





### Newsletter

The weather may have been the most diabolical for the past 50 plus years and it has of course stopped us enjoying 'normal' flying. It is however a great time to enjoy building, in my case, more indoor models.

Jason has now managed to find a really good indoor flying venue at the Highfield School in Blackpool. It has a state of the art sports hall - really high ceilings and excellent lighting. My flying skills (did I really have any to start with?) Had become well rusty and I managed to comprehensively crash my newly built Beta. It was like a nervous racehorse - highly sensitive and I never got it trimmed out during that evening. Anyway, I consigned it to the rubbish bin and built another one which is now ready to fly.



Jason's Beta



This time I'm going to do the sensible thing and ask Jason to trim it out for me first. I've also built a rather weird looking 580 span 2 channel model it was a chuck glider design which I have converted. Finally I built a 450 span Double Fun biplane which I will try out this coming Friday.

Any of you interested in indoor flying come along to Highfield Humanities College on Highfield Road FY4 3JZ - the entrance to the car park is on Lindale Gardens. You need to be there by 7:50pm in order to gain access to the building - flying is for 1 hour commencing 8pm.

Tank Dave's Shockie mixing it with Jason's EPP model









450 Span Double Fun Bipe - my latest model. This has now flown at Fleetwood very lively!!

A gentleman from BAE was flying this own design biplane. He has his a laser cutter for precisely cutting the Depron ! The way he flew it was brilliant - prop hanging - he made it all look so effortless.







#### O what a tangled web we weave, When first we practise to deceive...

Many modellers seem to feel that they need to keep the practice of their hobby hidden from their wives/girlfriends/significant others. Very often the need is a result of guilt, stemming from the purchase of yet another ARTF, or the feeling that much-needed household cash is being diverted in unlikely-to-be-approved-of directions. Sometimes, such purchases are frowned upon by the distaff side since time spent on a model is time that will not be spent on alternative and altogether more wholesome activities, such as gardening, DIY and shopping.

With the above in mind I was not in the least surprised when, at one of the major shows a couple of years ago, I passed by the marquee of a noted retailer and saw a sign, prominently displayed, bearing the legend "SNEAK ONE IN TODAY!" The retailer in question had a huge pile of the latest ARTF wonder and was selling them like there was no tomorrow. Many a modeller could be seen, large box under arm, making his furtive, guilt-ridden way back to the car park. I often wonder just how many of them manage to "sneak" successfully. The other day I came across some advice on the subject of sneaking; and the advice being dispensed came from an unlikely source...

Picture the scene: a modeller is standing at the model shop counter and obviously wants to buy a shiny, new model which seems to be beaming at him from the shelf, urging him to reach for his wallet. He is fighting temptation. He knows that domestic approval for such a purchase will not be forthcoming. He voices his fears to the model shop owner... At this point the *wife* of another modeller (who is in the shop with her modeller husband) chimes in. "What you need to do", she coos, "is to buy the kit and hide it at a club mate's house, then, when the next club night comes around, you pick up the kit, stick a raffle ticket on it, take it home and say that you won the kit in the club raffle" The sound of jaws dropping all around the shop was deafening. This sound was then followed by murmurs of appreciation at the audacity and simplicity of the siren's suggestion. The lady in question was seen to smile sweetly and, taking her husband by the arm, guided him out of the shop before he could make a purchase. The shop's sales enjoyed a healthy peak over the following half hour!

Please don't misunderstand me, I'm not condoning or encouraging deceit in any shape, size or form, but, if you feel the need to use that lady's ploy, you had better start coming to club nights...

John Higgins







## Servo Power Consumption

February 2014

By Brian Holdsworth

It is apparent that little reliable information is available on the power supply requirements for radio control equipment. The manuals are very inadequate, but include legal disclaimers that it is essential that the power supply must be adequate for the purpose while giving little hint of those requirements. As the manufacturers have access to all the required data, some might think it curious that they are so reluctant to publish. However, the numbers are such that they may consider it preferable to keep quiet!

An understanding of the underlying operation of the various elements can allow sufficiently accurate estimates to be made with support for the figures coming from clues gleaned from documentation on the websites of the major brands. The subject is fairly complex, especially for digital servos, with many parameters interacting, so that a detailed analysis would quickly become confusing with little benefit. Accordingly, very simplified descriptions will be presented together with simple tests for identifying some common problems. Meters claiming to measure the currents are available but, since they are necessarily heavily filtered, are of little practical use. The multiple LED variety are almost totally useless, indicating fully charged and flat battery voltages with very little in-between.

The current drawn by a servo varies tremendously with actual usage but may be divided into three areas.

AVERAGE: The current averaged over the flight. As such, it determines the capacity taken from the battery and so, multiplied by the number of servos and the number of flights intended with a suitable margin added, defines the required battery capacity. Since it varies tremendously with the servo type and control usage, it can only be estimated by monitoring the capacity returned to the battery when charging. As an indication, 5 standard (~42g) analogue servos with near-continuous aerobatics resulted in less than 250mAHr per hour of flight. 4 micro (~9g) digital servos in a thermal soarer resulted in about 350mAHr per hour. Usage for digital servos in a large aerobatic aircraft would be much greater.

PEAK: The maximum smoothed current when the servo is moving under load. Again, it is highly dependent upon the applied load but an indication may be assumed to be when the servo is stalled though this can be misleading for some digital servos. This figure is largely determined by the resistance of the motor reduced by the effects of the winding inductance. A figure of 250mA is often quoted for mini and micro servos though 350mA would be more representative of current standard analogue servos with larger servos taking significantly more. Since all servos often move at the same time, this gives about 1.8A for 5 standard servos with larger servos drawing more.



### Servo Power Consumption continued.

TRANSIENT: The maximum current at any time. This is impracticable to measure without very expensive equipment which is, perhaps, why it is rarely mentioned but, unfortunately, this is the cause of most problems. The duration may be only a few microseconds but the resultant voltage drop through the wiring is difficult to filter and is liable to result in erratic operation of the receiver and servos. A few examples in manufacturer's literature have been found, and 1800mA at 4.8 volts, 2200mA at 6 volts for a mini servo and 2A and 3A respectively for a standard servo would seem realistic. A digital servo is liable to draw near its maximum current at its driven rate, typically 300 times per second; since this rate is not well defined, it is probable that ALL servos will draw their maximum current simultaneously at some time during the flight resulting in transient spikes of up to 15A for 5 standard servos which is somewhat alarming! Fortunately, the filtering in the receiver and servos absorbs much of these spikes, but enough can remain to cause problems. It should be noted that some servos described as analogue, including many from Futaba, should be regarded as semi-digital since their implementation draws the transient current of digital servos.

The current drawn by the servos causes the voltage to drop due to the battery characteristics and the switch and wiring resistance; if used, a voltage regulator may also cause a significant voltage drop. The maximum rating for standard switch harnesses and servo leads is quoted as 3A with heavy duty as 5A. Some extension leads are available with thin wires and so will handle less than 3A. Some leads are labelled as "Heavy Duty" but are actually standard wires with thicker insulation - buyers beware! Voltage drops affect the receiver and the servos with the most obvious effect on the receiver being the infamous brown-out to which Spektrum/JR seems particularly vulnerable, but erratic operation of receiver or servos is quite likely. The lead between battery and receiver is critical where the servos are supplied through the receiver. Some amplifier leads are available to boost the signal received by a servo on long extension leads to stop jittering; since the problem has nothing to do with the signal and is caused by the voltage drop along the leads, these should not be used and Spektrum manuals include warnings against their use. Some manufactures recognise the higher currents and use heavier gauge leads for digital servos than for the equivalent analogue versions. A distribution panel may be appropriate to provide some electrical separation between receiver and servo power for more than 5 servos.

Many brushless speed controllers quote a 3A BEC supply via a switching regulator from a 3 to 6 cell LiPo as being suitable for up to 4 standard analogue servos. Some controllers use an uprated regulator to allow up to 4 mini digital servos. Some smaller controllers using a linear regulator quote 2A from a 3 cell LiPo for up 4 mini analogue servos. A significant

February 2014







## Servo Power Consumption continued.

limitation of linear regulators is their high power dissipation which causes overheating with consequent shutdown and total loss of control; this makes them unsuitable for use with digital servos with their higher current consumption. Even switching regulators become problematic at higher cell counts. If using more servos or more than 6 cells, the use of a UBEC or a separate receiver battery would seem desirable to avoid excessive heat generation within the controller.

NiCd batteries were deservedly popular since they demonstrated an ability to provide high transient currents with little corresponding voltage drop, although there was a resultant reduced cycle life and increased failure rate, as was evident in the longer life of the same batteries in transmitters in spite of their higher average currents. NiMh batteries also show this ability though to a lesser extent with significantly poorer performance at low temperatures (< 10 degrees centigrade). Lithium batteries generally handle high currents very well though LiPos demonstrate a limited number of cycles (quoted about 100) suggesting that LiFe would be a better choice.

The physical size of LiPo and LiFe batteries increases with increasing capacity and their current capability increases accordingly. This is not the case for the commonly used NiMh batteries where capacities of 1100 to 2000 mAHr are available in AA sizes. The current handling capability of the 2000 size will be less than that of the 1100 version - not double as some assume. This suggests a practical limit of 3A meaning that 5 standard analogue servos should be handled satisfactorily; 5 standard digital servos would be near the limit. More than 5 servos should consider other battery arrangements. AAA sizes are inappropriate due to their limited current capability as is evident from reported problems when used with 6 mini digital servos in gliders.

Some use a 6 volt supply thinking that the 25% increase in voltage from the more usual 4.8 volt will result in a higher voltage at the receiver so reducing any brown-out problems. However, a servo will then draw at least 30% more current so that any voltage drop problems are worsened, not improved. In addition, most servos are only capable of efficient operation at 4.8 volt even when specified at up to 6 volts and so may draw over 30% more current at 6 volts.

Futaba and JR have receivers using serial servo interfaces promoted to reduce wiring complexity in bigger models by using a single lead to all servos with each servo being programmed to respond to the required channel number. Unfortunately, the Futaba







# Servo Power Consumption continued.

documentation shows the use of a single battery routed through the receiver and a single serial lead. All the current is thus routed through a single servo plug which is only rated at 3A and is incapable of accepting heavier wiring. If used, it would seem essential that separate batteries are used for each servo group to spread the load through the wiring and so separate the receiver from the high servo currents.

There are several products incorporating linear regulators to drop the voltage from a 2 cell LiPo to 5 or 6 volts to power the receiver and servos. However, the documentation seen is very limited and would require better definition to have any confidence in their use. Some quote up to X amps without context, so must be assumed to be at maximum input voltage which is irrelevant! Their high power dissipation may be sufficiently handled by large heat sinks and adequate ventilation but there are potential problems with current handling. A typical linear regulator component specification might be 5A with a minimum input/output voltage difference of 1.4 volts; sustained current capacity may be reduced by power dissipation considerations in the implementation. This is a minimum capability and many, but certainly not all, examples would allow a higher current. Note that this means exactly what it says in that attempts to draw more current than the actual capability for even a very short time will result in voltage collapse towards zero. A 6 volt output would require an input voltage of at least 7.4 volts which would strain a 2 cell LiPo with the inevitable voltage drop through the wiring. It is evident that some manufacturers cut costs by using lower specification components, which increases the potential for voltage collapse should the component not exceed its specification by a sufficient margin. A higher input/output voltage margin than the minimum allows a higher current to be supplied, provided the heat from the increased power dissipation is handled. In practical usage, the product must operate down to a lower input voltage than the minimum which would significantly reduce the maximum current capability from the published component specification.

A more meaningful specification for such a product would be:-

A1 amps continuous at maximum input voltage (limited by heat)

A2 amps for T1 seconds at maximum input voltage (limited by heat)

A3 amps at minimum input voltage (limited by current capability)

Any testing should ideally be performed with a battery discharged to a level below that reached after the most intensive flying session to reduce the available margins. Most



## Servo Power Consumption continued.

#### February 2014

2.4 receivers have an LED indicating that the receiver is locked onto the transmitter signal so that any flickering during these tests would indicate a major problem requiring immediate attention. However, it should be emphasised that completing even the most exhaustive testing procedures cannot guarantee the absence of problems - proving a negative is notoriously difficult.

The simplest test is to move each transmitter stick and look for any response from the other servos. This response could be a twitch or a change in any buzzing. Any twitch with this primitive test suggests major problems and should be investigated. A more rigorous test is to apply a load to each servo in turn by twisting the output arm manually and then releasing. Again, any response suggests problems.

To provide an indication of the available margin, extension leads can be added to increase the wiring resistance and consequent voltage drop. Add one or more extension leads between the battery and receiver or in extensions and exercise the servos as above. Ideally, one extra lead should not produce a noticeable effect and it may be worthwhile to try multiple leads until some reaction is seen. Aileron servos, in particular, often require long extension leads and adding a Y lead at the servo end with a spare servo and applying a load can produce a response from the other servo indicating that a heavier duty extension lead is desirable.

Most servo reversers are sensitive to voltage spikes and adding one to a servo and exercising the other servos can also be an indication of potential problems. Their use with digital servos can be problematic - check before use!

The importance of minor servo twitches is difficult to quantify. It is suspected that most installations will show some reaction in the above tests. Probably, changes in servo buzzing can be ignored but visible twitches may be more serious. Any flickering in the receiver LED should not be ignored. A post-mortem inspection after an unexplained crash is unlikely to be able to show that voltage drops were the cause but...!







#### A VIEW FROM THE HEDGE. (By Will Sparrow)



The cold wind doth blow, And we shall have snow, And what will Will Sparrow do then? He'll sit on his twig, And keep himself warm, And hide his head under his wing...

I was musing recently, whilst gripping my twig for dear life, as the gales ripped through the hedge and water dripped incessantly from the end of my beak, on the meaning of life and, more specifically, survival strategies employed by us wild and free folk. It was only the other day that a passing blue tit told me that he was having a really tough time of things; he said that the last time he got on the scales he only weighed 11 grams and to maintain this body weight he had to eat 10 grams of food every day and that overnight, just in the act of keeping himself warm, he would lose a full 5 grams! Just imagine if you modellers operated on the same system – you would go to bed at night and wake up five stones lighter and ready for your breakfasts. You would then have to spend all day stuffing your faces with ten stones weight of food. I'm told (that wise old owl again) that in some far-off land called America, this is normal behaviour for everyone, not just modellers!

Some birds seem to show a bit more sense than others. My sources tell me that it has been known for wrens to snuggle together for warmth on cold nights and that, on one occasion, sixty-three of them were found to be over-nighting in one nest box! This idea really appealed to me: why don't we sparrows build a large winter nest, – preferably with a roof? What could be better than spending a winter's night cuddled up with lots of hot, fluffy hens? I raised the idea with the hedge committee... and was met with total indifference! Another good idea lost to inertia and apathy. I don't know why I bother.

At this time of year it's difficult not to be affected by SAD, but just think, it is but a few short weeks to spring. The days are getting noticeably longer, one or two brave blooms are poking their heads above ground and the prospect of the new flying season looms large. I was saying to my mate, Jim Sparrow, a couple of days ago that I could just imagine all you modellers beavering away in your workshops, putting the finishing touches to your latest creations in anticipation of the 2014 flying season. Jim reckoned that it was more likely that the average modeller was reluctantly applying a sticky decal to his latest Chinese take-away whilst complaining that he had to provide his own screwdriver in order to fit both parts together. Jim can be hyper-cynical at times!

So, be of good cheer... spring really is almost here.

WS







### Pete's Workshop

Words by Rosie

This month's Workshop article is about Peter Eyres – though to call it "Workshop of the Month" is something of a misnomer for Peter, because he doesn't have a workshop – yet!

There are plans to use the garage, but this is a concrete sectional building with the usual corrugated iron roof which causes a lot of condensation – not a good place for the electronic components of the electric planes that Peter likes to fly! So if any members have ideas for solving condensation in this type of garage these would be very much welcomed.

Peter has full use of a spare bedroom at home but this is small and is used only for storage of his planes and the assortment of paraphernalia that goes with that, along with his tools, clothes and 2 computer systems! He also uses the loft, the caravan and wherever in the house his partner Rosie will tolerate!

He mainly uses the kitchen worktop as his workshop and sometimes the lounge. This shows that even for beginners it's possible to engage in this hobby without the full facilities of a dedicated workshop. That is of course if you don't have huge petrol, glow or jet powered planes!!

Peter has always been interested in aviation in general and dabbled with RC models during the seventies although the cost became quickly prohibitive. Before joining the Blackpool club he used to design, make and fly kites – he still does on occasion.

He began to show interest again in model planes about 5 years ago. He was wondering where to fly when along came Justin Goldstone! Justin was making a delivery from the local garden centre where he worked and got chatting with Rosie about RC models. Justin invited Peter to meet him at the Blackpool flying club and that's where it all started ......thanks to Justin!!

Peter was determined to design and build his first plane from scratch himself – feeling that this would give him a greater understanding of flight, and so the long saga of the Foamie Trainer development began - or the "Wombat" as John Higgins called it! With much help and advice on trainers from Keith Webster and John. the Wombat eventually flew quite well.



### Pete's Workshop continued.



This is Pete's Wombat own design - looks quite nice too!

Because of the building limitations at home Peter has stayed with foamies and always used electric power. He says foam is much easier to fix should an incident occur!

Peter took his A cert in April 2011 in his second plane - a Multiplex Twinstar II which Rosie hand painted (should have used a brush!).



Peter now has a range of models, all foam based and all electric. Most of them are slow to medium flyers such as the Parkzone Mustang:-









Also a WOT4 painted geen and gold by Rosie, as they didn't want it to look like everybody elses!! (*The colour scheme on this WOT 4 makes a very welcome change in my opinion - looks dead smart - ed*)



Peter is also very keen on gliding and in the right weather in the summer months he and Rosie will cart the models up to Jeffrey Hill on Longridge Fell to enjoy the slope soaring – and



occasionally encountering other Blackpool flying club members!

He flies a Hobbyking Dynamic S and a Multiplex Easy Glider as well as a flying wing which previously belonged to Glenn Block.

The Hobbyking Bixler 1.1 is a superb glider but is also a general sport plane which Peter flies both on the slopes and at the club field.





Peter still likes to design and build models from scratch as well. His current project is a prototype canard delta. He and Rosie call it the Friesian (after the cow of course). It's painted in a black and white winter camouflage scheme and flies rather well given its low power motor.





It was for me a great pleasure to meet up with Pete and Rosie. They have to be the friendliest people you could ever get to know. I had met up with them both many times at the field and have never forgotten the warm welcome they gave me when I visited the field just prior to re-joining. Pete is so very enthusiastic and a good flyer. I was very surprised to find out that he has only been involved with the hobby for only 5 years. Thanks to both of you for letting me visit you.



#### THINGS TO DO ON A WET AFTERNOON...

Okay, it's raining outside, you can't go flying, you've finished your latest project and you're at a loose end. Right? So why not try a bit of balsa therapy?

Take a sheet of ordinary balsa; 2 mm thick will be ideal. Using a sharp knife (having first read the health and safety warnings and filled in a risk assessment form), cut the sheet in two. Place the two pieces on top of each other and repeat the process. Keep doing this until you have performed the action 38 times in total. You should now have lots of little bits of wood.

The next stage might take a little time and cannot be rushed. Using your favourite glue, stick the 2 mm bits one on top of the other... perseverance is necessary at this stage. Once all the glue has set you can stand back and admire the result; you have in front of you a very tall balsa stack...so tall in fact that it would easily reach to the moon! (If you had the inclination – and patience – to perform the operation 46 times your stack would reach to the sun.)

If your better half, tired of solitude, pokes her head around the workshop door to inquire what you have been doing, you can always retort that you have merely been playing with your exponentials!

John Higgins



#### Would the last Aeromodeller put the lid on the Dope! February 2014 By John Prothero

I have just realised that most of you don't even know what I mean by DOPE! Don't worry it's not one of these legal highs that are in the news at the moment, or something you slip a horse to make it win. It's what we Aeromodellers use to shrink and air proof the nylon/silk or tissue covering on our models. We also used something called Banana Oil, this isn't something to ease the harvesting of Bananas, it is a none shrinking dope. Banana oil is the common name of the chemical compound properly known as amyl acetate. It is a colourless liquid ester derived from amyl alcohol, and although its scent strongly resembles that of bananas (hence the name), it is not found naturally in the fruit of the banana tree.

We also use balsa cement! One of our members who hailed from the Emerald Isle (we all knew him as Patrick, but his real name was Shamus) turned up with his model. A learned member of our club picked up the model and exclaimed "Goodness me this is heavy! Do you actually expect this to fly?" The learned member then wandered off for a few moments then came back and said ""I have just calculated the wing loading it's horrendous. I calculate that if and when the engine stops the glide is going to be somewhat steep!" A prominent leading light in the club then picked up the model and came to the same conclusion saying "\*\*\* me, this is \*\*\* heavy what the \*\*\*\* have you done to it? "When the engine stops it's going to have all the flying characteristics of a Steinway Piano!" It turned out that he had followed the instructions to the letter and had cemented the engine bearers in using three of sand and one of cement!!

The model never did get off the ground.

This was before you could walk into a model shop and purchase a covered almost ready to crash model; yes we had to build them some of use still do!

Back in the day radio models where very rare, so most of us flew either control line or free flight, yes free flight, we just let them go! Sometimes we even got them back! Free flight had and still has lots of different categories; Glider, Power, and rubber describe the different power types (you also had the nutter's who used Jetex, a sort of solid fuel rocket engine).

What's a rubber model? I hear you ask, what a bloody good idea, sounds almost indestructible! Well how wrong can you be a rubber model is power by a rubber motor, this is made up of several strands of rubber, lubricated by a soapy rubber lubricant (the







### Would the last Aeromodeller put the lid on the Dope!

lubricant had other uses, allegedly; that I won't go into here). Below are a typical rubber model and a rubber motor. Here is a YouTube link for free flight <a href="http://www.youtube.com/watch?v=ynoqQqeZ8ml">http://www.youtube.com/watch?v=ynoqQqeZ8ml</a>



Most power models where powered by diesel engines, the fuel was the best part its smell was almost as good as dope. The absolute best was the classic Oliver 2.5 Tiger, it was used in all sorts of models but was best known in control line circles (no pun intended) as THE engine and today day is a much sought after collectors piece.

Here is a cutaway photo of the classic Oliver Tiger 2.5cc engine, John Oliver also produced the Oliver Cub 1.5cc and the Major 3.5 cc but the most famous was the Tiger!





Above is an Oliver tiger and to the right a Razor Blade Combat model and a 60 powered Speed Model. The Razor Blade Combat model reputedly had more cuts to its name than your modelling knife. I've done it again CUTS I hear you say? These models towed a streamer (Go watch it at the Nats) the idea was to score points by cutting bits off your opponents







### Would the last Aeromodeller put the lid on the Dope!

streamer with your prop inevitable an odd time you cut a little more than the streamer, (accidents will happen in this area of our sport) that's why we had a standby model ready at all times and why we each took at least a dozen models each to the Nats! If you were really lucky you may bring back one or two. Which reminds me of Barry, who wasn't well just a few weeks before the Nats? We all decided to help him by building some Combat models for him so we went round to his home near Belle View Manchester. When we arrived we were told to go straight up stairs by his mother, on opening the door to his bedroom it swept an arc in balsa dust and shavings! We saw Barry sat up in bed, the bedroom and his bed was smothered in Balsa dust and shavings as was Barry, as he merrily sanded yet another leading edge! (The leading edges were made from soft 1" square Balsa). "This is worse than biscuits in bed" he said, "but I've done 10 models this week!" He had even covered most of them in dope & nylon; he said he covered them in the evenings because the dope made him sleep well! "How are you Barry" we asked? "Got a bit of a cough but I should be OK for the Nats" he replied. "The Doc says it's from all the saw dust at work"

But Barry wasn't alone in his enthusiasm or obsession for the hobby. I can remember being in a passionate embrace with a particular girl friend, when she whispered in my ear "You've been using that bloody glue again haven't you!"

It was the same year that the club show off decided to enter control line speed with a Dooling 61 powered model (I think the model was a Gin Mill). So our man's turn came and he went to the centre of the circle, he did a very fast test run around the yoke. Signalled he was ready and the engine howled into life, these things had to be heard to be believed, absolutely deafening. The model was released and it hurtled round the circle, it lifted off the take off dolly, did a wing over and buried itself into the tarmac! One of our more witter members shouted "Control line Stunt is being held further down the runway". The club show off went into a rage and chased him down the runway as they past the Stunt circles he shouted back "here is the stunt". They didn't speak for weeks after that. Here is a YouTube link so you can get an idea of what I'm on about.

I was practising for the Nats with my profile stunt model (Mercury Cobra) it had a Johnson Stunt Supreme 35 Glow Motor, open exhaust as they were in those days, very LOUD! We







# Would the last Aeromodeller put the lid on the Dope!

were flying off grass and the model was held aloft by my helper whilst I flick started it, no starters in those days and a chicken stick would damage the wooden prop. The engine had blown a plug, so we replaced it after much messing around trying to figure out why the thing wouldn't start (we had no inline meter in those days) it then burst into life immediately and made a loud pop as it did so.

I trotted down to the handle and nodded for my helper to release the model; I relaxed and started to do a few manoeuvres. At the same time my helper started to shout something, I couldn't hear him for the noise. Almost immediately I became aware that my legs were getting hot, I looked down to see my feet were on fire! What had happened was the surplus methanol from the engine had soaked into my boots and the exhaust had ignited the methanol, you can't see a methanol fire! My helper dashed into the circle and grabbed the handle whilst I batted my feet out with a rag. Those were the days!

http://www.youtube.com/watch?v=yAB0uPxQo2E

So would the last Aeromodellers put the lid on the dope!







### Events - 5<sup>th</sup> March

Blackpool & Fylde RCMS would like to invite you to an evening event on

Wednesday 5th March at South Shore Tennis Club, Midgeland Road, Blackpool FY4 5HZ

#### 7.45pm for 8.00pm.

Dave Johnson of the LMA is giving a talk on the development of his various Vulcan Bombers. This should be a very interesting evening as Dave has been flying the Vulcan for many years and has a great and varied knowledge of this legendary aircraft.



Thanks to Dave Swarbrick for this flyer







# For your Diary

### Social Evenings at the South Shore Tennis Club, Midgeland Road.

#### 2<sup>nd</sup> April

Chuck Glider competition organised by John Prothero. This is a fun evening. You will all be given the necessary balsa and sandpaper etc. and we all have a time limit to build a simple chuck glider. It's great fun. Longest flight time wins.

#### 7<sup>th</sup> May

Safe Flying presentation and Aerobatics event briefing. This will be presented by Dave Swarbrick and Jason Reid.





## Shows/Events for 2014

This is not a definitive list of every show in the country - I've kept it to relatively local areas only. If you know of any other shows/events which you feel would be of interest to the membership, please let me know.

### LMA

RAF Cosford  $19^{th}\mbox{--}20^{th}$  July

Elvington - 9th - 10th August

Much Marcle - 6<sup>th</sup> - 7<sup>th</sup> September

### Other Events/Shows

BMFA North West Area Scale Fly in RAF Shawbury - 9th September

Weston Park Model Show - 13th - 15th June

### In Conclusion

My sincere thanks to John Higgins, John Prothero, Brian Holdworth, Will Sparrow, Dave Swarbrick and Peter & Rosie. I hope for next month, I will be able to visit another 'workshop' for the March newsletter.

Just perhaps, the weather may start to calm down and we just might get some flying in. I had a long talk with Pete about the Teranis transmitter and will be writing something about his findings next month.

For now, I wish you all happy and safe flying. See you at the Dave Johnson talk on the 5<sup>th</sup>.