Canberra Electric Flight Association
Radio-Controlled Aircraft Club
Yarralumla Bay Oval, Canberra, ACT

Current Affairs

Newsletter of the Canberra Electric Flight Association
Issue 5 – March/April 2003

My latest improvement on a kit – this time the Nebula ARF two metre glider. This uses a new lightweight and much more streamlined fuselage. She weighs just 520g all up and should go well thermal soaring in calm conditions.

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ACTAA Thermal Glider Round 2

Queanbeyan – March 9th, 2003

The QMAC round 2 of the ACTAA thermal glider comp was held on 9th March in low overcast with the threat of rain for most of the day. 2ch class was not run due to lack of competitors.

The wind was not too strong and after the first few winches were laid out into the forecast SE, the wind turned 90 degrees and remained there for the rest of the day. The surprisingly good conditions were only interrupted by a very light sprinkle of rain half way through the afternoon and then a reasonable soaking as I closed the gate at the end of the days flying.

The lift was challenging, providing generally weak lift drifting downwind at only just enough strength to give a climb if you flew carefully. Some stronger patches were found that sent people running for their winches and chasing those who had already specked out.

A welcome contingent from the Sydney side clubs came down to play, but misfortune followed them all day. The first incident was Ian having line breaks on both his allowable attempts resulting in a 21 second score. Next Vic had an incident on landing cartwheeling his Starlight and was very lucky to only break a wing joiner. Then Jack and Don had a mid air, damaging Don's V tail, before Jack tempted fate and tackled Brad's Mojo head on. A Mojo is not the sort of model you want to have a midair with and the result was an amputated winglet on the Pike which unfortunately did not recover before an awkward landing which crushed the opposite winglet.

Although unfortunate all damage should be reasonably easy to repair and indications are that we will see more trips from the big smoke from these guys. A special mention for John who put in some excellent flights in the difficult conditions with his Starlight to take a podium finish.

The QMAC club must be thanked for providing the catering for lunch and presenting framed certificates to the placegetters. Once again the ACTAA Thermal competitors had a successful day in the face of adverse weather.

Scott Lennon (QMAC)

Yass Fun Fly

Yass – March 30th, 2003

The Yass fun fly ended up being a very enjoyable day. The field is situated about 5 km out of Yass (45 minutes drive for me) on a property which is owned by a wonderful farmer and his wife who are absolutely rapped in RC aircraft. Tony & Jenny are their names and they produce fine wool for a living on a beautiful 300 acre property. (Yass is renowned for producing some of the best fine wool in the world) I heard what I thought was a tractor up near the homestead but over the rise came a magnificent newly painted in royal blue & white, I think Piper Cherokee Arrow, which he parked near the pits. He has owned the plane for 20 years and paid $34K for it. It is now worth around $85K and it is used mainly for holiday travel. As he said, it is a better investment than a car!

Tony is so interested in model aircraft that he has graded a 300 metre strip for the club on the top of a rise which he gives them rent free. But there's more, this week he is bitumening his driveway and he suggested to the club that while the workmen are there that he does a landing strip 200 metres long by 20ft wide at the same time, at his expense, to be repaid by the club at around (wait for it) $50 PA.

Anyway, the day was not without incident, the first one being my one and only aerotow when I towed Rick Harris's beautiful 3 metre scale "Cirrus" glider with full cockpit detail to around 1000ft. Upon it's release, for some unknown reason, the Cirrus immediately went off the air and spiralled vertically and ever so gracefully into a paddock around 1/2 mile away. It must have been travelling at 100 mph when it hit, the impact was catastrophic as you can imagine. The sound, when it reached us around a second later was like a car crash. The other incident was when a very experienced pilot put his hand through a spinning prop and cut it up his fingers fairly severely. A reminder for us all.

I won 3 awards, one for 2nd in touch & go, one for the most planes flown on the day and the 3rd for taking out the limbo with the Porter. They had to give it to me because as you can see from the accompanying piccy taken by Murray Scott, I not only took away the streamer, but also the supporting pole on one side as well so that no-one else could compete.

The Karia as usual impressed all with its performance and awesome rate of climb.

Byam Wight (CEFA/CMAC)

Millenium Cup Round 3

Queanbeyan – March 30th, 2003

Round 3 of the 2003 Millenium Cup series was the second year that the Millenium Cup has come to this region. Last time it was a great success and it attracted 23 competitors, and it was the only round of the second half of last year that allowed a "proper" competition (ie chasing after thermals, rather than just hovering into the wind and hoping for a thermal to blow through!). The Sydney flyers certainly enjoyed the conditions, they were still talking enviously of Canberra's thermal soaring weather many months later.

This year we were a little down on numbers (17 entrants) and it was very disappointing to see that I was one of only three locals competing. The fact that the Yass Fun Fly was being held on the same day may have had something to do with it. The Sydney flyers were down in force again though, but only just as Ian Roach reported in the Heathcote Soaring League newsletter:

"Leaving Sydney around 5am, soon had Tony Shearman and Klaus Weiss running into fog, 20 minutes from home. I'm sure that lots of other competitors ran into the same fog. Talking, and not concentrating, saw them pass the turnoff to the Hume Highway near Appin, and they were at Albion Park, before realising where they were going. More heavy fog on Macquarie Pass, before they reached the highway. Just past Goulburn, the fog re-appeared and they totally missed the Federal Highway turnoff, to Canberra and didn't even realise it. Somehow, they eventually made it back, and as they crossed the highway on the way to Bungendore, saw Jack Murphy and Matt Brand behind them.

Not having a map to the field, Klaus gladly let Jack take the lead. They both ended up lost, and returned to Bungendore, before finding the correct road. Both cars rolled up to the QMAC field just before the pilots briefing.

Klaus started to assemble his model, with a Spirit Elite fuselage, having smashed the original model at IMAC. It seemed very light, and the reason became obvious when the canopy was pulled off. No receiver battery. Jack loaned him a receiver pack, and Klaus had made his mind up to just enjoy the day and not really try too hard. Good decision on his part, as the mental pressure was off."

Initially it seemed like conditions would be very similar to the previous year, although the first few flights indicated that the thermals weren't quite as strong. Apparently Dale and Mark (who were flying at Yarralumla) experienced some fairly strong winds, but at Queanbeyan apart from a short period when a front passed through, the winds were light and the thermals were good.

My turn to fly quickly came, and after a moderate launch I found myself in sink. However the wind suddenly changed after a couple of minutes, and after quickly flying downwind, I was steadily climbing in a small thermal to win the first round with 6:01 and a four metre spot landing (worth 35 points).

My new Mk 2 v-tail glider was far too sensitive at first, but I was able to trim it out throughout the day. She is very light and flies best in calm conditions, but with the addition of ballast will penetrate wind fairly well. I was very pleased to make the required six minutes three times, and just for a change I did some good spot landings!

Ray Murray and Geoff Jacob (the other two locals) however didn't do quite as well – maybe the fact that they normally only fly Open Class and weren't familiar with their borrowed models had something to do with it!

In the end Jack Murphy, who was appropriately flying a Polish design called a First, won the contest. The First has a fibreglass fuselage with a slip on nose cone, and veneered foam wings. She seems to go best in windy conditions; this certainly was the case here as Jack scored worse than many others when conditions were the calmest and easiest, and did much better when the wind picked up a little later on in the day.

After three rounds Peter Sikora leads the Millennium Cup points score, with Col Woodward and Jack Murphy not far behind. But with four rounds still to be flown, and only each pilot's best four to count, it is still anyone's Cup.

Matt Greenfield

(Thanks to Klaus Weiss and Ian Roach for the scores, photos and model details)

Place	Name	Score
1st	Jack Murphy	1886
2nd	Col Woodward	1860
3rd	Klaus Weiss	1807
4th	Ian Roach	1731
5th	Peter Sikora	1691
6th	Matt Greenfield	1571
7th	Dean Markwick	1525
8th	Max Stone	1456
9th	Geoff Jacob	1448
10th	Matt Brand	1438
11th	John Quigley	1420
12th	Ray Murray	1418
13th	John Kinlay	1395
14th	Tony Shearman	1309
15th	Laurie Bestell	1240
16th	Ken Woodward	1124
17th	Owen Pearcey	1119

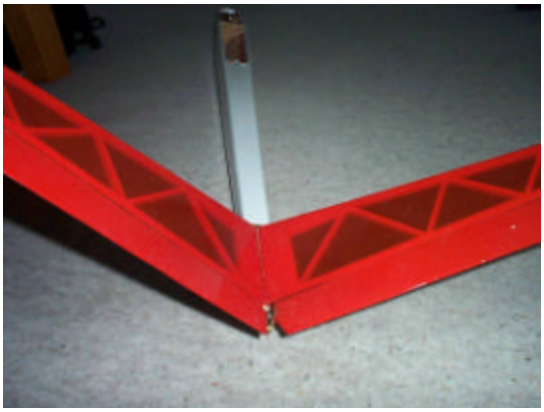
Reflex Tow launch at Queanbeyan

V-Tail Design and Setup

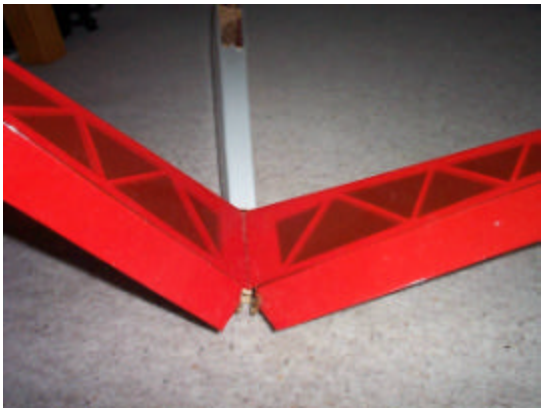
My new own-design V-tailed gliders seem to have attracted a lot of attention over the last few months, and I am always being asked about how they are set up. It has proved to be a challenge – not a particularly difficult one, but it still required some thought. The following is a summary of the idea, the design and my experiences in setting up the V-tail, which hopefully will inspire some of you to have a go!

What is a V-tail and how does it work?

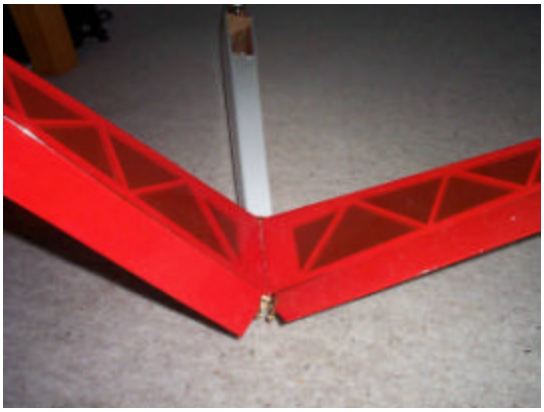
A V-tail is simply a tail shaped like a V, hence the name. Sounds simple so far! The advantage is that because of its shape, it's possible to build a tail with less surface area, meaning less drag and a lighter model. However setting up a V-tail isn't quite as easy as setting up a conventional tail, because each control surface has two different functions (rudder and elevator). The controls move as follows:



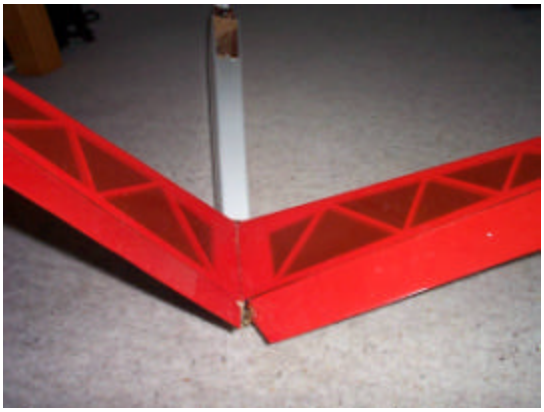
Up Elevator:
Both surfaces move up.



Down Elevator:
Both surfaces move down



Left Rudder:
Right surface moves up
Left surface moves down



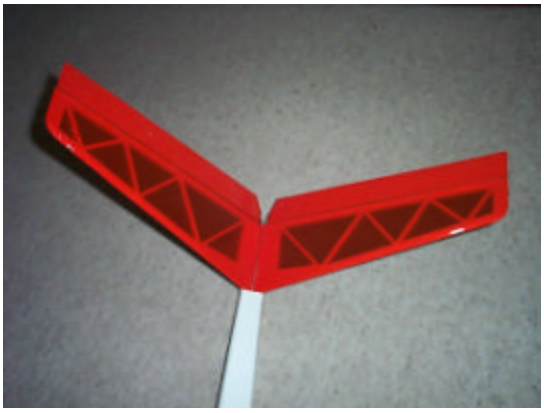
Right Rudder:
Left surface moves up
Right surface moves down

On the radio I am using for this glider (a JR Max 44) it is possible to control the total amount of movement of the control surface but it is not possible to program how much of that movement is rudder and how much is elevator. The amount of rudder and elevator movement needs to be set by good design and careful trimming.

The Design

To design the V-tail I simply extended the Spirit tailplane design by the appropriate amount to form the V-tail halves, and glued the halves at an angle of 110º, which looked about right to me – and as the adage goes: ”if it looks right it will fly right”!

I butt-joined the Mk 1 tail together with 30 minute epoxy and reinforced the joint with a fibreglass bandage. Unfortunately this created a weak point at the end of the bandage, and the tail would break on even a slightly heavy landing. Hence the new Mk 2 fuselage and tail (shown opposite) – in which I omitted the fibreglass bandage. This turned out to be a much stronger way of constructing the tail – it has survived several hard contest landings without any damage.



Setup

Setting up a V-tail is very simple using my trusty JR Max 44. Each control surface is connected to a servo via a pushrod as usual, but in this case the left surface was plugged into the receiver’s elevator slot and the right surface to the rudder – and of course I set the computer radio’s V-tail mixing to “On”! Without really knowing how much movement to put on the tail, I programmed a maximum of about 30º total movement for each control surface.

Flying

Test flying initially consisted of a series of hand launches, which revealed that the glider was trimmed well but the control throws were too sensitive. I gradually reduced the throws to a more manageable amount.

The next thing was to try some turns. Again I did this initially by strong hand launches. I discovered that when turning in both directions the glider wanted to climb. This problem was fixed by increasing the down movement and decreasing the up on each control surface. By the time had come to bungee launch the model she was flying pretty well, and only minor adjustments were needed to perfect the turns.

Conclusion

Constructing a V-tail has proved to be a very worthwhile experiment. It does take some thought and a bit of fiddling, but in my case the model proved to be just as easy to fly as the standard tail version, and as a bonus the performance is noticeably better (undoubtedly partly due to the reduced drag of the V-tail). It will be interesting to see if any more V-tail models will appear at the field in the next few months!

Watts On

DATE	EVENT	LOCATION
May 5th	Millenium Cup (2M Glider) Round 5	Muswellbrook, NSW
May 17th-18th	7 Cell Glider / F5B	Illawarra Model Aircraft Club, Wollongong, NSW
May 25th	ACT Thermal Glider Round 4	Goulburn Mulwaree Sports Flyers field, Goulburn, NSW
June 29th	ACT Thermal Glider Round 5	Belconnen Model Aeor Club, Mitchell
July 13th	7 Cell Glider / F5B	Picton, NSW
August 31st	ACT Thermal Glider Round 6	Yass Model Aircraft Club, Yass, NSW
September 6th-7th	Millenium Cup (2M Glider) Round 5	Cowra Model Aircraft Club, Cowra, NSW
October 26th	Millenium Cup (2M Glider) Round 6	Heathcote Soaring League, Maddens Plains, Sydney, NSW
November 16th	Millenium Cup (2M Glider) Round 7	SMFC Bomaderry Field, Nowra, NSW
December 7th	Ted Swan Cup (Open Glider)	Goulburn Mulwaree Sports Flyers field, Goulburn, NSW

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