

More Tales of Electric Woe – Kyosho F16

Firstly, a safety note. We are all aware of the dangers of I.C. engine propellers, but recently part of the folding prop on my electric glider was 'thrown' on start-up. Fortunately, nobody was hurt, but given the fact that electric gliders are often launched near the flight line and at head height, the piece of prop *could* have caused an injury. The remaining stump was very sharp and I never found the piece that flew off at speed!

As a result of this incident I check the condition of the prop more regularly (especially after a nose down landing), and start up more gradually to minimise torque effects (rather than zero to full power). It goes without saying that the propeller(s) should be kept out of line of your own head and other on the flight line at the point of launching.

After reading the recent newsletter article on experiences with the Ripmax Alliance electric model, I found it very much mirrored my own "experience" (read frustration!) with a Kyosho F- 16 electric ducted fan model I purchased earlier this year.

I bought the ARTF kit at the height of the Foot and Mouth problems when our normal flying field was closed. The intention was to fly from the large playing fields in Grove, and I gained permission from the local council after explaining the situation at the club and the type of model I intended to fly.

I was looking for a 'safe' electric model that would fly in most conditions, and provide enough excitement to stop me 'becoming rusty'. A couple of week's prior to the F & M problems I had watched a very proficient pilot at the White Horse Hill throwing a 60" pylon racer about the sky. He had a Kyosho F 16 in the car and reported that it "flew off the slope as well as the model I was watching". In hindsight I should have made a mental note of the fact that there was a serious breeze, and conditions were ideal for a well ballasted slope soarer... .. -

The model was put together without too many problems, and really did look the part when completed. A few 'run-ups' of the ducted fan in the dining room found that it even had a jet engine type note - much to the annoyance of my wife.

I was a little concerned about the fragile looking foam engine intake and landing skid, (held together with small lengths of cocktail stick and epoxy), but reasoned that it was a 'proven' design and up to the job. A second concern was that the recommended 2000mah flight pack gave about 4 minutes motor duration during ground tests!

Time for the first flight came and I enlisted a work colleague to do the hand launch. We knew it was going to be a fast flying model that would require a full blooded 'javelin' style launch, and he duly provided the sort of throw that Steve Backley would have been proud of. The model followed a very flat trajectory and 'landed' at high speed about 25 metres away. The landing skid was a little dented from this initial encounter with Terra Firma, but otherwise all was well, and I adjusted trims for a bit more 'up'.

My colleague put even more effort into the next launch, and I was ready to pull back on the sticks as required to get the model away properly. This time I actually managed to gain a little height prior to a very sudden tip stall, which I just recovered to make another very high speed 'landing'. This encounter broke the flimsy landing skid off all together, although there was no other damage.

We decided to have a third 'chuck', with the intention of letting the speed build up prior to gaining any height. This strategy worked and a large circuit was completed at head height, with a very gradual climb into wind. Three circuits were completed very gingerly until a height of approx. 30ft had been gained. A sharper turn was attempted on the downwind leg, which resulted in loss of speed, and a very sharp tip stall. It quickly became apparent that this model was not easy to fly, and it certainly did not 'zip' round the sky as I had expected!

The BEC cut in after a relatively short time and I made a fast deadstick landing. Although the landing was good, the scoop air intake took another battering and we decided to call it a day.

Back in the workshop I attempted to repair and reinforce the air intake, without adding too much weight. A small piece of aluminium litho sheet was used to line the bottom of the air intake, which made things much sturdier.

Within the week I tried flying the model again. The first 3 or 4 hand launches failed to get the model away, and I suspected the slight weight increase was responsible. The only plus side was the aluminium reinforcement prevented further damage to the air 'intake'. Ideally, I would have tried launching from a slope, but all these were 'off limits' due to the F&M restrictions. I also toyed with the idea of a bungee launch, but thought that reinforcing the air intake further to take a tow hook would push the power to weight ratio right off scale. The only thing was to wait for a windier day and hope a strong headwind would help achieve flying speed from a hand launch.

A suitable day arrived and I managed to get the model flying from the first launch. Remembering the need to keep the speed up before attempting to climb I planned a couple of wide circuits. Attempting to turn on the downwind leg of the second circuit resulted in a loss of speed and complete aileron reversal, causing the model to flick violently to the right and plough into the deck. The flimsy nose was broken in several places and one of the wings was loosened.

This was the final straw! Under normal circumstances I would have attempted a repair, but I felt that the additional weight would have ended any possibility of the thing flying. I concluded that the model *probably would* fly well in a gale from the White Horse Hill, but 'normal' flat field flying was a different story.

I called R*pm *x to express my disappointment with the model. The sort of response I got ranged from "it won't be ballistic like a real jet", to "it flies well enough in experienced hands". Interestingly, they were promoting this model heavily on their web site at the time, but did not appear to be flying it at shows!

After seeing a Multiplex Twin Jet *actually fly*, I decided this fitted the original brief and bought one. It certainly lived up to my expectations and has been seriously campaigned during the year.

The model has been upgraded with '480' motors and an eight cell battery pack which gives it very good performance and a safe, steady climb out from hand launch. Out of curiosity I have tried the model with slightly lighter, but lower voltage 7 cell packs Result: A series of high speed 'belly flops', exactly the same as the Kyosho F 16! I think this demonstrates the fine line between success and failure with small electric models.

A general problem I have experienced with two electric gliders and the Twin Jet, is reduced 'aerial down range' and the occasional 'glitch'. I have tried various approaches with different

positioning of speed controller, receiver and aerial, larger capacitors across the motor terminals, ferrite separation rings, shielding the receiver with tin foil, routing of wires, etc. but have yet to achieve the sort of aerial down range I would expect from a non-electric model.

Last year I tested several different speed controllers in a model shop to optimise results. The unit that gave the best performance in my '600' glider was rated at 65 amps; way above the 30-35 amp speed controllers normally recommended for a '600' motor. This led me to conclude that the problems *may* be related to using a speed controller at close to its rated capacity.

This theory was further reinforced recently when I changed the props on the Twin Jet from the original Gunther to Graupner 'Cam' props. The new props gave a worthwhile reduction in noise, and the motors appeared to rev higher (drawing more current ??) First flight with the new props resulted in a couple of 'glitches' that I had never experienced with the old set up (35 amp 'Jeti' speed controller and 'Pico' receiver).

Third flight with the new props (on a different day), I lost radio signal to the model whilst flying well downwind and it crashed. Fortunately, I was able to repair the model and substituted a 60 amp speed controller for the 35 amp unit. The model has been flown several times since with no 'glitches', which may again confirm a link between radio range and motor current being drawn vs capacity of the speed controller.

I don't know whether there is any scientific basis to these observations, but it would be interesting to know if others have experienced the same problems.

Finally, I have another electric 'twin' under construction. It is the DH88 Comet from Galaxy models, which should look great in the 'Grovenor House' colour scheme. I don't think it will be as forgiving as the Twin Jet with its narrow chord elliptical wings, so I am keeping my fingers crossed that it is not another heart ruling the head purchase!