Newsletter 370 – November 2014

MINIATURE AERO SPORTS NEW SOUTH WALES INC.

Young Oliver Manwaring in his grandfather John Manwaring's aircraft. Neither of them are quite ready to fly yet.

Photo: Grahame James, Cootamundra.

Contents

Diary Notes

Next MASNSW Meeting

Friday 14th November 2014, 8:00pm at **Dooley's Waterview Club, Cnr of Clyde Street and Silverwater Road, Silverwater**.

Following MASNSW Meeting

Friday 5th December 2014, 7:30pm at **Dooley's Waterview Club, Cnr of Clyde Street and Silverwater Road, Silverwater**.

Newsletter #371 (December 2014) deadline for submissions
Tuesday 18th November 2014.

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Miniature Aero Sports NSW Inc

MINUTES

Business Meeting
Board Room, DOOLEYS Waterview Club,
Cnr Clyde St & Silverwater Rd, Silverwater
Friday 10 October 2014

Meeting Opened: 8.00pm

Attendance: D Costelloe QFS, B Bishop CMAC, T Nolan ROW, R Carpenter HMAS, S Norrie NSW SAS, A Nolan ROW, R Masters WPMAC, D Lewis Coota, B Swan UMAC, M Stone HSL, J Kastelan BAC, G Atkinson WRCS, J Deece HMAS, G Hoy CMAC

Visitors: M Swan UMAC, B Barden BAC

Apologies: J Randal, CKSMAC, T Ashley CVRCMAC, B Thrift CVRCMAC

Minutes: Motion that the minutes of the meeting held on the 12 September 2014 at Silverwater as published in newsletter 369 be accepted as a true and correct record of those meeting. Further that the financial record from the meeting are also accepted as circulated to clubs in MAS NSW bulletin number Seven 2014 2015.

Moved: WPMAC **Seconded:** CMAC **Carried**

Business Arising: Greg Hoy, CMAC was present but not listed at the 12 September meeting; an oversight on the attendance sheet.

Correspondence: (N.B. Items of correspondence with one * are for information, items with two ** require a decision.)

Correspondence In:

From MAAA:

M 1.1 Secretary: Australian National Aviation Museum open day 8 Nov (MAS NSW Bulletin)
M 1.2 Secretary: advice of the next issue of Wingspan Magazine
* M 1.3 Secretary: 2015 Nationals Program in QLD
* M 1.4 Secretary: request for auditors report to close out old financial requirements

From other than MAAA:

C 2.1 R Young: CVRCMAC, comments on name change
C 2.2 CASA: display approval for Temora Jets
C 2.3 B Lampe: WWMAC, FW25 enquiry – (new card printed by MAAA)
C 2.4 J Rolfe: NSW SAS, feedback on the status of the State Field Cootamundra
C 2.5 P Bennett: COMSOA, air display application at Tamworth

C 2.6 F Nieuwenhuizen: NSW Pattern, updated contest calendar
C 2.7 J Randall: CKSMAC, enquiry on behalf of Cowra Club re their MAAA grant
C 2.8 J Kastelan: BAC, nominations for flight training course
C 2.9 R Butnaro: CMAC, FW25/turbine application
C 2.10 CASA: area approval for HMAS
C 2.11 H Oddy: NEMAC, height exemption application for sailplane Expo 2015
C 2.12 E Ashley: NSW SAS invoice for NSW Scale Championships – forwarded to Treasurer

C 2.30 Received completed Large Model Permits to fly forms from the following:
N Mackley COMSOA, J Price RAAFMAC, P Celima CKSMAC x 2, D Costelloe QFS,
M Locock CKSMAC, A Williams COMSOA, T Martin WRCS, A Harris COMSOA,
L Plaatjes WPMAC, L Higero LMAC, J Hodder COMSOA, G Wilkinson DMAC, P Giles JFA,
C Gregson SSSFA, G Wilkinson DMAC, G Hilderbrandt OMAC, D Bolstadi WRCS
G Dore GMAC

Late Permits:

C 2.31 Received Cancelled Large Model Permits to fly forms from the following:
G Dore BRCFC

C 2.32 Newsletters Received:

Late Correspondence:

Correspondence Out:

To MAAA:

To other than MAAA:

C 2.5 Application forwarded to CASA
C 2.7 Advice to author re the grant status from MAAA
C 2.8 Forwarded to CFI for attention
C 2.15 To CASA

Business Arising from Correspondence:

C 2.10 The President advised the meeting of the outcome of the Area Approval for HMAS and encouraged other clubs to consider making application via MAS to get their field approved. This has a number of advantages when it comes to displays and competitions and can also give you access to fly above 400' AGL. The meeting thanked Tim Nolan for the work he has done in improving the relationship with CASA and his efforts in helping clubs/members with their applications for displays and Area Approvals.

Motion that the inward correspondence is accepted and the outward correspondence be adopted

Moved: WRCS **Seconded:** UMAC **Carried**

Reports
Treasurer Bob Bishop

The Treasurer supplied a copy of his report to all members of the meeting for review – this will be emailed to Clubs via MAS NSW Bulletin for circulation.

Business Arising from the Treasurers Report:
The last of the outstanding cheques from the Commonwealth Bank account have now been presented and as soon as the ATO confirms the change in banking details we will be closing the Commonwealth Bank Account.

Motion: That the Treasurers report be accepted and accounts be approved for payment

Moved: HSL **Seconded:** NSW SAS **Carried**

President Bob Carpenter
We have had an extremely busy month with the planning and execution of the MAS NSW Fly In and Airshow over the 4th and 5th of October. As much as this was a great event there were key activities leading up to the event.

Probably the most important for the ongoing operation of our clubs was the work done by our Secretary Tim Nolan in liaising with CASA for the approval for the public display. Up to now we have had to apply through CASA for each individual public display or height clearance for our events with a charge for each approval. Tim was able to work with both CASA and the RAAF to establish the area approval for the HMAS Field at Vineyard for the next five years. There are conditions involved but we now have the ability to have a 1000 ft height clearance for selected events by liaising with the RAAF and the Area Approval will be shown on the full size aviation charts for the next five years. This will also mean that all our approvals at this location will be from MAS NSW and there will be no further CASA charges for the club. This is the way to work with the regulator and professionally establish our fields. Well done Tim.

The partnership between MAS NSW and the Freemans Reach Rural Fire Brigade (FRRFB) has been developed over the past two years and at this year's Fly In and Air Show the FRRFB provided the car parking and catering. Whilst all profits went to the Fire Brigade to assist in their activities this allowed our members, of both the club and the association, to be free to be involved in the flying and demonstration of our aircraft. I am of the opinion that this has many benefits, two of which are the involvement with the Fire Brigade shows us as a valued member of the community and secondly allows our members to interact with the public to show technology at work.

The event itself was once again very successful with many clubs represented by their members. We also took the opportunity to showcase Control Line flying by CLAS NSW and a highlight of the show was extreme 3D helicopter flying by Rhys Wyatt from Newcastle. The exceptional part about Rhys is that he is 5 years old, not yet at school, and handles his helicopter (that is bigger than him) with all the skill of a seasoned flyer. He will be flying as a contestant in the 3DX event in November.

At the event we had the local Hawkesbury FM radio station on site, with crosses back to the studio throughout the day on all aspects of our flying, jumping castle for the kids and the display of full size race boats. These all added to the spectacle and gave the opportunity for all MAS NSW members to get together and just enjoy their pastime.

We have already commenced planning for next year's event and have decided that it will be two weeks later to take it away from the long weekend and the school holidays. We will be strongly suggesting that this is the only event in the calendar on that weekend in NSW.

Thanks to all involved.

Registrar **Dave Lewis**

- Currently running at 2120 Members, similar number to this time last year.
- Very happy to see Sydney Society of Model Engineers re-affiliate, that makes 82 Clubs on the books
- Email Bulletins and Treasurers Reports appear to be working (around 170+ on the Contact List)
- Australia Post still providing "challenges"

Chief Flying Instructor **Bob Carpenter**

Our course in Grafton over the weekend of the 13/14 September has been conducted. We had representation from Queensland with their executive and CFI attending to see how we conduct our course as they will be undertaking the same course in coming months. We have received the same feedback from all who attended - that this was an extremely beneficial course that is needed by all modellers but especially those who are the administrators in their respective clubs. The information presented and the locations of key resources is required by the modellers of today that probably do not have the same experience or time in modelling that those who have preceded them have. Of particular note this time, from my point of view is that clubs who are not regularly involved with other modellers and other flying locations develop their skills to suit local conditions. This reinforces the points that we bring up continually; that if you get the chance take the opportunity to fly at different locations and with different models. Your skills will improve immensely.

I would like to thank George Atkinson and Martin Cochrane for their assistance as deputy CFIs and Steve Keep as an assistant for the weekend. We need to ensure that these courses are continued and provided to the total membership.

The next Instructor's Course and workshop will be conducted at HMAS Vineyard over the weekend of the 29/30 November please ensure that if you wish to attend that you contact the Secretary.

We have been requested to run a course in the Newcastle area and we are planning this for early in the New Year possibly late February. Once again if you would like to be involved contact the Secretary Tim Nolan.

State Flying Field Secretary **Steve Norrie**

I am pleased to announce that there have been three groups use the field in the last month, all of these have reported that the field is in great condition. For this I cannot thank the Cootamundra Aeromodellers Club members enough. The outfield requires cutting; this has been organised for the weekend of 11-12th October.

The next event will be Scale Downunder commencing 15th October, followed by Large Scale Pylon Racing commencing 24th October.

The following was sent in by Mark Purvis

"Please pass on my thanks to the Cootamundra model club for their assistance and the excellent presentation of the field for our couple of days there.

The facilities are amongst the best I have seen and very well maintained. Perhaps what is more impressive is the potential this site has for development, that is if MAS is considering powered sites and fixed accommodation for major events, it would then be unparalleled in Australia".

Another report from Mark Chapman (F3C Heli event) has been submitted separately.

CASA Liaison Officer **Tim Nolan**

We can now confirm that Mr Kevin Scrimshaw from CASA will be attending the December meeting to address us on CASA 101, risk assessments and display applications. Kevin is the main contact person for us in dealing with all these applications and he is very knowledgeable on this material and very keen to assist us all in meeting the requirements of CASA to enable us to demonstrate out great sport/ hobby to a wider audience.

If you have questions on this material or other areas then please arrange to be at the December meeting on the 5th starting at 7.30pm. He will also be able to discuss multi rotors and where they are going with CASA and the difference between hobby and commercial applications

Public Relations Officer **Aranka Nolan**

The Air Show at Vineyard was a perfect event to showcase some truly amazing aircraft and flight skills from our members. We had the very experienced guys doing mind twisting manoeuvres, with a number of young guys showing their prowess, and one pint sized child, Rhys Wyatt (aged 5, thank you very much) giving the Heli guys a run for their money. He is seriously good but outstanding for his age. What was really important was that we took full use of the Hawkesbury Radio Station that was set up to broadcast from the field. At every opportunity we had a representative from our aeromodelling community getting interviewed to talk about their style of aircraft and their involvement in the sport. So jets, helicopters, quadcopters, control line, gliding and aerotowing as well as our boy genius Rhys were among those that spoke. Thanks to all of you who helped me on the day by talking on behalf of the sport. The Radio Station Rep was quite enthusiastic and said that would happily support the event next year. The members from the Rural Fire Service made everyone feel most welcome, keeping all of us fed and watered throughout the event as did the members of HMAS. Thanks to everyone who made it such a great success and one that will attract more people in the future.

Aeromodellers NSW is now on Facebook
For those of you who are users of Facebook you can now receive updates as they are put up on the Aeromodellers NSW Facebook page.

I encourage everyone to join in and post stories and images as well as video from around the country as they occur. It is a great place to share you latest creation or any other aeromodelling information that would be of interest to others.

I am in the process of loading some videos from the Air Show and I note the first one has been reached over 100 people and I only loaded it over the weekend.

Calling for history

As we get closer to developing the new Aeromodellers NSW website it is a great time to find all those old but important stories about our sport and how it started in this State. Images, newspaper clippings, design improvements - all these types of things would be most interesting to present in the history section of the site.

Other reports:

Bill Swan, UMAC, gave the meeting a report on the F3C helicopter titles and the team Selection event held at Cootamundra, it will appear in the newsletter as a standalone item.

Motion that the reports be accepted.

Moved: WRCS **Seconded:** HMAS **Carried**

Awards:

Applications received for the approval of MAAA Fixed Wing Power – Bronze Wings:

Erron Gardiner	CMAC	42801
Ray Blight	PMRCMAC	32233
Chad Towns	CCMAC	82332
S Dakin	EMAC	82188
Glen Mason	HEMFC	81966

Applications received for the approval of MAAA Fixed Wing Power – Gold Wings:

Ronald Swager	WWMAC	68114
Philip Chad	HMAS	25176
Blake Barden	BAC	73924

Applications received for approval for MAAA Fixed Wing Power Instructors:
No applications received

Applications received for Approval of Commercial Model Aircraft Flying Instructors:
No applications received

Applications received for the approval of MAAA Helicopter - Bronze Wings:
No applications received

Applications received for the approval of MAAA Helicopter - Gold Wings:
No applications received

Applications received for approval of MAAA Helicopter Instructors:
No applications received

Applications received for the approval of MAAA Glider – Bronze Wings:
Peter Blackwell SHMAC 73961

Applications received for the approval of MAAA Glider – Gold Wings:
No application received

Applications received and approved for MAAA Glider Instructors:
No applications received

Applications received and approved for MAAA Multirotor – Bronze Wings
No applications received

Applications received and approved for MAAA Multirotor – Gold Wings
No applications received

Moved: HMAS **Seconded:** CVRCMAC **Carried**

MAAA Inspector Approvals:

Heavy Model FW 25 Inspector Approvals:
Nil received

Heavy Model RW 25 Inspector Approvals:
Nil received

Giant Model FW 50 Inspector Approvals:
Nil received

Giant Model RW 50 Inspector Approvals:
No applications received

Gas Turbine Inspector Approvals:
Nil received

Commercial Instructor Approvals
Nil received

MASNSW POINT SCORE COMPETITION AWARDS 2014:

SAM 1788	Old Timers	Sept 2014
SAM 1788	Old Timer	Oct 2014

General Business:

The first item of General Business is:

The next Business Meeting and the Annual General Meeting of MASNSW will be held on Friday 14 November 2014 at Dooley's Club starting at 8.00pm all members and visitors are welcome.

All members are again reminded about the December meeting it is on the 5th December 2014 and will commence at the earlier time of 7.30pm

There was discussion around the possibility of connecting the State Field at Cootamundra to power, an estimate of some $66,000 to install the six power poles to bring power to the main area. This was discussed and use of generators and the cost to run etc, the distribution of power, and the how many are using/require the power for their flying. It was acknowledged the increase in electrics but was agreed that the current usage of the venue was not sufficient to justify the expenditure. Your Executive will continue to monitor the usage and any event s that do require power we will assist in the provision suitable generators.

There being no further business before the meeting, the meeting was declared closed at: 9.50pm

MASNSW 2014 Events Calendar

(**Compiled 27/9/2014**)

- Those Events marked with an * are MASNSW Point Score Events.
- Unless otherwise advised MASNSW Meetings are held the 2nd Friday of every Month.

Nov 2014				
2	NSW Pattern Flyers – Aerobatics	Pitt Town	Felix N.	0428 880 633
8-9	Waraldia Fun Fly	Waraldia	Barry Power	0488 688 377
9	Shoalhaven Shield & 2m Glider Millennium Cup Rd 7	Bomaderry	Ian Avery	02 4232 1093
14	**MASNSW General Meeting – Waterview-Dooleys**	**Silverwater**	**Bob Carpenter**	**02 4577 6612**
15-16	Belconnen/Yass - Old Timers	Yass	Grant Manwaring	02 6241 1320
15-16	World 3DX - 3D Helicopter Event	Hawkesbury	Bob Carpenter	0438 171 070
22-23	NSWSAS (Scale) Round 4	Richmond	John Rolfe	02 9734 6288
29-30	Lithgow Seaplanes	Lake Wallace	Dave Brown	0402 868 568
Dec 2014				
5	**MASNSW General Meeting – Waterview-Dooleys**	**Silverwater**	**Bob Carpenter**	**02 4577 6612**
	Note Meeting is one week earlier and starts at 7.30pm – to allow for Guest Speaker from CASA			
7	F5J Picton Cup Rd 2	Appin	Bill Gibson	0435 439 377
Jan 2015				
10-11	Lithgow Seaplanes	Lake Wallace	Dave Brown	0402 868 568
17	NSW Pattern Flyers – F3A	Camden Valley	Felix N	0428 880 633
24-26	35th Armidale Sailplane Expo	Armidale	Hutton Oddy	0425 285 758
31/1-1/2	Alan Brown Memorial Old Timer Event	Orange	Peter Johnsen	0412 641 088
Feb 2015				
14-15	23rd Annual Banjo Paterson Scale Rally	Orange	Peter Johnsen	0412 641 088
14-15	NSW Pattern Flyers – F3A Fletchers Lane	Bomaderry	Felix N	0428 880 633
Mar 2015				
6-9	APA - F3A	Pitt Town	Jason Sparks	0417 750 055
	(Organised by The Australian Pattern Association)			
28-29	NSW Pattern Flyers – F3A	Queanbeyan	Felix N	0428 880 633
Apr 2015				
18-19	NSW Pattern Flyers – F3A	Wingham	Felix N	0428 880 633
May 2015				
16-17	COMSA Scale Fun Fly	Metford	Paul Robertson	02 4946 8334
16-17	NSW Pattern Flyers – F3A	Gloucester	Felix N	0428 880 633
Jun 2015				
20	NSW Pattern Flyers – F3A	Richmond	Felix N	0428 880 633
Jul 2015				
25-26	NSW Pattern Flyers – F3A	Wingham	Felix N	0428 880 633
Aug 2015				
Sep 2015				
5-6	NSW Pattern Flyers – F3A	Gunnedah	Felix N	0428 880 633
Oct 2015				
24	NSW Pattern Flyers – F3A	Camden Valley	Felix N	0428 880 633
Nov 2015				
23-24	NSW Pattern Flyers – F3A - State Championships	Richmond	Felix N	0428 880 633

Club News

Marc Swan (UMAC)

2014 NSW F3C State Champs Report

The 2014 NSW State Champs and 2015 world F3C team trial was held over the October long weekend (3rd to 5th) at the NSW State Field at Cootamundra.

United Miniature Aircraft Club (UMAC) was the hosting club for the event and arrived early on Thursday morning to prepare and check over the field and to do any last minute things before the majority of competitors arrived on Friday.

Upon arriving at the State field we met the President of the Cootamundra club Grahame. After having a good chat with Grahame and looking around the field, it was evident that they are really taking good care of it. The grass had been freshly cut and all amenities were clean and ready for use. It's really great to see the field in such great condition and it was a pleasure dealing with Grahame. We would like to take this opportunity to say thanks for his help and also for getting the field ready for us.

As most of the F3C community has now gone electric, it was decided long before we went down for the event that we would take one large generator, rather than 20 smaller ones running everywhere. MAS NSW was kind enough to organize and supply us with a large generator that we towed down from Sydney and supplied power for all as well as the canteen.

This made the event so much better having power at the field, and I would like to think that one day we could either have permanent power or a large generator at the state field.

UMAC ran the canteen all weekend, and I would like to take this opportunity to thank the UMAC members that helped to either run the event or spent the time in the canteen! Thanks to, Marie, Bill, Tony, Dean & Mark. Without the help of these people the event would not have taken place.

The weather for the competition was nearly

perfect, a little wind during the afternoons but other than that, we couldn't have asked for better competition weather.

Friday we had almost all of the competitors turn up to practice on the field and have a good chat and catch up. It's always a good relaxing day on the Friday with everyone getting there machines ready and practiced ready for the first round on Saturday morning.

Saturday saw us run through 2 rounds, and after completion gave competitors some time to relax and unwind with the fun machines or just to have a sit down and chat. Saturday night we all got together and had a nice pub dinner at the Family Hotel. Anyone wanting a good feed in Cootamundra, I couldn't recommend this place enough, not to mention, it's less than 100m from the hotel where most were staying.

Sunday morning everyone was out at the field ready for an early start in order to get proceedings finished and get everyone on their way home. The final 2 rounds were run, and just after 1pm the event flying had finished.

The presentation was then done by the CD, Marc Swan, who ran through thanking all the competitors for coming to the event and handing out the trophies.

The final results are below,

Sportsman
1st – Bill Swan
2nd – Rex Barbey
3rd – Murray Howell

Advanced
1st – Neil Russell

Expert
1st – Paul Sanders
2nd – Robert Brown
3 – Ant Sisley

F3C
1st Marc Swan
2nd – Brendan Tucker,
3 – Mick Warren
4 – Rick Mailath
5 – George Atkinson

In summing up, I believe that everyone had a great event and really enjoyed it. The Cootamundra State Field is a great location at which to have this event and I would like to say a big thanks to both MAS NSW and the Cootamundra club for the use of the State Field.

Also thank you to MAS NSW for its assistance with the generator and trophies, it is always appreciated.

Finally, a big Thank You to all who turned up, both competitors and helpers; without you, we don't have events!

Look forward to seeing you all at the next event.

Kind Regards
Marc Swan
UMAC Committee.

Model Engine Lubrication & Other Oily Stories – Part 2

Brian Winch

PART 2 ***(continued from last month)……***

For some I reason I was never to find, Synlube disappeared off the market as did the people involved. I later found that it was manufactured under licence by the Shell Oil Company but they would not produce it without an order from (the chemist). The name is now trade marked by some other company but they do not produce the same oil or any oil suitable.

Fortunately I had quite a supply of Synlube as I purchased a small bulk quantity when it was available so I did not have to revert to the dreaded castor as many modellers did.

A LIGHT ON THE HORIZON.

Model Technics in the UK is a large manufacturing company that produces thousands of litres of model fuel mixes plus glow plugs and other similar accessories. Over the years they have gained a reputation for reliable, high quality fuel (etc.) and, in 1980, they released a fully synthetic oil for model use with a recommended ratio of no more than 10% with 7.5% being ideal. I had contact with the company and the chemist/part owner told me that they had tested several hundred engines on various fuel mixes (methanol/nitro at different ratios) with 2% oil and they were yet to destroy an engine.

A few different oils were now available in Australia but, those that were good were quite expensive for some time until synthetic oil was gaining a reputation in various industries. Modellers, being what they are, tried many of these oils and some did quite a good job and…were not so expensive. Not all was rosy in some cases as one particular oil that was found to be very kind to the engine gave off a smell from the engine exhaust that would clear a paddock of wild goats. Imagine pouring rancid tuna oil on the rotting carcass of a rat and setting fire to it and you have some idea how bad the smell was. It was banned at most flying fields in order to prevent murderous attack on the user.

On a similar note, some of the members of the tethered car section at the Sydney Society of Model Engineers were testing different oils in the quest for higher and higher speeds. As a note, many of these cars now get well up above 350 kph. One intrepid member tried fish oil which, before you even consider using it, smells like decaying gym socks that have a fungus growing on them. The smell from the engine exhaust in his car took paint off the wall, killed rats, mice, cats and birds over a 500 meter radius, caused the local bus company to alter the route and motorists refused to drive along the road adjacent to the club. (yes, of course I am pulling your leg but...it really did stink something putrid). Eventually, by worldwide agreement, standard FAI fuel is used in all tethered car competitions (and pylon aircraft). The main reason for this…and the reason we still see castor oil in the instructions for model engines, is that in many countries in the world, synthetic oil is either not available or so expensive it could not be used for model purposes. I have a modelling friend (by Email) in KolKata (previously Calcutta - New Delhi) who tells me there is no such thing as synthetic oil available in his area. He has to use castor oil which he purchases from the local medicine dispensary.

One synthetic oil that had been around for a long time and is a very good lubricant is Klotz

in its several types. Only one problem in those early days - there was no anti corrosion additive in the mix for two stroke engines and it was known to cause rust inside an engine under certain circumstances. A similar oil that was pushed for a little while in the USA was a Ucon oil - one of the many produced by Dow Chemicals. It was probably a polyalkylene glycol based lubricant for some specialist purpose (as all their oils are) and somebody found it would mix with methanol and it was suitable for model engine use. Apparently it also was not good as far as preventing corrosion and various gun oils and similar were touted for after run use as necessary to prevent corrosion. Back to the Klotz oil - in those early days the bottle labels had a warning - 'NOT TO BE USED AS A LAYUP OIL' which is an American term for storing an engine - one that you won't use for a while so you fill it with a suitable liquid to keep it free and clean inside.

After run was a big point in those days (is still important these days) and there were several on the market including HANGAR '33' After Run which was my product - one I formulated and had blended by a chemical company. Even though I say it myself, it was a good product for the times considering the problems we had with most lubricants (I will give you a formula further on).

OUT OF THE BLUE.

In 1980, Eddie Edwards (owner of Tates Toys and Hobbies in Geelong, Vic.) was in the USA to fly in a pattern competition. At the start of the day he had a problem with the fuel he was to use. An American modeller - in the spirit of camaraderie, gave him some of his fuel which had the engine going better than it had ever run and….it ran quite cool. When Eddie asked about the fuel he was told that it had Morgan's Blue Coolpower oil in it - a local product. As luck would have it, next day Eddie met Jim Morgan - the man behind the fuel and oil company. Much discussion, arrangements made and a deal was struck - Eddie had collared the oil for distribution in Australia. He was convinced it was an outstanding product but he wanted other opinions to add to his own. He sent me a gallon of the oil for testing and evaluation and that was the beginning of the end for me. I gave that oil a really rigorous lot of tests and trails and I couldn't kill it or an engine. One the first four strokes I tried it in I could not get the engine up to operating temperature - it ran so cool. I modified my fuel mix, used less oil and the engine ran perfectly - better than it had even done and it remained at a nice operating temperature - even when I took it a bit on the lean side. Apart from the running characteristics, the big surprise was when I dissembled the engines for internal checking and found almost no evidence that they had been run - nothing more than a mild brown oily colour on top of the piston and it wiped off completely with a tissue.

I have used Coolpower Blue, Red and Purple oils ever since (over 30 years) almost exclusively for all engines - diesel, glow and petrol and I don't foresee any reason why I will ever change. It has done well for me - no blown up engines, no gumming and no corrosion and, I have used it at the lowest ratio of 40:1 which is 2.43% of the total fuel mix.

{**Note**: To calculate oil amounts such as 40:1 you are measuring one part of oil to 40 parts of petrol. Using 1 litre (1,000 ml) as a basic, divide the ratio number - in this case..40.. into 1,000 and the answer is 25 so…..you add 25 ml of oil to 1 litre of petrol. Now, if you are interested in the percentage you divide the amount of oil by the total amount of mixed

fuel (now 1,025 ml) and multiply by 100 - use a calculator, it is easier - and, if you pushed the correct buttons, your answer is 2.43 which is the percentage. Try another? Okay, common mix is 20:1 so…1,000 divided by 20 equals 50 - the amount of oil you add to 1 litre of petrol is 50 ml (or cc - both the same measure). Percentage? Here we go, 50 divided by 1050 equals 0.047619 multiplied by 100 equals 4.76 (close enough) percent of oil in you fuel mix. Simply, if you want to mix up a number of litres, say, 4 then multiply the oil amount by 4 and the litres of petrol by 4 and you have your bulk mix. Want to try it? Okay, 4 litres of 40:1. Obviously you start with 4 litres of petrol in a 5 litre container (or any size larger than 4 litres) and you add 25 x 4 = 100 so, add 100 ml of oil. Checking…..100 divided by 4,100 x 100 = 2.43…Errmazing!)

What about glow fuels in percentages? Let's try 15% oil plus 10% nitro.

Again starting with 1 litre - 1,000 ml and we multiply that by 15% to give us 150 ml of oil….by 10% to give us 100 ml of nitro - add the two together and we have 250 - subtract that from 1,000 and we have 750 so our mix is then:
750 ml methanol
150 ml oil
100 ml nitro methane giving us a total of 1,000 ml and, again, for a bulk amount, say 4 litres, multiply all amounts by 4 to give a total mix. So easy.}

OTHER CONSIDERATIONS

Well, as you can see, my first choice and recommendation is the Coolpower range of oils. The blue is the most used, the red is a lower viscosity for, example, heli engines (but you use more of it than the blue) and purple which is halfway between blue and red. I have used both the red and purple in petrol engines for good results - actually, no difference to the blue. For readers who get up on the soapbox and waffle on, the difference in viscosity is a difference in the 'drag' of the oil - when an oil, due to its viscosity, causes a drag effect, it is lubrication drag. Castor oil drag begins at a 12% ratio, Coolpower blue at 16%, red is about 22% and purple is about 19% but don't get your knickers in a twist about this as you will not be able to see, record or realise any difference under normal user circumstances. When you consider the high speed aspect of our hobby, speed control line, pylon R/C and tethered cars all use 4:1 methanol/castor mix and they are the super high speed sections, it is not a concern. The only time you might record a difference is when you run a very small capacity engine - like…very small. As an example, some time back I tested and reviewed the smallest production engine, the Cox 0.010 cu (0.163 cc) which had a claimed RPM of 27,500 using the recommended blend of castor, synthetic, nitro and methanol. I used the same ratios of oil and nitro but I used straight Coolpower and recorded 28,500 RPM. Not of great use but certainly of interest and enjoyment hearing that little beast really scream for mercy. Maybe, if you are running the Nova Rossi R/C car engines you might be a bit more specific about the lubrication as they use a small amount due to their capacity (c.c. size) and the tachometer will be hovering around 50 to 52,000 RPM - that's rally humming.

Occasionally, new oils crop up and one, recently was a Klotz product - R 50 - purpose designed for petrol fuelled, high speed model engines. A comparative product is Petro Max

and the recommended ratio is 32:1. I cannot get my head around the advice from Klotz that this oil might not be suitable for four stroke

engines as their lower running speeds might cause a carbon build-up. According to my engine tests, most four stroke petrol engines record a similar RPM to the majority of petrol two strokes - OS GT 15 two stroke - max. RPM 11,111 - Saito 11 four stroke, 10,800 for example. Maybe the large multi cylinder four strokes might need consideration but…I wouldn't be too concerned about it as I don't see a real problem.

MY RECOMMENDATIONS

My first recommendation is the Coolpower range - either the oils or ready mixed fuels. As to the ratio, I know that anything in the 10% to 15% is quite adequate…and safe. A lower ratio can be used but I am not tuning your engine so you are on your own. If you want to set up a happy medium, try 12% in all your methanol fuels but refer to the ratios for petrol fuels. You might hear it that the high oil content we are used to seeing - 20% and more - assists in carrying away the engine heat. There is a lot of qualified evidence to dispute this and, for my two cents worth, consider all the petrol engines on such incredibly low ratios - where is the oil flow out the exhaust to cool them? One thing for sure, using a lower oil content will keep your model cleaner. Really, the high oil content is a carryover from days past when parts fits in engine were nowhere near as fine as they are today and the metals were quite different. Some of the old style engines relied on a thick castor to give a piston/liner seal. In my control line team race days - very keen in those days - I favoured an Eta 29 engine (made in the UK) which had two rings and went like stink….if you could start it, particularly when it was hot. In a team race event there are a number of pit stops when your engine runs out of fuel, you land (quickly) - your ground mechanic quickly fills the tank (like…really quickly), starts the engine and you are back in the air again. The winning Eta's were those where the mechanic knew to squirt 2 cc of neat castor oil into the open exhaust to provide a good seal for starting…one flick and you were in the circle again.

OTHER CONSIDERATIONS.

My next favourite is the Klotz range - R 50 (KL-104), Petro Max and Model Lube (KL- 310) for petrol only, Original Techniplate (KL - 200) for methanol and petrol.

If you insist on using castor oil - use only a very high quality oil that is modified for high performance engine use and keep the percentages down to around 10 - 12%. I recommend the Klotz BeNol Racing Castor if you want castor alone but a better choice is Super Techniplate (KL-100) which is a blend of synthetic with 20% BeNol added - that should satisfy those who still insist (why, I don't know) that you must have, at least, some castor in your fuel. Bit much like carting a horse around in the boot of your car in case that 'newfangled four wheel contraption stops working').

Before we move on - as a point to present those 'luddites' you might meet who insist on no less than 20% lubrication - point them in the direction of the Saito range of engines. All their petrol engines are, really, glow engines with the only changes being a slightly lower compression (as required for petrol fuel) and the addition of spark ignition. Yesterday we ran the engine as a glow with 20% oil (I didn't but some do) yet today we raise the cylinder slightly (lower compression), fit a spark plug and run it with the same oil at 4.76% (20:1) and, strangely, the engines keep running as good as gold. Yes, same as a glow engine - plain bearing big and little end on the connecting rod - how do you like them apples? Putting an old story to bed - or better still - in the grave. It still appears in some engine instructions (that haven't been changed for many years or have been copied over and over) that you need to use mineral oil to run a petrol engine in then change to synthetic. These days - my opinion - absolute nonsense and it is a long and sad story about how this clotted rot started but I will close on this for you. If you are running in a methanol engine---what mineral oil could you use? None available - won't mix with methanol yet, it is

an odd factor that a methanol engine runs in okay on synthetic and…a lot more of it which, for the old reasons stated about mineral oils, would exacerbate the problem. Bury the rubbish and stomp on the grave.

TANKS FOR THE INTEREST

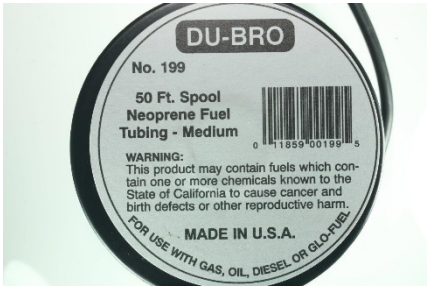
Ending on a little advice regarding the fuel tanks for your engines. For methanol fuel -

same tank set up as used for many years - all fuel tubing is silicone and the clunk tube does not bend or twist around to get to the front of the tank (age old argument - worse than the castor argument). Petrol fuel is a different matter as it will 'do an injury' to silicone tube

if in direct (liquid fuel) contact - the tube goes soft and stupid. Okay to use as an extension on the muffler outlet as there is no liquid petrol present.

The common tubing used for petrol is a transparent yellow plastic tube with the best grade being Tygon 4040 but….there are many clones (generically referred to or called Tygon) and a lot are not what I would recommend. As it is, the better tubing, Tygon, has a limited life and the manufacturer recommends you change it no later than every 6 months as it hardens in the tank (the clunk tube) and becomes semi rigid (some of the clone tubing goes rigid as an iron bar and reduces in diameter by more than 50%).

When it starts to harden. The clunk weight cannot keep down enough to follow the fuel level and…petrol type carburettors just do not like bubbles or air streams in the fuel line -



they just throw a tizzy fit and cease to function. An alternative is black neoprene tubing such as the type used in many chainsaws (and other hand tools) as it remains soft for years and another is Nitrile Butadiene rubber which is quite good but not quite as flexible as neoprene. Tanks, in the main, are an open item - many types available - some good, some in the 'maybe' file. For both methanol and petrol, the Du-Bro range are an excellent general choice fuel tank in every size you would ever want. Reliable, do not leak and last for years. Specify methanol or petrol when purchasing as the 'bung' (neck stopper) is a rubber compound that is different for the two fuels as is the supplied fuel tubing. Two specialist tanks I highly recommend - I have tested both very well - and they are both

extremely reliable in both the tank itself and the supplied tubing. First is the Roto Flow tank in a good range of sizes - all the same shape. These are very heavy duty tanks (you would need a hammer to damage them) with a 100% mechanical clunk system that never needs attention - which is good as you cannot dissemble the tanks. Absolutely the bee's

knees for petrol as the clunk remains the same for you until you sell or crash the model. In the larger sizes the Fourtitude brand is very hard to better. These tanks also come ready set up - do not require maintenance (read - interference) and the tubing used for the clunk actually remains soft - reasonably softer with use actually so...obviously, it won't stiffen which is good as the lid of the tank is sealed on. These tanks come supplied with the best fuel tubing you have ever used. Never hardens and, once fitted, it requires heat and effort to remove.

What size tank do you need? Depends on the engine capacity and how long you want to fly so, you really need to know how long your engine runs on a measured amount of fuel. Don't fit extra-large tanks for the engine size - they cause a problem with balance and variations in engine tuning. When you leave fuel in them then have to drain it back into your canister, this, if you use muffler pressure, introduces water to your fuel (water from combustion of the fuel) which, eventually, will render your fuel unusable. Use a smaller tank for petrol engines than you would use for a methanol engine. Generally, a glow engine will use 2.5 times more fuel than a petrol engine for a given engine capacity. Example = if you would use a 250 cc tank for a glow engine - use a 100 cc tank for the same capacity petrol engine for about the same engine run time.

Of course, if you are a really keen aeromodeller you could make your own tank from metal 'recycled' from food tins as I and many modellers of my era did and do. Then again, maybe you need some lessons on bending metals and soldering but…we will leave that for another time.

ALMOST FORGOT

Yes, that's correct, I promised you a formula for after run protection which you can use in two or four stroke methanol engines - also in petrol if you really see a need but, I wouldn't bother as they are not prone to corrosion or gumming if you use one of my recommended oils. Okay, get your beakers, flasks and pipettes ready - we are going to measure liquids. Argh - don't bother with the laboratory stuff, an old condensed milk tin or whatever is handy will do as we are going to mix three main ingredients in equal proportions. Here we go….

1 part kerosene
1 part synthetic oil - Coolpower or Klotz
1 part auto transmission fluid (aka ATF) of any brand or type.

To each litre of this mix, add 1 teaspoon (no more) of concentrated kitchen detergent -the good quality stuff. This acts as a surfactant and keeps the mix in suspension (all mixed together).

At the end of a flying day, use a syringe (use one with a plastic piston if possible as the kero

slowly rots rubber) and squirt about 10 to 20 ml (cc) into the engine according to is capacity. DO NOT REMOVE THE PLUG. A plug thread in an engine has about 20 plug fittings (plug in and out - 40 attacks on the thread) for the average modeller before it is either stripped or worn to where it will strip soon). There is a 'hole' in an engine that will allow fluid to go into the combustion area if you feel there is a need - it is called 'THE INTAKE' and, oddly, there is one on both a two stroke and a four stroke engine. If the engine is a two stroke, slosh the cleaning fluid around a bit - rock the prop left and right - then tip the engine on its side - still rocking the prop - until you see the fluid running out the muffler or, if you like, the carburettor. This mix cleans the corroding fuel residue out of the engine and will keep it lubricated for weeks - months provided you place a plastic bag over the engine if you are leaving it for months. If you want to leave it for a longer time - in storage, after the cleaning process. Drop in about a teaspoon full (5cc) of ATF, slosh it around, plug the intake and exhaust with a tissue, seal the engine in a plastic bag and it will keep well for years.

Much the same treatment for a four stroke engine but here we have a little problem. It is the crankcase and cam case area that needs the cleaning mostly as this area acts as a sump for the corroding liquid and it is not flushed out with a fresh charge of fuel as it is in a two stroke. Squirting the cleaning fluid in with a syringe presents a problem in many engines as the inside of the engine is, virtually, sealed as you have just connected up to the one equalising vent - the crankcase breather. My simple solution is to fit another breather nipple in the rear cover and this will allow you to squirt fluid in until the cows come home or the engine is full - whichever occurs first. Suck the fluid in and out with the syringe about 5 times then, finally, suck it out completely and discard it. The inside of the engine will be clean, all corrosive fluid removed and a layer of oil on all parts for the next running of the engine. If you want to leave the engine for a while, connect the nipples together with a short length of fuel tubing but…attach a cardboard tag to it so you are reminded to remove the tube from one nipple so the engine can breathe or you risk internal damage or, at the very least, a nasty coughing session - the engine keeps 'coughing' the prop off. Block off the tube to the extra nipple; a simple bung of some sort in the tube when running the engine as some engines rely on a little crankcase pressure to lubricate other sections in the engine so - too much OUT pressure means insufficient internal pressure. For long term storage, same as a two stroke; a dose of ATF will keep it in perfect condition for many years provided you connect the two nipples to act as a seal.

ANYMORE?

Anything I have forgotten - something you are not sure about - ask a question…email me on oilyhand@bigpond.net.au. Anything rude or nasty will get a free trip to South Head via the sewage pipe.

Modelling products mentioned in this article as follows:

Morgans Coolpower oils and fuels - Tates Toys and Hobbies.
Klotz oils, Dubro tanks and fuel tubing - The Hobby Headquarters.
Petro Max oil and Dubro Tanks - Model Engines (Australia)
Roto Flow tanks - Christian Traders.
Fourtitude tanks and fuel tubing - 3D Hobby Shop Australia

The Cassutt Racer

Alistair Heathcote

BEING WORKED ON AT DUXFORD

Tom Cassutt – a TWA Captain – designed the Racer in 1951. It was designed for Formula 1 Goodyear racing and other Midget Racer events. Only 15ft wing span and with a 100hp Continental flat four engine, it had a top speed about 250 mph!


I MODELLED THE CENTRE AIRCRAFT

A few years ago I saw one at Duxford Museum that really caught my eye. An internet search showed that it was owned by Richard Grace and was one of three that do the air show circuit in the UK as "The Dukes of Cassutt" (see Photo). Richard is son of Carolyn Grace who owns and flies a two seat Spitfire!! Anyway, a quick scribble on a big piece


MY MODEL LOOKING GOOD

of paper had a plan drawn up for a quick build scale like model. I chose the long wing version (17 1/2 ft!) which came to 70 inches for a one third scale.

My model is conventional build with a relatively thick wing to improve aerobatic performance, Saito 100 four stroke power, fuselage covered in aluminium Glosstex, wings and tail in Monocote – it was quick to build and looks the part. As many of you will have seen it also flies on rails and is nicely aerobatic. Fun, fun, fun!

Enjoy the photos. Aircraft pics courtesy Richard Grace.

Cooling

---by Klotz the Kat

There's an urban legend going around that says the ratio of cooling outlet area to cooling inlet area for cowled model engines should be 3:1. Is it true? Maybe. I ask you to look at the cowls of the Nieuport 28, AT-6, B-29, P-47, Pitts Special, FW 190, GeeBee, Cessna 152, Zero, Extra 3000, Sukoi 31, or any full-sized air-cooled airplane of your choice. You won't find this ratio or anything even close to it. In many cases, the exit is less than the inlet.

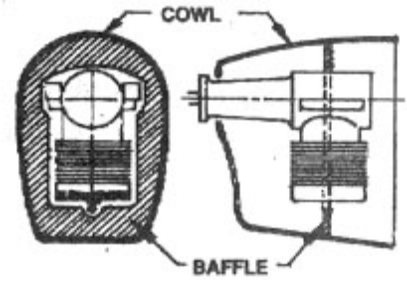
Haven't the designers of these airplanes read the chatrooms? To be fair, under certain very specific conditions, the 3:1 rule sorta works. But those who spread this legend don't tell you all you need to know. Here's the rest of the story.

The 3:1 rule applies only to cowls:

1. without baffles or any other internal air direction,
2. whose internal volume is much larger than the volume of the cylinder(s), and
3. in which the incoming air travels straight to the cylinder without any change of direction.

Under these conditions, the 3:1 rule approximates the airflow of an uncowled engine. It is an attempt to get the air to flow around the engine as if the cowl weren't there! The location and shape of the inlet and outlet must be carefully adjusted to accomplish this. For example, if the inlet hole is too big or improperly positioned, air will flow around the cooling fins instead of thru them. For this type of cowl to work, the inlet hole must squirt air directly on the engine, especially the cylinder head. It is an inefficient and unreliable method, requiring a lot of tinkering to get it working right. It may not work at some airspeeds and some attitudes. It is uncalculatable. It's a kludge. That's why it is never found in full-sized aircraft. And the holes make it useless for scale models and draggy for racers. A much better method is to follow full-size methods—use a baffle, duct or other airflow direction methods.

A baffle directs all incoming airflow thru the cooling fins of the engine. It has nowhere else to go. The volume of air flowing thru the cooling fins (the only air that is useful for cooling) is proportional to the pressure difference between the front and back of the engine times the area of the space between the cooling fins. As long as the intakes and outlets are at least as big as the area between the cooling fins, airflow will be at least as great as an uncowled engine. If either is made larger, the airflow will be even greater. A cowl of this type is known as a "pressure cowl" because of the large amount of compressed air inside. So why aren't baffle patterns included in engine user manuals? Because we modellers don't ask. And what about the fact that heated air expands? How much bigger should the outlet be to accommodate the increase in volume due to heat? By actual measurement of the exiting air of a cowled and baffled OS 108 2-cycle engine in flight at full throttle in ambient air of 90 degrees F, we have observed an increase in temperature of 30 degrees F. Using Charles Law (V/T = k), we calculate the increase in volume to be only 6 %.



Reprinted from "At the Field - Offbeat Stories About R/C Model Airplanes and The People Who Fly Them" by David P. Andersen

Upcoming Events

Just an average group of flyers with an obsession for precision aerobatics

RC PRECISION AEROBATICS - 2014

The next and final event in the NSW Pattern calendar for 2014 is at Pitt Town NSW.

The Pattern Event (for precision aerobatics (F3A)) is being held at Charles Kingsford Smith MAC Pitt Town on the **Saturday 2nd November 2014**. CKSMAC is located off Pitt Town Bottoms Road, Pitt Town.

Please forward your entry through the NSW Pattern Flyers website or entry@nswpattern.org.au . Please submit your entry by Wednesday 29th October 2014 so that the scoring program can be configured accordingly.

Please note: Bring your own food and drink as there will be no catering at this event.

If you would like to know more about precision aerobatics please visit the NSW Pattern Flyers website (www.nswpattern.org.au) for some great information. If you are new to aerobatics please ring the undersigned for information and suggestions to get started to have a lot of fun and to improve your flying skills.

The event following Pitt Town in the NSW Pattern Flyers calendar we travel to Camden Valley for a one day contest to be held on the 17th January 2015.

As always we welcome any newcomers, who will fly the in the Sportsman Class. The Schedule is on our site www.nswpattern.org.au . If you can loop, roll, fly inverted and perform a spin, come and join in the fun, or just come to watch. Our Members will be keen to assist you in any way.

For more information contact Felix Nieuwenhuizen, on 0428 880 633, or at felchem@bigpond.com

NSW PYLON RACING CLUB inc

Q500, F400, F3D and the
Electric EF-1 and Funfighter(i.e. Rare Bear) PYLON RACING at

"ARTHURSLEIGH"

MARULAN

Sunday 23 November 2014 – 9:00am Pilot Briefing

Practice and sports flying Saturday 22 November 2014

Must have current MAAA membership
Entrants and callers must bring hard hats

Novices and New Racers Always Welcome

Shearer's huts accommodation and camping available at field along with showers, cooking and Bar-B-Q facilities
Or
Ali's Motel Tavern and Restaurant at Marulan Phone 4841 1330
http://www.alismotel.com.au

For more information and field directions, contact

Peter Kerney 0407013230

(This is a private field and is only available on the advertised dates which is why we cannot publish field directions)
http://www.nswpylon.org/

FUEL SUPPLIED ON RACE DAY

Saturday 8th November
Gates open at 9am for all day flying

Last years event saw an incredible array of models from park flyers to turbines
Everyone who attended enjoyed a great days flying in a really festive atmosphere.
Come along and help make this year's event even better
All levels of flying skill are welcome!

& Swap Meet

Got something to sell? Bring it along

$10 entry fee includes BBQ lunch, a drink and entry into our lucky door prize.

Enjoy a day's flying with us at the most scenic flying site in the Sydney Basin. All levels of flying skill are welcome, just turn up on the day and fly as little or as much as you like.

No competitions, no pressure, just enjoy flying!

Bring your family along and enjoy a picnic by the Hawkesbury River

MAAA Cards and Permits to Fly for large models must be presented at registration

If you have any questions please contact Mike Close, president@srcsclub.com
Please check the SRCS website on the day for cancelation information in the event of bad weather. An announcement will be made by 7am.
www.srcsclub.com.au

JUST PLANE FUN!

WARIALDA FUN FLY

Supporting the Naroo Dementia Unit

Warialda Airport

8th & 9th November 2014

Model Remote Control Aircraft

Saturday 8th November

Pilots Day

Test & Tune
Night Flying
Fuse Racing

Sunday 9th November

Open to Public

Flying exhibition
Open flying
Fun fly events
Loop & Roll
Streamer Cut
Balloon Burst

All models welcome (*No winches)

Catering & Raffles for the weekend

Entry by gold coin donation

Contact:

Barry Power – 0267 291 740
Don Turner – 0439 180 762

Lithgow Seaplanes
November 29 – 30, 2014

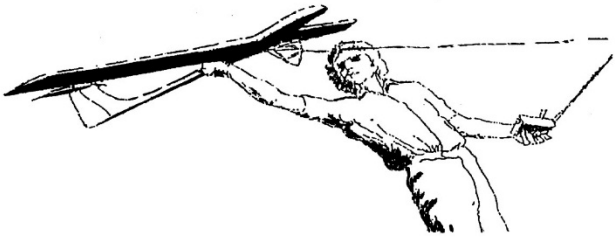
Lake Wallace Reserve
(Opposite school)
Wallerawang,
1.5kms north of
Gt Western Hwy.

Seaplane Fun Fly Event
Sport, Scale and Novelty models welcome.
Open Keyboard, Rescue Boats
Pontoon established
Daylight hours only

Country BBQ and Canteen
Self Contained Camping available

Contact Dave Brown
02 6355 7298 or
daveb@ix.net.au

35th Armidale Sailplane Expo



Hosted by New England Model Aircraft Club and Sailplane Expo Trust

Saturday 24th to Monday 26th January 2015

- **Australian Open Thermal**
- **F5J**
- **F3K**

Entry Form, Event details and Location :-

http://www.lsfaustralia.org.au/

http://www.fly-rc.com.au/?page_id=110

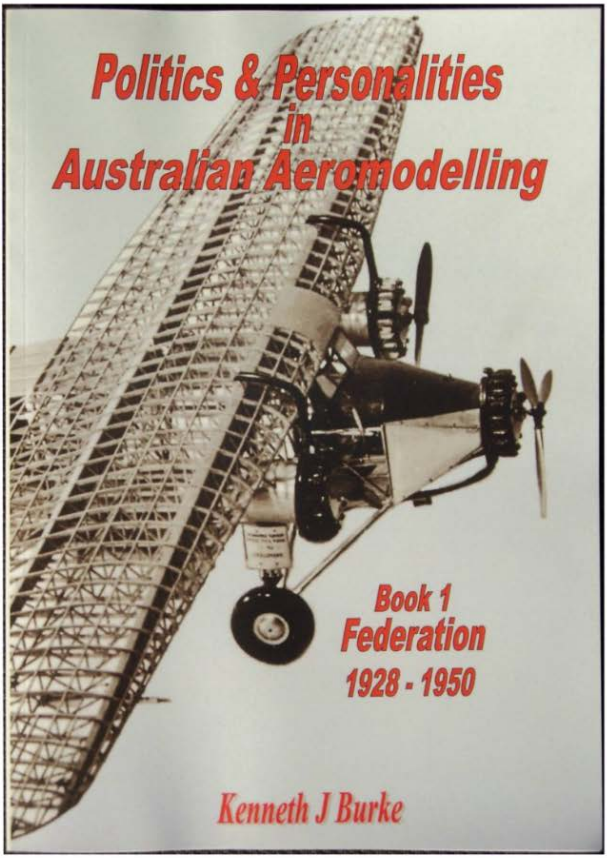
http://www.flyelectric.com/Expo-main.html

Contact Hutton Oddy on 0425285758 or email vhoddy@gmail.com

For Sale

The final print run of *Politics & Personalities* has just come off the press. This is the last. There will be no more encores.

P&P traces Australian aeromodelling from its inception in the late-20s through the 30s, when there were probably more model builders and flyers in NSW than the MAAA's total membership today. It finishes in the early-50s by which time the bitter struggle between the Masons and the Catholics had lead to the MAAA imploding and its virtual demise.



Brian Winch (AKA the Oily Hand and Engin Ear) is regarded by many modellers as Australia's leading writer on aeromodelling subjects. His articles have appeared in every local aeromodelling publications as well as many overseas magazines.

Brian Winch reviewed *P&P* and I would like to have included his entire review here. But there is only space for a few words from his opening paragraph where he gave P&P the ENGINEAR's tick of approval, and the final paragraph.

A GOOD READ.

I know it is a time worn cliché but it is so apt in this case—this is a book that is very hard to put down from the moment you read the first page. It took me ages to write this review as I kept going back to check a detail and began rereading many times.

$66.00 delivered to your door.

To Order: phone or email me or mail a cheque .

Ken Burke, 3 Moore Street, Vaucluse, 2030.

kburke@bigpond.net.au Phone 0408 876 678

270 large (220mm x 290mm) information packed pages. P&P contains dozens of contemporary photographs of models and modellers, and in some instances the rules that generated those models

GOODIES FOR SALE

TOP FLIGHT BONANZA KIT - ONLY DROOLED OVER
NO LONGER MANUFACTURED
A REAL BARGAIN - $350 -

BUYER COLLECTS
AND
TWO FUTABA 2.4 GHz RECEIVERS - BOUGHT IN ERROR -
WRONG SYSTEM - S-FHSS

FROM TOWER HOBBIES - YOURS AT MY COST - $30 EACH

RING ALISTAIR ON 0296052568

Deadline for submissions to Newsletter #371 (December 2014) is Tuesday 18th November 2014.

Please forward any changes of mail or email address together with your AUS Number directly to the Registrar.