

**LISMORE
FLYING**



**MODEL
CLUB**

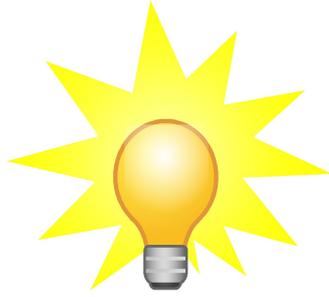
NEWSLETTER

August 2016.



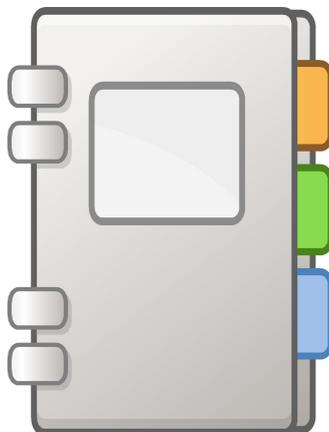
Achtung!

John Roche proudly shows his latest acquisition.



**Here's a thought,
why not attend our next monthly meeting,
TO BE HELD AT THE FIELD ON
SUNDAY, September 4th.
COMMENCING AT 9.00A.M.**

ENTER THE DATE IN YOUR DIARY!



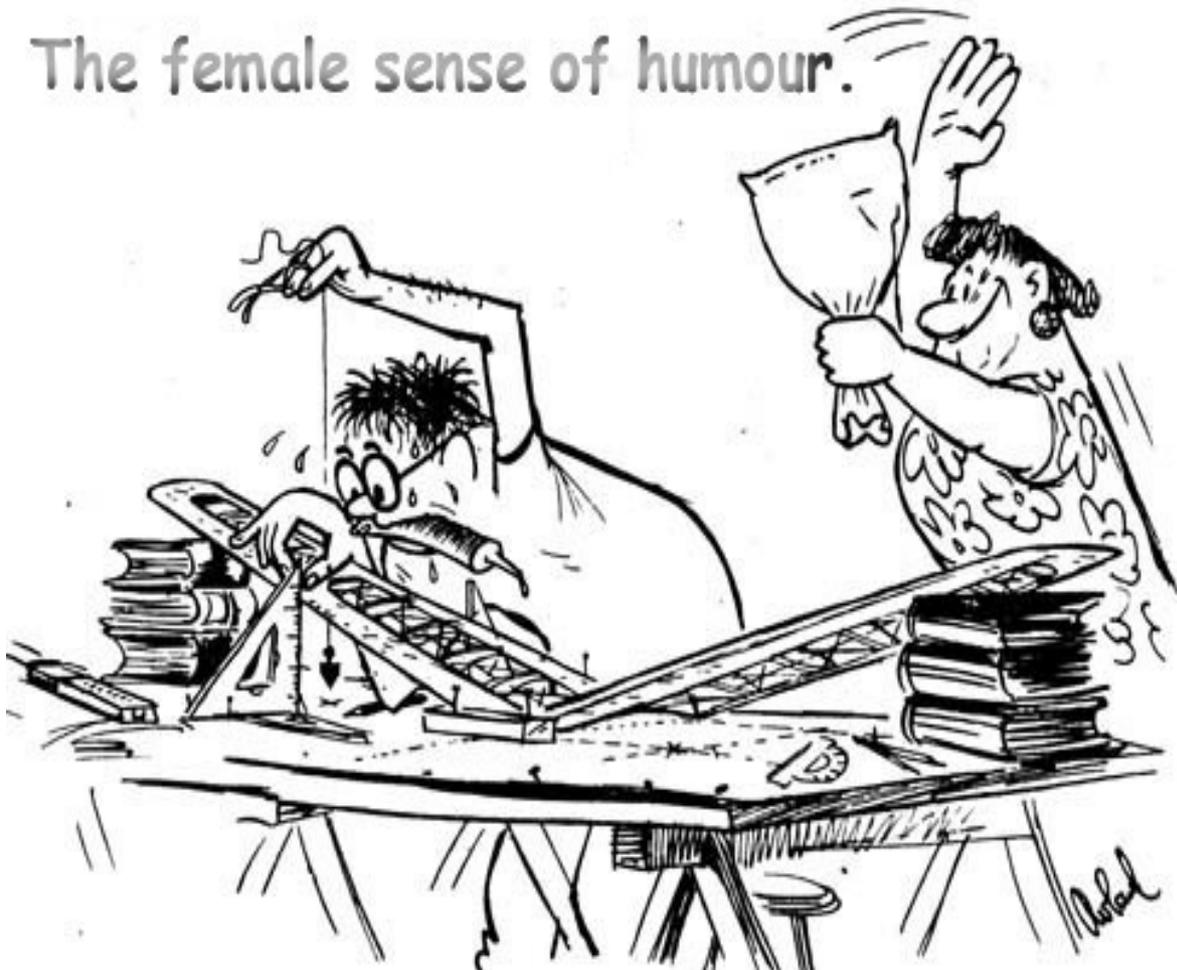
News in brief.

What a great month we've had and a busy few weeks ahead. Lots of new models on the building board and several events coming up. The LMFC glider competitions are coming to the end of their season but the enthusiasm remains strong among competitors.

The Glide-A-Fair ([September 24-25](#)) is approaching and should carry over the success of previous years. Please, don't just wait for a report though, come on out to Pearce's Creek and lend a hand. Great people, plenty of magnificent models and exciting competition.

It's great to have members sharing their knowledge, photos and stories in the newsletter. This month is a good cross section, with advice on batteries, some great photos of current models and a peek at a few that we'll hopefully see at the field soon. Of course my thanks to all of the contributors who spend a few minutes at their keyboards and to those who snap some wonderful pics. Keep them coming!

The female sense of humour.





MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA



A sporting day out the whole family can enjoy while supporting a worthy cause!

Got nephews, nieces, grandkids or your own kids that you'd like to get into aero modelling? Then the **2016 Australian Model Flying Day** is the perfect family day out to give them a taste of the thrill of our sport!

Being held over the weekend of **22-23 October** this year, the MAAA is hosting this great event which also **supports the Royal Flying Doctor Service Australia**.

MAAA President Neil Tank encourages local clubs to support the annual event by holding local events, as it's important to get more Australians behind the sport.

"Flying a model aircraft is a fast-growing family sport and this event's wide range of activities help people learn more about the sport while giving members a great day out," said Neil.



"We need to showcase to younger generations the high-speed pylon racing jet planes, gliders and helicopters, and let them experience the adrenalin rush and thrill of flight".





MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA

In 2015, more than 40 clubs joined in on the action across Australia. Clubs held static displays of model aircraft at barbecues, shopping centres and fun flyins, just to name a few.

The 2016 Australian Model Flying Day will take place at various locations across the country on 22-23 October. The entry fee is a \$5 badge which goes directly to the Royal Flying Doctor Service.



The Royal Flying Doctor Service of Australia (RFDS) is one of the largest and most comprehensive aeromedical organisations in the world. Using the latest in aviation, medical and communications technology, we deliver extensive primary health care and 24-hour emergency service to those who live, work and travel throughout Australia.

With 66 aircraft nationally and a waiting room of 71.5 million square kilometers, we provide 24-hour aeromedical emergency services to country Australia.

Combined with telehealth consultations, fly-in fly-out GP and Nurse clinics, mobile dental services, patient transfers, health education and a myriad of other health services, the RFDS is constantly working to see that those living in rural and remote areas can enjoy the same health outcomes as those living in city areas.

So how do you take part in this great event? Plan an event (a club flying day or even a fundraising BBQ) for one day on the weekend of 22-23 October. Then Register your club's event with the MAAA Secretary (secretary@maaa.asn.au) and advise how many members you believe will attend. You'll then receive 2016 MAAA Australian Model Flying Day badges. Then encourage club members and the public to come along!

Neil Tank
President





What else can you do that's this much fun, and legal? (*OK, apart from that!*)

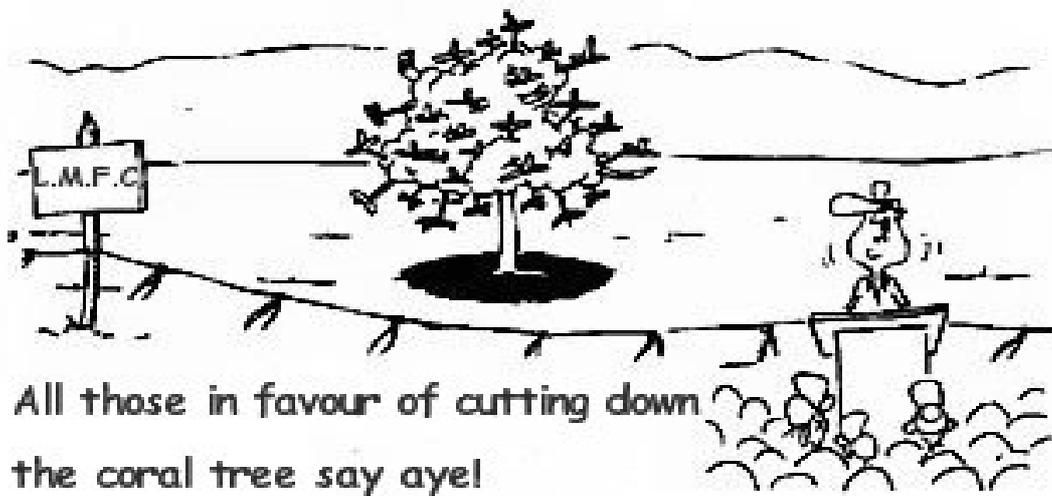
Waiting for the next flight.





Now that the Harvard has headed off to a new home, Phil has a little more freedom to finish the JU87.

As Phil says, "27 pieces of prime JU87 Stuka. Let the surface detailing begin!!"



The story of his month's cover shot.

From the club's June Swap and Sell

This menacing looking Hobby King Focke-Wulf 190D was snapped up at the June Swap & Sell, new in the box and everything but a battery and receiver for only \$20.

I decided to over-paint a bit of it using house paint and then I added a dusting of water-based polyurethane to protect it. Even though it was recommended to fly it on a 400mAh 2S LiPo, this was definitely under powered so the FW190 was maiden (thanks yet again Craig) using a 1000mAh 3S. Even



though the LiPo was a bit too heavy, it was the smallest 3S LiPo that I had. The plane is hand-launch only and the maiden went quite well, though she was no speed demon with that motor and ESC and 7x6 propeller that came with it. It was just a little unstable, probably due to the high wing loading.

On her second flight a few days later, the sky was grey with a strong glare, and yes, that grey on grey camouflage worked really well. All I could see was a silhouette showing one wing up – but which one? A wrong guess had her “landing” in the coral trees. She is now fully restored and equipped with an old Tower-Pro 2409 bell motor I had, as the original motor was too weak. I also added a larger ESC and propeller to give more power and now I can use the lighter 2S 950mAh Li-Po to lower that wing loading.

To compare, the original Hobbyking motor and 10A ESC using a 2S Nano 950mAh with an 8x6 SF used 10 Amps for only 69 watts. The Tower-Pro 2409 with a Plush 25A ESC and the same prop and LiPo uses 18 amps for 113 watts, and I think that extra power is needed.

I will only fly on bright clear days until I get used to it. Great fun, with a few challenges thrown in.

THE ROVING EYE

Tuesday 2nd August was a good morning for a flight or two and Graham Gilliver was making the most of it so I had to be quick in getting this pic as he was heading out to stir up a little more air with his Shark, as he reckons it's better than bussing around town.



This is a round table conference without a table, Neil, Paul, Graham and company chewing the fat.

Why do LiPos fade away, sometimes quite quickly?

We have been warned that charging our LiPos at too high a charge rate is bad. Only charge at 1C rate. For example, a 2750mAh LiPo should be charged at no more than 2.75 A

We have been warned that discharging too quickly is bad. Don't run your planes at full throttle over most of a flight, coming in with a really warm or hot LiPo, if you want to have longer-living LiPos.

We have been warned not to let our LiPos get hot. Don't leave them in a hot car in summer.

But . . . what about Storage Voltage? We all have it on our battery chargers. Do you use it? I almost never do, as I expect it to be too inconvenient to have to charge up all the LiPos that I may use the following day. I have been keeping my LiPos fully charged, waiting for a quick trip out to the field. Some are fully charged for months without being used. However, I am increasingly reading that this is a problem for LiPos. They permanently lose capacity if left fully charged for long periods of time.

In searching the Web for some authoritative evidence I found the following site useful, and I have extracted just a few sentences and tables/ charts to give you a feel for the site. I highlighted some sentences in bold red.

The identifiers like BU-206 below identify which document the extracted sentences came from. <http://batteryuniversity.com/>

BU-206: Lithium-polymer: Substance or Hype?

As far as the user is concerned, lithium polymer is essentially the same as lithium-ion. Both systems use identical cathode and anode material and contain a similar amount of electrolyte.

Li-polymer cells also come in a flexible foil-type case that resembles a food package.

A foil-type enclosure reduces the weight by more than 20 percent over the classic hard shell. Light weight and high specific power make Li-polymer the preferred choice for hobbyists.

Charge and discharge characteristics of Li-polymer are identical to other Li-ion systems

BU-808: How to Prolong Lithium-based Batteries

What Causes Lithium-ion to Age?

The lithium-ion battery works on ion movement between the positive and negative electrodes. In theory such a mechanism should work forever, but cycling, elevated temperature and aging decrease the performance over time. Manufacturers take a conservative approach and specify the life of Li-ion in most consumer products as being between 300 and 500 discharge/charge cycles.

Similar to a mechanical device that wears out faster with heavy use, the depth of discharge (DoD) determines the cycle count of the battery. The smaller the discharge (low DoD), the longer the battery will last. If at all possible, avoid full discharges and charge the battery more often between uses. Partial discharge on Li-ion is fine. There is no memory and the battery does not need periodic full discharge cycles to prolong life.

Table 2 compares the number of discharge/charge cycles Li-ion can deliver at various DoD levels before the battery capacity drops to 70 percent.

Depth of discharge	Discharge cycles
100% DoD	300–500
50% DoD	1,200–1,500
25% DoD	2,000–2,500
10% DoD	3,750–4,700

Table 2: Cycle life as a function of depth of discharge. A partial discharge reduces stress and prolongs battery life. Elevated temperature and high currents also affect cycle life.

Lithium-ion suffers from stress when exposed to heat, so does keeping a cell at a high charge voltage. A battery dwelling above 30°C (86°F) is considered *elevated temperature* and for most Li-ion a voltage above 4.10V/cell is deemed as *high voltage*. Exposing the battery to high temperature and dwelling in a full state-of-charge for an extended time can be more stressful than cycling. Table 3 demonstrates capacity loss as a function of temperature and SoC.

Temperature	40% charge	100% charge
0°C	98%	94%
25°C	96%	80%
40°C	85%	65%
60°C	75%	60%
		(after 3 months)

Table 3: Estimated recoverable capacity when storing Li-ion for one year at various temperatures. Elevated temperature hastens permanent capacity loss. Not all Li-ion systems behave the same.

What can the User Do?

Environmental conditions, not cycling alone, govern the longevity of lithium-ion batteries. The worst situation is keeping a fully charged battery at elevated temperatures.

BU-808b: What causes Li-ion to die?

Dr. Dahn stresses that a voltage above 4.10V/cell at elevated temperature causes this, a demise that can be more harmful than cycling a battery. The longer the battery stays in a high voltage, the faster the degradation occurs.

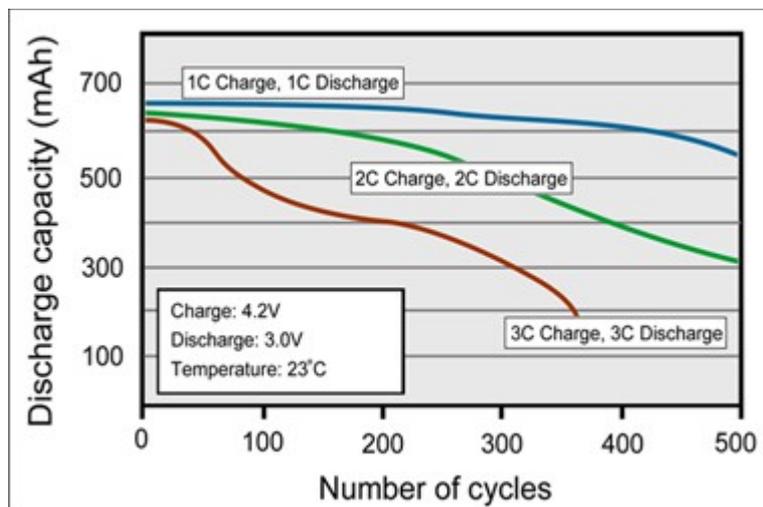


Figure 4: Cycle performance of Li-ion with 1C, 2C and 3C charge and discharge. Moderate charge and discharge currents reduce structural degradation. This applies to most battery chemistries.

So, I have just put all my LiPos at Storage Charge using my old chargers, and I will see if I can slow down the decline in my LiPos. My Neutron charger can measure Internal Resistance, so I can keep an eye on any decline. I will need to work out ways of make more convenient the process of re-charging all the batteries I intend to take, the day or night before I fly. Is it worth it? I guess I'll find out.

JUNIOR 60's BUILT FROM PLANS *(by Bill Parker)*

I built the two 60 inch wing span Junior 60 models (pictured below) from plans early in 1980s, The one on the right I built for myself and the other one for Peter Nesbitt of Casino. I powered mine with an OS 40 4s, and Peter's had an Enya of about the same capacity. I did hear Peter's had a chequered life and now is history. Peter did most of his flying in Casino.

You can see the background was free of trees back then with no sign of those dreaded Corals. A few cattle grazed on the land beyond the drain and fence so retrieving an aircraft was no problem.

December 2014, I made the fatal mistake, when flying towards myself, of moving the aileron stick to the right when I wanted the aircraft to turn left, my excuse was old age, no not the aircraft, just me.

My Junior 60 means a lot to me as my son Steven saw how I painted Junior 60 on the wing and that changed him from being a brush artist to an airbrush artist and now he is classed among the best air brushers. You can see some of his work on face book, search on your favourite browser "sjparker designs" Albany Creek. You might get a site at Warwick, which was where he lived before shifting back to the Brisbane area. He is currently working on a movie named "THOR" so has to do commissioned work on the weekends.





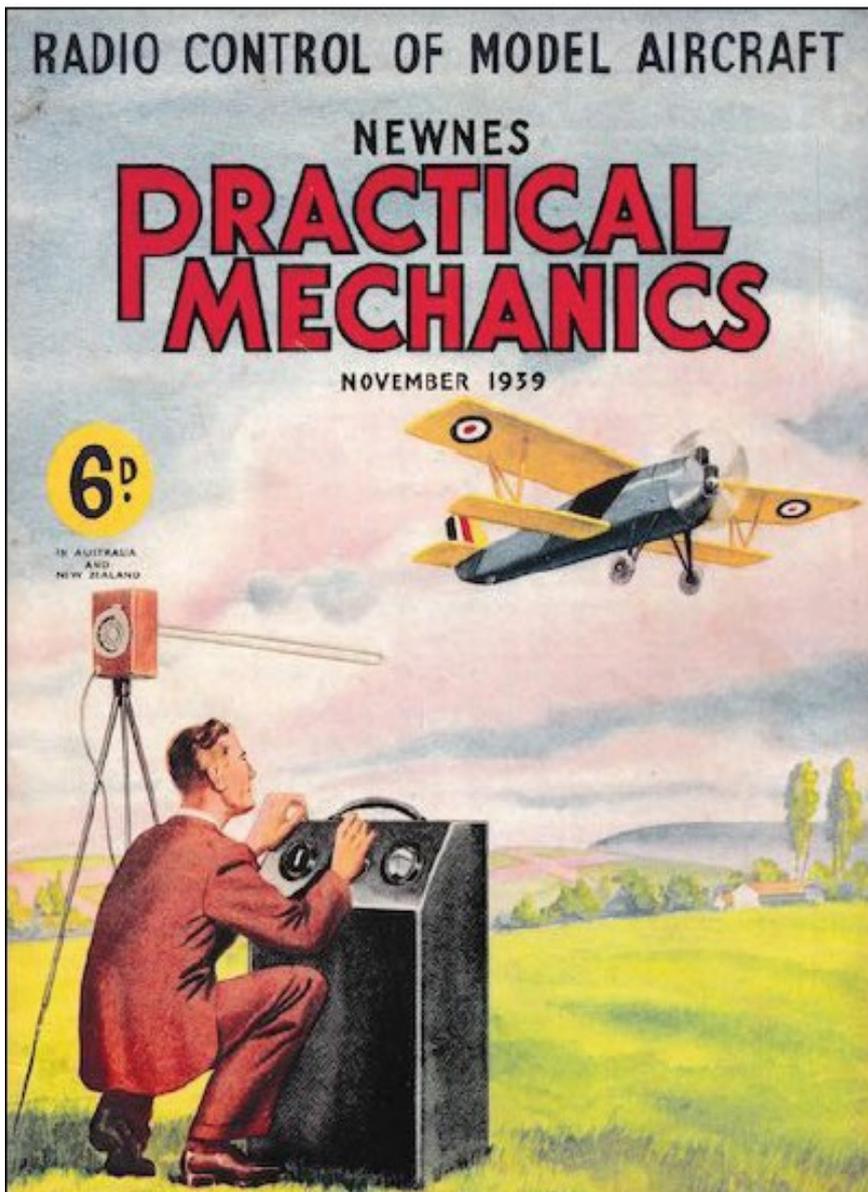
This picture is when I converted junior to electric by installing a 600 geared motor with 11-7 Taipan prop powered by a speed control and a bunch of Nicads. At a later date I changed back to the OS 40 4s.

It took me about 3 months to rebuild the fuselage and repaint it with new colour trim, now ocean blue. It has been airborne and flies as good as it did from day one.

Flying the aircraft you built yourself gives you a great feeling when you see it rise off the runway flown by yourself or one of the members that's always



ready to help you, and I say a great thanks to them.



What a difference a few years have made to R/C equipment. Well, 77 years actually. Can you imagine setting this unit up at the field every time you wanted to fly? And how would the flight line look at the Fling comp?

(Picture courtesy of AVANZ News)

Upcoming September glider competitions.

18-Sep **F5J Central Queensland** Bundaberg

18-Sep **HSL F5J Event** HSL, Maddens Plains
Sydney

23-Sep **NSW Schools break up**

24-25 Sep Millennium Cup 2-days Gloucester

[24-25 Sep Pierces Creek, LMFC Glide-A-Fair Open Thermal near Alstonville](#)

Below are the Fling results for this month. The competition is still close and hotting up as the season progresses.

As Jim reports, “We’ve had some cracking days flying.”

Flyer	Rd.1	RD.2	Rd.3	Rd.4	Rd.5	Rd.6	Rd.7	Rd.8	Rd.9	Rd.10	Total
Scott	561	1000	476	1000	990	1000	164	1000	713	787	7692
Rusty	254	736	714	764	1000	674	784	415	878	724	6944
Jim	1000	922	629	545	488	971	858	794	1000	649	7857
Nigel	967	487	636	525	526	881	888	576	994	644	7124
Grayham	591	603	1000	534	567	410	1000	626	739	1000	7070
David	284	649	854	297	567	878	769	309	693	379	5679



A happy man, Craig Thomas with his new 1/3 scale World Models Piper Cub, following its maiden flight. Turning the fan is a DLE 120cc twin. The cowl required a bit of modifying to house the twin so Jamie Zambelli did some surgery and the Cub now sports a split cowl. The plane looks and flies great and as Craig says, "All I have to do is smile."



Tarmac Scale Rally (Phil Crandon)

Some shots from a fantastic weekend away at the Tamworth Scale Rally last weekend.

A couple of really BIG model present. 42% Decathlon and giant PC21 turboprop. A really good turnout will a super bunch of guys from all over NSW.

TARMAC is by far the best flying backdrop I have ever flown at. Beautiful place and well worth the trip down.



**A good mix
of models
and a
wonderful
flying site.**





Just some of the quality models at TARMAC





British fighters, the WW1 Se5a and the WW2 Tempest.



**The following bulletin is very important.
Please read.**

Email Bulletin Number Eight 2016-2017

MAAA Notification

MAAA have asked us to pass on information about the change to MOP056

Dear Secretaries,

Recently the MAAA Executive have been dealing with three incidents. Two being 'fly aways' resulting in models impacting in public areas and becoming the subject of complaints to CASA. The third was operating from a full size airfield and resulted in the destruction of the very expensive model (\$30,000).

Based on reports received from the three incidents they were all subject to some form of loss or 'reversed' radio signals. At their last meeting the MAAA Executive reviewed the requirements in MOP056 Safe Flying Code and agreed to the changes shown below. While 'fly aways' can occur to any type of model and have done so in the past, it is agreed that taking the steps outlined in MOP056 with regard to range and failsafe checking of RC controlled models, the risk can be reduced. In the destruction of the expensive model, while it cannot be proven 100% due to the model being totally destroyed by fire, there were sufficient knowledgeable modellers on the scene to evaluate and draw a fairly comprehensive conclusion from the events that took place. Any modeller utilising a 'powerbox' distribution system within their model are urged to check the 'fail safe' while the model is running and being restrained. Simply turning off the Transmitter will check this. Powerboxes need to be set up with the particular brand of Radio equipment being used, we all know there are differences, especially with the throttle set up, between certain brands of equipment. In the case concerned it would seem that when transmission was either reduced or lost and with the engine running, the failsafe activated, however the throttle was reversed through the powerbox in fail safe mode.

RADIO CONTROL

- 1) *I will ensure the correct model is selected and have completed a successful radio equipment ground range and fail safe check each day prior to the first flight of any model.*
- 2) *I will perform my initial turn after takeoff away from the pit and spectator areas.*
- 3) *I will not knowingly operate an R/C system within 4 kilometres of a pre-existing model club flying site unless in accordance with the MAAA Manual of Procedures.*

It would be appreciated if this information could be sent to all your clubs.

Regards

Kevin Dodd

MAAA Secretary

Office: 07 3207 9067

Mobile: 0411645637



And always remember....

Nothing is foolproof to a sufficiently talented fool.



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