

# THE VMAA TROPHY

March 31<sup>st</sup> and APRIL 1<sup>st</sup> 2012

(Easter is on the traditional date)



At the VMAA State Flying Field at Darraweit Guim, near Wallan

**The aim of this event** is to encourage Victoria's clubs to have a go as a Team effort in a two-day event that has the emphasis on fair play and **maximum fun!**

**For continuity, the Trophy event rules will remain materially unchanged for the next three years at least** (safety issues aside). Many events are run to 'VMAA Trophy Rules' that make it fair for the many smaller clubs to have a go with a good chance of doing well against big clubs.

Enter as many events as you can... Your best six of the twelve events to count

**A person may be a pilot in up to two events, and also 'assist' other pilots/team members in other events.**

All Clubs may be asked to provide people to act as judges or time-keepers for some events.

Time restrictions may make it necessary to have no frequency clashes where two events may be run at the same time, or in events where aircraft fly at the same time, or there are multiple heats within rounds. These events are identified below. Frequencies will be 'locked-in' on a first-to-enter basis. Enter early to avoid frequency change!

If you want to stay overnight, on-site camping is OK, & Motels and Caravan Parks are nearby

## **SATURDAY'S EVENTS, but not necessarily in this order (depends on weather) ...**

**Combat A NEW EVENT** The task is to be airborne for three minutes of actual "Combat Time" (one point per second) PLUS one hundred points for each streamer-cut the model makes during the Combat Time. Models involved in a mid-air collision receive 50 points and are to disengage and land immediately.

Models shall be of flying wing design, preferably delta, up to 48 inch wingspan. Twelve inch maximum propeller diameter. Up to .50 size engines or equivalent electric.

The models will be flown in a 'cube' of sky in front of the pilots, with a 'disqualification line' (no-closer or you're zero-points-and-land-right-now-line!) that is at a safe distance away at its' closest (expect 40 to 60 metres). In each round, the aim is for everyone to go up together. If there are too many entries to allow this, heats will be run to make a round. As many rounds as we can fit into an hour. A sound signal will indicate the start and finish of each actual Combat Time.

There will be an up-to two minute 'window' to start engines and get airborne before the signal for Combat Time. Up to ten minutes will be allowed to retrieve/repair etc before the start of the next round. Sooner if all are ready. Spare models may be used after any heat, providing there is no frequency-clash. Allow for possible carnage...

Teams shall use the streamers supplied (three metres of crêpe-paper tape at the end of a three metre string). Teams shall provide a pilot, a caller, and a launcher. Observers will record each team's air-time and streamer-cuts. Other observers will control the no-closer line.

### **Fun Scale.**

VMAA Trophy Rules apply. Only the flying is judged, and the best one of two flights to count. While there is no static judging at all, aircraft should be of reasonably scale appearance (so ARF's are quite OK, but no profile models, or sticks with Maltese crosses please!). Flight schedule is: takeoff, level flight flypast, then any four manoeuvres of your choice from the provided list of manoeuvres and finally, landing.

Each Team must provide a list of the four manoeuvres (for each flight) at the morning's pilot briefing at 8.45 am. Each Club may be asked to provide a judge, and we expect the person 'offered' has at least a basic knowledge of what to look for, regarding what manoeuvres (and their shapes, speed, etc) are applicable to the aircraft type.

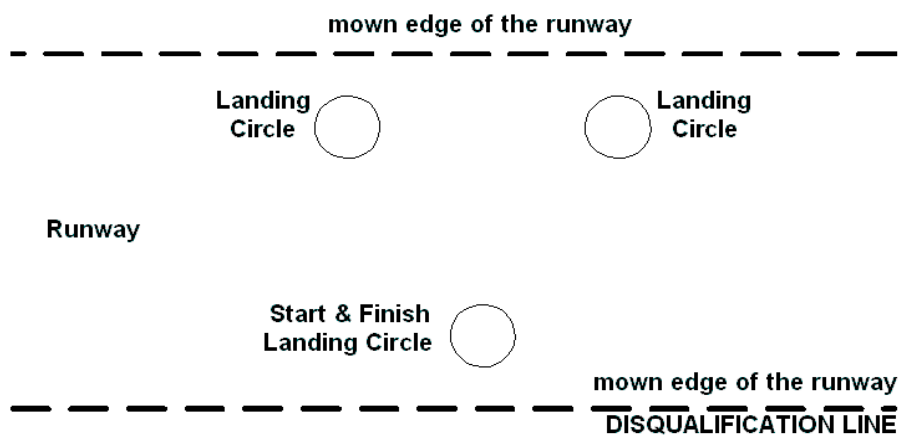
- 'Realism in Flight' is the aim, and will be given a substantially higher 'weighting' in the scores.

**Helicopter (1<sup>st</sup> of 2 Heli events) 2.4 GHz radios if available, please.** VMAA Trophy Rules apply, and it's not a speed event! This event will be run while other events may be underway, so 2.4 radios would help.

Models will be timed while flying around a triangular course (left or right hand, pilot's choice), including landing and taking off at each of two Landing Circles. If desired, pilots may move with/follow the model around the course at NINE metres minimum distance.

Each of the three Landing Circles will be two metres in diameter and positioned 25 metres apart. The object of this event is to achieve a target flight time that is closest to 180 seconds (three minutes). One second equals one point. One point will be deducted for each second under or over the target time. The pilot's mental capability shall be the sole means of timing, meaning no external assistance of any kind. We will be checking... !

Timing starts when the model first lifts off from within the Start & Finish Landing Circle, and stops when the heli first touches down within the Start & Finish Landing Circle after completing the required course. Thirty points will be deducted if any landing gear is not entirely within each of the three landing circles at touchdown. At each of the two distant Landing Circles, models must land and remain stationary for between a minimum of five seconds and a maximum of ten seconds. Thirty points will be added/deducted at each of the two distant circles where the model is not stationary for the required time. Thirty points will be added/deducted for every landing/touch between the circles.



**Scale Aerobatics.** VMAA Trophy Rules apply.

This event is open to any model that is based on full-size, single-engine aerobatic aircraft. This will include many models that are regularly flown at most clubs, such as the Giles 202, Staudacher, Cap 232, Extra 300, Ultimate Biplane, Citabria, Sukhoi, Pitts Special Biplane etc. Maximum engine capacity shall be 35 cc / 2.1 cu in (or equivalent if electric powered).

One flight of each to be flown, with both counting. Each Club may be asked to provide a judge, and we expect the person 'offered' has at least a basic knowledge of judging aerobatics.

Flight One will be a 'Known' schedule of nine manoeuvres, which are intended to be quite 'do-able'...

Judging criteria for the 'known' flight only will be as per F3A judging guidelines, in this order of importance:

1. Precision of the manoeuvre.
2. Smoothness and gracefulness.
3. Positioning.
4. Size of the manoeuvre, relative to the manoeuvring area and other manoeuvres in the flight).

Flight Two will be a 'Freestyle' flight of manoeuvres of your choice. A maximum of three minutes will be judged, plus take-off and landing time if required. In the freestyle, pilots are encouraged to use the full capability of the model, such as smoke, snap rolls, torque roll, etc. Judging criteria for the freestyle only will be...

Originality, Accuracy (precision of the manoeuvres), Degree of difficulty, Versatility (few repetitions of the same thing), Positioning of the manoeuvres for judging, and Entertainment Value.

## **Fun Fly.**

VMAA Trophy Rules apply. Rounds will alternate between Task A and Task B. The same model is to be used for all flights. For each team, the best two out of three rounds to count (or 3 out of 4 if time permits).

From “Permission To Start” the engine, up to two minutes will be allowed for the model to ROG and attain ‘working’ altitude.

Timing commences when the PILOT clearly announces “NOW!” to the event’s CD during the two minutes.

Timing stops when the aircraft stops moving after landing, or five minutes after “Permission To Start”, whichever is first.

Ten seconds will be added to the flight time for each of: not commencing from level flight; any loop or roll not completed; touchdown and/or coming to rest with any wheel not on the mown runway.

To discourage crashing, if a model is considered suspect after a flight (propeller excepted), up to five minutes will be allowed for the team to work on the model and then demonstrate that it still flies safely (after the last flier in the round has finished) or two-minutes will be added to that round’s flight time, and it will be a counted round!

- Task A flights: ROG, climb to a ‘working’ altitude of the pilot’s choice, and then *beginning from level flight* do a roll then a loop then a roll... *three times*, then land on the runway, in the shortest possible time.
- Task B flights: ROG, climb to a ‘working’ altitude of the pilot’s choice, and then *beginning from level flight* do a roll then a Cuban Eight with half-rolls then a roll... *three times* and then land on the runway, in the shortest possible time.

## **Thermal Soaring.**

A ‘no frequency clashes’ event. VMAA Trophy Rules.

(Note the changes from previous years... line length & task-times)

Any kind of glider, any type of controls, as long as the *primary* strength of the wings is from wood. For example, balsa-skinned foam is OK (or any other wood skin). Carbon-strengthened wooden spars are OK.

Winch or hand-tow. The event will be run from one of the two runways, so the distance from winch to turnaround will be 150 metres, or ‘what fits the runway’. While clubs should provide their own launching equipment, the VMAA’s winch will be available to share with clubs, if needed. Each club will need four people... a pilot, a timekeeper with a reliable stop-watch, a launcher and a parachute retriever.

This is a ‘thirty minute total’ thermal glider contest. The object is to log a total of six flights that are as close to 2-minute, 3-minute, 4-minute, 5 minute, 6 minute and 10-minute flights as possible, in that order.

Total time allowed for the event is about one hour.

Scoring is at the rate of one point per second, so the highest total score wins. If you fly under or over-time, your score is reduced by the amount of seconds from the target time. There is a 20-point bonus in each segment for the model landing within 15 metres of the ‘landing spot’.

A working-time ‘window’ will be specified for each time-segment. All models are to fly together in each segment, in each respective time-window. Models that have been released/launched as the window ends may still complete that segment.

## **SUNDAY'S EVENTS, but not necessarily in this order (depends on weather):**

### **Helicopter (Second heli event). 2.4 GHz radios if available, please.**

This event will be run while other events are underway, so 2.4 radios would help.

### **Novice Class Manoeuvres as per MAAA Rulebook (see pdf file) for Novice pilots.**

Anyone recognised as Intermediate or F3C grade or standard will fly the same manoeuvres, but with the model constantly at 90° instead of tail-in. F3C pilots will also attract a 'suitable' handicap...

### **Electric Glider. A 'no frequency clashes' event.**

Models like the multitude of electric gliders seen at typical club days are encouraged to be used (not the highly specialised, expensive models seen at "Formula 1 level")

VMAA Trophy Rules apply. Any kind of electric motor, with or without gearbox. Any kind of electric glider up to 2 metres wingspan with no operable airbrake, spoiler, flaps or 'crow' capability (ailerons are OK).

Each Team will need two reliable stop-watches; one for the flight time, and one for motor run time.

Batteries shall be made available for inspection by the CD before the event starts, and at any later time.

NiCd and NiMh packs may be up to 7 cells of any capacity.

**LiPo packs:** See the table below. The result of multiplying the MilliAmpHour (mah) rating of the cells by the number of cells in the battery pack shall not exceed the number 6,600. Another way of expressing this is to divide the number 6,600 by the number of cells in the battery pack to give the maximum capacity in MilliAmpHours.

e.g. if you want to use a 3S (3 cell) pack:	$6,600 \div 3 = 2,200.$	You can have up to a 2,200 mah pack.
If you want to use a 2S (2 cell) pack:	$6,600 \div 2 = 3,300.$	You can have up to a 3,300 mah pack.
If you want to use a 5S (5 cell) pack:	$6,600 \div 5 = 1,320.$	You can have up to a 1,320 mah pack.

The aim is for an exact 300 second (five-minute) flight, plus landing bonus. From 300, deduct the seconds of flight time *either side* of 5 min. Then deduct the motor run time to get the nett flight time.. All heat scores will be normalised using 1000 points. As many rounds as can be flown in the time available (hopefully, six rounds). The worst round will be discarded for each competitor.

### **Old Timer Duration. A 'no frequency clashes' event.**

Current MAAA rules, except for no fly-off. Where there are any ties, the '2-minute Landing Time Allowance' of each round will be used to determine the placings: Nearest to the exact 7 minutes max-time wins (or putting it another way, using the least amount of the Landing Allowance Time).

A 7-minute flight target ('max') includes a timed engine-run of 25-40 seconds depending on engine type, usually with a sky-rocket type climb, then the thermalling begins.

### **Most Unusual Model.**

May be radio-control, control line, or any other type of flight. Flight duration must be more than 60 seconds. A working time of ten minutes (including flight) will be allowed per team, with up to five minutes of flying time.

Overall entertainment value and Originality (how unusual it is) are the main criteria and receive most points.

Judging criteria will be:

Max 30 points: Overall entertainment value.

Max 30 points: Originality of design.

Max 20 points: Degree of difficulty of build

Max 10 points: Flight abilities

Max 10 points: Presentation of the team's effort.

### **Musical Landings. A 'no frequency clashes' event.**

VMAA Trophy Rules apply. Fairness to all competitors, and safety will be high priorities in this event. This is an 'elimination' event. Upon a clear signal, the music starts. The models Rise Off Ground (ROG) and fly in the required circuit at the required altitude until the music stops playing. The models are then landed in the required area, and from the required direction, in the shortest time possible.

Models shall have a minimum wingspan of forty-eight inches, and minimum flying weight of four pounds. Any type of fixed-wing model; any type of power (that complies with MAAA safety rules!)

The circuit and landing direction will be made known before each heat. Pilots attempting to circuit or land 'against the flow' will earn for their team an equal-last place for that round (1 point).

In each heat, one warning only will be given for models being flown too low in the circuit or hugging the favoured end etc. before being 'grounded' and banished to equal-last place for that round.

If more than 6 flyers are competing in a heat, models may be landed anywhere within a total designated landing zone. If six or less are competing in a heat, the models must land on and be stopped with all wheels upon the mown runway. Pilots landing outside the required area will score equal-last and not fly again in that round.

- In each heat, models shall not be touched after landing until a clear signal is given to do so. From that signal, up to three minutes of carefully monitored 'working time' will be allowed for refuelling, making running repairs, and ROG to the circuit as soon as desired.
- In each heat, last model to stop moving forward is eliminated, and does not fly again in that round. The rest go on to the next heat, and so on until there is a winner for the round.
- NOTE: If a team is last-down in a heat, but then the second-last team cannot ROG in the next heat, then the 'last-down' team is deemed 'not out' (saved!) and may ROG at the end of the three minutes. Stay ready!
- In order to save some time during the event, if all the eligible models are already back in the air, the signal to start the music may be given before the three minutes is up.
- A clear signal will be given when the three minutes is up, and the music is started again. If a model has not ROG within ten seconds after the signal is given, it shall remain on the ground and be given equal last place for the round. For this event, a reliable motor and model will rate highly on the desirability scale!
- To discourage crashing (especially in the final heats!) a team will score equal last for the round if their model can not safely ROG within the three minutes allowed; or for the winner of the last heat, cannot be flown within three minutes after that heat to demonstrate 'airworthiness'.
- Any model that is deemed unsafe to fly (by the CD or CD's officials) by the end of the three minutes' 'repair time' will not be permitted to ROG and the team will suffer their fate of scoring equal-last place (1 point).

Teams may use one spare model with a non-clashing frequency in a subsequent round. But within a round, a back-up model on the same frequency may only be used (and it must be ROG within the three minutes) where a team's model has been damaged by another and cannot be repaired within the allowed three minutes. The model that did the hitting does not fly again and the team will score equal-last for that round (1 point).

Two rounds (possibly three) to be flown over the day, and all rounds will count in the results.

In each round, 1<sup>st</sup> place gets a number of points equal to the number of entries. 2<sup>nd</sup> place gets one point less, etc. The results of the two rounds will be added to give a final result. Highest accumulated points wins. There will be a fly-off to break any ties for 1<sup>st</sup> and 2<sup>nd</sup>.

**Simplified Musical Landings Rules...To do well, models must ROG on time, not get damaged too much, land in the right place, and be no worse than second-last down every time!**

The aim of this event is safe, competitive racing with simple models.

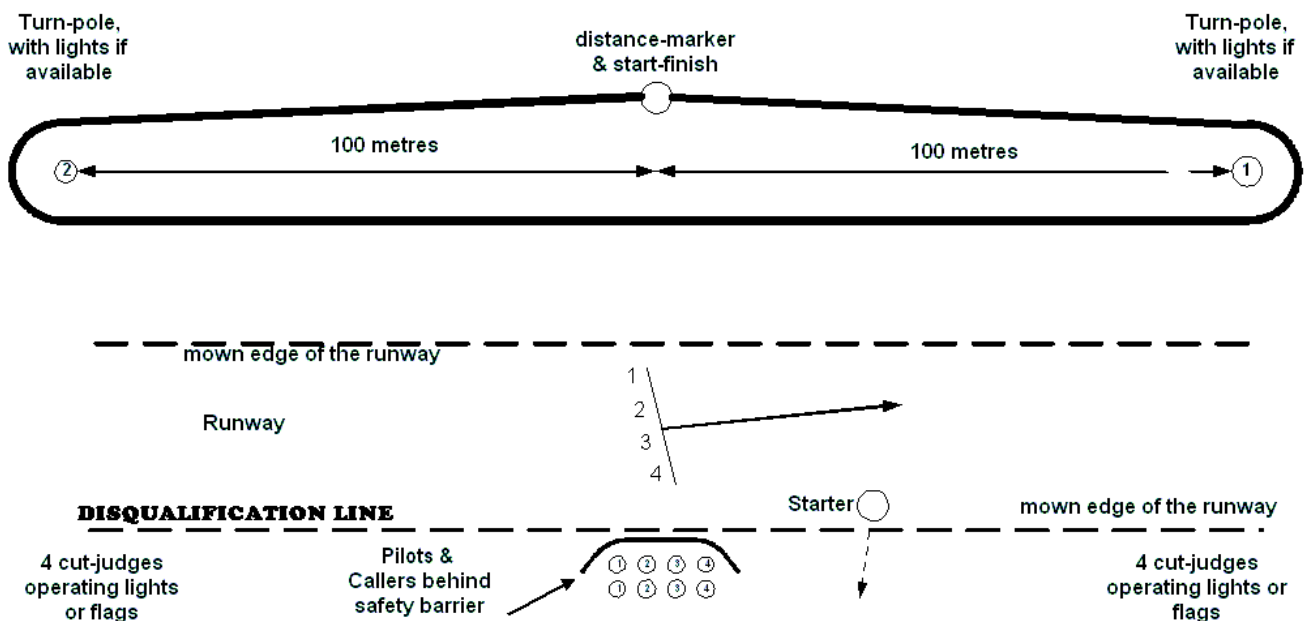
The course will be 200 metres between the turn-poles, in an anti-clockwise direction *if practicable...* (wind).

Up to 4 flyers per heat, timed over 10 laps of a slightly triangular course with the flyers standing outside of it. The upwind and downwind legs have a turn-pole erected at each end. The start/finish line will be in front of the pilots/callers/timekeepers. Lights may be used if available. Otherwise, the cut-judges will 'drop' coloured flags.

Three people are required at the flightline for each team: the pilot, the caller, and the 'launcher'. Callers shall remain with their pilot at all times during each heat.

The models, with motors already running, shall be carried together by the launchers to the start line and placed on the ground about 2 metres apart, and in the order of the Heat Draw. The Starter will give a start signal to each team's launcher in turn, beginning with the model in position '1'. Launchers immediately leave the runway.

Times start from when each respective start signal is given. Motors shall not be restarted after the first start signal is given in a heat. A time of 300 seconds will be awarded if the model does not complete the 10 laps.



A "turn-cut" will be given if a model does not reach the distance of turn-poles. 10 seconds will be added to the flight time for each turn-cut.

To avoid mid-air: on the far leg, models shall fly no closer than the distance-marker. Turn-cut penalties shall apply after one warning for failing to fly safely by not attempting to fly a proper course around the turn-poles.

Un-sportsmanlike and/or unsafe flying invites disqualification. Flying closer than the 'Disqualification Line' means exactly that. DSQ's (disqualifications) will mean a time of 300 seconds for that heat. Fly safely!

Each Team shall present their model and any spare propellers etc for scrutineering (inspection, measurement and compliance... before the event begins; see below). **Models not complying shall not compete.**

Models shall have wings of constant chord and thickness, with minimum plan-form wing area of 500 square inches (e.g. 10.5" chord X 48" span = 504 sq. in. Similarly, 9" chord X 56" span = 504 sq. in.).

Wing-tips shall not be included in the wing measurement.

Fuselages shall be wide enough to accommodate 3 standard-size servos side-by-side.

Wings shall have a minimum thickness of 40 millimetres. A gauge shall be provided to verify.

2-stroke motors shall be of up to and including .50 cu. in. capacity, intended for general 'sport' use.

Any 4-stroke motor up to .70 cu. in. capacity may be used.

Propellers shall be commercially available, and show the manufacturer's applied name (brand) & size.

The pitch shall be 7 inches. The diameter shall be 11 inches (see below).

Any prop changes shall only be to those that have been pre-inspected and OK'd.



**This event has a maximum allowable engine rev limit of 11,500 RPM with the 11x7 propeller and fuel containing up to 15% nitro.** Teams are to supply their own fuels. During pre-event scrutineering, if the VMAA's Tachometer holds at 11,500 with occasional 'blips' to 11,600, this will be considered within tolerance. If the reading is any higher, first the team may reduce nitro content of their fuel to as low as zero (VMAA will supply an FAI no-nitro test-fuel to check if required).

The second and only other way Teams may reduce the revs to 11,500 or under, shall be to increase the diameter of the prop (up to a maximum of 11.5 inches), provided that only no-nitro fuel is used.

Revs shall be tested as follows: Carburettor to remain visibly fully open, the motor 'peaked' as desired and promptly tested. The model is then held in a near-vertical attitude for a period of ten seconds, and another tachometer reading taken. If complying, no further adjustment/s to the engine or fuel supply 'systems' shall be permitted. 'Spot-checks' may be made at any time.

## VMAA Trophy Scoring:

VMAA POINTS are awarded for placing in each event in the following way:

1<sup>st</sup> = 6 points

2<sup>nd</sup> = 5 points

3<sup>rd</sup> = 4 points

4<sup>th</sup> = 3 points

5<sup>th</sup> = 2 points

6<sup>th</sup> = 1 point

7<sup>th</sup> onwards = 1 point

JUNIORS will receive an extra **1 & ½ (one-and-a-half)** VMAA points (per attempted event) to their scores.

Your six highest-scored events will be counted... you don't have to enter all ten events!

**IMPORTANT INFORMATION ...**

PLEASE QUOTE YOUR non-2.4 FREQUENCY NUMBERS IN FULL

FOR EXAMPLE, write: **36.330** and not its' common abbreviation 633  
( 330 etc will not be accepted as an entry! Would you believe some people have offered 363 !!!)

## **Frequencies:**

Two-inch keys in a standard two-inch keyboard shall be used, and keys are to be clearly marked with the pilot's name and frequency number. 20 kHz frequency spacing will be used in all cases for 29, 36 & 40 MHz.

AND: Up to nine 2.4 GHz sets may operate at any one time. Keys clearly marked with the pilot's name shall be used in the 2.4 board for 2.4 GHz radios.

**Team Managers are to forward their club's entries, but it's up to the individual competitors to satisfy themselves that the VMAA CD has received the correct frequencies from the Team Manager.**

## **Frequency Clashes:**

Some events must be run with all the competing models in an event being flown at the same time, or in rapidly-following heats.

These are... Thermal Glider, Electric Glider, Old-Timer Duration, Club Racing, & Musical Landings.

Otherwise there simply wouldn't be enough time to run all the events. Teams will benefit by entering as early as possible, because in the event of a frequency clash, the last-received entry will be required to change to a CD-advised unused frequency. Late-received entries have a much higher likelihood of having to change frequencies, along with possible re-certifying of your radio to the new frequency.

If, after the team's entry has been accepted, a team member subsequently wants to change a frequency in a no-frequency-clash event, it can only be to an unused frequency, to be advised by the CD.

**It is in your own interests to get your entry in as early as possible,  
as any frequency clashes must be resolved by a first-in best-dressed basis.**

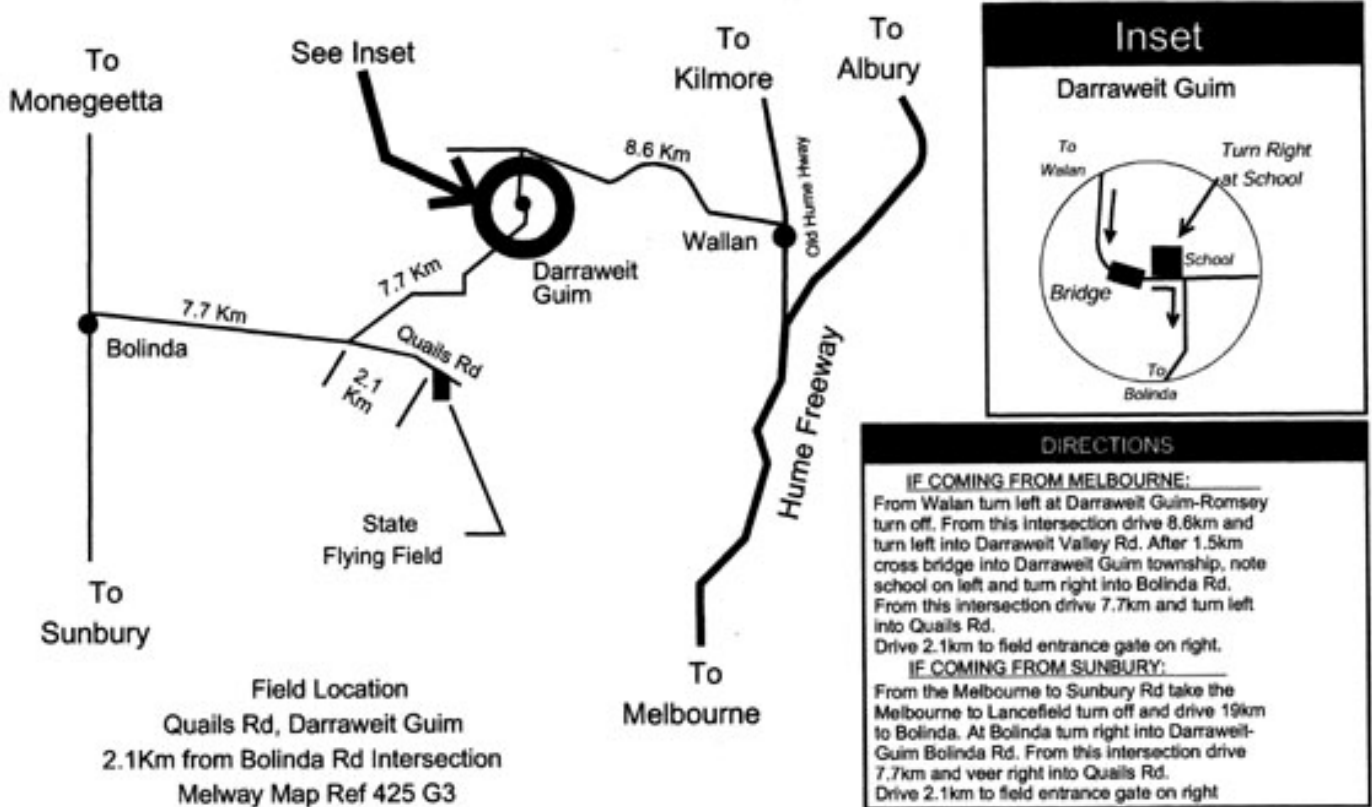
**ENTRIES CLOSE: midnight, Monday 26<sup>th</sup> of March 2012**

**NO CHANGES TO ENTRIES AFTER THIS DATE**

**THERE IS NO ENTRY FEE FOR THIS COMPETITION!**

**The venue will be the VMAA State Flying Field at Quails Rd, Darraweit Guim, near Wallan.  
Great catering available both days, and you can camp overnight on-site if you want**

Motels and Caravan Parks are nearby if you want to stay overnight



If you need further information:

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