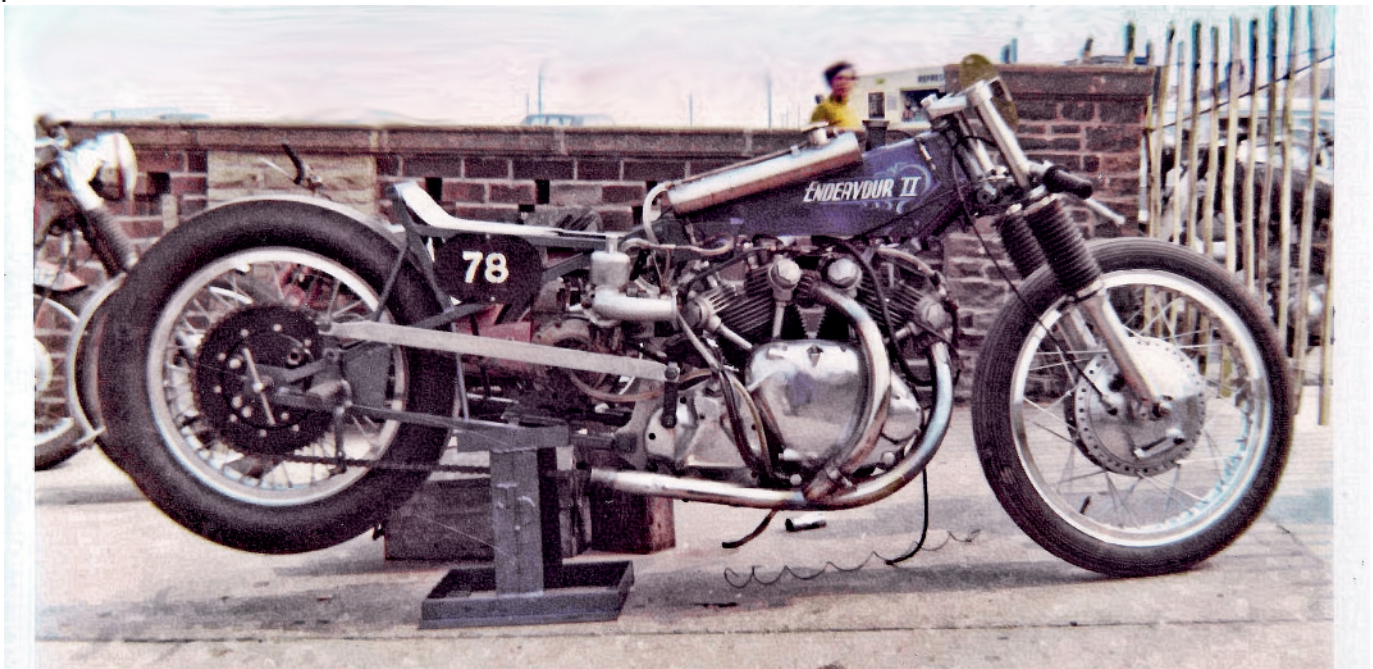


Newsletter

February 2017

Another month has just passed by and we have had an absolute cracking storm a couple of days ago. I have a lovely big 20" x 10" slate grinning at me out in the yard to prove it! I haven't been to the field now I'm disappointed to say for at least 2 months. I know that you guys who look after 'things' for the members have had the grass mown and I know that a few of you have been flying.

I like to get down so that I can put up to date pictures into the newsletter but right at the moment, I am just not very mobile. It really hurts to put any pressure on my leg and the consultant has decided that I need a knee replacement which is now scheduled to happen within the next 3 months - it was arthritis that has done it - that and over enthusiastic riding on a motorcycle by me back in 1997 when I came a 'cropper' due to complete stupidity on my part. I often think of guys like Dave Swarbrick who could hurtle down a drag strip on a highly tuned huge drag bike reaching almost 200 MPH and still be on the bike at the end and there was me doing less than a quarter of that speed to finish up in a heap! The word pathetic comes to mind.



This was Dave's superb Vincent Shadow bored out to 1300 cc. 2 litre supercharger and modified 2½" SU carb with a 3mm main-jet, run on a mixture of methanol and nitro.

Approx 5 litres in 30 seconds or just enough to do a 1/4 mile sprint. 0 to 60 in 1.5 seconds and a top speed in excess of 170 mph.

Later model was much lighter with a larger fuel tank and a Wal Phillips fuel injector, running on nitro. This setup reached 198.6 mph on the flying kilo at Topcliffe aerodrome in 1974.



Social Evening Ideas Appeal

February 2017

Thanks to all you guys who have responded to my appeal for ideas of what you, the members would like to have happen at the Social evenings. A couple of members said that they were not interested in having Social evenings - thank you for your honesty.

Here are some of your suggestions - this was the first reply:-

'How about a bring and buy / swap night with 10% of sales going to club funds (optional)? This would be a good opportunity to have a clear out and could include any unfinished projects, unwanted spare parts etc.

With the growing interest in retro equipment and vintage models how about a bring along your "antique" gear night, curios etc., to sell or just to talk about around the tables informally. Is there any interest in old aircraft/engineering related books, postcards etc.? Could be included in the bring and buy/swap night.

I really enjoyed the minicopter/quad night!

Other members suggestions:-

'What I think is needed for the winter meetings is a speaker at each one, as a lot of societies do.'

'What about various building technics using proper stuff like WOOD also types of glues and covering models with the film, tissue or painting or even glass cloth.'

'I seem to recall many moons ago that the Solarfilm people would do demonstrations of the use of their products to clubs. Being fairly local I guess their fees wouldn't be too steep for an evening demo.

If they still do this perhaps the club could have a combined evening with other clubs?

I know there are not many (any?) 'local' retailers, but perhaps we could invite them to bring along a sample of the latest kits and goodies to a club night for members to inspect and maybe purchase?

Last year the LMA guy came to the club with part of his big Vulcan to talk about its construction and operation. I found this very interesting so maybe there are others like him?'

These were some of the ideas put forward. Thanks guys - all of your ideas will be discussed in detail and considered.



A VIEW FROM THE HEDGE. (By Will Sparrow)

February 2017



We had a couple of Sundays towards the end of January that, considering the time of year, were not bad flying opportunities. One of these days produced more than the usual lone flier; on this day there were two or three of them! I must admit to being fooled on one of these occasions, however, when lots of cars, which I recognized as modellers' cars, started to arrive down the muddy track. I thought that I was to be treated to a winter display, but I was to be disappointed; they were congregating for a committee meeting, not for anything as mundane as flying. I'm an optimist and thus spend much of my time being disappointed!

A recent event found the hedge in a state of near panic... and it all started as a result of a trip my mate, Jim Sparrow, made recently. As you will know, we sparrows are part of a widely-spaced diaspora, but we do try our best to stay in touch with our relatives whenever we can. With this in mind, Jim flew over to Preesall to visit a not-seen-for-ages cousin. The visit went well and Jim returned with many a tale to tell...and a sniff. The day after his return, Jim really did not look well; the sniff found itself augmented by a runny beak, drooped feathers and glow-in-the-dark temperature levels. One of our hens, Pauline by name, exclaimed, "Do you think he has bird 'flu?" The hedge suddenly went very quiet and, before you could say H5N8, poor old Jim found himself banished to the utmost downwind extremity of the hedge. Meanwhile, there was hardly a perch to be had in the extreme upwind end of the hedge! At times like these I think it best to consult The Wise Old Owl – the old chap who knows everything and has never been known to panic. He agreed to have a look at Jim (from an upwind position, I noticed – this guy is wise, not daft!). The WOO left half a dozen "ripisan" grubs for Jim to take and provided the poor bird with soothing reassurance. What do you know? Two days later Jim was as right as rain, although some sparrows still are not keen to get too close to him. Let's hope that poor Jim's rehabilitation is complete before the mating season (amen to that! – JS).

The first Sunday in February was a lovely day for model flying; the sky was clear, the wind was a mere zephyr... and the track was extremely muddy! The prospect of de-mudding the cars, however, did nothing to inhibit the hardy band of modellers who turned up to give me something to see from the famed viewing twig. At this time of year, with the grass long and wet and the ground in a soggy state (some members were



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castigated for puddling the ground into mud “like a set of ducks”), the wise modeller deploys an aeroplane capable of dealing with such conditions. Heavy models with little wheels are of no use; even if they can manage a take-off without ploughing themselves into the ground, the “emergency stop” on landing is likely to do them no good at all. What is needed is a light model with big wheels, something that can be hand-launched... or a boat! This is not as far-fetched as it sounds – one such was present on this day. The “boat” in question was not the kind kitted out with oars, sails or funnels: this one had a high-set motor fixed to the tail and a fetching set of delta wings. The model was made from re-cycled ceiling tiles, was very light and, more importantly, flew very well indeed. I particularly appreciated the bow wave produced by the long touch-and-goes. It’s nice to see something a little different, don’t you think?

I have also noticed that your industrious committee has been doing a bit of work to make the site more secure and especially to prevent the local (?) geniuses from practising their hand-brake turns on the car park. You now have the makings of a sturdy boundary fence to the car park and a steel gate at the car park entrance. The brambles have also been cut back and the car park surface is to be given a bit of attention. It’s good to see your already excellent facility being further improved. These improvements, together with the proposed mine field along the eastern edge of the strip, should deter all but the most determined of undesirables.

As regular readers of these ramblings will know, February is the month in which we birds choose our mates for the coming season. Those of us of a romantic turn of mind try to arrange for our choice to coincide with the 14th... for obvious reasons. Regular readers will also know (Where does he get the idea that he has **any** readers? – Jim Sparrow) that I am regarded as some sort of feathered Sex God, with the fairer sex, in this neck of the woods. (It’s true; he is so regarded... For the life of me I can’t understand what all those hens see in such a mangy specimen! JS). The 14th found me sitting on my viewing twig not, for once, observing the antics of you modellers but gazing at a twig-full of delectable hens! Now, which one to choose? Should I go for the one with the soft, plump breast, the one with the exquisite beak or the one with that alluring look in her eye?... And you lot thought that choosing a new model for the coming season was difficult!

WS



February 2017

TX Setup - 7

Article by Brian Holdsworth

For many years, it has been a legal requirement in most countries that action is taken, where the implementation permits, to reduce the possibility that an uncontrolled model could fly away into controlled airspace risking collision with a full-size aircraft; a near-miss is included, defined as the model being seen by the pilot. Fly away occurrences are fortunately rare, though the potential consequences are sufficiently serious to justify the requirement; it has become more relevant with the increasing weight and speed of some models with their greater potential to cause damage.

The requirement may be achieved to the satisfaction of the controlling authority (CAA in the UK), by closing the throttle of a powered model in the event of loss of the radio link from equipment failure, interference etc. Gliders were not mentioned, perhaps because there is no simple implementation and they were generally slow and well below the original model weight limit of 5Kg; fast, large gliders are now being flown, some over 20Kg, with considerable potential to cause problems, which would seem to require attention. In practice, the main emphasis is protection against radio interference since implementing a fault-tolerant system capable of absorbing any equipment failure is a major undertaking beyond current technological capabilities, even in full-size aircraft including airliners! Battery problems and complete receiver failure may require consideration for other reasons. Servo problems where the resultant control surface position does not match its command are not covered. There is no requirement to cause an uncontrolled model to crash, since this may cause other problems depending upon who or what is hit!

35MHz PPM radio sets did not support this facility and were granted exemption for use in smaller models (up to 7Kg) in the expectation that technology would improve within a few years. PCM sets were used for larger models even though the technology exhibited significant flaws, which is why it did not replace PPM. 35MHz is obsolete and will not be covered though much PCM functionality is similar to that described. All legally imported 2.4GHz radios include this facility, though some have inappropriate defaults making user action essential, for all model types and sizes, to avoid legal liability and potential invalidation of insurance cover etc. in the event of an incident.

The implemented capability is described as "Fail-Safe" and does not, and cannot, prevent an uncontrolled model from crashing as some seem to expect. If triggered, survival of the model should be regarded as a bonus! The functionality is implemented within the receiver, with some settings determined via the transmitter during the receiver binding process or menu options. Loss of power or complete receiver failure would, obviously, inhibit any



TX Setup - 7 Continued/...

February 2017
Article by Brian Holdsworth

Fail-Safe operation.

A radio control system sends data defining the servo channel positions, derived from user movements of the transmitter sticks, switches etc, over its radio frequency link updating the positions at the frame rate of ~20 milliseconds (50 times per second) or, sometimes, ~11 milliseconds. The 2.4 implementation sends some data at 2 millisecond intervals alternating between multiple shared radio channels to provide some resilience in the event of interference on particular channels; this overcomes a major limitation of 35MHz which required exclusive use of a single channel making it very vulnerable if another transmitter within a mile or so was also operating on that channel. The data is filtered, merged and validated by the receiver to update the positions at the frame rate via the servo sockets. If not received or invalid, all channels are frozen at their last valid positions to avoid unwanted movements. If no valid data is received within a period of up to about a second, the receiver Fail-Safe is triggered which should be set to move the throttle to low. The other channels may be left at their current positions in "Hold" mode or a "Preset" mode may be available where the position of some or all channels can be defined, leaving the others in their current position. After several successive valid data blocks have been received, normal operation would be resumed, updating the positions.

Equipment failure interrupting the radio link in flight is rare though receiver aerials are vulnerable if abused. External interference interrupting operation is also rare for 2.4 sets due to their use of multiple radio channels. Most interruptions will be due to inadequate receiver or transmitter aerial orientation, such as pointing the aerial towards the model, and may be short enough not to trigger the Fail-Safe. Such events may be quite common, several times in a flight, but are usually short enough to pass unnoticed.

While the prime requirement is avoiding a flyaway, it is worth considering reducing the crash potential and any resultant injury/damage. Settings are a compromise and conditions may be envisioned where particular choices may worsen the result.

There is a temptation, especially with a relatively stable model, to set a little up elevator to avoid diving into the ground together with a little aileron so that it circles rather than flying straight, but the resultant distance covered could be considerable and the model is still likely to be damaged even if nothing is hit.

Setting controls to full movement has been suggested to make it obvious that the Fail-Safe has been triggered and bring down the model quickly. Those who used early proportional



TX Setup - 7 Continued/...

February 2017

Article by *Brian Holdsworth*

radio control will remember such a response as a glitch, which often occurred several times during a flight, so that the user was prepared and waiting for the next! Happily, those days are long gone and such a glitch would be startling and confusing so that, even if control was restored quickly, panic and inappropriate user action would be likely which could result in an unnecessary crash and potential injury/damage. This could be interpreted as being legally liable by causing the incident.

In most cases, low throttle with the other channels frozen or set to neutral would seem an adequate choice, which is, perhaps, fortunate given the difficulties of determining and setting suitable values. Legally, it may be considered better to do nothing rather than take action deemed to worsen the result. Throttle to low idle rather than stopping the engine would leave the propeller turning to provide some slowing effect during the inevitable dive into the ground; in the event of recovery from Fail-Safe, a normal powered landing could then be achieved.

Where multiple receivers are used, consideration of servo assignments is needed to reduce problems if only one receiver enters Fail-Safe, as is quite likely. For example, splitting flap servos between receivers could leave one up and one down causing a violent roll response difficult to diagnose so that the flap control may be changed appropriately to regain some control.

Jets have large fuel tanks and a pump causing a fire risk if fuel is sprayed over a hot engine. It may be appropriate to stop the engine, and hence the pump, to reduce this potential - some are normally stopped via a shutdown sequence which might take too long to be useful.

Helicopters, especially those with carbon blades, have considerable potential to cause injury/damage from fast-spinning rotor blades which are likely to shatter on impact; closing the throttle would remove the drive to the rotor avoiding a flyaway; if the collective was also moved to low, auto-rotation would be entered producing a very high rotor speed so that leaving the collective near the normal mid-position would seem a reasonable compromise. Multicopters etc have similar potential, particularly FPV racers with high-revving carbon propellers; some implement a Return-to-Base function triggered by a switch though it seems ambiguous whether this would be triggered by the Fail-Safe.



TX Setup - 7 Continued/...

February 2017
Article by Brian Holdsworth

Gliders, including electric-powered types, present particular difficulties since they could travel considerable distances, if uncontrolled, even with any throttle closed. With thermal assistance, a glider can climb to a considerable height, so that setting a turn could be inappropriate since a thermal would tend to tighten it and centre the model in its lift. Where implemented, airbrakes etc. may be helpful but could cause structural failure if opened at speed; using a receiver which removes the servo drive after a few seconds would be inappropriate since the airbrakes may blow back in the airflow.

For most sets, the default Hold mode is setup by binding the receiver with the throttle stick in the low position where the throttle channel will be set to low with the other channels frozen at their current positions; some also freeze the throttle which would be inappropriate - there may be a menu option to enable the throttle. This mode would be inappropriate for multiple throttle channels since all throttles would need to be set to low.

Where available, Preset mode drives channels to user-defined positions, often with the option to leave some frozen. After the model has been setup, the mode is entered by powering up with buttons etc pressed or via a menu sequence. The values are defined by moving the transmitter sticks and switches to suitable positions within a short time period or via a menu option where values can be entered for individual channels. Generally, the receiver needs to be powered off and on again for changes to take effect. Modifying the model setup may need the values to be updated. Determining values suitable for all conditions is not easy and inappropriate values may worsen the result which could be hard to justify legally.

Hitec defaults to freezing and then removing the servo outputs after one second, leaving all servos, including throttle, at their last position without drive and vulnerable to being moved by the airflow. Setting up Fail-Safe would be needed, following the manual descriptions. Power up, press the receiver button and wait for the LED to turn off. Release the button and the LED's should blink alternately. Move the transmitter sticks and switches to the required positions and hold until the blinking stops.

Spektrum is bound into Hold mode by inserting the Bind plug in the defined receiver socket before powering the receiver when the LED should flash. The transmitter is then powered with its Bind button pressed and the throttle stick in the low position; the LED should become solid to indicate binding completion. Some receivers support Preset mode by



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Article by Brian Holdsworth

powering a bound receiver with the Bind plug in place, waiting for the LED to start flashing and then removing the Bind plug when the LED should continue to flash - if not, the mode is not supported and re-binding may be needed. The transmitter should then be powered with the sticks and switches in the required positions, waiting for the LED to become solid - the process is reportedly somewhat erratic in practice! There have been several software versions for most transmitters and upgrading may be needed. Some receiver types have been changed without obvious indications, so that apparently identical items may behave differently; others remove the outputs after a short delay with the potential consequences outlined above. Counterfeits are fairly common so that a bargain, especially on Ebay, could be dubious; similarly, compatible receivers such as Orange and FrSky are unlikely to implement the mode correctly.

Futaba is bound into Hold mode by pressing and holding the powered receiver button with the throttle position defined by the stick position, which should normally be low. Most have a Preset mode via menu options where positions may be entered for selected channels, leaving the others frozen. Most (all?) receivers have a Battery Fail-Safe function where a detected low supply voltage would drive the throttle to the defined Fail-Safe position leaving the other channels responding normally. Moving the throttle stick to low would allow throttle control to be resumed for about 30 seconds to allow an immediate landing - flaps, retractable undercarriages etc. should not be moved since their high currents could flatten the failing battery leaving no control with the throttle at its new higher position.

It can be easy to set up Fail-Safe incorrectly, so it should be tested. An undriven servo may be detected by attempting to move it by hand - test unpowered first to judge the amount of force required; small plastic-gear servos are vulnerable to damaging teeth so care would be needed. At home, a simple way of testing throttle operation where a servo is not used, as for electric power or jets, would be to replace the controller with a servo, checking for appropriate movement; plugging the ESC, with its motor disconnected, into a spare channel would allow powering from the flight battery. Set the throttle above idle with the other controls away from centre, and confirm appropriate behaviour when the transmitter is switched off. Operation with the engine running should be confirmed, suitably restrained, before first flight - in case of errors, it would be wise to check before such testing that the receiver re-connects satisfactorily when the transmitter is switched on again. The Fail-Safe should not be tested in flight since the receiver may not re-connect under such conditions - in particular, the obsolete Spektrum DSM2 is unlikely to function correctly.



Shows and Events

February 2017

Blackpool & Fylde RCMS
Radio Control Model Society

FLY-IN

Sunday 28th May 2017

Special Guest Pilot:
Azza Stephens

Like us on **facebook**

International
WESTON PARK
MODEL SHOW

16/17/18th June 2017

Large Model Static & Trade Show
Sunday 19th March 2017 at Haydock Park Racecourse
Warrington Road, Newton-Le-Willows, St.Helens, WA12 0HQ

Come and see Vulcan Bomber XH558 as seen on BBC One Show

Doors open from 10am

Entrance Price
Adults - £5.00
Children under 10 Free
(When accompanied by an adult)

Scan QR code to buy tickets and for latest show information

All major credit/debit cards accepted

Large Model Aircraft Rally
15th - 16th July 2017
RAF Museum Cosford, Shifnal, Shropshire, TF11 8UP

Trade & food stalls
Access to the RAF Museum
A great day out for all the family!

Come and see model flying at its best

Vulcan Bomber XH558 as seen on the BBC One Show

Adults £8.00
Children under 10 Free (when accompanied by an adult)

Scan QR code to buy tickets and for latest show information

All major credit/debit cards accepted

Elvington Model Air Show 2017
Saturday 12th & Sunday 13th August
Elvington Airfield, Haxby Way, Elvington, North Yorkshire, YO41 4AU

One of the largest model shows of the year

Come and see some of the best pilots from throughout the UK and Europe. Show runs from 10am till 5pm each day (Gates open 8.30am last entry 4pm)

Camping will be allowed on the airfield Friday and Monday

Do not camp for the weekend (4.00 on the gate, 0.00 on advance) up to 20th July

Public camping please contact 07627 473664
email: public-camping@elvingtonmodelairshow.co.uk

For all other enquiries contact: 07627 784528 or email: chairman@elvingtonmodelairshow.co.uk

Admission Prices
Adults £10.00
Children under 10 Free
(when accompanied by an adult)



List of our instructors.

February 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

- 1st March Mark Tomlinson RAF days - his years flying Nimrods yes - 'Real' aeroplanes!
- 12th April Mystery Night
- 3rd May Open Forum and Safety Talk

The Phoenix Club asked me to publish this:-

The Phoenix model aircraft club will be holding its Spring Swapmeet at our usual venue of the Deanwater Hotel (SK7 1RJ) on Wednesday 22nd March. Doors open at 7:30, entry is £2 and tables are £3 each to book. Full details are available on our website:

<http://pmaccheshire.bmfa.org/> where you can also reserve a table. Alternatively 'phone Terry Mason on 0161 439 3816 to make a booking. We hope to see you at the Deanwater for what is always a busy, productive and sociable evening.

THE FALLING POUND

by John Higgins

As a result of the plummeting pound, the kilogram is now worth 15% more. This means that what was a 22 lbs model, now weighs over 25 lbs! So what, you might say; but there are hidden consequences. If you are currently flying a model which is round about 14 lbs, it could now be over the 7 kg mark... and you will need a "B" certificate in order to fly it. If you need advice, please ask any committee member.

So there you have it for this month. If any of you take photos at the field, please pass them onto me - I need some for these newsletters. I know that Justin has a new Decathlon with a petrol motor - if you see him with it at the field and you happen to have a camera at the ready, please take some pictures. Thanks to John Higgins, Brian Holdsworth and Will Sparrow for their interesting contributions. Thanks also to Dave Swarbrick for that lovely picture of his Vincent.

February 2017



A couple of pictures taken at Elvington to remind you what real warm sunshine looks like glinting on your model as you fly past.