

THE VOICE OF CONTROL LINE
AEROMODELLERS FROM
AROUND AUSTRALIA

Number 90



Produced by the Victorian Control Line Advisory Committee

July 2005

INSIDE THIS ISSUE

Contest Calendars.

Home-made Canopies for small models:

News from W.A.

MAAA Rules Conference and Control Line Report.

General Glow Plug information.

Contest results and reports.

For Sale.

**Copy Deadline for next issue is:
Wednesday 20th July 2005
PRODUCTION SPECIFICATIONS**

Please remember when submitting copy that if you have access to a PC, or suitable typewriter you can save me retyping by giving me your items pretyped, and please use a good black ribbon for best reproduction.

Best of all is to send it on a 3.5" disk as a Windows Write, Word for Windows, or as an ASCII TEXT FILE or use Email

Contest results should be tab delimited, ie use a single tab between each column of results, if submitted by disk or email. This makes formatting much easier on the editor.

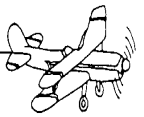
Email address:- acln@optusnet.com.au



COMING EVENTS



COMING EVENTS



C.L.A.S. (NEW SOUTH WALES)

VICTORIAN CONTROL LINE CONTEST CALENDAR 2005

DATE	EVENT	CLUB
JULY 3	Simple Combat.	SMAC
JULY 3	C.L.A.G. Country Flying Day "Coreflute Combat"	Moe
JULY 17	FAI & Combined Speed, Jnr 2.5cc Combat, Mini Goodyear, Jnr 2.5cc Rat race.	CLAMF
JULY 24	FAI (Stuntmasters), Novice & Jnr Aerobatics, Class 2 Team race, Classic "B" Team race.	KMAC
AUG 7	Simple Rat Race (Whipping permitted).	SMAC Knox
AUG 7	C.L.A.G. Country Flying Day "Diesel Day"	
AUG 14	FAI Team race, 2.5cc Rat race, 1/2 A Combat.	CLAMF
AUG 28	Classic Stunt, Vintage "A" Team race, Combined Speed.	KMAC
SEPT 11	Classic Stunt, Vintage Stunt, Aust "A" Team race, Classic "B" Team race, Simple Combat. Combined Speed	Moe
SEPT 18	FAI & Combined Speed, Simple Rat race, 1/2 A Team race.	CLAMF
SEPT 25	FAI, Novice & Jnr Aerobatics, Classic Stunt, Bendix,	KMAC
OCT 2	C.L.A.G. Country Flying Day	Moe

The third Sunday of each month is the regular "**Brimbank Club Day**"

Events will be flown in order of printing. Events in **Bold type** will be flown over hard surface

CLAMF Frankston Flying Field, Wells Rd, Seaford (Melway 97J10), 10.30am start

Contact :- G. Wilson (03) 9786 8153,

Events conducted by CLAMF at the KMAC Field (Melway 72 K9) 10.00am start.

Contact :- H. Bailey (03) 9543 2259

KMAC Stud Rd . Knoxfield (opposite Caribbean Gardens) (Melway 72 K9) 10.00am start

Contact :- T. Matthews (03) 9560 0668.

SMAC Contact :- Reeve Marsh (03)9776 5949

CLAG Contact :- Graham Keene (03) 51924485

Details of venues can be found on web site www.clagonline.org.au/home.htm

NOTE - All SMAC events to be held at KMAC flying field. All events at KMAC except Aerobatic events to be run by CLAMF, DAC & SMAC members

Contest Calendar 2005

DATE	CLUB	EVENT
Sun Jul 3	IMAC	F2B Aerobatics
Sun Jul 3	KMFC	2.5 Stunt, Simple Rat and Slow Combat
Jul 8-14	"Benson's Lane, Richmond. NSW" AUSTRALIAN MAAA 58th National Championships	
Sat Jul 23	REMAC	Mid Winter Vintage Stunt.
Sun Aug 7	KMFC	F2B Aerobatics
Sat Aug 13	KMFC	CLUB STUNT (Novice)
Sun Aug 28	SSME	Slow Combat (Bonus points for WW2 Style model).
Sep 10-11th	MAAQ. CLASII Ipswich	
	MAAQ C/L Scale State Championships. J.Taylor	0733927679
Sun Sep 11	KMFC	"Classic Stunt, Vintage Stunt, Simple Rat, Slow Combat, SWAP MEET"
Sat Sep 24	KMFC	CLUB STUNT (Novice)
Sun Sep 25	SSME	F2B Aerobatics
Oct 1-3rd.	MDMAS as host club.	
	NSW C/L STATE CHAMPIONSHIPS	
Sat Oct 15	REMAC	Spring Vintage Stunt
Sun Oct 17	IMAC (Berkeley)	F2B Aerobatics
Sun Oct 30	KMFC	JUNIORS DAY
Sun Oct 16	KMFC	JUNIORS' DAY
Sat Oct 29	SSME	"Vintage 1/2 A, Vint B, Goodyear T/R, Combined Speed"
Sun Oct 30	SSME	"Phantom, Vintage A, Bendix T/R"
Sat Nov 5	KMFC	CLUB STUNT (Novice)
Sun Nov 6	SAT (Kelso Park)	F2B Aerobatics
Sun Nov 13	KMFC	"Vintage T/R, 1/2 A, A and B. "
Sun Nov 20	NACA at Gateshead H.S.	ClassicStunt&Cardinal Stunt.(I.Smith Ph:024975 2292)
Sun Nov 27	KMFC	1.6 and Slow Combat
Sun Dec 4	Doonside (Kelso Park)	F2B Aerobatics
Sun Dec 11	KMFC	Christmas Party and Fun Fly

"Doonside. Kelso Park North, Panania. "

"IMAC (Illawarra Model Flying Club)- Flying site @Hooka Ck Road, Berkeley. NSW"

"KMFC (Ku-ring-gai Model Flying Club)- St. Ives Showground, Mona Vale Rd, St. Ives. NSW"

"NACA (Northern Area Contest Aeromodellers)-Gateshead H.S., Pacific Hwy, Gateshead. NSW."

"REMAC (Ryde Epping Model Aero Club)-Peter Board HS, Wicks Rd, North Ryde. NSW."

"SAT (Sydney Aeromodelling Team)-Kelso Park North, Henry Lawson Dr. Panania. NSW"

"SSME (Sydney Society of Model Engineers)- Model Park, Luddenham Rd, Luddenham. NSW. "

"WMFC (Werrington)-Entrance to flying site @cnr. Landers & Walker Sts, Werrington. NSW."

“MDMAS (Muswellbrook District Model Aero Sports Inc.)
Mitchell Hill Field, New England Hwy,
Muswellbrook”

“COMSOA (City of Maitland Society of Aeromodellers)
Raymond Terrace Rd, Metford. NSW. “

CLASII CALENDAR 2005

CLASII FIELD HAS NOW REOPENED AND EVENTS WILL BE HELD AS SCHEDULED. At this point in time the only competition scheduled will be the **Queensland C/L Scale Championships to be held at one of our two fields on September 10/11.** Further details will be advised later in year **Please note Club flying days have been changed to SATURDAYS.**

Regardless of what day it is **flying is only permitted between 9am and 5pm** (i/c. engines are not to be run before or after these times) and in accordance with **MAAA, MAAQ and Club policy**, permission must be sought from club executives for **visitors** to use facilities on days other than **SATURDAYS**. Mufflers are to be used wherever possible. **Field entrance gate will be locked except for designated flying times.**

Aside from **published competition days**, after more than two casual visits, FAI licence holders would be expected to apply for Associate membership of Clasii. All members and visitors to the field will be required to sign an attendance book. This action assists in meeting insurance requirements and would be of great help in the event of a claim being made. Visitors to the field **MUST** show their current FAI Card. **NO CARD NO FLY** **Intending members** will be allowed two visits (training days) before being requested to apply for membership. Applications will be then be assessed by Committee and applicant advised of outcome before any fees are payable.

CLUB AND ASSOCIATE MEMBERS WILL BE ABLE TO ACCESS THE FIELD 7 DAYS PER WEEK BETWEEN 9am and 5pm

Subscribers to ACLN can have the latest edition of the newsletter (in colour) emailed to them as a PDF file at no extra charge.

Simply send a request for this service to the editors' email address which is on the front page.

Home-made Canopies for small models: A new method.

Ray Fairall Asrgf@alinga.newcastle.edu.au

The traditional method for making canopies dates from the earliest days of Aeromodelling. In its simplest form the method consists of making a “master” in the exact 3-D shape of the canopy, and a “frame”, which can consist of a flat plate with a hole in the shape of the widest part of the canopy. Next a piece of Acetate is heated to above a temperature where it becomes “plastic” or moldable. This is often done in a kitchen oven or similar appliance. The hot acetate is then placed over the master and the frame is pushed down, over both, from above. The acetate is forced in its plastic state, into the exact shape of the master. Very accurate canopies can be made using this technique, and a variation, using a vacuum pump, is used to produce the commercially available hobby shop products. The technique is useful for making canopies to exact dimensions for scale models and high quality stunters etc,

however it is a lot of trouble to go to for someone like myself whose motto could be summed up as “near enough is good enough”.

A simpler technique.

The material.

The packaging industry now uses a “thermo-forming plastic” material called “PET” (PolyEthylene Terephthalate), for a vast range of transparent household liquid products such as soft drink and juice bottles, cooking oil containers, etc (see: <http://www.dow.com/pet/> for the manufacturers website.). This material is the modern replacement for glass. PET has excellent mechanical properties. It is Very light, strong and is virtually unbreakable, having excellent impact resistance. It is as transparent as glass, and is also tasteless, satisfying most international regulations for packaging of food and drink. The best feature for our purposes is that it is also free, since a large number of PET containers will pass through an average household every week!

The easiest method for identifying the material is to look for the recycling symbol, a “1” in a triangle on the bottom of clear and coloured containers (see figure one). The symbol is made up of three separate bent arrowhead parts pointing in a clockwise direction. The words “PET” or “PETE” may or may not appear. The bottles often have a “rocket-ship” base. These are the ideal materials for use with the techniques described below. Don't worry too much about the shape of the container or molded in detail on the surface. Mineral water containers made of PET are probably the best source of material. They are thin, have excellent clarity, and make particularly light canopies. Recent examples also come with a slightly blue tinge, which makes an attractive contrast to most primary colours.

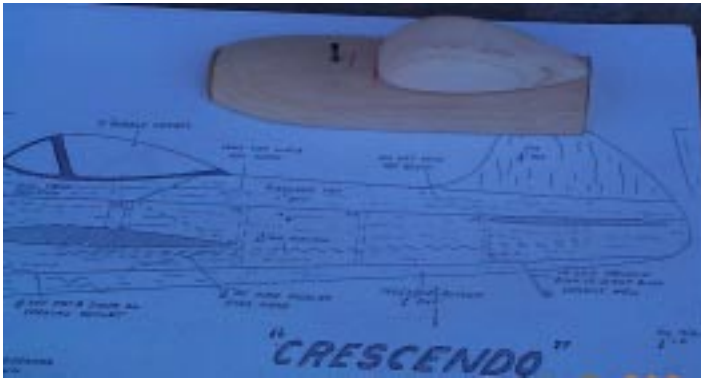


The PET Recycling Symbol

The equipment

Firstly make a master male mould of the canopy (see photo one). This can easily be made up by “sandwiching” a number of layers of balsa together vertically. The centrepiece can be 10 mm thick and traced directly from the side view on the aircraft plan. It can then be sandwiched between two other pieces of equal thickness balsa (10 mm in the example shown). The remaining width can then be made up with equal numbers of bits of thinner balsa. It is important to make the master much deeper (or taller) than required. In other words add at least another 30 mm to the base. Photos one and two show a master for a Crescendo B class teamracer canopy.

It has been found that there is no need to coat the master. In fact the heat applied may cause any coating to ignite or “gas-off” causing complications with the hot plastic. Bare balsa works perfectly well! Photo five shows a suitable source of heat, a 1200 Watt electric paint stripper.



Master mould for Crescendo Canopy



Crescendo Mould

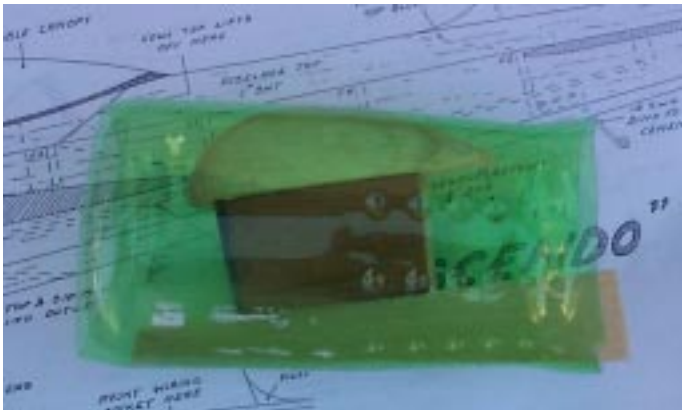
The Technique

Wash out your PET bottles with water and remove any labels. Photo three shows a prepared green PET lemonade bottle.



Prepared green lemonade bottle

It is a good idea to have a number prepared. First attempts are likely to be failures, and when successful, once you are set up it's much easier to make a batch.



Master assembly in place and ready for heating

Photo four shows the next steps. Cut the top and bottom off the bottle carefully with a sharp knife. Glue a suitably sized (smaller all round) additional piece of packing wood to the base of the master. Place it within the bottle. Wedge the latter in place with scrap balsa as shown. The master should not be able to move at all within the bottle.



1200 Watt Paint-stripper gun

The next step requires using the heat gun to warm the plastic (Photo five). Before doing this ensure that your workspace is clear of any inflammable material. It has been found that a four-inch ordinary bench vice helps here. The end of the balsa wedge sticking out of the bottle can be cramped in the jaws, so no movement is possible and 360-degree access is available.



Partly formed canopy

Gently heat the bottom of the assembly on one side starting with the heat gun well away from the plastic, and slowly bring it closer, watching its effect all the time. Try to avoid applying heat to the plastic that will form the canopy directly. Also avoid heating any one area too much; aim at spreading the heat around one end of the bottom part as equally as possible, while watching what happens around the canopy end. Remember the closer the heat gun, the hotter the plastic. Aim to get the canopy material just past the "plastic" state so that it will contract and take up the required shape without "charring" through too much heat. Once one end is formed, move the heat application point and shape another part of the canopy (Photo six).



Nearly completed Canopy

Success should come after a few failures. The technique is easily mastered.

Photo seven shows a nearly completed canopy. Reformed PET plastic is a tough material. Cut the final product from the mould using sharp shears or tin snips. Final marking out can take place on the master mould. Mark the desired bottom edge with a marker pen with the canopy in place on the mould, take it off and cut it to final size using the tools described above.

Finished results



Completed green canopy on Crescendo

Photo eight shows the completed canopy in place on the model.



Completed PET canopy for a Voodoo

Photo nine shows a clear PET (from a mineral water bottle) canopy on a Vintage A Voodoo. It is four years old, proving the durability of the material.

Notes on Safety.

The techniques described above should only be performed in a well-ventilated work area. Avoid breathing any fumes. Remember that hot plastic can burn severely if it comes in contact with skin!

Newsletter Editor

Harry Bailey.
37 Thompson Street.
Clayton.
VICTORIA. 3168.
Telephone (03) 9543 2259.

Hearns Trophy and Yeoman Trophy A Combined contest

(Author: Peter Rowland - Contest Director)

Sunday 22nd May: The 2005 Hearns Trophy was flown, with renewed support from both flyers and officials. The fact that it had been cancelled twice before due to poor planning and weather meant not only were the competitors flying for 1 contest, but it was also run in conjunction with the 2005 Yeoman Trophy.

The weather a typical Melbourne Day, cold mid-high teens, wind little to contend with, but everyone was keen to begin a contest and a special mention **MUST** be given to our 2 dedicated judges - Andrew Frith, a long time Knox flying club member, supporter and aerobatics flyer, and Craig Yeoman, a brilliant Stunt pilot, and the Yeoman Trophy is a legacy to his father John Yeoman, who's support to our young stunt flyers and the sport in general was a valuable contribution. It is fitting that a trophy be held in his honour.

We started the day spot on 10am with 6 keen F2B flyers ready to battle it out for a piece of history with the winners name going along side other stunt winners from past era's. The 6 flyers who braved the contest were John Goodge, flying his "Plagiarist" with Stalker .51 for power; Doug Grinham flying his new ship "Jazzmate" with Stalker .61 power; PJ Rowland flying his old World Champs "Vortex" with Stalker .61; Adam Kobelt flying his Grinham "Impact" with Saito .56; Mark Ellins flying his Ex-Doug Grinham "Jizzer" with ST 60 power-plant; and rounding off with David Nobes flying his tri-undercart McFarland "Shark" with OS 46 LA .

Round 1: The wind was constant, not too rough to cause major problems yet strong enough to keep you on your toes. John Goodge was 1st up putting on a solid display of flying, pushing his Plagiarist in the square eight's, telling it "This is where you are going" and scoring a solid 1554.5.

Next up was Doug Grinham, who was obviously not happy with his less than adequate performance by his standards in the State Champs, so came to play hard ball with some brilliant pullouts very consistent. A new prop and renewed practice and confidence with his new Jazzmate saw Doug push his score to 2126, which when Round #1 was over was to be the highest score of the Round.

Mark Ellins, PJ Rowland, and Adam Kobelt were left to battle out for a place on the score board with Adam's Saito 56 proving to everyone that a good 4-stroke is hard to beat when the wind starts to get the better of you. Adam, who has made some huge leaps forward and is now considered to be in the hunt at every contest he is in, topped off his Round #1 with an almost perfect landing that scored a 9 off one judge. He seemed happy with his flight yet his score of 1977.5 left him in 4th place after Round #1.

Current State Champion PJ Rowland said "I'll Never fly my old World Champs Tiger again" at the end of the 2005 State Champs in April, hoping to have his new stunter in the air, but as luck had it, things were not finished in time for this contest so his heavy 73 oz stunter was forced into the air once again. He flew a decent pattern, but even with his almost perfect 9½ for the landing wasn't enough to catch Doug Grinham who was dialled in. The end of Round #1 saw PJ in 2nd spot.

Mark Ellins, who has a renewed confidence with his Ex-Doug Grinham Jazzer, is proving a formidable flyer, with a 1st flick start and a great take-off Mark NAILED his reverse wingover scoring a 9 off one judge and continuing with a great performance placing him in 3rd only 31 points behind PJ Rowland.

David Nobes flew a great pattern also with his tricycle undercart Blue Shark showing everyone how to land properly with 9's across the board from BOTH judges. This landing was solid, smooth, to the rulebook with no bounce - some say it was a 10, but the judges rule is final and end of round saw David score a respectable 1978.5 to push him in front of Goodge.

Round 2: Started after a short lunch break as the wind died down to almost nothing the flyers continued at 11:30 am with the same flying order.

Doug Grinham, keen to stamp his authority on the event, was out to cement his Round 1 score and was flying a blinder, and perhaps the extra concentration was a factor but Doug did what we have all done at one time or another, left out a manoeuvre, not 1, but 2!!! Doug went from inside triangles to vertical 8, leaving out both the Horizontal eight's thus blowing a fine round.

PJ Rowland saw a little opening and flew a very consistent pattern. With the wind down to a soft breeze, he pushed his Vortex to the limit scoring a 2200 even, which when the dust settled at the end of Round 2 would prove to be the highest score of either Round 1 or 2.

Adam Kobelt also decided to put his foot down and push the Saito. 56 powered Impact, flying smoothly and precisely to score a 2097 which was the 2nd highest score of round 2 behind PJ. Adam flies some of the best round manoeuvres and his score of 9 and 9 off both judges for the inside loops and horizontal eights was proof of his mastery of the round manoeuvres.

Mark Ellins also decided to try and up his score, flying very sharp and consistent, showing more and more confidence every time he steps onto the circle, moving his score up a little higher he was only 25 points behind Adam's flight, which proves, a missed intersection, or a pullout can be the difference at this level.

John Goodge and David Nobes were fighting out their own battle for a placing, both scoring very well and at the end of both their flights only a mere 19 point separated them, with David flying smooth rounds and John pushing through the squares manoeuvres.

With the final round commencing after another lunch break, everyone got a chance to have a practice flight and push their final flight score up, with the best 2 flights

going toward your final flight score.

Round 3: Round 3 saw the sun come out in all her glory, the wind drop and high scores the order of the day. Everyone except PJ went up in Round 3, with all flyers going the extra distance and flying to their full potential.

John Goodge flew a great pattern 1st up, just a little wobbly on the vertical 8's, and scored his highest flight of 1698.5 trying to gain the points lost to David Nobes who did fly a great pattern again proving smoothness and consistency. David pushed his score to 1753.5 with a great battle just coming out on top of John after 3 rounds - these two flyers were separated by only 77 points!

Doug Grinham, keen to make up for his embarrassment, choose not to use a "caller" much to the disappointment of those who offered! Doug saw his chance to put in a solid flight and with a solid 9 for the reverse wingover, put in a GREAT flight with mostly 8's and 9's to score what was to be the highest flight of the entire contest with a massive 2209.5

Adam Kobelt flew a brilliant pattern trying to improve, and with some neat square's and inverted flight scored his highest flight of the day only 52 points behind Doug's huge score.

Mark Ellins was also pushing his limits with a solid performance just pulling out low on the inside triangles, this proved to be the key as only 2 points separated Adam's and Mark's Round 3 scores. Mark later said " I need to relax and fly. I seem to fly great in practice but over - correct in a contest" We are all sure Mark will overcome this with all his years of experience in racing.

The end of a great contest saw PJ Rowland winning the 2005 Hearn's / Yeoman Trophy. I would like to thank both the judges for their effort, a thankyou to all the flyers who were once again prompt with being in the circle and being ready to start, and to all the tabulators.



Dave Nobes / McFarland "SHARK" - OS46LA

At the end of the day the scores were totalled and the standings read as follows:-

Place	Competitor	Model/Motor	Rd 1	Rd 2	Rd 3	Total
1	PJ Rowland	Vortex/Stalker 61	2045.5	2200.0	2178.0	4378.0
2	Doug Grinham	Jazzmate/Stalker 61	2126.0	1735.0	2209.5	4335.5
3	Adam Kobelt	Grinham Impact/Saito 56	1977.5	2097.0	2157.0	4254.0
4	Mark Ellins	Grinham Jazzer/ST 60	2014.5	2072.0	2155.0	4227.0
5	David Nobes	McFarland Shark/OS 46 LA	1698.5	1695.5	1753.5	3452.0
6	John Goodge	Plagiarist/Stalker 51	1554.5	1676.0	1698.5	3375.0

News from ZWA

By Charlie Stone VH 4706

TARMAC Notes for June and July

I am away from the computer for a bit over a month and therefore won't be able to assemble the TARMAC notes in quite the same way that I usually do. So I have decided to use what the generosity of others has provided for me to fill the monthly gap. Alwyn Smith kindly sent me these notes on stunt engines that were recently published in the newsletter of the English Society of Antique Modellers, 'SAM 35 speaks'. The notes were written by George Aldrich, and in fact they cover much of the same information that George sent to me (and no doubt to hundreds of other guys who had written to him over the years). They cover the subject of stunt engines and how to get the best from them. So if you are interested in stunt engines, you are in for some good reading. If not, perhaps there will be something that you will like next month.

Phil Trueman has drawn my attention to the fact that Discount Hobby Supplies is about to move shop. So if you are looking for them after the 7th of June 2005, they will be located at: Shop 1, 16-18 Augusta Street, Willetton WA 6155. Their Phone and Fax numbers will not change.



Terry McDonald sent Alwyn Smith this photo of an All Australian Mk 11 built by his friend Tony Bowler. It is powered by a Merco 35. The photo was supplied by Terry McDonald via Alwyn Smith.

SOME NOTES ON STUNT ENGINES written by George Aldrich.

What is a stunt engine? What makes it different from

other engines? These can be tricky questions when one remembers that we once flew stunt with Hornet and McCoy .60's, considered at the time (1940-1950's) to be the top racing engines. To confuse the issue even further this type of engine even won the world championship in 1970. To simplify things, these engines are quite different from the racing engines we know today. The key here is Blow Down. This term refers to the difference in the cylinder port timing. If the exhaust port stays open for 140° of crankshaft rotation and the intake port(s) stay open 125°, the engine is said to have 15° of blow down. This 15° just happens to be the upper limit for stunt engines, if you want to run them in the classic 4-2 break mode, and avoid the tendency to break into a 2-cycle and runaway. Racing engines today may have a blown down period of 50° or more, and exhaust timing over 160°. The old racing engines had exhaust timing of less than 140°. Those who flew them in stunt used lower pitched props, turned them up at higher revs, and flew at a slightly rich 2-cycle.

Unfortunately, most of the engines made today fall into the modern racing class. While they may not have the 192° exhaust timing of a piped .15 F.A.I. speed engine, most start at 155° and go higher. The highest exhaust timing found on usable stunt engines today is 146°. The best utilize 140° tops, with a blow down of 14°, or 126° total open, intake porting, piped or not! So now you've got an engine that meets the basic outline of a stunt engine. How do you get the most out of it? To a certain degree our 2-cycle glow engines are liquid cooled by the methanol we push through them. This fact relates directly to the fuel used, venturi size, and head clearance.



From the TARMAC archives is this picture of Phil Trueman (age 22) with his Veco .35 powered stunter. This one was based on one of Noel Mitchell's models. Photo supplied by Phil Trueman.

Taken in order, a fuel that has more lubricant will be thicker. Therefore, if you run a thicker fuel the relative needle valve setting will have to be more open. In the same manner if a larger venturi is used more air will be taken in, and again the mixture will have to be richer. These two things taken together or separately force a higher fuel/air ratio through the engine. It's not hard to see that by forcing more fuel through the engine it will have a definite cooling effect. As with most things, one action can cause a reaction. By using a larger venturi and allowing more fuel/air into the engine we have also increased its power. If nothing else, think of it as increasing the compression ratio. Common signs of an engine with too much compression (for stunt) are runaway - - - that is breaking into a 2-cycle and staying there, or just quitting for no reason. The latter can happen unexpectedly - like half way up the first leg of the reverse wing over it will quit like it was hit with a hammer! It's pretty clear that a testing session at the flying circle can reap a lot of pleasure. By going out with 2 or 3 Venturis in progressively larger sizes and a few spare head gaskets (shims), an engine can be fine tuned to give its ultimate power. The idea is to adjust the head clearance to fit the venturi size that will allow an engine to pull fuel properly. A set of telescoping inserts can easily be made from brass or aluminium tubing. The main thing about head clearance is to not go out with a preconceived idea about any limits. Some engines could require as much as .060" to .080" to give the type of run you want. The idea is you can't know how many head shims are needed until you have gone too far! Once you add so many that the power starts to get wimpy - it's easy to go back the other way. Removing the head and adding or subtracting head shims is a simple task, no more involved than turning some screws. It will be wise if a notebook is kept on the amount of shims used in each engine.

Normally I engrave the piston depth in the cylinder at top dead centre (ATDC), on the top of the crankcase next to the cylinder lip. I also mark the cylinder location in the case. Usually a scribe mark on the edge of the cylinder lip will correspond with a scribe mark on the top of the case. This assures that the engine can be taken apart and assembled with the critical parts aligned exactly. To summarize this discussion, we are suggesting that to get the friendliest power from a stunt engine, be willing to do some individual tuning with each engine. When trying a new engine, that immediately breaks into a fast 2-cycle and runs away, try adding head shims and see if this doesn't calm it down. You may be surprised at how much you can raise the head without greatly affecting its power. Should the power seem to be lacking, try a larger venturi. By using the largest venturi that will give adequate fuel draw, and adjusting the 4-2 break with the head clearance, the utmost can be extracted.

Should the unusual condition arise that an engine just delivers too much power, even with extra head shims, and the 4-2 break just where it should be, then reducing the venturi size would be in order. The other big variable is the propeller - - - - but that's another story. It is always best to run-in your engine in the air. However, there are some special ways to do this. At the 1958 Nationals, I didn't even qualify for the finals due to a Johnson .35 that just would not run right. That night in the hangar, Hi Johnson took that .35 and rebuilt it into a .33 by installing a .29 crankshaft along with a new cylinder assembly. I met him on the ramp the next morning to try it out. After

running out the lines, I came in to start the engine, and Hi says, "Here, put this on." The prop he handed me was a Y&O 8x5! Well, that first flight was really boring, as Hi set it off so rich all I could do was fly level for the whole tank of Fox Superfuel (29% castor oil). This went on with Hi leaning the engine a little more each flight until I was able to do lazy Eights. Load the engine on the inside portion, and unload it on the outside. Finally when the new Johnson .33 would break into a 2-cycle without sagging, we put the normal 10 x 5 on it and I was able to put in a pattern as good as ever.

It is pretty obvious that the smaller prop let the engine run free without overheating and the rich setting kept the parts flushed with cooling methanol and plenty of lubricant. This method of running in an engine applies to lapped, cast iron piston and ringed engines. It does not apply to engines with a true ABC (Aluminium Piston, Brass Chromed Cylinder) set up. Use proportionally larger props for larger engines—say a 9 x 5 for a .40-.46, and a 10 x 5 for a .60. Be patient and don't set the engine off too lean - over-rich is the message.



Here is a photo from the May TARMAC club meeting. It was taken by Fred Tower and shows a few of the models in one corner of Peter White's workshop.

When I chrome a steel liner/iron piston engine, I try to allow for the "Green Growth" of the cast iron. It is not necessary to heat treat cast iron pistons that are going to run against chrome, because the chrome hardly wears at all. As the cast iron piston is run, it expands with the heat generated, but when it cools it does not return to its original shape; this is called seasoning. If the piston is not lapped to a slightly free fit when it seasons, it will tighten the fit too much and take hours to reach peak output. As you run in a GMA chromed engine properly, you will notice the compression gradually increase. When I chrome a cylinder from a really ragged-out engine, it will be lapped to a closer n .mind fit as I know the piston is well seasoned. Now let's talk ABC/AAC cylinder assemblies. The first ABC engine that came into this country, was sent to me in 1967. From that first engine and succeeding production, the basic tapered bore fit was developed in my shop in 1968. While the AAC set up has some advantages above 30,000 RPM, I'm convinced that the ABC system is more durable. It will certainly take

more abuse as in over-lean runs.

Initial run-in for ABC/AAC engines is pretty simple. Run a tank or two through them at a slightly rich 2-cycle, and then go fly! It is important not to run them at an over rich setting, particularly when they are new. The high silicone aluminium material used for the piston has a lower expansion rate than the brass cylinder. This means that in order to maintain excellent hot compression, the fit of the piston must be much tighter than engines using a cast iron piston/steel cylinder. A property fit ABC/AAC engine will be nice and free through BDC (Bottom Dead Centre), but soon after the piston closes the exhaust port it will just lock up and stop. To be able to turn the engine over a prop will have to be put on, and when new, it will squawk and squeak as it is turned through TDC (Top Dead Centre). Quite often, the compression is so fierce it is really hard to flip the prop. To start a new engine the first time, it's often best to lightly prime the exhaust and just slap the prop backwards. It's normal for the engine to fire and kick off running in the right direction.

It's easy to see that if the engine is kept cool, via a rich setting, this tight fit will put undue stresses on the rod and connecting parts. What we want is, to get the engine into a 2-cycle right away in order to build up heat, to expand the brass cylinder and ease the stresses early on. The special crosshatch I hone into the chrome cylinder facilitates the piston seating perfectly in the bore. This crosshatch leaves microscopic sharp edges in the bore. As the engine is run for the first time, sharp edges are worn off while at the same time they are also literally cutting the piston. This action seats the piston perfectly within the first 2 minutes of running. Understand, we are dealing with millionths of an inch here. Because of this unique honing it is not unusual for the cylinder to still show crosshatch marks after hundreds of flights, yet the engine will retain its great hot compression. This crosshatch helps hold lubrication on the cylinder walls, extending engine life. Chrome is so dense it does not hold lubricants easily, but is unequalled in its wear resistance. Years ago, the van der Horst method of chroming big diesel engine cylinders was developed to help hold lubricant on the cylinder walls. These cylinders often have over 1/16th" of chrome. By reversing the current, at the end of the plating cycle, thousands of cracks were introduced in the chrome surface to help retain lubricant. My crossed-hatch honing is the closest way to duplicate this lube retention in our tiny parts.

Breaking in a ringed engine isn't a lot different from the procedure for a lapped, cast iron piston set up. There are three things to consider with a ringed engine: When selecting a ringed engine ring reject anything that doesn't have good to excellent compression to start with. A ringed engine with soft or squishy compression when new, is unlikely to get much better. Such an engine indicates an engine with out of round rings, or bore, or both. Correct ring end gap for an unchromed bore is .003/.004; for a chromed bore .006/.008. These are the basics and a careful rich run-in will pay great dividends. Ringed engines are just a cheap way of getting compression and a light piston. If you have a choice between an engine with a true ABC system (not ABN, the nickelled cylinders just don't cut it!) and a ringed set up, I'll take ABC or to some extent cast iron piston engines anytime. Larger engines with cast iron pistons can, to some extent, tend to vibrate more. With these, matching the prop to the best RPM range will give the smoothest running.

The preceding comments have been gathered over a period of some 54 years. From my early years of free flight, to C/L stunt and speed, to R/C and manufacturing research and development, I offer these findings and opinions in the hope of making your modelling a little easier and more pleasurable.
George M Aldrich.

These comments were written over 10 years ago but are still worth noting.

We do not stop playing because we grow old; *We grow old because we stop playing.*

Charlie Stone
cestone@bigpond.com

VH4706

Email



Meeting held at Knox on Sunday June 5th.

The promise of fine weather and light winds coaxed an impressive number of fliers down to the KMAC field. A quick head count showed about 30 participants and at least 50 models of every persuasion; Speed, Combat, Stunt and Sport - all were represented. There were dad's and son's; old retirees making a comeback; family groups; and many observers who simply drove in from Stud Road to see what all the activity was about.

It was great to see such interest in this supposedly "dying" hobby/sport - very encouraging.

Eleven CLAG members (that still sounds horrible) made the journey to Knox. The award for "indulging two passions in one day" was shared by Paul Richardson and Geoff Ingram. Both gents arrived on their motorcycles, with Paul having a model ocky strapped to the seat.

As mentioned there were a lot of models, and the five available circles were often all in use at once. The condition of the flying areas was brilliant; a credit to the KMAC members. Too many modellers and too many models to list separately. The regular barbeque lunch required two "charcoal creators" to cater for the numbers (thanks go to Peter O'Keeffe), and the Mitchell Bros. provided the usual delicious liquids that these days are renowned for. The Knox "shed" was packed.

I must thank SMAC members Len Follett and Reeve Marsh for setting up a Limbo comp. and demonstrating what fun it can be. As first timers we learnt a lot. The construction of a Limbo pole is now being planned by CLAG. For those not familiar with this event, it involves flying your model under a 1.8m length of 5mm dowel supported on a pole. The model must not touch the ground or the pole and as each successful pass is made the dowel is moved down the pole. Two unsuccessful attempts means you are "out". A steady hand and a tough model are prerequisites for success.

Reeve not only brought the Limbo pole and associated

paraphernalia, he also arrived with a carload of models and true to his word flew every one. Now, that's the measure of an enthusiast.



Some of the models at the Knox field

And speaking of enthusiasts, during the day "Vicstunt" webmaster Ken Dowell distributed surplus photos he had collected. The photos were all enveloped and individually addressed. I am sure all recipients were very appreciative of this generous gesture. Thanks Ken.

If the smiling faces and atmosphere of camaraderie were anything to go by, I am sure all present had an enjoyable day "Sport Flying". The success of the day well illustrates the point, made by David Owen in ACLN June 2005. Thanks David for putting into words what a lot of us believe.

Our next meeting will be at Moe on Sunday 3rd July. We have planned a "Coreflute" combat event, rules to be decided. All are welcome to attend, bring a snag for the BBQ, drinks will be available at a very reasonable price.

Graham Keene Sec/Treas CLAG Inc.

MAAA Rules Conference. Friday, 27th May, 2005.

Reports submitted by Joan McIntyre
(Acting CLAS Delegate)

The meeting opened at approximately 8 o'clock. Delegates were shuttled from the Hume Villa Motor Inn to the Ford Centre by private cars. Refreshments were provided before the meeting.

Delegates introduced themselves at the start of the meeting. I had made contact with both Tahn Stowe and Joe McGuffin before the start of the meeting to ascertain procedures regarding voting and to acquaint myself with the most relevant issues. I also advised them of any areas on the agenda with which CLAS had reservations and the reasons for our concerns. I made a point of circulating and making the acquaintance of the representatives from other states. I was made to feel most welcome by all the delegates and the Executive members of the MAAA.

Sub Committees members from each State were confirmed and Chairmen voted into office. Maris Dislers from SA is the C/L Sub Committee Chairman.

Control Line Report

A brief email tour around the States reveals that activity in our discipline over the past year has been strong. At the Sydney based Kuring-gai Model Flying Club the sight of 4 and 6 year old Bonomo brothers competing in club stunt events along with a recent mature age refugee from radio control sporting a grin that barely fits on his face indicates that we have the spectrum covered from both ends.

Victoria had a successful and well attended 2004 State Championships with entries from both NSW and SA. Mark Ellins represented his State with distinction being part of the winning F2C Team Race at the USA Nationals setting a new AMA record of 6.43 which also bettered the existing Australian record. This followed an 11th place in F2C at the World Championships. Paul Stein made up the other F2C team with New South Welshman Richard Justic as his pilot. Also competing at the World Championships and acquitting himself well in the most dreadful weather was outstanding young F2B flier P J Rowland. We are expecting to see bigger and better achievements from PJ in the future. Also on the F2B scene a fine F2B judge has been discovered in Ken Dowell and he will be standing at the forthcoming 58th Nationals. With the usual stalwarts, who seem to have always been around, still competing fiercely, all is well in Victoria.

South Australia provided the other half of the USA Nationals winning F2C team in Robert Fitzgerald. Robert teamed with Greg Pretty to win Scale Racing (Goodyear) also at the USA Nationals.

Control line activity in the Festival State has been steadily increasing during the past year with regular flying of sport and stunt models at Ellis Park each week while the hard surface at Monarto was the venue for regular practice and competition days for F2F Team Racing. South Australia's 2005 State Championships held at Monarto over the recent Christmas-New Year period attracted entries from NSW, VIC and WA in addition to the usual local modellers. AAC hosted competitions for Triathlon, Vintage and Classic Stunt at Ellis Park, which is located in the parklands surrounding Adelaide's CBD and Whyalla hosted a successful weekend competition as part of the Whyalla Show.

Western Australia is recording increased numbers in the aerobatics and F2C circles. They gained an outstanding F2B flier a few years ago when Peter White relocated from Victoria. Their new Whiteman Park flying site with hard stand for F2C, Goodyear and Speed with a grass area for sport and grass racing is in use. This facility was built and financed by members over the past 2 years with all members putting in large chunks of time, effort and money to achieve the result. Trevor Letchford is to be thanked for guiding the project from start to finish. Unfortunately the TARMAC club Kalamunda Road grass field looks to be lost to developers with use now on a week to week basis, but the club has started searching for a replacement field.

Queensland is the home of outstanding F2B flier and former National champion Joe Parisi, who was in our F2B team at the Muncie World Championships. Joe had no luck in the dreadful conditions and in 1 of the 2 qualifying flights went overtime when in the strong wind his model did almost a complete circuit on the tarmac after landing.

One of the most respected international fliers commented

that Joe's own design 4 stroke powered model was amongst the very few outstanding performers in the strong windy conditions. Robert Smith also from the Sunshine State was an assistant in the F2D combat team at Muncie. Queensland clubs always provide a contingent of fliers to the Hunter Valley Championships held in Muswellbrook NSW each year.

New South Wales is hosting the 58th Nationals in July this year at Richmond near the RAAF base and organisation of the control line activities is in the hands of Nationals Committee member and CLAS President John Elias. An enormous amount of work has been done by John to get the event off the ground and secure an outstanding facility for the control line events. We are fairly confident that there will be F2B competitors from Japan and New Zealand and overall it is shaping up as an event not to be missed.

NSW provided 10 members of the Australian team for the World Championships as well as the team manager in engine wizard Stan Pilgrim and assistant team manager in Sydney all-rounder Tony Bonello. Best performances were by Ian Gapps, Andrew Heath and Richard Justic in F2A Speed achieving a team place of 6th out of 13 and in F2D Combat Mike Comiskey, Mike Comiskey Jnr, Peter Norrie and Robert Owen were part of the team which placed 8th out of 18. At the USA Nationals Richard Justic placed 3rd in F2A and Ryan Comiskey placed 3rd in Junior Combat. In the light of the strength of the competition our people acquitted themselves with distinction.

For the first time ever at a World Championships, Australia had an F2B judge on the international panel of 5 and congratulations go to Joan McIntyre for the profile she has given us on the international scene.

NSW State Championships was a very successful event held in Sydney last June. Stunt events in particular were well patronised with both Classic and Vintage Stunt attracting record numbers of competitors. The F2B event was fortunate to have the services of Victorian judge, Ken Dowell, who, along with resident international judge Joan McIntyre, added to the status of the event. The racing events were also keenly contested but would have been even better with more interstate competitors.

The Sydney club competition calendar is very active with F2B events each month attracting good numbers of fliers and the racing fraternity is also active.

Junior participation is a prime focus for Sydney's Kuringgai club and very good results have been achieved. For this we thank John Nolan because it is obvious to all that without juniors being encouraged there is a bleak future for the sport. John has put ideas into action and the club, and ultimately the sport overall, will benefit from the result.

Control line overall has had a good year and we look forward to the future of our sport with confidence and enthusiasm. Bring on Spain 2006.

John McIntyre
Sub Committee Member (NSW).

(Thanks go to John McIntyre who did a magnificent job in compiling this report at very short notice)

General Glow Plug Information - Consolidated

By James McCarty, Brian Cooper, Brian Gardner, and others

OS Glow Plug Information:

No. 8. Hot. Recommended for most current O.S. (and other) 2-stroke engines

Type F. Mildly Hot. Special long-reach plug recommended exclusively for O.S (and other) 4-stroke engine

Type RE. Hot. Special long-reach plug designed exclusively for O.S. Wankel rotary engine

A5. Cold. Recommended for most current O.S. (and many other) 2-stroke engines particularly for 1/10th & 1/8th scale off-road car engines

A3. Hot. Dependable O.S. quality makes A3 the most durable and longest-lasting glow plug available at an economical price

R5. Very Cold. Recommended for high-nitro fuel and high r.p.m. engines, particularly 1/8th track racing car engines

ENYA Glow Plug Information:

3. Hot. All Enya engines such as TV & four cycle engines

4. Mildly hot. All Enya engines, especially those used with 10% or greater nitromethane fuel

5. Medium. All Enya engines, especially the .40CX, .45CX and high nitro methane fuel.

6. Cold. High compression engines and high nitro methane fuel used in racing.

Fox Glow Plug Information:

All 1. 5 Volt Plug s are Dry Cell or Ni-Cad All 2 Volt Plug s are Lead Acid Battery

Standard Short Hot 1.5 Volt, Standard Short Hot 2 Volt

Standard Long Hot 1.5 Volt, Standard Long Hot 2 Volt

Gold STD Long Plug Hot 1.5 Volt, RC Short Mildly Hot 2 Volt

Gold RC Long Hot 1.5 Volt, RC Long Mildly Hot 2 Volt

RC Short Mildly Hot 1.5 Volt

RC Long Mildly Hot 1.5 Volt

Miracle Plug Hot 1.5 Volt

Pro 8 Short Cold 1.5 Volt

Pro 8 Long Cold 1.5 Volt

McCoy Glow Plug Information:

W/OS Equivalent

MC-8 Cold A5, R5

MC-9 Medium Hot #8

MC-50 Hot IDLE BAR ? LONG

MC-55 Medium Hot A3, #8

MC-59 Very Cold

ROSSI Glow Plug Information:

STD ROSSI GLOW PLUG S BI-TURBO GLOW PLUG S (without idle bar) (conical w/o washer)

Rossi Glow Plug s (cold for pattern type work / high nitro fuels, hot for sport / low nitro flying)

R1 Extra hot 0.8 to 2cc RB4 Hot
R2 Hot from 2 to 3.5cc RB5 Medium
R3 Medium from 3.5 to 6cc RB6 Cold
R4 Cold from 6 to 10cc RB7 Extra cold
R5 X-cold for nitro fuel & R/C RB8 Super cold
R6 Cold nitro 10 to 13cc
R7 Cold for nitro 13 to 15cc
R8 Cold for nitro 15 to 30cc GLOW HEAD FOR R15

G1 Hot

R/C GLOW PLUGS

G2 Medium (with idle bar)

G3 Cold nitro 15 to 30%

RC Hot for 2.5 to 6cc

G4 X-cold nitro 30 to 50%

RC Cold for 6 to 15cc

G5 Cold nitro 50% or more

Glow Plug Usage Tips:

Your glow plug temperature range is too cold when:

1. The engine power is weak or has weakened from previous levels.
2. The engine slows down considerably or stops after removing the glow plug battery, despite correct adjustment of the needle valve. For example (Enya), if a # 4 plug gives you these problems in your engine, switch to a # 3 plug instead.

Your glow plug temperature range is too hot when:

1. The engine suffers from pre ignition and loss of power.
2. The overall engine running is rough
3. The glow plug filament is broken or collapses frequently.

These are several cures to these problems. We suggest using a fuel with less nitro methane content, using a larger size propeller or using a colder plug than the one currently in use. For example if an Enya # 3 plug gives you these problems in your engines, switch to a # 4 plug.

Model glow plug engines are extremely dependent upon the type and quality of the glow plug used. Enya glow plug s use a platinum alloy coil, which uses a thick diameter wire for long life. The thicker wire coil also eliminates the need for an "idle bar" as found on other brands of glow plugs; idle bars tend to reduce top speed slightly, to achieve a more stable idle speed. Enya's glow plug design insures both good top end speed and stable idle speed.

Enya glow plugs also have a thicker battery contact at the tip of the plug for greater heat dissipation and better electrical contact. Altech Marketing presently stocks glow plug battery cords specifically for Enya glow plugs, which are standard equipment with Enya four-cycle engines. Other glow plug cords usable with Enya glow plugs are available from several other manufacturers.

HOT GLOW PLUGS (for low nitro and FAI fuels):

Enya: # 3

Fox: Miracle, Standard, and R/C Long (2V)

Fireball: Hot (1.2-3.0V), and S-20 R/C Long

Fire Power: F 6 (warm), and F 7 (hot)

K&B: 1 L

McCoy: MC 55 R/C Long, MC 59, and MC 14 (very hot)

O.S. Engines: # 0, # 1, # 5

Rossi: R 1 (extra hot), and R 2

Sonic Tronics: Glow devil # 300

Thunderbolt: R/C Long

MEDIUM GLOW PLUG S (for 10%-15% nitro fuels):

Enya: # 4 (medium hot), and # 5 (medium cold)

Fireball: Standard (1.2-2.0V)

Fire Power: F 5 (medium), and F 6 (warm)

Fox: R/C Long (1.2-1.5V), and Gold

Hanger 9: Sport Long

McCoy: MC 50, and MC 8

O.S. Engines: # A 3, # 8, # 9, # 7 (with idle bar)

Rossi: Medium, and R-3

Sonic Tronics: Glow devil Standard

Tower Hobbies: Tower Power Performance plug , and Reg. (w/bar)

COLD GLOW PLUG S (for high nitro; 25% +):

Enya: #6 (cold)

Fireball: Cool (1.2-1.5V)

Fire Power: F 2 (extra cold), F 3 (cold), and F 4 (cool)

Fox: R/C (1.2V), and # 8

K&B Long & Short high performance nitro plug

O.S. Engines: R-5

Rossi: R 4 (cold), and R 5 (extra cold)

FOUR-STROKE GLOW PLUGS (hot):

Fox: Miracle plug (often used in 2C's W/low nitro)

McCoy: MC 14 (very hot, often used in inverted 4C's)

O.S. Engines: Type F

Sonic Tronics: Glow devil ST 301/302

IDLE BARS:

Idle bar glow plug s came about because some engines were having trouble transitioning from idle to high speed. When the throttle was opened from idle, the incoming air and raw fuel would strike the glow plug's heated coil, cooling it to the point where it would no longer support the combustion process, so the engine would die. To help prevent this, the idle bar was added to the glow plug to serve as a physical shield, helping to keep the coil from cooling off too quickly.

A glow plug with an idle bar will not increase peak RPM (it may even reduce it in some cases), but it may improve the idle with some engines, since it simply helps to keep the plug hot enough to light the fuel. If your having transition problems, you might want to try using a glow plug with an idle bar. Some modelers use idle bar plug s in the winter only, since the glow plug tends to loose heat faster in the colder environment.

Naturally, all of this assumes that you have the low speed mixture adjusted correctly to begin with.

HOT PLUGS:

So what is a "hot" plug, and how does it differ from a "cold" plug? Naturally, a hot plug will heat up faster and stay hotter, but that's not the whole story. When discussing this aspect of glow plug s, another very important aspect must be considered, the amount methanol in the fuel. The more methanol we're using (i.e., less oil and less nitro), the hotter

the plug we should use. Conversely, the more nitro and/or oil we use, the less methanol we're using, so we use a cool(er) plug. An extreme example would be when using a very high nitro content fuel in a very high RPM engine (a typical ducted fan engine, for example). Here we'd use a very cold plug. For most sport pilots using fuel with just 5-15% nitro, however, a hotter plug would probably do well. Probably? Yes, trial and error is often the best (and sometimes 'only') way to determine the right glow plug for your application. Most 4C engines need either high nitro or hot plugs to run at their best, since they have combustion strokes only half as often as 2C engines.

RULES OF THUMB TO LIVE BY:

1. Use a hot plug with low nitro (less than 24%), and a cold plug with high nitro (more than 25%).
2. If you remove the glow starter from your idling engine, and notice an immediate drop in RPM, you may need a hotter plug or more nitro.
3. If your engine has a tendency to backfire a lot, you may be using a glow plug that's too hot, or you may need fuel with less nitro.
4. Most hot plugs can take up to 2.0 volts starting power without burning up, while most cold plugs prefer 1.2 to 1.5 volts starting power.

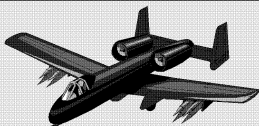
(Information taken from Stuka Stunt Main Forum)

Nationals note :- Competitors taking part in the Richmond Nationals should have their MAAA membership fees paid and up to date.

Due to the fact that the Nationals are so close to the start of the financial year membership cards will not be processed and delivered in time for the contest.

To avoid any possible administration problems competitors should take a copy of the receipt of fee payment with them to show at registration as proof of membership.

CONTEST RESULTS



Results of SMAC Limbo contest, 5 June 2005, at Knox

Some new names had a go at the limbo contest this time around - a number of CLAG members taking the opportunity to join in since they were flying at Knox this month. A good effort too, all flyers being very competitive despite being unfamiliar with the technique.

1st	M. Ellins	26cm
=2nd	R. Marsh	30cm
=2nd	G. Ingram	30cm
=2nd	G. Keene	30cm
=5th	L. Follett	44cm
=5th	K. Hunting	44cm
7th	G. Vibert	56cm

Results from CLAMF Comp 19/06/2005 flown at 3.00pm after the rain cleared.

GOODYEAR

1.G.Wilson/M.Ellins	4:02.99 4:00.88	Mr D Nelson/SE
2.H.Bailey/R.Virgo	4:44.03 5:08.17	Miss San Bernadino/Cox Conquest

The views and opinions expressed in ACLN do not necessarily reflect those of the Editor or Committees of Clubs or of the members of the Club represented in ACLN but are those of the respective authors.

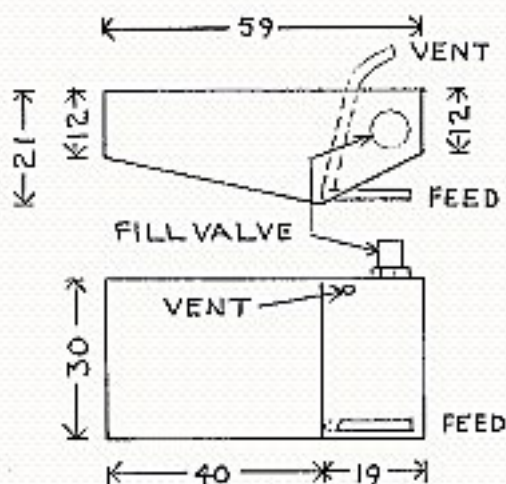
Any comments, queries or complaints with respect to any article in this publication should be addressed to the author of the article.

The Editor and Committee of Clubs accept no responsibility or liability for any loss or damage incurred or suffered by anyone as a result of this publication or in reliance upon or as a result of acting upon anything contained in this publication.

AND T'ANKS FOR THAT ...

John Broadhead and Bernie Langworth present a simple fuel tank for B T/R.

The drawing below is of the simple uniflow tank that Bernie and I use. It works well and we seem to have airspeed and laps per tank similar to other teams.



Volume (tank + pipes + fuel tube) = 29.4 cc
Form tank from tinsplate and brass tubing.
Measurements are actual size (in mm).
Allow extra for seams. Stuart Robinson fill valve.

Don't miss the chance of enjoying a good racing class just because of the fuel tank ... make one of these now! You can always spend next winter making a more complicated one - the performance will not improve but there will be more to talk about!

VINTAGE 'A' TEAM RACING at the Barton MFC Bash (11 entries)

CD:	Dave Rudd			
Pos	Team	Heat 1	Heat 2	Final
1	Toogood/Ward	3.25.1	3.34.0	7.30.6
2	Ross/Yeldham	Disq	3.47.2	7.37.4
3	Fitzgerald/Court	3.47.5	4.00.2	8.04.5
4	Smith/Bollen	4.01.2	3.49.9	
5	Langw'th/Broadh'd	3.58.4	4.26.5	
6	Bainbridge/Orchard	4.56.0	4.03.9	
7	Barker/Taylor	4.32.8	4.28.4	
8	Green/Long	Disq	69 laps	
9	Simon/Winstanley	Retd		
10	May/Mealing	Retd		
11	Flack/Springham	Retd		



Dave Lacey's "Sukhoi" - OS 46 LA.



Robin Hiern's "Super Zilch" - Super Cyclone sparkie.



A fascinating view of the flight line - Garry Ogders "Coy Lady"; John Goodge's "F86 Sabre"; Col Collyer's "Stampf Monitor"; Craig Hemsworth's "Nobler"; Craig's "Da Ducks Guts"; Mark Ellins' "Jazzzer"; & Dave Lacey's "Sukhoi".



Dave Lacey's "Phoenician" - OS 40 FP.



Adam Kobelt starting his Saito 56 "Impact", assisted by Damien Sammut with Peter Roberts snoopervising



Doug Grinham with his latest creation "Starfire" - ST 60. Higher aspect ratio wing and l-o-n-g tail moment are Doug's present direction. Showed real promise.



Ken Taylor applying the starter to his latest creation "Karma" - MVVS51. John Goodge assisting. Obscure engine problems cut flights short.



Beautiful "Coy Lady" from Garry Ogders, usually a free-flight modeller. Not a drop of paint on this model - all tissue covered. Maiden flights with no problems.



Dave Lacey preparing his "All American".

Pit area adjacent to Circle #2 - the regular stunt circle.



These photos were taken at the Knox meeting on June 5th courtesy of Col Collyer.

For Sale

BriStunt Products email address has changed to
bristunt@aapt.net.au

I now have ST46 ABC piston & Liner sets in stock. \$80
posted within Australia.
Brian Gardner

SUBSCRIPTION APPLICATION ARE YOU BORROWING?

If you have just finished reading somebody else's copy of Australian Control Line News why not get in now and order your own copy. Australia and New Zealand residents cost \$20A and other countries \$30A. For this annual amount you will receive eleven issues of this newsletter, and be up to date on Control Line both in Australia and elsewhere. Please make payments payable to "Control Line Advisory Committee"

You can order from:

G. WILSON
P.O. BOX 298
SEAFORD
VICTORIA 3198 AUSTRALIA

NAME _____

ADDRESS _____

POSTCODE _____

TELEPHONE _____

A.C.L.N. ADVERTISING

For the newer readers, we point out that "private" (personal) ads are free to subscribers, and "commercial" ads are \$20 per quarter page, or \$5 for business card size. Commercial Advertisers can receive a free business card size ad for submitting original articles of interest to A.C.L.N. readers.

Copy or artwork for ads should be sent to the editor, cheques to the treasurer (G Wilson P.O. Box 298 Seaford, Vic. 3198) If you want to save a stamp, I can forward on any cheques sent with ads, but please make them payable to "Control Line Advisory Committee"

Like to talk about and look at interesting model engines?

Then you are welcome to visit the
**M.E.C.A. MODEL ENGINE COLLECTORS
ASSOCIATION COLLECTO**

to be held in conjunction with the 58th Australian Model Aircraft National Championships at Richmond, NSW
**Wednesday, 13th July 2005 from
4-9pm, Hawkesbury Indoor
Stadium**

for further details please contact the MECA Regional Director, DAVID OWEN



1948 Hearn's Hobbies 10cc Tempest Mk2 Ignition Engines like this will be on display at the MECA Collecto

David Owen's Winter 2005 ENGINE SALE LIST

is ready now and contains pages of great new and near new engines, parts and accessories.

Ph (02) 4227 2699 now for a free copy,
or email: owenengines@tpg.com.au.
Please insert "Engine List" in Subject line.

Below is the "Disclaimer" that Peter Branigan in the U.K. uses in the Barton MFC Newsletter.

Traditional Disclaimer

The views expressed in Circle Talk should be recognised as being those of the Editor or contributor(s) alone and, unless expressly so stated, do not necessarily represent those of (or are shared or have been promulgated by) the Committee of Barton MFC, to whom, however, all brickbats, vile abuse, demands for retraction and/or solicitors' letters should be addressed in the usual way rather than to the hapless Editor.

AUSTRALIAN CONTROL LINE NEWS

If undeliverable return to:-

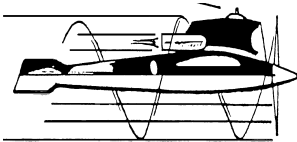
G. WILSON

P. O. BOX 298

SEAFORD VIC 3198

**SURFACE
MAIL**

MODEL RACING SERVICES



*** Services ***

- Motor Modifying and Blueprinting for all competition classes, ie. Pylon, Control Line, R/C, FF, Aircraft, Boats, & Cars,
- Rebush Conrods - Replace Conrod - Replace Piston - Diesel
- Conversions - Motor Repairs - General Machining - McAnelly
- Pans.

*** Kits ***

- "Arrow" - 2cc - 2.5cc speed kit includes pan, pre cut wood, hardware, plans etc. **\$90 .00**
- "Ol Blue" - 2cc Mini Goodyear - pre cut wood, hardware, wheel, shutoff, plans etc. **\$69 .00**

COMPONENTS FOR THE COMPETITION & SPORTS MODELLER

- | | |
|--|-----------------------------------|
| Goodyear Shut Offs | Venturis |
| Head Inserts ¼ x 32 & Nelson | Check Valves |
| Wheels 27, 40, 50 & 60mm | Stunt Mufflers |
| Racing Undercarriage Leg & Box Sets | Line Reels |
| Prop Nuts, Prop Drivers & Extensions | Piston Rings |
| Elevator & Flap Horns | Pan Hold Downs |
| "Adjustable" Team Race & Stunt Handles | Alloy Wings |
| Tank Valves - Pressure & Suction | Exhaust Extensions |
| Single Blade Counter Weights | Mono-Line Torque Units |
| Mono-Line Handle Units | Single Strand Lines |
| Paxalon & Steel Bellcranks | Bobbin Bellcranks |
| Magnetic Prop Balancers | Time Traveller valves and fillers |

" Plus Many More Items "

For Mail Order or for complete price list to :-

**Robin Hiern Model Racing
Services**

P O BOX 976 CRANBOURNE 3977 VIC

Phone 03 59 96 0339 Fax 03 59 96 0307

Hrs. Monday to Friday 8.30 a.m. - 7.00 p.m. Visitors by appointment