

Newsletter

May 2018

What a fantastic 'Show' - I mean of course the Fly In. It was just brilliant - superb weather and some very interesting models came to our site from further afield. If you missed it, you really missed a lot. I've put loads of pictures on the Club's Facebook page. I loved that little DH2 electric model - it looked so realistic in the air.



Another impressive model was the electric ducted fan Vulcan flown exuberantly by a guy, Mr I Watts. He was a man 'of many years' and he won the Best Flight award. The way he flew that model and so realistically - the guy was so obviously enjoying himself and the flying performance seemed viceless.



May 2018

Yes, there was some very good flying and some interesting models brought along by visiting Clubs. However, I feel that our guys put on a great show. It's the first time I've actually got to see Mark's big Decathlon flown and wow, did he fly it!



Mark flew his large Decathlon around as though it was a small aerobatic - highly impressive.

To all you guys who worked hard to make this event what it was, you all deserve a big thank you. You guys presented this Club in the best possible way. The whole thing was run in a friendly and efficient way - WELL DONE to you all. A lot of hard work very obviously went into organising and running the show.

Awards were presented as follows:-

Barry Built won the **Best Scratch Built Model** award with his Fokker DV1. This was powered by a 3 cylinder radial Saito which sounded so good.



May 2018

The **Best Flight** award was made to Mr I Watts for his many superb flights with his electric Vulcan.



Josh
Henderson
won the award
the **Most
Entertaining
flight** with his
Gee Bee.



for

May 2018

Sadly, the **Worst Model** award went to Steve Warburton who flew this superbly built beautiful model - the Wiggo. By the way guys, the second word is 'off'.



Anyway, well done Steve - you flew it really well - doesn't look like it's done your street cred any good though!

Finally the **Best Effort** award was presented to Allan Bates as Fly In Events Manager - great show Allan.

Star of the Show for many of us - Allan's partner, she was great making bacon butties all day.





A VIEW FROM THE HEDGE. (By Will Sparrow)



May 2018

Everybody, at some time or other, must have stumbled upon specially designated days – I’m thinking of things like “National no smoking day”, “National eat a carrot day”; the list is endless and most of these days pass by without anyone having the faintest idea that they exist. The last Saturday in April was National Retract Day. Being the sort of well-informed bird that I am (modest as ever! – WOO) I was aware of the significance of the day but had a little bet with my hedge-mates that none of you model flyers would have a clue as to the deep significance of the date: I positioned myself on the famed viewing twig as a goodly number of you prepared your models for flight (it was a really nice day so plenty of you had turned out). It wasn’t long before a model landed and retracted its wheels, a little later another model landed... and retracted its wheels. Half an hour passed until yet another model, petrol-powered this time, suffered an engine cut, performed a dead-stick landing and (you’ve guessed it) retracted its wheels. I moved to claim my bets from the hedge-mates but, true to form, they refused to pay up on the grounds that all of the models concerned had fixed undercarriages and, as such, their wheels were not meant to retract. Reluctantly, I had to concede their point. Not one of the modellers concerned mentioned National Retract Day – the only comments I heard were about the length of the runway grass! A week later on it was National Tweet Day... the silence in the hedge on the day was deafening!

Summer, this year, lasted from Friday, May 4th, to Monday, May 7th and what a summer it was: light winds, high temperatures... and all of this perfect flying weather coincided with a Bank Holiday (days when the banks close in order to give themselves time to think up new ways of extracting more money from their customers – WOO). Members turned out in droves to fly models rather than succumb to the more obvious appeal of the Bank Holiday traffic jams. This period was a twig-sitter’s delight with many hours of flying to watch. It must have been the high temperatures, but quite a few of the petrol-powered models seemed to be suffering engine problems with some refusing to start and others refusing to run well. Another such model decided to shed its silencer and then, once this was fixed and the model airborne, went deadstick and came to rest in the rough. The electric models continued to perform as well as they always do with a total absence of fuss, bother (and noise). The total calm proved ideal for the testing of new models; one such candidate was a lovely electric glider that had spent many (too many?) hours in its nest and now yearned for the freedom of the skies. The test flight proved totally



May 2018

A View from the Hedge Continued/...

successful, with only minor trimming needed. This model flew again over the weekend with its responses being further refined. I find these long-winged beauties very relaxing to watch... what could be nicer than a large glider circling in lift, envious buzzard looking on, as the vario warbles its dulcet notes against the background hum of summer insects. I'm getting a bit carried away here... The entire weekend, although blessed with blue skies, was entirely devoid of lift!

Before the summery Bank Holiday drifts too far into the past I must just recount a couple of items which prompted comment in the hedge. The first involved one of our trainee pilots who was trying to master the art of landing. He got much too low when approaching from the west and the model disappeared into the dip, short of the runway. Seconds later, the model reappeared over the threshold but minus its rear undercarriage, only to perform a not too dusty landing on the strip with only the nose wheel to keep the prop off the ground. An hour later, when the trusty epoxy had hardened, the model was ready for further adventures. The second demonstrated levels of keenness rarely seen in the modelling sphere: one member camped out, overnight, in order to be first on the scene to fly the following day on the last "pip" of ten o'clock. He even arranged for a handmaiden to serve him breakfast. What a man!

We have all, at some time or another, suffered from the "Must Have" syndrome. It affects us sparrows as well as you modellers. Indeed, I remember my mother hen saying to me, long ago, "Why must you have a green, hairy caterpillar as a pet just because young Jim Sparrow has one?" The effect is evident in your community and goes right back into pre-history, when you all lived in caves, looked forward to nice, juicy brontosaurus steaks on a Saturday night and wooed ladies with a club... (Ugg's got a shiny new flint... I want a shiny new flint!) Fast forward to the present: there has been a sudden upsurge in members appearing with shiny new transmitters. First one appeared, and another member saw how shiny it was and promptly bought one. With two such transmitters shining brightly on the field it wasn't long before several others joined them. The syndrome had kicked in with a vengeance. These wondrous devices can do things that would have seemed like science fiction only a short time ago: they can talk to you and offer you advice – some of them even use words that you would not want your mother to hear. They have so many safety features that it is almost impossible to crash a model (and if one looks as if it might crash, "the voice" will give advice). If all else fails, and the

May 2018

A View from the Hedge Continued/...

model does crash, the transmitter will log what went wrong and will automatically order a new one from HobbyThing using your stored credit card details. An email will also be sent to your wife/partner/significant other to ensure total domestic harmony. Every foamy Wot 4 needs one of these transmitters to guide it on its way. Yes, you've certainly come a long way since the days of Ugg and his flint!

WS



New/Returning Members

Adam Watson and Paul Jennings have rejoined the Club. A special welcome to our new member, Miss Emily Ollerton.



May 2018

THE USE OF MOBILE TELEPHONES IN CLOSE PROXIMITY TO ELECTRONICALLY PROGRAMMED TRANSMITTERS

Article by John Prothero

It has been reported there are sometimes problems when live mobile telephones are in close proximity to programmable transmitters which can cause memories to be corrupted or partially erased.

It is known that strong radio frequency radiation can corrupt or disable some modern electronic devices.

Although the risk may be small, this should be minimised by bringing it to the attention of members and clubs. We strongly recommend that mobile telephones are not switched on within 10 feet of any programmable transmitter. This may appear to be an overkill, but it is better to be safe than sorry.

Care should be taken during pre-flight checks to ensure that all controls are operating fully and in their correct sense, and to ensure the transmitter memories have not been affected since the last flight.

Following the crash of an expensive gas turbine model helicopter, the investigation into the cause revealed that the synthesised transmitter being used to control the helicopter was interfered with by a nearby mobile telephone. In this case it was a ***** transmitter but the same could occur with other synthesised transmitters.

The transmitter manufacturer's instructions were scrutinised and found to contain a warning that mobile telephones were not to be used in the direct vicinity of the transmitter.

Subsequent tests revealed that the problem was repeatable with that particular transmitter.

The BMFA already recommends that mobile telephones are not taken into the pits or the flying area for other reasons, but please be aware that mobile telephones can interfere with some modern synthesised transmitters.

This could possibly explain some previously "unexplained" crashes due to loss of control and / or control reversal during flight ?

So who was standing next to you on the flight line ??



Batteries

May 2018

Article by Brian Holdsworth

Batteries are vulnerable to mechanical damage, especially in a heavy landing (crash!). Where the battery is enclosed in a rigid case, a dent etc suggests that considerable forces have been sustained and replacement would be wise.

LiPo's etc have relatively soft cell cases within a more rigid enclosing shrink sleeve and are vulnerable to crush damage where a corner becomes crumpled. The internal cell structure can be described as a layer cake, with stacked sandwiches of metallised plastic film electrodes separated by polyester fabric saturated with the electrolyte. These layers are connected in parallel to produce a large surface area capable of delivering high currents.

If crumpling occurs, the layers are squeezed together increasing the risk of shorting between the electrodes, which may occur immediately or even weeks after the event. The heat from shorting can melt the plastic film increasing the shorting area and hence the current and generated heat in a chain reaction until the cell's plastic case smokes. This should not be confused with a "LiPo fire" and the temperature is relatively low, though the smoke would be alarming - obviously, the battery should be allowed to cool before handling.

Alternatively, the shorting metallised layers may burn out like a fuse, isolating the area. The shorting partially discharges the cell and may be apparent from meter readings etc. where its voltage is reduced suggesting immediate disposal - attempting to "recover" a low cell by slow charging etc may provoke further shorts. The generated heat may sometimes be detected where one end or side of a battery feels warmer than the rest, suggesting immediate disposal. Such batteries need to be handled with care to avoid further shorting from flexing of the internal structure, though it seems wise to handle all batteries with care anyway.

Lixx batteries have a balance plug which is vulnerable to internal lead fracture from flexing. Often, these leads are not supported where they exit the enclosing sleeve and a blob of EvoStik or similar may provide sufficient support to avoid such fractures. A poor connection when attaching a meter etc, especially if "corrected" by moving the lead, suggests a broken wire at its connection with the cell. Since these connections are tightly spaced, there is a considerable potential for a short circuit suggesting immediate disposal.



Batteries Continued

May 2018

Article by *Brian Holdsworth*

When a charging current is applied to a cell of any chemistry, the voltage rises as it becomes charged. The voltage needed to supply the current is greater than the cell voltage by an amount roughly proportional to the current, produced by an effect similar to ESR, which could be called "Equivalent Charging Resistance". This varies with the chemistry and increases as the battery ages, often differing between the cells. Generally, little heat is generated during charging, provided the current is within limits, though chemistries such as NiMH generate heat at the end of their charging process, resulting in a freshly charged battery feeling warm.

The charging regime for Lixx is "Constant Voltage/Constant Current" where the user defines the cell chemistry and count together with the charge current. The charger outputs that current until the battery voltage rises to the limiting voltage for the cell chemistry and count, after which the current is reduced gradually, maintaining that voltage, until the current drops to a sufficiently low value for the battery to be considered charged - typically 10% of the defined current. Since excessive wiring resistance would cause additional voltage drops likely to upset charger operation, it is essential that adequate wire thickness is used for connections, which is generally the case for the leads supplied with the charger - any additional wiring, such as adaptors between connector types, should be short and use wire of at least matching thickness. A time-out is usually implemented to abort charging if not fully charged after maybe two hours; this may mean that another charging cycle would be required if a battery is charged at a low rate, taking longer than the time-out.

Lixx chargers are specified with maximum cell count, current and power. The charging power is the product of current and voltage and the current will be automatically limited to be within the power capabilities, which are determined by the ability to dissipate the heat generated within the circuitry. Due to the additional heat generated by the internal power supply, some have a lower power capability for mains operation than with an external 12 volt supply - this is not always mentioned in the manual!

For example, a charger may have limits of 6 cells, 6 amps and 50 watts. This would mean a maximum 1C current of ~4 amps for 3 cells, ~3 amps for 4 cells or ~2 amps for 6 cells. If a higher current were entered than the charger capabilities for the cell count, the actual charge current would be limited to be within the power capability. The maximum current of 6 amps would only be available for 1 or 2 cell batteries which is unlikely to be appropriate!



Batteries Continued

May 2018

Article by Brian Holdsworth

If the cells were perfectly matched, their voltages would reach charged status simultaneously. Unfortunately, this is rarely the case, and some cells will lag behind the others meaning that when the battery reaches its charge termination voltage, some cells will be lower than their intended voltage. Others would be overcharged to a higher voltage, increasing their vulnerability to thermal runaway, which is the much-hyped "LiPo fire" scenario - LiPo chemistry is more vulnerable than LiFe and Lilon. There is a considerable safety margin, but a very weak cell could cause problems.

To reduce this problem, balancers are included where part of the charging current bypasses a cell when it nears its limiting voltage, allowing weaker cells to catch up. Heat is generated within the charger circuitry by this process so that the balancing current is typically limited to 300 mA. These are often implemented separately from the charging circuitry, which can present a problem if the charging current is still above the balancing capability when a cell becomes fully charged, since that cell would continue to be charged, leading to its over-voltage.

An indication of such overcharging may be seen if the charger display of cell voltages (or a battery meter) is monitored on charge termination when one or more cells may be seen to be higher than the intended maximum. A lower value indicates a weak cell, reducing performance and suggesting battery replacement if another cell voltage is more than maybe 50 millivolts above its limit.

Most recent designs use software to implement a more refined approach, improving the control of the charging process by monitoring individual cell voltages to give better balancing and detection of any over-voltages so that charging may be aborted with a suitable error message. Before charging, several checks are included to identify some problems. This should give a longer battery life with more use squeezed out of weakening batteries. As it is also a safety feature, this enhanced control is usually emphasised in the manuals. Perhaps, older chargers not mentioning such features should be considered for replacement, remembering that old designs are still available - checking the downloaded manual before purchase should identify.

Some cells develop a characteristic where they become reluctant to reach their limiting voltage, extending charging times; such cells often show a small voltage drop after



Batteries Continued

May 2018

Article by Brian Holdsworth

charging, producing a cell mismatch. While this indicates a battery with reducing performance, it may still be adequate for continued use as above. Using a charger of recent design seems to produce better results than an older one, suggesting that the claims of improved charging performance may be justified!

To allow for unplanned overshoots etc, flight battery capacity usage should be less than ~70% (~1500 mAHr for a 2200 battery) noting that consumption is generally greater in windy weather. Since the voltage drops as the battery discharges, the throttle position may need to be increased during the flight to maintain the required motor power output, meaning that the usage rate at the end of the flight would be higher than at the start. If a greater margin is available with a new battery, more usage from older batteries, with their reducing capacity etc, could be extracted. Ideally, the remaining capacity percentage should be checked immediately after flight, since weak cells can recover significantly in a few minutes after use - the amount of recovery provides an indication of battery health. Many meters have large steps in their display values, so that they seem to jump from 30% down to ~14%!

Thus, for a powered flight duration of 7 minutes, the average current should be less than 6C - proportionally less for longer flights. This suggests that the maximum current should be limited to ~12C (~26 amps for a 2200 battery) otherwise, the available duration of maximum power usage could be too short to be useful.

If the remaining capacity is less than that desired, the options are shorter flights, less vigorous throttle usage, a better (newer or higher capacity) battery and/or a more efficient motor/propeller combination.



Club Instructors

May 2018

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

Evening Flying at the Field

Evening flying at the field commences from Tuesday 1st May through till 30th September to Tuesday, Wednesday and Thursday evenings till 9pm. Wednesday evenings remain as Training evenings. On Tuesday and Thursday evenings, electric only after 8pm - no I.C.

Upcoming Events/Shows

Sunday 10th June Cleveleys Classic Car Show - B&FRCMS will have a stand once more in a prime position - the BMFA are letting us borrow their Flight Simulator which may attract new members to our Club.

June 15th - 17th Weston Park Model Airshow

Sunday 24 June is the Club's 60th Anniversary - more details will follow concerning the celebration of the date. If the weather is crap - that date may be moved to 1st July.

July 7th - 8th Cosford Large Model Airshow

Sunday 2nd September Competition for the Aero Show and Scale Model Trophies

August 11th - 12th Elvington Large Model Airshow

September 1st - 2nd Much Marcle Large Model Airshow

In Conclusion

May 2018

May has proved to be a fantastic month. The weather is at last living up to it's name - Spring going into Summer. Let's just hope it carries on like this. I've been able to fly the Super 60 and the Pulse. The Super 60 is so majestic in flight - landings are a doddle and I think, possibly because of it's flying weight, it doesn't get affected by winds. Everything happens in a measured way - you put in rudder and it persuades itself into a nice banked turn - little bit of 'up' maintains the bank - it's all very relaxing and in my opinion, that model looks really good in the air. Just love it.

The Pulse on the other hand is the complete opposite - highly responsive - lots more trimming to do - I just want a calm day but it's a delight to fly.

The Cleveleys Classic Car Show is looming June 10th - put it in your diaries because we have a stand there - hopefully we will encourage more new members.

This Sunday, the field will be taken over by the Drone racing but we have been invited to fly at the Fleetwood site at the end of Jameson Road.

So, guys, that's it for this month. Safe flying.

