 'Whirlwind' engine, the same type of engine that powered the original Spirit. With the J-5 engine, Cole got the idea to build a replica of Lindberg's iconic aircraft. Another milestone and catalyst to get the project off the ground was the acquisition of an extremely rare earth inductor compass. With the compass and engine in hand, Cole decided it was time to begin his replica Spirit.

Next, a fuselage was tack-welded together by Cole, which was then finish welded by a well meaning but ultimately incompetent welder while Cole was away. Upon his return the finished fuselage frame was found to be not airworthy and it was discarded. The project was shelved due to the demands of other aircraft at ORA and so the project suffered its first setback. An even more grievous one was to follow as Cole passed away unexpectedly in 1993.

In 1996, as a tribute to Cole's 'can do' spirit that fostered growth at ORA for so many years, the staff and Board of the Aerodrome decided to finish the work Cole had started. Kenwood Cassens, using plans drafted by Ed Morrow and found in the Ryan

Above & below: Tail details, showing the corrected rudder shape

Above & below: Undercarriage details. The wheels have their covers and are nicely laced

Anemometer mounted on top of the fuselage

Extendable periscope on the port side

The wicker seat

High mounted instrument panel

Inside the cockpit of the Spirit

Aeronautical Library, began welding a new fuselage frame. These drawings were done without the benefit of the original aircraft and as such omitted key details, like the cockpit arrangement and other important aspects that were necessary to proceed.

Ken then visited the Smithsonian's National Air & Space Museum to take measurements from Lindberg's Spirit and was graciously assisted by Chief Curator, Dr. Peter Jakab. He was lifted up to the suspended Spirit and was shocked to learn that what he had just built didn't match what he saw in the interior of the original plane. After taking copious measurements he returned to ORA to reconfigure components of his replica fuselage to more closely match the measurements and what he had learned from the original.

The Smithsonian also donated three instruments: a tachometer, and oil pressure and temperature gauges, plus a very rare 'gascolator' or Lunkenheimer valve, which was used to separate any water found in the fuel and drain it away through a funnel and tube through the bottom of the fuselage. They also provided fifty 8" x 10" black and white photographs that showed the original Spirit being built.

New Ribs Please

To compound matters the wings that had been started by Cole's friend Andy Keefe, and which had been waiting patiently in one of ORA's storage buildings caused concern. In 2001 they were inspected and were found to be in an okay condition but not in great shape due to the ravages of New York winters. It was decided that the wings needed to be completely disassembled to better assess the condition of the components and to remove the old varnish.

Three out of four of the main spars made of Sitka Spruce were salvageable, as were many of the main sections of the ribs. However twenty new ribs had to be fabricated and such was the efficiency of the production of these ribs that it was decided to make all new ribs, 51 in total. The nose ribs were made from plywood – one modern concession! Scott and Bob Mackenzie, Bob Johnston, and the late Larry Potter undertook this work.

After all the wing work was completed the Spirit had an almost brand new wing. Many companies across the United States donated services or goods to help the Spirit project, everything from powder coating of the tube steel fuselage and tail feathers, to wood, rigging materials, rubber mounts for the engine, the list goes on! The Dacron covering and paint for the Spirit were generously supplied by Polyfiber in California.

Another deviation from the original was the size of the fuel tank, which is a 55 gallon versus the original 450 gallon combination of fuel tanks in the fuselage and wings. The replica Spirit came in at 50 pounds over the weight of the original aircraft – 2180 lb gross.

As the Spirit was nearing completion Ken began training for flying an aeroplane with poor forward visibility, with only two small square windows on either side of the plane plus a telescoping periscope that was found to be only nominally effective. To do this he used the Aerodrome's Curtiss Robin and placed a piece of cardboard in front of him to block his forward vision. A second pilot was onboard to prevent any unexpected mishaps.

December 5th, 2015 arrived and it was time to test fly the new aircraft. Overall Ken stated that the aircraft exceeded his expectations. Minor tweaks were made, including removing about 200 lb of ballast in the nose to get the aircraft to balance according to the calculated Centre of Gravity. After several more test flights finishing details included the laced wheel covers and a corrected rudder shape.

Photographers, ORA staff and board members, and various costumed characters escort the replica to the centre of the field

Switches off! The prop is rotated to starting position

Ken taxis the Spirit to the end of the runway. What thoughts must have been going through his head?

The Spirit is airborne! The engine can barely be heard over the applause and cheers from the crowd

Bringing the Spirit in for a nice landing. Like Lindbergh, Ken had to side-slip the Spirit before landing to see out one of the two small windows!

Ken and the Spirit just before take-off

Going Public

Saturday, May 21st, 2016 was chosen as the first public flight of the Spirit. When it was announced, I cleared my schedule for that weekend and circled it in red on my calendar. I wasn't going to miss this!

Like so many others, Lindbergh's story and historic flight had captivated me since youth. I grew up around Washington D.C. and would spend many a weekend gazing at the original Spirit and imagining the lone aviator, tired and uncertain, making his way across the vast expanse of the foam-scudded Atlantic. Over the years I had followed ORA's project, visiting on various occasions to see the aircraft's progress, so I certainly didn't want to miss this special moment. The day was overcast, just like the morning of the original Spirit's flight, and there were about a thousand spectators or so – just like at Roosevelt field!

After an afternoon of talking with various individuals about the project, including a very nice interview with Ken Cassens, 5 o'clock finally arrived and the Spirit was pulled and pushed by an army of ORA staff and volunteers to the centre of the field. The crowds faded away and the wheels were chocked. The propeller was turned for several revolutions, finally pausing at about 10 o'clock. A paper sack was handed to Ken, just as Lindbergh had taken his sandwiches; this small detail, along with a Saint Christopher's medal, completed the items found in the cockpit. The engine caught and roared to life; the sound was tremendous, and the crowd cheered and added their voice to the music of the J-5 idling smoothly.

The chocks were finally pulled and Ken deftly taxied the Spirit down to the far end of the runway and down the little hill that momentarily obscured it from view. The top wing emerged above the runway, then the whole plane came into view, tail up and heading straight down the airstrip. Cheers again emanated from the crowd, and if you didn't have goosebumps by now you didn't have a pulse!

As the sleek silver monoplane lifted gently from its earthly constraints it carried with it the spirits of so many who had dreamed big and had faith in the project. Importantly, it wasn't done alone. Key people at the right time helped craft this success story, but they all believed. And the believing made everything else possible.

Charles Lindbergh once referred to himself, his plane, his backers and those at Ryan aircraft who built the original Spirit as 'we' – now we have a few more names to add to that list.

RCMW

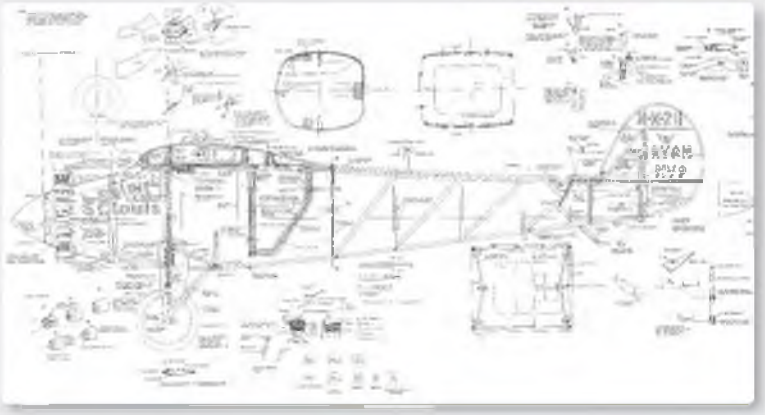
Continued overleaf

The Spirit taxiing after landing. Full up elevator is used to push down on that tail-skid to slow her down

A crowd gathers around the pilot after the Spirit is brought back to the ORA hangars

BUILD YOUR OWN SPIRIT!

Charles Lindberg's solo flight across the Atlantic in The Spirit of St Louis in 1927 was the turning point for commercial aviation and the Ryan ST monoplane has become one of the most famous aircraft of all time. For this Traplet plan (MW2360) the design has been replicated by Brian Rice to make a 92.5 inch (2350 mm) wingspan R/C model for 4 – 5 function radio and a .90 – 1.20 four-stroke engine, or suitable alternative electric power (not described).



BUILD CATEGORY: Intermediate-Advanced
PLAN NUMBER: MW2360
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Miles M.14 Magister
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Scale 1:4

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Designed by Harbinger MK2
Plan (MW2505) £23.50
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Wingspan 15" / 4570mm
Weight 18lb / 8.8kg

FAUVEL AV48 MW3392 ●●●

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Plan (MW3392) £32.50
Lasercut Woodpack (WP3392) £88.99
Canopy (CA3392CY) £22.50
FULL SET (SET3392) £129.59
Wingspan 158.5" / 4m
Scale 1:4
Radio 3-4 Function

SLINGSBY T-45 SWALLOW MW2320 ●●●

Designed by Tony Slocombe
Plan (MW2320) £22.50
Lasercut Woodpack (WP2320) £100.99
FULL SET (SET2320) £104.97
Wingspan 129" / 3280mm
Radio 4 Function
Weight 10lb 8oz / 4.7kg

HW-4 FLAMINGO MW3463 ●●●

Designed by Chris Williams
Plan (MW3463) £32.50
Lasercut (Woodpack WP3463) £141.99
Canopy (CA3463CY) £28.50
FULL SET (SET3463) £170.82
Wingspan 196" / 5 metres
Radio 4 Function

SLINGSBY T-51 DART 17R MW3178 ●●●

Designed by Chris Williams
Plan (MW3178) £23.50
Canopy (CA3178CY) £22.50
FULL SET (SET3178) £41.40
Wingspan 190" / 4.82m
Length 85" / 2.160m
Radio 5-6 Function

GOPPINGEN GO-1 WOLF MW3465 ●●●

Designed by Vic Steel
Plan (MW3465) £32.50
Lasercut Woodpack (WP3465) £95.99
FULL SET (SET3465) £109.22
Wingspan 138" / 3.5m
Radio 3 Function

PZL-SWIDNIK PW-5 SMYK MW3150 ●●●

Designed by Vic Steel
Plan (MW3150) £22.50
Canopy (CA3150CY) £22.50
FULL SET (SET3150) £40.50
Wingspan 157.5" / 4000mm
Radio 4-5 Function

SG.1 SAILPLANE MW3500 ●●●

Designed by Vic Steel
Plan (MW3500) £32.50
Canopy (CA3500CY) £22.50
FULL SET (SET3500) £49.50
Weight 3kg
Scale 1:4
Wingspan 137" / 3.5m

SLINGSBY T-41 SKYLARK 2 MW3274 ●●

Designed by Keith Humber
Plan (MW3274) £22.50
Lasercut Woodpack (WP3274) £60.99
Canopy (CA3274CY) £8.50
FULL SET (SET3274) £78.19
Wingspan 109" / 2.75m
Length 53" / 1345mm
Scale 1:5.3

R1 GHEPPIO MW3594 ●●●

Designed by Vic Steel
Plan MW3594 £26.50
Canopy CA3594CY £20.50
FULL SET SET3594 £42.30
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Legnth 2.2m
Radio Functions 5

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The Sport Channel

Gray's latest selection of sport and nostalgic modelling topics includes more models from Dave Platt and George Stringwell, plus a fleet of Airtronic soarers

"What you call a hero, I call just doing my job..." (Anon)

This Month's Wise Words

One very pleasing outcome of our recent items on legendary modelling hero Dave Platt has been the amount of correspondence we've received about 'Mr. Scale', as he's become affectionately known.

Long-term fans of Dave's work always remark on the diversity of his output, whether published or kitted. In fact, just recently, while looking for some information in a pile of 1950s and 60s magazines, I was struck by the number of small plan features and centre-fold full size plans that I stumbled across that were credited to Dave Platt.

Ever prolific, Dave continues to build and fly everything imaginable and regularly attends meetings and competitions. Reader Graham Foster wrote to tells us of a sighting of Dave in action: *"Your mention of Dave Platt in the May edition reminded me that we were honoured by a visit from the great man at our 2015 Antique models meeting. I live in Florida in the winter and belong to the Charlotte Radio Control Society.*

Dave turned up at our meeting last year with some of his friends from the East Coast. He brought several of his immaculate models and flew them very well despite a strong wind, including using a vintage reed set!"

There's nothing quite like sharing a flying field with a modelling 'great'. I'm fortunate enough to belong to a club that's enjoyed many visits from 'big name' modelling figures over the decades and although I remain incurably starstruck in many cases, it's been a great bonus to form friendships with some of my own heroes.

If you have any anecdotes about modelling 'celebs' at your site, please tell us about it.

The celebrated Dave Platt appears at the Charlotte Radio Control Society's Antique Models meeting in Florida. Check out Dave's well known Keil Kraft 'Fleetwing' in the foreground and that cool reed Tx!

All Time Low-Winger

While I would never presume to claim that this modest column exerts any influence out there in the 'real world', not long after our recent item on George Stringwell's stylish workshop, an acquaintance in the garden centre trade mentioned that Continental-style mini chalets were enjoying unexpected popularity as hobby sheds! He added, *"And I think some of you model aeroplane people seem to like them too..."* Well, even if we're only reflecting a minor social trend, it's good enough for me!

George has been in contact again and he writes: *"My wife, Alison was quite amused about Kevin's comment in his editorial about me keeping a neat workshop, as mine had just reached the peak of untidiness which arrives at the completion of each new model! She said, "Ah, he should see it now!" It did give me the incentive to do a proper clear up before starting the next project though."*

The most recent output from George is a subject that we've covered on several occasions in the past and that's always remembered with fondness by readers who were active in the Single Channel era.

It's also an example of the ingenuity and problem solving shown by contemporary designers. Unlike today, when it's possible to create perfect scaled-down and fully functional versions of any larger model, fifty years ago a modeller wanting to miniaturise, say, one of the 'full house' aerobatic competition models of the day could find their scope limited.

The smallest R/C equipment of the day was some form of single channel, where miniaturisation could be more readily achieved. But to reinterpret 'multi' designs – fast neutrally stable models that could be flown on one channel (usually 'bang-bang' rudder) – was a challenge that called for a real aeromodelling 'head'.

In fact, around this time, an attractive low-wing single channel kit model gained notoriety as being difficult, if not impossible to fly rudder only. An exasperated kit reviewer admitted defeat after exhausting his considerable skills on it. In more recent times micro proportional gear with more channels transformed it into a delightful proposition.

George, though, picked a classic from this ambitious area of S/C and goes on to explain: *"This one represents another nostalgia trip! I built my first Swannee early in 1966, just as soon as the plan was given 'free' with the February Aeromodeller.*

I was immediately captivated by the lines of John Bowmer's lovely design, a sort of 'mini-Orion', and rapidly built one for an ex-contest F/F Cox TD 049, equipping it with a MacGregor Minimac super regen Rx with a home built switcher driving a Mighty Midget 'servo' for pulse rudder only control.

It was a delight to fly, extremely controllable and agile despite only having rudder control, and I flew it for two years until it literally fell apart. Fast forward to 1991; we had just suffered a serious house fire and had to spend four months in rented accommodation.

Most models were write-offs with smoke damage and as a therapeutic exercise I built another Swannee, still TD 049 powered, but this time with rudder and elevator control from what passed, in 1991, as lightweight proportional gear.

This model wasn't flown much with the TD – too noisy – and was converted to electric with a geared Speed 400 and 7-cell AR500 NiCad battery. In this guise it flew OK but suffered from being too heavy (19 ounces) and somewhat underpowered.

Fast forward again to April 2016 and since the design was now 50 years old and thus qualified for the latest build off on the RC Groups vintage forum, I was contemplating building a third. Alison tipped the balance as she had happy memories of the first one since I was flying it at the time we met in the spring of 1966 (she is just a romantic really!) and urged me to build another.

So here is the new one, R/E/T controls and powered by a 150 watt BRC outrunner propped down to deliver around 100 watts. Thanks to light radio gear the all up weight is 14.5 ounces, so there should be no shortage of performance with this one.

With an 850 2S LiPo the C of G has come out exactly right and I am repeating or surpassing the flying fun I had in 1966. After a few trimming tweaks (more down and right thrust, and moving the C of G back) the Swannee is now into double figures of flights and is performing perfectly.

The 850 LiPo gives an easy 9 or 10 minutes of mixed flying, as I am now running a 7" x 3.5" GWS prop at only about 60 amps, which is plenty; handling is delightful, just as I remember it. The only difference is that this one took six weeks to build, whereas the 1966 one took two – but we all slow down as we get older, I guess! As usual, the finish is tissue and dope, lightweight Modelspan from my hoarded stock this time, and I found a really nice abstract swan graphic on the Internet which I could execute in coloured tissue."

Another eye-catching rendering of an all time favourite from George's chalet production line – beautiful work! The Swannee's one of those designs I used to ogle when I had my first S/C radio, but felt too intimidated to tackle! If readers would like a copy of the plan, drop me an email at the address at the end of the column.

Latest from George Stringwell in France is the 'Swannee' by John Bowmer from 1966. Clever design work produced a slick looking low-winger that resembled large 'pattern ships', yet still flew on single channel!

George is a long time Swannee fan; his current version is discreetly upgraded to electric power and rudder/elevator/throttle control. And according to the graphic on the wing, becomes the 'Swannee-E'!

Aquila Family Album

Several issue ago, we covered the Airtronics 'Aquila', a thermal soarer of the mid-1970s. The Aquila, its variants and the whole range of competitive designs by its creator, the late Lee Renaud, still have a strong following today.

Reader, Mike McIntyre of Illinois, has a unique relationship with the Airtronics range, as he was a friend of Lee Renaud and had first-hand experience of the development processes of these time-honoured designs and actually building pre-production prototypes.

Mike agreed to take some fleet shots of his Airtronics collection and wrote: *"I took some time off to gather up most of my collection of Airtronics designs. The day I took the photos, there was a 25 mph wind and a snow storm on the way, which came the next day!"*

We've arranged Mike's images to fit the available space here and he supplies the key:

"The top of photo 'A' is the collection of Aquilas. From left to right/front to back:
1) All white prototype Aquila.
2) Red with blue/white tips, prototype Aqulia Grande and a set of Skip Miller modification wings.
3) Aquila with Miller modified wings
4) Prototype of the Aquila XL (1975).

Bottom of photo 'A', the Olympics:
1) The original Olympic 99 red wing/white spoilers
2) The prototype Oly II – red wings/red tail/ white fuselage.
3) First production model of the Oly II – just behind the Olympic 99 (red/white/blue in colour – used for the photo on the box).
4) All white Oly II – has Miller mod wing.

Main image, photo 'B', the high performance gliders of Airtronics:
1) Prototype Sagitta 600 – red wings/red tail/ white fuselage.
2) Prototype Cumic (has rudder, elevator and spoilers) – Orange wings and tail/white fuselage. Cumic Plus had flaps and ailerons.
3) Prototype of Whisper – white mains and tips, red tip fuselage and tail, blue canopy.
4) Last one in the back is the prototype Legend – white mains, red tips, silver canopy.

Last photos alongside are of the Buteo. This prototype was never kitted. It was the one of two of Lee Renaud's last designs before he passed away. The orange one is the glider version and the other is the electric version. It is 650 square inches in wing area. Uses the same type of wing as the Oly 650 that Lee designed.

Well, that is my collection of Airtronics designs. I don't know but I think I covered them all? The ones I have had anyway.

I have to thank Lee Renaud for his great designs, and Dan Pruss, for talking to Lee to let us build and fly them."

Thanks to Mike for sharing with us his unique and historic fleet. I've no doubt that it will bring in some mail. And can I remind readers that I can supply downloadable plans of the Aquila and Aquila Grande if you drop me an email.

Mike McIntyre from Illinois USA owns this historic fleet of Lee Renaud designed Airtronic models. Includes pre-production prototypes. Aquilas and Olympics assembled here

Mike McIntyre's high performance Renaud collection, plus the unreleased 'Buteos'

Surf's Up!

Finally, another of those great old technology magazine covers that promised so much from the scientific and engineering progress in the near future.

Regular correspondent, Simon Rogers of Warwickshire sent in this startling image from 1930 of what I guess would be a forerunner of parascending and kite surfing, with a board and rudimentary wing towed by a speedboat.

The surfer-girl pilot seems to be thoroughly enjoying it, despite the fact that her craft would probably have a few alarming aerodynamic 'issues' to cope with! But there again, these mags were as much about enthusiasm and creative energy as they were about sound science. We love 'em!

Contributions, please to: The Sport Channel, c/o the Traplet Publications address. All email correspondence to: gray_rcmag@hotmail.com **RCMW**

Spectacular conception of aerial watersport from 1930 edition of Popular Mechanics mag. Looks a whole load of fun, but would this surfboard/kite actually work in this configuration? Your thoughts, please. (Copyright/acknowledgement: Popular Mechanics)

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INDOOR

1st Oct, 5th Nov, 3rd Dec '16
Fun Flying at Potters Bar, at Furzefield Sports Centre, Mutton Lane, Potters Bar, Herts. EN6 3BW. From 6 pm until 10 pm, flyers £9, spectators £2. Small rubber free flight and small electric models, wingspan will be limited to 20". All enquiries to Mike Quille, Tel: 020 8500 3549,
Email: mp.quille@live.co.uk

8th Oct, 12th Nov, 10th Dec
North London MFC Indoor R/C Meetings, at Furzefield Sports Centre, Potters Bar, Herts. EN6 3BW (Junction 24/M25), 6 pm – 10 pm. All up weight limit for fixed wing 225 g, 36 inch span, Helicopters 400 g. BMFA insurance required. Admission: flyers £9, spectators £2.50. For more information contact Peter Elliott on 01707 336982

GENERAL

21st Aug '16
Deeside M.A.C. Open Event, Broken Bank flying site off the A548 Flintshire. Start time 9 am. All flyers must be B.M.F.A. members be insured with proof of insurance. Max weight of models 30 kg. Models over 20 kg to have C.A.A./L.M.A certification. Models over 7 kg will require a B certificate. The event is a family fun day for the following classes: Fixed wing, I.C./Electric, Turbine. Helicopter, IC/Electric, Turbine. On site toilet, barbeque and a 230 V AC charging facility, and the site has a take-off strip suitable for large models. The gates will be open from 8.30 am and locked at 10.30 am, however a phone number will displayed on the gate for latecomers. Contact: George Robson for further information and directions. Email: zen219506@zen.co.uk,
Tel: 01352761814 or check out the website at www.deesidemac.co.uk

3rd & 4th Sep '16
LMA Swap Meet, at the Much Marcle show, this popular addition to the flying programme does not need to be booked but tables will be allocated on a first come first served basis. Table will cost £10 for 2 days or part thereof. All money raised will be donated to the Vulcan charity. Further details can be obtained from Steve Ogden 01782 853883,
Email: topgun@modelpilot.co.uk

4th Sep '16
GBR/CAA F3A League competition, Grimsby. All schedules. See gbrcaa.org – then forum 'Competition News' for details and 'Competition Entry Form' for fees and payment. Visitors welcome but please contact Contest Director, Dave Tofton on 07890 490847 for details

4th Sept '16
Salisbury Model Flying Club Scale Day, open to all clubs, for more information check out www.salisburymodelflyingclub.co.uk, or email: spikespencer707@btinternet.com

4th Sep '16
White Sheet Scale Fly-In, to be held at the White Sheet Club slopes near Mere, Somerset (back up date 18th Sept). No competition, just a friendly fly-in. Proof of insurance, please. Further information from: c_williams30 @sky.com. Go-No-Go decision the evening before on the WS and SSUK forums, www.whitesheet.org.uk, scalesoaring.co.uk

9th to 11th Sep '16
F3A Triple Crown Invitational team competition: England, Ireland, Scotland. Venue: Enniscorthy, Co Wexford, Ireland. Visitors welcome but please contact Competition Secretary, Adrian Harrison on 07976 244004 for details

10th & 11th Sep '16
PSSA 'A-4 Skyhawk Mass Build' Fly-In event, The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for 10 am each day. Open to non-PSSA members. Proof of insurance required. For more information contact Phil Cooke on 07772 224719 or
Email: webmaster@pssaonline.co.uk

10th & 11th Sep '16
Southern Model Arts & Crafts Show, at Headcorn Aerodrome, Kent, will feature a stunning array of model aircraft, helicopters, ships, tank and other vehicles. A full range of other activities, including the popular Bring & Buy stand, and a showground packed with traders makes this a must visit event for anyone with an interest in this fascinating hobby whether a professional or a beginner. Entry: £12 adult, £10 child, under 5's Free, family (2 adults, 2 children) £35. For more details check out the website at www.headcornevents.co.uk

11th Sep '16
North London MFC Electric Day, at Warren Lane, Baldock, Herts SG7 6RR. Flying from 10 am. BBQ and drinks available. All pilots need BMFA A certificate or LMA proficiency, those flying 7 kg models need BMFA B certificate or LMA proficiency. Proof of insurance required. No noisy models please. £5 pilots entry fee.
Contact Maurice Northcott on 07866 105721 or
Email: mail@mpnltd.fsnet.co.uk

11th Sep '16
Basingstoke Model Aero Club Electric Fly-In, flying between 10 am and 5 pm at our excellent grass strip. Gates open at 9 am for registration with a pilot briefing at 9.30 am. Relevant BMA A-cert minimum and proof of insurance to be shown at registration. Models over 7 kg require prior registration via Chris@bmacuk.co.uk. Food, drinks, raffle and trophies available, £5 to fly. Please note that we are not open to the general public but pilots may bring guests. More information, Tony Lee, tony.v.lee@btinternet.com, website: bmacuk.co.uk

17th Sep '16
GBR/CAA F3A League competition, Skelbrooke. All schedules. See gbrcaa.org – then forum 'Competition News' for details and 'Competition Entry Form' for fees and payment. Visitors welcome but please contact Contest Director Bob Rowland on 07969 456441 for details

24th Sep '16
Huddersfield & District Model Aero Club Swap Meet, at Shepley Methodist Church Hall, Penistone Road, Shepley, Nr. Huddersfield, West Yorkshire HD8 8DB. The Church Hall is situated on the A629, approximately 1/2 mile North of Sovereign crossroads (A629 and A635), on the outskirts of Shepley village. 09.00-12.00. Entrance fee £3, Tables FREE to sellers, 20 tables, plus bring your own camping tables. No table bookings. Parking for 30+ cars to rear of Church Hall. Refreshments available: Tea, coffee, bacon sandwiches!
Contact: 01226 766636,
mobile (24th Sept. ONLY) 07790 647827

1st & 2nd Oct '16
Festival of Flight Spectacular, at Ragley Hall, Alcester, Warwickshire B49 5NJ. Brand new, two-day model spectacular with fantastic night show Saturday evening. As well as top aircraft displays, fantastic trade support and on site camping, there will be model boats, cars, prizes and much more! Entry: £12.00 adult, £6.00 child, £28.00 family. Camping £60 pre booked. Please visit the Weston Park Show website for more details, or contact Steve Bishop on Mobile 07758 895068

1st & 2nd Oct '16
GBR/CAA Championships, Hurley. All schedules. See gbrcaa.org – then forum 'Competition News' for details and 'Competition Entry Form' for fees and payment. Visitors welcome but please contact Contest Director Adrian Harrison on 07976 244004 for details

2nd Oct '16
North London MFC Large Model Day, at Warren Lane, Baldock, Herts SG7 6RR. Flying from 10 am. BBQ and drinks available. All pilots need BMFA A certificate or LMA proficiency, those flying >7 kg models need BMFA B certificate or LMA proficiency. Proof of insurance required. No noisy models please. £5 pilots entry fee.
Contact Maurice Northcott on 07866 105721 or
Email: mail@mpnltd.fsnet.co.uk

2nd Oct '16
Wet Wings MFC 3rd Annual Splash-In, 9.30 am to 5.30 pm at Carr Mill Dam, Garswood old road, St. Helens, Merseyside WA11 7LZ. Electric and I.C. water planes fun-fly (I.C. subject to 76 db limit). Pilots pre-booking fee £5, on the day £7.50, spectators free. Light refreshments, tea, coffee etc. and camping available at extra cost. There is also a Premier Inn located on the edge of the lake, please ask for details. Contact Christine Evans, WWMFC secretary at wetwingsmfc@hotmail.com for more info

2nd Oct '16
Autumn Mega Swap Meet, at the Meir Community Centre, Meir Stoke-on-Trent, Staffs ST3 7DY. Tables £7, Entry £2. Doors open 9.30 am for sellers and 10 am for buyers. To book, Tel: 01782 853883 or Email: topgun@modelpilot.co.uk

8th & 9th Oct '16
PSSA 'Fly for Fun' Event, The Great Orme, Llandudno, North Wales. Meet at the 'Tank Track' car park for 10 am each day. Open to non-PSSA members. Proof of insurance required. For more information contact Phil Cooke on 07772 224719 or Email: webmaster@pssaonline.co.uk

15th Oct '16
Salisbury Model Flying Club Autumn Swap Meet, at Alderbury Village Hall, for more information check out www.salisburymodelflyingclub.co.uk, or email: spikespencer707@btinternet.com

20th Nov '16
Southern Counties Swap Meet, at Mountbatten School, Romsey, Hampshire SO51 5SY. Admission only £4, under 16s free. Tables £8 including one admission. Sellers from 8.30 am, buyers 9 am to noon. More details at hmfa.bmfa.org/ To pre-book tables only call Mike Stokes on 07702 742647

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Classic aerobatics rare kit Mini K Zero 40 from Bertolani (1970). £150 & shipping. Pictures available: airxav@hotmail.com. Switzerland.

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Laser 150 or similar size 4 stroke model engine. Must be in good working order. Please ring Richard on 01535 663187. Yorkshire

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MODEL WORLD Next Issue

DON'T MISS OUR OCTOBER 2016 ISSUE!

Next month's free plan will allow you to construct this simple 40" span Depron and balsa pylon racer designed by Graham Dorschell for a 1500 KV outrunner and three function R/C.
It's a quick build airframe that features a folded wing, and which can be built using a minimal set of tools. Pole Dancer is very fast and stable, and is also a very strong, lightweight design. Although not recommended for low-time pilots it is an easily constructed plane for anyone starting to build model aircraft and is also a fairly cheap to produce pylon racer. It's ideal for a club one-model event!

Vaughn Entwistle accompanies scale sailplane guru Pat Teakle to the top of Crook Peak in the Mendips to hear Pat recount an epic cross-country glider flight that he made back in 1984. Pat Teakle is a well-known name in UK soaring circles due to the line of scale sailplane kits that he produced for many years, and which are still available from Cliff Evans.
The topography of Crook Peak lends itself to long, ridge-running flights and the West Mendip Soaring Association has been hosting cross-country (XC) competitions since the 1970s. But in 1984, Pat recorded a flight that soon became the stuff of legend. You can read all about this epic flight, and get an impression of the distances involved, from Vaughn's entertaining article in the October issue of RCMW.

OCTOBER 2016 ISSUE ON SALE THURSDAY 15TH SEPTEMBER

In mid-June, Frank Skilbeck assembled a team from the Newent & District MAC to take part in an enjoyable inter-club Scrapheap Challenge organised by the nearby Gloucester Model Flying Club. Model planes made from scrap material (mostly Correx!) had to fly for two minutes. Those that completed this task were then judged on their aerobatic ability to do a loop, stall turn and roll. Building tables were provided, along with rolls of gaffer tape, sheets of Correx and a generator to run a hot glue gun from. Seen here are 'The Gurrminators' from Gloucester with their MDS40 powered Blue Baron triplane – which was soon to become a biplane!

PLUS...

More features, columns and reviews from across the complete spectrum of the R/C model-flying hobby

All contents are subject to change without notice

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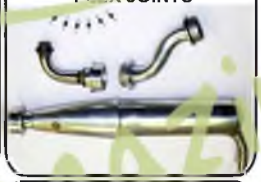

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WOT 4 MK2

BY CHRIS FOSS

I/C Power Pack Installation Kit *

EP Power Pack Installation Kit *

The ever popular WOT 4 ARTF has been given a makeover for 2016, the primary aim being to make it suitable for either I/C or electric power. A large hatch with a spring loaded locking pin has been installed in front of the wing to allow access for flight battery changes. Alternatively it also makes access for fuel tank and receiver battery installation simpler. A ply battery mount/tray system is supplied, which makes battery changes quick and easy, yet ensures that the battery is properly secured. You just purchase the option pack that suits your chosen power source.

To complete the new package the model adopts a new colour scheme in common with the smaller foam version, this being bright and attractive whilst aiding orientation.

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