Sydney Radio Control Society
Newsletter NOVEMBER, 2002

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SRCS COMMITTEE 2002–2003

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Quarterly General Meeting
Castle Hill RSL
Gallery Room

Friday 28 March, 2003
2000 Hours (8PM)
All Members Welcome

Please note: venue is inside
the RSL Club Dress Rules Apply

Presidents Letter

MINUTES OF THE NOVEMBER QUARTERLY GENERAL MEETING

The meeting was held at the Castle Hill RSL Club on Friday 22 November 2002. Mike Close opened the meeting at 8.05 p.m.

PRESENT	Mike Close	Col Bruce	Paul Toyne
	Bill Bollard	John Howard	Derek Slevin
	Norm Bantin	Bill Barrett	Rex Broadbent
	Bob Evans		
APOLOGIES	Phil Norris	Ron Irvine	Phil Chapman

MINUTES OF THE PREVIOUS QUARTERLY GENERAL MEETING 23-08-02

The minutes of the previous QGM held at Castle Hill RSL held on 23-08-02 were accepted as a true and accurate record with no changes.

MATTERS ARISING

- **The Committee wishes to thank Matt Holloway for the supply of 6 portable signs for use at our various Club events. The signs will come to good use.**

TREASURER'S REPORT

NO TREASURERS OR SECRETARIES REPORT SUBMITTED

ASSETS

Cash and Bank Accounts	**Balance**
ANZ IBD	
WBC IBD	
WESTPAC	
Total Cash and Bank Accounts	
Total Assets	
Liabilities	0.0
Overall Total	

REGISTRAR'S REPORT

Membership now totals ? consisting of ? seniors,
? pensioners, ? juniors, ? associates, ? social, ? spouse flying and ? life members.

SECRETARIES REPORT

CORRESPONDENCE OUT

Ref No **Summary**

CORRESPONDENCE IN

Ref No **Summary**

OTHER BUSINESS

- Shade area seen as a positive development however it was decided that a fence and gate be erected around this area to prevent cattle ingress.
- Suggested also that this area be paved. Suggestions ranged from precast concrete to roadbase to Astro-turf. Finally decided that Committee should discuss further.
- Norm Bantin suggested that the Club purchase a ride on mower for maintenance of the strip. Norm presented figures that suggested that the mower would pay for itself in 2 – 3 years and provided we could secure it in the container would be a positive step forward as many members would offer to mow if the mower was already there. A motion was moved that $4,500 be set aside for the purchase of a mower at the Committees discretion. Motion moved by Bill Bollard and seconded by Col Bruce. Motion carried.
- Norm Bantin suggested that a working bee be set up in the next few weeks to clean out the container to make room for the mower. Norm to arrange.
- Norm also suggested that at least two new picnic tables be purchased for the shade area. Norm to go ahead and purchase these tables.
- Motion moved by Mike Close that SRCS present a gift of assorted wines to Roadmaster as a token of appreciation for their generosity in allowing us to use their land. Seconded Bill Bollard. Motion carried. Mike Close to arrange.
- Col Bruce to ascertain the cost of hiring the services of a professional to design a web site for SRCS.

Meeting Closed at 9.20pm.

TWO STROKE ENGINES

Although there are many types of model airplane engines, the 2 stroke glow-fuel powered is the most common. Sizes available for the sport pilot range from .010 cubic inch to 1.50 cubic inch displacement and higher. The plastic, control line airplanes you see in most toy stores are usually powered by .049 engines and are considered quite small by most modeler's standards. .25 to .60 sized aircraft are the most popular.

How does it work?

The glow engine is unique in that it doesn't use a standard spark plug to ignite the fuel air mixtue in the combustion chamber. Instead it uses a glow plug with a special element that contains platinum. To start a glow engine a battery is attached to the glow plug to heat the element up red hot. The engine is then started and the battery removed. The engine can continue to run without the starter battery because the glow plug then continues to "glow". Hence the name. It doesn't glow just from the heat of running though. The heat of compression along with a chemical reaction between the platinum element and the methenol based fuel causes ignition. It actually operates more like a diesel engine than a spark ignition engine.

What's in the fuel?

Model engine glow fuel consists of at least two ingredients, Methanol and Oil. A common recipe would be 80% methanol and 20% castor oil. Most fuels in the United States contain a third ingredient called Nitro-Methane. This gives the engine a better idle and more power. The amount of "Nitro" in fuel ranges anywhere from 5% for sport flying to 50% for high performance racing needs. Hence you might have some fuel that has 60% mehnanol, 20% nitro-methane, and 20% oil. Nitro-Methane can be very expensive and therefore most people in the USA will use 5% to 10% for everyday sport flying. In other countries the price may be even higher, so no-nitro fuels are common. Sometimes manufacturers will add other ingredients such as anti-foaming compounds and cleaners but these are in very small amounts.
Although castor oil is the traditional oil of choice, many fuels now contain synthetic oils or maybe a blend of castor and synthetic. Castor oil is very good at protecting a model engine but over time can leave a build-up in the engine called varnish. It also gets baked on the outside of the engine leaving a brown coating that is difficult to clean off. Synthetic oils overcome these disadvantages but may lack in protecting the engine at extreme temperatures due to the fact that they can vaporize. A castor/synthetic blend is a good way to get the best of both worlds.

What's an ABC engine?

Model airplane engines many times come in ringed and ABC versions. The ringed engine has a piston ring to create the piston-cylinder seal that is needed for compression. An ABC engine has no ring. The ABC stands for Aluminum, Brass, Chrome. It means the engine has an aluminum piston that is running inside of a Brass cylinder that is chrome plated. The ABC engine has the potential for more power and requires very little break-in. It is, however, less tolerant of dirt or dust that may be ingested by the engine.

What is meant by Schnuerle Porting?

Some engines are advertised as being schnuerle ported. This means that there are multiple (usually three) bypass ports in the cylinder which allow fuel up into the combustion chamber. On a non schnuerle ported or "loop scavanged" engine there is only one bypass port which is opposite the exhaust port. This may result in some of the fuel passing over the piston and right on out the exhaust port. With schnuerle porting the fuel arrives from different directions and converges at the center of the cylinder which allows more fuel to be burned, hence more power. Most newer engines use schnuerle porting.

MAINTAINING YOUR BATTERIES

Most of the batteries we use in our hobby today are the rechargeable type. There are several kinds of rechargeable batteries and these include NiCads (Nickel Cadmium), lead - acid, sealed lead-acid, and gel-cell, among others. NiCads are used to run our radio systems as well as power our model cars, boats, and planes. Generally they are wired together in packs of four or more cells, depending on the application. The other types of batteries are usually 6 or 12 volt and are used to power flight boxes and large scale boats.

NiCad Batteries

NiCad batteries are used in just about every radio system that comes with rechargeable batteries, and they power just about every electric car, boat, and plane in the hobby. A NiCad cell, regardless of capacity has a nominal voltage of 1.2V. When fully charged it will have slightly higher voltage and it is considered to be fully discharged when it is down to 1.1V.

The capacity of NiCads is measured in milliamp hours (M.A.H.), the average current drawn times the time in hours. A NiCad cell of 1000 m.a. capacity could supply 1000 m.a. of current for one hour. It could also supply 2000 m.a. of current for a half hour or 500 m.a. of current for 2 hours. NiCads can be found with capacities ranging from 50 m.a. to 4400 m.a. in different size and shape packages.

Most radio systems have battery packs made up of AA size cells, having a capacity of 600 m.a. The airborne system battery pack will generally have 4 cells wired in series producing 4.8 Volts and the transmitter will have 8 cells producing 9.6 Volts nominal. Only the voltages add when the cells are wired in series; the capacity remains 600 m.a.

Battery packs to power large models are usually made up of the Sub-C size cells. At one time These were rated at 1200 m.a. in capacity, but with progression in technology, Sub-C's are commonly found with 1400, 1500 and even 1700 m.a. capacities. These packs are usually in either 6-cell (7.2V) or 7-cell (8.4V) configurations but some models, especially large airplanes may have 28 or more cells wired in series to form a pack.

If you are wiring your own pack, DO NOT wire NiCad cells in parallel to get higher capacity. NiCads have an extremely low internal resistance compared to ordinary, non- rechargeable cells. When they are wired in parallel, if one cell is at a different charge level than the other, thus producing a slightly different voltage, a great deal of current can flow from the higher voltage cell to the lower voltage one. This could cause a fire by heating the wire joining the cells or from the heating of the cells themselves. If you need higher capacity, go to a larger cell.

When operating a radio control system it is very important to know the condition of the batteries powering it. The life of your model, and the safety of those around it, depends on this. Always be certain your transmitter and receiver battery packs are fully charged before you operate your model. Your transmitter will usually have a meter indicating the current state of your transmitter battery it can be easily monitored during operation. The only way you can determine the state of your receiver battery, is to plug an expanded scale voltmeter into your pack and measure the voltage under load.(which is generally done through the charging plug) doing this after each flight during a flying session is a good habit to get .

NiCad batteries discharge differently than alkaline or other non-rechargeable types. When the cell first comes off charge it will usually show a fairly high voltage (1.4V possibly). This will drop off quickly as the cell is discharged until close to the nominal voltage of 1.2V. The voltage will then drop off slowly throughout the bulk of the discharge. However, once the cell is near fully discharged, it will drop off very quickly again.

NiCad batteries have one bad characteristic in that they can develop a memory. If a NiCad battery is repeatedly fully charged and then used an amount that is less than full capacity (let's say you charge and regularly have three or four flights in a session), after a period of time, it may not be able to deliver any more than the capacity frequently used. This is called NiCad memory.

To avoid NiCad memory, it is IMPORTANT to cycle the batteries. Cycling is where the battery is fully discharged under controlled conditions, as described below, and then recharged. By fully discharging the pack in this way every so often , (about once a month) the cells in the pack will not develop memory and will remain at maximum

possible capacity.

It is also a good idea to measure the capacity of your battery packs every so often. This will tell you how long you can safely operate your model in one session. You will also discover when your batteries need to be replaced without destroying a good model in the process. (it is a good idea to set a schedule for this that fits your flying habits.)

It is possible to check the capacity of the battery while cycling. If you discharge your pack at a constant, known rate, and measure the pack voltage at various time intervals during discharge, you can determine the capacity by multiplying the discharge current rate by the time it takes to fully discharge. Your pack is considered discharged when it reaches a value of 1.1 volts per cell. For example, if you are discharging a 4-cell receiver pack, it would be fully discharged at 4.4 volts (4 cells x 1.1 volts/cell). Do not discharge a pack below this level or cell reversal could result.

There are pieces of electronic equipment available which can do this automatically for you and you will find these in your favorite hobby catalog. It is definitely worth investing in one of these units as one crash due to poor battery maintenance will usually cost you more than a cycler, not to mention the hours you have put into building your model.

The normal charge rate for NiCads is C/10 or the capacity of the NiCad divided by 10. For example, a 600 m.a. pack should be charged at 600/10 or 60ma. This is known as the overnight rate. Although, ideally, a pack should be fully charged in 10 hours, due to inefficiency, it will probably take between 12 and 15 hours.

After being charged overnight, the battery should either be removed from the charger or the charge rate should be reduced to C/100 (the capacity divided by 100). This is known as the trickle rate. The pack in our example would have a trickle rate of approximately 6 ma. The battery may remain on the trickle rate indefinitely. Keeping your system's batteries on trickle charge is a great idea as it will ensure that your batteries are fully charged when you go to the field. NiCads, just sitting around will probably loose 1% of their charge each day.

Most NiCads may also be charged at a higher rate such as a rapid charge of C (charge rate equal to capacity) or a quick charge of 10C or ten times the capacity. This is normal practice with the packs used in powering electric models. Some cells are better at accepting a fast charge than others and these are usually denoted by being an "R" type cell or "SCR". In fast charging NiCads, however, you have to be very careful to make sure that they do not get overcharged. Applying these high charge currents to a battery that is fully charged can at the least ruin the battery and at worst make the battery explode. For this reason, fast chargers are equipped with a discharge circuit and a timer.

The discharger is used to fully discharge the pack before charging so the current state of charge for the pack is known. The charge rate is applied by turning on the timer. Timers are usually for 15 minutes although it will probably take between 20 and 25 minutes to fully charge the pack.

A second type of fast charger is the peak detection charger which can automatically charge your battery packs for you without the need for a timer. A circuit monitors the voltage of your pack during charge. As a NiCad charges the voltage will increase at a slow rate. However, once the battery is fully charged, the voltage will actually drop back slightly. The circuitry detects this drop and reduces the charge rate to trickle. You can safely charge your batteries with this type of charger and there is no need for initially discharging them. Even though NiCads can be fast charged, it is IMPORTANT to slow charge your batteries at the overnight rate periodically, or about every 5 charges. This helps stabilize the cells to retain their full capacity and will lengthen their life.(on an average you batteries should be changed every two years.)

Other types of batteries such as lead-acid, sealed and non- sealed, and gel cells should also be charged with care. Do not charge your field box battery with an automotive car charger or with any other "fast charger". These batteries can boil dry and be damaged by high rates of charge and overcharge. (and possibly blow up) Use a charger meant for the job at the overnight rate of C/10.

SIG Manufacturing Co, Inc has been one of the Radio Control industry leaders since 1951, manufacturing an extensive line of radio control, control line and free flight model aircraft kits as well as numerous accessories and a complete assortment of balsa for the modeler who enjoys scratch building. The nice people at Sig have graciously permitted us to reprint the following article from their catalog, which will tell you all about balsa. Enjoy.

Model airplanes are no different than any other type of flying machine, large or small - THE LIGHTER IT IS BUILT, THE BETTER IT WILL FLY! With that in mind, it is easy to understand why balsa wood has been the standard material for model airplane construction since it first became readily available in the U.S. in the late 1920s. Its outstanding strength-to-weight ratio enables hobbyists to construct durable models that fly in a totally realistic manner. Balsa also absorbs shock and vibration well and can be easily cut, shaped, and glued with simple hand tools.

WHERE DOES BALSA WOOD COME FROM?

Balsa trees grow naturally in the humid rain forests of Central and South America. Its natural range extends south from Guatemala, through Central America, to the north and west coast of South America as far as Bolivia. However, the small country of Ecquador on the western coast of South America, is the primary source of model aircraft grade balsa in the world. Balsa needs a warm climate with plenty of rainfall and good drainage. For that reason, the best stands of balsa usually appear on the high ground between tropical rivers. Ecquador has the ideal geography and climate for growing balsa trees. The scientific name for balsa wood is ochroma lagopus. The word balsa itself is Spanish meaning raft, in reference to its excellent floatation qualities. In Ecquador it is known as Boya, meaning buoy.

HOW DOES BALSA WOOD GROW?

There is no such thing as entire forests of balsa trees. They grow singly or in very small, widely scattered groups in the jungle. For hundreds of years, balsa was actually considered a weed tree. They reproduce by growing hundreds of long seed pods, which eventually open up and, with the help of the wind, scatter thousands of new seeds over a large area of the jungle. Each seed is airborne on its own small wisp of down, similar to the way dandelion seeds spread. The seeds eventually fall to the ground and are covered by the litter of the jungle. There they lay and accumulate until one day there is an opening in the jungle canopy large enough for the sun's rays to strike the jungle floor and start the seeds growing. Wherever there is an opening, made either by a farmer or by another tree dying, balsa will spring up as thick as grass. A farmer is often hard put to keep his food plot clear of balsa. As the new balsa trees grow, the strongest will become predominate and the weaker trees will die. By the time they are mature, there may be only one or two balsa trees to an acre of jungle.

HOW LONG DOES IT TAKE A BALSA TREE TO GROW?

Balsa trees grow very rapidly (like all pesky weeds). Six months after germination, the tree is about 1-1/2 inches in diameter and 10 - 12 feet tall. In 6 to 10 years the tree is ready for cutting, having reached a height of 60 to 90 feet tall and a diameter of 12 to 45 inches. If left to continue growing, the new wood being grown on the outside layers becomes very hard and the tree begins to rot in the center. Unharvested, a balsa tree may grow to a diameter of 6 feet or more, but very little usable lumber can be obtained from a tree of this size. The balsa leaf is similar in shape to a grape leaf, only a lot bigger. When the tree is young, these leaves measure a much as four feet across. They become progressively smaller as the tree grows older, until they are about 8 - 10 inches across. Balsa is one of the few trees in the jungle which has a simple leaf shape. This fact alone makes the balsa tree stand out in the jungle.

THE PERFECT NURSE!

Nature evidently designed the balsa tree to be a "nurse tree" which would protect the slower-growing species of trees from the scorching jungle sun during their critical early years. For instance, in an area of the jungle that has been ravaged by a tropical storm or other natural disaster, the balsa trees will quickly sprout and begin to shoot up to impressive heights in a very short time. Their fast growth, and the extra large leaves they have in their early years, provide shade to the young seedlings of the slower-growing forest giants. By the time the seedlings are established enough to take care of themselves, the balsa tree is beginning to die. Undoubtedly, the balsa tree's rapid growth, fast spreading crown of first very large and gradually smaller leaves, and it's relatively short life span were

intended to make it the "perfect nurse" in the jungle ecosystem.

HOW ARE BALSA TREES HARVESTED?

While nature intended the balsa tree to be a short lived nursemaid, mankind eventually discovered that it was an extremely useful resource. The real start of the balsa business was during World War I, when the allies were in need of a plentiful substitute for cork. The only drawback to using balsa was, and still is, the back breaking work that is necessary to get it out of the jungle. Because of the way the individual balsa trees are scattered throughout the jungles, it has never been possible to use mass production logging procedures and equipment. The best way to log balsa trees is to go back to the methods of Paul Bunyan -- chop them down with an axe, haul them to the nearest river by ox team, tie them together into rafts, and then float the rafts of balsa logs down the river to the saw mill. The logging team usually consists of two native Ecuadorians, each armed with a broad Spanish axe, a machete, and a long pole sharpened like a chisel on one end for removing the bark from the downed trees. Because of the hilly terrain, an ox team may only be able to drag two logs to the river per day. At the saw mill the raw balsa is first rough cut into large boards, the carefully kiln dried, and finally packed into bales for shipment to the U.S. via ocean freighter. Final cutting and finishing of our model aircraft balsa is done right here at the SIG factory. As a result of the balsa tree's fast growth cycle, both the quality and lightness of the lumber obtained from a balsa tree can vary enormously depending upon the tree's age at the time of cutting.

WHY IS BALSA WOOD SO LIGHT?

The secret to balsa wood's lightness can only be seen with a microscope. The cells are big and very thin walled, so that the ratio of solid matter to open space is as small as possible. Most woods have gobs of heavy, plastic-like cement, called lignin, holding the cells together. In balsa, lignin is at a minimum. Only about 40% of the volume of a piece of balsa is solid substance. To give a balsa tree the strength it needs to stand in the jungle, nature pumps each balsa cell full of water until they become rigid - like a car tire full of air. Green balsa wood typically contains five times as much water by weight as it has actual wood substance, compared to most hardwoods which contain very little water in relation to wood substance. Green balsa wood must therefore be carefully kiln dried to remove most of the water before it can be sold. Kiln drying is a tedious two week process that carefully removes the excess water until the moisture content is only 6%. Kiln drying also kills any bacteria, fungi, and insects that may have been in the raw balsa wood.

HOW LIGHT IS KILN DRIED BALSA WOOD?

Finished balsa wood, like you find in model airplane kits, varies widely in weight. Balsa is occasionally found weighing as little as 4 lbs. per cu. ft. On the other hand, you can also find balsa which will weigh 24 lbs. or more per cu. ft. However, the general run of commercial balsa for model airplanes will weigh between 6 and 18 pounds per cu. ft. Eight to twelve pound balsa is considered medium or average weight, and is the most plentiful. Six pound or less is considered "contest grade", which is very rare and sometimes even impossible to obtain.

IS BALSA THE LIGHTEST WOOD IN THE WORLD?

No! Most people are surprised to hear that botanically, balsa wood is only about the third or fourth lightest wood in the world. However, all the woods which are lighter than balsa are terribly weak and unsuitable for any practical use. The very lightest varieties don't really resemble wood at all, as we commonly think of it, but are more like a tree-like vegetable that grows in rings, similar in texture to an onion. It is not until balsa is reached that there is any sign of real strength combined with lightness. In fact, balsa wood is often considered the strongest wood for its weight in the world. Pound for pound it is stronger in some respects than pine, hickory, or even oak.

SELECTING BALSA FOR MODEL BUILDING

Most hobby shops have a large rack of balsa sheets, sticks, and blocks that you can choose from if you are going to build a model airplane from scratch. Undoubtedly, because of the nature of balsa, the actual weight of each piece of wood of the same size can vary slightly. When you select the pieces you want to buy you should keep their final use in mind. Logically one should select the lightest grades for the lightly stressed model parts (nose blocks, wingtip blocks, fill-ins, etc.) and the heavier grades for important load bearing parts of the structure (spars, fuselage stringers, etc.). To a large extent, this selection is already partly done for you. Here at SIG, we purposely cut up our lightest raw balsa into blocks, and our hardest raw balsa into sticks. Sheets are cut in the entire wide range of density.

COMMON MODELER'S TOOLS FOR CUTTING AND SHAPING BALSA WOOD

Balsa is a very "friendly" wood to work with --

so light, so soft, so easily worked into so many things. You don't need heavy-duty power saws and sanders like you would if working with a hardwood. In fact, even with an extensive power shop at their disposal, the professional model builders here at the SIG factory find that they still rely primarily on 4 or 5 simple hand tools for the majority of their work. If you are just starting out in the model airplane hobby, here are the tools that they recommend you get:

X-ACTO No. 1 knife with No. 11 blade for general cutting; X-ACTO No. 2 knife with No. 26 blade for carving; Razor saw for cutting thick sizes of wood; Razor plane for shaping; A knife or razor blade will work well for cutting balsa sheets and sticks up to 3/16". Always keep replacement blades on hand - blades do wear our and a dull blade can make it impossible to do a good job.

YOU WILL ALSO NEED SANDING BLOCKS

In addition to the cutting tools, you will need an assortment of different size sanding blocks. These are indispensable tools for model construction. You can buy ready-made sanding blocks or make your own. The most often used general-purpose sanding block in our model shop is made simply by wrapping a full 9" x 11" sheet of sandpaper around a 3/4" x 3" x 11" hardwood or plywood block. Use three screws along one edge to hold the overlapped ends of the sandpaper in place. Use 80 grit garnet sandpaper on the block during general construction. Another handy sanding block to have can be made by gluing 80 grit garnet sandpaper onto a 24" or 36" long piece of aluminum channel stock. Most hardware stores carry a rack of aluminum in various sizes and shapes. This long sanding block is very helpful for shaping leading and trailing edges, and other large pieces, accurately.

Last but not least, glue sandpaper onto different sizes of scrap plywood sticks and round hardwood dowels. These are handy for working in tight places and for careful shaping where a big sanding block is too hard to control.

BALSA GRAIN-LEARN HOW TO IDENTIFY ALL THREE GRAIN TYPES

In selecting balsa sheets for use in your model, it is important to consider the way the grain runs through the sheet as well as the weight of the sheet. The grain direction actually controls the rigidity or flexibility of a balsa sheet more than the density does. For example, if the sheet is cut from the log so that the tree's annular rings run across the thickness of the sheet (A-grain, tangent cut), then the sheet will be fairly flexible edge to edge. In fact, after soaking in water some tangent cut sheets can be completely rolled into a tube shape without splitting. If on the other hand the sheet is cut with the annular rings running through the thickness of the sheet (C-grain, quarter grain), the sheet will be very rigid edge to edge and cannot be bent without splitting. When the grain direction is less clearly defined (B-grain, random cut), the sheet will have most intermediate properties between A and C grain. Naturally, B-grain is the most common and is suitable for most jobs. The point to bear in mind is that whenever you come across pure A-grain or C-grain sheets, learn where to use them to take best advantage of their special characteristics.

A-GRAIN sheet balsa has long fibers that show up as long grain lines. It is very flexible across the sheet and bends around curves easily. Also warps easily. Sometimes called "tangent cut." DO use for sheet covering rounded fuselages and wing leading edges, planking fuselages, forming tubes, strong flexible spars, HL glider fuselages. DON'T use for sheet balsa wings or tail surfaces, flat fuselage sides, ribs, or formers.

B-GRAIN sheet balsa has some of the qualities of both type A and type C. Grain lines are shorter than type A, and it feels stiffer across the sheet. It is a general purpose sheet and can be used for many jobs. Sometimes called "random cut." DO use for flat fuselage sides, trailing edges, wing ribs, formers, planking gradual curves, wing leading edge sheeting. DON'T use where type A or type C will do a significantly better job.

C-GRAIN sheet balsa has a beautiful mottled appearance. It is very stiff across the sheet and spits easily. But when used properly, it helps to build the lightest, strongest models. Most warp resistant type. Sometimes called "quarter grain." DO use for sheet balsa wings and tails, flat fuselage sides, wing ribs, formers, trailing edges. Best type for HL glider wings and tails. DON'T use for curved planking, rounded fuselages, round tubes, HL glider fuselages, or wing spars.

Sydney Radio Control Society Inc.

Wish to advise that they will be holding their

Annual Scale Rally

at the S.R.C.S. Flying Field
Bandon Rd, VINEYARD

on

Sunday 11th May 2003

All fliers of Scale Model Aeroplanes are invited to attend with their models to join in the activities on what always proves to be an excellent day.

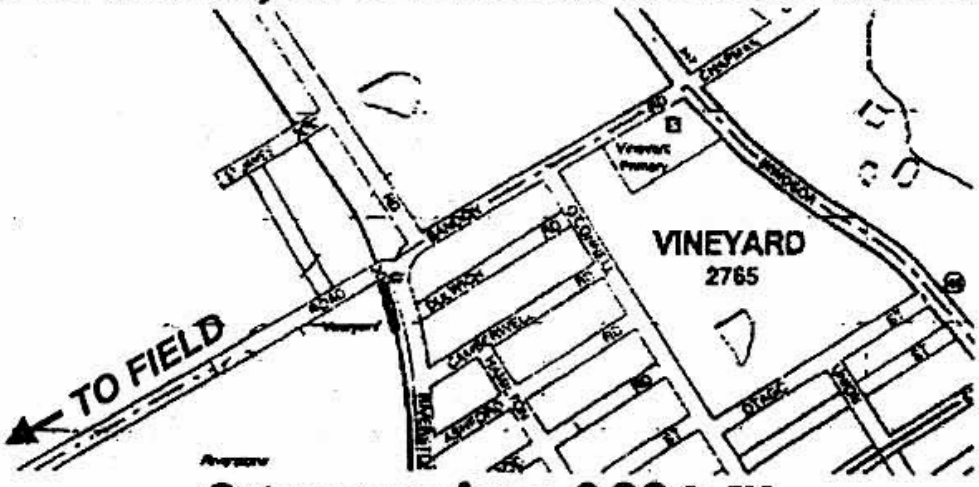
The Rally is open to all Scale sizes, and the usual permits are required for aircraft over 7kg.

Permits will not be issued on the day.

Pilots Briefing - 9.45 a.m.

Flying to Commence - 10 a.m.

Pilots with 60/80 size models are most welcome!



Gates open from 8.30a.m.

Refreshments and food will be available

For further information contact Ron Irving 0408-299-236

SRCS CALENDAR

Date	Alternate Date	
9/3/03 Sunday)	23/4/03	Glider Day
25/5/03 (Sunday)		Scale Rally
15/6/03 (Sunday)		HOG Day
26/7/03 (Saturday)	9/8/03	Club Scale Rally
30/08/03 (Saturday)	13/9/03	Kevin Gray Memorial Fun Fly
29/11/03 (Saturday)	3/12/03	Pattern Day

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.**

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.

THE COMMITTEE OF SRCS