



Annual General Meeting

**To be held at the field on
Saturday 19/8/06 at 11.00am
Sausage Sizzle provided
BYO drinks**

Agenda:

- **Apologies**
- **Previous Minutes**
- **Matters arising**
- **Presidents Report**
- **Treasures Report**
- **Secretaries Report**
- **Election of the Committee**
- **Other Business**

<u>Page No</u>	<u>Inside this issue</u>
1	Content
2	Committee, SRCS Calendar
3	Presidents Letter
4,5,6	QGM Minutes June06
7	Election of Committee
8	Nomination for Committee Form
9,10	Hog Day Report
11-17	Radio Installation for large models
18	Proxy Voting Form

To all members,

Why not volunteer to be on the committee this year and give the current guys a bit of a break. See page pages 7 and 8 for details of how to apply.

Please note that any article, technical or historical fact or fiction other than the published minutes of general meetings of the club, express the opinions of the writer of such articles and do not necessarily become fact. The club accepts no responsibility for any outcome of any incident that may or may not be attributed to any matter printed in the club newsletters.

SYDNEY RADIO CONTROL SOCIETY – inc. CLUB NEWSLETTER

THE 2005– 2006 COMMITTEE - WEB PAGE WWW.SRCSCLUB.COM

<u>NAME</u>	<u>POSITION</u>	<u>PHONE</u>	<u>E-MAIL ADDRESS</u>
Mike Close	President	(02) 9872 6469	Mikeclose@cherry.com.au
Matt Holloway	Vice President	(02) 9670 1164 0412 522 050	mholloway@mmm.com
Paul Toyne	Secretary & Safety Officer	(02) 9642 7059 0419 525 664	papaloma@bigpond.net.au
Ewald Klinkenberg	Treasurer & Registrar	(02) 98312817	Klink@idx.com.au
Norman Bantin	Newsletter Editor	(02) 9624 8117 0403 337 829	nbantin@bigpond.net.au
Baldo Polizzi	Ordinary Member	(02) 9630 4019 0418479971	balmap5@bigpond.com
Rex Broadbent	Ordinary Member	9686 3114 0417 471 361	rexp@optusnet.com.au

<u>CLUB EVENTS</u>	<u>Date</u>	<u>Alternate Date</u>
Kevin Gray Fun Fly	Saturday 12 th August	Saturday 26 th August
SRCS Scale Rally	Sunday 15 th October	
Instruction Day	Saturday 22 nd July	

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 any invest in a new Club Shirt and cap. Don't forget that the Club Badges issued to this years to 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 Klinkenburg** at the field.

PRESIDENT'S LETTER

The last Quarterly General Meeting was again well attended, even though we were a bit worried by the weather forecast a few days before it. As a result of the success of holding them at the field, the Committee decided to hold the AGM there as well. This is a first, and hopefully many of you who do not normally come on a Saturday will also be able to attend. The AGM is important because as well as electing the Committee it also endorses actions for the next year.

The QGM agreed to hold a general club day later in the year but the Committee has not finalised details for that yet. However we have decided that we will hold an Instruction Day on 22nd July. Normal flying will not be affected and it will be an opportunity, and give an incentive, for anyone who wants to upgrade their wings status to get assistance from the other club members and the instructors who will be there. It will also be an opportunity for us all to remind each other about how we are supposed to fly. For example how many of us really do the pre-flight check properly? It is one of the weakest areas when I take people through both Bronze and Gold Wings, yet experience shows that done properly it will stop many of the crashes that are not caused by dumb thumbs. We can organise other talks on the day if there is a demand.

In the March Newsletter I said that we had to be responsible users of the land and report any problems that we see to either Roadmaster or the farmer. This earns us brownie points in the event of any problems that we might cause unintentionally. I was very pleased to hear that we had told the farmer that one of his calves had died. When he came down to move it, I had a talk to him and he said how bad things are at the moment with the lack of rain. This reminded me of a previous conversation where he said that he knew we were there when he signed his lease but if we cut any more grass, every blade was one less for his cattle to eat. Whilst the grass is very low at the moment we still have to be careful not to inadvertently let our usage creep out beyond the current mown areas. If we do we might find we have a problem when the grass grows back. Several clubs in Sydney have serious problem with their flying sites and have either lost them or been suspended for a period of time because of their own actions. We have to make sure that we minimise the likelihood of having similar issues ourselves. The more other clubs that have to look for alternate fields, for whatever reason, the less suitable sites there are going to be within the reducing open areas of the Sydney basin.

The old Visitors Book has fallen to bits and has been replaced by a loose leaf version. It continues to be imperative that we sign in anyone who is not a club member before they fly. I won't repeat the requirements for being able to sign someone in here as they are both in the book and on the notice board. However it is important to remember that the person signing them in is responsible for ensuring that the visitor follows the club rules and that the allowed flying areas, club protocols, transmitter pound usage and our mobile phone policy are specifically explained. We cannot assume that all clubs operate as carefully as we do and therefore even experienced visitors may not automatically follow our procedures without guidance. Don't forget if there is a problem it could affect the whole club not just the visitor and whoever signed them in

I hope to see you all at the AGM, when once again Norm will be organising a Bar B Q. Keep enjoying our facilities and each others company. Happy and safe flying.

Happy and safe flying Mike Close President

JUNE 2006 QUARTERLY GENERAL MEETING

MINUTES

The Quarterly General meeting was held at the SRCS Field on Saturday 10th June 2006.

Mike Close opened the meeting at 11.05 a.m. Minutes were recorded by Paul Toyne

PRESENT

M. Close	R. Zyp	B. Polizzi
N. Bantin	P. Toyne	C. Pellatt
E. Klinkenberg	R. Vella	C. Bacon
G. Meek	P. Norris	R. Wright
J. Howard	L. James	M. Garside

APOLOGIES

M. Holloway	C. Bruce	P. Chapman
R. Broadbent	J. Cahill	

MINUTES OF THE PREVIOUS QUARTERLY GENERAL MEETING 01-04-06

The minutes of the previous QGM held at the SRCS Field on Saturday 1st April 2006 were accepted as a true and accurate record with no changes. ***Motion proposed by N. Bantin and seconded by E. Klinkenberg***

MATTERS ARISING

- Mike Close to trim the existing spare frequency board for the 2.4 GHz frequencies.
- Committee decided it would be a good idea to have a Clubman Of The Year trophy purchased with funds from a donation from the Hibble family. This was discussed at the QGM with positive feedback. To be followed up by Committee

SECRETARIES REPORT

Incoming:

Nothing to report

Outgoing:

Email to MASNSW with advert for Hog Day

TREASURERS / REGISTRARS REPORT

- See separate report

2006/07 FEES

- Fees were discussed as per Treasurers recommendation and a motion proposed to hold the SRCS Fees at the 2005 / 2006 level except for a small rounding factor. ***Motion proposed by Ewald Klinkenberg and seconded by Norm Bantin. Carried unanimously***

SYDNEY RADIO CONTROL SOCIETY – inc. CLUB NEWSLETTER

OTHER BUSINESS

- ❑ Various ideas were discussed for club events including Bronze / Gold Wings Instruction Day and a Club / Social Day. All thought these were good ideas. Phil Norris suggested a streamer event perhaps. To be followed up by Committee.
- ❑ Price to be offered by Col Bacon for the supply of a worktop for the Phil Hibble Shelter. This will be a laminate top so it can be wiped down.
- ❑ Suggestion from Norm Bantin that a deck of some sort be installed in the Phil Hibble Shelter. General feeling was that this was not necessary at this stage.

Meeting Closed at 11.35am

Profit and Loss Statement July 2005 to May 2006

	This Year	Last Year	
Income			
Club Badges	\$9.00	\$0.00	ASSOCIATES 7
Club Clothing	\$36.00	\$253.50	
Donations	\$5.00	\$0.00	JUNIORS 1
Gate Keys	\$285.00	\$860.00	
Interest	\$1,773.87	\$357.74	LIFE 4
Joining Fees	\$615.00	\$1,345.00	
Member Fees	\$18,352.00	\$20,372.25	PENSIONERS 8
Scale Day	\$780.90	\$10.90	
Total Income	\$21,856.77	\$23,199.39	SENIORS 95
Expenses			SPOUSE 1
Badges	\$0.00	\$114.10	
Bank Charges	\$64.10	\$38.35	TOTAL 116
Competition Prizes	\$67.50	\$212.86	
Consumer Affairs	\$78.00	\$89.00	
Equipment Hire	\$110.00	\$0.00	
Equipment	\$0.00	\$129.86	
Field Maintenance	\$891.13	\$373.22	
Food & drink	\$38.06	\$0.00	
Gifts	\$37.99	\$0.00	
Hall hire	\$55.00	\$315.00	
Key refund	\$30.00	\$10.00	
Locksmith	\$1,547.43	\$1,371.70	
Website	\$742.50	\$478.50	
MAS fees	\$13,586.75	\$15,344.75	
Postage & shipping	\$174.00	\$100.58	
Scale Rally	\$429.73	\$0.00	
News letter	\$639.07	\$814.57	
Stationary	\$32.65	\$0.00	
Toilet Services	\$187.00	\$88.00	
Refund of membership	\$881.00	\$0.00	
Total Expenses	\$19,591.91	\$19,480.49	
Net Surplus / (Deficit)	\$2,264.86	\$3,718.90	

Election of The Committee

As per the rules of Sydney Radio Control Society Incorporated, the Committee is re-elected at the Annual General Meeting held every year. The Committee consists of the office bearers and two ordinary members. The office bearers are the of The President, Vice President, Secretary, Treasurer, News Letter Editor.

The president presides over and chairs all meetings of the association and is assisted by the vice president

The secretary is responsible to keep minutes of all appointments of office bearers and members of the committee, the names of members present at a committee meeting or a general meeting and all proceedings at committee meetings and general meetings.

The treasurer is responsible to ensure that all monies due to the association are collected and received, all payments authorized by the association are made and correct books and accounts are kept showing the financial affairs of the association. This includes full details of all receipts and expenditures connected with activities of the association. The Treasurer is also the public officer and registrar and ensures that all requirements of The Department of Fair Trading are complied with, and all information and affiliation fees required by MARS NSW and MAAA are forwarded as required. The Treasurer also keeps a membership register.

The newsletter editor ensures that the information determined by the committee is included in the associations Newsletter, is collated and published to the timescales required and advises dates for General Meetings.

Nominations for candidates for election to the committee must be made in writing, signed by two members of the association and accompanied by the written consent of the candidate. The nominations must be delivered to the secretary of the association not less than 28 days before the date fixed for the annual general meeting at which the election is to take place. If no nominations are received then nominations are called from the floor.

The ordinary members assist in the general running of the club

STORMIN NORMIN

SYDNEY RADIO CONTROL SOCIETY – inc. CLUB NEWSLETTER

NOMINATION FORM for Candidate wishing to stand for election to the COMMITTEE of the SYDNEY RADIO CONTROL SOCIETY Inc.

I,(Full name in block letters, please.)

being a financial member of the Sydney Radio Control Society Inc., for the 2006/2007 year wishes to nominate for the following position/s on the committee of the Society.
(Please tick box.)

- | | |
|--|--|
| <input type="checkbox"/> PRESIDENT | <input type="checkbox"/> VICE -PRESIDENT |
| <input type="checkbox"/> SECRETARY | <input type="checkbox"/> TREASURER |
| <input type="checkbox"/> ORDINARY MEMBER (2) | <input type="checkbox"/> NEWSLETTER EDITOR |

.....
Signature

Nominated by:being a financial member of the Sydney Radio Control Society Inc., for the 2006/2007 year

Seconded by:being a financial member of the Sydney Radio Control Society Inc., for the 2006/2007 year

N.B. Under the amended Rules of the Society members may nominate for more than one position if they wish.

This nomination should be returned to the secretary SRCS 28 days before the AGM, addressed to:-

**PAUL TOYNE
SRCS Secretary
PO Box 201
Belfield NSW 2191**

HOG DAY REPORT 2006

The 11th Annual Hog Day was run on Sunday 18th June with many entrants enjoying this unique day in the SRCS calendar.

A slight breeze after a chilly morning ensured that numbers were consistent this year with the flying conditions best described as perfect. There was only one fatality thanks to Col Bruce's stunning wing over wing cartwheel along the strip (with only minor damage resulting) and all other Hogs went home with their hocks in the correct place. Mike Close added some twists to existing competition rules for the day including 3 minute 8 second flight and most accurate landing. This created some variety and great fun on the day.

Although the conditions were good, the event was enhanced by a great sausage sizzle ably manned by Norm, Matt and Paul. Thanks guys.

Norm Bantin was rewarded for the great job performed on his "BANTINS BACON" Hog. He won his category and the Perpetual Trophy, which was reluctantly handed over by Paul Toyne, the 2004 & 2005 winner. Don't grow too attached to it Mr Bantin.....

The winners were as follows:

- Norm Bantin won the best Standard Hog & Concours D'elegance
- Col Bruce won the best Non Standard Hog
- Larry James won the 3 min 8 second Flight
- Gavin Bland (Springwood Nepean Club) won the Spot Landing

I know it seems like a long way away however let's get building those Hogs from kits and plans that are hidden away under the bed or in the garage and try to make next years event the biggest ever. If anyone wants a Hog plan please let me know and I will organise it for you.

Paul Toyne
SRCS Secretary



Forget about the Guts check the smile



Paul Toyne's Bipe – it actually flew this year

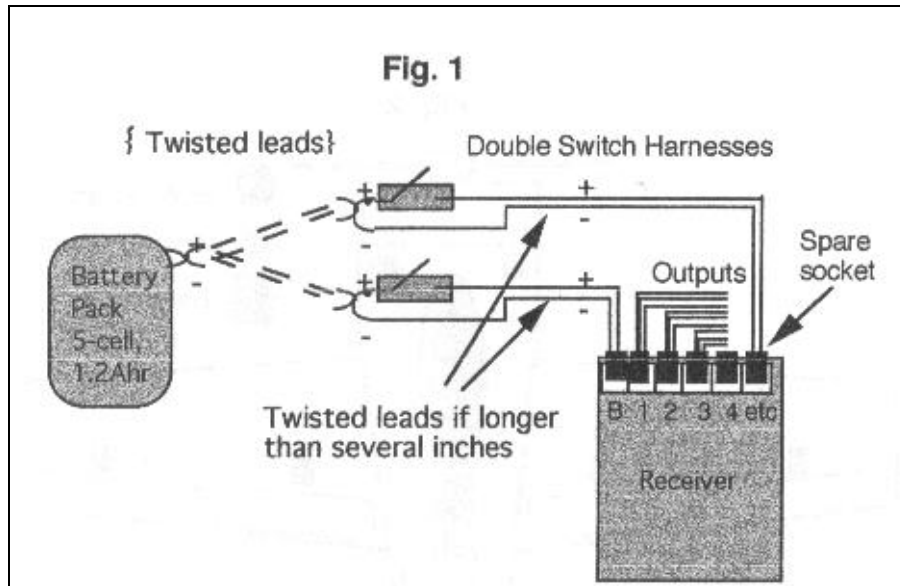
Radio Installation for Large Models Keith Mitchell

When we purchase a set of radio gear we don't have to be Marconi to work out that it isn't really designed for anything else but small models. In Part 1 we looked at how to make some basic mod's such as lengthening servo' connections and making up a battery pack. There are others, too, one of which is what voltage should we use to drive our flight system, 4.8V or 6V? The convention, of course, is the former but the case for the latter is overwhelming. However before we address the pro's and con's let me reassure you that you can't damage your radio gear by making the transition to a 6V flightpack and certainly the following are designed to operate from the higher voltage: Futaba, Sanwa, Mutliplex, Hitec and Becker. Fleet Systems are not and JR I'm unsure about as they adopt a different output pulse convention from the rest. Also note that all servo's and receivers in the above list of manufacturers are electronically compatible with each other apart from their connector and wiring conventions so take care to allow for this. As an example of 'mix and match' my Becker Rx's on the Beau' drive a variety of Multiplex. Futaba and Sanwa servo's. So what are the advantages of 6V operation:

- *Increased servo torque of 20-30%*
- *Increased servo speed of 20 – 30%*
- *Improved receiver performance*
- *Improved noise immunity of receiver/servo CMOS circuitry*
- *Reduced effects of voltage drops across long servo extension leads*
- *Implementation of simple Main/Backup battery switching systems*

There are two small disadvantages, one obvious –a more expensive 5-cell pack will have to be bought (or made-up) - and one not so obvious - we don't get 'owt for nowt', higher power means more current drain from the pack, Thus we have to increase the capacity of our flightpack from the standard 500mAh supplied as this is not really adequate for models of greater than 5-6kg. I would suggest the following as guidelines: for models weighing 6-12kg use 1.2Ahr ('sub- C' cells); 12-25kg use 2.2Ahr ('C' cells); in excess of 25kg use at least 4Ahr ('D' Cells). When it comes to the 'Mega-Models' of 50kg and more we have to be thinking of 10Ahr and above as other significant factors begin to enter the equation. Such a model with perhaps 15 or 20 servo's on board will be taking 3 to 4 amps quiescent i.e. when the model's standing on the ground doing nothing - this could easily be doubled in flight.

Now let's look at wiring-up a basic airborne system for a model in the 6-10kg range. Purchase, or fabricate, a 5-cell, 1.2Ahr pack as described previously and hardwire your switch and supply harness to it. If you want to insert a little more reliability, and you have an unused receiver output socket, purchase an additional switch/supply harness and wire this in parallel with the existing one, see Fig. 1. When you finally connect-up, insert the original harness plug into it's usual battery socket on the Rx and the additional one into the spare socket. This builds-in extra redundancy if one of the switch harnesses fails but also has the nice electronic benefit of distributing the higher than normal servo' currents between the two plugs on the receiver. Every electronic engineer will tell you this is desirable and in the event of any fault on a complex electronic system, the first place he goes to are the connectors - *the scourge of uninhibited electron flow!*



I would also encourage you to fit some form of battery voltage monitoring device. These are available in 4.8 and 6V forms and there are several manufacturers advertising them in the Mag's for 10-15 quid. They are worth every penny and will give you extra confidence on the state of your batteries. Remember, though to check voltages *following* a flight as well as before, as this will give a better indication of the true state of the pack after prolonged load. Leave any battery 'off' for a while and it will recover some voltage - but not charge. I also always check with a load applied and this you can do quite easily by 'stirring' both sticks so that all the surfaces are being made to move - this, will give you a far better impression of what's likely to happen in flight. Any doubts about voltage levels then don't fly as you can be assured that things will most certainly deteriorate during the flight.

As to servo' installation, the first thing I would suggest is that you drive each surface with a local, direct-coupled servo' (details on how to do this are in my column RCM&E Feb. '99 (Vol. 42, Issue 2). This means you will have to produce two 'Y' leads, one for the ailerons and one for the elevators. Remember to twist the leads as described in Part 1. If there are flaps, you'll probably have to do another for those, too. Standard torque servo's (3-4 kg.cm) will do for ailerons, elevators and flaps on a model of this weight. Drive the rudder with a dosed-loop system if at all possible and use a higher-power servo' (5kg.cm). This is because you will probably need the biggest arm - or disc - in the servo' kit to get adequate rudder movement and the trade-off with such large leverages is that torque - as applied to the surface - is reducing as servo' arm length increases.

When you've wired-up your system double check before switching-on. If you have any doubts about what you've done get somebody experienced in electronics or the installation of radio equipment in models to check it out for you. The overall layout should be similar to that in Fig. 2. As to layout of the servo' leads, lie them along the bottom of the fuz' and hold them in position with masking tape. Keep runs neat and tidy. Position the receiver at the back of the cockpit, or just behind it in the top of the fuz' so it is well away from servo' and supply-lead runs. Also make sure it's well away from any ignition circuitry which should be kept in the front of the fuz' or some clean, cool location in the back of the engine cowling. Run the Rx aerial along the top of the fuz'

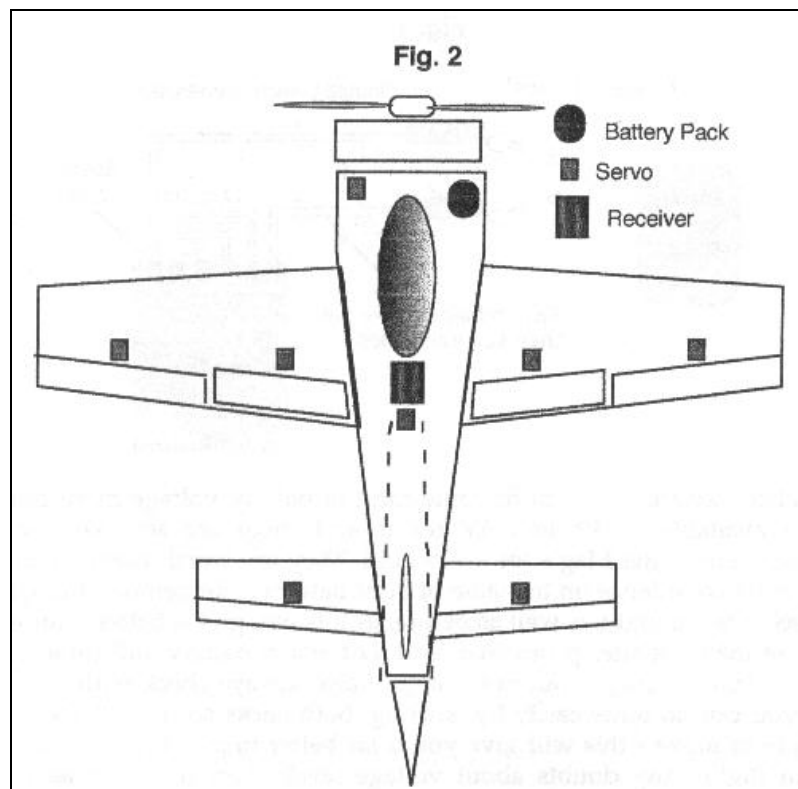
or better take it out just behind the cockpit to the traditional point on the top of the fin. This is to maximize ground range. Remember that with a large model it is very easy, particularly on a large strip or airfield site to end up with the model a long way from the transmitter in the outfield and the higher the aerial is the better will be the ground range.

Now out on the field when doing your ground range checks, petrol engines will require a little additional care to glow engines as one needs to establish that ignition noise is not compromising range. Go through the usual checks engine-off and when satisfied start the engine up and with your helper restraining the model check range at idle, mid-range and full rpm. Do this, firstly with the model side-on to the position of the transmitter and then do it nose-on to the model. This is the worst-case condition as the engine's ignition circuitry is interposed between transmitter and receiver. No compromise of engine-off range should be noted under any condition. If there is, the following is a list of common causes which should be checked:

- Spark-plug lead properly screened
- Spark-plug undamaged and cap secure
- no 'metal to metal' contact anywhere on the model (linkages, rigging-wires, turnbuckles, loose 'quicklinks' - check the lot!

Failsafes

Of course in all large models over 7kg it is mandatory to have a failsafe. Most modern PCM sets have these incorporated, but on PPM units a module will have to be purchased to interpose in the throttle channel between Rx and servo. As to the setting of it — and after some considerable debate in the LMA to the pro's and con's of such — the LMA Handbook recommends that it be set the throttle to idle or cut-off. In PCM sets where failsafe settings are applied to all principal settings, the throttle would be as above and the flying controls to neutral.



Moving-on from the basic large model system to that required for the heavier, more complex prototype, we have to think about airborne systems which have redundancy built-in. This principle is adopted in the primary flight control systems of full-size aircraft and in the dual braking systems of many up-market cars these days.

For those new to this branch of the hobby the arguments for applying it in your large model go something like this: if the chance of a component failing - be it switch, battery, wiring harness, servo' or receiver - is 1 in 1000, then doubling-up on all these elements i.e. a fully backed-up system, reduces the probability of them both failing *simultaneously* by the product of the individual probabilities i.e. 1 in 1000 multiplied by 1 in 1000 i.e. **1 in a million**. Thus the chance of **total** failure becomes minuscule. Of course we would not weight all the various elements equally as we know from experience that the most likely elements to fail are the battery, then in all probability, individual servo's or the switch/wiring harness and finally the receiver which, in general, probably exhibits the highest reliability of the lot. But not infallibly so. Crystals can be damaged, they can age, aerials can be dislodged from the circuit board - a particularly nasty fault - as ostensibly everything works till just out of range after take-off - and you know the rest! So as a general rule it is advisable to double-up as much of the onboard system as weight and space allow.

Basic Back-up System -- Single Rx

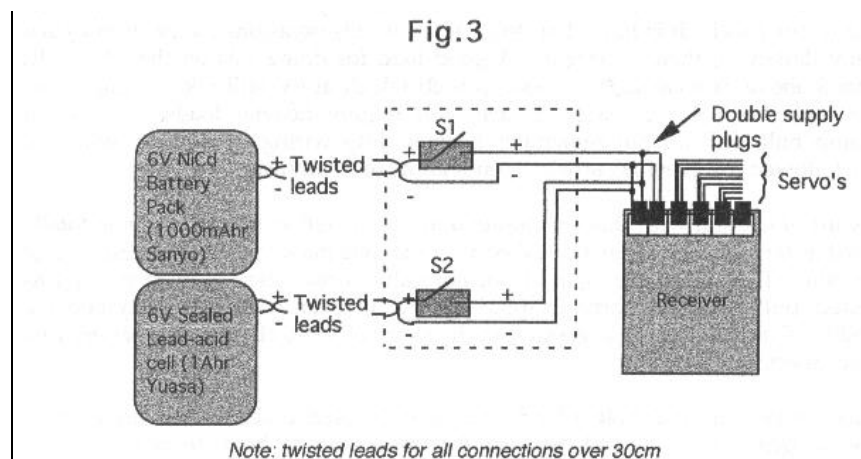
Ask with all things in life there are several ways of skinning a cat and I will highlight different methods of incorporating this function. They all have particular advantages and disadvantages but what I can say is that they all work and have done so reliably in several large models. Once again, for those who don't want to construct their own, commercial off-the-shelf units are available from companies such as SM Services.

As referred to earlier, the most common source of on- board system failure is in the battery pack/on-off switch/wiring harness. To improve reliability, we introduce a separate supply system, the so-called back-up. To do this it is possible to make a simple system by purchasing an additional battery pack/switch and harness. We also need to procure a suitable battery to connect to this harness to serve as back-up, see Fig 3. I say 'suitable' because what we must not do under any circumstances is to connect two Ni-Cd packs in parallel as this will result in both packs being shorted together (*NB I gather from one or two LMA members that a recent article in an American A/lag, has suggested that this is OK but it most certainly is not*).

The reason why we can't do this is because of the low internal resistance of the NiCd battery and the slightly dissimilar voltages - and capacities - of different packs even though they may have the same nominal value e.g. 4.8V, 500mAh. Mass production variations mean they cannot be made identical. The result is that large currents can pass from the higher voltage pack to the smaller voltage one - even a difference of 0.1 volts (100mV) in cells with an internal resistance of 0.01 Ohm (10 mOhm) could result in 10A passing between cells which will result in undue, and possibly damaging, overheating.

Now it is possible to connect batteries together to perform the back-up function, but only if they are of differing technology e.g. Ni-Cd and Sealed Lead- Acid (sometimes referred to as 'gel-cells'; modelers will be familiar with these as we use the 12V versions in flight-boxes). They are available at 6V and are ideal for our purposes as they have slightly higher internal resistance. This means that if we connect one in parallel with a Ni-Cd of the same nominal voltage i.e. 6V (5-cells), overheating and potential damage do not occur. It is a method I have used for several years on large models, including both the Lancaster and Beaufighter, and works very well. Functionally, of course, the term 'back-up' for this battery is a misnomer, as you will appreciate that being connected in parallel with the 'main' Ni-Cd means that it is being discharged at the same time.

On the smaller, large model a 6V, 500mAh pack (or 1000mAh seem to occupy the same volume these days) can be connected through separate switches/wiring harnesses as in Fig. 3.

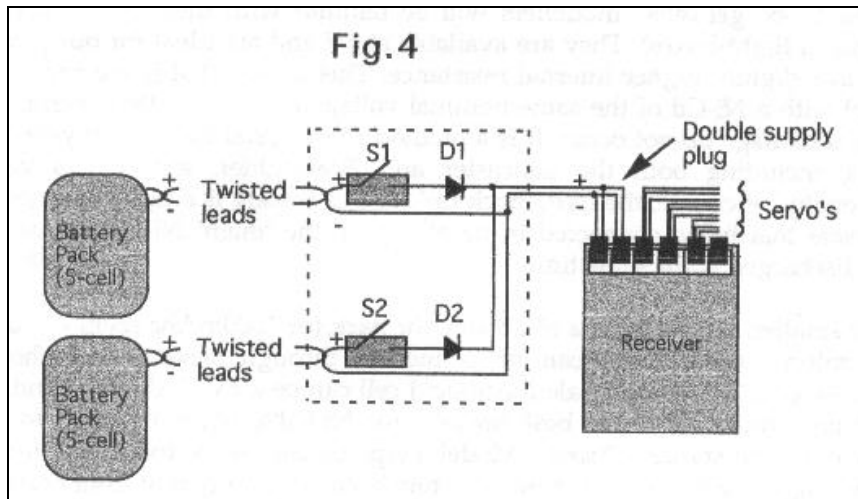


The sealed lead-acid cell can be a 6V, 1Ah type and, just as I would only recommend the best Sanyo's for Ni-Cd's, when it comes to gel-cells, there's only one starter - Yuasa (Model shops usually stock them; Maplins supply the full range at good prices). Nowt can touch 'em - but only buy from brand new as the 'ex-serv.' types seen at the shows are usually knackered! Again, as I said previously, include a commercial LED voltage monitoring module in the set-up to monitor pack voltages.

Charging requirements of gel-cells are different to NiCd's, but are not a problem. Fancy voltage chargers are made, but I just use a fairly basic car battery charger (Sparkrite BC4 - around £20 from Argos) which has a 6V output in addition to 12V and two rates of charge 'fast' and 'trickle'. One must be careful on the 'fast' rate not to overcharge and once the LED's indicate full it is important to terminate charging or reduce to 'trickle'. It's helpful to have a voltmeter - I love those Magregor tacho's with the volts range - very useful. Gel-cells can take up to 7.5V on fast charge, but 6.9V max. for trickle. It is important to give these cells occasional, very deep cycles, virtually flattening, then recharging. A good load for doing this on the 1Ah cells described above, is a car 21W stop-lamp bulb which at 6V will take 1 Amp or so. Bigger capacities for very large models will require heavier loads. A 50W car headlamp bulb will do but remember heavier duty wiring is required which, if you've followed my previous articles, you'll know to fit anyway.

One word of caution with this technique; don't allow either pack to become totally flattened as large cross-currents could occur when one pack tries to replenish charge in the other. This, of course, should not normally occur when used in parallel as suggested, but should be borne in mind if they 've been used separately and the possibility of total flattening is greater. In the event of such, charge each battery first then reconnect.

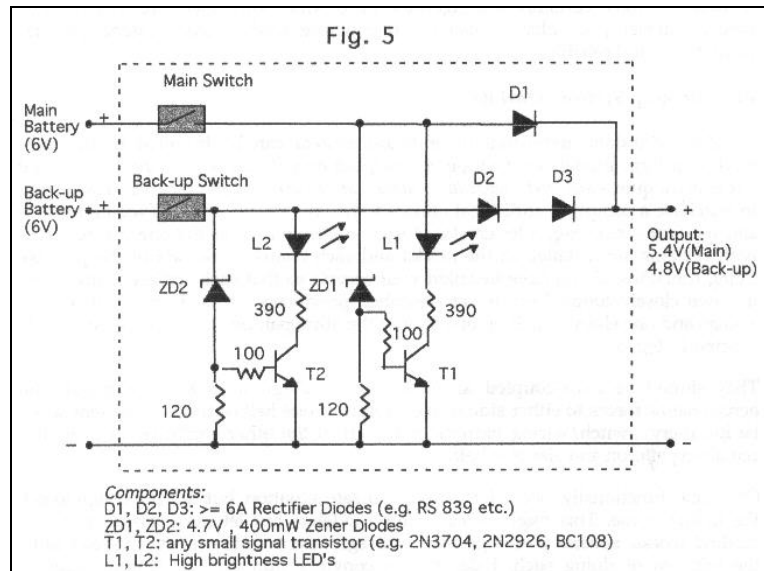
For those who want to dabble a bit further into the electronics we can use another method to provide 'main' and 'backup' functions and, to boot, from two Ni-Cd packs. To preclude the problems discussed above, however, we must introduce diodes to the circuit. For those with a rudimentary knowledge of electronics the diode is an electronic 'valve' which allows current to pass in one direction only, see Fig. 4 (denoted by the circuit symbols DI & D2; the current passes in the direction of the arrow).



Each of the battery packs- note that they have to be 6V, 5-cell packs - can thus supply current to the receiver circuitry through these diodes. If one of the supply systems suffers a failure, be it pack, wiring or switch (S1 or S2), the other continues to supply current through its respective diode. Also, on the rare occasion that a cell in a pack goes short circuit, its diode prevents the good pack from discharging back into it. As to construction, we can house the switches and diodes in a small plastic box for a neat installation in the model (again, *Maplin* have an excellent selection).

One disadvantage of using diodes, of course, is that they require 0.6V across them to conduct so the supply voltage to the receiver is $6.0 - 0.6 = 5.4V$ which means we lose some of the advantage of 6V operation. Nonetheless, it is still 0.6V higher than the standard 4-cell pack and gives a useful improvement in system performance. The circuit will also discharge both battery packs more or less equally so that packs of similar capacity are required.

In Fig. 5, a further refinement of the method is shown whereby three diodes are used enabling a larger capacity 'main' battery (1200mAh - 4.0Ah depending on size of model) to be used in conjunction with a lower capacity 'back-up' battery (500mAh).



The diodes are connected so that during normal operation the 'main' pack supplies current through diode D1 at 5.4V but if this falls to 4.8V or below, the 'back-up' pack kicks in and supplies current through the other two diodes D2 & D3 but at the reduced voltage of 4.8V. In addition, the system also incorporates battery voltage indicators (Zener diode ZD1, transistor T1 and LED L1 for the 'main' pack and ZD2, T2 & U for the 'back-up' pack) the LED's being illuminated as long as the battery voltage on either pack is above 5.3V; a fall below this and the LED is extinguished. You therefore have a simple form of voltage monitoring which will alert you to problems on either pack.

For those who want to construct these units, components can be obtained through *RS* or *Maplin*.. Although I personally cannot supply circuit boards or components for this project an enterprising LMA member, Alan Service, is producing circuit boards, components and fully built-up units of this design. They are excellent quality and available at very reasonable prices, post free. The board is £5, board plus components £9 and the built module £12. Contact him on 01406 380364 or write AW & S Service, Elderberry Lodge, Broad Gate, Weston Hills, Spalding, Lincs PE12 6D.



POWER AIRCRAFT

ANDREW WOLSKI ACHIEVEMENT AWARDS
Flying Proficiency Examination for MAAA Gold Wings

PLEASE NOTE: The following Flying Proficiency Examination must be completed under the supervision of an approved MAAA R/C Pilot Instructor and is subject to the General Notes set out below.

INSTRUCTIONS: Each numbered item below is to be demonstrated to an approved MAAA R/C Pilot Instructor who, upon completion of demonstration, will complete the certificate section.

1. Pre-Flight Training, as follows:	10. Immelman turn, left to right.
a. Dexterity of Pilot with his equipment	11. Immelman turn, right to left.
b. Theoretical knowledge.	12. Three inside loops, left to right.
c. Pre-flight checks.	13. Three inside loops, right to left.
(NOTE) This item must be completed before flying.	14. Cuban eight, left to right.
2. Start-up, taxi and take-off positioning.	15. Cuban eight, right to left.
3. Take-off.	16. Spin, three turns.
4. Outward figure of eight, left to right.	17. Inverted flight, 5 seconds, left to right.
5. Outward figure of eight, right to left.	18. Inverted flight, 5 seconds, right to left.
6. Inward figure of eight, left to right.	19. Three horizontal rolls, left to right.
7. Inward figure of eight, right to left.	20. Three horizontal rolls, right to left.
8. Procedure turn, 90° to 270° left to right	21. Landing circuit, left to right.
9. Procedure turn, 90° to 270° right to left.	22. Landing circuit, right to left.
	23. Landing, roll-out and stop

- GENERAL NOTES:**
1. The flying proficiency examination must be completed in not more than four flights.
 2. The flights may be undertaken over a period of two individual days. (eg., two Sundays within a period of three weeks.
 3. Weather conditions, ie wind direction etc., must be allowed for.
 4. The flying proficiency examination must be completed under the supervision of an Approved MAAA R/C Pilot Instructor.
 5. It should be noted that the emphasis in the flying proficiency examination is laid upon pilot proficiency and achievement, rather than manoeuvre excellence. ie., a well recovered mistake may demonstrate proficiency as well as, or better than, a perfect manoeuvre
 6. The type of aircraft, ie., aerobatic model, sports model, trainer etc., is to be considered when judging manoeuvre excellence
 7. Return award claim, together with the award fee of \$5.00, to the Secretary of the appropriate State Association.

CERTIFICATION OF PILOT FOR THE AWARD OF MAAA GOLD FLYING WINGS

This is to Certify that (Name) FAI No.: AUS:
(First Name then Surname - PLEASE PRINT)

of (Address)

Club:
(Full Club Name)

Has demonstrated a degree of proficiency in Radio Controlled Flying of Model Aircraft to Qualify for the Award of



In accordance with the Andrew Wolski Achievement Awards



Instructor's Name Signed:

FAI No.: AUS (MAAA Approved Flying Instructor)

Address: Date:

SYDNEY RADIO CONTROL SOCIETY – inc. CLUB NEWSLETTER

SYDNEY RADIO CONTROL SOCIETY

INCORPORATED

FORM OF APPOINTMENT OF PROXY

I,.....
(Full name)

of,.....
(Address)

Being a member of Sydney Radio Control Society Inc.

Hereby appoint.....
(Full name of proxy)

of.....
(Address)

Being a member of that incorporated Society, as my proxy to vote for me on behalf at the General Meeting of the Society (Annual General Meeting or Special General Meeting, as the case may be) to be

held on theday of 20 and at any adjournment of that meeting.

* My proxy is authorized to vote in favour of/against (delete as appropriate) the resolution (insert details).

**To be inserted if desired.*

Signature of member appointing proxy.....

Date.....

NOTE: A proxy vote may not be given to a person who is not a member of the Society.