

The Tingalpa

May—June 2008

# TRANSMITTER



*40 years at Porter's Field  
1968—2008*



## MANAGEMENT COMMITTEE

### President.

Peter Stevenson 0401 700 675 President@tmac.asn.au

### Secretary.

Phil Gartshore 0407 070 263 TMAC Secretary PO Box 2108  
Tingalpa QLD 4173

### Treasurer

Jim Viles 0413 876 531 jmv\_bao@fairpricetelecom.com.au

### Registrar

Phil Gartshore 0407 070 263 registrar@tmac.asn.au

### Committee Members.

Committee member (Liaison Officer).	Will Sipma	3901 2208
Committee member (Editor)	Peter Biddle	0402 403 469, tmaceditor@bigpond.com
Committee member (Web Master)	Roy Syntageros	WebAdmin@tmac.asn.au
Committee member	Glenn Crossley	
Committee member (Field maintenance)	Gregor Kruberg	3397 5697
Committee member	Allen Danvers	
Committee member	Michael Hobson	
Plan Library.	Ted Hacker	3355 4714

### TMAC Life Members

Doug Kent, Will Sipma

### TMAC Life Member's Trophy.

Gregor Kruberg

### Flight instructors.

Tony Gliddon (07) 3899 0885  
0408 648 379

Noel Wilson (07) 3890 2520

### Heavy model inspectors.

Chris Howarth, Richard Symes,  
Ian Howard, **Heavy & giant models**  
Kevin Dodd, Doug McIlwraith

### Turbine model inspectors

Kevin Dodd, Phil Collins.

**On The Cover  
Club President Peter Ste-  
venson with his new OS 200  
powered Spitfire.**

### From the Editor.

Firstly a small correction to the last edition of the Transmitter. In the story about Porter's Field and DH84 VH-AOR I inadvertently put the date of the crash of this aircraft as 1958. As some have pointed out it was in fact in 1954. My apologies for the typo.

Since the last edition we have had the annual Warbirds day. This was a very successful day thanks to all involved. See Gregor's report on page six.

Phil Gartshore has produced another article, however this time with something a bit different. Phil is an ex air traffic controller and this article provides an insight into the modern ATC systems.

The next event at the field is the Fun Fly Day on 25th May. This event is being organised by Ron Dobbie and is intended to be exactly what it says, a day to come and have some fun flying. The event is open to all pilots, regardless of skill level. If you are lucky you may even get a prize. (Please note this is one week later than previously indicated in the Club calendar.)

Peter Biddle

All pictures in the Transmitter are taken by the editor unless otherwise noted.





## From the President

### Your Committee

The TMAC committee are members who volunteer their time and services freely for the benefit of the Club, its members and the fellowship of model aeroplanes.

The committee are elected each year at the AGM (Annual General Meeting), which is held in September each year.

I would encourage each member to think of what they can offer for the club, and if you would like to become a committee member, please let anyone on the committee know.

### Life Members Trophy

Each year at the AGM, a person who has given outstanding voluntary service to the club, or has shown himself to be an excellent modeller representing the club in a prestigious event, may be judged as a worthy recipient of the Life Members Trophy.

If you know of such a person, please complete the Life Members Trophy nomination form, and send it in to the TMAC Secretary.

### Peter Cutler Trophy

Just a reminder that the Peter Cutler Trophy and Scale Day is coming up and will be held on Sunday 15 June.

The Peter Cutler Trophy is the club's premier scale event, and I encourage all members to come along and enjoy the day.

The Scale Event held at the same time, will be judged this year as Pilot' Choice for (a) best Scratch or Kit build and (b) best ARF.

So all pilots, bring along your best plane and enjoy the day. For those with a keen eye, I need 3 judges for the Peter Cutler Trophy.

### Safety with the Winter Sun

If you are new to the hobby, please take extra care when flying early in the morning, as the sun is very low on the horizon early in the morning, and can blind the unwary flyer.

Please take extra care, and ask your fellow club member to be your observer when flying with the low sun.

### 2007 / 2008 Membership

The 2007 / 2008 membership forms are expected to be posted to each member in the last week of May or first week in June, once fees have been set by the MAAA and MAAQ.

Good flying—Peter Stevenson



## From the Secretary

### Field Sign Work

Last month, I mentioned that we had replaced the main sign at the field. We have also been inspecting other signs at the field, and the next candidate will be the sign at the main gate. This sign, apart from fading with the years, has attracted some unwanted attention from local shooters, and has the war wounds to prove it. We will have a new sign with the art work redone, and updated contact details in the next few months.

### 40<sup>th</sup> Anniversary Year 2008.

In the continuing lead up to the 40<sup>th</sup> Anniversary at Porter field in October, Gregor Kruberg has produced a fabulous commemorative polo shirt. This shirt will have the TMAC logo on the front as per the current club shirts, and commemorative artwork (shown below) on the back depicting the De Havilland DH.84 aircraft which flew from Porter field. These shirts need to be ordered in advance. Check the notice board at the field or the web site for availability. Get in early and support our anniversary year!



### Wobbly Wings 20<sup>th</sup> April

We held a Wobble Wings training day in April. Unfortunately, the turnout was somewhat low, with only two candidates participating this year. Martin Homann and Patrick Helmgens received some intensive individual attention from Ron Cavanagh, and have now gone off to practice over the next couple of months before sitting their Gold Wings. Well done boys! Gold Wings is great achievement for pilots. It makes you a better pilot, and is required to participate in MAAQ sanctioned events.

The club continues to struggle to get support from those holding MAAA Instructor ratings at these events. We don't ask Tony and Noel to participate, since they do a great job on a day to day basis as the club instructors, and we have nearly a dozen other instructor rated members. In the event, apart from the Committee, the only offers for assistance I received were from Associate Members! This is obviously not just a TMAC issue, to the extent that there is now a submission currently before the

MAAA to make the appointment of instructors periodic. If this is adopted, instructors will have to demonstrate coaching and testing activities in order to continue as a MAAA instructor. It is unfortunate that, what should be an obvious thing to do as an instructor, has to be policed by the national body.

Thanks very much to instructors Ron Cavanagh (RAAF Amberley), Joe Luxford (CAMS), and Brian Hucker (LARCS) for volunteering their time.

### Nominations for the Committee

This issue of the transmitter also contains the nomination form for the TMAC Annual General Meeting. The club is always looking for assistance on the Committee to run the club, but please only nominate for an office or the committee if you have the drive and the time to participate. It does consume some time organising and running events, and attending committee meetings. Please check the form if you are considering nominating; there is a deadline prior to the actual meeting to submit your seconded nomination.

### Water Usage

We have had some ongoing issues with water leaks at the field. The latest was a cracked join between the bunker and the toilet block. Many thanks to Will Simpa, Dave Walker, Gregor Kruberg, and others for repairing the pipe work. We believe that there has been an issue with the durability of the joiners originally fitted. These have now all failed and been replaced with different parts. Time will tell whether the issue has been resolved.

Happy flying!  
Phil Gartshore.

**PINE RIVERS AERONAUTICAL MODEL SOCIETY INC.**  
**MODEL AIRSHOW**  
**2008**  
**SUNDAY 27TH JULY**  
**10:00AM - 3:00PM**

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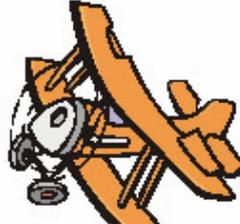
ELIZABETH RD. GRIFFIN  
 FOLLOW THE SIGNS FROM THE ANZAC AVE OR  
 DOHLES ROCKS RD EXITS FROM THE BRUCE  
 HIGHWAY.




**FAMILY FUN  
 FOOD AND DRINK  
 AVAILABLE ON SITE**

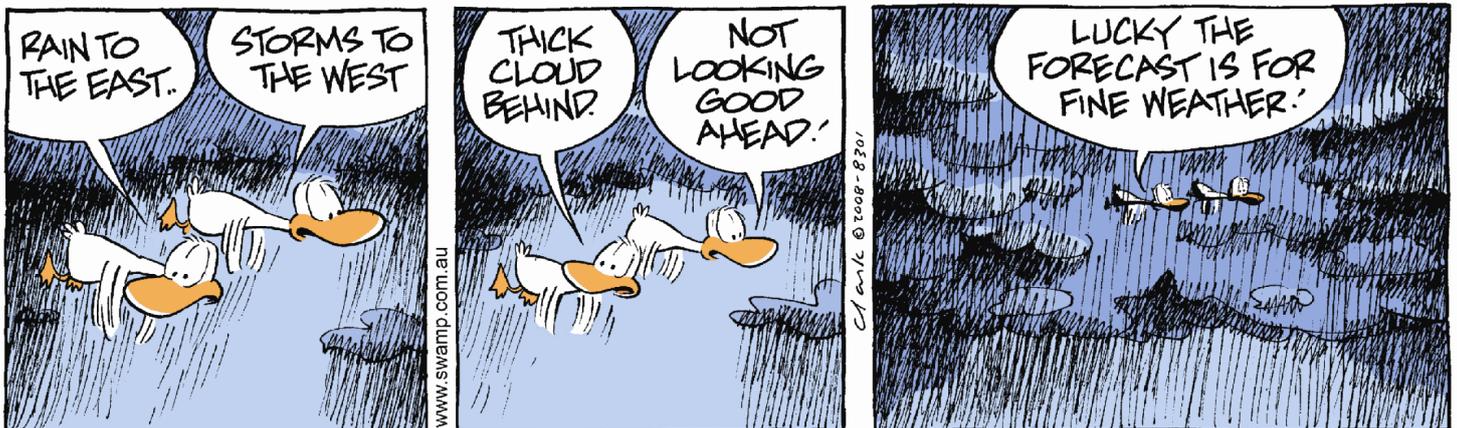
**ENTRY:**  
**\$5.00 ADULT, \$3.00 U/16,**  
**MAX \$10.00 VEHICLE**

Supporting  
(A Division of Ball of yarn Mills)  

If you wish to fly your aircraft at this event please contact Peter Tompkins at: 225 Francis Road Bray Park Qld 4500  
 Phone: 07 3882 2901

Although we have not had a lot of rain recently we have had a lot of windy days, which the weather bureau seem to have trouble predicting. I think the Swamp cartoon below says it best.



Swamp cartoon used with permission. See more at [www.swamp.com.au](http://www.swamp.com.au)

# Has This Ever Happened to You?

by Bob Kugler

You're flying your favorite airplane. You're doing the maneuvers that you've done a hundred times before. The weather is perfect. The wind is steady, light, and blowing in your favorite direction. You are having a great time. You couldn't feel more comfortable.

Then, without warning, your old friend develops a mind of its own. While doing a simple, straight, and level flyby, your airplane throttles up. It rolls over and spins into the ground. Something has gone seriously wrong. Your first thought is, "I've been shot down!" This may or may not be true. After you have had time to regroup and analyze the situation, you may be able to determine the actual cause of the crash. A postmortem is always worth doing so you can prevent the problem from recurring.

What are the possibilities?

- Someone turned on a transmitter on your frequency.
- Outside radio interference.
- Receiver battery failure.
- Transmitter battery failure.
- Radio failure. .
- Receiver switch failure.
- Mechanical failure.
- Pilot error.

My limited experience has shown that most airplanes are lost as a result of mechanical or electrical failure (items 3, 4, 5, 6, and 7). Next comes pilot error. This includes letting the airplane get too far away, losing it in the sun, getting confused while inverted, stalling the airplane too far away, throwing the wrong switch on your transmitter, or simply trying one too many turns while dead stick.

The least frequently seen cause of RC airplane crashes is radio interference (items 1 and 2). Yet this is the one we think of first. This is probably because it is one of the few causes that we can blame on someone or something else.

Here are some things you can do that may prevent these problems:

1. When installing the switch harness in your model, you may want to locate it inside the airplane. Cut a piece of thin music wire so, when bent to shape, it will extend from the switch to the outside of the airplane. This will help the switch stay clean and oil free.
2. When installing the radio in your airplane, shield the receiver and battery from vibration by wrapping them in closed-cell, high-density foam. In time, vibration will loosen the internal electronics of an unprotected radio. Prolonged vibration can also cause a short in an onboard battery. While you're at it,

make sure your servos are shock mounted by using the little rubber grommets and sleeves that come with the radio.

3. Before you assemble your airplane, make sure the servos, battery, and receiver are secure. Ensure all radio connectors are in place. Check the control surfaces for excessive play, cracks, or binding
4. The connection between the antenna of your transmitter and the transmitting module in your transmitter must be solid, so check to see that the link is proper
5. Walk the flightline and pits. Check to see who is sharing your frequency. Let them know you are there and ask them if anyone else is using the channel. Don't assume that everyone uses the board when flying. You may run into a new person who is not familiar with our system, or you may find someone whose tag fell off the board.
6. Use the frequency control board.
7. Always do a preflight inspection of your airplane.

Check to see that all controls are working and in the right direction. When I first started, I could not remember which way the ailerons were supposed to work until I started using a catch phrase. When I test my aileron, I push the stick to the right and watch the right aileron. I say "right up" to myself. If the right aileron moves up, it's working correctly.

Check the meter on your transmitter. These batteries are reliable, but they do sometimes fail.

People who faithfully check their receiver batteries sometimes forget to glance at the transmitter meter. Range check your radio system. This is rarely done, but it can uncover an otherwise undetected problem. It should be done with the engine running so, if any of the radio components are loose, the vibration may cause it to act up.

Test to see if another transmitter is turned on. This can be done by turning on your transmitter and receiver. Move the sticks to the corners, much like you would when performing a snap roll. While holding the sticks in that position, turn off your receiver switch. Next, turn off your transmitter. This will leave the ailerons, rudder, elevator, and throttle off center. Turn on the receiver switch. If the control surfaces should center themselves or begin to twitch, your receiver is getting hit by another radio or some sort of outside interference. Do not fly!

If you are already flying and your airplane starts going crazy, hold your transmitter as high as possible. Notify everyone on the flightline that you are going on the field. Run toward your airplane. If you can get your transmitter closer to the receiver in your model, it may provide a strong enough signal to override any interference.

Reprinted from the AMA Insider, March 2008, the national newsletter of the American Academy of Model Aeronautics.

# TMAC Warbirds Day

## Sunday 16<sup>th</sup> March 2008

Attendance by pilots and spectators was impressive. There were eventually thirty plus signed in pilots and a large crowd of spectators. Perhaps an outstanding array of high quality WW2 aircraft on display as well as superb flying was the reason. Parking space was also at a premium with vehicles all the way down the access road.

We had great support from our friends from Toowoomba, Logan, Gratten Field, Sun Coast & PRAMS.

Several display flights were given by the "big birds" during the morning with up to five ¼ scale aircraft in the air simultaneously. The spectators were impressed with the professional airmanship and it also made a spectacular re-enactment of the real thing. Thanks to pilots Chris Howarth/Seafury, Peter Love/P40, Jamie Hartmann/Zero, Steve Thomas/Spitfire, and Ron Cavanagh/P51.

Other highlights were the flights by Lionel Weeks with his 30% scale Stearman Bi-Plane powered by a Moki 5 cylinder 215cc Radial engine. The superbly detailed aircraft is painted in authentic bright US Navy colours and looks stunning.

Chris Howarth also provided a flawless single demonstration flight with his immaculate Sea Fury. This is a huge aircraft and as usual was flown expertly by him.

General warbird flying went on in between these events and gave every participant a good chance to have plenty of air time. With good participation there were many and varied aircraft representing a whole range of WWII military aircraft.

Several friends from the Military Jeep Club of Queensland dropped in for a visit. Ralph Murfin, George Kanka and Ken Griffiths spent the morning with us and were most gracious in providing a short ride for the kids creating a good view for the spectators of the beautifully restored WWII Jeeps. Thanks Jeep Club Drivers, please visit again.

Encouragement book awards were presented to Josh Thomas and Ben Love from Toowoomba and our own Zac Syntageros TMAC. These awards were made to our young pilots in recognition of their keen interest and pilot capabilities in warbird aviation.

We are thankful to Glen Crossley, Joel and Michelle Davison, Dan & Nicole Carroll, Mick Pawelski and Martin Homan for their very hard work with the Bar-B-Q all day providing low priced food and drinks for members and visitors. The team provided a hearty breakfast and other food all the way through to lunch time for the troops. There were plenty of volunteers to help with the clean up too. It was much appreciated.

We are indebted to the devotion of TMAC President Peter Stevenson for the operation of the pound. Thanks again Pete.

With participant numbers substantial again this year it shows continued interest in our passion for reproducing such memorable and fine aircraft. It continues to just get better and better.

See you again next year.

Gregor Kruberg

Warbird Event Co-Coordinator





# Australia's Next Air Traffic Control System - ADS

Phil Gartshore

As an ex Air Traffic Controller, I can't help but keep an eye on what's happening in the industry.

Today, Air Traffic Controllers in Australia get their plane-location information using a ground-based network of Secondary Surveillance Radar (SSR) aerials. This system relies on all aircraft having an operational transponder, which sends a Digital response when it receives a signal from one of the rotating SSR radar aerials. This system replaces the older Primary Surveillance Radar (PSR) systems which relied on interpreting returned signals from a rotating radar head emitting directional radar pulses. These started off with operators in dark rooms a la the old war movies, but were rapidly replaced with displays which could be viewed under normal office lighting, thanks to the invention of Scan Converter technology.

The current radar systems are very safe at this point. Last year, there were no fatalities in aviation in radar coverage. But it has all kinds of problems. It's expensive to maintain. The signal varies with distance and weather. You can't even put radar dishes in the ocean.

And above all, the long-range radar dishes take 12 seconds to rotate, so the air-traffic controllers get an updated plane positions only once every 12 seconds. (Near airports, the updates are every 5 seconds.) As a result, air-traffic controllers have to keep airplanes 3 miles apart near airports, 5 miles over land, and in places where there's no radar, as far apart as 75 miles.

This is all about to change with air traffic agencies around the world commencing the rollout of ADS-B (Automatic Dependent Surveillance–Broadcast) technology. It's essentially GPS for airplanes, and it's really, really cool!

**Automatic** - It's always ON and requires no operator intervention

**Dependent** - It depends on an accurate GNSS signal for position data

**Surveillance** - It provides "Radar-like" surveillance services, much like RADAR

**Broadcast** - It continuously broadcasts aircraft position and other data to any aircraft, or ground station equipped to receive ADS-B

With the current Radar equipment, only air traffic control—not the pilots—see where all the planes are. I saw a recent quote from a US 747 pilot: "I get in my plane, I take off, I put a paper bag over my

head. That's how much I know what's going on around me."

Far different from Primary Surveillance Radar, which works by bouncing radio waves from fixed terrestrial antennas off of airborne targets and then interpreting the reflected signals, ADS-B uses conventional Global Navigation Satellite System (GNSS) technology and a relatively simple broadcast communications link as its fundamental components. Also, unlike radar, ADS-B accuracy does not seriously degrade with range, atmospheric conditions, or target altitude and update intervals do not depend on the rotational speed or reliability of mechanical antennas.



Figure 1 - ADS-B Communications

ADS-B also changes other things. You, the pilot, see an icon for your plane in the centre of the screen, and the other planes appear around you, with altitude numbers ("−20" means the guy is 2,000 feet below you). You can zoom in and out, call up the weather map, search your aircraft user manuals, and so on.



Figure 2 - ADS-B Cockpit Display

ADS-B goes further. At least once per second, the

aircraft broadcasts not just its ID and altitude (as with current SSR systems), but also the other essentials of target tracking, azimuth and range—all without interrogation from the ground. This high update rate is a big step forward from the old system, which updated once every 12 seconds.

In typical applications, the ADS-B capable aircraft uses an ordinary GNSS (GPS, Galileo, etc) receiver to derive its precise position from the GNSS constellation, and then combines that position with any number of aircraft information elements, such as speed, heading, altitude and flight number. This information is then simultaneously broadcast to other ADS-B capable aircraft and to ADS-B ground, or satellite communications transceivers which then relay the aircraft's position and additional information to Air Traffic Control centres in real time.

The Universal Access Transceiver ("UAT") variant is also bi-directional and capable of sending real-time Flight Information Services ("FIS-B"), such as weather and other data to aircraft. In some areas, conventional non-ADS-B radar traffic information ("TIS-B") can also be up-linked as well.

ADS-B is also a relatively inexpensive technology, with estimated costs for ground based equipment between 5% and 10% of the cost of equivalent to radar coverage equipment. Also, unlike radar, both the footprint and power requirements for ADS-B are quite small, allowing an ADS-B ground station to be installed on mobile phone towers and many other kinds of structures, and in even the most remote areas using solar power technologies.

This is all well and good for the pilots, but where are the improvements for commercial aircraft travel?

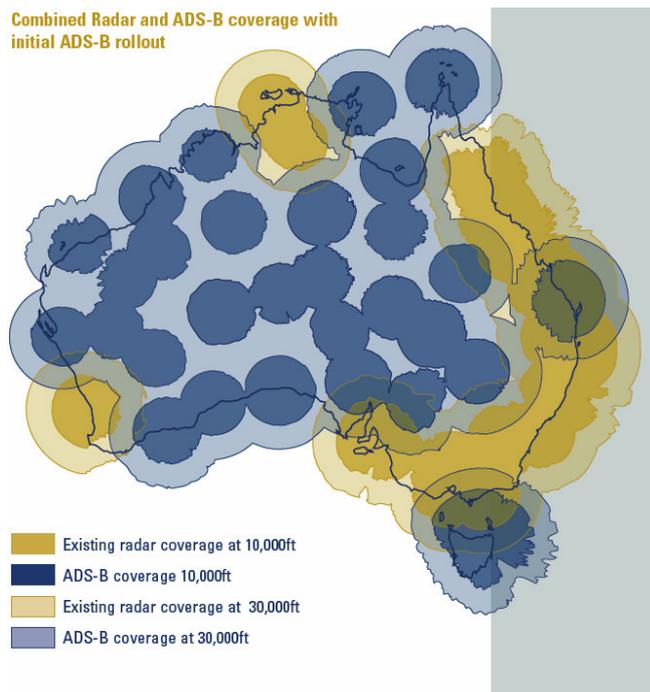
Currently ATC radar coverage in Australia is substantially restricted to the east and southern coast from Cairns to Adelaide, including Canberra, in a band approximately 320 Nm wide, plus coverage at Perth and Darwin airports. The rest of the country has no civil radar coverage.

ADS-B will initially be filling in the blanks, and then replacing Australia's aging Thompson SSR radar equipment.

In addition, ADS-B may make it possible to decommission much of the current ground based navigation aid (NDB/VOR) network, attracting substantial operational cost savings.

So, what's the down side? Cost mostly. It will cost tens of thousands to fit a basic transponder to older aircraft, making the cost of conversion to ADS-B prohibitive. Then there's integration with existing

flight management systems and on it goes.



**Figure 3 - ADS-B & Radar coverage after ADS-B Rollout**

The system also requires every aircraft to be fitted with a transponder. If your aircraft doesn't have a transponder, you can't be seen by ATC or by other aircraft fitted with cockpit displays.

Air Services Australia has already begun its rollout of ADS-B ground equipment.

Work also has to be completed to test and update Civil Aviation regulations to allow aircraft operations using ADS-B as the sole navigation technology. What will be the role of pilots in air traffic management when they have a display similar to that of the air traffic controller?

ADS-B is sexy technology, but there are some challenges to be overcome, not the least of this is mandating that all aircraft carry an ADS-B transponder. If strategies, which may include government financial subsidies for aircraft fit out succeed, Australia will have leading edge Air Traffic Control Systems in place that can handle more aircraft with less delay in the next few Years.

**References:** Progress on Sole Means GNSS and ADS-B (RAAA Conference 2005) Air Services Australia  
 ADS-B Technologies <http://www.ads-b.com/home.htm>  
 Air Services Australia. <http://www.airservicesaustralia.com/pilotcentre/projects/adsb/default.asp>  
 Airways Museum. [www.airwaysmuseum.com/Surveillance.htm](http://www.airwaysmuseum.com/Surveillance.htm)



# Lets fly and have FUN!



## 25<sup>th</sup> May 2008

In looking at the clubs calendar of events this year the first thing that strikes you is the number of events we have at Tingalpa, each month we have something happening at Tingalpa which is a credit to the committee and our members - **MAY 2008** is no different with the FUN FLY DAY late in MAY.

There is a difference however with the re-introduction of a day set aside to have some FUN, FUN and more FUN, - YES its back and you are invited to come along and have a day with a difference. The day is all about having FUN and although requires basic flying skills is ALL about seeing something different, trying something different and having a good time.

Come along and

- SEE an Exhibition **PYLON RACE** by world champions
- Test how fast your plane goes** - Speed trap quality RADAR gun at the field.

Try flying in the.....

- BULLSEYE** landing (first touch)
- LIMBO FLY** – Yes fly under the paper tape like real LIMBO
- PYLON RACING** – Not quite like the World Champions
- BURST A BALLOON** and win a prize – balloons 600mm in diameter – WHO CAN MISS !

### **BARBEQUE**

Bacon butties, Steak, Snags and Soft Drinks make up what will be a great day

**When: SUNDAY 25<sup>th</sup> May 2008**

# Management Committee Nominations

I ..... being a financial member, eligible to hold office in accordance with TMAC Rules and By-laws, hereby accept nomination for the position of ..... and am willing to act in that office if elected.

..... (Nominee)

..... (Proposer)

..... (Proposer)

**Note1:** Nominees must be proposed by two members who are eligible to vote in accordance with the Rules.

**Note 2:** Nominations to be submitted to the Secretary prior to the Annual General Meeting.

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## Life Members' Trophy Nomination

I ..... hereby nominate Club member ..... as a candidate for the (year) Life Members' Trophy for the following reason(s):-

Signed .....

**Note:** Nominations to be submitted to the Secretary by:-**15 August 2008**



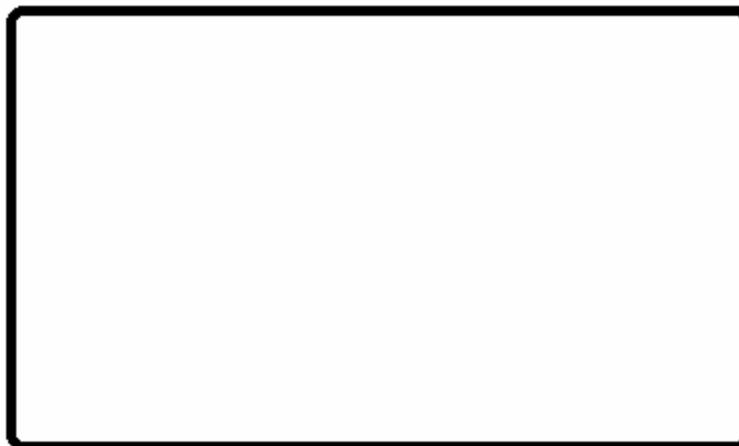
If undeliverable, please return to:

The Secretary,  
Tingalpa Model Aero Club Inc  
PO Box 2108  
Tingalpa QLD 4173

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PP 424022/00093

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AUSTRALIA**



### Upcoming Events at TMAC

Monday 5th May	Meeting	Club General Meeting
Sunday 25th May	Event	Fun Fly Day
Monday 2nd June	Meeting	Club General Meeting
Sunday 15th June	Event	Peter Cutler Memorial Scale Day
Monday 7th July	Meeting	Club General Meeting
Sunday 20th July	Event	Wings Testing Day

**Next event is the Fun Fly Day - Sunday 25th May.  
(Except for short periods the field will remain open to general flying)**

Note: For events the field will normally be closed to general flying