

June 2016

Newsletter

None of us can complain that we aren't getting a good summer this year! One of us can't even complain that you don't get the odd thermal wafting over the field. I was flying one of my brother's old models - this time it was a motor glider, the Spectra. It's a 2 metre span motor glider kitted by Great Planes. I know this model flies nicely and is quite sensitive to lift.

It was really warm that afternoon and I noticed a lovely big 'interesting' cloud forming right over the field. So I got my trusty Spectra out of the car, set it up for flight and took off. I was standing next to Andy and as I circled beneath this cloud, I noticed the wings wobble a bit. I said to Andy, 'Hey look at that, I think I've found some lift'. Too right I had - it was climbing very fast indeed and within a very short time was reaching the disappearing point. Jason realised I was in trouble and although he flies Mode 2 and I fly Mode 1, he managed to stop me panicking (which I was) and took over the rudder control. I am so grateful to that guy - it took him quite a time but he coaxed out of lift and I was bale to get it back to the strip. I've no idea how high it had reached but it looked to me no bigger than a tiny spec - later, Jason said that he reckoned that it was up at cloud base.

I can only say thanks to Jason - you saved that model.



June 2016

I was unable to get down to the Weston Park model show but those who went seem to have enjoyed themselves. Anyone got any pictures?

Dave's Latest Project

Photos by Dave Swarbrick

Dave Swarbrick has now finished the new Panther which will be flown at the shows by Jason. He took some pictures - I can't wait to see it fly.



Dave was telling me that one day he spent a solid 8 hours in the workshop when he coming to the finishing stages of this lovely model.

*It's only slightly smaller
than his other Panther*





June 2016

A VIEW FROM THE HEDGE. (By Will Sparrow)



Only the other day, I was invited to go and have a chat with the Wise Old Owl. (This old chap occasionally perches on a twig towards the bottom end of our hedge: he is revered and held in awe by us sparrows and constantly amazes us with his encyclopedic knowledge, wit and wisdom). I always look forward to these none-too-frequent chats with the WOO and, since he said I could bring along a friend if I liked, I invited my mate, Jim Sparrow, to share the experience. As the afternoon progressed and the WOO rambled on to the open-beaked pair sitting on the twig opposite him, he touched on the marvellous devices that you humans had recently invented (How does he know about such things?). By all accounts, a wrist band can now be worn that monitors the wearer's heart rate and even how many steps have been taken over the day. If the amount of exercise the wearer has taken falls below an acceptable minimum, the wrist band delivers a mild electric shock to gee-up the sedentary specimen wearing the device into something approaching dynamic action! If the electronic nudge is ignored, the wrist band delivers a higher voltage shock. In extreme circumstances, the device can even report back to the wearer's GP via something called "The Internet" (whatever that is). In extremely extreme circumstances an ambulance can be summoned. We listened in silent amazement as the WOO, now fully into his stride, went on to describe how this technology was being adapted for the modelling community. When fitted with a Modeller's Magic Wrist Band – MMWB, for short – a lack of transmitter stick time would be detected and the modeller would be given a "gentle reminder". If the sticks were left un-twiddled for the week following the reminder, the device would up the voltage. Modellers who had been inactive for months, without good reason (a note from their mummies?) would see the device automatically contact the BMFA. In extreme cases of modeller inaction the BMFA would revoke any certificates held. All very scary stuff! On our way back to our own twigs, Jim asked if I thought that, towards the end of his eulogy, the WOO had a bulge in his cheek. I surmised that it might just have been his tongue; it's really not easy to tell with owls...

Well, I bet that you're all dying to know what has been worth viewing from the hedge over the past few weeks (especially those of you occasional fliers about to be fitted with MMWBs). A Sunday, towards the end of May, saw me viewing a nice twin-boomed jet, as it swooped effortlessly over the blue skies, then I noticed, as landing time came, that the



June 2016

port wheel had refused to come down. The trepidation in the pits proved to be unfounded as the pilot, demonstrating commensurate skill, pulled off a perfect wheels-up landing on the forgiving grass – he even retracted the low-slung flap at the last minute just as those folk who fly big gliders do. Applause from the pits! I remember my great grandpappy sparrow telling me that in days long past, modellers used to get a round of applause if they landed **on** the wheels, in the same field!

I've seen a few strange birds in my time, so you can imagine how intrigued I was to see a model that looked a bit like a helicopter, but also had a fuselage and a tail, turn up for a mid-week outing. The strange bird was known as an autogyro and had a motor on the front with a free-wheeling rotor on top. I thought that the model's outing was going to end in tears but it did, eventually, manage to take off, fly round and land successfully, on its small wheels.

The Bank Holiday weekend was blessed with ideal flying conditions and, on the Saturday, you modellers were out early; some too early! One member had brought a small, twin-boomed jet (why do all jets seem to look alike?). The model was started and wheeled down to the extreme westerly end of the runway, since the wind was blowing from the east, over the hedge. Before the model could take off the owner noticed smoke and flames coming from the back of the model – the turbine had set fire to a large clump of dried grass clippings. Now, fires are greedy things and this one seemed to have missed its breakfast as it set about the model's fins and rudders, with ravenous will. The modeller had the good sense to squirt the model forward and out of the reach of the grass fire: the helper, with his fire extinguisher, had a good view of the action from the distant pits. I know that I shouldn't laugh but, once in a while, I just can't help myself. You couldn't make this stuff up! Luckily the damage to the model was only cosmetic.

Bank Holiday Sunday was another glorious day and had been slated, as I found out, for the club's lunch-time barbeque. Original indications were of a poor turn-out, but the numbers picked up as the mid-day hour approached. Much munching (and flying) took place and the afternoon saw a little glider do its best to enter orbit by hooking a boomer of a thermal. Elation, however, quickly turned to concern as the model was on the brink of vanishing upwards. Thankfully, eagle-eyed help was on hand and the model was coaxed down. Jim swore that he heard the sound of buttocks being unclenched... Jim can be a bit fanciful at times!

WS

Bank Holiday Sunday at the Field

June 2016



June 2016

Jim Sheldon flying his MX5



Chris launching one of John Higgins' big gliders

June 2016





TX Setup - 1

June 2016

Article by Brian Holdsworth

Especially to the novice, that shiny new transmitter may seem to offer a bewildering range of options with many having no obvious use. Most manuals provide little useful information and, in too many cases, do not even identify the functions let alone describe their usage. Although poor, the manuals should be read since, if nothing else, they should describe the process for binding the receiver, together with the operation of the various buttons, switches etc used to navigate the display and adjust the various parameters. The receiver manual may also describe specific binding and fail-safe capabilities - some have multiple operating modes, selected by receiver button presses during binding or power-up.

Rechargeable batteries are supplied in a partially-formed state (not the same as part-charged) and should be fully charged before any use, otherwise their chemicals may not be formed into the state required for reliable performance.

Most transmitters are user-upgradable via the brand website and this may be worthwhile, especially as some upgrades have corrected significant errors rather than just extending functionality. Downloading the appropriate user manual could be helpful since this may have been updated (improved?!) from the paper version supplied; sometimes, the manual for a lower specification transmitter in the range can give a better insight into usage.

Setup can range from basic through more complex configurations, together with mixers for adjustment of interactions to improve performance. Most (hopefully all!) useful aircraft options will be identified in this series with methods of implementation and flying tests to fine-tune the controlling parameters. Some may not be achievable on even the more expensive transmitters. Due to the poor manuals, experimentation (trial and error) is often the most practicable method to identify suitable options and any transmitter limitations.

Most transmitters support "Aircraft" and "Helicopter" types; "Sailplane", "Drone" or "Multicopter" types may also be available. The "Sailplane" type may add some flap options, but is usually intended for pure gliders making usage for electric-powered gliders difficult. Some indoor models use variable pitch propellers, and using the "Helicopter" type with standard swash plate (separate aileron and elevator) would



TX Setup - 1 Continued/...

June 2016
Article by Brian Holdsworth

provide switched options ("Idle-up" and "Throttle Hold") to tune throttle and pitch responses.

The transmitter interface allows selection, display and modification of the parameters controlling the functionality, including selecting the required model memory - some interfaces are less obscure than others! Access may be via buttons or rotary controls, or via button areas shown on a touch screen. A single menu sequence may be used or the functions may be divided into separate menus such as "System" (rarely used parameters common to all model memories), "Model Setup" (model selection and parameters used for initial setting up such as wing type etc.) and "Model Settings" (servo throws, mixers, timers etc), entered by button presses, sometimes held while switching on. These are divided into sub-menus, often with multiple levels, to access the functions and servo channels as appropriate. Navigation and editing may use separate controls or an edit mode may be entered and navigation controls also used to change the selected parameter. In general, any modification takes immediate effect and cannot be cancelled, though some of the more critical changes may require confirmation.

Most users will not use any of the "System" options and these will be covered later. However, options such as "Stick Mode" (Mode 1, 2 etc) have a significant effect upon the internal memory configuration, which may not be handled correctly, so that a change would suggest clearing all defined model memories and re-entering their parameters to ensure reliable operation. If re-using a model memory, resetting that memory is also advisable if the basic configuration (wing or tail type) is changed, since parameters may remain from the previous configuration, not visible via the display, with consequential undesirable effects. Such design flaws seem common.

The initial stages of setup should be undertaken without the receiver, since significant servo movements may be generated as options are set. Via the menu system, a model memory should be selected; some transmitters use "New Model" or similar to add a memory. "Aircraft" type may need to be selected before continuing. It is helpful to rename the memory immediately to suit the model; this name needs to be obvious, perhaps with a matching label on the model, or future confusion could occur - using the wrong model memory may not end well!



TX Setup - 1 Continued/...

June 2016

Article by *Brian Holdsworth*

The default uses a single aileron channel. Many models have an aileron servo in each wing and these may be linked into a single channel via a "Y" extension lead. Greater flexibility would be available if a dual aileron mode is selected, so that each servo is connected into a separate channel; some transmitters use a "Wing Type" option including dual ailerons, while others enable a "Flaperon" mode. Other wing and tail type options may be available but will be covered later. If using Futaba or Tactic for electric models with a Speed Controller (ESC), the throttle channel will need to be reversed - if set first, re-binding later could be avoided.

Before the receiver is powered for the rest of the setup, electric-powered applications should remove the propeller (and clamp-type adapter if used) for obvious safety reasons; similarly, engines fitted with an auto-start facility should be inhibited. Where possible, linkages should be disconnected to avoid possible over-driving and consequential damage - RTF models with fitted servos are often incorrectly setup.

Unless supplied with the transmitter as a combo, a new receiver must be bound before it will function. Sometimes, a transmitter option must be selected, or a switch operated, to enable the binding process; it may also be required to identify the receiver type. With the exception of Futaba FASST, which transmits the throttle fail-safe position during normal operation, a receiver will need to be re-bound if the throttle sense is reversed, since the fail-safe information is stored in the receiver during binding. Where telemetry is implemented, re-binding will be needed since the transmitter also needs to be bound to the receiver for the model memory used; this will be implicit in the binding process. The Fail-Safe should always be setup, with Low throttle stick, since it is a legal requirement that the throttle be closed, if radio contact is lost, to avoid flyaway into controlled airspace. Sometimes, a separate option is available for adjusting fail-safe servo positions. Powering-down, waiting a few seconds, and re-powering transmitter and receiver is advisable (required for some sets) to ensure that the binding information has been correctly stored - any satellite receivers also need checking.

Some interfaces have a menu option "Servo Settings" or similar with "Reverse", "Throw", "Sub Trim" as options while others may use separate entries. "Throw" may be identified as "Travel Adjust" or "EPA" (End Point Adjustment); it should be left at 100% for all channels (for the moment!). Some include an option labelled "Limit" or similar - this will be covered later. Servo direction needs to be checked - in most cases, at least one



TX Setup - 1 Continued/...

June 2016

Article by Brian Holdsworth

channel will need to be reversed. If the throttle sense is changed, re-binding may be required as above. The servo output arms should be centred - frustratingly, the centre position will often be midway between spline steps when the closest should be used; "Sub Trim" should then be used for fine adjustments - where dual servos are used such as on ailerons, both channels should have the same sense of correction applied (ie both positive or negative) since some sets have design flaws producing non-linear movement, especially with mixers, when any trims are used. For best mechanical advantage, the outermost control surface arm hole should be used with the appropriate servo arm hole for the required travel. The linkages should be mechanically adjusted to centre the control surfaces as required - not using the trims!

A new ESC needs to be setup to match the throttle throw of the transmitter; this may need to be repeated if a different transmitter is used. This is particularly important for Futaba with its non-standard servo throws. Some ESC's will not operate until this has been completed. The throttle trim should be left centred and has no use in this case - it should not be used to "correct" continued motor running at low throttle where the ESC has not been setup correctly. If powered-up at full throttle, the ESC enters programming mode as indicated by a set of beeps as described in the ESC manual. After the beeps, close the throttle and another beep sequence should indicate success. If powered-up with part throttle set, ESC operation is generally inhibited with an error beep sequence; however, near low throttle, the motor may startup - always power-up with the throttle stick fully closed!

Retro Radios

June 2016

John Prothero has just come back from Florida and he sent me this Email together with some pictures

Hi Peter,

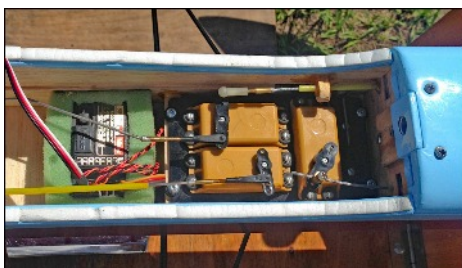
Here are the images of the X-Ray complete with original servos!

I saw many models whilst I was in the U.S.A. but this one stood out, I was shocked to find that it was almost apart from some modifications to the radio original!

The owner has modified the TX to take a HITEC innards to bring it into line with current U.S. frequency legislation. The RX is also HITEC, he says that he chose the HITEC system because it is almost identical to the original KRAFT system and this meant that he could retain the original KRAFT servos which still work perfectly. The model is an AMCO X-Ray and this model was built in the late 60s, it is finished in traditional JAP Silk and dope with a couple of coats of fuel proofer over the lacquer finish to quote the owner/builder.

The model fly's superbly and is powered by the original H.P. 40 which still has plenty of power.

The Radio was by KRAFT, Phil Kraft was one of the original digital proportional pioneers. A little known fact is that the "Stick" type models that you see today originate from Phil Kraft who needed a model that was lively, fast to build and rugged so he came up with "Das Ugly Stick" to test his new proportional system out on. Phil Kraft also designed and built the highly successful KWICK FLI which dominated the aerobatic scene in the mid to late sixties and to an extent into the early 70s.



It just goes to show how long models can last in the right hands!



June 2016

Talking of Retro Radios



I saw these lovely 'Retro' sets being marketed by JR - the Colt is a 6 channel set and that gorgeous one on the right, the Mercury is a 14 channel. The Colt costs around the £400 mark and the Mercury just over £600.

Now I know what I want for Christmas!

Jake's New Camera

Jake just bought a Canon 1200D digital SLR complete with standard zoom plus a very useful 75 - 300mm lens. The whole bundle cost around £300 and he let me have a look at it. This is a really effective bit of kit and the quality of his lens is really impressive. Here are a couple shots.





What Goes Up, Comes Down (OR NOT)

June 2016

Article by John Higgins

We all know, from past experience, that if we launch our models into the wide, blue yonder, they will always come down: they will either land under our guiding hands, they will crash (under our guiding hands?) or they will run out of fuel or available electrons and will then either land or crash! However, if you are flying a glider, then a fourth possibility is open to you – you will hook some real thermal lift and your pride and joy will disappear... upwards!

Now thermals can be powerful things with the air rising at 500 ft/min or more. What's more, the higher the thermal goes, the stronger it becomes, as the rising air mass accelerates upwards until, eventually, it tops out, perhaps at many thousands of feet. If your little glider contacts real lift it will quickly become difficult to see and, in the blink of an eye, it will vanish. In an expressionless sky your eyes will tend to focus on a point about 50 ft. in front of your nose, so, unless you are very lucky, you won't be able to find your glider in the sky as it soars ever upward with its little plastic pilot reaching for his oxygen mask!

The answer, of course, is not to get into this situation in the first place, but let's assume that we are where we are and your glider is getting close to the limits of your vision. You've realised that you have a problem and you need to implement a solution. Let's take a sideways step for a moment and look at the things that you **shouldn't** do. All aeroplanes, be they models or full-size have a VNE – a velocity that must never be exceeded. If the pilot is daft enough to step over this mark the aircraft will suffer structural damage and may even disintegrate. In days of yore, when gliders were made of wood and fabric and generated the sort of drag that might be expected of a falling Steinway with its lid open, pushing the stick forward to increase speed and fly out of the thermal was not a problem, but nowadays, gliders are much, much more slippery and a forward push on the stick soon has the model, or its full-sized counterpart, rushing towards VNE and self-destruction. Do not, unless your model is made from 100% carbon fibre and unobtainium, try to dive steeply, or spiral dive, out of your thermal!

So, what can be done? If the cause of the problem is the thermal then you need to leave the thermal. Near every thermal there are regions of sink – down-going air; this is where we now want to be. Fly the model out of the lift by flying a course at 90° to the wind direction. This should get you into sinking air and things will slowly start to



What Goes Up, Comes Down (OR NOT) Continued... June 2016

become more comfortable and your pulse rate will start to revert to the norm. Don't fly downwind (thermals drift downwind) and don't fly upwind (the same source that generated your thermal might well be generating another). Land, have a sit down, and explain to anyone who will listen how you alone, being possessed of great skill, managed to find a good thermal when everyone else could find only the sink.

As in many walks of life, there is nearly always more than one way to de-fur a moggy. Escaping from thermals is no different, but the actions you can take (in addition to flying into sink) depend on the sort of model you are flying at the time. Let's assume that the model you are flying is a modern, glass glider of, say, 4m wingspan and weighing in the region of 8 or 9 lbs. Such a model will be fitted with airbrakes and/or crow braking using flaps and ailerons and will be strongly constructed so that the model will be stressed for high speed flight. With such a set-up, escaping from a thermal is easy; one just pops out the brakes and dives out of the lift. My own models are configured so that, with brakes deployed, the models can hold a 45° dive, without accelerating, and maintain a speed well below the model's VNE: the vario tone confirms that a descent is indeed taking place! But what if your glider is a lightweight type, perhaps with just rudder and elevator for control? (I have one of these too, and it will stay up on the merest whiff of lift). Yes, flying into sink is always an option... but there is another way. Initiate a brief dive in order to build up a bit of speed, then half loop to the inverted position; once there, push the elevator stick fully forward. In this position the model will be perfectly stable and can be steered around on rudder in just the same sense as when the model is the right way up. Glider wings are very good at providing lots of lift and not very much drag... but when they are inverted they produce very little lift and lots of drag. It is the ratio of lift to drag which determines the glide angle so, when your model is flying inverted, it will be coming down at a very steep angle but at a low air speed because of all that drag. This is just what is needed and, since you will be flying at 90° to the wind, you'll soon be in the sinking air and able to breathe freely again.

As with all "death defying" manoeuvres you should practise them, in safety, and at a good height, before you need to employ them for real. By the way, you did put your contact number in a nice, visible position on the model, didn't you?

John Higgins



Do You Think Our BMFA Rules Are Restrictive?

June 2016

John Prothero has recently returned from the U S of A. He owns a property over there which he will happily rent out to you for vast sums of money. He has been talking with a local model flying club over there and somewhat amazed at just how stringent some of their conditions are when you fly model aircraft.

One of the forms that the modeller is asked to sign is the Waiver form - here is just a part of it:-

Waiver of Liability
Imperial Polk Properties
1400 Broadway Blvd
Polk City, FL 33868

WHEREAS I, _____ (print name)
of _____ (print street address)
_____ (print city, state and zip code)
_____ (print company or organization name)
Mid Florida RC Club

do undertake to operate radio controlled propeller driven aircraft of my own initiative, risk and responsibility at property owned by Imperial Polk Properties, Inc and
WHEREAS I, but for this release of liability, acknowledge that Imperial Polk Properties, Inc would not allow my participation in this activity, and
WHEREAS I, am fully informed and aware of the risks, rules, regulations and other controlling regulatory information regarding this activity, and
WHEREAS I, voluntarily assume any and all risks associated with this recreational activity, including injury or death and to hold harmless **Imperial Polk Properties, Inc, Fantasy of Flight, World's Greatest Aircraft Collection, Inc, Kermit Weeks, individually and Weeks Aircraft.**

I do hereby, for myself, my heirs, executors, administrators and assigns, remise and forever discharge, indemnify and hold harmless **Imperial Polk Properties, Inc** et al, its Administrators, and all of its directors, officers, agents, volunteers, independent contractors and employees, acting officially or otherwise, from any and all claims, demands, damages, actions or causes of action, of any nature, whether known or unknown, which arise out of or relate in any way to my participation in said activities, in any capacity.

It goes on and on like this stating all sorts of clauses where you virtually sign away your life. We get off so lightly in this country - I think the BMFA makes things so easy and simple for us.



Social Calendar/Shows for 2016

June 2016

TRAINING NIGHTS

These are every Wednesday evening from May 11th onwards till September at the field so if you wish to, either learn, or just brush up those skills prior to taking your 'A', (or 'B') - this is a good time to do it. The winds seem to subside as the evening develops. It's a great time to fly.

List of our instructors.

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

SHOWS

18th - 19th July **Cosford LMA**

13th - 14th August **Elvington LMA**

June 2016

In Conclusion

Once more I thank all you guys who have contributed to this newsletter - The two Johns - Mr Higgins and Mr Prothero, to Brian Holdsworth, to Dave Swarbrick and our beloved Will Sparrow.

I leave you with some more pictures taken at the field.



Chris Vernon's Hangar 9 Valiant - this time, electric powered - lovely sound!



Carl Brotherton burning up the sky with his pretty mini Delta