SYDNEY RADIO CONTROL SOCIETY - incorporated
CLUB NEWSLETTER

Quarterly General Meeting

To be Held at the field

Saturday

1st April 2006 at 12 noon

Agenda:

- ***Apologies***
- ***Previous Minutes***
- ***Matters arising***
- ***Presidents Report***
- ***Treasures Report***
- ***Secretaries Report***
- ***Other Business***

Club will provide a Sausage Sizzle and soft drinks afterwards for lunch

Page No	***Inside this issue***

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 2005 – 2006 COMMITTEE

WWW.srcsclub.com

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PRESIDENT'S LETTER

As many of you will know I recently went to the USA for a meeting. The area where I went to was deep in winter so there was no opportunity to visit any clubs. However I did see the AMA Headquarters at Muncie and also attended an indoor event that had been nationally and internationally advertised. Obviously things are on a much larger scale over there and they have more money available. Of course not only is the population itself much larger, the population centres are also vast. This does create problems in itself as the distances that the city dwellers have to travel to fly can be large even by Sydney standards.

However it is also gives an opportunity to reflect on the advantages that we have. We can have modest size clubs where everyone can know each other and there is less pressure on getting a flying slot. At the indoor event there were over twenty aircraft flying at the same time. Whilst it was very large hall there were some problems. At our field, as at most others around, we feel crowded if about four or five other aircraft are flying. This does mean that normally when we fly we do not need to be totally controlled as to where we fly. Because most of us are used to flying with each other there is an unspoken understanding about flying in a compatible way. A few years ago two visitors arrived and of course were invited to fly. When I got there I was told they were flying dangerously and I was asked to stop them. When I had my first flight one of them was flying and I did feel uncomfortable. Rather than wade in, I decided to watch their next flight from the pits. They did not appear to do anything wrong, they were just flying differently to the way that we usually do.

We do have a relaxed club and, as in the case of the flying example, it is sometimes hard to explain what we are doing that gives us this atmosphere. What ever it is I hope that we never lose it.

Of course there are always things that happen which should not. We had a fairly new mower, and not long before Christmas we found that we did not. How the container was broken into we will probably never know, but who ever did it was prepared, as the expensive chain that secured it to the container had been cut with oxy equipment. Whether this preparation was because they had seen the mower when the committee area of the container had been open at an event, at some other time, or they just came prepared in case there was anything worth stealing we are unlikely to ever find out. The club cannot insure anything that we keep at the field so the club has lost $4000. With a hundred plus members we can all work how much this means for each of us. The club of course has reasonable funds but whilst we are happy to improve the area it is also for a rainy day. No club the Sydney basin can expect to be at the same location for ever.

When we are at field, whether on the Committee, or just an ordinary member, we all have to be aware of what is happening in the area and do something if we are not sure if everything is OK. Whether it is a cow in difficulties, a motor bike tearing around, someone flying that we do not recognise, or anything else we need to ask a couple of questions and if needed report it appropriately. Helping protect the Roadmaster and our neighbours' property earns us brownie points, stopping people who are non members flying protects our insurance, and both can protect our assets whether it is from theft or damage.

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

Mike Close President

DECEMBER 2005 QUARTERLY GENERAL MEETING

MINUTES
The Quarterly General meeting was held at the SRCS Flying Field on Saturday 3rd December 2005.

Mike Close opened the meeting at 11.05 am. Minutes were recorded by Norm Bantin

PRESENT	Mike Close	Col Lyttle
	Norm Bantin	Larry James
	Ewald Klinkenberg	Bob Evans
	Tim Owen	Renton Wright
	Noel Dalton	Col Bruce
	Baldo Polizzi	Rex Broadbent
	Jeff Johnson	Phil Norris
	Matt Holloway	Corinne Pellat

APOLOGIES Paul Toyne

MINUTES OF THE PREVIOUS ANNUAL GENERAL MEETING 23-09-05

The minutes of the previous AGM held at Toongabbie Bowling & Recreation Club on Friday 23rd September 2005 were accepted as a true and accurate record with no changes by Baldo Polizzi and seconded by Col Lyttle.

MATTERS ARISING 23-09-05 AGM

- A safety incident register was discussed and agreed that it was a good idea. This was discussed further by the Committee and a register is to be kept in the container – Ewald to arrange and Norm Bantin to put something in the next newsletter

SECRETARIES REPORT
Nothing to report

TREASURERS / REGISTRARS REPORT
See attached

OTHER BUSINESS

- Next Sunday 11/12/05 the Christmas get together is to be held at the Riverstone RSL from 11.30pm – all welcome.
- Mike Close addressed the meeting regarding smoking under the shelter and explained that the committee had decided not to ban smoking but all members should use common sense with regard to other non-smoking members.
- Mike Close thanked Robert Zyp for the ordering of material and building of the new shelter, the funding which was kindly donated by Phil Hibble, also Paul Toyne and Norm Bantin for arranging the tools. The Shelter has been named the Phil Hibble Shelter and Matt Holloway has installed a sign. Thanks also for everybody who helped and to Norm Bantin for organising the BBQ afterwards. Paul Toyne to write to Phil Hibble to thank him for the donation.
- The new shelter can be used for working on aircraft but not under the existing shelter which is to used for socializing only.
- A working Bee is to be held to finalise the fencing of the new shelter and tidy up the fencing of the existing shelter- at a date to be determined – Norm Bantin to arrange.
- Bob Evans enquired into how Gold Wings for members is registered with MAS NSW. Mike Close explain that Ewald already does this when membership is renewed.
- Mike Close was elected as Chief Flying Instructor – proposed Norm Bantin – seconded Ewald Klinkenberg. Pal Toyne was elected Safety Officer – Proposed - Matt Holloway – Seconded Norm Bantin
- All first aid incidents should be recorded in some form at the field. Ewald Klinkenberg to obtain a book for the container

TREASURERS REPORT

Balance Sheet	Feb-06		
	This Year	Last Year	$ Difference
Assets			
Current Assets			
Cash On Hand			
Westpac - chq a/c	$3,489.55	$5,006.16	-$1,516.61
Petty Cash	$10.00	$10.00	$0.00
Total Cash On Hand	$3,499.55	$5,016.16	-$1,516.61
Investments			
Westpac term deposit	$16,553.03	$15,764.79	$788.24
ANZ term deposit	$31,275.85	$29,198.29	$2,077.56
Total Investments	$47,828.88	$44,963.08	$2,865.80
Total Current Assets	$51,328.43	$49,979.24	$1,349.19
Other Assets			
Deposits Paid	$50.00	$50.00	$0.00
Total Other Assets	$50.00	$50.00	$0.00
Buildings			
Furniture & Fixtures			
Equipment at Cost	$18,900.23	$16,568.73	$2,331.50
Less Accum Dep	-$10,766.28	-$8,545.64	-$2,220.64
Total Furniture & Fixtures	$8,133.95	$8,023.09	$110.86
Total Assets	$59,512.38	$58,052.33	$1,460.05
Liabilities			
Long-Term Liabilities			
Total Liabilities	$0.00	$0.00	$0.00
Net Assets	$59,512.38	$58,052.33	$1,460.05
Equity			
Retained Earnings	$56,441.70	$54,183.06	$2,258.64
Current Year Surplus/Deficit	$3,070.68	$3,869.27	-$798.59
Total Equity	$59,512.38	$58,052.33	$1,460.05

Profit & Loss
July 2005 through
February 2006

	This Year	Last Year
Income		
Club Badges	$9.00	$0.00
Club Clothing	$15.00	$157.50
Donations	$5.00	$0.00
Gate Keyes	$195.00	$770.00
Interest	$1,773.87	$357.74
Joining Fees	$435.00	$1,215.00
Member Fees	$17,976.00	$19,828.00
Scale Day	$780.90	$10.90
Total Income	$21,189.77	$22,339.14
Expenses		
Badges	$0.00	$105.60
Bank Charges	$44.60	$38.35
Competition Prizes	$67.50	$158.86
Consumer Affairs	$78.00	$56.00
Equipment Hire	$110.00	$0.00
Equipment	$0.00	$32.36
Field Maintenance	$371.72	$373.22
Gifts	$37.99	$0.00
Hall hire	$55.00	$260.00
Key refund	$30.00	$10.00
Locksmith	$1,547.43	$1,371.70
Website	$390.50	$478.50
MAS fees	$13,301.75	$15,116.00
Postage & shipping	$114.00	$44.58
Scale Rally	$429.73	$0.00
News letter	$440.22	$391.70
Stationary	$32.65	$0.00
Toilet Services	$187.00	$33.00
Refund of membership	$881.00	$0.00
Total Expenses	$18,119.09	$18,469.87
Net Surplus / (Deficit)	$3,070.68	$3,869.27

membership	
assoc	7
jnr	1
life	4
pen	8
snr	92
spouse	1
total	113

ADHESIVES **by Roger Layton** –Clays Newsletter Helper

Cyanoacrylate adhesives: The history that abounds relative development of CA is this. It was developed as an alternative to sutures and bandages for treating open battlefield wounds during the Vietnam War. This seems to make sense in light of its ability to instantly weld the fingers together of any careless modeler. That little bottle of instant repairs that you buy is actually a chemical called cyanoacrylate monomer which, except for an inhibitor, would instantly form a single plastic blob of polymer with accompanying heat and fury that would resemble the China Syndrome. CA was on the market for a number of years before it came to the construction hobbies. The adhesive was so fluid that it could only be used to mend nonporous materials like ceramic, plastic, and glass. It certainly did not work on balsa, which merely soaked it up like a sponge. Later, when viscosity modifiers were added, it became generally useful and ended up "in our hands" (pun intended). The advantages of CA are speed and hold. The disadvantages are cost, vapor, and brittleness. Please be your own judge but I will not use it for whole plane construction. It has a place and is excellent in certain applications. For many butt joints and T-joints, CA is too brittle, especially in large airplanes. Aliphatic glue is a much better choice. CA is specified as the adhesive of choice for wing skins. In this application, it is too hard and makes sanding to an invisible butt joint very difficult. Animal glue like Sigment is the quintessential choice since it is the sole truly sandable adhesive. Cyanoacrylates are excellent for tacking parts into place to speed up construction followed by regluing with an aliphatic adhesive. CA is unequalled for making repairs and piecing a crashed beauty back together. When you use CA, be careful not to draw debris such as sawdust or baking soda (incidentally a good inexpensive accelerant) into the bottle. It may cause the entire contents to harden.

Aliphatic glue: The parent for this type of glue is doubtlessly Borden's white glue. Borden's is a very strong glue which penetrates wood well. A second generation of such glues contains fillers which render them somewhat "sandable." Regardless of the claims, none are truly sandable since their binder is rubbery. In my mind, more expensive is not better. The hobby store brands like Pica's "Gluit" and others are expensive and not very sandable. Borden's yellow woodworkers glue is strong, inexpensive, and as sandable as any I have found. On large built up fuses and wings, I recommend using Borden's woodworkers glue for most of the "inside" construction including attachment of the skin. But I glue the skins together and other places to be subsequently sanded with Sigment. Firewalls, landing gear blocks, and hard points are attached with epoxy.

Silicon caulk or RTV: This is an excellent adhesive which does not harden. This provides considerable shock absorption. This material is particularly good for attaching parts inside fiberglass fuselages. There must be ample gluing surface. Fiberglass flexes in a finished airplane during flight will cause brittle joints made with CA epoxy or other adhesives to fail. Many servo trays have broken loose during a hard landing. Certainly, you have noticed the vinegar-like smell of silicon adhesive when it cures. Do not use this adhesive around electrical components. Connect cells in a battery with hot melt adhesive.

Rubber cement: The next time you want to make little protective foam boxes for your receivers or batteries use rubber cement. It maintains its flexibility and will never let go once it is dry.

3M Spray Adhesive: Formula 77 is excellent for attaching paper rib and bulkhead patterns to balsa or plywood during scratch building. If you want to remove the pattern from the wood after cutting, allow the adhesive to dry on the paper for more than a minute before applying. The paper will not stick quite so tightly and the adhesive will not transfer to the wood. 3M can also be used to hold 6oz. fiberglass in position on the wing center while epoxy or polyester resin is applied. It is great to hold plans flat on building board.

[from Rock Valley RC Flyers, Rockford, IL.]

LANDING GEAR ENGINEERING –Clays Newsletter Helper

By Clay Ramskill

The plane hit the runway hard, bounced and hit again. A second bounce put it over the tall grass near the runway, and the plane mushed into it. Not any damage -- except the main landing gear had torn out in the grass! This scenario is quite common. Our planes' landing gear will often take unbelievable impacts on the runway, yet collapse in a heartbeat when in the grass (or weeds). Why?

It's a matter of design, sometimes awfully poor design. The poorer designs assume the major loads on the gear will all be vertical, from the weight of the plane. And with easily turning wheels on a smooth runway, that's pretty much true. But -- in the REAL WORLD, we hit things (rocks, uneven ground, high grass, gophers, etc.), putting heavy rearward loads at the wheel. Since the gear hangs down several inches from it's mounting, a rearward shock at the wheel also adds a considerable TWISTING force on the gear mount. In figure 1, a typical wire gear set up is shown, wing mounted. This torsion-wire system is designed such that shock is eased by the torsion link -- but very heavy forces are still involved. Hitting high grass or the lip of a runway, a force of 5 pounds at the wheel is not unreasonable; over the 4 inches of strut, that puts 20 inch-pounds torque on the wire. At the anchor block end, with only one inch of mount arm to spread the load, we see 20 pounds force on the ends of the block! It is here that the block fails, or its attachment to the wing fails.

Aluminium or fibreglass gear bolted to a block or plate on the bottom of a fuselage have a similar force arrangement, resulting in heavy upward force at the rear of the block, downward force at the front. It is that downward part of the twist that many designs fail to cope with.

What we need to do is spread out the load from these twisting forces - on a typical fuselage gear arrangement, the gear is mounted on a block or plate glued between the fuselage sides, usually with some kind of doublers or tristock on top to keep the block from being forced upwards from landing shocks. Unfortunately, there is often little provision to keep the front end of the block from being ripped out downwards. This is best done by using ply doublers, extending forward several inches, preferably to a bulkhead or the firewall. Figure 2 illustrates.

The same type of considerations apply to a wing mounted set-up. In this case, use a ply rib, or a ply rib doubler, so that the forces are well spread out along the rib, preferably tying in with the leading edge and spars. Also, placing some heavy balsa on either side of the anchor block (aileron stock works very well for this) will help keep the block itself from breaking under heavy shock loads. Figure 3 applies.

So, for the next kit you build; take a careful look at the plans. If you see shortcomings with the main landing gear, add a bit of extra beef, to save you some grief!

Figure 1

Landing gear must be designed not only for weight, but also twisting when an obstacle is hit.

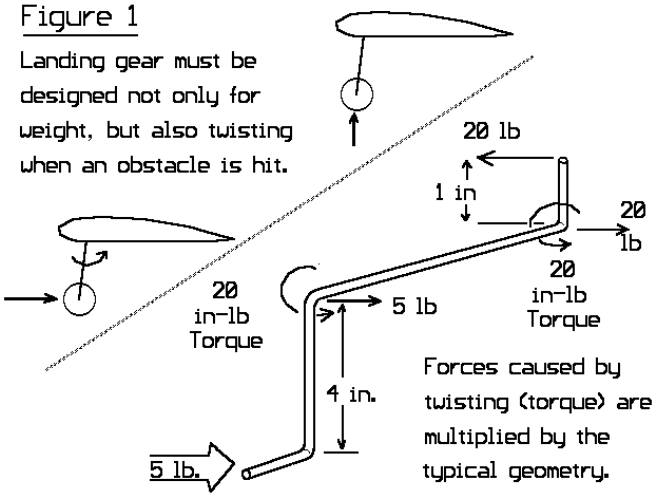
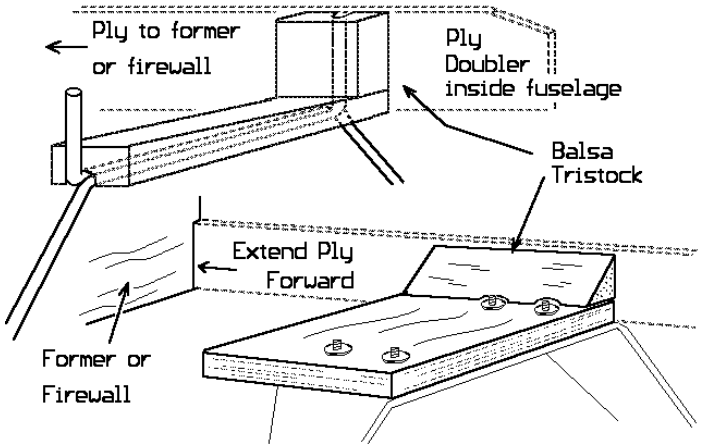


Figure 2 Fuselage Mount Beefup



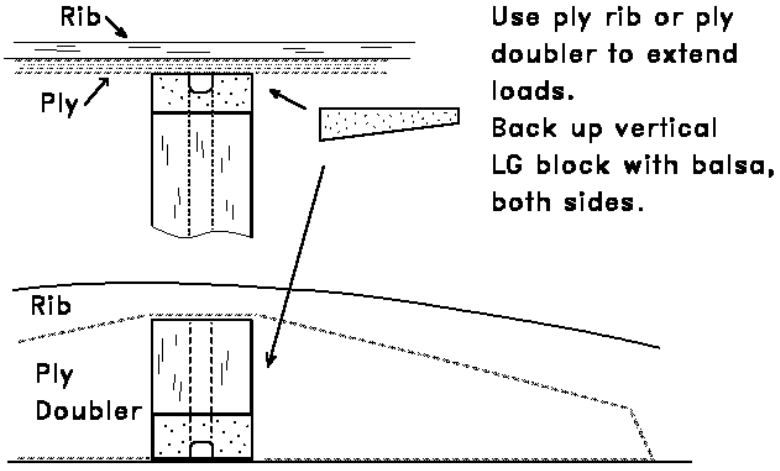


FIGURE 3 Beefing Up wing LG mounts

Radio Control Model Aircraft Safety Checklist –From Keith Lightbody's Radio Control Planes – useful links

Before Your First Flight....

Balance

- Is the longitudinal center of gravity (fore and aft) within the range shown on the plans?
- Is the model balanced laterally (side to side)?

Alignment

- Are all the flying surfaces at the proper angle relative to each other?
- Are there any twists in the wing?
- Do the wings and, where removable, the tailplane seat properly on the fuselage everytime?
- Is the engine set at the proper thrust angle as shown on the plans?

Control Surfaces

- Are all control surfaces securely attached? (i.e., hinges glued, pinned). Pull on each one to test.
- Are the control horns secured to the model?

Control Linkages

- Have all the linkages been checked to be sure they are secure?
- Are all the clevises closed? (keepers or fuel tubing should be fitted to ensure they stay closed)

Engine / Motor Security and Operation

- Are all engine mount screws tight, including mount to bulkhead if applicable?
- Is the propeller nut and/or spinner tight?
- Does the throttle work without binding?
- Does the throttle trim tab shut down the engine?
- Has the propeller been balanced and checked for damage?
- Are propeller tips painted a contrasting colour? (whilst not essential it makes the propeller much easier to see)
- Has the engine been thoroughly test run? (engine idle and throttle up properly)
- Is the fuel tank installed correctly? (i.e., carburetor at the same height as fuel tank, fuel tank klunk in proper
- position and moving freely, fuel lines in good condition and connected to the engine correctly)

Radio Equipment

- Are the receiver and battery securely mounted and padded with foam to protect from vibration and shock?
- Are all electrical connectors secure?
- Is the receiver's antenna fully extended and in good condition?
- Are the batteries charged and in good condition (check under load with a volt meter if unsure)?
- Are all servo securely fastened to the rails or trays?
- Are servo arms firmly attached with screw in place?
- Are all push rods firmly secure in servo arms (again keepers or fuel tubing should be fitted)?
- Are the control throws in the correct direction with proper amount of deflection (as per plan)?
    - Rudder & Tailwheel: Left stick should move the rear of the rudder and tailwheel to the left.
    - Nosewheel: Left stick should move the front of the nosewheel to the left
    - Aileron: left stick should move left aileron up and right down.
    - Elevator: Pulling back on the stick should move the back of the elevator up.

- Canard: Pulling back on the stick (elevator) should make the front of the canard move up
- Throttle: With trim set fully forward, pushing the stick forward should open throttle fully. With trim set fully backward, pulling stick back should fully close the throttle.

- Has a full range check been performed? (see below)

Undercarriage (where fitted)

- Is the undercarriage firmly attached to airframe and the wheels securelt retained?
- Does aircraft taxi in a straight line?

General

- Is the covering tight with no visible signs of damage?
- Are all retaining bolts in place and secure?
- Are any hatches, cowls and canopies secure?
- Are all components structurally sound?
- Are your name and contact details marked on the model somewhere easily visible? (in case it's lost).

Range Checking the radio

- Verify frequency is available and mark it as yours if necessary.
- Turn on transmitter check the correct model is selected (if applicable) and then turn on the receiver.
- **Important**: make sure the transmitter aerial is down fully.
- Ask someone to help and walk away from the model until signs if loss of control are apparent.
- If electric powered ensure that the range is not worse with the motor running.

Before EVERY flight:

- Verify your frequency is available and mark it as yours if necessary.
- Check the receiver battery pack to ensure enough charge for the flight intended.
- Check for damage and the control throw direction of all surfaces.

- ***For fuel powered models:***
  - Turn on the transmitter and check the correct model is selected (if applicable) and then turn on the
  - receiver.
  - Start the engine and test the entire throttle range ensuring an consistent idle and acceleration response.
  - Check the engine at full throttle with the plane's nose straight up in the air? (to make sure it won't stall
  - when full power is applied on climb out)
  - Take the model out to the strip and warn people you are about to take off.
  - As soon as you land switch off the receiver.
  - Switch off the transmitter and release the frequency for others to use.

- ***For electric models:***
  - Turn on the transmitter and check the correct model is selected (if applicable).
  - If the model has a receiver battery then switch on the receiver.
  - Ensure the throttle is in the correct position and connect the motor battery.
  - **WARNING:** The motor must now be considered live as the motor could start at any time without warning
  - (possibly due to interference or faulty controller).
  - Arm the controller if necessary and briefly check the motor functions correctly.
  - Take the model out to the strip and warn people you are about to take off.
  - As soon as you land disconnect the motor battery and switch off the receiver if necessary.
  - Switch off the transmitter and release the frequency for others to use.

Practical R/C Model Design

Reprinted with permission of Howard Sullivan

Radio controlled model aircraft can be designed using some basic rules of thumb or more appropriately, design paramaters. These basic design parameters can be applied to a trainer or sport model. There are no complex or magic formulas to solve. These paramaters have been proven to work by a multitude of sport models that have been developed using these rules. A modeler who has built a few models and has gained some knowledge of common structures can design a plane that suits his individual needs

The design begins with selecting the size of engine that will be used. This will become the determining factor for the entire design. The wing area is first selected from the table.

Engine/Wing Area

ENGINE	WING AREA
.049	200 - 250 sq. in.
.10	250 - 350 sq. in.
.15	300 - 450 sq. in.
.25	400 - 500 sq. in.
.40	500 - 700 sq. in.
.60	600 - 850 sq. in.

After selecting the engine size and wing area, the next step is to determine the wingspan and wing chord that will give this wing area *and* an aspect ratio between 5:1 and 6:1. If .40 size engine is selected, the wing area will be 500 - 700 sq. in. To make things simple, and area of 600 sq. in. and a span of 60" is chosen. This will give a chord of 10" and an aspect ratio of 6:1. The rest of the design will be based on the chord length.

The next step in determining the configuration of the wing is selecting the airfoil according to the purpose of the model.

Airfoil Type

AIRFOIL SHAPE	CHARACTERISTIC
Flat Bottom	Slow, docile, forgiving, poor inverted flight
Semi-symmetrical	Good lift, penetration, aerobatic, and inverted flight
Symmetrical	Best aerobatic and inverted flight

Programs can be downloaded which will draw one of a multitude of airfoils. Airfoils can also be plotted manually using the coordinate dimensions to draw points on the airfoil and drawing the curve of the airfoil using a French curve or flexible rule. The airfoil that is selected should have a thickness of 15% - 18% of the chord at 30% - 40% from the leading edge and should have a blunt leading edge for gentle stall characteristics. The wing incidence is normally set to 0°. The dihedral will be 0° - 3° with ailerons and 3° - 5° without ailerons. Finally, the type of ailerons that will be used is selected and the size determined according to the chord.

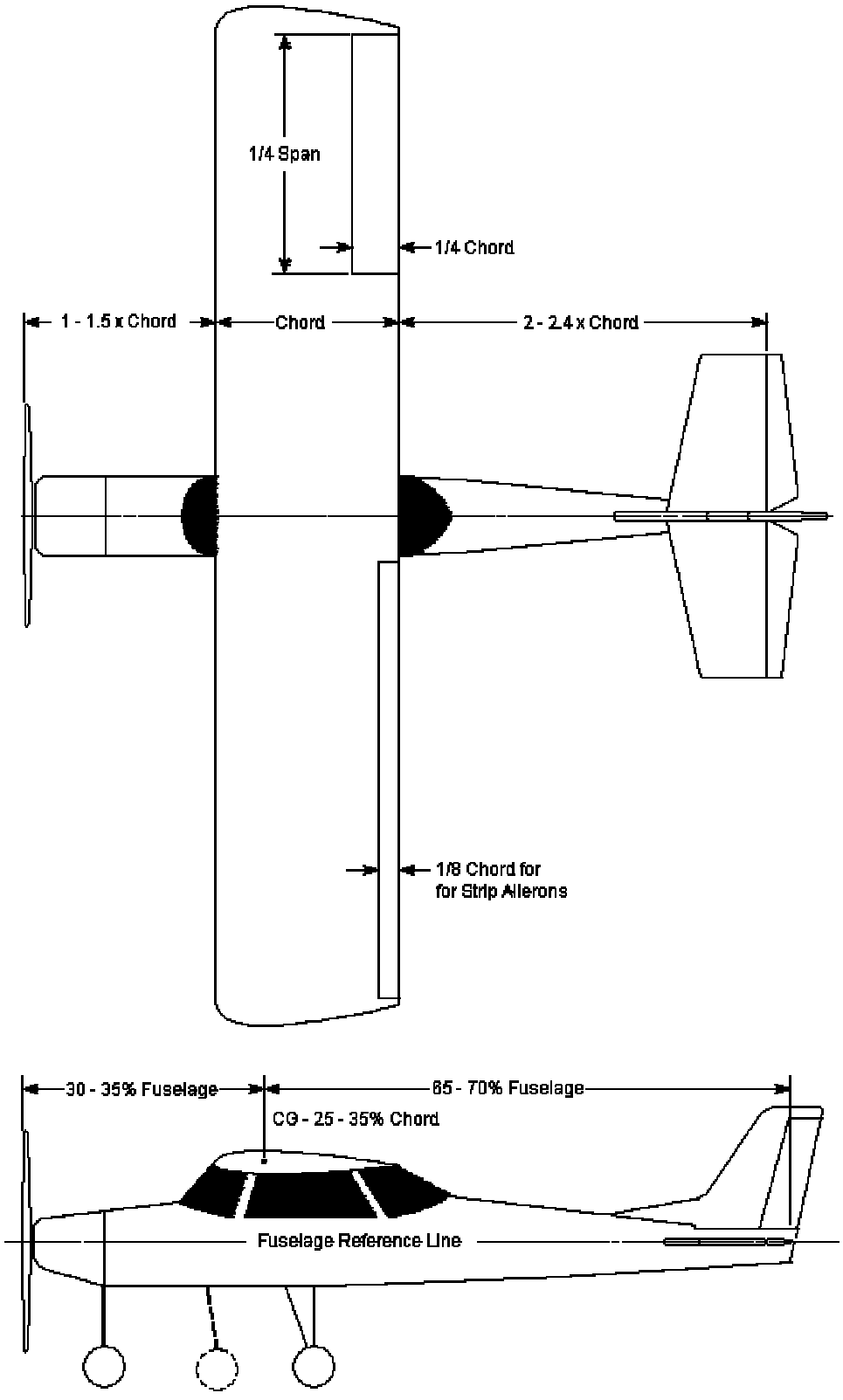
The fuselage length is now calculated using the 10" chord. The nose will be 10" - 15" and the tail will be 20" - 24". Taking the median dimension of these, the fuselage length will be 44-1/2" (12.5" nose + 10" chord + 22" tail). The engine thrust is usually set for 0° - 3° down and 0° - 3° to the right. The landing gear is selected as a matter of preference. A conventional landing gear is set even with the leading edge of the wing. The main gear of a tricycle landing gear is placed 1 1/2" behind the center of gravity. The width of either main gear is 1/4 of the wingspan.

The stabilizer area will be 20% - 22% of the wing area. The area for the 600 sq. in. wing would be 126 sq. in. nominal. The aspect ratio for the stabilizer is 3:1. Using a stabilizer chord of 6 1/2", the length of the stabiler would be 19 1/2" and the area would be 127 sq. in. The elevator is 20%; of the stabilizer area or 25 sq. in.

The fin is 1/3 of the stabilizer area and the rudder is 1/3 - 1/2 of the total fin area. For the current example, the total area of the fin would be 42 sq. in. and the rudder would be 21 sq. in.

The type of structure that is designed will depend on the use for which the model is intended and the personal preference of the builder. The slab sided fuselages are easier to build than the truss work structures but are also heavier and stronger in most cases. Foam wings are easier to build than built up wings but are heavier and more accurate. A little knowledge of structure goes a long way in the design of a model. In many cases, a modeler will design using the structural configuration of another model and simply change the appearance or the size of the model.

These design parameters were originally collected by Romney Bukolt and published in "Marcs Sparks" in about 1975. Since that time, the validity of the parameters has been proven by the many different models which have been designed using this method.


1/4 Span
1/4 Chord
1 - 1.5 x Chord
Chord
2 - 2.4 x Chord
1/8 Chord for
for Strip Ailerons
30 - 35% Fuselage
65 - 70% Fuselage
CG - 25 - 35% Chord
Fuselage Reference Line

CLUB EVENTS 2006

EVENT	**DATE**	**ALTERNATE DATE**
Hog Day	June	
SRCS Club Scale Day	July	August
Kevin Gray Memorial	August	September
SRCS Scale Rally	October	
Pattern Day	October	November

Dates to be determined

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 or another committee member** at the field. Sizes for the shirts are large and XLS in blue or grey.