

**NEXT MEETING IS ON
TUESDAY 12th FEBRUARY 2008**

The Newsletter of WRCS Inc.
PO Box 349
Brookvale NSW 2100

Warringah Radio Control
Society Incorporated
(Incorporated under the Association Incorporation Act 1984)



NEWSLETTER

FEBRUARY 2008



"And what can Santa bring you this year, little girl?" Santa gets to administer peace, joy and harmony to Lynette Austen ... Lucky Doug

MEETINGSMEETINGSMEETINGSMEETINGSMEETINGS

The next meeting will be held on Tuesday, 12th February 2008 at Tennis Cove, Eastern Valley Way, starting at 7.30 pm. The next meeting after that will be on Tuesday, 11th March 2008

POSTAGE
PAID
AUSTRALIA



GLIDER & ELECTRIC DAY

Sunday, 18 February 2008

Open to all electric models

Glider 5 minute max. Bonus points for spot landing, 3 rounds.

Electric 5 minute max. Bonus points for spot landing, 3 rounds. Deduct motor run times from total flight times.

THE JOHN MEEK MEMORIAL TROPHY
will be awarded for the "Best Glider"

**THIS IS A FUN EVENT WITH SAFETY
PARAMOUNT**

Competition Director - Mike Minty

Warringah Radio Control Society Inc.

President	Colin Simpson	9419 7844(w)	0417 264 240
Vice President	Warren Lewis	9417 0269(h)	
Hon Secretary	Brian Porman	9488 9973(h)	
Treasurer	Ron Clark	9440 1990	
Committee	Grant Furzer	9451 3651	
	Paul Mandl	0411 854 977	
	David Pound	9907 9261	
C.F.I. fixed wing:	David Menzies	9975 7576	
helicopters:	Shane Austin	0412 453 351	
Editor	Tom Wolf	9371 0843(fax)	0411 339 590

2008 COMPETITION PROGRAMME



David Pound has taken over the task of being the Competition Co-ordinator for 2008, we thank Tom Sparkes for the job he has done over the past years.

The Competition Directors for each event are to be advised

The Programme for 2008 is:

Glider & Electric Day

- Sunday, February 17

Combat Day

- Sunday, March 16

Scale Day

- Sunday, May 18 . There will be **NO** Special Theme competition

Biplane Day

- Saturday, June 21

Race Day

- Sunday July 19

Pattern Competition

- Saturday & Sunday, July

Date to be advised, the field will be closed this weekend to all other flying

Helicopter Day

- Sunday, August 17

Garigal Cup

- Sunday, September 20

Scale Day

- Sunday, October 18

(Special Theme competition to be advised)

Fun Fly

- Sunday, November 16

THE GREAT BELROSE BUBBLE



Stephen MacMahon and his Hawke 1400

by Stephen MacMahon

On Friday 9th November 2007, I looked at the weekend's forecast after an excellent week of seasonal rains. It measured 102 mm's on my rain gauge, which was good news for Sydney's water and my rain tanks. Saturday's forecast was showers clearing and fine for Sunday with a high pressure sitting off the Tasman to bring in east to northeasterly winds and 27 degrees. I decided to fly Sunday on this information. Getting ready to go to the airfield, I could feel the moist heat coming off the driveway suggesting a steep moist adiabatic lapsed rate and hopefully good thermalling conditions at Belrose.

By 1245hrs, I had arrived, setup, had several natters, and decided it was time to fly.

Having replaced the ESC in my Hawke 1400, it was time to test it. The winds were quite steady at 20 klms/hr according to my anemometer, but swinging constantly between the north-east and south-east. I felt it would be an interesting climb-out with the turbulence. I also noticed an isolated tall dense cumulus cloud in clear skies sitting at about 3000+ feet above my favourite soaring area (below the heli area).

With steady winds and the hot sun, my thoughts were to head over here first to look for lift.

I had four flights that afternoon with the Hawke and whilst there was some reasonable lift from the winds, there was nothing like that thermal again. It was only a fluke to find it but just the same, worth the experience.

What lessons could I learn from this experience?

1. What a great but scary ride!!!! All serious glider pilots give their "eye teeth" for a good thermal.
2. Let's piece together what actually happened.
3. Let's look at ordered ways to escape the big thermal if you are lucky to find one.

If we go back to basics, in the article about "**Soaring at Belrose**" we discussed the effects of the sun warming the air, which in turns rises helping to create thermals. As it rises, the air cools and continues rising until its reaches equilibrium with the surrounding air.

When it reaches this equilibrium, the thermal dissipates and the cool air sinks. The air is then reheated to create another thermal cycle. This cooling of the air is termed the adiabatic lapsed rate.

This can be a dry adiabatic lapsed rate (DALR) (averages at 2 degrees/1000ft.) or a moist / saturated adiabatic lapsed rate (SALR) (5 degrees or more / 1000 feet) depending upon the environmental conditions. In simple terms, moist air rises at a greater rate creating better thermals than dry air.

It is more common to see big thermals on a sunny day after rain than in a dry spell.

One can sense the warmth coming from the ground when the sun shines after rain similar to what I experienced on my own driveway as I was loading the car. That unpleasant feeling of hot rising air is what is termed super moist adiabatic lapsed rate.

On Sunday 11th November, the moisture trapped in the sandstone rocky outcrop below the heli area obviously setup ideal conditions for a super SALR.

The air rising at such a rate reached dew point at a low altitude and the formation of a cumulus cloud by precipitation of water crystals. As predicted, the climb out with the Hawke was "interesting" especially since this aircraft does not have a good reputation for being a stable flyer. I headed straight for the north-east corner of the field underneath this cumulus cloud.

Approaching about 200 feet, the air became stable and I cut the motor. I nosed the Hawke into the east and it began to hover. How nice, I thought!

My neurones then sprung into action and became aware that even though the Hawke was hovering, it was rising at the rate of knots! My thoughts were; "wow, what a thermal!" I decided to put theory into practice and began circling.

After a few circles, I was starting to lose sight of the aircraft and was becoming concerned that unless I did something soon, it would disappear into the cue cloud!

The accepted method to lose altitude in a thermal is to exercise tight turns using rudder and opposite aileron to keep the turns flat to avoid a spiral dive.

However as the Hawke is a V-tail with no rudder configuration, this would not work.

I tried to fly out of the thermal under power but the feeder winds were so strong it pushed me straight back into the core of the thermal.

"S..t!" I was only left with the option of putting the Hawke into a spiral dive, which is a great way to overstress it and collapse the wings. I tried it but it still wouldn't come down!

I next tried it with power just as it disappeared into the cue cloud. My God, I thought; I started at 200 feet and disappeared at about 3000 feet!

To my relief, out she came and to Thunder Tiger's credit, she stayed in one piece! I then plucked up the courage to try again to enter the thermal. Whilst circling under the cue cloud, there was no lift.

The thermal had gone! I followed the cue cloud to the southwest corner of the field and still no lift.

Dean Schuback also has a similar story to tell of his experience this spring. I am also sure our more experienced thermal pilots can relate to similar stories.

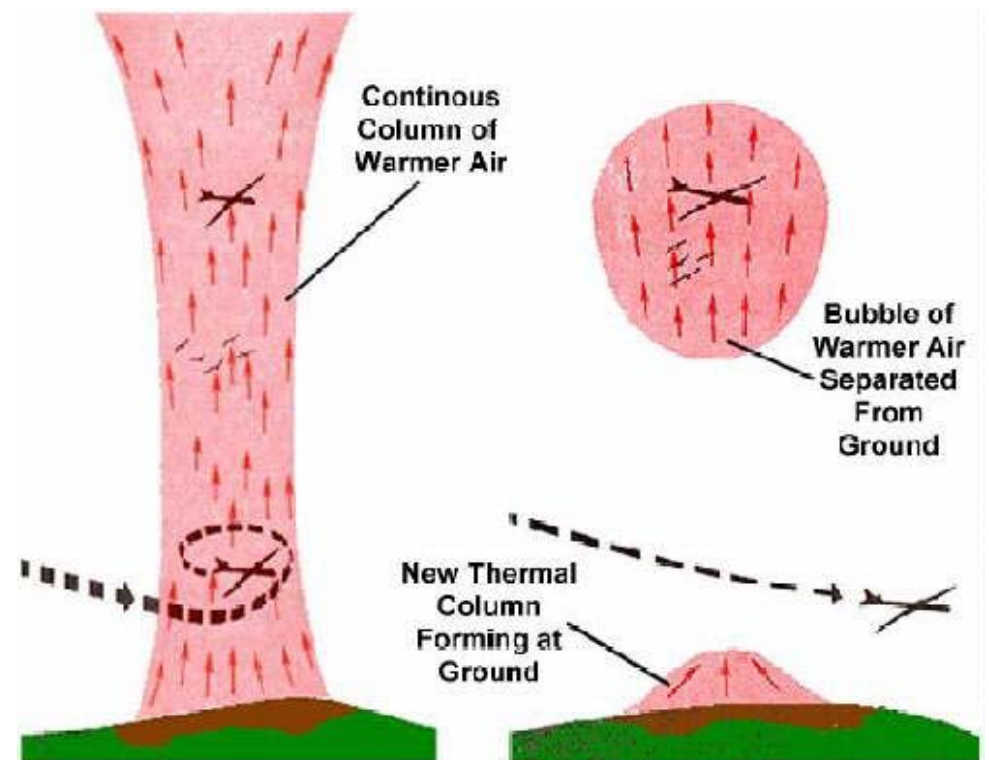
In combination with the oroscopic updraught from the easterly wind, this set up ideal conditions for "THE MOTHER OF THERMALS".

By chance, old muggins happened to fall right into it with the Hawke! Thermals can rise as a continuous column or "plume," or break off and create "bubbles".

This is common with pulsating thermals that form, break off quickly and move with the wind.

This is more common in open country in dry conditions.

I wonder in this case whether I managed to find the bubble and could explain why I could not find it again.



How to hunt, fly and escape thermals:

I am sure all our seasoned soaring pilots will have various techniques to seek and fly in thermals.

Here are a few basic techniques to try.

Firstly, knowledge of the terrain, wind speed and directions will assist in determining what areas are good for potential thermals. At Belrose, the 4 quarters of the field are the most obvious areas to find lift.

Pure thermal lift is best found in the north-east and north-west corners of the field above the quarry in the north-east and carpark in the north-west.

First "rule of thumb" at Belrose is to find a patch of sky where you can hunt for lift and not be in the flight path of the powered fixed-wing aircraft.

When the easterly winds blow in the warmer months, it is easier to fly to and fro between the easterly ridges. Lift is usually in the north-easterly corner above the quarry and the south-easterly ridge.

The adjoining air over the dam is usually sink.

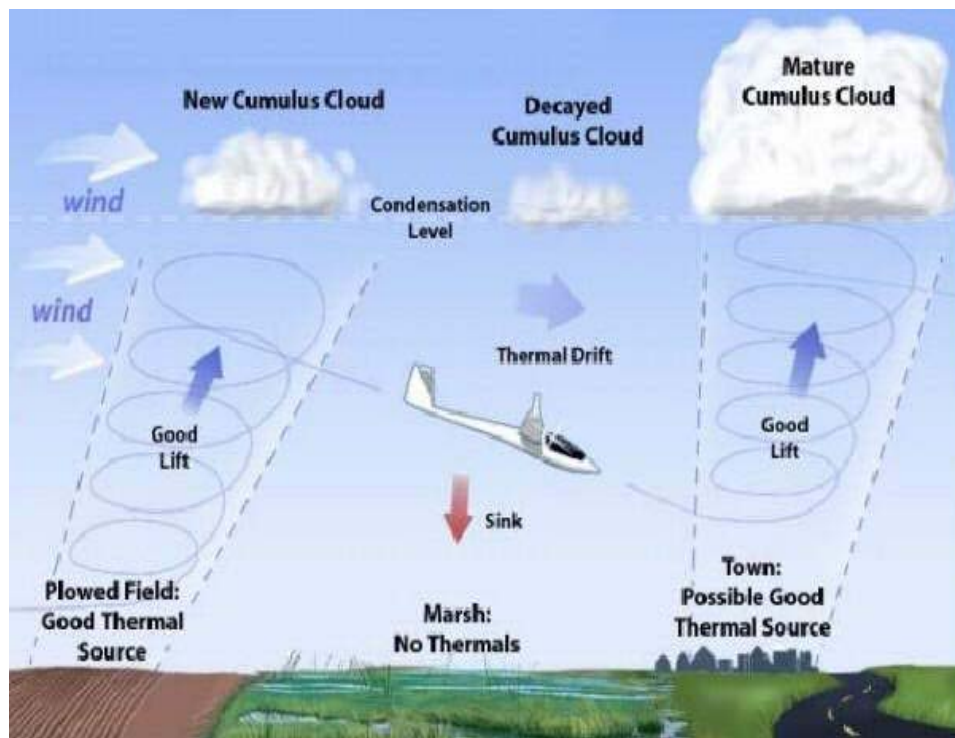
When flying to and fro, one will always reach the point when it is time to turn back for another leg.

Which way do we turn; into the wind or down wind?

Theoretically, it is ideal to turn into the wind, that is, into the lift not downwind when one will lose lift, hence sink.

Any polyhedral slow flier should turn into the wind.

Interestingly, I have found that with the Hawke which could be loosely termed a “hotliner”, if you turn upwind, she very quickly tipstalls.



However, when turning downwind, what height you lose in the turn, you gain and more so when you gain speed on the next leg.

I am anxious to try this manoeuvre with my Siren, which is a true hotliner, and see if this theory holds.

When approaching a thermal, one will notice two obvious changes in the air

craft. Firstly when approaching a thermal or updraught, the smooth air will suddenly become turbulent due to the incoming feeder winds to the thermal and the wing on the thermal side of the aircraft will rise up.

When this happens, turn towards the raised wing and commence a circular searching pattern using shallow turns of cross controls between aileron and rudder to keep the turn flat.

When in the vortex of the thermal, the aircraft will steadily gain altitude. Do not maintain the same radius of the turns as remember the thermal will be moving with the wind currents.

If the aircraft hits sudden sink, you are most likely on the lee side of the thermal so commence a turning pattern upwind.

What to do if one enters ‘The mother of thermals’:

1. If you are lucky to find mother, you will need to do something quickly or otherwise your precious sailplane may disappear up to as high as 15000 feet. Remember sailplane pilots can very easily find thermals up to this height. I hope you have a good pair of binoculars!
2. If your sailplane disappears, don't panic and don't give up! Convince yourself it is still up in the skies somewhere. Put your thoughts into simulating a “search pattern” and fly it with your radio. With help from some helpful observers, someone is likely to spot it before it reaches terra firma.
3. Turning very tight circles will help to lose height in most circumstances. As previously stated keep the turns as flat as possible. This is usually the best method.
4. One can also try to fly straight out of the thermal but if the feeder winds are strong, it will not work, as I found out.
5. It has also been suggested to try inverted flight in tight circles. This theoretically reduces lift on the wings hence height.
6. If 2 to 5 is unsuccessful, a powered dive may be a last resort but remember you most likely will exceed the structural limit of the wings and disintegrate in the dive!

As most thermals will dissipate quickly, there is nothing more enjoyable than a sustained flight relying on lift and not power to stay airborne.

Hunting for thermals is very satisfying when successful.

Most thermals will generate simple lift and it is more of a challenge to stay in the lift rather than being sucked into oblivion if “mother” is around.

HAPPY SOARING

APOLOGY

Your Editor apologises to all Members who did not receive their Newsletters in the latter part of 2007. The label programme became corrupted and it was not noticed until Stephen McMahon complained that he had not received 4 month's worth of issues,.

Upon checking the label list it was found that a significant number of other Members had also been left off the list.

Thanks Steve, I wonder if the other Members read the Mag (or missed it)??



A number of finger/hand/arm injuries were noticed at the Christmas Party, both Graeme Swalwell and Taki Enomoto were very lucky that their injuries (although serious enough) were not much more serious and permanent. Taki actually received his injuries in 2 separate incidents on the same day!! Talk about being a glutton for punishment!! This is a timely reminder to the rest of us that **FAST SPINNING PROPELLERS ARE DANGEROUS!!**

We are reminded that one of our sponsors, Northern Beaches Hobby Centre (located in Dee Why where Wings'n'Things/Extreme Hobbies used to be) also give 10% discount to WRCS members. Greg Bakla also indicated that he has a staff vacancy for anyone interested, contact Greg for details

Glider towing was taking place ... Dean Schuback towing Mark Ter Laak's glider aloft when the glider canopy flew off and the tracker device fell out. Despite lengthy searching with and without the Yagi antenna it couldn't be found ... either a dodgy battery or maybe it wasn't turned on??



The plane in these pictures is still officially the 'Air Vehicle Number 1', a prototype, on board the USS George Washington CVN-73 for catapult fit checks. Not exactly still Top Secret, but certainly not yet made public.

THE "NOT SO TOP SECRET" F/A-37



It will be known as the F/A-37. Although specs are classified, it is believed to be Mach 3.5 (top speed in the Mach 4 range), super-cruise stealth fighter/bomber/interceptor with approximately a 4,000nm range. Awesome!

Check out the Navy test pilot in the cockpit of the F/A-37...Lt. Kara Wade... You go girl!



Thanks for the story Doug!