Newsletter

April 2017

The times they are a-changing. The sheep will be gone very shortly and regrettably for the Club, the drone testing is about to cease at our field. The sheep have been an absolute pain and caused some of the members a lot of work repairing the fences and trying to keep them off our field. The drone guys were however a great asset to the Club and thanks to Mark Tomlinson and Dave Swarbrick for all their work since they brought a very welcome steady stream of income into the Club's coffers.

First of all an apology. I said that Dave Swarbrick's Javelin was around half scale - it's more like a one fifth scale - my apologies. Dave normally proof reads these newsletters before they go out - he was away at the time so the error was not picked up.

I decided that since the weather should be settling down as we move into more summery weather that I would get the Diamond Demon vintage model ready for flight and here it is.

Soonever I can get down to the field on a suitable day, I'll test glide it and then start up that Mills 1.3cc diesel and hand launch it into the blue yonder. The evocative smell of that diesel fuel lingering in the air brings back so many happy memories of modelling back in the fifties.

I did get to fly my trusty electric Spacewalker for a couple of flights but the wind was bouncing it about something chronic. I only stayed at the field a short time - I simply can't stand on my leg for any period without a lot of pain - the weird thing is that I can now get on my electric bike and cycle over 12 miles without affecting my knee at all (and mine is the later type where you have to pedal all of the time to make that motor assist). It's only 250 watts running on 36 volts and yet it can move me along at up to 15 MPH.

April 2017

A VIEW FROM THE HEDGE. (By Will Sparrow)

Greetings fellow aviation enthusiasts! Yes, the equinox is behind us, the clocks have sprung forward (more of a digital leap, these days…WOO) and most daffodils have retreated into their bulbs. For the true model aviator, however, retreating is the last thing that fills his thoughts… You've all waited so long, and now it is here at last; the flying season is upon us!

The last weekend in March delivered some splendid flying conditions. The Saturday was nothing short of ideal, even if the woolly bleaters had made a bit of a mess of the hallowed turf. I was surprised that, given the weather conditions, so few of you turned out to enjoy them. Still, enjoy them you did, and a good few flights were made. The following day was Mothering Sunday, but family duties did not stop some of you turning out for your aviation fix. Now, I'm used to seeing modellers arrive, rig their models and take to the skies. This Sunday, however, had rather a different pre-flight routine. The field echoed to cries of "come-by" and "away" as one determined early-arriver attempted to shoo the woolly bleaters from the runway. The electric fence was not working and was in tatters in many places. My mate, Jim Sparrow, told me that these crafty sheep surround one of their number and shove him/her into the electric fence, ignoring the electrified bleating and using him/her as a woolly battering ram (must be a "he", then – WOO) to demolish the electric fence (… a sort of sacrificial lamb!). Eventually, the modellers triumphed and the sheep were driven into the field behind my hedge and flying was able to take place. A nice little electric model, that I had seen flying well the previous day, was all set to repeat the experience but, just as it was about to break ground, the small left wheel fell into a huge hoof crater and the poor model did a sort of handbrake turn and was flung onto its back. The motor was ripped from its mounting and the 15 X 8 prop was reduced to a 2 X 8. There was a bit of superficial damage to the cowl too. There was nothing that couldn't be fixed but I could tell that the owner was not best pleased! For the amount of money that you pay to enjoy your hobby you really should not have to put up with livestock on the field – you've enough to contend with a hedge-full of hard-to-please sparrows! Later arrivals, having been made aware of the sheep-induced crash, were initially reluctant to have a go

A View from the Hedge Continued/...

themselves, but have a go they did and successfully, too. I suppose that when the hoof crater has your name on it…

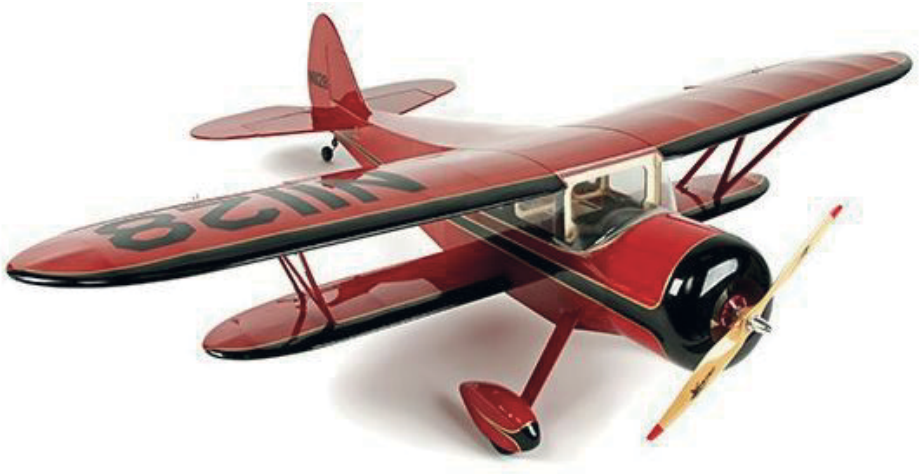
As April dawned, reluctant as ever to reveal her true beauty (steady on there, Will! – JS), the only member to venture forth was your Swedish member, Loof Lirpa. The strangeness of foreign names always amazes me but this was as naught compared to the new, self-designed model he had brought along to test fly. How does a twin-engined triplane complete with retracting undercarriage grab you? I'm pleased to say that all went to plan and the well-satisfied owner promised himself that he would bring the model out at the same time next year. The following day was a Sunday, blessed with good flying conditions and only marred by a single woolly bleater on the flying strip. After a slow start, the car park began to fill and a good amount of model aviation took place. I had seen most of the models before, and all performed well; even that nice Decathlon, which I saw a few weeks ago, performed with no hint of a tip stall and only suffered from a touch of loose propeller syndrome. The same modeller also had a large Extra (?) to exercise. The engine fired up easily but decided to quit just as the model was climbing out. An out-field landing was the only option; I was really impressed as, with great athleticism, the owner sprinted to the edge of the strip, so as to keep the model in sight, and pulled off a soft landing in the valley of sin. The model was undamaged and flew again soon afterwards. I overheard the owner telling club mates that the model had "Randomly Selectable Thrust Vectoring" (RSTV). "Don't you mean that the engine is loose and about to fall out? Why are you holding that big bolt in your hand?", I heard one modeller say. It just goes to show what a sharp lot you modellers are! Other new models on the field included a little PT19, converted from a free flight kit to radio, and, at the other end of the spectrum, a large, beautiful, red and black aerobatic biplane. This model was to have its second only flight – I can't think how I missed the first one. The huge and lusty engine was fired up and the model taxied out to embrace its destiny… the model was a little out of trim but a few gentle circuits (never before seen from this member!) soon had things sorted out and the model performed a feather-light landing on the strip: a ripple of applause rang out from the pits. I look forward to viewing this model again; it shows great promise.

The following weekend, the weather gods smiled yet again – that's three weekends in a row: something of a record! The woolly peril had, once again, demolished the electric fence, but a couple of sturdy members saw them off in short order. The grass had been cut during the week and the Saturday produced a good turnout of modellers. That beautiful red and

A View from the Hedge Continued/...

black aerobatic biplane that I had witnessed being test flown a week or so ago, put in another appearance and was flown… wait for it… in an elegant and, to many hedge-dwellers, a most pleasing manner! Has this member at last come over from the dark side? Time will tell. Before the sheep finally leave us, and the electric fence is but a distant memory, you might be amused by a couple of incidents where the electric fence played a part, albeit in a passive role. The first of these involved a member attempting a landing from a weird direction and managing to fly his model between the two cables of the fence (they are only a foot (30 cms) apart) to land unscathed on the other side. The second incident involved a much bigger model – a large jet. The model was fired up and whooshed towards the eastern end of the strip at a fair old lick. I've seen this done before and had mentally prepared myself for the hot blast up my twig, as the model readied itself to swing through 180 degrees, ready to take off… except on this day the steering/brakes failed and no 180 degree swing took place. The electric fence came off second best!

WS



If this model looks as good in real life as it does in the pictures, then it's an absolute snip at £129.58.

To me, this design is just drop dead gorgeous. It probably wouldn't be all that aerobatic but it is so very beautiful.

I saw this on the Hobby King website - Waco 1300 span - it goes on my wanted list.

My New Decathlon

Article & Pictures by Justin Goldstone

So, the kit is by Seagull models and is the 120 version. I think there are also two smaller versions (46 & 90 sizes).
I had been looking for some time for a suitable airframe to home my OS 22 GT petrol engine which was sadly salvaged from my much loved Great Planes Venus 2 following what Tena would describe as "an oops moment"

Whilst trawling the website I came across this model which I have always loved the look of and convinced myself that I deserved. Designed around a 1.20 2 stroke glow engine I was a bit sceptical that my heavier less powerful petrol engine would be sufficient for the job but knowing that these engines have more torque and are happy throwing bigger props I was relatively sure that things would be ok.

All the on board electrics from the Venus were also suitable for use in this model and also survived the unscheduled arrival without any damage. The servos used on all the control surfaces are Spektrum DS 821 digitals which have plenty enough power for the job. (I don't believe in using over powerful servos which could potentially tear off flying or control surface and dubiously built ARTFs') but that's just me.

Power for the receiver come from a 2s lifePO4 2100mah battery which I now use on all my I.C. models. These produce 6.6volts and have similar properties to lipo's without the need

My New Decathlon

April 2017

Article & Pictures by Justin Goldstone

for a voltage regulator as there is a slight voltage drop caused by the resistance of wires. I realise that this point could be open to much opinion, but I now have these batteries fitted in many models and have, as yet, not experienced any issues.(Spektrum receivers will happily operate on 3-9 volts, its the servos that you have to be careful with). I also have a second of these batteries mounted on board to power the ignition unit which is wired via an OPTO kill switch which I think are great for use on petrols.

Any way, construction was very straight forward as you would expect from an ARTF, apart from a little bit of tweaking which was needed in order to get the tailplane to seat nicely against the fuselage, and also a rather strange instruction to drill two 5mm holes straight through both wing panels and the aluminium wing tube at a point about 300mm out from the fuselage. After a little investigation I worked out that there aren't any plugs inside the wing tubes and the only reason for these bolts is to prevent the wing bracing tube from migrating left or right inside the wing. This seems a ridiculous solution to a problem that could be solved by simply plugging the wing tubes during the construction process. I chose to ignore this and instead have elected to drill and tap a small hole in the centre of the wing tube which accepts a small screw inside the fuselage via the cardboard tube that runs between fuselage sides. Having spoken to and taken advice from a few respected members, I have also chosen to brace this cardboard with some heavy duty plywood strengtheners to prevent any flexing of the wing brace which could lead to the aluminium tube being weakened by the small hole.

All ready to go and all I needed to do was wait and wait for a suitable,or not that suitable day to take her to the field. Having arrived at the field at about 10 to 10 on a Sunday morning a couple of weeks ago, in the hope to have her rigged and ready by 10 o'clock. Unfortunately my plans were somewhat scuppered by the discovery of one of them pesky sheep which had managed to entangle itself in a load of brambles in the wood. I spent around 15 minutes cutting it free and once that was done, other club members had started to arrive and we discovered that the electric fence which is supposed to keep the little blighters off the flying field was virtually non existent. We spent the next hour or so repairing said fence.

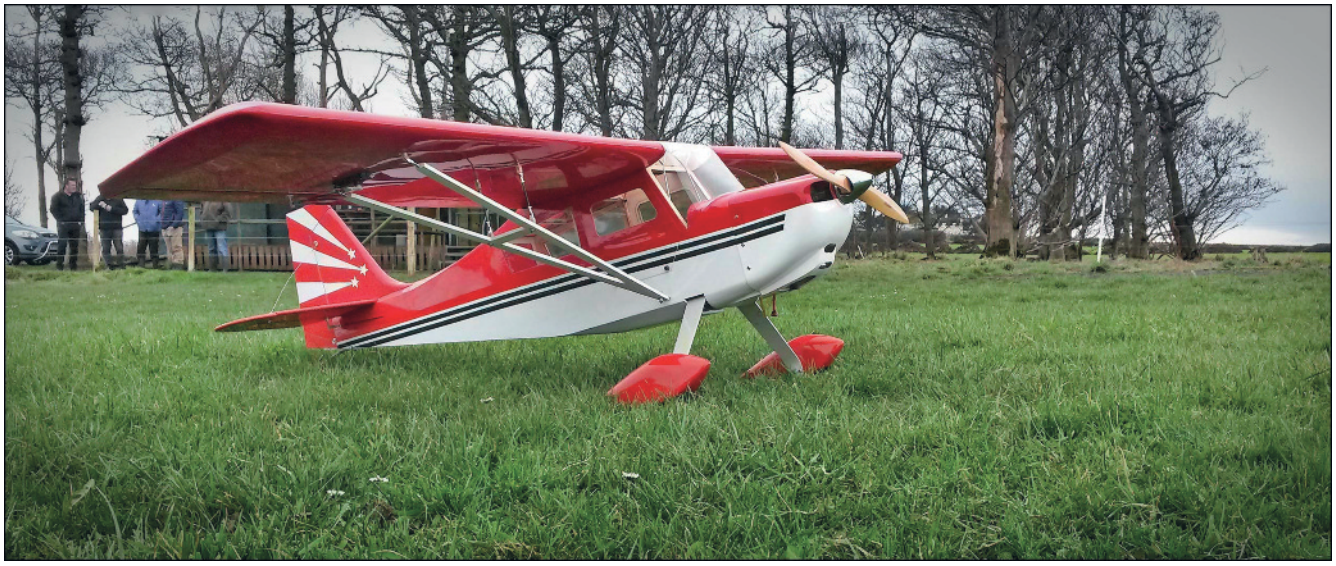
Finally a chance to try and get a flight in. After a couple of minutes I managed to get the engine to spring back into life. Carry out a range check and check that all flying surfaces are moving in the appropriate manner and direction and carry her out to the flight line. I would like to thank Alan Bates for his help in the pits and for carrying the model out for me. I've

My New Decathlon

Article & Pictures by Justin Goldstone

read on a few forums that this model can be a little tail happy due to being so short coupled. Several pilots had struggled with stalling on take off, which seems odd with such a large wing area but reading between lines, I think what people have tended to do is struggle to keep them tracking straight once the tail wheel has lifted and subsequently pulled them off the ground before they are ready and up to flying speed, thus resulting in a stall.

I carefully opened the taps and away she went. With the now building head wind of some 10-15 mph she lifted off within about 20 feet without any vices and was soon at a safe height



for me to trim her out. A few clicks on the ailerons and couple on the elevator and all was well. My concerns about sufficient power now a distant memory as she has bags of it. A few bumpy circuits in the almost blustery conditions and line her up for a landing approach which ended up being a trouble free landing and i breath a sigh of relief. Its always good to get that first landing out of the way!!

I had intended to take her up again but the weather had closed in a started to drizzle and didn't look like it was going to clear so I had to call it a day. I'm off work this this week and had hoped to get some flying in, but, as I am writing this email the wind is about 30mph and its bloody snowing!!!!!!
TYPICAL!!!!!

TX Setup - 9

Article by Brian Holdsworth

Trim Setting

This option is often available to change the amount of servo movement per click of the digital trims with a separate value available for each trim. It could be used to to allow more movement for first flights (in case the trim should be wildly out!) or to provide less movement for fine trimming. In general, adjustments should be made mechanically via the linkage lengths with trims set to centre; Sub Trim is preferable for adjusting any servo alignment errors to centre the output arms.

Channel Assignments/Selection

This option (under various names) allows transmitter channels to be re-assigned to different receiver channels. Care is needed since inappropriate settings could result in confusion and strange results! In general, wing type, tail type and mixers need to be setup after any channel changes. For example, a six channel receiver could be used with a seven channel transmitter pre-defining channel 7 for a wanted function by assigning transmitter channel seven to the spare receiver channel 5; some sets default switches to control such channels which would need to be reset.

Some transmitters use this option to assign spare channels to switches etc.

Motor

This may be available for the Glider Model Type to allow switched motor control for a powered glider; if unavailable, ESC options intended for helicopter usage to slow motor startup may be sufficient. A suitable switch is defined, and two speed settings are available to slow motor starting and stopping which is essential to avoid airframe damage from the torque. Sometimes, an additional safety switch may be defined.

It is generally easier to use the throttle stick for general use, but some sets make it difficult to setup flaps etc for a glider unless that model type is selected.

Sequencer

This may be available in higher specified sets, and allows two or more channels to be switched in a sequence with delays between each. For example, several channels could be used to open and close undercarriage doors at suitable moments as the retractable undercarriage legs move. Better control response may be achieved by using a sequencer

TX Setup - 9 Continued/...

Article by Brian Holdsworth

in the model since latency (delay between stick movement and receiver channel output change) can increase significantly with higher numbers of servo channels.

Servo Test

This is intended to exercise servos through their full movement range - sometimes, only selected channels are moved at a time. There is an obvious safety issue if the throttle channel is driven with a live electric motor and control surfaces, linkages etc may be driven beyond their limits with potential for damage. It is a poor, ineffective technique for testing servo operation and so is best avoided!

Modulation/Receiver Selection

This option is available (under various names or sections) where supported receivers use different transmission modes and is setup before the receiver is bound. The receiver should be unpowered since considerable servo movements for a bound receiver may occur as RF settings etc. are changed. The manuals are often vague, perhaps intentionally, as to the compatibility of receivers, especially those with different channel counts - for example, will a six channel receiver operate with a nine channel transmitter, or a nine channel receiver with a six channel transmitter? Unfortunately, the complexities of 2.4 implementations are such that a combination apparently working on the ground may not be reliable in use, especially with other active transmitters; several Spektrum combinations are reportedly erratic and upgraded Futaba transmitters with older and clone receivers have frozen in flight.

Spektrum transmitters have an option to select DSMX (default) or DSM2 which will be inhibited or omitted on current sets in the UK. The main screen displays the active mode. Even where available on older sets, DSM2 has several limitations so that DSMX is preferred. Any receivers not supporting DSMX are old and overdue for replacement - many early receivers had design errors resulting in erratic operation. During the binding process, the receiver sends data to the transmitter identifying its channel count and other capabilities to select transmission options.

Futaba may select S-FHSS or T-FHSS supporting telemetry. There may be also several FASST modes with different channel counts or telemetry (FASSTest).

TX Setup - 9 Continued/...

Article by Brian Holdsworth

Hitec select the receiver type via the main screen item "Spectra" - the manuals imply that all receivers are compatible with all current transmitters. Optima 6, 7, 9 (AFHSS bi-directional) support telemetry for analogue and/or digital servos. Minima 6 (AFHSS single-direction) for analogue and/or digital servos. Maxima 6, 9 (AFHSS single-direction) for digital servos only. SLT is also available for receivers using Secure Link Technology.

Frame Rate

Where available, sometimes under Modulation, this option allows the frame rate to be changed between the default ~20 milliseconds and ~11 milliseconds, intended to reduce latency which is significant on some sets, though the improvement would be small. Analogue servos must not be used with the 11 millisecond frame rate since their operation will be erratic under some conditions.

Telemetry

Many sets offer telemetry though its practical value is debatable due to the inevitable inaccuracies in the sensors, and the difficulty of defining any warning thresholds without producing spurious alarms. If multiple receivers are used in a model, they must be setup so that only one generates telemetry with the others inhibited. Hitec, the first to offer telemetry, do not support it with their later receivers (Minima and Maxima) and have withdrawn several of their sensors. Most default to receiver battery voltage without needing additional hardware. In many cases, the implementation is such that increases in latency will be evident in operation. Looking down at telemetry data will take several seconds, with potential difficulty in finding and orienting the model again and presumably contravening the Air Navigation Order requiring the model flight to be observed at all times.

Data is usually displayed on a separate screen though some allow it to be included on the main screen.

Current Futaba manuals include several pages covering their sensors, but most manual coverage is very sparse - experimentation will often be required! The transmitter software may need to be upgraded from that delivered before the sensor is recognised and its data displayed. Setup is claimed to be improved, being mostly semi-automatic like "Plug & Play" in the Windows PC operating system. A menu may allow (or require) ident

TX Setup - 9 Continued/...

Article by Brian Holdsworth

numbers etc to be assigned for each sensor.

Futaba use their proprietary bidirectional SBus2 serial data bus, plugging into the receiver, to interface with their sensors and (expensive) SBus2 digital servos via hubs (essentially triple Y-lead adapters); the receiver operating mode is changed to use SBus2 as described in the receiver and some transmitter manuals. To support telemetry, SBus2 was extended from their earlier SBus which is obsolete, though still supported by some receivers since SBus servos are stated to be incompatible with SBus2. Some receivers share their last servo socket with SBus2, reducing the available number of channels unless SBus2 servos are used. Care is needed that the appropriate socket is used or damage may result. Sharing long cables, such as SBus2, between multiple servos is likely to cause problems with servo torque and jitter due to the voltage drop along the wires - distributed power supplies would be needed for the servo groups, not all routed through the receiver as shown in the manuals.

Spektrum and Hitec require an interface unit plugged into the receiver providing several sockets for the sensors. Current Spektrum AS3X receivers incorporate telemetry to allow their parameters to be displayed and altered via a menu entry though documentation is sparse.

Trainer

This is often referred to as "Buddy Box" operation. Two transmitters of the same brand are linked by cable or wireless link so that an instructor (master) can pass control to a student (slave) or regain control using a switch (generally spring-loaded) or a button. Sometimes, control is also regained if any stick is moved. A menu option enables trainer mode in the master, sometimes allowing other switches to be used; it would be wise to disable the mode for use without a connected slave, since some sets have shown erratic operation under such conditions.

In general, both transmitters need to be programmed to match servo directions, throws, trims etc. Considerable effort may be needed so that the servo positions match when the switch is operated - any noise or twitch suggests a mismatch. Some sets have an option for programming to be in the master only with the slave using its default settings; however, practical experience suggests that this is rarely satisfactory.

TX Setup - 9 Continued/...

Article by Brian Holdsworth

Most have an option for some channels to be still controlled by the master when the trainer switch is operated, defaulting to all channels being transferred to the slave. The menu option will have a list of channels with "Master" and "Slave" or similar wording to be set as required.

Wired connections are vulnerable to the cable coming loose, especially if stepped on! They can be expensive when unusual connectors are used such as for Futaba, especially with different transmitter battery voltages. Some sets require the slave to be powered while others do not with erratic operation if powered - check the manual though, presumably, if it works with the slave unpowered then that is the required state!

Where available, wireless connections are more convenient. It may be setup by binding the slave to the master via a master menu option. Alternatively, the master is switched on with the trainer switch held when the display indicates "Searching" or similar; the slave is then switched on, within a few feet of the master, and the master display should indicate a satisfactory connection so that the switch can be released; the link is terminated when the transmitters are switched off.

Key Lock

Some user interfaces are vulnerable to a momentary contact being recognised as a key press, potentially changing parameters. Where available, this function prevents such changes by locking the keys to avoid inadvertent operation in flight, which would be undesirable! It may be enabled by a menu option or a key sequence such as holding "+" and "-" keys simultaneously for a second or so. To unlock, repeat the key sequence or hold the specified key(s) for a second or so. Some sets only need a very short operation of a single key to release the lock which seems to defeat the intent!

RF Output

This option is often available to allow the RF to be turned off while setting up the transmitter. It is inherited from the obsolete 35MHz sets where overheating damage was likely unless the aerial was fully extended which was inconvenient indoors due to its length. The short aerial and low power consumption of 2.4 means that this option is rarely used. The Range Check function to temporarily reduce the RF output for range checking

TX Setup - 9 Continued/...

Article by Brian Holdsworth

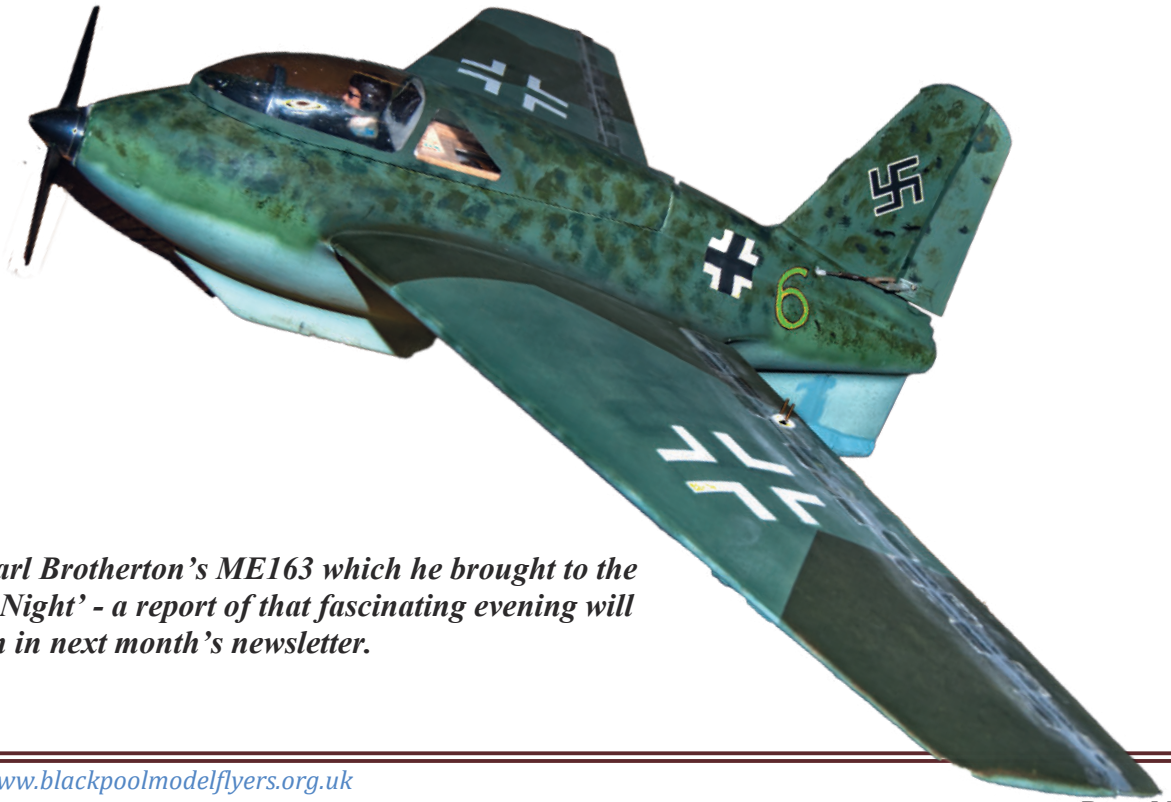
may also be on this menu page.

Check List

Some have an option to define a pre-flight checklist that appears each time the transmitter is powered or when the associated model memory is selected. Each item on the list must be confirmed before the Main Screen can be accessed - generally RF is inhibited until completion. This may be useful where a complex model is flown by several pilots as may happen at displays etc.

Model Selection

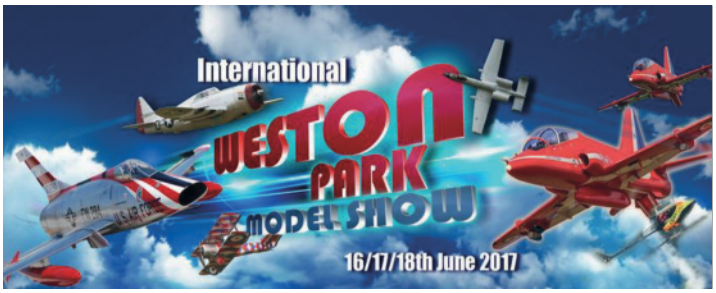
This will be a menu option and, sometimes, a key combination is available as a short cut. The receiver should be unpowered since considerable servo movements may occur as RF settings etc. are changed; servo reverse settings may also become inappropriate with obvious consequences, especially for throttle. Some transmitters change the model immediately as the hi lighted entry is scrolled, but most require a key press to select the entry with the current model retained if exited without selection. It would be wise to confirm that the intended model has been selected before powering the receiver - a suitably unique and memorable name is helpful to avoid using the wrong model which is unlikely to end well!

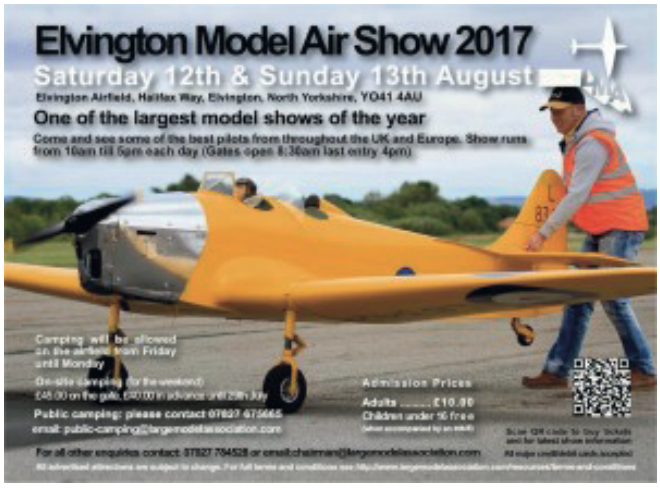


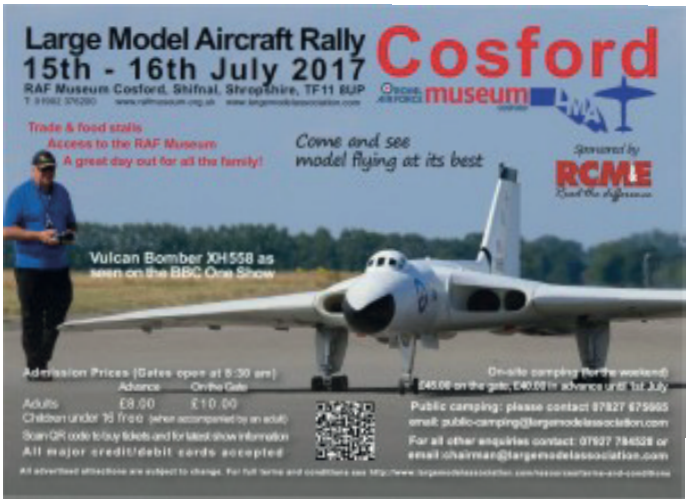
This is Carl Brotherton's ME163 which he brought to the 'Mystery Night' - a report of that fascinating evening will be written in next month's newsletter.

Shows and Events

April 2017







List of our instructors.

April 2017

Jason Reid, John Higgins, Chris Vernon, Mark Conlin, Brian Holdsworth, Jim Sheldon, Paul Cusworth, Andy Harrison, Justin Goldstone & John Prothero.

Social Calendar for 2017

2017 Social Evenings - Marton Institute, Oxford Square, Blackpool FY4 4DR

3rd May Open Forum and Safety Talk 7:30 for 8pm.

Well guys, here endeth another newsletter. I had intended to include a report about the Mystery Night which turned out to be highly informative and very entertaining. It was made good by you members who brought along some really interesting stuff. I just couldn't send you out a newsletter 20 odd pages long so it will be written up for the May edition.

The late Wednesday evenings will be starting very soon intended for trainees but anyone can come and fly.

The **Fly In** is in just under 4 weeks from now - Sunday 28th May. We will be appealing for volunteers to help out during the day.

Thanks once more to you guys who have given up your time to support this newsletter - to Will Sparrow, Brian Holdsworth and Justin Goldstone. It was interesting to hear what Justin said about his Seagull kit. My Spacewalker is a Seagull kit and the thing has never once crashed - they are obviously well built models and I know they fly well.

I hope the weather continues to improve and that you can enjoy some safe and happy flying.

Bye for this month.