



# SWARMS Propwash

April 2003

Committee members;

President: Selwyn Saunders Ph 97253215  
Secretary: Brod Meredith Ph 97272305  
Treasurer: Paul Dodge Ph 97252527

Safety officers: Ian Humphryson/Dennis Green  
Canteen officer: Brenda Green  
Newsletter editor: Paul Dodge (dodgey@iinet.net.au)

**Hi everyone - Selwyn here.....**

*It will soon be the AGM so I hope you will all come along and help to decide the important issues such as fees and appointment of committee members. I believe at this stage that Brod is willing to carry on with his duties as secretary if elected but I myself will not be standing again. I'm afraid that I just can't find the time to commit to such an important position with a young family. I will be still helping out in the background though with the new shed in fitting it out - especially the kitchen area!*

*The club shed is progressing - we are just waiting for the permit from the local council before we can proceed with the footings. Application has also been made to withdraw some of the debenture stock investments so that payment can be made.*

*The evening meal at the Capelite restaurant went well - many thanks to Paul for organising it and the awards were well received by all including Dennis (who didn't even know he had won one!).*

*Well that's it for now - take care and safe landings.  
Selwyn*

## AGM

The AGM for this year is to be held earlier in the year than usual on Sunday 4<sup>th</sup> May at 10 am at the flying field. Any agenda items and nominations for committee positions should be sent to the secretary at least one week prior to the meeting.

## New Site

There is a new flying site at the corner of Treasure and Wellesey Roads halfway way between Brunswick and Australind. Travel north up the motorway until you find Treasure Rd on the right just past the Kemerton turn. Keep going down there for 5 kms until you come to the intersection with Wellesey Rd. The field is directly opposite to the left. The farmer has kindly consented to let people fly there for free and the field is fairly level suitable for short ground take-offs if you pick your spot! There are some power lines about 300m away but if you're flying near them then you're probably too far away anyway. Why not try a visit one w/end. Bob Gaffney is the contact on 97970181.

## Happenings

Here is a photo of Brod with his trainer - I think this is the one with the bits that move when they shouldn't!



Wednesday the 26<sup>th</sup> saw a beaut, calm, warm day - the first I can remember for some time. I took a ½ day off work - I was so excited I turned up at the field at 9am - the earliest I'd ever been there - I didn't even realise it was light at that time of day! Already there were Selwyn, Stuey, Larry, Dave, John, Ken G, Richard, Little Bob, Den and Brenda and others. Larry was flying a new Cap that he had made for Dave and Ken Grant had a small electric low wing job which flies well in calm conditions. Richard had his Rookie powered glider which seemed to be a lot lighter than mine and flew well. He also had a go with my Junior 60 which didn't want to come down as usual. Towards the end Ken Turner turned up as well - good to see you again Ken.

Friday the 28<sup>th</sup> was the visit by the Morrissey 'Happy Wanderers' group who were driven to the field by Mrs Clapp (it's a small world isn't it?). Ann decided not to fly though and let Ian do the honours.

Sunday 30<sup>th</sup> was overcast and showery but quite calm. Only a few members were there including Bob with his Pup (fitted with the larger engine) which he said took off and flew much better with the extra power.



Bob also had his PT-17 as well which had its maiden flight and behaved very well. Both Shane and myself forgot our rubber bands and had to buy/borrow some from Clayton! John was there with his Piper Pawnee - alias the 'pig' and Smudge also turned up.

One member that we never see is Val Parker - we hope you are well Val and we would like to see you out at the field again one day.

Colin flew his 'Jazz' very nicely although he was trembling afterwards with the adrenalin rush when I spoke to him. I'm sure Colin won't mind me telling everyone that he's now 78 yrs old and flew Fairey 'Battlers' in WW2!



**Colin with new Dazzler**

Sunday the 6<sup>th</sup> April was a shocking wet and windy day. I had modified my Canary wing to be semi-symmetrical and coaxed Larry to take it up for me. It flew really well and wasn't troubled by the wind as much as the flat-bottomed wing - landing is now a lot easier. A worthwhile mod to a flat-bottomed wing. Bob flew his Extra 300S and that was it – just the two flights all morning. A few people came out on the following day as well but the wind was just as strong. Larry flew his new pattern ship and did some remarkable landings from the west as the wind was constantly changing. Surely this wind can't keep up for much longer can it? A while ago I went to Ian H's house and took some photos of his amazing plane collection. I'll add them in as space permits but below is one of a new kit – an Extra 300L which cost only \$1600! Its an ARF made of balsa/foam and will be powered by a 100cc DA-100 engine when finished.



**Ian Humphryson with Extra 300L**

**Morrissey 'Happy Wanderers' visit**

The Happy Wanderers really enjoyed the visit to the farm on the 28th March. They thoroughly appreciated the time you all took to put on the display, thank you to all the members who so graciously gave up their Friday - especially John Knowles who sacrificed his golf day! The flying field is such a lovely place for people to visit and see and always seems to be enjoyed by all types - male, female, young or old.



**Some of the happy members who entertained the happy wanderers.**

Thanks again from the Morrissey 'Happy Wanderers' group. (Ann Clapp)

**Dangers of dealing with carbon fibre**

This disgusting looking object is someone's second finger.



It is in fact a lump of cartilage that formed over the past 18 months around a puncture wound from a piece of carbon fibre! In that time the cartilage has grown right around the finger and under the pad. The person concerned was cutting a carbon tube with an abrasive wheel when the tube shattered and a small (7mm x 3mm x 0.5mm) piece got lodged in his skin just above his fingernail. He pulled it out and it looked clean. It didn't even bleed (the doc told him it might have better if it had, but there is a down side to that as well). The cartilage has formed around carbon fragments that were so small that they were invisible.

The down side to having it bleed when it happened? Those particles could have gone into the bloodstream, and formed lumps of cartilage just about anywhere else. Worst still - just imagine breathing in the dust!!

So, carbon fibre is **NOT A SAFE MATERIAL TO PLAY AROUND WITH** – so please be aware when working it (and other composites).

**Fuels** (above article was taken from the Internet – Ed)

When sport engines "act up" on a standard brew of 4:1 Methanol/Castor, there is a need to experiment. Methanol can vary from season to season and can some times causes motors to run extremely hot and inconsistent. The remedy is generally to do what 'Shell Oil' do and add 3% Acetone to the mixture. This action can turn an unco-operative engine into a well-behaved engine. With Four Stroke engines, try running a blend of 5% acetone – this will reduce any backfire and stop a prop being thrown. The following information are some extracts from 'Performance Tuning in Theory & Practice - Two Strokes' by Graham Bell (*note that this article was originally written for full size engines - Ed*);

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" I recommend the use of racing fuels in which the higher octane is obtained by blending additives such as acetone, toluol (methyl benzene), benzol, ethanol or methanol."

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"Methanol (Methyl Alcohol) and Ethanol (Ethyl Alcohol) have an octane rating of 140 - 160, depending on mixture richness. These fuels therefore can be used with very high compression ratios."

Methanol and ethanol have very high latent heat of vaporisation, i.e., it takes a lot of heat to convert them from a liquid into vapour. Petrol has a latent heat of evaporation of 135 Btu/lb., methanol 472 Btu/lb., and ethanol 410 Btu/lb. This heat, required for proper atomisation, is removed from the piston crown, combustion chamber and the cylinder, resulting in an internally cooler engine.

The two-stroke engine is a type of heat engine, i.e. one that burns fuel to cause the expansion of gas and the subsequent movement of the piston. The more heat produced by the combustion process, the more pressure there will be exerted on the piston, which gives us a power increase.

Using Petrol, the fuel/air ratio for best power is 1 : 12.5. With methanol we can increase the fuel/air ratio to 1 : 4.5, although I usually prefer a ratio of 1 : 5.5. (less than 1:7 is too lean).

Methanol is extremely poisonous and as an accumulative poison, it can build up over a period of time and oxidise to form formaldehyde, eventually causing blindness or even insanity (Selwyn please note!). It is absorbed through the skin and lungs, either by direct contact or from the vapours. Inhalation of exhaust gases can also be dangerous as vaporised methanol is usually present, especially when rich mixtures are being used.

Methanol and ethanol will absorb huge amounts of water out of the air, so they must always be kept in an airtight container. Any fuel should also be completely drained from the tank and the carburettor to prevent the formation of water-induced corrosion and oxidation if being stored.

In colder climates, starting difficulties may be encountered when pure alcohol is being burnt. Some use other more volatile fuels blended in to help overcome this problem. Usually 5% acetone or a maximum of 3% ether is used.

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Nitro Methane's only virtue is that it contains approximately 53% by weight oxygen, so in effect it is a chemical super-charger. In drag car engines it is blended using 80-90% nitro to 10-20% methanol, but there is no way a standard two-stroke engine will hold together with much more than a 20% nitro-80% methanol blend. Care is in order when handling nitro methane, as it may become unstable and explode.

When methanol or ethanol is used as the base fuel, propylene oxide may be added to increase the combustion flame speed. If you decide to use propylene oxide, be very careful to blend in not more than 3-5% by volume and ensure a rich fuel/air mixture of 1:4.5-5.0 is maintained. Propylene oxide can become explosive if allowed to come in contact with rust particles or copper and its alloys. Therefore it must be stored in plastic or aluminium containers. Once blended with other fuels it is relatively stable.

Acetone is also often blended with alcohol to accelerate combustion flame speed, and also to reduce its tendency to pre-ignite when lean mixtures are used. Usually a max 10% acetone/90% alcohol blend is all that is required for this purpose, although much higher percentages of acetone may be blended if desired.

**Fuel supplies**

If you wish to mix your own fuels then try Stephen Wood of Australind (Ph 97971215/0427903159). He has an agency caused 'Motormate' which specialises in racing oils and fuels amongst other things. In particular he sells Methanol for \$20/20 litres and HTX-098 racing oil (brown/yellow coloured) for \$31.50/litre. When using this oil for model engines you need less than Coolpower (blue coloured) say 12-15% rather than 20%. Coolpower is available from Brian Simpsons for \$45/US gallon (that's 3.8 litres I think!) which works out at \$12/litre. This is therefore the cheaper way to go even though 20% is the recommended amount to add. Larry Allen and myself have been using the HTX oil and it seems OK although I personally find Coolpower easier to clean off the model and it doesn't stain clothes so badly - so my wife informs me! Also Brian sells Nitro for \$21.50/litre if you need to add some pep and also check this months windsock for even cheaper Nitro. Larry (considered by many as an expert in tuning 2-strokes) also speaks highly of Klotz oil (red coloured) which leaves little internal residue on engines.

I personally find that most motors used for sport flying run OK on a straight mix of 20/80 oil/methanol but 5% nitro seems to improve the pick up and top end a bit and is worth adding.

However 4-strokes seem to need around 10% nitro to run smooth – especially at the lower end - in fact I found my Saito very difficult to start by hand with a straight mix (must save up for an electric starter!) - add some nitro and it's a different story but maybe that's just the way I start them!  
(Paul)

## Hints and Tips

- This might not be as obvious as it seems. No amount of shaking will get that last bit of Cyano out of that glue bottle. Simply stick a hobby pin in one of the bottom corners and you will be surprised how far those last few expensive drops can go.
- Keep your old broken specs & sunglasses, the lenses make excellent windscreens for your open cockpit style models. Simply grind the top edge flat and you may also need to sand one side edge to get a symmetrical frontal shape. You will finish with a great looking concave & tinted screen, CA readily bonds with the ground edge too (be sure to ascertain that the lens is in fact polycarbonate and not glass though).
- Having a sticky time of it while using epoxy glue? Most epoxy glues in popular use can be cleaned up with ISOCOL which is an alcohol based substance available from most chemists. It comes in a 375ml green plastic bottle and is also great for thinning epoxy which can then be used for fuel proofing balsa and plywood. And whilst on the subject of cleaning up, methylated spirits works well on wet Silicon. If you have the misfortune to actually stick yourself to something with CA, don't panic, there are solvents available but acetone does work if you're patient.
- If you rub mineral oil onto a canopy, then wipe it off before using Cyano to glue it on - you don't get the white fogging. I've not tried it, any takers?
- Old car windscreen wiper pumps can be purchased from wreckers. They make excellent fuel pumps.
- If your aerial lead is too long for the plane then don't fold it back too much as this will reduce the range of your radio gear. Instead wind it around a plastic straw with tape over it to hold it in place. Make the turns with approx 5 mm spacing. Alternatively let the end of the aerial dangle downwards freely from the fin so as to be at right angles to the main aerial.
- Probably an old one but worth repeating – fishing weights are cheap/easy to purchase and can be drilled/screwed to fit to the nose bulkhead to adjust C of G if necessary. Get the ones with the flat bottoms in 25/50/100 g sizes to suit. Another convenient place to secure them temporarily for testing purposes is through the coil on the nose-leg of a tricycle undercarriage by using some cable ties. (always wash hands after handling lead).

Why not go for your Wings !!! Practice the moves below, do a few complete procedures with an instructor, then see Ian Clapp/Larry Allen or one of the instructors and book a day for your test.

### **BRONZE WINGS – (KAMS guidelines)**

#### Practical/Theory test

- Answer 4 safety rules and demonstrate correct procedure for frequency control.
- Range test the r/c equipment. Check operation of control surfaces and throttle.
- Demonstrate safe practices for starting, tuning and moving out to the take-off area.

#### Flying test

- Take-off into wind
- Straight flight left to right and right to left
- Rectangular circuit left to right and right to left
- Loop left to right and right to left
- Figure 8 left to right and right to left
- Simulated dead stick
- Circuit and landing into wind

### **GOLD WINGS – (KAMS guidelines)**

#### Flying test

- Take-off into wind
- Inward Figure 8 left to right and right to left
- Outward Figure 8 left to right and right to left
- Procedure turn left to right and right to left
- Circuit left to right and right to left
- Immelman turn left to right and right to left
- 3 inside loops left to right and right to left
- 1 outside loop left to right and right to left
- Inverted pass left to right and right to left
- Cuban 8 left to right and right to left
- 3 turn spin left to right and right to left
- 3 rolls horizontal left to right and right to left
- Slow roll left to right and right to left
- Landing circuit left to right and right to left
- Landing into wind

*(followed by the resuscitation of pilot by instructor! – Ed)*

#### **Results of Tender**

Computer printer      Selwyn \$20  
Hustler/OS40              Paul \$50  
Trainer/OS25/radio      Brod \$50

#### **For Sale**

Kyosho trainer/MDS40/Furaba 4 ch all as new \$480  
See Matt Boyland

#### **Events**

- Madmac fly-in at Pinjarra site on Sunday April 27<sup>th</sup> 9am
- AGM on Sunday May 4<sup>th</sup> 10 am

## 'Flyability' of Models

Ted Offer from California assessed over a hundred different radio control models to try to determine their 'flyability' relating weight, wing area and engine size and came up with the graph below. This information was also cross referred to other available data and is fairly accurate and can be used for designing and building your own aircraft as it will give you the size of engine for a given plane, size of plane for a given engine and typical weights that you can expect to fly for a given plane/engine. Changes to any of the above can be predicted from the graph and will predict how well the plane will fly. Note that Biplanes should only be considered to have 75% of their effective wing area and also require a slightly higher power requirement as would a plane with a high drag such as a thick wing aerofoil section. It is always better to have a slightly overpowered model than underpowered especially during takeoff and the extra weight at the nose is rarely an embarrassment as weight normally has to be added anyway.

### Example 1- Scale Piper Cub

With a wing area of 580 sq inches (excuse the use of imperial units but the book this was taken from is English) and an engine of around .25-.35 cu in would put it in the light area of the graph. With an average drag coefficient for this type of aircraft then no further adjustment is necessary.

### Example 2 - Mustang P51 large scale aircraft

This would be expected to be heavy but should have a good (low/med) drag coefficient. With a scale wing area of 800 sq inches then we will need at least a 0.60 cu in engine and a maximum weight of 150 ounces or 9.5 lbs or say 4 kgs. These sizes may seem quite low compared to the modern aircraft models used today but it has to be remembered that this graph was formulated some years ago when the biggest engine size was a 0.60 cu in 2 stroke. Nevertheless the curves still apply for most models up to say 4-5 kgs in weight – the only difference being that the engine sized is based on a plain bearing small carby type engine. If using a ball raced big-throated engine such as an OSFX type then an allowance should be made. For example an OS46FX would be equivalent to a 60-size engine shown in the graph.

Example 3 – What weight would I aim for with a scale hurricane model with a 400 sq in wing and an OS Max 25 engine?

From the graph it can be seen that a weight of around 50 ounces or 3 lbs or 1.5 kgs should not be exceeded. A 40-size motor will allow the weight to go up to 80 ounces or 2.5 kgs.

Remember to follow a sloping line when tracking a particular engine size (eg 09 size engine).

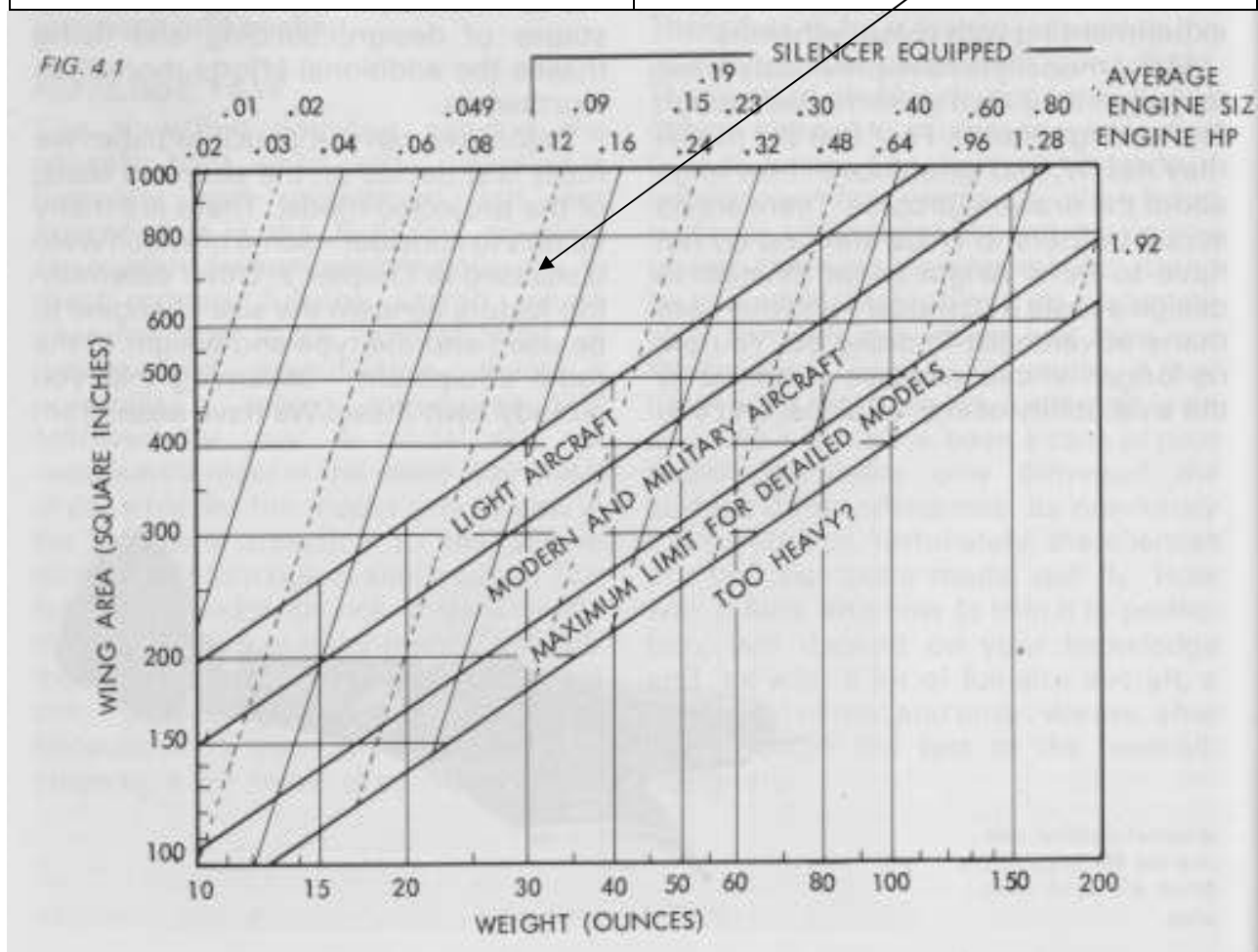


Fig 4.1 (this was taken from a 'Flying Scale' book that Ian lent me – Ed)

**Fly-in at Shane's farm at Buckingham**



Although only a few people managed to attend the fly-in at Shane's farm those that did make the trip were treated to some good old-fashioned country hospitality courtesy of Shane's family. It was one of the hottest days of the year - topping 40 deg C with strong gusty winds.

Only Roger flies like Roger who provided some good entertainment and stole the show by doing a spectacular crash.

I wish I had a field like that at the back of my house!

Many thanks to Shane for the photos.  
(Paul)



**Excellent shade and facilities were provided for one of the hottest days of the year**



**Roger looking for all the pieces**

**Treasurers report as at 31/03/03**

**Receipts**

Fees	260
Soft Drinks	35.20
Food	34
<b>Total</b>	<b>329.20</b>

**Bank balance**

Statement as at 31/03/03	1343.68
Cheques on hand	110
Cash on hand	20.40
<b>Balance</b>	<b>1414.08</b>

**Payments**

Tax	1.60
Soft Drinks	24
Food	9.80
Bronze Wings	60
Postage	24
Large mower repairs	71.85
Gas	25.95
Shed deposit	1275
Shed Permit	75
<b>Total</b>	<b>1542.80</b>

**Assets**

Equipment Value	23950
Debenture Stock	7000

**Stop Press**

Ireland's worst air disaster occurred late yesterday afternoon when a small two-seater Cessna plane crashed into a cemetery. Irish search and rescue workers have recovered 1826 bodies so far and expect that number to climb as digging continues well into the night.