

PMP Autumn Newsletter 2013

Welcome

Welcome to the PMP Autumn Newsletter. What a summer, the best one in four years, not quite like the very hot summer of 1976 when the temperature in my office never dropped below 32C (90F) for three months. It was not all good news though as there were standpipes in the streets, a potato shortage (we sliced bread and pretended they were chips), the grass was brown and there was a shortage of thermals for the full size gliders! To top it all when we took our summer break the rains came! This unfortunately dates us so hands up I am 70 this month but do not fret as we have no plans to retire despite the rumours we have heard to the contrary! The business, like most in the discretionary retail sector, is not good but we are still covering our overheads and still getting a lot of pleasure running it. Besides I do not want to relinquish the excellent building facilities I have and the big boys toys!

M2 Kits

On the Mk2 kitting front we have re-visited ten of our eighty / ninety models so far. Nine are complete and on the shelf with the tenth in the final stages of production. Sales of the Mk2 kits are growing steadily with the WingBAT 48 leading the way (we have just completed the third batch of kits). The latest, the Wallaby Mk2, is an electrified version of a 25 IC sports model originally designed in 1981. It may look like one of the current batch of ARTF electric sports models but the Wallaby pre-dates them by a number of years and I still have the original plan. The performance of the Wallaby is quite impressive with a near vertical climb rate, a spritely aerobatic performance and 10 minutes duration on a economically priced 2200mAh 3S LiPo.

CE Marking

This item is part self interest and part *customer beware*. Just because an item has a CE mark this does not mean that it is CE Approved. In some quarters it stands for Chinese Export! To get CE approval is a lengthy and expensive process. I remember a well known RC set by a major manufacturer being stuck in a UK warehouse for several months awaiting CE approval before it could be shipped to customers in the UK so when you see compatible versions of current equipment available for a fraction of the price of the original branded item it does beg a few questions. Apart from the damage being done to the original equipment manufacturer's business and their agents our concern is how insurance companies will treat a claim in the event of a serious accident if the model was fitted with non-approved equipment and it was deemed to be responsible. If the claim is rejected then the modeller responsible becomes liable. If the equipment was bought in good faith within the EU then the retailer becomes responsible. Consequently anything we sell is either bought through the official UK/EU distributors or direct from the manufacturer (KST servos) after we have checked that it is CE Approved.

A Cautionary Tale

A local customer recently bought a new Lipo battery from us. A couple of days later he brought it back saying it was faulty. A quick check with a LiPo battery tester via the balance lead showed that all cells were fully charged but no volts on the output terminals. I then noticed a small hole in the heatshrink sleeving at one end of the battery. Squeezing that end of the battery I was able to get full a battery voltage reading on a multimeter. What the customer had done when changing the pre-fitted Deans plug was to cut both power leads at the same time creating a short circuit. The cell bridging links act as a fuse in this situation and melt hopefully preventing to the battery catching fire. The moral, always cut power leads individually and when soldering on new terminals take great care not to allow them to touch each other. Tip always solder and heatshrink the female plug of bullet connectors first. For more information on LiPo care please read the article on our website.

Another One – Black Wire Corrosion

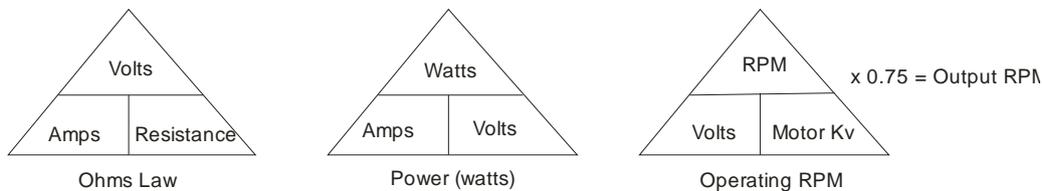
No, it has not gone away, it is still alive and kicking if feed back from customers is anything to go by. Black wire corrosion is caused by electrolytic action taking place between the negative and positive leads when there is voltage difference between the leads and there is a small amount of moisture present. This forms a sub-micro plating bath as the plastic sleeving is hydroscopic i.e. it absorbs moisture with the negative lead wire being the sacrificial plate. The solution to the problem is to store the model in a non damp environment and disconnect the battery from the switch harness when not use to prevent it spreading. To detect black wire corrosion cycle your batteries and do a capacity check. If battery capacity is lower than expected this could be due to either the battery nearing the end of its life or a high resistance in the leads due to black wire corrosion. In both instances the battery must be discarded. At the same time carry out a battery check, first on the battery terminal plug then on the switch harness charge lead and receiver supply lead. If there is a significant difference between the battery reading and any of the switch harness leads then change the switch harness as this indicates a high resistance in the switch harness restricting its ability to deliver the required current to the servos.

Simplifying Electrics

I seem spend a lot of time explaining the basics of model electrics to customers. Model electrics, like computers, is one of those topics, that for a lot of modellers, brings the mind shutters down. I can understand why as it happens to me with certain software packages. It is important that electric flyers understand the basics of model electrics, one of the reasons being mistakes are easily made and at the very least expensive. Unfortunately the information supplied with motors in particular is often misleading and needs to be adapted to suit different applications hence the following.

The maths involved is very simple ($a \times b = c$). There are three basic formulas. One is Ohms law, the second is for Watts (Power) and the third is to calculate an approximation of operating RPM. All three can be illustrated / remembered using the triangular representation shown below.

i.e. Volts = Amps x Resistance or Amps = Volts / Resistance etc.



The Watts and Operating RPM formula are important because they are used in the selection of operating voltage and motor Kv (revs per volt). Optimal motor RPM is normally between 70 and 80% of the theoretical RPM hence the 0.75 constant. The above is again explained in more detail on our website.

Some Simple Rules for Electric Flying

1. Always start with a smaller propeller than the one recommended.
2. If you increase the battery voltage i.e. cell count then you must reduce the size of the propeller. Going from a 3S pack to a 4S pack increases the voltage by third which means the motor will try to turn a third faster. This means it will be working a lot harder and drawing considerably more current with the danger of burning out the motor, the speed controller (ESC) or irreparably damaging the battery.
3. In normal flight with adequate cooling the Battery / ESC / Motor should only get warm. If any component gets hot then this suggests that it is working too hard and should be replaced if possible with a higher rated component.
4. Remember the Transmitter is FIRST ON and LAST OFF.
5. Always re-bind / pair the Tx and Rx after completing setting up the model with the throttle set to minimum to reset the failsafe. Check this out by switching off the Tx with the throttle partly open and the motor running. The motor should stop. If the motor does not stop then using the EPA (End Point Adjustment) on the Tx to increase throttle travel. Rebind the Tx and Rx to reset the failsafe and check again.
6. We suggest using a normal Rx battery to set up the model's control and bind / pair the TX and Rx.
7. When you sense the battery is beginning to fade. Land ASAP to avoid irreparably damaging the battery. Use a LiPo battery checker to check remaining capacity.

Model setup

On a visit to my favourite slope in Cornwall this summer I met a couple of friends / customers who were spending a pleasant few days at the caravan site half a mile from St Agnes. The one we used to frequent when we had a caravan. Both were flying one of our models. Naturally we got chatting and I was surprised to learn that both models were only set up as Aileron Rudder Elevator models despite both having separate ailerons servos and more than capable computer radios. Conditions were on the lightish side resulting in long flat fast landings, with the speed and space available landings were a little nervy. After a bit of discussion on how the models were designed to be set up I was able to demonstrate the difference in performance between their three channel set up and a four channel set up using Flapperons with Elevator Flap coupling and Up landing Flap. The loops / bunts were smoother and landings shorter and less harrowing. It really is worth the effort of spending a little more time setting up a model. It could turn a sow's ear into a silk purse!

PS. For those that think using Expo is cheating it is not. It is there to help get the most out the model and maximise your enjoyment.

The End!

This newsletter is a bit of a sermon with a trip down memory lane so please accept my apologies. Despite this I hope you found it an interesting and informative read and did not just leap to the last

paragraph. If you are interested in any of our previous newsletters which are full of useful information these can be found on our website at www.phoenixmp.com under Newsletters on the Home Page. Christmas is coming so please do visit our On-Line shop when compiling your wish list. 99.9% of all items listed are in stock and competitively price. We are constantly updating the site and adding new items almost on a daily basis.

PS. I am impressed with the new Spektrum DX9. Another step forward but can be a bit like the bossy lady on the Sat Nav!

Happy landings and happy and prosperous New year

Stan & Sheila

Big Boys Toys



Digital AO Laser Plan Printer/Copier/Scanner



Thermoformer (Vacuum Former)



Laser Cutter



Wallaby Mk 2

