



# Flight Desk

June 2007

The official newsletter of Chesham Model Flying Club Ltd

Volume 19

Issue 3

## June Club Night

Pednor

Wednesday June 20th

18:00 'til Dusk

Come and enjoy Silent Flying at Pednor.

Any electric or glider can be flown. Have fun at a well attended event. You know you will enjoy it.

## Editors Ramblings

Last time I told you about my latest model, the Pushy Cat, which I had scratch built from a plan published in QEFI. My initial fears about my flying ability being "up to it" proved groundless. She is a lovely model and looks good in the air with excellent low speed characteristics. Landing is a doddle with the only problem encountered, so far, being the prop hanging down and snatching the ground. I have broken two already. I must learn to look for it and to blip the motor before touch down. Oh, and my launching technique needs refining. I use an above the head style and managed to clip my ear with the wing last time. Isn't cyano wonderful.....

I have another model waiting in the wings. This one is a replacement for my defunct twin. I saw an item in one of the magazines, searched the UK



suppliers for one, and ended up importing it from Hong Kong. The model is a Cessna 337 and is an ARTF in all built up balsa and ply. With a 1.55m wingspan, there are two motors, in line, one tractor and one pusher. Originally designed for 0.25 ic engines, I have put in two 400W brushless motors running off a 4 cell lipo.

There is bags of power available so take off shouldn't be a problem. Once again, I hope my flying ability is up to it when it is time to land it.

I have enjoyed quite a few brilliant flying days over at Newground recently. Despite the weather at the bank holiday, Friday and Saturday were very flyable. As we both found out. Yes, there were just two of us on both days. I hope to see more of you through the summer. Happy Flying.

As always, you can contact me (Colin Hooper) at:

[webmaster@cheshammodelflyingclub.co.uk](mailto:webmaster@cheshammodelflyingclub.co.uk)

## Committee Matters

The programme of events for the next few months is:

June 16th/17th	Weston Park Model Air Show
June 20th	Silent Flight @ Pednor 18:00
June 23rd/24th	Wings and Wheels @ North Weald
July 1st	Bombing Competition @ Newground
July 7th/8th	Flying Legends Airshow @ Duxford
July 11th	Committee Meeting WHC 20:00
August 15th	Silent Flight @ Newground 18:00
September 8th	AHA Flying @ Newground ( Limited club flying )

The committee are pleased to report that we have received an offer from one of the members to stand as the clubs representative in the position of Child Protection Officer. We are currently putting the wheels in motion to have the person ratified, a painless operation allegedly. An announcement should be forthcoming soon with contact details and procedures to be followed.

## Chairman's Soapbox

**JUNE 20th CLUB NIGHT - PEDNOR (WED. 6.00 TILL LATE)**

This is our annual Silent Flight Extravaganza. Get your gliders and/or electric models sorted - now! This is the eleventh year running we have held this as our June club night at the Pednor field. Even if you have not got a suitable aircraft, or you are a new member and have not been to the site, - DO NOT let this be an excuse for not showing up. This is an ideal opportunity to meet new friends, savour the atmosphere and have a good chat.

**BOMBING COMPETITION - SUNDAY JULY 1st AT NEWGROUND**

After 2 successful 'outings' this competition, the brainchild of Dave Anderson, returns. Eagerly awaited by all those who have taken part previously, we are hoping for some new faces to make this - 'One not to miss' for competitors and spectators alike. Be there! Contact Ray Birdseye for details.

## 'FULL SIZE' AIRSHOWS, (AND MODELS)

On Sat 23 and Sun 24 June is the Wings and Wheels Model Spectacular at North Weald. Gas turbine powered models are included in the display.

Also on the same dates is The De-Havilland Moth Club Rally at RAF Halton. Never before held at this venue, but familiar to most, expect to see loads of Tiger Moths and other De-Havilland types. Gates open at 9.00 on both days, there is ample parking and admission is FREE! There is a one-hour flying display on both days starting at 2.00pm.

On the 7 - 8 July is the 'must see' Flying Legends warbirds show at Duxford. Star attraction will be the P-38F Lightning 'Glacier Girl', the aircraft dug out of the Greenland icecap, (some 260 feet down), several years ago and restored to 'as original' condition. It was one of 6 Lightnings and 2 B-17E's, which put down after running out of fuel in bad weather in 1942. All were destined to the UK as part of the Bolero Mission. The B-17E's, had they made it, would have ended up at Bovingdon with the 92BG. Well known display pilot Steve Hinton is piloting Glacier Girl to finally complete her mission on the route she would have taken some 65 years ago!

The following weekend 14 - 15 July, if you like 'heavy metal' there is the 2 day Royal International Air Tattoo at RAF Fairford in Gloucestershire. All the usual stuff in abundance, - Eurofighter, B-1B, B52, F117, Red Arrows, - Italian and Spanish display together with the Thunderbirds display team with their F-16's. Loads more plus over 200 aircraft on static. Check out full aircraft participation list on the RIAT website.

## PEDNOR

Thanks to Richard Johnson for replacing the broken polycarbonate windows in the club hut, There will soon be a final push to complete the re-furbishment started last year. We will be calling for volunteers in due course to carry out specific tasks.

## SITE SECURITY

The police have warned that there may be a return to 'Raves' this summer, - popular several years ago. We had at least three at the Pednor Site, and thankfully only one at Newground. Damage was caused at both sites by

vehicles on the flying area. If you spot anything suspicious at either site, - Don't hesitate! - call the police! In particular, - if vehicles are involved log the registration numbers.

## Events Co-ordinators bit

Hi Folks,

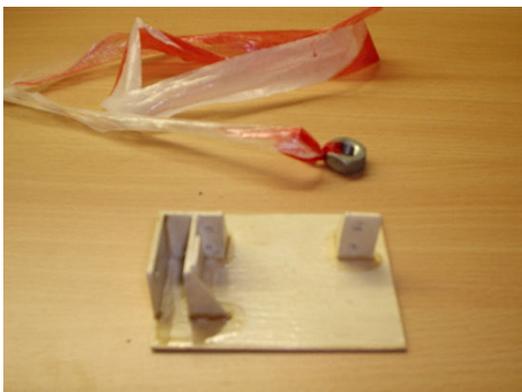
### "Fun Day", (bombing comp'), "brm's"

*With our "fun day" under the guise of a bombing competition coming up soon, (July 1<sup>st</sup>), I thought I would share my previous "brm" designs with you. For those of you who are unfamiliar with the principle you may find it of interest if you intend making your own "brm", (bomb release mechanism). For the more experienced, you probably have better ideas anyway! If you don't want to, (or are unable to), make a "brm" yourself there will be several, "**high quality, precision made units**" of Dave Andersons that you can use on the day, (I will say no more about these as I get on well with Dave and would like to keep it that way)!!!*

### Objective

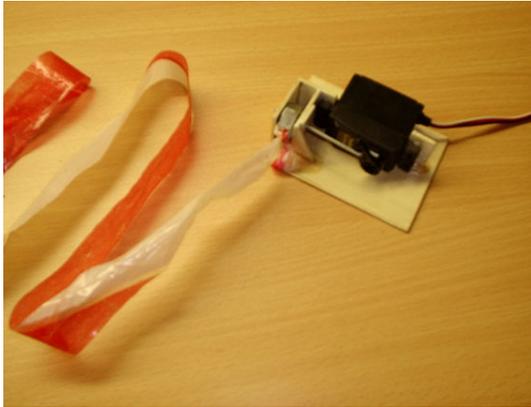
*Ok then and once again mainly for the benefit of the new members, what's it all about? Well folks the objective, (other than that of having some fun), is to equip ones plane with a "mechanism" which will release a "bomb" on command from your transmitter during flight. Subsequently the dropped bomb is hoped to land dead centre of the patch. Easy!!!*

### The Bomb



*The bomb, or shall we say, "standard issue bomb", should be an M8 or M10 nut with about a "foot and a half" to "two foot", (that's about 450 to 600mm), of streamer securely attached. As some of you will know, the last two years I have been a little, how shall we say, "unorthodox" with my*

bombs? So here are a few tips from the voice of experience, if your nuts are "a little large" or you have "lots of them" then do try to keep your "brm" as near to the "c of g" as possible, it really does make a difference, particularly with heavy payloads! Additionally, excessively long streamers cause a lot of drag and also can, "ney, do" get tangled up in the "tail feathers"! To be



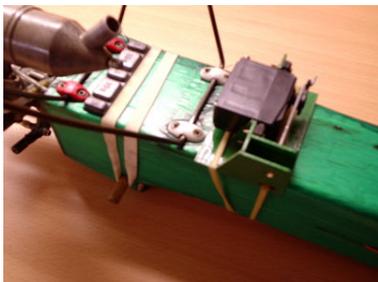
honest the nuts with short streamers do work the best. I will certainly be using them again this year, (or will I)?

### Radio/channels

You will of course need to activate your "brm", to drop the bomb precisely on cue and on target! The easiest way to do this is to use the undercarriage switch, (which is channel 5 on futaba

radio)! In fact any spare channel can be used, so essentially a minimum of 5 channel radio will be required!

The "brm" Now for my favourite bit, the "bomb release mechanism"! I don't know why but I just like coming up



with slight variations in the design for these little gismo's to better fit the intended



plane to which they will be attached. Here is a simple "brm" made from 1/16" ply, superglue'd together, that I just splashed some white paint on. It was used with my Tutor 40 trainer, (Enola

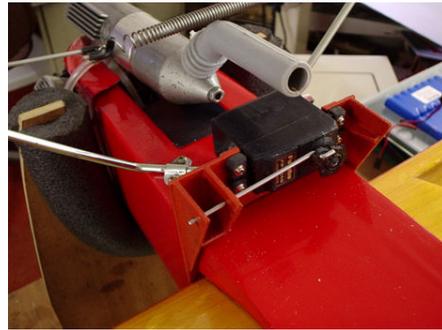
Gay), last year, (hence the white paint). There is another photo with the servo fitted and a "bomb" loaded! When the Tx switch is thrown the servo is activated and the rod is withdrawn. The nut is then released. This design is simple and is just held under the fuselage with a couple of rubber bands. The servo lead is just draped into the fuselage where the wings attach.

Here you will see a similar, though slightly smaller version painted green that is used with my Limbo Dancer. Along side is a variation, (in red), that was fitted to a wildcard. Notice how the wildcard version fits snugly between



wing and fuselage, located by the wing dowels! I am pleased with this design as it's the neatest yet! Though, it is situated quite far forward and does upset the "c of g" a little. The "little green outfit" you see here once again,

is being worn by my faithful Limbo Dancer, you can clearly see the rubber bands that are used to attach the "brm", they are simply stretched around the fuselage and held together by a simple "s" clip bent from stiff copper wire.



This has the advantage of being able to be positioned at the "c of g" so minimalizing the effects on handling characteristics! Again the servo lead simply enters between the wing and fuselage. I would of course show you the photo's if this years "brm" but they didn't come out!!! You'll just have to wait and see!!! Good luck and I look forward to seeing lots of ingenious designs!

### **"Fun Day" (bombing comp) objectives and rules!**

Most of you will by now know the main objective of the task. It is simply to over fly the patch into wind at approx' 50ft and deploy "a bomb" (typically a nut, of say, M8 or M10 size with a streamer attached). The intention is to get it to land as near as possible to Dave Anderson's table cloth which will be securely pegged down near the centre of the patch, (I do hope he washes it first this year)!!! Simple isn't it? So here are the "official rules" hot from Dave Anderson!

#### **COMPETITION BRIEFING**

4. Normal Safety considerations apply i.e.:
5. Frequency Control is down to you/ No over flying people/Circuits into wind over patch/ keep patch clear of people/ pits in normal area etc

#### ⌘ **Rules:-**

- ⌘ You are allowed two attempts at bombing the target which is the centre of the sheet staked out on the patch. We will complete one round before starting the second round. The bomb dropped nearest the target wins.
- ⌘ There are no practice runs allowed.
- ⌘ You will take off do one circuit over the target to set yourself up then repeat the circuit for one attempt at bombing then land.
- ⌘ You must attempt the bombing on a run from the side exiting on the other side, no flying towards or away from yourself on the bombing run.
- ⌘ The bomb must be released at a height of 40 feet or more and the Pilot will be at least 40 feet from the target. I will judge a foul bombing!

- ⌘ A foul bombing is void and no more than one per pilot is allowed. Therefore a pilot has one additional chance if a foul is called, any more will result in a disqualification.
- ⌘ The aircraft must be flyable after the landing.
- ⌘ No helicopters or hovering devices, e.g. hang gliders, are allowed.
- ⌘ My decisions are final and I'm in charge.

While the competition is underway no other flying please.

*So there we have it then, as I said, Simple! Just a reminder though on a serious note, "all" club rules and "safety procedures" apply as normal! You can still have fun and a laugh but "do it safely"!!!*

You can contact me by email, the address is

[events@cheshammodelflyingclub.co.uk](mailto:events@cheshammodelflyingclub.co.uk)

## Members Ramblings

The following article was sent in by Dave Wallis and is a fascinating insight into scale modelling at its ultimate.

The pictures are of a scratch built 1/5th scale Supermarine Spitfire MK 1 by an English model builder. It's hard to imagine such infinite detail can be accomplished even with super human devotion and dexterity. The pictures and accompanying text are by the model maker, David Glen.

*If anyone asked me why I set out to build a Spitfire in one-fifth scale, and detailed to the last rivet and fastener, I would probably be hard-pushed for a practical or even sensible answer. Perhaps the closest I can get is that since a small child I have been awe inspired by R. J. Mitchell's elliptical winged masterpiece, and that to build a small replica is the closest I will ever aspire to possession.*



*The job took me well over eleven years, during which there were times I very nearly came to giving the project up for lost. The sheer amount of work*

*involved, countless hours, proved almost too much, were it not for a serendipitous encounter at my flying club in Cambridge with Dr Michael Fopp, Director General of the Royal Air Force Museum in England.*



*Seeing the near complete fuselage, he urged me to go on and finish the model, promising that he would put it on display. I was flabbergasted, for when I started I had no inkling that my work would end up in a position of honour in one of the world's premier aviation museums.*

*As I write, the case for the model is being prepared, having been specially commissioned by the museum with a case-maker in Sweden. I have not yet seen it, but from what I hear, it is enormous!*

*In one respect the story has gone full circle, since it was at Hendon where I started my research in earnest, sourcing Microfilm copies of many original Supermarine drawings, without which such a detailed build would not have been possible.*



*The model is skinned with litho plate over a balsa core and has been left in bare metal at the suggestion of Michael Fopp, so that the structure is seen to best advantage. The rivets are real and many are pushed into drilled holes in the skin and underlying balsa, but many more are actual mechanical fixings. I have no*

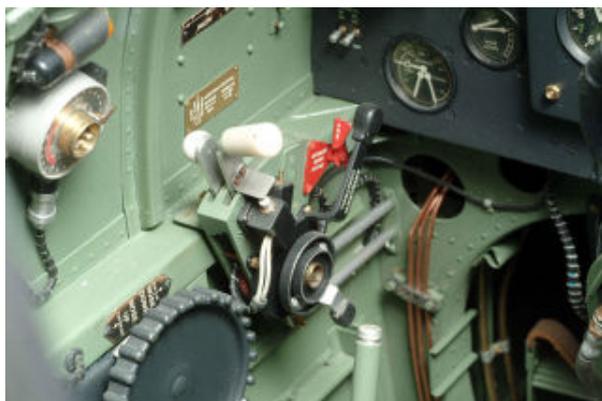
*accurate count, but I suspect that there are at least 19,000!*

*All interior detail is built from a combination of Supermarine drawings and workshop manuals, plus countless photographs of my own, many of them taken opportunistically when I was a volunteer at the Duxford Aviation Society based at Duxford Airfield, home of the incomparable Imperial War Museum collection in Cambridgeshire, England. Spitfires, in various marks*

*are, dare I say, a common feature there!*

*The degree of detail is probably obsessive: The needles of the dials in the cockpit actually stand proud of the instrument faces, but you have to look hard to see it!*

*Why the flat canopy? Well, the early Mk.I's had them, and I had no means to blow a bubble hood, so it was convenient. Similarly the covers over the wheels were another early feature and they saved me a challenging task of replicating the wheel castings.*



*The model has its mistakes, but I'll leave the experts to spot them, as they most certainly will, plus others I don't even know about. I don't pretend the little Spitfire is perfect, but I do hope it has captured something of the spirit and incomparable beauty of this magnificent fighter - perhaps the closest to a union that art and*

*technology have ever come - a killing machine with lines that are almost sublime.*

*So, with the model now in its magnificent new home, what comes next?*

*Well, I'm planning a book that will have a lot to say about its genesis and perhaps just a little about me and those dear to me, including a long suffering but understanding and supportive wife. And then there's the Mustang... Yes, a 1/5th scale P-51D is already taking shape in my workshop. How long will it take? I've no idea, but what I am sure of is that at my age (58) I can't expect to be building many of them!*

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I was browsing the web and came across this article, which I found quite interesting. I have attempted to anglicize the original German translation and it appears to make sense. I look forward to trying the software out.

## WAVEosSCOPE

### Speed measurement of model airplanes

#### Problem

Have you ever wondered just how fast your model is flying? This program offers the possibility of an objective measurement without the need of any special measuring instruments.

#### Solution

All that is required is a PC with a sound card for the analysis and a sound recorder such as a Camcorder to record the fly past of a model at low height and at close proximity. The sound that the model produces on the fly past is subject to the Doppler Effect. The Doppler Effect changes the pitch as a function of the airspeed of the model. If this pitch shift is measured, you can exactly determine the airspeed to within a few km/h. (The procedure is suitable only for propeller and/or impeller models. The sound of jet engines is subject to the same Doppler Effect, however the software cannot evaluate it.)

More details can be found, for those that are interested, on the translated [homepage](#) although the translation is interesting.....

#### Procedure

At the airfield a clean fly past is recorded with the Camcorder at close range. It should be flown at constant height with constant engine setting (normally flat out).

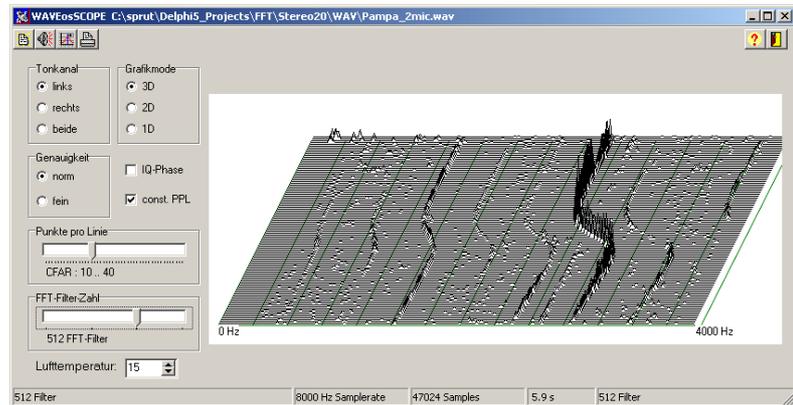
At home the Camcorder is connected to the PC audio input of the sound card. Using the tools provided by the Windows programme "Sound Recorder" the audio of the fly past is edited to produce a PCM-8-Bit-Mono-WAV-File (telephone quality). Ten seconds should be sufficient.



The program [WAVEosSCOPE](#) can read this WAV file, and analyze the frequencies of the signal.

## Result

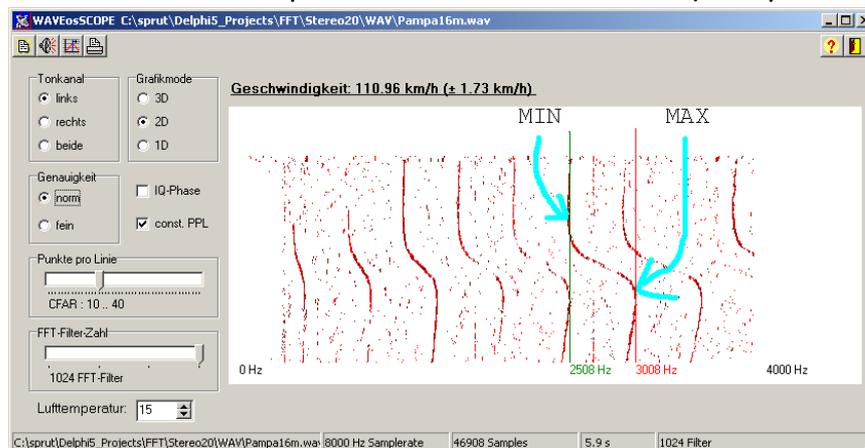
The WAV file is interrogated with an FFT spectral analysis. The signal strength of individual frequencies contained within the WAV file is plotted. The frequency band width goes from 0 cycles per second (left edge of diagram) up to the half of the SAM polarizing frequency of the wave data. A SAM polarizing frequencies of 8 kHz has proved, in practice, to be sufficient.



You can select between viewing a three dimensional, two dimensional, or a linear representation. In addition the number of filters used, and thus the accuracy of the analysis, can be adjusted from 128 to 1024. Whilst the three dimensional presentation is informative, the two-dimensional picture is the most practical on which to perform the speed measurement.

In order to obtain the speed of the model you must open the wav sound file using the  icon.

The graphic representation of the sound file clearly shows the dominant frequency lines that the Doppler shift of the model created on its fly past. To determine the speed, select one of the frequency shift lines in the right



half of the display (higher accuracy). Click with the left mouse button on the left part of the line and with the right mouse button click the right part of

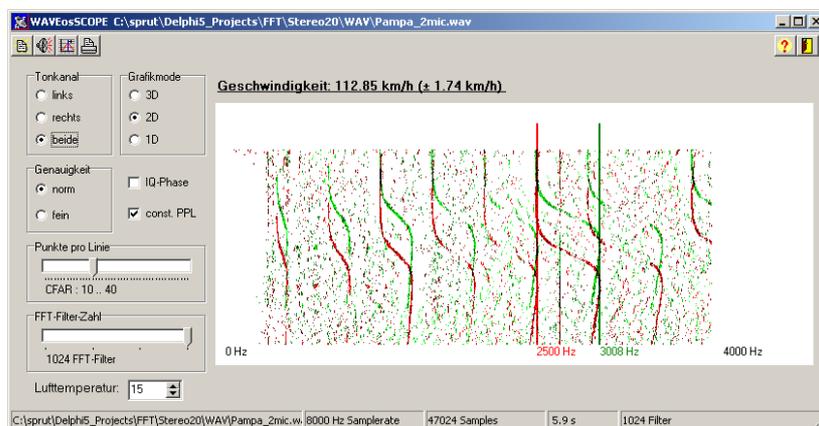
the same line. The program marks the points with a green and a red line and indicates the audio frequencies of the points.

Above the diagram, the calculated fly past speed as well as the accuracy are shown in km/h. To convert to mph you multiply the km/h by 0.621 (110 km/h = 68.3 mph).

It is possible to play the sound file using the  icon. The  icon refreshes the display, whilst the printer button prints the window image to your printer.

The programme can analyse stereo data produced by two microphones. A typical image is shown with the frequency shift lines from each microphone shown in red and green.

The analysis is more accurate if the microphones are a distance apart because the Doppler Shift occurs in the two sound channels successively. This allows the maximum frequency offset of both channels for the speed calculation.



## Download

To download the programme, currently at version V2.1. follow the link.

<http://www.sprut.de/electronic/soft/scope.zip>

It is a German development by Jörg Bredendiek who uses the nickname Sprut. There are no English versions available that I can find but that might

change. I found it an easy programme to use and should settle a few arguments at the field. Have fun.

Colin

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## Instructors Corner

### INSTRUCTORS CORNER WITH AL SPICER



Hi everyone,

Hope you are all fit and well and doing plenty of aeromodelling..... I bet you were the last Bank holiday weekend, what a waste of time that was, rain rain and more rain. If there's a hosepipe ban this year there's gonna be trouble.....!!!!

All our trainees are doing really well at the moment, no problems, slow but sure is the golden rule. Two guys namely Jeff Denty and Dave Foster both went solo quite a few weeks ago (you know..... in the summer we had in April) They have both done extremely well in the time that they have been flying, a very big congratulations to you both. Look out look out Les Pilcher's about AND with a new pair of glasses....I hear he's coming on in leaps and bounds....well done Les.

Unfortunately I am STILL seeing members starting their engines up and revving the pills off them whilst in front and leaning over the model. If you have never seen a prop come off or fracture and throw itself off, it's not a pretty site. I have listed below some very important tips

### PLEASE TAKE TIME TO READ THEM.

Always Install the prop with the curved side of the blade facing forward and tighten the prop nut or bolt with the proper size spanner.

Recheck the tightness of the nut or bolt often, especially on wood props which tend to compress and loosen more often.

When starting the engine, keep spectators and other members clear of the model and out of the path of the propeller.

Keep hands away from the prop as much as possible. Use a chicken stick or and electric starter.

Keep face and body out of prop arc as engine is started and run.

Make all adjustments from behind the prop except on pusher prop installations.

Never throw anything into the prop to stop the engine. Highly dangerous!!!!

Discard any props with nicks, scratches, splits, cracks or any other sign of damage. Never attempt to repair, alter or bend a prop.

Don't run an engine in areas of loose gravel or sand for the prop can throw such material into your face and eyes.

Keep loose clothing, shirt sleeves, and other such items away from the prop and avoid carrying objects that can fall into the prop such as pens, screwdrivers, etc. ( I haven't seen anyone yet wear a tie at either site.....)

Be sure to keep the glow driver wire out of the prop path.

If a spinner is used, be certain that it's edges are not in contact with the propeller blades.

These are quite simple safety items that although seem elementary still need to be repeated regarding propellers and their use. Thanks for reading.

While on the subject of props here is a handy prop chart for the majority of two and four stroke engines.....

### Prop Chart For Two Stroke Engines

Alternate Propellers'	Starting Prop	Engine Size
5.25x4, 5.5x4, 6x3.5, 6x4, 7x3	6x3	.049
7x3,7x4.5,7x5	7x4	.09
8x5,8x6,9x4	8x4	.15
8x5,8x6,9x5	9x4	.19 - .25
9x7,9.5x6,10x5	9x6	.20 - .30
9x7,10x5,11x4	10x6	.35 - .36
9x8, 11x5	10x6	.40
10x6,11x5,11x6,12x4	10x7	.45
10x8,11x7,12x4,12x5	11x6	.50
11x7.5, 11x7.75, 11x8,12x6	11x7	.60 - .61
11x8,12x8,13x6,14x4	12x6	.70
12x8,14x4,14x5	13x6	.78 - .80
13x8,15x6,16x5	14x6	.90 - .91
15x8,18x5	16x6	1.08
16x10,18x5,18x6	16x8	1.20
18x8,20x6	18x6	1.50
18x10,20x6,20x8,22x6	18x8	1.80
18x10,20x6,20x10,22x6	20x8	2.00

### Prop Chart For Four - Stroke Engines

Alternate Propellers	Starting Prop	Engine Size
9x5,10x5	9x6	.20 - .21
10x6,10x7,11x4,11x5,11x7,11x7.5,12x4,12x5	11x6	.40
10x6,10x7,10x8,11x7,11x7.5,12x4,12x5,12x6	11x6	.45 - .48
11x7.5,11x7.75,11x8,12x8,13x5,13x6,14x5,14x6	12x6	.60 - .65
12x8,13x8,14x4,14x6	13x6	.80
13x6,14x8,15x6,16x6	14x6	.90
14x8,15x6,15x8,16x8,17x6,18x5,18x6	16x6	1.20
15x6,15x8,16x8,18x6,18x8,20x6	18x6	1.60
18x12,20x8,20x10	18x10	2.40
18x10,18x12,20x10	20x8	2.70
18x12,20x10	20x10	3.00

Propellers starting sizes are mid range pitch props that should fly just about any plane designed for that size engine. Use these first as in most cases they will be close to being the correct size. Then use trial and error to try and 'fine tune' the maximum performance from your model by trying alternate props. If none work better stick with the recommended starting prop.

Well that's about all from me I'm afraid.

**HAPPY FLYING SEE YOU AT THE FLYING FIELD**

**AL SPICER**

## The Instructor Rota

The rota for the next few months is as follows: -

Month	Date	Instructor	Month	Date	Instructor
January	6	Dave	July	7	Al
	13	Geoff		14	Frank
	20	Al		21	Dave
	27	Frank		28	Andy
February	3	Dave	August	4	Al
	10	Geoff		11	Frank
	17	Al		18	Dave
	24	Frank		25	Andy
March	3	Dave	September	1	Al
	10	Geoff		8	Frank
	17	Al		15	Dave
	24	Frank		22	Andy
	31	Dave		29	Al
April	7	Andy	October	6	Frank
	14	Al		13	Dave
	21	Frank		20	Andy
	28	Dave		27	Al
May	5	Andy	November	3	Frank
	12	Al		10	Dave
	19	Frank		17	Andy
	26	Dave		24	Al
June	2	Andy	December	1	Frank
	9	Al		8	Dave
	16	Frank		15	Andy
	23	Dave		22	Al
	30	Andy		29	Frank

Additional instruction is available at Newground on Saturday or Sunday afternoons with Robin Thwaites. Please telephone to arrange a mutually convenient time.

### Committee

Chairman	Dave Humphrey	01494 791258	davedesign@btconnect.com
Secretary	David Turner	01494 864863	turnerdm@btinternet.com
Treasurer	Bob Bennett	01494 864751	bob.bennett@wychwoodrise.co.uk
Membership	Dave Anderson	01494 583127	david.anderson267@ntlworld.com
Newsletter	Colin Hooper	01494 866387	colin.jayne@wychwoodrise.co.uk
Instructors	Alan Spicer	01494 783214	alan.spicer@onetel.net
Events	Ray Birdseye	07703 768354	events@cheshammodelflyingclub.co.uk

### Instructors

Alan Spicer	01494 783214	07860 843613
Andy Hawkes	01494 772854	07855 146945
Frank Dalby-Smith	01494 711365	
Dave Anderson	01494 583127	
Robin Thwaites	01494 758079	

## "CAPTION COMP"

(Humpy mowing)

*Now here's a bit of fun! Here is a photo' of our beloved chairman mowing the patch. Hmmm, now it strikes me he could be thinking something! So what do you think it could be? Well send in your suggestions and we will print one of them along with the photo in the next issue!*



*Please send in any photo's you have, one of which will be printed in the next issue. You will then be invited to "send in your captions" for printing in the following issue! Get the idea?*

*Please send caption answers titled (Humpy mowing) and any photo's to [events@cheshamodelflyingclub.co.uk](mailto:events@cheshamodelflyingclub.co.uk)*