



# Sydney Radio Control Society

August 2007

# Newsletter

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## Annual General Meeting

**To be held at the field on Saturday 25<sup>th</sup> August at 11.00am followed by a BBQ lunch.**

### **Agenda:**

- **Apologies**
- **Previous Minutes**
- **Matters Arising**
- **President's Report**
- **Treasurer's Report**
- **Secretary's Report**
- **Other Business**



# SYDNEY RADIO CONTROL SOCIETY CLUB NEWSLETTER

## THE 2006 – 2007 COMMITTEE


<b>NAME</b>	<b>POSITION</b>	<b>PHONE</b>	<b>E-MAIL ADDRESS</b>
Mike Close	President	(02) 9872 6469	mikeclose@cherry.com.au
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Rex Broadbent	Secretary	(02) 9686 3114 0417 471 361	rexp@optusnet.com.au
Ewald Klinkenberg	Treasurer & Registrar	(02) 98312817	klink07@bigpond.com
Stephen Liseo	Newsletter Editor	0418 456 114	liseos@hillsgrammar.nsw.edu.au
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Corinne Pellatt	Ordinary Member		corinnepellatt@yahoo.com.au

<b><u>CLUB EVENTS</u></b>	<b><u>Date</u></b>
Kevin Grey Fun Fly	Saturday 11 <sup>th</sup> August
SRCS AGM	Saturday 25 <sup>th</sup> August
Scale Rally	Sunday 21 <sup>st</sup> October
A reminder that there is no general flying when club events are held	



These items can be purchased from the Club Treasurer

Club metal badges	\$5 ea.
Club cloth badges	\$5 ea.
SRCS stickers	50c ea
Club tee shirt	\$25 ea
Club caps	\$15 ea.



At the moment the Club has plenty of stock of caps and shirts available, so why not lash out and invest in a new Club shirt and cap. Don't forget that the Club badges issued to this years financial members must be worn at all times. A perfect place to wear it is on your new cap.

These items are available from **Ewald Klinkenberg** at the field.

Sizes for the shirts are small, large and extra large in blue or grey.

## **PRESIDENT'S LETTER**

Those of you who have been to the field recently will have seen the notice regarding the closure of the gate. If you have not, it is in this Newsletter and all members should read it carefully. The most likely cause is that a member either made an honest mistake or had not been told what the requirements are. The Committee would very much like to know what happened, and if anyone thinks that it might have been them, then we would encourage them to tell us. All we will do is to say 'thank you very much' whatever the circumstances, and then see if we need to change anything else for the future. The big bonus is that it will stop having to consider further whether we need to spend over \$4000 of either the club's, or individual members' funds, on changing the gate key.

A disappointing feature of this is that the farmer also said that he told someone a few days afterwards and asked that it be passed on to either myself or the Committee. This appears not to have been done. It is obviously vital when anything happens at the field that the Committee know about it and can take any action that is needed. It was only luck that I met the farmer and in this case no action could have looked like we did not care. The night after the farmer spoke to me a group of youths broke into the field, lit a bonfire, did wheelies on the mown areas and did not seem totally 'with it' on the Sunday when members arrived to fly. The latter contacted Roadmaster and tried to contact the farmer which is exactly the action that was needed. Looking after the interests of both of these is something that we have to do as a very high priority.

The Committee also need to be told about any injuries that occur at the field together with any incidents that either will, or could have if it was not for "that was lucky", result in an insurance claim. The MAAA require that all clubs report these and then investigate to see whether any procedures should be changed even if there is no claim in the end. It is a matter of record that last year the MAAA Executive seriously considered disallowing a personal accident insurance claim from another club as it was not reported till several months after the event. In the end it was accepted as it was claimed that the insurance company had been advised directly even though there was no evidence of it. The Club has a book which is kept in the locked container by the First Aid Box to record these all these incidents. Obviously if insurance is, or would have been, potentially involved a phone call to one of the Committee should be made as well if none were present at the time and know about it.

The AGM will be held shortly and the notice of it, and a Special Resolution that will be voted on, are in this Newsletter. This meeting sets the direction of the Club for next year and elects the Committee to implement the guidance given. Whether you think that the club is going well or needs some serious changes, please do consider offering your services on the Committee. There are often some members who do not seek re-election anyway, and one of the strengths of the Club since I have been President is that there is a continuing number of members who have been prepared to serve for at least one year. This has contributed to new ideas and enthusiasm continuing to be available, which has greatly benefited getting the Club to where it is today.

Don't forget the Kevin Gray Day as well. It is fun day for all and certainly some events do not rely on flying skill so anyone who takes part may go home with a prize as well as memories. Normal flying is suspended whilst the competition is on but anyone who is to solo standard will be able to try all the events, so there is plenty of flying that can be done.

I hope to see you all at the AGM and happy and safe flying.

Mike Close  
**President**

# SYDNEY RADIO CONTROL SOCIETY CLUB NEWSLETTER

## SPECIAL RESOLUTION

Notice is hereby given that the following Social Resolution will be put to the Annual General Meeting to be held on 25<sup>th</sup> August 2007.

This meeting resolves that Rules 14 (1) (c) and 33 (1) (5) be amended as indicated by italics and underlining below

14.(1) Nominations of candidates for election as office - bearers of the Society or as Ordinary Members of the Committee –

- (c) shall not be eligible to be received from Associate Members or Social Members of the Society.

### VOTING

- 33.(1).(5) Associate Members and Social Members of the Society are not entitled to vote at any General Meeting.

### JUSTIFICATION

Associate Members first loyalty is to the club that they are a full member of and there have been examples, in other clubs, where votes have been used for the best interest of the other club rather than the club directly concerned.

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Looking for something Different to Build?



**Minutes of Quarterly General Meeting 16th June 2007.**

The meeting opened at the airfield at 11am

**Present:** Matt Holloway, Mike Close, Ewald Klinkenberg, Phil Norris, Rex Broadbent, Steve Liseo, Corrine Pellatt, Benjamin Burrell.

**Apologies:** John Cahill, Baldo Polizzi, Rick Rapley, Renton Wright.

**Chair:** Mike Close

As there was a quorum (5), the meeting was adjourned to the Riverstone Memorial Club. There the meeting re-commenced at 11.20am.

**Minutes of previous QGM – 24th February 2007:** taken as read. Acceptance proposed by Ewald Klinkenberg, seconded by Corrine Pellatt. Motion passed.

**Matters arising:**

Keyboard: completed, still to be painted. Mike Close.

Instructors course: to be promoted, to encourage more to become instructors.

**Secretary's Report:** there was no correspondence.

**Treasurer's Report:** the income and expenditure account and balance sheet had been published in the Newsletter.

Annual subscriptions: decided on \$174 for seniors, \$128 pensioners \$75 juniors. Gate keys \$35 deposit. Joining fee stays at \$45. Email addresses get a \$10 discount (no government or hotmail email addresses).

Advertisement that subscriptions to be paid by 1.7.07 to be displayed on transmitter pound - Steve Liseo. Annual renewal form to be mailed to all members – Ewald Klinkenberg.

Acceptance of Treasurer's Report and annual subscriptions proposed by Steve Liseo., seconded by Matt Holloway. Motion passed.

**General Business**

Hog Day – Sunday 17th June: Mike will be at the field tomorrow – will assess from weather and attendance whether to cancel the day.

Emailing newsletter: this is more trouble than is saved. Mailing costs us ± \$1 per copy, plus 50¢ postage. Keep as 'mail'.

The meeting closed at 11.40am.

Rex Broadbent  
19 June 2007

**Treasurers Report****Profit & Loss [With Last Year]**

July 2006 through June 2007

	<b>This Year</b>	<b>Last Year</b>
Income		
Club Badges	\$114.00	\$9.00
Club Clothing	\$20.00	\$90.00
Donations	\$0.00	\$5.00
Gate Keys	\$905.00	\$285.00
Interest	\$2,606.45	\$1,773.87
Joining Fees	\$1,440.00	\$615.00
Member Fees	\$21,616.00	\$18,352.00
Scale Day	\$763.70	\$865.90
<b>Total Income</b>	<b>\$27,465.15</b>	<b>\$21,995.77</b>
Expenses		
Badges	\$472.90	\$0.00
Bank Charges	\$97.00	\$70.60
Competition Prizes	\$75.00	\$107.50
Consumer Affairs	\$43.00	\$78.00
Equipment Hire	\$226.44	\$110.00
Equipment	\$168.00	\$0.00
Field Maintenance	\$179.34	\$1,891.13
Food & drink	\$56.04	\$131.06
Gifts	\$284.47	\$37.99
Hall hire	\$0.00	\$55.00
Key refund	\$20.00	\$30.00
Locksmith	\$1,472.00	\$1,547.43
Website	\$594.00	\$742.50
Depreciation	\$2,242.23	\$2,158.94
MAS fees	\$16,298.00	\$13,586.75
Postage & shipping	\$279.25	\$224.00
Scale Rally	\$342.16	\$429.73
News letter	\$1,030.62	\$845.20
Stationary	\$108.90	\$114.31
Loss of Assets	\$0.00	\$1,594.25
Toilet Services	\$55.00	\$187.00
Refund of membership	\$552.00	\$797.00
<b>Total Expenses</b>	<b>\$24,596.35</b>	<b>\$24,738.39</b>
<b>Net Surplus / (Deficit)</b>	<b>\$2,868.80</b>	<b>-\$2,742.62</b>

# SYDNEY RADIO CONTROL SOCIETY CLUB NEWSLETTER

## Balance Sheet [Last Year Analysis]

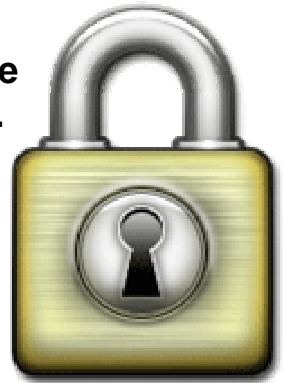
June 2007

	This Year	Last Year
<b>Assets</b>		
Current Assets		
Cash On Hand		
Westpac - chq a/c	\$1,584.02	\$1,429.44
Petty Cash	\$10.00	\$10.00
<b>Total Cash On Hand</b>	<b>\$1,594.02</b>	<b>\$1,439.44</b>
Investments		
Westpac term deposit	\$18,160.37	\$16,553.03
ANZ term deposit	\$32,274.96	\$31,275.85
<b>Total Investments</b>	<b>\$50,435.33</b>	<b>\$47,828.88</b>
<b>Total Current Assets</b>	<b>\$52,029.35</b>	<b>\$49,268.32</b>
Other Assets		
Deposits Paid	\$50.00	\$50.00
<b>Total Other Assets</b>	<b>\$50.00</b>	<b>\$50.00</b>
Buildings		
Furniture & Fixtures		
Equipment at Cost	\$17,885.23	\$15,535.23
Less Accum Dep	-\$13,396.70	-\$11,154.47
<b>Total Furniture &amp; Fixtures</b>	<b>\$4,488.53</b>	<b>\$4,380.76</b>
<b>Total Assets</b>	<b>\$56,567.88</b>	<b>\$53,699.08</b>
Liabilities		
Long-Term Liabilities		
<b>Total Liabilities</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>Net Assets</b>	<b>\$56,567.88</b>	<b>\$53,699.08</b>
Equity		
Retained Earnings	\$53,699.08	\$56,441.70
Current Year Surplus/Deficit	\$2,868.80	-\$2,742.62
<b>Total Equity</b>	<b>\$56,567.88</b>	<b>\$53,699.08</b>

<b>Membership 2006/2007</b>	
Assoc	9
Jnr	4
Life	5
Pens	6
Snr	111
<b>Total</b>	<b>135</b>

## **Locking of Gate**

The farmer has informed the Committee that on 4th July the gate was left open, and our padlock was the one not closed. The cattle had escaped and it was only lucky a more serious situation did not result. He made it very clear that any repetition, for whatever reason, would result in the immediate termination of the privilege of using the field for model aircraft flying. This obviously would be a very serious situation and one that has to be addressed. If anyone believes that this was not caused by a member of the club can they please immediately advise the Committee.



With immediate effect the Committee give notice that anyone entering or leaving the field without locking the gate behind them, and checking by a positive pull on the padlock that it is secured, will have their club membership instantly suspended by verbal notice under Rule 10 of the Constitution. The Committee will then meet to determine whether this be permanent or just for a particular period, depending on the circumstances that are presented.

In the event that a convoy is either entering or leaving, the person who unlocked the gate is responsible for ensuring that the gate is locked after the last car has passed through. Even if they have agreed that the last person will actually lock the gate, they must remain until they have seen the gate locked. This is to avoid the possibility of the last person not being able to lock the gate for any reason.

I ask that if anyone finds that this has not been done, they advise the Committee. The effect on all of us losing the field outweighs any consideration of not wishing to make a problem for another club member.

**Signed Mike Close  
President**

**On behalf of the Sydney Radio Control Society Committee  
18th July 2007**

## **The Status of Evolution of 2.4 GHz**

**By**

**Mike Close – Chairman, MAAA Technical Radio Sub Committee**

### **Introduction**

Radio sets that operate in the 2.4GHz band of frequencies are now available and several have been accepted for use by the MAAA. Inevitably this means that we will see more and more of them in use at model flying fields. There is no doubt that the spread spectrum technology in this equipment, now used for the control of model aircraft, is very exciting and it is likely that over the years it will become the norm, whether on the 2.4 GHz, 900 MHz, 5.8 GHz bands or any other band where it may be legal to operate. The safe use and operation of the technology for model aircraft is an evolving activity.

Manufacturers are justifiably proud of the products that they have invested a lot of time and money in developing, and of course each pushes the advantages of their versions in what is a very competitive market. However, they do not necessarily fully know or disclose the impact or interaction of their product on other equipments that are available, and indeed it may be a fact that no one has a total overview. One thing we do know, is that an out of control model aircraft can be very dangerous and so it is wise to be cautious while there is any doubt as to the operational safety of the various technologies.

There are some popular misconceptions about how the technology, as applied to model aircraft control, operates. One misconception is that Australian Standard for the 2.4 GHz equipment is the same standard that applies uniformly everywhere in the world. Another major misconception is to say that over two billion of these equipments can operate at the same time and there is no possibility of interference. This is different to a statement that that there is negligible possibility of another transmitter actually controlling your model.

This article will endeavour to further explain about the use of 2.4 GHz for models, but is not intended to replace the need to read the MAAA Policy, MOP 058. This covers the use of equipment in this band for the control of model aircraft. Anyone using, or thinking of using this type of equipment should carefully read and regularly check the MAAA Web page, <http://www.maaa.asn.au/mop/policy/MOP058%20-%20Policy%20%204%20GHz%20EQUIPMENT%20-%201-7-07.pdf>, for updates.

### **Technology**

At the time of writing, the MAAA has accepted three technologies, and the equipment using them, subject to some conditions which are in the MOP 058. All three systems operate in very different ways. Other manufacturers are almost certainly developing their own products. Until these products are on the market we will not know how they operate, but there is every chance that they will be using proprietary, but different, techniques. Until any new product is listed in the MAAA MOP as 'Accepted', its use is not authorised for MAAA activities. Obviously, the MAAA tries to evaluate new products as quickly as possible but often we are not provided with a sample, or much information, until the equipment is available from an Australian distributor. We then need to consider if the equipment is suitable for model aircraft use, as there are radio control implementations of 2.4 GHz technology which are not. We also need to determine how the equipment will interoperate with existing 'Accepted' equipment, and, if necessary, to enable appropriate restrictions to be applied to enable "safe" operations at our flying sites. Accepting equipment only means that the MAAA has done some evaluation and has not found any

significant problems which cannot be overcome; it does not mean that no problems will appear as more experience is gained in the actual use of that equipment.

As a result of discussions with the various manufacturers, the MAAA has technical information that is not available to the public and which has been provided on a confidential basis. Obviously it cannot be put in an article such as this. In some cases too much technical information may just confuse readers, so it has been kept to a minimum anyway. Anyone who seeks more information can always look at manufacturers' information or other sources that are in the public domain.

The acceptance of the Spektrum DSM2 system, like the other technologies whose description follows, is not limited in principle to a particular product, but rather to the acceptance of the general implementation in the manufacturer's radio products that use that system, except where the manufacturer places their own restrictions on its use. The Spektrum DSM system, which is very similar to the DSM2, differs in some technical details, and is only recommended by the manufacturer, and accepted by the MAAA, for Park Fliers. After switching on, a Spektrum system looks for two frequency channels that are not in use from within the whole of the band. When it finds two channels it starts to transmit on these frequencies. The receivers then lock onto them and the link is established. If it does not find two clear frequencies then the transmitter does not radiate and the complete receiver system is locked out and control is not possible. The system uses at least two separate receivers and antennas to provide alternate radio paths to improve the robustness of the link. Once locked on, the equipment operates on these frequencies no matter what external effects are present until it is switched off. The next time it is switched on, the equipment goes through the same process and may well select different frequencies.

The Futaba FASST system uses a totally different operating concept. It does not consider what any other equipment operating in the band is doing. This system changes frequency very rapidly and in less than a second will have operated several times on every part of the available 2.4 GHz frequency band. The receiver tracks the changes of transmitter frequency so it maintains what appears to the user as a continuous signal. It uses two antennas at the receiver and the receiver uses the better of the two signals by monitoring what is happening on both. Every FASST set operating will be hopping across the same frequencies in what is called a pseudo random basis. Of course at times it will hop onto a frequency which is being used, either by another FASST equipment or any other type of equipment. The section on interference describes the impact of this type of operation.

The Xtreme Power Systems technology, XtremeLink, is different again. In some ways it is similar to the DSM systems in that upon switching on it looks at the specific frequencies on which it operates to determine the best one available. It then transmits on this single frequency. The big difference between this and the other systems described in this article is that it monitors the performance of the radio link. This is achieved by having a combination transmitter/receiver in both the ground unit and in the airborne unit on the model. If the signal quality deteriorates to the point where the link might become marginal, for whatever reason - internal or external, the system changes to another frequency, if one is available, that will provide better communication at that point in time.

### **Interference**

Based on experience of the radio systems that we are used to, it may appear surprising that these 2.4GHz systems do operate together, as they also do with the many other users of the 2.4 GHz band including cordless phones, computer wireless local area networks and many other domestic and industrial applications. That is not to say that the usage is without limit

and the author understands that in some parts of Hong Kong and Taiwan the 2.4GHz band is totally unusable for anything, even with severe limitations, due to the large number of users attempting to communicate using it.

In technical terms, spread spectrum technology is designed to work simultaneously with other encodings and avoid direct collisions through complex algorithms that include randomization of the transmission times and encoding changes. Sorry this is bit of a mouthful but what it means is that the systems are designed so that more than one system can operate on the same frequency. Again this does not mean the numbers are limitless. As more transmitters access the same frequency, whether with the same or a different implementation, transmission collisions will occur more often and in technical terms this is seen as an increase in the noise floor. This does not mean that at some instantaneous point in time the systems will stop working. What happens is that the speed of control response will slow and this may be difficult to identify until there is an urgent control requirement. This is of course more critical to the control of a model aircraft than it is, say, for the time to download something from the internet. The impact of this collision issue on the different technologies in use is not the same and it is not possible to know whether the next brand of equipment, with a different implementation, will be better or worse.

For this reason the MAAA has placed a limit on the number of 2.4 GHz radio systems that can be used simultaneously at 10. With the currently accepted equipment, 10 is slightly conservative and is caused in particular by the impact of systems that use hopping technology. It is always possible that, when the use of this band for model aircraft has stabilised, this limit may be reviewed. This limit is one of the reasons why the MAAA requires that a frequency control system is used for this band, even though actual frequencies cannot be specified. The other reason for the MAAA, and also the AMA, (the US equivalent of the MAAA) requiring the continuing use of frequency control is that the discipline of always using a key, or equivalent, helps to avoid mistakes by individuals. It maintains the confidence that the number of keys inserted is still equal to, or greater than, the number of transmitters in use; a check that is still mandatory for control of the 36MHz and the other frequency bands that are used.

### **Legal Requirements**

In Australia it is a requirement of the Radiocommunications Act 1992 that all radiocommunications equipment, including model aircraft transmitters and receivers, operate in accordance with the relevant technical standards, and where relevant the class licences. Whilst it is true that 2.4 GHz is used in many countries, the requirements for its use are different in different countries. These standards cover not only the specific frequency band but also the power output, spurious signal levels, EMR, EMC, environmental conditions and other technical parameters which are not usually specified in model radio control datasheets, and for which it is impossible to expect the average user to determine. In many instances the Australian Standards are more onerous than those that apply in other countries. The author has been shown an individual slot car that is legal in the USA but which does not comply with the Australian EMC requirements, and in fact badly interferes with an electronic lap counting system.

The Radiocommunications Act is administered by the Federal Australian Communications and Media Authority (ACMA) and they will impose severe penalties on anyone who uses equipment that does not comply and who causes interference to other users. The Australian C-Tick compliance system requires that the responsibility for compliance of equipment that is either manufactured or sold within Australia is taken by either the manufacturer or the distributor. A C-Tick compliance mark applied to any equipment indicates that the importer or manufacturer has made a declaration of conformity that the equipment complies with the mandatory

obligations under the regulatory requirements, holding the appropriate test reports to the applicable standards. This is subject to audit by the ACMA.

Without this compliance mark the Radiocommunications Act places the legal responsibility on the user to ensure that the equipment complies with the applicable standards and holds supporting documentation. The fact that similar equipment may be sold in the Australian market with a compliance sticker does not guarantee that all equipment of that type or brand complies. As was stated earlier in this article, the 2.4 GHz specifications vary across most countries of the world and there may be internal hardware or software differences that are not indicated externally. These build standards may also change with time. The legal requirements are complex and can easily be misinterpreted. Whilst investigating this issue, the author found some apparent anomalies and these were only clarified by asking very specific questions of the ACMA. It is known that others have asked more general questions and received different responses, and these could have lead to operating illegally.

The only reliable source for an individual to obtain information on the compliance status of equipment without an Australian C-Tick compliance sticker is likely to be the original equipment manufacturer. However, what is acceptable is a matter on which the final arbiter would be a Court of Law. While the individual user must assume responsibility for documentation, model organisations, such as clubs, which have embraced the 2.4 GHz technology, should also consider their position regarding members who do not have C-Tick compliant equipment. The MAAA Insurance Policy does not have a specific exclusion clause, and so would still respond to an injured party in the event of any insurance claim that was found to involve equipment that does not comply with the Australian standards. However the insurer always has the option to institute court proceedings to recover his costs in the event that an insured party had not acted responsibly.

### **Summary**

The following is a summary of the specific requirements of MOP 058. Everyone interested in operating 2.4 GHz equipment for model aircraft control is strongly advised to refer to the actual document regularly both for more detail and to check for updates.

- Only technologies and/or equipment that have been 'Accepted' by the MAAA may be operated under MAAA Procedures.
- A keyboard system, preferably similar to the system used for the other frequency bands, shall be maintained for 2.4 GHz.
- Only 10 off 2.4 GHz radio sets are allowed to be used at any one time on the same site.
- All equipment used must comply with the requirements of the Australian Radiocommunications Act 1992, covering both Standards and Class Licence.
- Without a C-Tick compliance mark being applied to equipment, including those equipments accepted by the MAAA, the user is personally responsible for ensuring that they have the documentation to show that the specific equipment that they are operating complies with the Act, the Standards and the Class Licence.

The author acknowledges, with grateful thanks, the assistance of Bill Kent, Kevin Dodd and Ivan Chiselett in the proof reading of the manuscript.

Note - This article is copyright of the MAAA and is only to be used by State Associations and their Clubs for the information of MAAA members and is not to be published in whole or in part for any other purpose without written permission. The information contained within it is correct as far as the MAAA has been able to confirm but should not be considered to be legal advice or to be a definitive comparison between different commercial products.

**THE KEVIN GREY MEMORIAL TROPHY**

A Fun Fly Event for all Club Members, Saturday 11th August 2007

**Venue: The clubs flying field off Bandon Road, Vineyard,  
Starting at 10.00am**

The contest shall pause at a nominated time for a lunch break. There is to be no general flying during the contest.

**RULES**

**General**

1. Only one aircraft per pilot may be used for all events. In the event of damage occurring that in the opinion on the Contest Director cannot be repaired at the field, a substitute aircraft may be allowed.
2. Timing of events other than the speed ratio (and of course the spot landing) shall commence when the wheels of the aircraft first leave the ground, and finish when the aircraft stops rolling.
3. Aircraft that are capable of taking off from the ground must do so. In the event that an aircraft does not have a serviceable undercarriage, or other reasons why a takeoff cannot be undertaken safely, the Contest Director will give permission for the aircraft to be hand launched. Hand launches must be parallel to the ground, consistent with obtaining a safe launch.
4. The winner of each event will receive the number of points equal to the maximum number of total contestants, second one less, third two less etc. In the event of a contestant not competing in any event zero points will be awarded for that specific event.
5. The total points determine the overall winner.
6. A prize will be awarded to the winner of each event. The overall winner will receive the Kevin Gray Memorial Trophy.
7. Presentation of prizes and the trophy will be at the completion of the contest
8. In the event of bad weather that in the opinion of the Contest Director would make flying difficult, any incomplete events will be held at another time. Due to conditions possibly being totally different on another day, completed events points shall only stand provided that both rounds have been held for the event.
9. Two rounds for each event will be allowed. The second round will follow completion of a full first round of all five events. Best score counts.

10. In the event of an engine failure or a flight disqualification each contestant will be allowed one re-flight in each round. A re-flight may take place immediately after the Contest Director has been advised.

11. Events will be conducted in the following order:

- a) CLIMB AND GLIDE
- b) SPEED RATIO
- c) SPOT LANDING
- d) TWO MINUTE TIME FLIGHT
- e) THREE LOOPS

12. The Contest Director's decision is final in all matters associated with the Contest.

13. Specific Event Rules

### **CLIMB AND GLIDE**

Engine run will be 20 seconds from the wheels first lifting off the ground. The engine must be cut completely at the start of the glide section. The climb and glide shall be the total flight time including the engine running time.

### **SPEED RATIO**

The Contest Director shall determine the circuit direction. In the event of the wind direction or strength changing significantly during a round the Contest Director may allow additional attempts or require a complete re-run of the round. The speed ratio runs shall be made on consecutive circuits and in the same direction, with the high speed run first. Aircraft shall fly parallel to the runway and shall not substantially change direction or height between the two flags. Failure to do this will result in a flight disqualification. The engine must remain running through both runs.

### **SPOT LANDING**

The spot landing shall follow directly after the speed ratio has been completed. The intent is that the landing follows a glide approach and the engine must be cut no later than the distance from the mark to the end of the runway. The winner is the aircraft whose spinner tip, or prop shaft, is nearest to the mark after completion of the landing. There is no penalty if the aircraft does not remain on its landing gear.

### **TWO MINUTE TIME FLIGHT**

No timing devices of any kind are to be used by the pilot during the two minute fixed time flight. The winner is the nearest time to two minutes, either over or under. Timing is to be to whatever accuracy the stop watch records.

### **THREE LOOPS**

The aircraft wings have to be not more than 25 degrees from horizontal through the loop, including at the base and apex of each loop. This is more critical than total changes of heading. Failure to do three legal loops counts as a flight disqualification, however more than one attempt can be made to do a legal loop. In the event of an aircraft not landing on the runway a 10-second penalty shall be added to the total flight time.





## **2007 ASTRO HOG DAY**

Sunday 17<sup>th</sup> July 2007 turned out to be a cold and miserable morning yet despite the less than favorable conditions four die-hards turned up to take part in the 2007 SRCS Astro Hog Day. As usual Norm Bantin was there with his beautifully prepared "Babe LaLaLa", Stewart Clarke with his classic "Makin Bacon" and yours truly with my "Electric Astro Piglet". Let's not forget Mike Close who turned up to officiate.

Despite the wind and ominous rain clouds Norm was first too take to the skies with Babe and he noticed that something was not quite right, he manage to land without incident and performed an inspection. Nothing seemed amiss so in true Norm style off he went again. This is when things started to go a bit wrong, let's just say that although we have been able to prove that pigs can fly, we now know for a fact that they can't climb trees. Babe came to an untimely demise and had to be "retrieved" from a tree.

Needless to say this incident combined with the weather saw the remaining two pilots pack up. We paused for a quick photo opportunity then Mike made a presentation to all participants consisting of some 3M products (thanks Matt Holloway and 3M).

It great to see the Hog live on and despite the weather we all had a fun day and look forward to next years event.

**What is an Astro Hog?**

The *Astro Hog* was first published in the April 1958 issue of *Model Airplane News* as a construction article, designed by Fred Dunn Jr. Within a year it swept 1st, 2nd and 3rd places at the Nationals, Multi Class (Pattern or Aerobatics, now) and became one of the most influential 4 channel designs of its time. It was soon kitted by *Berkeley Models* and hundreds of versions were built, including an *Astro Bipe*, *Mini Hog* and other variants. *Berkeley* went out of business in the 1960's but the plans were still available and the *Hog* lived on. In the 1990's *SIG* began kit production of the original design, with provisions for "Trike" landing gear as well as the original 2-wheel gear.

The SRCS annual Astro Hog Day is a great event and given the easy flying nature of the Hog it would be a great way to get involved in organised club events. You can still pick a Sig Astro Hog kit or why not consider building one from scratch. Many club members have plans that they may be able to lend you, ask around next time you are at the field.



Stephen Liseo

