Newsletter

August 2018

This month has just flown by for me. The weather has finally started to become cool again for us in the North. We regularly speak to Judy's son who lives down South and they've had such sickly hot clammy weather - and after that, enjoyed some really dramatic thunder storms. Give me our weather up here any day!

You will no doubt have all heard of the tragic incident which happened at the Elvington LMA show where John Townsend became ill whilst flying his Miles Magister. He was able to hand the Tx immediately to his helper (his son) who took over the landing.

I had two of our members who asked me to remind you guys the importance of NEVER flying alone at our field. If something happened to you, it could suddenly become a catastrophy.

The other member suggested that you all acquaint yourselves with the co-ordinates of the field just in case you had to make an emergency call to let the services have the exact site location. That location is clearly displayed in the Club hut.

Yes, this was a very sad incident and must have been horrific for his poor son.

This is John Townsend's Miles Magister flying at LMA Elvington in 2016

Scale Day. 2nd September 2018.

August 2018

Article by Dave Swarbrick

The day dawned a bit overcast, but warm, with a southerly breeze.

On arriving at the field several members were already setting up models, and before long a few test flights were taking place. The range of models was quite diverse from large scale 3D to very small biplanes and everything in between.

The judges were myself and Peter Cathrow and we were quite lenient when it came to scale outline, but we thought if members had turned up to have a go, then so be it.

As I said earlier the wind was from the south and as the day went on it became quite strong, but this did not deter any of the fliers from competing. Some of the smaller models struggled to keep on track at take off but the larger more powerful ones found no difficulty in getting into the air.

I so love the Wilga - quirky design, and flies so well.

The scale flight schedule was 6 mandatory manoeuvres followed by 4 optional ones provided by the pilot. The pilot's caller then passed each manoeuvre on the judges who marked them out of 10.

The beautiful Corby Starlet built and flown by John Higgins.

The 6 mandatory manoeuvres were quite simple in that anyone with an "A" cert could enter and enjoy a basic competition. 'K' factors or a handicap system levelled out the field so everyone was in with a chance. The other 4 were quite diverse with rolls and variations of the Cuban 8 being the most popular. This worked well as the top 6 pilots were all within a couple of points of each other. Jim S put in a spirited flight as did Elvis (Allan), Jason, John H, Dave W. and Steve Studdart, Finger John flew with his inimitable style as did Steve W and Archie. Phil came over from France and flew first to show the others how it is done.

Mark Conlin brought along his tiny Viking foamy biplane and in spite of the wind put in a really spirited display.

In the end someone has to win and by a narrow margin of one-point John Higgins took the trophy with Jason and Dave W coming joint second.

The Beast campaigned by Allan.

The Aero show trophy will take place at a later date because the main comp did not end until about 2.30pm.

All in all, a good day was had by all and we will do it again next year, thanks to all who made the effort to enter and to those who don't like "Comps" have a go it will definitely improve your flying and it is a good bit of fun.

The more you practise the luckier you get.

Dave.

This Pulse needed a long take off run before actually leaving the strip.

It's a pity that John P was unable to fly this model in the comp but he did give it one test flight.

This is Jason's lovely little Bipe (Stearman ?) - Immaculate flight.

Mark flew this miniscule foamy in the Scale comp - considering the conditions, he did amazingly!

A VIEW FROM THE HEDGE. (By Will Sparrow)

Many of you regular fliers will be familiar with the lost souls who occasionally meander down the field track looking for destinations which have nothing to do with the joys of model flying. In the past we have had a chap looking for the local nuclear bunker (by the way, there is one in a nearby field, a relic of the Cold War), we have had a rather nice female engineer asking if it was possible to walk over the fields to the fracking exploration site that used to be on top of the hill to the north of your strip but, on a more mundane level, we have had scores of folk trying to find the scrapyard or the Wake Park. I think it is fair to say that we get our fair share of non-modelling visitors! On the 25th July a little mini pickup with what looked like a large tin can sloped up the back, pulled into the car park. I could almost hear the groans of "Not another one!" wafting over the space from the pits to my twig. All of a sudden the groans stopped as two rather fetching young ladies sashayed out of the mini. They were dressed in the sort of attire that you chaps seem to appreciate; one of them sported a backpack with the Red Bull logos all over it. When I glanced back to the car park I noticed that their vehicle was similarly logoed and the large, sloping tin was a large can of Red Bull. The girls came over for a chat and were keenly interested in what you modellers were doing and the models you were flying. It transpired that they were on their way to some promotional event but found their way to your field by mistake. They stayed quite some time but, before they left, they gave all the modellers present a can of Red Bull pulled from the backpack. The day was a hot one so the drinks were much appreciated.

I'm told that this Red Bull stuff "Gives you wings". I have to say that I saw no evidence of any wings appearing and, even if they had appeared you would still have to build the rest of the aeroplane! I'm still scratching my little feather head over this conundrum.

Only the other day my mate, Jim Sparrow, flew onto my twig in a state of some excitement. He had heard that, during the recent spell of hot, drought-like conditions, aerial surveys of the area had been carried out from aircraft and drones in order to uncover the presence of ancient buildings and artefacts that had suddenly become visible under these drought conditions. By all accounts, ancient structures that have been covered over for, perhaps, thousands of years, dry out at a different rate to the surrounding soil and thus show up in shadowy outline when viewed from above. He went on to tell me that the Wise Old Owl had told him that such marks had been discovered on your hallowed turf. These straight marks, known as "cursus", were thought to, perhaps, have been used by Neolithic man as athletics courses. The WOO had, however, given the story a different spin: he had told Jim that the marks, some ten yards wide and fifty yards long, formed a cross with arms aligned E-W and SE-NW were situated at the centre of your flying strip! Jim came away convinced that Neolithic man, some 3000 years ago had enjoyed the model flying pleasures that he sees you lot enjoying today… and nothing I could say would convince him otherwise! Jim flew off: I had another scratch of my head. (I know that I shouldn't tease poor old Jim with Fake News – I know he is a gullible sort of bird… but, sometimes, I just can't resist the temptation – WOO).

Summer ended on Friday, 27th July. In truth there has been little flying taking place of late as you all find other things to do, such as going on holidays and sitting in traffic jams. I hope that you'll be able to provide me with some more aviation experiences before the leaves begin to fall and the nights really start to draw in.

Preparing for your ‘A’ Test?

Whilst talking, recently, to some of our trainee pilots (all of whom seem to be making excellent progress) there seemed to be more than a degree of doubt as to what was required both with the manoeuvres and the theoretical part of the test. I had another look at the BMFA website to refresh my memory as to what was available to help their members along the path to their “A” certificate. To be charitable, the BMFA site is not of the best and there is not much relevant info on the main site. The information on the achievement schemes seems to have been relocated to a new website. http://achievements.bmfa.org

All the information is here, including diagrams of the manoeuvres and all the documents that you will need to be familiar with in order to pass your test. As well as the safety codes and the relevant parts of CAP658, there are quizzes on the type of questions that you might be asked on your test.

The list of 20 “air law” questions is also given, along with the correct answers. Also to be found is a useful document entitled TEST STANDARDS FOR CHIEF EXAMINERS AND CLUB EXAMINERS AND GUIDANCE FOR TEST CANDIDATES. If you read this you will know exactly what the examiners are looking for on the day of your test.

If you practice flying the test with an instructor until you feel confident that you are getting it right, there is no reason why your “A” cert cannot be in your pocket before the bad weather sets in. Good luck!

John Higgins.

Batteries

August 2018

Article by Brian Holdsworth

Some transmitters are supplied with dry cells, which may be considered adequate, with the low power consumption of 2.4 GHz; display backlighting increases consumption considerably (double or more) so that its usage should be minimised. It is claimed that dry cells should allow ~15 hours of operation which, assuming a typical usage of <1 hour per week, would be about 4 months, perhaps longer with missed sessions due to weather etc. The dry cell discharge curve is more predictable than the flatter curve of NiMH's.

Some have no charge socket, which would cause difficulty in charging a rechargeable battery. Usually, the battery box can be unplugged and removed to allow a 4 cell NiMH receiver pack to be fitted, with some padding to avoid rattling - its plug can be difficult to fit onto the printed circuit board, and frequent removal for charging could cause intermittent operation due to damage from flexing of the board.

Using individual NiMH cells in a battery box has the potential problem of the frequent cell removal for charging straining the spring contacts, since these cells are slightly longer than their dry equivalents. Where a charge socket is available, the current needs to be kept low (<500mA) to avoid overheating the spring contacts.

If it is decided to fit Lixx, the manual specification should be followed. In many cases, only LiFe will be mentioned and fitting a LiPo, with its higher voltage, could result in early transmitter failure with obvious safety implications as the model crashes with possible consequential damage to property/personnel etc. It is essential, as above, that balancing is used during charging which is why, for example, Spektrum batteries incorporate a charger/balancer - there have been reports of such batteries going flat, suggesting faults or design errors in their charge circuitry. Unplugging and removing a battery for charging, as often recommended in manuals, is likely to cause damage as above. A charger using only the balance plug via an extension lead could be convenient, avoiding disturbing the power lead. Some batteries are available with multiple plug leads to fit various transmitters - care may be needed to avoid the unused connectors shorting.

If the battery type is changed, the battery voltage alarm setting should be changed appropriately; this should be found among the transmitter system options with suitable values in the manual - hopefully! 35 MHz was simple with nearly all using 8 cell NiMH's. There is a wide range of 2.4 GHz transmitter voltages - single cell LiPo, 2 cell LiFe/LiIon/LiPo, 4/5/6/8 cell NiMH and 4/8 dry cell have been identified. In addition to voltage, some

Batteries Continued

Article by Brian Holdsworth

transmitter displays have a battery glyph incorporating a thermometer-type scale, giving an indication of relative voltage above the alarm setting, which aids the assessment of remaining duration - an empty scale indicates a near-flat battery! The displayed voltage may sag during the first minute or so after power-up, becoming more noticeable as the battery discharges.

The charge state of a battery is only known with any accuracy when fully charged or flat, so that usage duration since its last charge is, in practice, the best parameter to be monitored. Using a transmitter until its battery is nearly flat is unwise and frequent charging is preferable - before every session is convenient, providing a known initial state, and reducing the potential for some battery problems. However, it is preferable for the battery to charged immediately after a session, if heavily used, to minimise the duration of its near-discharged state.

Users need to be aware of their critical voltage (0.2 volts or so above the alarm value), indicating insufficient remaining capacity and hence duration, for their pre-flight checks - particularly where they use several transmitters with different battery types and consequential potential for confusion. Obviously, long flights may require a greater margin. Trainees need to ensure that their checks include this, since instructors are unlikely to be aware of the appropriate value for their transmitter, especially where the supplied battery type has been changed.

All Lixx types share general characteristics with their main variation being the nominal cell voltage, which is that near the end of their discharge cycle. The actual cell voltage is generally significantly higher, declining steadily during the cycle. This differs from NiMH's with their flatter discharge curve, where the nominal cell voltage of ~1.2 volts is maintained over the majority of the cycle being higher only for a short period at the start of the cycle and dropping below nominal towards the end. The physical size for a particular cell count and capacity can vary between brands, which could cause problems in an installation if insufficient size margin has been allowed - especially with some puffing.

Some high capacity LiPo's are available with a ~10C rating, slightly smaller and lighter than their higher C equivalents, and are intended for drones (quadcopters) to give long duration flights with their low consumption. Such flights are a major cause of the additional model flying restrictions being imposed by the regulating authorities in many countries, since they

Batteries Continued

Article by Brian Holdsworth

allow drones to be flown under GPS guidance to loiter at a fixed point for considerable periods, waiting for something interesting to be caught by their video cameras - such as in the approach to airports to record close encounters with landing airliners etc!

Some LiPo's up to ~2200 with 70C+ ratings have been introduced for FPV drone racing etc. to produce very high speeds for their short flights. They are often slightly bigger and heavier than their lower C equivalents. As covered earlier, only a few cycles may be available since performance would reduce quickly.

LiPo's intended for general usage typically have C ratings of the order of 30 to 40 as a practical compromise. With all, capacity and C ratings should be regarded with scepticism being often more advertising hype than reality! Assuming capacity as the next size down (2200 assumed to be 1800 etc) and limiting maximum metered current indication to below half the C rating would seem wise for a long life. The displayed current values are smoothed by the meter implementation and the actual maximum transient current will be near double that of the displayed value.

Experience with some "budget" LiPo's, such as those from Hobby King, show a rapid deterioration of performance after the first few cycles with considerable variations between examples, suggesting that better quality control would be helpful. Some sets of batteries have shown at least one poor cell in each suggesting that their claims of resistance-matched cells may be valid, but not in a helpful way! Often, one set of batteries performs differently from another obtained a few months earlier or later, presumably from a different batch. A possible approach might be to obtain a small number and, if performance seems satisfactory, to obtain more in the hope that they come from the same batch! Unfortunately, the better behaviour for the first few cycles before they deteriorate, raises the awkward question of when they may be considered adequate.

More expensive LiPo's seem to show better performance with less cell variation.

Several years ago, some chargers added support for LiHV, which is, essentially, a higher voltage form of LiPo. These have a nominal cell voltage of 3.8 volts with a charged voltage of 4.3/4.35/4.4 volts according to type. The multiple charged voltages provide opportunities for confusion resulting in over-charging and consequential safety concerns, especially as some users may be tempted to boost performance by selecting a higher voltage than that

Batteries Continued

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Article by Brian Holdsworth

specified. These batteries have yet to appear, perhaps because any performance improvements are insufficient to overcome the safety concerns.

Future battery types are difficult to identify, especially for airborne model applications. Lead-acid was one of the earliest using the heaviest metal in general usage; they used to be wet, containing liquid sulphuric acid which can be very corrosive if spilled, but most now use a gel to hold the acid in a more stable form. Several nickel-based types have been introduced with some losing favour for various reasons. More recently, Lixx has become available, using lithium which is the lightest metal possible; it is very reactive but only small quantities are used, minimising the potential for problems. The considerable resources being put into electric car development may produce suitable variations of current chemistries. High temperature salts and molten metals are being considered for some specialized applications but seem unlikely to have general application.

Improvements in LiPo quality control should be achievable, and seem the most likely development in the near future. However, surprises are always possible!

Club Instructors

August 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 commenced from Tuesday 1st May through till 30th September to Tuesday, Wednesday and Thursday evenings till 9pm. Wednesday evenings remain as Training

Upcoming Events/Shows

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

September 1st Much Marcle Large Model Airshow

August 2018

In Conclusion

I so enjoyed yesterday. It was great to meet up again because I haven't been to the field for ages. You guys who flew did not have an easy time of it with that blustery wind, especially the smaller models. There was lots of friendly banter - it was a great day out.

I took loads of pictures and I'll put some more on the Club's Facebook page.

In the meantime I wish you all happy and safe flying.

Thanks to all of you members who again contributed to this newsletter without whom, it wouldn't exist.

I believe this must have been the maiden flight for this delightful Hobby King EDF