Newsletter

November 2018

Sorry I missed last month's newsletter. It's been a difficult couple of months due to Judy's health issues. It has, and will continue to affect the way we are able to live our lives - this time last year, we could go away, stay for a night or two at a hotel to visit our family - now it is not so easy to do that. It's a narrowing world and so limits every day life. I nip down to the cellar anytime I can and very slowly my Ben Buckle Matador has taken shape and is now structurally complete ready for covering when the final sanding is done.

It only needs about 125 watts to power it but I've got a spare 250 watt motor which will swing a 10" x 7" prop - but it's easy with electric to tune the power curve down to something it can use.

Apart from that in these past couple of months, I've flown just 3 sessions whilst Judy was in hospital. I took my brother's army Zulu to the field on a very cold day - the runway grass was overlong and still had ice on it. Taking off was difficult (my brother never over powered his models) but once it had been persuaded to unstick, it flew magically and the landing was the best I've ever done with that model. I kept power in and flared just right - it greased lightly down and came to a stop after about 15 feet. Very satisfying. I had got frightened of flying his models because I know that I can never rebuild one to his high standards. The last time I'd flown it, I had made a real pigs ear of the landing - not enough power - treating it a bit like it was a WOT 4.

I still have that Airspeed Courier of his which I have never dared to fly - I vow that when the weather brightens up again next Spring, it will be flown.

Bonfire night at the Club was great - such a shame the guys were unable to fly their night flying models. I had been so looking forward to seeing that display

I nevertheless got shots of the excellent firework display.

November 2018

Social Evening

John P brought this beautiful retro Nick Ziroli design trainer jet - this model has 'presence'

Lee brought along his giant Beast powered by a DLA120

Looks like a lot of fun from a very small package - a lovely little MIG edf built by Dave.

This was our 'Bring a Model' evening - really enjoyable and we saw some really interesting models right from the miniscule to the Giant Beast which Lee brought along.

A VIEW FROM THE HEDGE. (By Will Sparrow)

Well, autumn is really with us; the leaves are hanging on to their twigs for dear life (and fighting a losing battle) and the swifts, swallows and martins have long since departed for warmer climes. As chance would have it, just as these summer visitors made their exit, our hedge received a clutch of visitors of quite a different feather. The visitors in question called themselves waxwings. These birds were on their annual migration but had been either blown off their normal course or had suffered a malfunction of their sat nav. Whatever the cause, here they were, welcome guests in our hedge. This particular mini flock – there were five of them – hailed from southern Russia (which I believe to be even further north than Lancaster), they had strange accents and were about the same size as our British starling. Their name seems to have come from the red tips they have to their wings which, allegedly, look as if the tips have been dipped in sealing wax (whatever that might be!). The reason that waxwings migrate is that their diet is rather specialised – they, apparently, only eat berries. Russia is not well-stocked with berries in the winter months so it's off to pastures new for the waxwings. I did point out that the berries round here are starting to get a bit over-ripe and are fermenting on the twig and that eating a few of these could make flying in a straight line a bit difficult! We invited our guests to a feast of fermented berries as a prelude to their next-day departure. The evening ended with lots of sparrows sitting on their twigs giggling (Jim Sparrow fell off his twig!) and the five waxwings, somewhat bemused, still as sober as judges. The next morning off they went, flying in a dead straight line! The Wise Old Owl later told me that waxwings have specially adapted livers that process alcohol so that it has no effect on their system enabling them to eat as many fermented berries as they wish. Just imagine alcohol having no effect on one's system… I'm glad I'm not a waxwing!

Just as I had resigned myself to enduring the storms of autumn along came a nice day, the last Friday in September. A good dozen of you turned out in the afternoon to give this bird his aviation fix. One model that piqued my interest was a scale model, but not one of those thousand-hour masterpieces. No, this model was a quite large A10 tank-buster… and it was made of foam! It was an electric ducted fan twin and looked suitably realistic and menacing. It made a pleasing sound on take-off and flew well – but not for very long! The model didn't crash, it exhausted its

A View from the Hedge Continued/...

batteries in two or three minutes! This type of model demands high-spec batteries of large capacity. I hope to view this model again when it contains a few more electrons.

The very next weekend produced a decent, if windy, flying day on the Saturday and an even windier day on the Sunday. Still, at this time of year modellers turn out in goodly numbers, being released from the summer distractions of holidays, traffic jams and the joys of shopping. On the Saturday I noticed a new glider that I hadn't seen before that seemed to be only capable of turning one way. To my eagle eye the wing seemed to have a bit of a twist to it – but I could be wrong. On the Sunday I had the misfortune to witness a crash. Readers of a nervous disposition should proceed no further… a mug of warm cocoa is a safer bet. A large jet blasted down the runway, took off and gave its usual spirited display, smoke trails and all. Come landing time the wheels came down on demand but the approach was too high: the owner opted to go around for another attempt. The engine seemed reluctant to spool up and, just as all seemed to be well and the model starting to climb away, the engine emitted a puff of blue smoke and stopped. A dead-stick landing was probably on the cards, but it was not to be and the stricken model, after a series of stalls, crashed into the field to the north of the strip. I flew over to the crash site before the recovery party arrived. The model seemed to be a total wreck. I felt a bit sick as I flew back to the hedge. It is a fact of life that if you fly model aeroplanes you will have the odd crash. If you haven't had one yet, don't get complacent, the hand of fate will smite ye eventually.

As you all will undoubtedly know, the Airshow Event had to be postponed from its original slot as a result of the popularity of the scale do a couple of weeks previously. Luckily, the new date set was blessed with a reasonable weather forecast (according to the hedge's seaweed!) so, having had an early breakfast, I scrambled to my viewing twig eager to share in the fun. As the start time approached there were two entrants in the car park! Okay, the weather was a bit overcast and gloomy but it wasn't that bad. As the clocked ticked on a few more modellers arrived until, after another hour or so, we had six entrants. I have been fortunate (!) to witness this event in previous years so I know what to expect – think world-standard flying in front of world-standard judges… and then think the opposite! This day is more about having a bit of fun in a less-than-serious setting. I always enjoy viewing such events. As the proceedings came to a conclusion, the murk lifted and the afternoon was blessed with sunshine and no wind. At this time of year nice days don't come along

as often as we would all like so it was nice to see modellers enjoying the sky… perhaps you, dear reader, will become one of this happy throng?

Talking of happy throngs, I was amazed to see so many of you turn out on a Friday in early November. It transpired that word had got out that a big, new, petrol-powered bi-plane was about to undergo a series of early test flights. These events can be a little stressful for the owner, but in this case he need not have worried – the model flew beautifully, made little noise and landed like a feather. On the subject of noise, these large petrol engines can be made very quiet if the revs are kept down to reasonable levels. It's only when folk try to extract ultimate performance that the noise levels become unacceptable, sparrows in the hedge start to experience hearing loss and residents in the village start to notice your presence.

Once autumn is into its stride I begin to look forward to your annual bonfire night celebrations, so I was not surprised to see firewood starting to accumulate to the far side of the club hut. Folk arrived with trailers stuffed with wood; I even spotted a vintage lorry arriving with a huge load of fencing panels. It seemed that no members would be shivering from the cold come the night. Last year, as well as the usual fireworks, we had the spectacle of illuminated, night-flying models to give us watchers in the hedge something extra to ooh and aah about. When the great day arrived, although the weather was fair and mild, the strong southerly wind put paid to the planned night flying even though it did fan the bonfire into a raging inferno! The fireworks were as entertaining as ever – especially when some of them deemed to attack the setters-off. You certainly have some brave men amongst your ranks! You all know that I like to see members enjoying themselves; you seemed to be having a good time at the bonfire event. I don't think I have ever seen such a lot of you!

Now that bonfire night is behind us I suppose that it's downhill to Christmas! Modellers everywhere will be contemplating the building season, sharpening their modelling knives and laying in materials. Others will be clicking away, ordering the latest Chinese wonder and looking forward to the challenge of applying the decals. Whatever your route to modelling nirvana, just make sure that you provide me with something interesting to view from the hedge come next spring.
WS

The KK Sportster Reborn

November 2018

Article by John Prothero

The KEIL KRAFT SPORTSTER

In the late 50s, yes I really am that old! I lived in Chadderton Oldham - behind the shop that I lived in was Coalshaw Green Park. My friend Dave Sewell and I had just got bitten by the Aeromodelling bug and being around 8/9 years old found a lot of the kits on the market a bit complicated to say the least.

Our local model shop (Harry Butterworths) recommended the “Eezebilt Sportster, so Dave and I took one each home and stuck them together.

We arrived in Coalshaw Green Park and proceeded to fly these little models. Once we had followed the instructions they flew quite well and we had hours of fun climbing trees to retrieve our models. This little model kick started our Aeromodelling careers and soon lead to other models. Then we both acquired engines and started with a Veron Nipper for me and a Phantom Mite for Dave. The Nipper had an E.D. Bee (which I still have) and Dave put an A.M. 10 in his Phantom Mite (power mad).

We both later joined the Oldham Club and the Whitefield Club were we flew mostly combat and later 1/2A Team race (1.5cc Diesel engines). We also flew Mercury Cobra's, mine had a Johnson 35 Stunt Supreme and Dave's had a FOX Rocket 35, Dave's was very rapid whereas mine was rather more restrained, both flew well.

We progressed to radio via single channel, reeds and then finally proportional radio.

But we never forgot the Keil Kraft Sportsters! Then one day about 3 years ago Dave gave me a ring and announced that he was building a scale model – a scale model of a Sportster! He said now this is a bit backwards because a scale model is usually smaller but in this case it's bigger!

"It's a plan I've come across" said Dave. A few weeks later he invited me round to see his handy work. Dave's models are always nicely built and this one was no exception. We then went off to one of our old flying fields and flew the R.C. Sportster, it flew superbly well, it just drifted around very reminiscent of the original, but now we could keep it out of the trees and as Dave pointed out to me "I think our tree climbing days are over".

Dave asked me round to his home recently and said that he wasn't doing any more flying and would I take a couple of models off his hands, but he insisted that he GAVE me the Sportster on condition that I never sell it and that it gets flown. I really treasure this model, for lots of reasons, but mostly because for me - I have come full circle, I have a Sportster again.

Here is the SPORTSTER reborn and built by Dave Sewell.

Batteries

Article by Brian Holdsworth

The manuals supplied with equipment used in radio control models need to define the minimum and maximum supply voltages, together with power consumption and resultant capabilities, in an appropriate form for the intended user - many do not! This is unfortunate since there is potential for legal implications in the event of an incident blamed on equipment failure, where the user could be deemed liable if the equipment was not used within its limits.

The supply voltage is critical to achieve the required performance without degrading reliability. All equipment requires a reasonably stable input voltage within its range without excessive fluctuations, especially under transient loads. A wide range is very difficult to implement, particularly for servos, and some items demonstrate erratic performance near their voltage limits.

Too low a voltage, even momentarily, will reduce performance and stop operation if below some value.

Too high a voltage increases current consumption, generating more heat which increases the probability of future failure. Over some voltage, immediate failure will occur or breakdown of circuit elements resulting in erratic operation with early failure probable. Some items are specified quite close to their internal limits so that even half a volt over may be enough to over-stress them. The seemingly widespread belief that "if it works on the ground, it will be fine" does not necessarily mean future reliable operation!

Failures can occur for no apparent reason, but too high a supply voltage and/or over-heating will result in damage which is cumulative over weeks, months or even years before eventual failure.

All too often, failures can be intermittent so that the equipment seems to operate normally until the temperature of an internal component increases sufficiently to upset operation. Sometimes, such a problem can be provoked by ground operation for a period while applying varying loads to servos, generating heat, when inappropriate servo movements may be observed. Unfortunately, lack of visible effects from such tests does not always indicate lack of problems - proving a negative is notoriously difficult!

Batteries Continued

November 2018

Article by Brian Holdsworth

Early R/C equipment was rated at 4.8 volts, corresponding to the universally-used 4 cell NiCad's of the time. Immediately after charging, their "super-charge" often caused jittery operation so that they were best left for a few hours to "settle" or the servos were exercised a few times before the first flight of the session to drop the voltage, otherwise problems were likely. About when NiMH's appeared, "4.8 to 6 volts" specifications became common, including items previously rated at 4.8 volts; some of these are still available, raising doubts as to their satisfactory operation on 6 volts. This range corresponds to the nominal voltage for 4 and 5 cell NiMH's with some voltage drop expected from the varying currents drawn. Some servos demonstrate reasonable performance on 4.8 volts but are jittery on 6 volts, which is hardly "adequate" performance, even if it does not result in early failure as such.

The nominal NiMH cell voltage is 1.2 volts, which is maintained for most of the discharge, only dropping lower when discharged further than should generally be allowed; the "super charge" quickly reduces as above. This means that a 5 cell NiMH could be ~6.9 volts initially, quickly dropping to the nominal 6 volts in use, which would then be maintained, only dropping lower when needing charging.

The advent of Lixx (LiFe, LiIon, LiPo) confuses the situation, since their quoted nominal voltage is that near the end of the discharge cycle, so that their voltage is always higher in use. For example, LiFe has a nominal cell voltage of 3.3 volts and a charge voltage of 3.6 volts. This means that a 2 cell pack will be 7.2 volts fully charged, dropping steadily to the nominal 6.6 volts when nearly discharged, with charging desirable before this level is reached. This is significantly higher than that for a 5 cell NiMH through most of the discharge and so liable to over-stress any equipment rated at 6 volts maximum. Similarly, the voltage of a 2 cell LiPo, 8.4 volts dropping to 7.4 volts, is much higher than that of a 5 cell NiMH and so would be inappropriate for other than HV-rated equipment.

Some transmitters do not identify their voltage requirements, since they fit a large single-cell Lixx; this is likely to be non-standard so that eventual replacement may need to be via the supplier (expensive!), especially if fitted without a connector. Some equipment intended for indoor models may be for single-cell LiPo, sometimes with non-standard dimensions intended to be unique for the brand, but compatible LiPo's are often available at lower prices.

Batteries Continued

November 2018

Article by Brian Holdsworth

A range of "4.8 to 7.4" volts may be interpreted as 4/5 cell NiMH, 2 cell Lixx or a regulator supplying 5.0 to 7.4 volts; these items are often labelled as "HV" (High Voltage). Some quote maximum as "8.4", also signifying up to a 2 cell LiPo. Some quote a minimum of "6.0", meaning that lower voltages (from 4 cell NiMH or a 5/5.5 volt regulator) would not be appropriate - this often applies to HV-marked servos, which usually include a regulator for their control circuitry.

Unfortunately, there are many cases where the specifications seem to have been taken from internal components, ignoring the overall requirements and confusing the user. Where a value in the range is not "4.8", "6.0", "7.4" or "8.4", it may be assumed that the range refers to internal limits and the supply needs to be well within that range. For example, Spektrum quotes receiver input voltage range as "3.5 volts to 9.6 volts". Receivers stop working below ~3.5 volts and their manuals recommend operation above 4.8 volts, even with servos fully loaded. The figure of 9.6 volts may be taken as being the voltage which, if exceeded even momentarily, would be likely to cause damage - including releasing the magic smoke!

There are cases where linear regulators quote input ranges starting from below their rated output voltage; they would not stop working, as such, at these lower voltages, but their output voltage would be reduced below specification, with lower current capability, which most would regard as not working! There are similar examples for switch-mode regulators where it is possible that some may maintain their output voltage by stepping it up above the input, with increased heat generation; assuming the availability of this capability would be optimistic guesswork unless specifically stated.

Most linear voltage regulators produce 5 volts, which is appropriate for equipment supporting usage from 4 cell NiMH's, including Spektrum receivers etc. Some linear and most switch-mode regulators produce 5.5 volts which is adequate for equipment supporting usage from 4/5 cell NiMH's (ie most). Some produce 5.9 volts, often including statements in their manuals that this voltage avoids over-stressing equipment rated at 6 volts, suggesting awareness of potential legal liability; this voltage would be inappropriate for equipment rated at 4.8 volts only. A few regulators may be set to produce 7.4 volts which, as above, needs all connected equipment to be specified as HV-compatible.

Servos are vulnerable to failure modes which remove drive (sometimes in one direction only) to the output or, even more seriously, drive the output to the mechanical limit

Batteries Continued

Article by Brian Holdsworth

with higher torque than its specification and very high current drain, with obvious consequences. Failure modes of other equipment generally take the form of ceasing operation, sometimes drawing excessive current which could inhibit operation of other equipment. One fortunately rare failure mode of a regulator passes its input voltage straight through, which could destroy all connected equipment from the resultant excessive voltage; many regulators and some other components incorporate overheat protection to reduce the probability of such cascade failures by shutting down until sufficiently cooled and their supply has been cycled off and on.

The CDI units used to control the spark ignition for petrol engines are very vulnerable to supply over-voltage, resulting in early failure. Many are only rated at 4.8 volts and would need a 4 cell NiMH or a 5 volt regulator. Similarly, any rated up to 6.0 volts would need a 4/5 cell NiMH or a 5/5.5/5.9 volt regulator. Some quote up to 7.0 volts, which is the short-term peak voltage of a fully-charged 5 cell NiMH. Using LiFe direct would be likely to over-stress such units unless a rectifier diode, such as 1N4007, is connected in series to reduce its voltage.

To meet 2.4 GHz specifications, the RF components operate on a limited supply voltage range, so that a regulator is often incorporated in transmitter and receiver circuitry to supply these, and often the processing elements; this will generate heat. Transmitter voltage specifications need to be checked before, for example, 2 cell LiPo's are fitted, otherwise their RF boards are prone to failure. Early receivers were specified for "4.8 to 6 volts". Most recent receivers specify up to 7.4 volts, often marked HV, suggesting a 2 cell LiPo would be supported. Some include telemetry of receiver temperature, to generate an alarm in the transmitter if a user-definable value is exceeded; unfortunately, their manuals usually omit the required information as to what temperature would be considered excessive! Over ~60 degrees would be of concern.

Hitec Optima receivers have an option (SPC) to operate from a separate supply from the servos, which the manuals state may be up to 35 volts. This is a very high voltage to handle, so it is presumed that a form of switch-mode regulator is incorporated, otherwise the heat generated would be considerable. It seems doubtful that this capability has been used, and it is not included in the later Minima and Maxima receivers.

Aeroshow Trophy.

By Dave Swarbrick

When we ran the Club Scale trophy a few weeks ago we ran out of time for the aeroshow trophy. I decided to run it later on in the year and the 14 Oct. seemed a good time for the event.

The weather coming up to the weekend was awful with gales and heavy rain from about the Tuesday onwards, but the Sunday was looking flyable so a decision was made to run the event and see how things progressed with the weather.

The day dawned overcast but with no wind or rain and almost perfect flying conditions. We ended up with 7 pilots all eager to test their skills, so a start was made. Each pilot had a helper/caller to read out the manoeuvres and give moral support.

I will not give a blow by blow account of what happened but suffice to say all the models except for one engine stop performed well.
The pilots gave a good presentation of the stunts and tricks they had written on the entry form and were mostly recognisable. Finger John again proved that doing a stall turn at full throttle does not quite work.
The score ended, because of the handicap we had built in, very close with two A cert flyers in the top two positions, but alas none could compete with Jason on the day and he took top honours with first place.

Thanks to Steve for doing the score sheets and also Geoff and Julie for helping with the scoring.

Thanks again for turning up and having a go.

Club Instructors

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

Social Evenings/ Club Events

The AGM will be held at the Marton Institute 3rd December commencing 8pm.

Quiz and Hot Pot Supper 13th December

I'm so sorry that you did not get a newsletter last month and I have had so much input from members that I have saved one excellent article for next month anyway.

Thanks most sincerely for all of you who have contributed this month. I am hoping that by this time next month that I will be clutching a lovely full frame camera which should improve my photography. The camera I use at the moment was designed 9 years ago and just does not compare with technology of today.

I will be going to the AGM but unfortunately won't be able to make it to the Hot Pot Supper.

I wish you all happy and safe flying.

Remembrance Sunday 2018

Justin Goldstone, Paul Cusworth, Dave Swarbrick and John Prothero held a simple act of remembrance at the field with three Spitfires. Justin brought a glow powered Spitfire as well as a Ripmax Spitfire, John also brought his Ripmax Spitfire all three were flown as an act of remembrance on behalf of the club.

LEST WE FORGET