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THE VOICE OF CONTROL LINE  
AEROMODELLERS FROM  
AROUND AUSTRALIA

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Number 46



Produced by the Victorian Control Line Advisory Committee

July 2001

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**Copy Deadline for next issue is:  
Wednesday 18th July 2001  
PRODUCTION SPECIFICATIONS**

Please remember when submitting copy that if you have access to a PC, or suitable typewriter you can save me retyping by giving me your items pretyped, and please use a good black ribbon for best reproduction.

**Best of all is to send it on a 3.5" disk as a Windows Write, Word for Windows, or as an ASCII TEXT FILE or use Email**

Contest results should be tab delimited, ie use a single tab between each column of results, if submitted by disk. This makes formatting much easier on the editor. Harry Bailey. 37 Thompson Street. Clayton VIC. 3168.

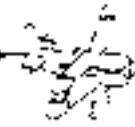
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# COMING EVENTS



## CONTROL LINE CONTEST CALENDER 2001

JULY 8	Simple Rat race (whipping permitted)	SMAC
JULY 15	<b>FAI &amp; Combined Speed</b> , Jnr 2.5cc Combat, <b>Mini Goodyear</b> , Jnr 2.5cc Rat race.	CLAMF
JULY 22	FAI, Novice & Jnr Aerobatics, Class 2 Team race, Vintage Stunt.	KMAC
AUG 12	Simple Combat.	SMAC
AUG 19	<b>FAI Team race</b> , 2.5cc Rat race, 1/2 A Combat, <b>Combined Speed</b> .	CLAMF
AUG 26	FAI (Stuntmasters), Novice & Jnr Aerobatics, Vintage "A" Team race, Classic "B" Team race.	KMAC
SEPT 2	Classic Stunt, Vintage Stunt, Aust "A" Team race, Classic "B" Team race, Simple Combat.	Warragul
SEPT 9	Vintage "A" Team race, Aust "A" Team race.	SMAC
SEPT 16	<b>FAI &amp; Combined Speed</b> , Simple Rat race, <b>1/2 A Team race</b> .	CLAMF
SEPT 23	FAI, Novice & Jnr Aerobatics, Classic Stunt, Bendix.	KMAC
OCT 21	Friend and Fly Day	Brimbank
NOTE -	All SMAC events to be held at KMAC flying field. All events at KMAC except Aerobic events to be run by CLAMF, DAC & SMAC members.	

Events will be flown in order of printing. Events in **Bold type** will be flown over hard surface

**CLAMF** Frankston Flying Field, Wells Rd, Seaford (Melway 97J10), 10.30am start

Contact :- G. Wilson (03) 9786 8153,

Events conducted by CLAM.F at the KMAC Field (Melway 72 K9) 10.00am start.

Contact :- H. Bailey (03) 9543 2259

**KMAC** Stud Rd . Knoxfield (opposite Caribbean Gardens) (Melway 72 K9) 10.00am start

Contact :- T. Matthews (03) 9560 0668.

**SMAC** Contact :- Reeve Marsh (03)9776 5949

**WMAA** Horsham. Contact :- V. Cresp (03) 5382 4065

**BRCAC** Bendigo-Newbridge Rd . Marong

Contact :- S. Power 03 54 424 925

Competitors at CLAMF competitions are reminded that events **start at 10.30a.m.** and they should be ready to begin at this time.



# COMING EVENTS



THE FOLLOWING PROGRAMME IS OPEN TO ALL MEMBERS OF THE MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA (M.A.A.A.)

### LOCATION OF FLYING FIELDS

(ALL EVENTS START 9 am UNLESS OTHERWISE NOTED)

**TAMWORTH MAC:** CONTACT LEN SURTEES 02 67-61 8508  
**R.E.M.A.C.:** PETER BOARD HIGH SCHOOL, WICKS RD.,  
**S.S.M.E.:** LUDDENHAM ROAD, LUDDENHAM.  
**K.M.F.C.:** ST. IVES SHOWGROUND, MONA VALE ROAD, ST. IVES.  
**S.A.T.:** KELSO PARK, HENRY LAWSON DRIVE  
**I.M.A.C.:** BIRKLEY ADJACENT TO FREEWAY.  
**MUSWELLBROOK M.F.C.:** MITCHELL HILL FIELD, NEW ENGLAND HWY., MUSWELLBROOK.  
**NARROMINE:** CONTACT STEVE BAKAC 02 68 89 2501  
**CLAS** CONTACT MIKE COMISKY 02 9605 2062

## CLAS Contest Calendar 2001

Sun 15 Jul	KMFC	AGM + 2.5 Stunt, Slow Combat, F2CN [Simple FAI]
Sat 21 July	REMAC	All American [de Bolt] Vintage Stunt
Sat 28 July	SSME	Vintage 1/2A & B T/R . Goodyear. Com. Speed
Sun 29 July	SSME	Phantom & Vintage A T/R + Bendix
Sun 12 Aug	KMFC	F2B Aerobatics
Sun 9 Sept	KMFC	Classic Stunt + Vintage Stunt
Sun 16 Sept	Illawara	F2B Aerobatics
Sat 29 Sept-		NSW
Sun 30 Sept		State
Mon 1 Oct		Championships
Sat 13 Oct	REMAC	Duke Fox Memorial Vintage Stunt
Sun 18 Nov	SAT	F2B Aerobatics
Sun 18 Nov	KMFC	Vintage 1/2A & A & B Team Race
Sun 25 Nov	SSME	F2B Aerobatics
Sun 9 Dec	KMFC	Christmas Party & Fun Fly

Dates and events subject to change.

For further information contact CLAS Secretary:

Guy Bevan: 2 Kamilaroi Road Bayview NSW 2104

Fax/phone 9979 9595 Mobile 0412 465 802

Email: [guybevan@hotmail.com](mailto:guybevan@hotmail.com)

For regular updates and contest news get your name on the CLAS email list

Send address to [guybevan@hotmail.com](mailto:guybevan@hotmail.com)

## Queensland Control Line Events Calendar

DATE Year 2001

FIELD

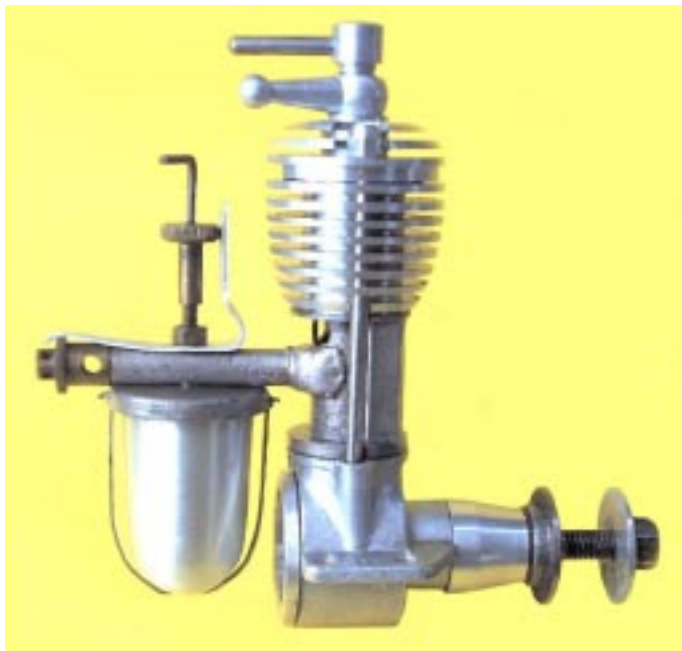
# Vintage Engines

From Stan Pilgrim

## The STAB 1.25cc.

This engine is the main reason why the lower limit of my collection is 1.25cc and not 1.3 or even 1.5cc - I like it that much! It is extremely well made fit wise, runs beautifully and has loads of character. One flick starts are the order of the day and flat out is 7500 rpm on a Magnum 8" X 4.5" propeller.

The Stab company commenced trading in 1922 and is still in business today at the same address in Petits-Champs, Street, Paris but alas they no longer produce model engines. R.STAB first offered engines for sale in 1941 and production ceased circa 1960.



Finding suitable materials and the eventual manufacture of a model engine during the Second World War must have been difficult, particularly in occupied France. The war years did not deter STAB however and I have been told that engines were manufactured in the sewers beneath the city of Paris during those troubled times. That is dedication for you!

STAB built their first 1.25cc diesel engine in late 1941. The engine pictured is stamped 1442 which probably means engine number 14 from 1942. All STAB 1.25cc engines I have seen look similar to mine which leads me to assume the engine was available unchanged until production ceased.

The engine was based on the same crankcase as used by the company's 2.27cc spark ignition model. That probably accounts for the pressed on machined cover section on the front of the crankcase. Had they originally intended for

the engine to have spark ignition or were they using up an excess of pre machined 2.27cc engine crankcases?

Both the marine and aircraft fraternity were catered for, the factory conversion from air to marine was effected simply by swapping the cooling fins for a water jacket plus the addition of a large flywheel. The 1.25cc engine has a 10mm bore, 16mm stroke and a weight of 113 grams (air cooled version).

Next month we will look at a recent replica of the American Vivell 1.5cc diesel from 1948.

Stan Pilgrim.

## CLASSIC B PLAN OFFER.

The mail offer on the Galaxie plan was highly successful, with over 20 plans distributed around Australia. Not surprisingly, over half were sent to NSW, showing the high interest in Classic B in that state. Western Australia also gave a strong response with Bob Fry, Alasdair Taylor and Hans Bertina building racers for the Albury Nationals, now only about six short months away.

Speaking of our friends in W.A., just a couple of lines about that 100mph speed limit issue! Through the internet, the yanks have been expressed some disquiet about this rule. They now liken their races to a parade! HELLO! It's team RACING we're talking about here...and the difference between 100 mph and the 105mph that our best models fly at here is so small that it just doesn't matter. That's why speeds are not limited down under. And yes Jim, you're right. You can modify motors, use modern plain bearing engines and can choose to use any glow plug you like, be it OS, Enya, Rossi, McCoy, Taylor or even (heaven forbid, it seems) those made in the USA by a modeler named Henry Nelson!

Now for the GOOD NEWS. Thanks to NSW's Warren Norrie, we now have another full size plan on offer. This time it's the Crescendo, an all Aussie Class B team racer from the sixties. Designed by Ken Taylor, this super looking semi-elliptical racer could be just the model you've been looking for.

Just send a \$5 note to me at P.O. Box 181, North Melbourne, Victoria, 3051 and your Crescendo plan will be forwarded by return mail.

John Hallowell. VH 1984



# Crescendo Plan



1393 Blk. Wolf Ave.  
Oshkosh,  
Wis. 54902

Dear Editor,

A copy of A.C.L.N. recently came to me via one of your subscribers. Although I am not of the "turn left go fast" persuasion, I'm interested in C/L and the beginner problem. All C/L interests need to work together here. Our F/F brothers continue to demonstrate what happens when complexity passes the point of being merely challenging, e.g. indoor microfilm, Wakefield etc.

Control Line Speed learned nothing, made the same mistakes booming complexity as "Good" and suffers the same fate, a lack of beginners. Stunt folks having seen what happened to F/F and C/L Speed learned nothing. Enter the era of \$500 motors, \$40 props, \$40 mufflers etc. Guess what? We lack beginners! How could that be?

Allow me to boldly offer one possible approach to some of the problems pointed out by John Hunting, April 2001 Letter to the Editor. May I present a class called: -

**Duffer Speed.**

Rules

1. Reed valve motors .049 max. 10% nitro
2. 60 sq. in. area, min.
3. 35 ft FIBER lines (Kevlar, whatever.....)
4. Like all junior events - no entry for anyone under 18.

Sure, fine tune as needed, but perhaps such an event might hang on to those with declining finances, eyesight and interest.

I have enclosed a copy of a clipping you may wish to share with your readers. It seems to me that it gets more to the core of the issue. The author is one of the few surviving islands of sanity in social behavior here in Yankland.

Douglas A. Dalke

## Whatever happened to hobbies for American kids?

By JOHN ROSEMOND  
Knight-Ridder Newspapers

One of the questions I occasionally ask my seminar audiences is "How many of you, as children, had a hobby?" Nearly everyone raises a hand.

I then tell them to keep their hands up if at least one of their children has a hobby, defined as an activity or interest pursued independently, of the child's own initiative, and in which the child is actively involved on a regular basis. That distinguishes a hobby from an organized, adult-directed, after school activity.

Almost every hand goes down.

Why is it that so few of America's children have hobbies? Thirty-odd years ago, nearly every one of the kids in my suburban Chicago neighbourhood had one.

Collecting and trading baseball cards was a popular pastime, as were coin and stamp collections. Some were into photography, others into building radios.

At various times, I collected baseball cards, rocks, and newspapers from cities around the country, coins and stamps. I also played mad scientist with my chemistry set. I guess you could also say that, up until high school, when I started playing on the school team, golf was a hobby.

Our hobbies were expressions of individuality. We took pride in them, and loved to show them off. Collecting newspapers set me off from the kid next door, who collected coins. Hobbies were tangible expressions of personal accomplishment that built not only self-respect, but respect for one another. Hobbies involved setting goals and reaching for them. In other words, they were catalysts for growth.

So why are hobbies becoming extinct? I have a theory, which is that an excess of after-school activities prevents today's typical kid from developing a focused, self-directed, recreational and/or educational interest, also known as a hobby.

In order to develop a hobby, a child must have sufficient free time in which to explore options and find an interest that suits his or her personality. How can a child who's being shuttled from activity to activity between school and homework find that time?

The second key ingredient that goes into the making of a hobby is initiative. So, I ask, how can a child learn to exercise initiative when his parents have taken initiative for him during his entire life, finding and manipulating him into nearly everything he's ever been involved in? Initiative is like a muscle. Used, it strengthens. Bypassed, it weakens.

When our kids were still young, we made three big changes in their lives. First, we took the television out of the home and kept it out for four years. Second, we reduced their toys to a couple of handfuls. Third, we no longer allowed more than one after-school activity at a time.

After they got over their shock and adjusted to our new old-fashioned lifestyle, each developed a hobby. Eric began building models of World War II military equipment and later, airplanes. That got him interested in flying. After hanging round the local airport for a while he began taking flying lessons during the last year of high school. He is now an instrument-rated pilot, well on his way to a career in aviation.

Amy asked for piano lessons, which led to an interest in musicals and songwriting. She began trying out for community theatre productions, working her way up from the chorus in "Annie!" to the female lead in "Oliver." She will enter college next fall as a theatre - arts student, minoring in film production.

For want of some time, a hobby can be lost. For want of a hobby, a talent may never develop. For want of talent, a life is less rich.

*John Rosemond is a psychologist who lives with his wife and two children in Gastonia, N.C.*

## TARMAC Notes for May and June

Quite a few modelers around Australia and even internationally will remember Peter Fauser. A few years ago Peter was a champion builder and flier of Wakefield rubber models. They were as good as any in the world at the time, and probably would not be far from the mark even now. He competed at World Championship level and placed very nearly at the top with his own designs. They featured beautifully made refinements like his home designed and built delayed prop release and variable pitch propellers. I am glad that I had the chance to see Peter fly them. It was a privilege, and both the aircraft and Peter were impressive to behold in action. Having gone into a resting phase from aeromodelling (no real aeromodeller ever gives it away permanently), he became an active Glider pilot and now has reached the most stratospheric levels of the West Australian gliding administration. In parallel with all this aviation activity, Peter has always been a practicing musician and has just released a CD of guitar music. If you know Peter, you might be interested to listen to an interview that he gave on ABC radio recently. It details some of his experiences in flying and music, and can be heard on the Internet web at:

<http://www.abc.net.au/local/perth/radio/bsbb.htm>

We managed to fit the weekend of May 6th in before the first rains came. There were plenty of kids (mostly pre-teenage) learning to fly for a change and it was a fairly busy day. We had a visit from Brian Gardner the proprietor of Bristunt products who was over from New South Wales on business. It was a pleasure to have Brian along and during the time at our field he helped out with advice and some coaching for the stunt fliers present. Mixed in with the idle gossip, was the news that Jim Trevaskis is hard at work in New South Wales building a Thunderbird, so I will have to put the hard word on him to send a few photos when that is finished.

Many moons ago, I realised that one of my favourite aeroplanes was the Hawker Tempest. This may have been caused by reading Pierre Closterman's autobiographical book 'The Big Show' or it may have been the reason that I first read it. I can't be sure. Whichever way around it was, the fact remains that the aeroplane is high on my list of favourites. So when I rediscovered the plans for a near to scale Tempest while digging through some old Aeromodeller magazines I had to have another look. The design by C M Milford was intended as an attempt to bring some realism to Control Line racing and is drawn as a 1/2 A racer intended for ED Bee power. That would have been interesting, but not too fast if my ED Bee was anything to go by. It was unable to pull the skin off a rice pudding even if the bowl was tilted. As I studied the plan and the associated text I realised that not only was Mr Milford a clever chap with good taste in aircraft, but this plan was also for an A class racer. In the description published with the plans, it states that if the plan is scaled up in the ratio of 4 : 3 it is the correct size for A class. Or, as we now know it, Vintage A.

I really didn't have to spend a lot of time thinking about this. I believe that there should be visual variety in Vintage racing, preferably by using different designs rather than the distortion of common models, some of which are so drastically adjusted as to be difficult to recognize. The Tempest is different from the general run of racers and to my mind better proportioned for the job than some of the other 'scale' racers that have been tried (like the 'Mew Gull') although the tip dihedral may weaken the wing a bit. It is a legitimate design published in the April 1955 Aeromodeller. So I built it and have painted mine in the livery of Closterman's 1945 Tempest 'Le GRAND CHARLES'. The last of his World War 2 mounts. This is not a scale model, but it is fairly close in general outline and mine is powered as usual with a standard Oliver Tiger. The weight is 14 ounces, which makes it a couple of ounces lighter than my 'Pluto' and it has rather less wing span too. Somewhere nearby should be a photo or two of the Tempest.



### *Charlie's Hawker Tempest Vintage A model*

When WA State Vintage A rolled around, I test flew the Tempest for the first time, but didn't have time to get it working well enough to race, so it was back to the tried and true 'Pluto'. I had enough time to work out that the Tempest is a slippery little monster when it is covered with oil, because it sprang out of my clutches unexpectedly during our first practice. It accelerates fast too, probably due to it being a bit lighter than my other racers. Not that any of this helped me in the State Champs as due a connection between pilots heads and down lines, the Pluto was destroyed in the first of our heats and that effectively put Kirton/Stone out of contention for the day.

There were seven entries in Vintage A and some that would have been there if they had known it was on (sigh). The Nats winning Bertina model was going like lightning,

but Hans had a few problems with ground handling that messed up his day too. Nevertheless despite the problems, he posted the fastest heat of the day at 3:41.78. At the end of the racing, the team that was first past the post was Fry/Taylor with a final time of 8:16.40, second was J Stivey/Adler with 9:11.97 and in third D Stivey/Bertina DNF. So after lots of effort, Bob and Alasdair have finally been rewarded with a name plate on the Vintage A trophy. It is now nine years since our first Vintage A team race in WA and about ten years since Bob Fry built the first of many Vintage A models here (a Footprint). When I have a bit more space it might be interesting to look at the highlights and times that we have seen posted over the last few years to see how we have progressed.

There has been a surge of interest in 'B' class racing of late. This was triggered off by the demonstration flying of some Classic 'B' class racers at the Busselton Nationals, thanks to John Hunting and John Taylor who took the trouble to bring them all the way over to WA. There has been much poring over rules and acquisition of likely plans and engines. Some of which, (my spies inform me) have already been sent off to distant engine men to be breathed on. The big question is will the class chosen be Vintage B as flown in Qld, Classic B as promoted in Vic or should we do our own thing for a change just to demonstrate that we can if we want to?

My personal preference, for what it is worth, is to travel down the Classic path as flown in Victoria. That is not to say that I think the present rules are perfect. I would like a minor change or two to be made. Classic allows the use of a much wider range of model designs than the Vintage rules that restrict you to pre 1958 designs. The early 1960s designs are what I read about, watched and flew when B class was in it's heyday. Coincidentally, they are also what I want to read about, watch and fly now. There are some very pretty elliptical wing shapes that make most attractive models. As for engines, there is a good range available, but I expect that Norm and myself won't be starting with any drastically modified motors to initially. We will probably begin with something completely standard. But I have a feeling that it won't be too long before the earsplitting din of Eta .29s will be echoing around West Australian flying fields again.

One interesting thing about Team racing is the steady change in the behavior of the competitors. At one time all developments, however insignificant, were cloaked in secrecy and never revealed to the enemy. That special fuel brew containing the mystery ingredient of 2.3% boiled penguin oil that increased horsepower, range and glow plug life, had to be locked away from prying eyes. It also had to be kept in a black glass bottle labeled 'Stuff' or 'Urge Juice'. Nowadays, thankfully, there is rather more sharing of information that makes it easier for newcomers to get up to speed with a little less heartache. That is not to say that you will get everything on a plate, but it is easier now than it once was. If you can think of the questions, someone will give you the answers. Or at the very least, a range of opinions.

Some of you may remember me writing my version of a begging letter from time to time, pleading for some input to help with these notes. I can tell you that it has usually fallen on deaf ears (eyes?), but there have been a few

instances where it has worked. I would like to thank those that have contributed. Most recently Bob Fry who put in some sterling efforts not long ago, and this month we hear from Hans Bertina who has written what I hope will be the first in a series of interesting articles. He certainly has some clever insights into many different facets of modeling (especially engines and racing). Here he gives us some details of his state of the art copy of the French designed Gee Bee stunter. He is the first person to try this four stroke powered system here.

#### **Hans writes:**

I have been asked to write about my experience in trying the Berringer approach to stunt, so here we go. At the world Championships in Landres France, I saw many interesting things. One of those was, a junior (and eventually junior champion) Remi Berringer posing a serious threat to the open competitors. He flew consistently in all weather conditions. (Believe me Landres 2000 had every weather condition known to man over that week). While his English was limited, we found that waving our arms around seemed to overcome the language barrier. I gave him 80 french francs. He gave me a prop and promised to post me a copy of his plan of the, "Gee Bee".

I built a Gee Bee from the plans, but replaced the designers tapered spars made of carbon fibre reinforced balsa with conventional D Spar construction as it is easier to ensure an accurate wing that way. I also used a fuselage mounted under carriage instead of fixing it to the wings. The rest of the model was built as shown on the plans. Due to the unusual fuselage I found it to be a very interesting project. Brian Eather made a fibreglass cowl for me and that made the process a lot easier.

Using a Saito .56 for power brought the all up weight to 56 ounces while my target had been 52. The controls fitted were exactly as per the plan and proved to be way too sensitive in all but still conditions. The model flies very well but I believe that it should be built with more conventional control ratios.

For the flying experience two major aspects were new to me. The 4 stroke and the high drag model with small flaps and long moment arm. I believe both are separate entities but first the package.

As I was new to 4 strokes I found the 13.5" x 7" Berringer props pulled the plane along too fast at 4.8 secs a lap. This was using a line length of 20m from handle to centerline of the model. But I also did not understand how to tune the motor at this stage. Since then I have to made a 13.5 inch prop; 7 inch pitch at the root and 3 inch pitch at the tip with about one eighth inch less chord than you might be used to with a .60 two stroke. This allows the motor to rev enough to make power but not fly too fast. It needs a minimum of 10% nitro. The engine is fitted with a 5 mm venturi and an OS wick feed needle. The wick occupies about 4 sq mm of the venturi

The rate it can turn is nothing short of astounding. It does take a few flights to get to know though. I believe the model, regardless of power unit, is a success, but it must conform to the major parameters which includes weight. It

needs to be built light. The principle is that the fuselage and wing section produce so much drag that when the nose is stuck up the load hardly changes (This model however must be between 52 and 56 ozs). The model flies at close to the same speed in virtually any direction. The four stroke also does not change power output much with changes in attitude and again for that reason the package must be light or you will not maintain line tension at the high parts of maneuvers.

Unfortunately pilot error crashed the model during practice and repairs brought the weight up to 61 ounces. The four stroke is not recommended at this weight. More care is now required at the top of the circle, but 5.4 sec/lap is achievable in light weather and 5.0 to 5.1 in heavier weather. At the lighter pre crash weight 5.2 to 5.4 seconds per lap was good at any time.

#### My Conclusions

I enjoy the sound of the four-stroke. It starts first flip hot or cold. The starting technique is as follows: When cold inject 0.6-0.7 cc raw fuel in carby either directly or by the Brian Eather method. Take the prop 180 degrees past compression and tap it backwards. When hot just refill the tank and flip backwards again. Don't inject any fuel when hot starting. Lap times are always the same at the end of a tank as at the beginning. The mixture setting should be rich enough to not slow the engine on climb. This will give optimum performance on a model under 56 ozs. Because the Saito does not increase power at the top of the circle as a two-stroke can, it is not recommended for flying weights in excess of 56 ozs.

One important aspect that is very different to a two stroke is that you can not use the needle (fuel) adjustment to modify air speed. The needle must be set to give optimum run regardless of speed. You get the speed correct by changing propeller pitch.

concentrate on lighter construction to be certain of low weight and use a different engine mounting system to allow tests with a two stroke. Hans Bertina.  
VH4709

Have you heard about the new breakfast food for cannibals? It is made from thinly sliced old ladies and is to be sold under the name 'Crone Flakes'.

Charlie Stone VH4706  
Email cestone@bigpond.com



*Photo of Paul Turner's nationals winning Stunter 'Wind Wizard'. This is the latest in a series of stunters that he has been developing for some time.*



I love the large fuselage concept as it gives an overall more balanced, "look". I enjoy flying it so much that I will build another but this time probably an 'Extra 300'. I will

*Hans Bertina's Gee Bee stunter*



# Brian Burke

## “MANTIS”

Stuck in a rut and sick of flying the same old thing? Want something different that's quick and easy to build and makes nonsense of some aeromodelling old wives tales? Give “Mantis” a go and become a celebrity!!!

Hire a press agent to cope with the media pressure and answer all the silly questions like “...why's it fly backwards, mister?..” and from the slightly more knowledgeable “... you give DOWN elevator to take off?..”. Yup it's a canard (that's French for “duck” or should that be “ducque”?).

But why a canard. Why try to be different; after all doesn't everyone know that there hasn't been a decent design since the “Nobler” (what's that mean?) and/or the “Peacemaker”.

Well a canard offers several advantages over more orthodox configurations. The principal one is that BOTH wings are lifting surfaces in comparison with the “normal” layout where the tailplane or horizontal stabilizer exerts varying degrees of downforce depending on elevator position. The tighter the turn/loop the more downforce is exerted and the higher the wing loading then becomes as the centre of lift moves forwards even in combat wings. I also suspect that the “elevators” act as leading edge slats when deployed.

I admit that “Mantis” is a direct result of the ongoing search for significant improvements in the performance of FAI combat models. However as the present devices are the result of probably tens of thousands of fliers and thousands of designs over the past 50 years, they are extremely effective in their role and are efficiently economic to produce and operate. Well I JUST DON'T LIKE the present odourless, colourless, tasteless spaceframe type of model where they all resemble one another and where there is likely to be a greater difference between models of the same design than between models of different designs!

My first effort was so stable that I could use full control movement without the slightest deviation from level flight! Not being able to predict the effect of propwash on the “elevator”, the canard wing was too small at 22sq.in. and the engine was too far forward to exert any salubrious effect. (I did draw this stability to the attention of the F2A guys present, pointing out they would have no pylon or height problems if they used that layout!) By definition a true canard wing should not exceed 25% of the mainplane in area.

OK then what's involved. Well I obtained three sheets of fence paling quality, rock hard 5mm balsa 100mm wide and butt joined them with PVA and masking tape and left to dry on a flat surface. Offset the tailmost sheet as the offcut will be large enough to use for the canard wing. A 50% planform taper was used so the the leading edge did not taper but the trailing edge went from a 150mm tip chord to the 300mm root chord. Wingspan was full sheet length of 915mm. Don't worry about aerofoil just round all edges. Tissue/glass cover if preferred.

Using the lightest engine you have calculate the engine bearer spacing using scrap 12mm strip balsa and 9X12mm hardwood bearers. Allow 5mm balsa spacers between wing and canard slots unless you want to try just mounting the

wing below the fuselage and the canard on top (would be easier to change plugs). I used 1.5mm ply doublers and glued the main wing in place.

The canard is relieved for the engine and was made from 5mm offcut in an “L” shape with the foot pointing forward on the starboard side. Cover with .8mm ply to counter control surface reversal and for strength. The front port side of the canard is then glued to the ply fuselage doubler and top of the “L”. Hinge and install “elevators” and linkage. Install control system after ply reinforcing wing for bolt. Line guides/tip fins were from 3mm ply whilst canopy and fin were from 5mm balsa scrap.

Balance at main wing leading edge and adjust for 20 degrees of control movement each way. Mainwheel leg is 2.5mm wire bound and soldered as shown and just plugged into holes drilled into both bearers.

If anyone warped enough to build one would like more info. etc., just contact me on (07) 3200 1308 or by mail at 2-24 Appaloosa Court, Munruben Q. 4125, or else I can knock 'em up for a few readies if preferred. Otherwise you can wait for the F2B version with built up fuselage, all-flying canard, inverted engine in Corsair/Crusader style cowling, and undercarriage concealed in drop tanks.

Triangles in F2B! Shock/Horror!!!

Brian Burke



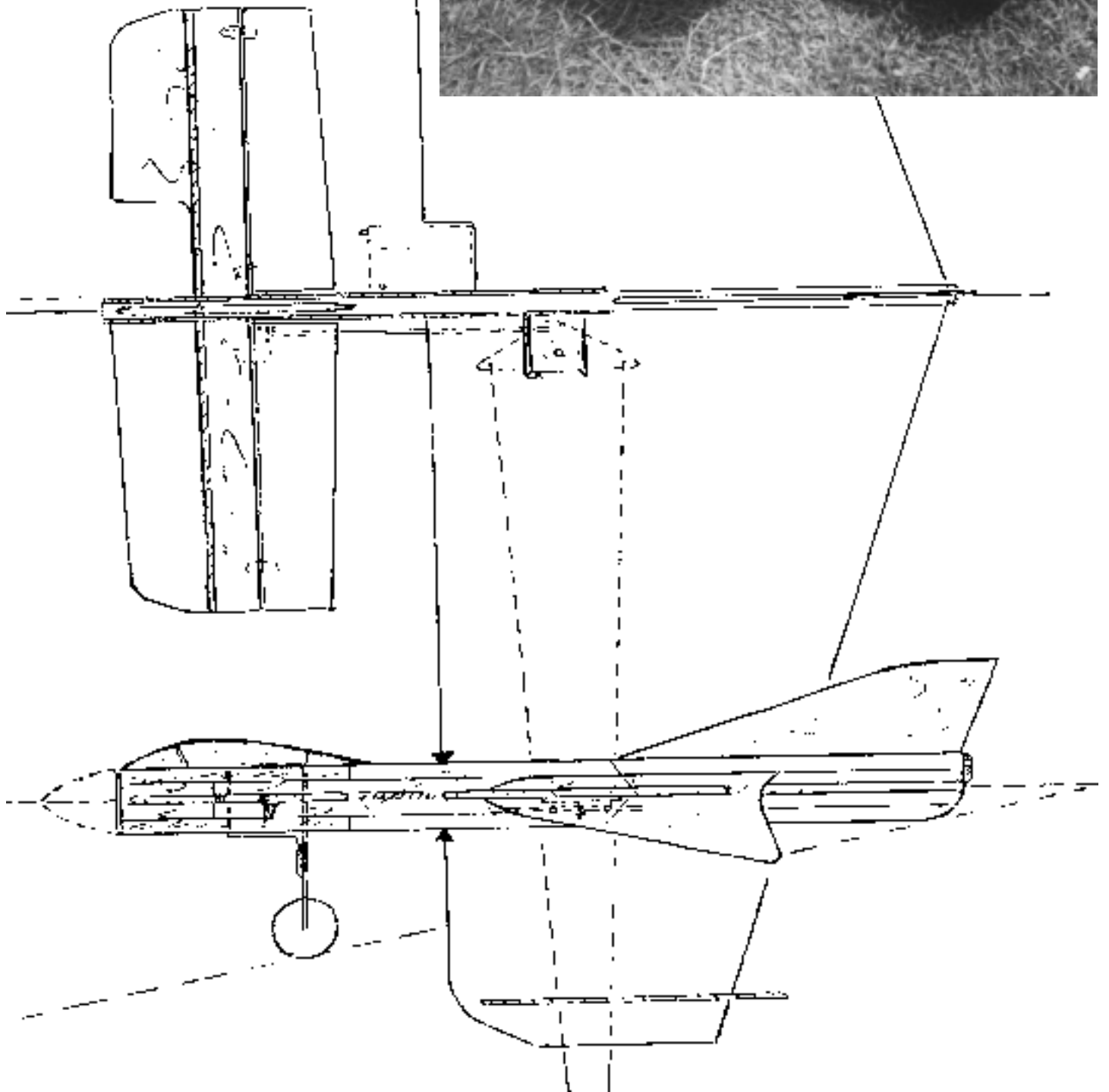
The attached photograph was taken at the 2.5cc slow combat that was held on the 29th of April at T/Birds. The “Red Terror” was owned by the late Arthur Gorrie and is now flown by Ron Egerton. (I used to see that model in Arthurs' shop window 40 odd years ago!) The “Mantis” is at the top of the picture and an unfinished “Maverick” at left of model box.

## To all C/L Competition modellers,

The rule change proposals have been again sent out to the State reps on the MAAA C/L Sub committee for distribution to all C/L clubs so if you want the chance to comment on any changes make sure your club has a copy so your comments can be returned to your State rep. The replies have to be back in by the 14th of August to me for postal vote submission.

Graeme Wilson. MAAA C/L Sub Committee Chairman.

“Preying Mantis”



## T/R WING CONSTRUCTION.

Need a super strong wing for that sleek new 'B' Class, Goodyear, Vintage or Rat? Then check out this tried and proven method. It works best with the Class B's, but is adaptable to most team racers, but is not meant for F2C style flying wings.

Building a wing is one of the most important parts of any racing model's construction. It simply must be strong enough to take at least a few seasons of fast landings and contest winning catches. It all starts with balsa selection. Try to find light, stiff and straight quarter grain sheets. They may be hard to find, but be persistent as it's certainly not impossible. When you buy from specialist model shops, the choice is always better than the local toy shop. I've heard some people actually collect balsa! Personally, I'd rather turn it into superb team racers...

Now for size. Yes, just like Godzilla, size does matter. Many older 'B' Class racers, like the Galaxie, used up to 7/8th root thickness for built up wings. A solid 1/2" is the better way to go. I know that a thinner 3/8th thickness is a more common size among B Class racers, but I have found a slightly thicker wing gives excellent take off and glide characteristics and flies really well, particularly when overtaking high in the circle. And it doesn't seem to have all that much effect on speed. Keith Baddock has shown me technical articles on aerodynamics that shows no measurable difference between a constant 6% and a 9% wing section thickness. Anyway, most of the thickness is at the root, so when the constant taper is taken into consideration, there is little difference in frontal area than a conventional 3/8th section.

Laminating two sheets together makes for an exceptionally strong wing. You may have to join two 3" sheets together. Just make sure the two joins are not on top of one another. I use a 4mm sheet for the bottom and an 8mm sheet for the top. This gives a 2/3rd / 1/3rd section and the join gives a clear datum line all around so very accurate sections can easily sanded. Use the conventional spruce strip, particularly on the catching side. For those paranoid about saving a few grams, the spruce can be replaced with a spliced hard balsa strip on the inboard side. Mark the spruce carefully to maintain your reference line for sanding an accurate section.

An Aeromodeller report on wing section tests with B Class racers carried out in England many years ago favoured a 2/3-1/3rd section over a symmetrical section and a few others. The fastest wing section had a 25% high point on top and a 15% high point on the bottom.

Firstly, you will need two panes of thick safety glass and a supply of house bricks or similar weighty objects. The wing is sandwiched between the glass and the bricks placed on top and left to dry thoroughly for at least a day. Before doing this, cut out the hole for the bellcrank on the top sheet. Using your bellcrank as a reference, mark out the internal leadout tracks and groove top and bottom.

The end of a small round file works well here. Just press firmly into the balsa and work it up and down until the groove is the right depth. Make the opening near the bellcrank about twice as big to prevent any binding where the leadout joins are. The idea here is to insert two lengths of 14 swg wire, thoroughly greased with multi purpose grease. Check the wires are perfectly free and slide up and down easily before applying the grease to the wire. Apply the epoxy onto both surfaces. Thin it a little with metholated spirits to aid brushing.

Carefully twist the wires in their grooves a few times while the epoxy sets. Bending an L shape into the wire at the leadout end helps you get a good grip for twisting during drying. When dry, remove the wires and you will have a pair of perfect grooves for your leadouts. While on the subject, Sullivan brand heavy duty leadouts have proved excellent. They come with nylon type line guides that won't saw through your leadouts at the tips. Brass or copper tubes have been known to do this, particularly if the alignment isn't right.

Now comes the shaping. First get the outline exactly right. With elliptical wings, a good trick is to photocopy the wing panel and carefully cut it out to use as a template. When you're happy with all that, sand the edges to get the exact outline all around. Use some thin cyano and let it 'wick in' all around your datum line. This will make the edge stronger and easier to sand to shape later on. You can install the leadout guides at this point. Also, you can now cut out the rest of the bellcrank hole and install the 1/8th ply mounting plate. You can then mark and drill the pivot point for the 1/8th bolt.

It's time to find your trusty razor plane and wallboard sander with handle attached and start on the shaping. The most important thing to remember here is to support your work at all times. Mark out the centre section and don't touch it again. KEEP IT SQUARE, so that it will fit accurately against the crutch or bearers. Use this method on the tailplane as well. The first shaping should be the straight line taper from where the wing will exit the fuselage down to the wing tips. Watch the datum line carefully as you plane and rough sand this straight line from the wing exit point in the fuselage down to about 3 mm at the tips. Do the same to the other side and then start with the underneath. The same applies. Sand a constant straight line taper to the tips. Don't put too much pressure on the balsa when you sand or you may induce curling. That's why a razor plane works well. The clean cutting seems to take some of the stress out of the wood.

Now sand the wing section noting the 25 & 15 % high points top and bottom. Work carefully, checking and rechecking all the time to get the correct shape. Use different grades of sandpaper finishing up with 400 wet and dry and get the surface absolutely smooth. Don't hurry this. Take your time, even do it over a few days if necessary. But get it right...or toss the wing in the scrap box and start again. It's that important. If you're not serious about building model aeroplanes, take up board games instead.

Small dents can be fixed by lightly wetting with water and applying light heat from a heat gun. Watch the trailing edge line very carefully as you shape. It's far better to

have a straight and consistent 1mm all around than ending up with a wavy 1/2mm. The leading edge should taper to a fairly sharp but nicely rounded edge, just like the plan shows. Further down the track, it's a good idea to give your wing generous balsa fillets top and bottom, as this helps reduce drag at the wing / fuselage joint.

It's now time to give the wing a light spray with a mix of approximately 15 parts water and one of ammonia. The mix doesn't seem that critical. White King works really well. Use something like an old pump action hair spray bottle. This wetting raises the grain for final sanding and the ammonia 'sets' the cell structure of the wood, helping to retain the desired shape. Allow at least overnight to dry and then re-sand with firstly 400 and then 600 wet and dry. You will also remove a tiny bit more unwanted weight!

Not much to go now. It's time for a light coat of dope and thinners. 50/50 seems OK. This is to seal the wood and prevent the epoxy from soaking in, adding unwanted weight and preventing the .8 oz fibreglass cloth from not sticking properly and spot lifting. This happened on one of my early models when I skipped this doping step. When the dope is dry, sand again with 600 wet and dry. Thoroughly wipe down the wing and cover the top and bottom with the glass cloth, using an old credit card as a scraper to help remove excess epoxy. It is a good idea to cover the bottom as soon as the top is tacky enough to trim the edges. This helps avoid any tendency to twist during drying. Your wing may need a thinned 2nd coat, but that is best left to when the entire model is finished and prior to painting with a two part paint like K&B Ultra Poxy.

Next install the controls. Make sure you get a bushed bellcrank, all holes if possible. You don't really want sloppy controls in your modeling future, do you? Bend an 2" long L shape out of 16swg steel wire and file a flat surface on it. Clean with wet and dry sandpaper until it shines. Thread the flexible leadouts through the wing from the tip. Now securely bind together with 25g fusewire and solder along an inch and a half of the wire. Make sure you leave slight gaps in the binding for the solder to flow into. Otherwise you will just create a wire sleeve which can slip off. I've seen it happen on other people's models! For extra strength, use low temperature silver solder which can be found at most hardware stores. It's claimed to be up to 5 times stronger than ordinary lead solder. Install the wire in the bellcrank and solder a small 2.56 retaining washer on top. Use a Z bend for the pushrod with a washer soldered on top to keep it in place. The pushrod can be 16swg, but it must be supported by going through 1/2" of brass tubing at two points along its length to prevent flexing. Grease the lot and you're done.

Now that your wing is complete, you can get on with the rest of your model. Good luck and good racing. At least you'll have a bulletproof wing!

John Hallowell  
VH 1984  
Melbourne, Australia.



## REMINDER : TEAM RACE AND SPEED WEEKEND

*WHERE: SSME Model Park.  
Luddenham Road  
Luddenham NSW.*

*When: Sat 28<sup>th</sup> and Sun.29<sup>th</sup> July  
2001 (9.00am start)*

*Cost: \$5.00 per head per event.*

### Events Sat 28<sup>th</sup>:

*Vintage 1/2 A Team Race*

*Goodyear*

*Vintage B Class Team Race*

*Combined Speed*

### Events Sun 29<sup>th</sup>:

*Phantom Team Race*

*Vintage A Class Team Race*

*Vintage A Class Team Race  
(B Grade)*

*Bendix Team Race.*

*All events flown on grass.*

*Events flown in order as per list.*

*For more information on Vintage A  
Class Team race (B Grade) please ring*

*Andy Kerr on 02 9683 4349*

## PLUS A LOT OF FUN

*Plenty of room, bring your caravan or tent.*

*Or bring your sleeping bag as accommodation provided.*

*\*\*\* We need to know numbers for events and catering.\*\*\**

*Saturday: Lunch and evening BBQ.*

*Sunday: Breakfast and BBQ lunch.*

*Meals, cold drinks, tea and coffee available at minimal cost.*

*Ring Tony Bonello 02 9834 4290 ah or  
Email tonybonello@bigbond.com*

*OR*

*Ring Colin Blake 02 45 775485 ah or  
Email merril@hawknet.com.au*

# CONTEST RESULTS



## Yeoman Trophy F2B

Flown at Knox 29/4/01

1.	Peter White	4192 Points
2.	Doug Grinham	4133
3.	P. J. Rowland	4024
4.	Mark Ellins	3882

## F2B Flown at Knox 27/5/01

1.	Peter White	(Zodiac / Moki 51) using a Zinger 12.375 x 5.75 Prop	4019 Points
2.	Doug Grinham	(Cobra / ST46) using a Rev Up 11.5 x 5.5 Prop	3829 Points
3.	Mark Ellins	(Manito/ ST46) using a Zinger 11 X 6 Prop	3746 Points
4.	Peter Rowland	(Nobler / OS35) Using a 10 x 6 Prop	2423 Points

The contest that was flown during the weekend of 2nd and 3rd of June in Horsham was hosted by the **Wimmera Model Aircraft Club**. The flying site was at the farm property of club member Peter Gibbins. The flying circle was well manicured and smooth and for that our thanks go to Peter.

Saturday afternoons events were Simple Rat Race and Simple Goodyear Team Race.

Simple Rat was first up and Jim Ray reckoned that the country air was benefiting his lap times in practice. 109 laps in heat one was good enough to make the final for Jim and Colin.

Results	Heat 1	Heat 2	Final
1. C. Ray/J. Ray	109	-----	224
2. G. Wilson/M. Ellins	105	87	217
3. M.Wilson/G. Wilson	105	105	183
4 H.Bailey/P. Hatherell	96	96	
5. J. Hunting/K. Hunting	83	81	

Final event for Saturday was Simple Goodyear. This event uses Goodyear sized models but engines are not used on pressure feed and are also un-modified.

Results	Heat 1	Heat 2	Final
G.Wilson / M.Ellins	5:14.28	DNS	10:58.04
J. Hunting/K. Hunting	5:50.97	5:26.28	11:19.44
C.Ray / J. Ray	5:39.34	DNS	11:22.18
M. Wilson / H Bailey	6:39.22	6:39.53	

After the racing we headed for the White Hart Hotel for a meal and a chinwag.

The following morning was bright and sunny and by nine a.m. we were at the flying site sitting down in the warm sunshine enjoying a breakfast of bacon, sausage, eggs and fried bread. Thanks to the Wimmera Club members for organising and cooking!

For the rest of the day the weather was glorious with comments of "If this is winter you can keep summer"

Vintage A was first up and it was the 'Cosmic' Rays that were setting the pace. A broken propeller during a pit stop put paid to their final chances.

Results Vintage "A"	Heat 1	Heat2	Final
K. Hunting /J. Hunting	3:53.33	DNS	8:07.81
G. Wilson / M. Ellins	4:02.24	DNS	8:09.78
C. Ray / J. Ray	3:47.50	DNS	10:06.89
J. Hunting / K. Hunting	4:21.00	4:12.50	
M. Wilson / G. Wilson	4:25.39	4:17.65	
H. Bailey / P Hatherell	4:35.09	4:25.42	

Classic "B" only had three entries so one heat and a final were flown. The Rays were resting their quick L.A. engine and used an O.S. 25FP. Bailey/Ellins used a 25FP also and Wilson/Hunting used a Vintage O.S.29 Max.

Results Classic "B"	Heat	Final
Ray / Ray	DNF (run in)	7:06.18
Bailey / Ellins	Sub 4 mins (faulty stopwatch)	7:15.50
G. Wilson/J. Hunting	4:18.20	9:59.35

The days events were concluded with some excellent bouts of 1/2 A combat. In the final bout James Gibbins was unable to start his engine but Graeme Wilson did the sporting thing and elected to have a second attempt and James changed to a more reliable model. A great bout was then flown with both fliers getting two cuts each and both going full out to snatch the knot. In the end Graeme came out on top and Harry Bailey placed third after a fly-off with Murray Wilson.

## Results 1/2 A Combat

1. G Wilson	L	W	W	W
2. J.Gibbins	W	L	W	L
3. H Bailey	W	L	L	W
4. M. Wilson	L	W	L	L

## KMAC 27/5/2001

Simple Rat Race	rd 1	rd 2	final
1. C.Ray/J.Ray	70	100	209
2. M.Wilson/G.Wilson	97	dns	200
3. H.Bailey/M.Ellins	104	dns	194
4. J.Hunting/K.Hunting	52	84	

## CLAMF 17/6/2001

FAI Teamrace	rd 1	rd 2	rd 3
1. C.Ray/P.Stein	3:16.90	3:35.78	3:24.81 *
2. A.Nugent/M.Ellins	4:40.31	4:16.22	3:33.50 **

\* = Mazniak      \*\* = Vorobiev

## Goodyear

Goodyear	rd 1
1. C.Ray/J.Ray	4:04.00 CS 15
2. J.Hunting/K.Hunting	dnf 8 - MVVS engine broke

A quiet day was had at the CLAMF flying field but some of the times were very impressive. Colin Ray was flying for Paul Stein and managed to do 3 good times the best being a 3:16.90 which included a slow 4 flick 2nd stop. The best race of the day was the last with both teams going flat out for the whole race with only 9 seconds difference in the end. Goodyear only had 2 entries and with the Hunting's blowing an engine just after the start the Ray's continued to fly and did a 4:04.00 heat which is not bad for a CS 15. It's a pity more weren't flying as it was a perfect winters day, no rain, no wind and sunshine most of the day. The combat events were not run.

## GET WELL SOON.

From all your friends on the aeromodelling scene we hope Steve Walton gets well soon after his industrial accident which left him with a short left thumb and mangled left index finger. He will have to pilot and let some one else do the pit work. All the best for a fast recovery.

# Queensland Control Line State Championships

## Brief Results

### F2A Speed

No entries received by closing date and event publicised as a non-runner. Subsequently to be properly organised by intending participants with outcome ratified as QSC official results - however no info. received, hence no official results.

### F2B Aerobatics

1. J. Parisi	2992.5	3012.5	3119.5
2. B. Eather	3057	2894	2900
3. F. Battam	2927	2896.5	2788.5
4. N. Corney	2698.5	2801	2907.5
5. D. Murrell	2732	2639	2865.5
6. J. Elias	2718	2621	2728
7. J. Poulsen	2294.5	2635	2484.5
8. W. Jackson	1708	1770.5	1845
9. D. Simons	2681.5	dns	dns
10. R. Edgerton	393	384	dns

### F2C Team Race

	Final	Round 1	Round 2
1. Owen/Justic	7:02.88	3:32.77	dns
2. Potter/Potter	7:25.56	3:30.78	66 laps
3. Harvey/Knight	35 laps	36 laps	64 laps

### F2D Combat

1. R. Owen
2. D. Clements
3. P. Dillon

Expect that full combat results will be available for inclusion in the next edition of ACLN

### Junior Rat Race

1. Trent McDermott (M. McDermott)
2. Michael Comiskey (M. C. Snr)

### Junior Combat

1. Bowie Pollard
2. David Burnett
3. Adam Gilby

### Open Combat

1. M. Comiskey
2. R. Smith
3. R. Owen

### 35 Slo Combat

1. R. Smith
2. M. Comiskey
3. John Major

### 2.5cc Slow Combat

1. J. Pollard
2. M. Comiskey (Snr)
3. J. Poulsen

Although for the first time in 20 years I didn't have a model flown in FAI combat, all Open combat entrants used "Mauler Open"s except Rob Owen who at least used my handles whilst a "Mako 15 Trainer" finished second in 2.5cc Slow and an assortment of BBE weapons cleaned up in 35 Slo !

### Vintage "B" Team Race

	Final	Round 1	Round 2
1. M. McDermott/ P. Dillon	7:31.8	4:08.96	3:52.93
2. J. Duggan/ V. Kromin	7:47.59	3:25.41	dns
3. L. Winterton/ I. Garton	dns	4:31	20 laps
4. R. Harvey/ G. Knight	44 laps	dns	
5. G. Potter/ G. Potter	dns	dns	

Apparently a high rate of attrition with only 2 models able to contest the final.

### Goodyear Team Race

1. G. Potter/ G. Potter
2. R. Owen/ R. Justic
3. D. Simons/ H. Simons

More complete results will be forwarded in time for the next edition together with a bit more blurb and photos! Ditto for the "Mantis" canard. It is 915mm (36") 'span and uses an ex- Justin Scott OS 15 FP F2D engine modified I believe, to Stan Pilgrim's specification by Brian Scott and subsequently severely lightened with the advent of mufflers in 1993. Turns a Taipan 8X4 nylon prop which eventually loads up in continuous, almost impossibly tight manoeuvres. .018" lines are a bit heavy in consecutive clovers if there's no wind - must get around to engine offset and tip weight one day!

Regards,  
Burkey 18.6.01



## NORTHERN DISTRICT CHAMPIONSHIPS FOR CONTROL LINE

AUGUST 18 & 19, 2001

Hosted by Bendigo Control Line Flyers

The Bendigo Control Line Flyers will conduct the Northern District Championships and the Jnr. Allen Trophy to be held at the Bendigo Radio Control field at Marong

### PROGRAMME

Saturday 18<sup>th</sup> August 2001 - 1:00pm Start

SIMPLE RAT

SIMPLE GOODYEAR

JUNIOR 2.5cc SIMPLE RAT

Sunday 19<sup>th</sup> August 2001 - 9:00am Start

VINTAGE "A" TEAMRACE

CLASSIC "B" TEAMRACE

1/2 A COMBAT

- Practice may be on racing circles up to starting time on Saturday / Sunday. No practice on race circles after 1:00pm Saturday and after 9:00am Sunday.
- Practice circles will be available over the weekend.
- Points gained in each event will go towards the Champion of Champions trophy.
- Full catering service will be available on Sunday.
- Please consider this weekend event as we need your support to make it a success.

For more information please contact

Shaun Power (03) 5442 4925

# Acoustic Antenna: Part 1

by Joe Supercool

Well folks, don't hold your breath waiting for Acoustic Antenna: Part 2! Its taken me 2 years to get this far already. If you are not into computers, the following may not be to your taste, but do give it a read.

If you have taken an interest in using Doppler to get the airspeed and RPM of your model, then this is for you. I know the F2A guys are using this, and really its essential to optimise performance and even see what the other guys are doing. Check out my website at [www.space.net.au/~props](http://www.space.net.au/~props) for details, but here is a brief rundown.

The sound from a model airplane engine is comprised of a set of tones known as harmonics. The tones have an apparent higher pitch when the model is approaching you, and a lower apparent pitch when it is going away from you. This is a large effect, easily measurable, and was discovered and named after Herr Doppler. By measuring the pitch change, one can determine the speed of the model and the RPM of the engine using some very simple equations.

You need a tape recorder to store the sound, a computer with a sound card and Richard Horne's wonderful free program called Spectrogram to extract the tones. Thats all, and it works a treat. You can even get lap times, acceleration and heat times, even with more than one model up. Good for F2C, you get speed and RPM for all 3 models.

Now after doing this for a while, I wanted more. Surely with all that racket going on, there is more to be had from a sound analysis. Would it not be desirable also to find the airplane trajectory? In R/C pylon race, a tightly flown course can win races. But if you go too far passed the pylons, you lose out badly, but may not even know you are doing it. Replaying the course you have flown on a computer screen would let you know your mistakes.

So what we need is a bunch of microphones stuck up in the air and configured in such a way as to reveal the position in space of the model as it flies along. I call this device an "acoustic antenna". It is going to need at least 4 microphones grouped in a bunch to find the direction of the model in 3 dimensions, so right away we have a hardware problem.

Our previous Doppler method only needed one mike, but now we need 4! How do we get the sounds into the computer? Thought you might ask that!

Well it turns out that, not only can you connect a mike to the mic-in port on the sound card, but with the right circuitry you can put 2 more into the line-in port. Not only that, you can install a second sound card into the computer, giving another 3 mikes! That ought to be enough! It may also be possible to add 2 more mikes to the sound card CD port, and even 2 more to the AUX port!

So what about software? Clearly Spectrogram won't handle this lot, you are going to have to write your own code. The programming language BASIC is widely accessible to those with a computer bent, and the easiest of all languages to learn. I use a version called Power Basic, available from [www.PowerBasic.com](http://www.PowerBasic.com). You have to pay for this version, and its harder to use than say Quick Basic, but its very fast and is a fully compiled language.

This means you need to be able to write code that

will read and control your sound card. Here is an example of code that will read a sound value from the microphone port of just about any sound card in any PC.

```
OUT &H220 + &HC, &H20
```

```
do loop until INP(&H220 + 14) and &H80 value =  
INP(&H220 + &HA)
```

There, wasn't that fun! Similar commands are available to read the other ports and control the sound card. Now, what do we do with the values from all those mikes we have stuck up in the air?

Well, the idea is this. Because the mikes are separated from each other, a given sound wave from the model will reach the different mikes at different times. Since sound is really quite slow at 340 m/s, these times are easily measured. In fact, the mikes really only need to be about 6" apart, so our acoustic antenna will be quite small, about the size of a loaf of bread.

The quantity to be measured is not really time, but is called phase. If 2 mikes are square on to the model, then the sound will reach both mikes at the same time, and the phase is zero. If the 2 mikes are pointing at the model, then the phase is at a maximum, as the sound reaches one mike much sooner than the other. This means we can get an indication of the position of the model from the phase difference. With 2 more mikes arranged in a square, we can in fact find the exact direction in which the model lies.

Determining its trajectory is then just a heartbeat away.

The phase difference is obtained by determining the Fourier transform of the signals read from the mikes. These transforms yield the tones as seen in the Spectrogram program, and also the phase values.

This really works. Sitting here tonight in my computer lab I have a tone generator (built from a Jaycar kit, price \$50) in the corner of the room.

I have 2 mikes, about 6" apart, going into 2 sound cards in my 486 DX4-100.

Moving the mikes around each other, I can watch the phase change on my computer screen. So that is Part 1 of this development program; the feasibility study.

It all works and cost me \$40 for the extra sound card, \$5 for the extra mike, \$50 for the tone generator, and nothing for the computer, as Big Norm Kirton the super-fit bus driver and scramble flier gave it to me! Cheers Norm!

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Expressions of interest are invited for

### Eastcoast Invitational Team race

Expressions of interest are invited from teams wishing to take part in a series of Vintage b team races consisting of six races from which your teams best 4 results will be used to score. (you drop your two worst results)

#### P r i z e s

First prize. A perpetual trophy and one return airfare ticket to the u.k. to compete at the U.k. nats. in vintage b in 2002. (or dollar value of ticket)

second prize. new vintage b motor.

This event will be invitational.

This event will be run to the current a.l.c. vintage b rules

For a copy of the rules contact: - les winterton  
ph 07 32076325

For an invitation contact john duggan:- ph 07 32736932

team entry \$30 per event (no admin)

first event starting august 2001  
date to be advised

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## Control Line Aeromodellers of Gippsland from Peter White

Another pleasing roll up of fliers attended the CLAG day at Moe Racecourse to fly in excellent conditions on a grassed surface that puts my lawn to shame.

Among the twenty who showed up were newcomers Graham and John Calway receiving lessons on Graham Keen's Ossie Mossie and Sig Skyray, and Frank Bale with a Hurricane / OS Max 35, having his first active day with us.

Rian Goodge brought one of his schoolmates, Cody (surname missed), who got to go solo on Rian's modified Rogue and Graham's Ossie Mossie under the direction of Graham and John Goodge. Rian also had an O/D Cox 049 powered 'Rian Special' which flew well - a good start for someone who hasn't been flying for long.

Other semi-regulars who joined us were Shae Haefale who flew an Ossie Mossie with a Norvel 061 (this could have been Graham K's much used model), Ted Hall with a Veco Chief / Enya 45 combination, Warren Frith with an ex Derek Pickard Epic sporting a just run-in Stalker 50 and Wayne Lowe who pops up two or three times a year, this time flying Graham's Midi Slow. Graham, by the way, regularly makes his models available for others, especially beginners, to fly and gives much of his time to helping these newcomers to the gentle art of flying things on strings. Good work Graham!

After some initial juggling of tank height, prop sizes and needle settings, Warren put in some flights that he was happy with while still getting the feel of the model.

Vic Mitchell brought out his Taipan 25 powered Peacemaker and Phoenix ( a clipped wing Dixon T'Bird) with an OSFP40 while brother Steve did some laps with his Old Whitey/ST46 (a powerful sweet running one at that) and a Nobler with an unco-operative OSMAX 35H. If Steve carries out his threat , the OS will be washed, oiled and consigned to the dungeons of his engine collection, never again to see the light of day in the vicinity of a stunt model.

Graham Keen, when he wasn't helping someone else, flew his Fuji19 Triathlon model and his O/D Delta with Enya 35 power.



Trevor Beevor, flying confidently was caught putting his stunt trainer and Fancy Pants through loops, horizontal eights and steady inverted flight below chicken height. Andrew has been dabbling with that other kind of flying that begins with 'R' and has recently gone solo. Congratulations Andrew!! However, now that you've been there and done that, its time to get back to where the real flying takes place.

Graham Vibert again flew his Ruffy with its rebuilt Merco 35 which ran well generally but on a few occasions threatened cut out as it was doing at the last Warragul meeting. Since the Moe outing, Graham has removed some junk from the spray bar and the problem hasn't reappeared, so hopefully this has cured it.

Ron Jones brought out his Enya 35 powered Valiant and put in three or four flights with it. Ron's 35 runs smoothly and seems to have plenty of grunt.

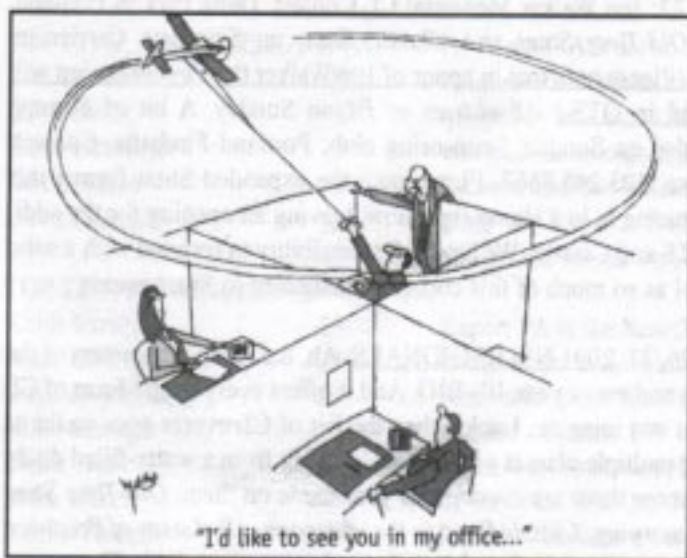
Paul Richarson flew his Aeromodeller design Chihuahua with a Paw 1.49 providing the sound effects, while Geoff Ingram put in some flights on both his Windy and his Wombat. Both Paul and Geoff are working on new models - Paul has a Coy Lady on the go and Geoff has been some time on a Nobler.

Yours truly flew a Manito/ST46 and a recently finished Whirlwind which was originally a Central Aircraft offering from the late 50s. This little model was powered by an AM25 that ran very well once needle and compression settings were found.

The next flying day will be at Traralgon on the grounds of Hobson's Park Hospital on July 1st, followed by Maffra on August 5th. Keep in mind the Warragul competition on September 2nd.

As usual everyone is welcome no matter what type of control line flying they prefer and the usual BBQ arrangements stand.

For those of you who take great pains to build lightweight models, the following really useful tip was rumoured to have been sighted in a very influential and widely respected club newspaper from Lower Patagonia. 'When considering the addition of tip weight or nose/tail weight, always use aluminium weights as they don't add unnecessary weight like lead does'.



Overheard at the flying field.

Spectator: "Is your model remote control?"

C/Liner: "No it's direct control"

Spectator: "Well then, is it radio control?"

C/Liner: "No, it is human controlled"

A note from the internet:

I am sorry to inform all of you that George Aldrich is very ill with Bone Marrow Cancer. I talked with him last night and he is weak in body but strong in spirit. Take time to keep him and his family in prayer and if possible send him a card to let him know you are thinking of him. He is a irreplaceable part of the sport of model aviation and I am glad to be able to call him my friend and a brother in Christ.

Lt Col Tom McClain

Send cards to:

George Aldrich

12822 Tarrytown Road

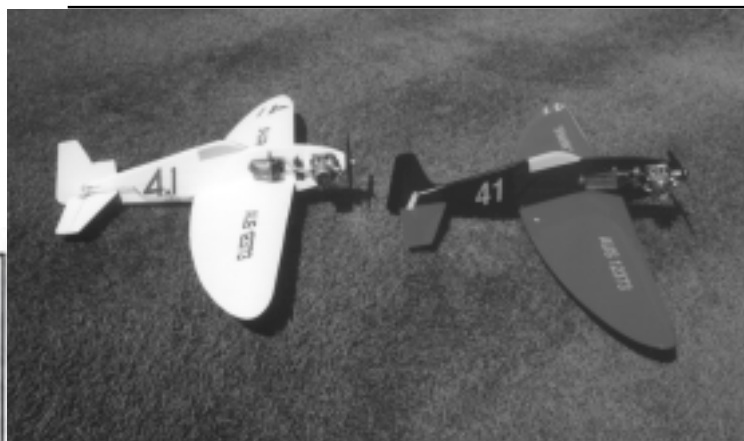
San Antonio, TX 78233



## NOTICE:-

CLAMF members are reminded that the club AGM will be held on Friday 6th July at the secretarys home. The meeting will be followed by an aeromodelling film and video show with supper provided. Members are urged to attend.

Meeting starts at 8 p.m.



Ready to 'rrrrumble' Mark McDermotts' 2 Bendix weapons. 'Mustang' / Gillot Super Tigre 34 and 'Mace Shark' with Nelson 36



Classic "B" Antares

# 55TH NATIONAL CHAMPIONSHIPS - 2001/02 Ammendment June PROGRAM SHEET

		RADIO CONTROL				FREE FLIGHT		CONTROL LINE		SOCIAL FUNCTIONS	
DAY & DATE	INDOOR STADIUM	IBIS	TWINCITIES FIELD - OLD TIMER	WODONGA	GLIDER FIELD	STADIUM - IN DOOR EVENING	OUT DOOR	AIRPORT	GRASS - ALEXANDER PARK		DAY
SATURDAY 29/12/01	REGISTRATION DAY & PROCESSING FOR PYLON & CAL	PRACTICE	PRACTICE	PRACTICE	PRACTICE	CLOSED	PRACTICE	CLOSED	PRACTICE	OPENING CEREMONY	SAT
SUNDAY 30/12/01	STATIC JUDGING R/C - FAC,SOS,LARGE, CAL-SOS	PYLON	NOSTALGIA	AEROBATICS	OPEN & JNR, THERMAL R/C Hand launch (R1&2)	P/NUT SCALE & HLG 6PM	F1C & OPEN RUBBER & JNR RUBBER	FAI SPEED	RD1 AEROBAT & JNR 2.5 COMBAT & FAI COMBAT	SEMINAR ?	SUN
MONDAY 31/12/01	CLOSED	PYLON	TEXACO & TEXACO JNR.	AEROBATICS	O.T & R/C Hand launch cont. (AM) - F3J (PM)	CLOSED	P30 RUBBER & F1H & HLG & JNR HLG	FAI TEAM RACE & CLASS II & 1/2A TEAM	PRACTICE	NEW YEARS EYE PARTY	MON
TUESDAY 01/01/02	INDOOR PRACTICE 1PM TO 10PM	PYLON & FSD (ELECT)	TEXACO 1/2A & 1/2A JNR	AEROBATICS	F3J	PRACTICE	F1B & OPEN POWER	CLOSED	RD2 AEROBAT & S.O.S. & JNR, 2.5 RAT RACE & BENDIX	NIGHT SCRAMBLE AT F/F FIELD	TUES
WEDNESDAY 02/01/02	R/C INDOOR 1PM TO 3PM	FAC SCALE	O.T. DURATION	HELICOPTER	F3B	IN USE	F1J & F/F SCALE	2.5RAT RACE & GOOD YEAR & MINI GOOD YEAR	PRACTICE	SWAP MEET AT STADIUM 8PM TO 10PM	WED
THURSDAY 03/01/02	INDOOR PRACTICE 1PM TO 6PM 7PM - EZB & F1D	LARGE SCALE	2cc & 38 ANTIQUE	HELICOPTER	F3B	EZB & F1D (Micro) 7PM START	F1A GLIDER & JUNIOR	COMBINED SPEED	RD3 AEROBATIC & OPEN COMBAT	SEMINAR ?	THUR
FRIDAY 04/01/02	HANGAR RAT AND BOSTONIAN 6PM TO 10PM	S.O.S.	GORDON BURFORD	HELICOPTER	F5B ELECTRIC	HANGAR RAT BOSTONIAN	F1G & DAY SCRAMBLE	CLOSED	VINTAGE STUNT & A TEAM RACE	SEMINAR ?	FRI
SATURDAY 05/01/02	CLOSED				7 CELL ELECTRIC		VINTAGE = POWER & RUBBER & GLIDER	CLOSED	CLASSIC B TEAM RACE & CLASSIC STUNT	PRESENTATION DINNER SEA PLANE - LAKE HUME	SAT

# For Sale

O.S. Max FP25 R/C New in box \$115  
 Fox 15 p.b. Stunt. Near new \$50  
 Enya 29 (Early sandcast model) red anodising gone, o'wise appears new and unrun. \$100  
 Enya 35 Model 5001 early 4 bolt head model with venturi resembling Gabriels trumpet, prop drive has plier marks, o'wise exc N.N. \$140  
 Enya 35 Model 5224 "Special" TBR. Mint. NIB \$150  
 Enya 29 B "Super Typhoon" Model 5103 Has been run, but exc. in box. \$140

All prices plus postage.

Phone Bob Allen on (02) 6342 4413

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ST 660/XL Pre-sheeted (light weight) foam core wings from Tom Dixon. Current U.S. price \$95 (Wings only)

Sell \$145 Aus

SV - 11 Foam cores and stab from (Randy Smith U.S.) Same wing as Intrepid, Novar, Etc.

U.S. price \$55

Sell \$95 Aus

Ron Varnas (03) 9579 1143

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1 genuine Russian built F2C team racing model to suit Mazniak motor and valve

Used once, as new, top flier.

\$500.00

Contact: Paul Stein

Phone: 03 95465006 (AH)

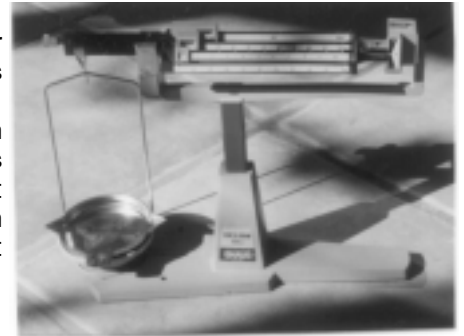
→ → → → → → → → → → → → → →

Super Tiger. ST60 Stunt engine. Early model with tube muffler. Eather converted. All excellent.

\$175

Derek Pickard Tel (03) 9889 1149

Superb scales for the serious modeller. Measures 1/100th gms up to 311gms Excellent condition. Made in USA. Have 2 at \$150 each



2 new CS-15 PB in box, set up for C/L with mufflers.

\$60 each

Phone Len Surtees A/H on (02) 67618508

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Taipan 1.5cc Glow motor (Late 60's - early 70's)

Prefer V.G.C. to E.C. Will pay right \$\$.

Taipan needle valve assembly to suit 2.5cc B.B. diesel (Ser. 11 - 12)

Ron Varnas (03) 9579 1143

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Rear rotor assembly including venturi for Torpedo 40 or parts to change over to front induction preferred

Altrnatively a loan of rear rotor assembly for a copy.

Ray Morgan. 78 Currawang Avenue, Leeton NSW 2705

Phone 02 6953 2311 (AH)

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