

THE VOICE OF CONTROL LINE
AEROMODELLERS FROM
AROUND AUSTRALIA

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**Copy Deadline for next issue is:
Wednesday 15th March 2006
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.

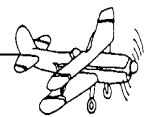
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COMING EVENTS



COMING EVENTS



VICTORIAN CONTROL LINE CONTEST CALENDAR

DATE	EVENT	CLUB
MAR 5	Hand Launched Glider.	SMAC
MAR 5	C.L.A.G. Country Flying Day	Moe
MAR 12	FAI Team race, Mini Goodyear, Vintage Combat.	CLAMF
MAR 26	Vintage "A" Team race	KMAC
APR 2	Simple Combat.	SMAC
APR 2	C.L.A.G. Country Flying Day	Knox
APR 9	FAI & Combined Speed, Goodyear, 2.5cc Rat race.	CLAMF
APR 14-17	VMAA Control Line State Championships CLAMF, KMAC, CLAMF Events & Calender to be advised.	
APR 19-24	59 th Nationals South Australia. Murray Bridge, Strathalbyn & Monarto	
MAY 7	Vintage "A" Team race, Aust "A" Team race.	SMAC
MAY 7	C.L.A.G. Country Flying Day	Moe
MAY 21	FAI & Combined Speed, Triathlon (Artmil Trophy).	CLAMF
MAY 28	Simple Rat race, Class 2 Team race, Classic "B" Team race.	KMAC
JUN 4	Balloon Burst, Limbo.	SMAC
JUN 18	FAI Team race, Goodyear T/R 1/2 A Combat, FAI & Modified Combat.	CLAMF
JUN 25	Combined Speed, Vintage "A" Team race.	KMAC
JUL 2	Simple Rat race (Whipping permitted).	SMAC
JUL 9	FAI & Combined Speed, Jnr 2.5cc Combat, Mini Goodyear, Jnr 2.5cc Rat race.	CLAMF
JUL 23	Class 2 Team race, Classic "B" Team race.	KMAC
JUL 30	FAI Aerobatics (Yeoman Trophy), Vintage Combat.	SMAC
AUG 6	FAI Team race, Goodyear T/R 1/2 A Combat.	CLAMF
AUG 13	Vintage "A" Team race, Combined Speed.	KMAC
AUG 27	Classic Stunt, Vintage Stunt, Aust "A" Team race, Simple Combat. Classic "B" Team race,	MOE

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 events at KMAC except Aerobatic events to be run by CLAMF, DAC & SMAC members

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

C.L.A.S. (NEW SOUTH WALES) CONTEST CALENDAR 2006

DATE	CLUB	EVENT
4-5 Mar	MDMAS. (Mitchell Hill Fields, Muswellbrook)	2005. HUNTER VALLEY CHAMPIONSHIPS
Sun 12 Mar	KMFC	Competition Practice and Club Racing
Sun 12 Mar	Werrington	F2B Aerobatics and Classic Stunt
Sun 26 Mar	SSME	Phantom, Vintage A, Vintage 1/2A and Bendix
Sun 2 Apr	KMFC	1.6cc Combat and Slow Combat
14-17 Apr	VMAA.	(Venues to be advised)
18-25 Apr	MASA MAAA.	VMAA. VICTORIAN C/L STATE CHAMPIONSHIP (Monarto / Murray Bridge SA) 59 th NATIONAL CHAMPIONSHIPS
Sat 22 Apr	KMFC	CLUB STUNT (Novice)
20-21 May	MDMAS. (Mitchell Hill Fields Muswellbrook)	VETERANS' GATHERING
Sun 28 May	SSME	F2B Aerobatics
Sun 4 Jun	KMFC	Palmer / Aldrich Classic Stunt and CLUB STUNT (Novice)
10-12 Jun	CLAS.	(Venue to be advised)
Sun 25 Jun	KMFC	CLAS. NSW C/L STATE CHAMPIONSHIPS GALA COMBAT DAY
Sun 9 Jul	KMFC	AGM, 2.5 Stunt, Club Racing and Slow Combat
Sat 22 Jul	REMAC	Classic and Vintage Stunt.
Sun 6 Aug	KMFC	F2B Aerobatics
Sat 12 Aug	KMFC	CLUB STUNT (Novice)
Sun 27 Aug	SSME	Slow Combat (Bonus points for WW2 Style model).
Sun 10 Sep	KMFC	Classic Stunt, Vintage Stunt, Club Racing, Slow Combat, SWAP MEET
Sat 23 Sep	KMFC	CLUB STUNT (Novice)
Sun 24 Sep	SSME	F2B Aerobatics
Sun 15 Oct	KMFC	Gordon Burford Day, Club Racing
Sun 29 Oct	SSME	Phantom, Vintage A, Bendix T/R, Vintage 1/2A
Sat 4 Nov	KMFC	CLUB STUNT (Novice)
Sun 5 Nov	SAT(Kelso Park)	F2B Aerobatics
Sun 12 Nov	KMFC	Vintage T/R, 1/2 A, A and B.
Sun 19 Nov	NACA (Gateshead H.S.)	Classic Stunt & Cardinal Stunt.(I.Smith Ph:024975 2292)
Sun 26 Nov	KMFC	1.6 and Slow Combat, Club Racing
Sun 3 Dec	Doonside (Kelso Park)	F2B Aerobatics
Sun 10 Dec	KMFC	Christmas Party and Fun Fly
27-28 Jan.2007	CLAS.	(Details to be advised) CLAS. CITY OF SYDNEY CHAMPIONSHIPS

- DOONSIDE - (Doonside Model Flying Club) - Kelso Park North, Panania.
- KMFC - (Ku-ring-gai Model Flying Club) - St. Ives Showground, Mona Vale Rd, St. Ives.
- NACA - (Northern Area Contest Aeromodellers) - Gateshead H.S., Pacific Hwy, Gateshead.
- REMAC - (Ryde Epping Model Aero Club) - Peter Board HS, Wicks Rd, North Ryde.
- SAT- (Sydney Aeromodelling Team) - Kelso Park North, Henry Lawson Dr. Panania.
- SSME - (Sydney Society of Model Engineers) - Model Park, Luddenham Rd, Luddenham.
- WMFC - (Werrington Model Flying Club) - Entrance to flying site @cnr. Landers & Walker Sts, Werrington.
- 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.

CLASII CALENDAR 2005/2006

Flying has continued on Saturdays at the Leichhardt Park flying site (UBD Map 232 R1)

John D. Taylor,

Secretary/Treasurer CLASII (Ipswich, Queensland)

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This picture of John Hallowell's latest "Super Swooper" should have been included in last months article on Vintage A and Classic B at the S. A. State Champs. Apologies from Ed.



A note from the club President

For those of you, who do not know who I am, let me give you a quick introduction, I have been flying control line for a good 40 years, specifically Control line aerobatics attending competitions at both World and National level.

The purpose of this letter is to propose a contest calendar change for Control line Aerobatics for Victoria.

What I am proposing we alter is the amount of Contests flown each year from as many as 7 in some years, down to only 4 (four). I would like the competition scene in Victoria to return to the depth of flying talent we once had and I believe by reducing the competitions, we will be able to place greater emphasis on these "majors"

As in most sports/hobbies there is always something in the top category, which is the prize to strive for.

We have our Nationals as the "Major" that every competitor wants to get the number one position and have their name at the top of the rankings, however I would like to have Victoria adopt 4 "Majors" of there own.

We already support these four:

Hearns Trophy FAI Aerobatics flown Jan 20

Victorian State Championships FAI Aerobatics flown April 14 -17

Yeoman Trophy flown July 30th

Stunt Masters flown September 24th

Monty Tyrell Memorial Classic Stunt November 26th

In addition, if flyers wish to compete in Classic / Vintage stunt at any of these events, it will be subject to numbers, but we are more than happy to run these events after aerobatics, this makes more sense when everyone is already together.

These events have 4 magnificent trophies; all representing an era when names such as Norm Bell, Monty Tyrell, Peter White, Tony Farnam and Doug Harlow were engraved onto them, times when aero modelling was innovative and participation was high.

By having these four Majors in conjunction with the Nationals, I believe we can run each of these Victorian Stunt Majors more efficiently, by placing more emphasis on them. We never struggle to find judges, volunteers or competitors at the Monty Tyrell Classic Stunt day or the Nationals, due to the emphasis on it. If each of these events could be held in the same manner by having stature and pride in the trophy which, like the tennis at Wimbledon is steeped in tradition, with each new winners name engraved on the same plaque as someone who achieved the same result 30 - 40 years earlier.

- I would like to see each of these four trophies have bases or tiers added to them so we can engrave all past winners from as far back as people can find the records, just like the current Hearns trophy.
- I would like to see the Four events moved date wise to span the course of the year, and I would be

more than happy to organise and run or offer any assistance I can to running some judges clinics to increase our pool of judges who are qualified to judge at ANY event even a Nationals.

Perhaps by creating more interest in these four events by both advertising and word of mouth the attendance by both spectator and flyer may increase. It might even entice some previous fliers out of retirement, or entice those who have lost the drive to regain it.

As far as Victorian Stunt competitions go I have purchased out of my own funds a small Laptop computer and power supply for use on a car battery as well as writing a program to allow us to utilise this for tabulating scores. It was trialed with great success at the 2004 Nationals stunt events, where it dramatically cut down "wait time" for scores, as well as dreary time consuming cross checking of K factors, and score tallies. The final flight score was put up on the board within 5 minutes of flights ending, allowing both the person tabulating and officials to continue watching the remainder of the event. This makes for a quicker event and a more professional event with the human error of tabulating K factors and running totals removed.

This system is in wide spread use for all Control line stunt events thus eliminating one of the hardest jobs for our event tabulator. Anyone can use this: the software is foolproof and error free. No more stuck in a tent with a calculator and pencil!

I am more than happy to now give this proposal up to the Stunt community in General, and specifically the Victorian Stunt community, those who wish to discuss this with me personally may contact me via phone or regular mail.

Regards Peter Rowland SNR (President of Knox Model Aircraft Club)



Meeting held at Traralgon on Sunday January 8th.

Once again, Traralgon did it's best to justify it's reputation, with an almost dead calm morning that slowly but surely degraded into the usual windy venue for Club Flying Days - almost !!! Once again, again, by day's end, everyone's assessment was not exactly a perfect flying day, but a damn good one !!!

The wind was almost non-existent until mid afternoon when, just as the barbeque plate was cooling down, the wind picked up to be quite troublesome. At least the wind direction, originally away from the sun, moved in concert with it, thereby easing the strain on eyes. BUT - it was HOT !!! From early in the morning, it was HOT !!!

This "Day" brought forward two "new" models from John Goodge - a "Thunderbird Mk II" that has been shoved around from place to place (read one bedroom corner to another) for around two years, and is now finally completed with a Stalker .51 up the snout. Finished with light weight tissue, then silk on top of that, it is (for

Johnno) quite light. After sequentially adding more and more lead to the tail wheel leg, he is now very happy with it, and was last seen flying the Classic Pattern with particular intent.

His other "new" model was an appealing bright yellow "Sea Vixen" - a twin-boom high-set-tailplane Stunt model designed by Jack Sheeks in 1966. The OS 46LA sounded sweet with Johnno's usual 20% nitro, but lack of power wasn't the problem. John knows he usually builds tail heavy, so pre-empted by pushing a large lump of lead forward into the nose block from the cockpit. In flight, the model is noticeably "nose heavy" (VERY), but as this chunk of lead is now "irretrievable", in the manner of a reversal of how it was installed, a little surgery is required.



John Goodge's "Sea Vixen / OS 46 LA" - Note the extended lead-out guide on the inboard wingtip to cater for the very sharp sweep-back.

Another model "new" to the CLAG scene, but not exactly "new" itself was an "Angelique" which now belongs to Ken Dowell, the original designer way back in 1962. Back then, these were best with a Merco .35 (no muffler), and as well as Ken's Nationals in '63, it gained him and many other flyers of that era a number of top Stunt competition wins. This particular model had been hanging on Mike Chipchase's garage wall since 1972, with the mid-60's vintage OS 49 never having been run since then either.



Ken Dowell's "Angelique / OS 49" - Been hanging on Mike Chipchase's garage wall since 1972. Needs a few little adjustments, especially the tank level.

Fill the tank - turn it over a few times - connect the plug lead - and a-w-a-y it went, sitting nicely at a steady four

stroke setting. Take off was typical Angie - low, slow and steady - but together with the prop being much too small, the tank level was found to be a long way off. It almost stopped on entry into inverted, but settled into a very slow run in level inverted, and literally staggered up and out back to upright. When the motor stopped, the Angie glided - and glided - and glided - and kept gliding ... it has to be actually flown onto the ground to make it land.

After lunch, a coarser pitch prop was fitted (with thanks to Graham Vibert and his prop reamer), and this made some difference. However the tank level is a must-fix before it can ever become an Angie of old. Still, in this author's eyes (I'm allowed to be biased here), it was wonderful to see an Angie in the air again. Competition again with it? - only if I'm prepared to risk the divorce court! (To quote from TV's "Rumpole of the Bailey, "She who must be obeyed has spoken!")

Ken's "Pacer/Moki 51" always gets air time, with the Moki never missing a beat. Ken also had his grandson Aden down on holidays from Darwin. The intent was for Aden to gain a little more trainer experience but he declined, probably not wanting to look foolish if he pranged someone else's model. The irony here is that the Christmas before when he was down with Pop, guess who did the pranging? 'Nuff said!

Reeve Marsh (Secretary of the Springvale Club) made a welcome appearance at our Country Day, bringing with him quite a stable of models. See photo captions. Unfortunately, when it came time for the Bleriot to see the air, the wind had strengthened, and caution wisely prevailed. That little Piper Cub zips around very nicely.



Reeve Marsh's "Bleriot 3-liner/HP20".



Reeve Marsh's Sport Scale "Piper J3 Cub / HP 20".

Ron Jones must have set a record for himself - the most

flights in one day. His "Nobler/Fox 35" was in the air at almost every opportunity in the breaks when others were sheltering from the heat in the shade of the trees. That old saying about "Only mad dogs and Englishmen go out in the midday sun" ? Ron is an Aussie! - we think. Steve and Vic Mitchell attended, as they always do, but elected to skip the heat of the sun and instead "snoopervised" everyone else's activities from the comfort of their chairs in the shade. No-one blamed them one bit. Vic was even seen to catch the odd 40 or 200 winks here and there. The high humidity didn't help anyone.

As usual, Graham Keene performed the task of Master Chef for our Lunch Break (a quite lengthy affair for some). This time the snags (sausages, not things in the nearby creek) were very tasty with infusions of garlic and herb flavours. Sales of soft drink cans must have hit an all-time high. Graham always has to "interrupt" his flying of something to set up the barby etc. (wonder if he does all the cooking at home?), and his efforts are always appreciated but seldom acknowledged. THANKS, Graham!

Doug Black attended with a "Viper/OS 35S" and "Flightstreak/OS 35H Stunt". Doug is making a very welcome comeback to control line modelling, and promises to complete a Mk I Thunderbird that, part built, has been hanging in his garage for some 20 years.

The other "ham" in CLAG circles, Graham Vibert, had one flight of his "Shoestring/OS 35FP" then decided it was much more comfortable in the shade. The bits and pieces and tools he carries in the boot of his car is remarkable - coming to the rescue with that prop reamer was better than trying to drive a 3/8" drill bit through it.

Rian Goodge, assisted by Dad Johnno flew his "Skyray/OS 25FSR". Dad went out to the centre to assist with arm position for outside loops, and CLAG's "intrepid" (again, see photo caption) photographer attempted to snap a pic of the tangle of arms. Too late - Dad left the centre, and photographer was left just on the flight circle. Rian didn't know, and one Skyray passed two feet directly above photographer's head. Accidents can always happen, and this instance of no ensuing injury was more luck than good management or wise action.

Alan Frost gained a lot of air time in circle 2, but later in the day when it came time to get the Stick Trainer going for son Rodney, the Fox 25 refused to cooperate. This author's view is "typical Fox !" While talking about Fox's, Johnno was presented with a photo of a "flight box" (from an American VSC event) bearing the slogan "Old Time Stunters Do It With Foxes" - in keeping with John's "love" of Fox engines. (Tongue in cheek, of course)

"El Presidenté" Jeff Ingram arrived aboard his usual Beemer/sidecar outfit, and bored some more holes in the sky with his "nipple pink" Peacemaker. Why does "Real men don't eat quiche" come to mind?

A "Plastic Fantastic" Combat rounded off a very good, if very hot, day - Keeno and Rian Goodge both finding that slightly off-tune engines because of the heat doesn't make these flat plastic sheet wings fly any better.

Come along on March 5th to Moe and join the gang in the best Flying Days on the calendar.

Ken Dowell - CLAG Inc.

The Dragon and the Fox

By good fortune, I became the owner of a nice rendition of J. C. Yates' Dragon Stunt model. This design harks back to 1947 and its design is quite ahead of its time, making it just the ticket for Vintage Stunt. The prototype aircraft sported an up-to-the-minute Orwick 64, built by Al Cunningham to a very high standard. Performance (even with spark ignition) was very good and the Dragon gained a reputation for a thrilling performance at high speed. My example had a Fox 35 Stunt engine in the nose. Call me a sceptic, but would it have the urge to fly the Dragon? Initial test flights were promising, but the Fox was nowhere near good enough. So it was back to the workshop for a look inside, which started my learning experience.

Which Fox 35?

Duke Fox released the original Fox 35 Stunt engine in December 1948. Commonly known as the "sandcast" version owing to a relatively rough surface finish, it was in fact produced from gravity die-castings. Ron Warring tested the 35 in 1950, finding that it went like the clappers, recording 0.625 BHP at around 15,500 RPM, using 42% nitro in the fuel. That was quite awesome for an engine weighing 5.75 ounces.



A successor to this first model appeared in 1952. It had a new pressure die-cast crankcase, six cylinder head screws, three backplate screws and a number of internal changes. While the Fox 35 Rocket (1959) and 35 Combat Specials came and went, it is this somewhat beefed-up successor to the first Stunt model that has continued in production to the present day, with only minor changes. My example has the added "ears" either side of the exhaust stack for mounting a muffler. I reckon that dates it to around 1980.

A true Vintage experience

The Fox 35 Stunt engine has attained "Icon" status, but despite change in the rest of the world, the Fox retains the sort of quality that was widely accepted half a century ago. Back then, low prices and large volume were paramount and engines were not expected to last very long. Also, it

was expected that a new engine have an extended "break-in" period to work through the production inaccuracies.

My engine had plenty of these inaccuracies, including an alarming angular misalignment between the big and little end holes of the conrod and a cylinder bore that was probably intended to be parallel, but was wider at the top than at the ports. In less experienced hands, it would have done little to enhance the Fox 35's reputation and no amount of "break-in" would have entirely remedied the situation. It seems the world is divided between those who respect the engine's enviable manners for stunt work, and those who have experienced its design and engineering limitations more times than they would think reasonable. There is a wealth of experience with Fox 35's to draw on, but when pressed, few people have any facts beyond the level of "this worked for me". I'm always up for a new learning experience, so my journey of discovery has been on a more technical level. My data and results may be of interest to others.

Foibles

Almost alone, Fox engines have retained unhardened steel cylinders with cast iron pistons (hardened or chrome-plated cylinders have shown advantages when cast iron pistons are employed). This is one reason for keeping the castor oil content of the fuel at an unfashionably high 28 percent. This odd number might be explained by equating fairly easily (in American fluid measures) to 9 ounces of oil per quart of fuel, but long experience had probably shown this to be the "magic" number. Some people brag about using less castor oil content or even getting away with synthetic substitutes. It appears this is possible in circumstances where the engine is always running well within its comfort zone (running rich/cool) and has no internal problems with fits between parts. However, the piston/cylinder can easily be ruined by a lean run unless there is enough castor oil present to provide protection. Secondly, oil that does not burn picks up heat within the engine and conveys it through the exhaust far more efficiently than external air-cooling alone. The Fox 35, by nature runs quite hot, so the high oil content provides a significant moderating effect on temperature and improves general handling characteristics. Why change a good thing? I'm advised that those people that were more concerned by how much oil ends up on the model rather than why it is needed in the first place should not use a Fox engine!

The unique needle valve design used in the Fox 35 Stunt (essentially unchanged since 1952) has few fans. While it will hold a steady setting, adjustment is anything but linear or consistent. The wise men of the Stuka Stunt Forum were divided as to which substitute needle valve assembly was the best. Logically, any type with less air leakage and more precise metering would do the job, but most have a larger spraybar diameter. Opinions were mixed whether this should be reduced from the typical Super Tigre or ENYA 4mm diameter to the Fox's original 3.2mm. Initial tests were conducted with an ENYA assembly (4mm spraybar) before trying one from a Fuji 15 (3.3mm spraybar).

The Fox 35's canny design cuts production time/costs to a minimum, hence its continuing super-low selling price. A necessary compromise, in this respect is the location of the backplate. Production tolerances relating to the fore-aft crankshaft position/movement are slack, so the backplate face is kept well out of the way. That is no big deal and tests by Duke Fox and George Aldrich showed that wide changes in crankcase internal volume had little effect on

performance of this engine. However, crankshaft flex under working loads in typical model engines results in a tendency for the conrod to work its way off the crankpin. With the Fox 35, it could be hanging almost halfway off the crankpin while running! The result is increased loads on components and a tendency for the piston to ride crooked in the cylinder (top leans forwards against cylinder and bottom edge drags against cylinder). An optional "stuffer" backplate from Fox largely fixes this fault. I went one further and re-machined the appropriate bits so that the conrod is held "central" within 0.1mm.



Fox internal bits

Compression ratio and head design on the Fox 35 is OK, but Fox offer an optional "hemi" head with different combustion chamber shape and this is said to improve running consistency. Without a hemi head at hand, I'm unable to report on its merits.

Initial flight tests

Extensive hand lapping to true up the cylinder bore completed the fix-up work and the Dragon with Fox 35 (sporting a RSM tongue muffler and ENYA needle valve assembly) took to the air. Consistency of run through manoeuvres was excellent owing no doubt to the large spraybar giving a modest effective choke area. Airspeed soon showed itself to be the most critical parameter. Six seconds per lap was too slow and five-second laps were OK. In terms of actual airspeed, the critical lower point for my model proved to be around 90 KPH. Adjustment of line length could still be made to make sure line tension was adequate on windy days, but it was clear the Dragon needed to fly faster, meaning the Fox could not be run at an easy setting to provide the required power. The day ended with a horrible sagging run that had to be stopped by landing the model under power and nosing it over. The top of the cylinder turned blue from the heat, but thanks to my chamfering of the top edge of the piston skirt (a subtle, but very important and easy mod.), there was no sustained damage.

There are two factors here. Firstly, the engine was still a bit tight and friction in the piston/cylinder was higher than ideal. It had not yet burned the proverbial two Yankee gallons of fuel for "break-in". Secondly, the tongue muffler was exacerbating the heat build-up as this muffler type is something of a devil's bargain. You get reasonable silencing effect from a very light and compact unit, but the lack of expansion volume for exhaust gasses keeps them from cooling to any significant extent in the muffler.

Without a reasonable expansion chamber, gas energy remains high, so the outlet must be relatively restrictive to subdue noise levels. The RSM muffler has a total outlet area of 44 mm² distributed amongst fourteen holes of 2mm diameter each. This would be more restrictive (owing to frictional losses) than an equivalent single hole of 7.5mm diameter (a typical size for a regular expansion chamber style muffler for a 35). So high temperatures and significant backpressure might be quite alright when it is intended to run the engine at moderate speeds and rich mixture setting, but is not good news in my particular application.

Muffler effect on power

Tests showed that the RSM muffler drops running speeds by around 500 RPM across the useable range. This is interesting, as regular expansion chamber mufflers of good design have negligible impact at lower speeds and progressively more power drop at higher speeds. Noise checks with the RSM muffler gave readings between 92-97 dBA at three metres, depending on prop size and mixture setting. This is not particularly quiet compared with modern "real" mufflers, but this little gadget sure is compact and lightweight. In any case, a muffler is a necessary evil these days, but count on losing around ten percent of the engine's open-exhaust power with the RSM in place. All further testing was done in this configuration.

Power curves at "real" stunt settings

A series of RPM checks using standard propellers gave BHP and torque curves reasonably similar to those obtained by Peter Chinn when he tested the Fox 35 in 1967. From previous flight experience I estimated that the Dragon needs at least 0.4 BHP to fly reasonably well. A steady 0.45 BHP or more would be even better. Stunt engines are seldom run flat out, so a series of tests were also made with the engine running at fully four-cycle setting. As an approximate rule, this was 1000 RPM down on peak setting for any given prop. That equates to a rather modest output of 0.35 BHP in the air swinging a typical propeller size (I've got 2.5cc diesels that have no problem doing that!). This rather low figure seems quite adequate for sport flying with many smallish models flown on 60 feet line length.

Original setup

Std 10% nitro 4mm spraybar

Propeller	RPM	BHP	Torque
APC 12x6	7300	0.33	45.6
APC 11x6	9300	0.46	49.9
APC 10x6	10100	0.4	39.9
APC10x4	11,100	0.4	36.3
Graupner 9x5	12,100	0.43	35.8
Graupner 10x3	13,400	0.5	37.6
APC 9x4	14,000	0.45	32.4

The point where the engine vacillates between two and four-cycle running lies around 500 RPM below peak speed. It was not particularly easy to pick this reliably or repeatedly and despite the Fox's reputation for routinely working up and down this range, the test engine was more likely go either two or four-cycle than remain in-between. Maybe the OS No. 8 plug was not an optimum choice? Also, while the individual two-cycle test readings were reasonably close to the expected trend, those for four-cycle running were all over the place. Perhaps this is an example of those subtle dynamics of single cylinder two-stroke engines that make some propellers "work" in a particular application while other more theoretically worthy

examples don't. Experimentation here could pay significant dividends when looking for that sweet 4-2-4 running characteristic.

There was a noticeable drop in torque at medium speeds, coinciding with the propeller sizes commonly recommended for use with the Fox. This could be caused by unwanted vibration at these speeds. Evidence of bad vibes on my rigid test bench is not good news and there is plenty of anecdotal evidence that Fox 35's in certain models are virtually useless owing to vibration. To alleviate the problem, the Stuka Stunt Forum was full of praise for the after-market crankshaft offered by Randy Smith for around USD50. This has increased mass on the counterweight and the flanks of the crankweb are relieved on either side of the crankpin. I decided on a similar path, but by modifying the standard components.

Modifications

First up was a simple grinding job on the crankweb. This is easily done with a bench grinder or Dremmel tool. There is no need for super precision, but a good final finish will prevent failure at stress-raising points.

Next was removal of unnecessary material from the piston to reduce reciprocating mass. The Fox piston is already quite lightly constructed and the only place where a bit of excess remains is either side of each gudgeon pin hole. Some work with the Dremmel and a good tungsten carbide cutter dropped piston weight from 9.62g to 9.11g (around 5%). The Fox piston has an internal stiffening ring above the gudgeon pin holes. This is crucial for maintaining piston shape and should not be removed! Duke's design philosophy has been to keep the piston rigid, thereby allowing the cylinder to be thin and "conformable". Having both piston and cylinder flex would be bad news.

Lastly, I cut circular ports on the piston skirt and cylinder on the transfer side. This is an old design feature with the following benefits. More weight is taken from the piston (now reduced to 8.83g) and these holes are on the same side of the piston as the baffle, thereby helping to offset its mass on that side of the gudgeon pivot line. Putting corresponding ports in the cylinder allows mixture to pass through the piston and into the transfer port, thereby promoting cooler running and perhaps improving cylinder charging and gudgeon pin to conrod lubrication. A second series of tests was undertaken to assess the overall benefit of the modifications.

Did the mods. Work?

I must confess that my supply of 10% nitro fuel ran out, so I switched to a 5% nitro mix. Comparison with the first series of tests is therefore a bit less valid. However, it seems that the modified engine was running more happily and the real gain was at the bottom end of the speed range, where performance with the APC 12x6 prop (almost 8000 RPM) was a real surprise. The Fox normally runs hot when loaded in this way, so I reckon the porting changes were of use here. There was some improvement in the middle speed range. It was not really possible to gauge the drop in vibration, but the modified Fox is a smooth runner even at the highest speeds, being quite free of fuel-frothing problems when flying the Dragon. The balancing mods were worthwhile, but the porting mods were probably unnecessary.

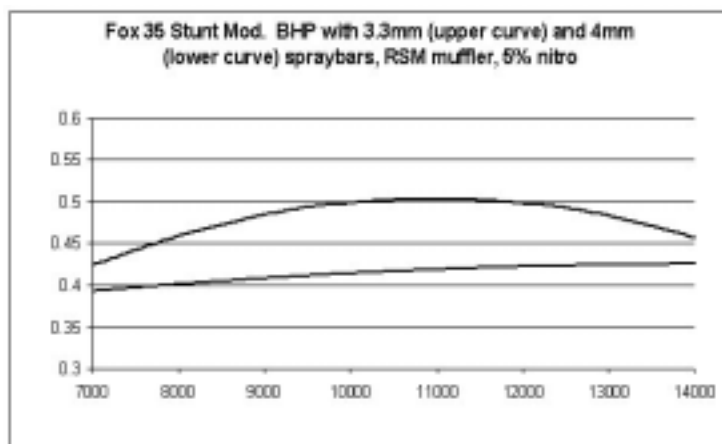
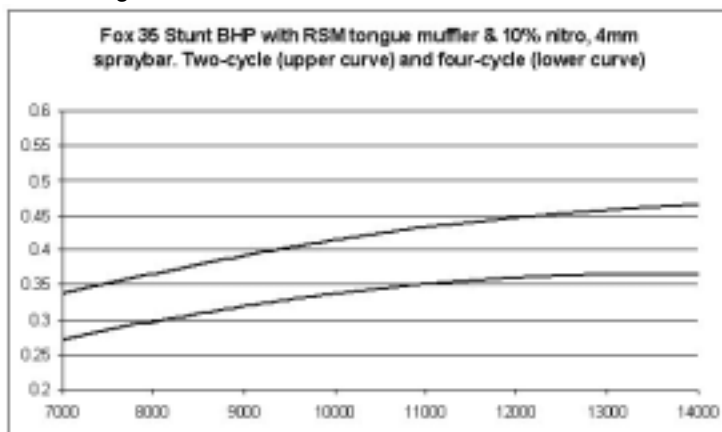
Final setup

With mods & 10% nitro & small spraybar

Propeller	RPM	BHP	Torque
APC 12x6	8100	0.45	56.0
APC 11x6	9500	0.5	53.1
APC 10x6	10900	0.5	46.2
APC10x4	12,600	0.575	46.0
Graupner 9x5	13,000	0.525	40.7
Graupner 10x3	13,900	0.555	40.2
APC 9x4	14,700	0.525	36.0

Effect of spraybar size

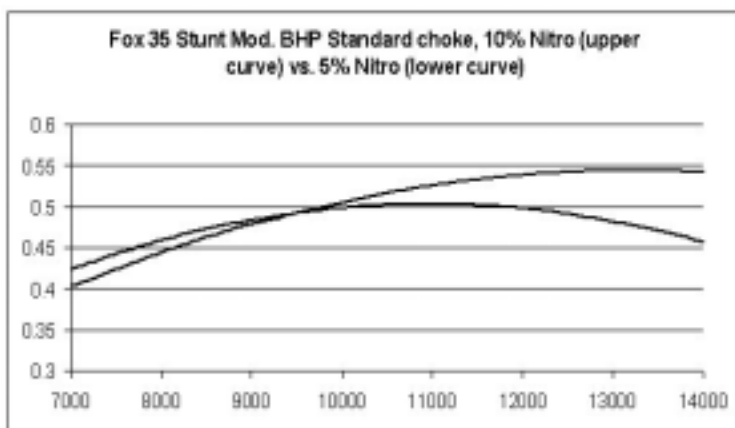
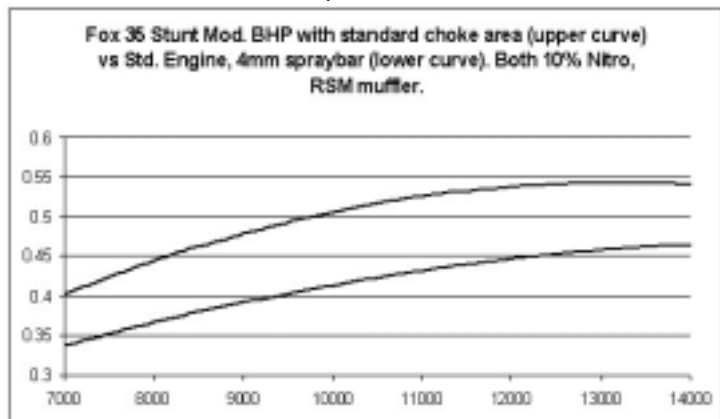
With a 4mm spraybar, the Fox has an effective choke area of approximately 10mm² (around two thirds of the standard 14.7 mm²). In this configuration, suction is extremely good and therefore perhaps a good patch-up for poor tank venting/location if power is not at a premium. Repeating the test process with the smaller 3.3mm spraybar diameter to restore standard choke area gave some surprising results. A significant improvement in power of around 15% was gained in the medium speed range, allowing the modified Fox to top 0.5 BHP near 11,000 RPM. However, this advantage was reduced to almost nothing at low or high speeds. So the "loss of torque due to vibration in the middle speed range" theory might well be rubbish and I should not have strayed from the original spraybar size. Power output aside, the engine was noticeably happier and cooler in running, no doubt thanks to the extra fuel and air passing through.



Effect of Nitro content

A final test session with nitro back up from 5% to 10% showed progressively more relative benefit as running speed went up: essentially shifting peak power higher up the RMP scale. The gain from the extra nitro went from nothing at 8000 RPM, to around 300 RPM at 10-11,000 RPM, and 700 RPM at the top of the speed range. Power output was now up to around 0.55 BHP at 13,000 RPM. The

overall effect at typical Stunt speeds was negligible and significantly more nitro would probably be needed to realise any significant practical benefits. Unless the engine was running "cold", the increased heat of combustion from more nitro would be an unwelcome side effect, not mentioning added cost and fuel consumption.



Conclusions

Most popular Vintage/Classic Stunt models designed for the Fox work with less power than I was after and much of what I was seeking is not usually needed, as evidenced by countless successful applications. If vibration is a problem, rebalancing the innards will surely help. For more power at "useable speeds" and happier running, the standard choke size seems to be the go. More nitro is likely to have less effect than other potential adjustments, such as optimising propeller and glowplug choices.

Flight tests confirmed that I was getting what I wanted with the Fox/Dragon combination. The final set-up has a generous line length of 20 metres (around 65 feet) and a near-peak "wet two-cycle" setting giving the required airspeed, lots of sky to fly in, comfortable lap times and adequate line tension. The British "RAM" 10x6 worked noticeably better for me than the APC or Zinger equivalents. The next step will be to try a homemade lightweight muffler with generous expansion chamber volume and muffler pressure to keep the effective mixture setting spot on in flight.

Would I recommend the Fox 35 Stunt engine? I'd say not, if you don't like fettling your engines, happen to get a dodgy one or would rather not pay for a custom built example. It won't match the best of the modern Stunt engines for all-round performance. But if points for age in Vintage Stunt are important, or you just want to experience an enduring piece of control line history, a good Fox 35 can give a lot of satisfaction.

MARIS DISLERS

Hearns Trophy



With Melbourne in the grip of a heat wave, there was no doubt that the expected top of 35 degrees forecast would be met, and perhaps even exceeded. With that in mind 5 keen fliers and many more onlookers made up the field for the 2006 Hearn's Hobbies Trophy and were met with beautiful blue sky, a small amount of wind, and that heat!

This contest is one of the 4 "majors" that has been launched in Victoria this year to make up a shorter contest calendar but with each of the events having a long history and prestige alongside it, with the State Championships, Yeoman Trophy and the Stuntmasters Cup making up the other major Contests. Great names and fliers of past such as Norm Bell, Tony Farnan, Bob Hyde, Monty Tyrell, Ken Taylor, Peter White, Doug Harlow just to name a few have all adorned this amazing trophy which goes back to 1947.

History was to be added today as another name was engraved onto the large tiered base plate - question was on this Sunday 29th January 2006, who would it be?

1st round was completed in short time, with everyone ready at 10am, ready to get underway before the sun really came out in force, Doug Grinham, Mark Ellins, PJ Rowland, Craig Hemsworth all put up good scores to have a spread of 101 points separating 1st - 4th. Mark Ellins is flying some good patterns still using Doug's old model with the Stalker .61 and Doug Grinham himself using an older model Jazzmate, all performing great.

PJ Rowland, who posted the highest score of round 1, was flying the same model he flew at the 2005 Nationals, with Stalker .61 for power also. Craig has a better model, flying a modified KA-10 with Stalker .51 which performs better than now his old "Da Ducks Guts" and as a result of some obvious practice posted the 2nd highest score, only 25 points behind PJ Rowland. Rounding out the contest was newcomer Damian Sammut, who has been trying really hard to get his patterns down, and with time and more practice will be pushing the top spots I'm sure.

Round 2 saw the weather and the flying heat up. Doug Grinham was keen to make a better effort than round 1 where he ran over time by several seconds. Doug was flying a great pattern, pushing the Jazzmate to every corner of the sky, and posted a very respectable 1747, but also ran overtime again.

Mark Ellins and Craig Hemsworth were pushing each other and round 2 was no different with Mark coming out on top with some nice smooth rounds and tight bottoms, just edging out Craig by 50 points.

PJ Rowland flew a consistent pattern to again top score, flying a better pattern than round 1 with a top score of the day of 1862.5.

Round 3 saw the wind pick up slightly to the relief of all who were competing, but on a down side, the extra wind and extra heat saw lots of turbulence and eddies move

across the field, making precise manoeuvres difficult. Everyone flew, and Doug Grinham finally got the fuel mixture right to post a score only 30 points off PJ Rowland who scored 1855 to Doug 1825. Very tight at the top.

That was how things smoothed out after the last flier landed, with Mark Ellins in 3rd place, Doug Grinham in 2nd place and PJ Rowland in 1st. Craig Hemsworth was just out of the podium with a score that was only a mere 19 points shy of 3rd place. Perhaps a smoother landing in round 2 could have made the difference with only a minor bob, as at this level you need to make every point count.

History shows Peter White won the contest 7 times in a row from 1972 to 1978 which was quite a run alongside Ken Taylor with 5 in a row with Feb '62; Sept '62; Feb '63; Sept '63; and Feb '64.

PJ Rowland added his own little slice of history as being the equal 3rd highest straight run with 3 wins in a row 2004, 05 and 06. Doug Harlow won 3 in a row in 1960/61.

So concluded the 2006 Hearn's Trophy. Many thanks to the efforts of our 2 experienced judges Peter Roberts and Peter Rowland Snr, and Frank McPherson, for the tabulation of the entire day in a car that topped temperature of 42.5 Degrees.

Another successful contest enjoyed by all.

Results

Place	Competitor	Model/Motor	Rd 1	Rd 2	Rd 3	Total
1	PJ Rowland	Vortex/Stalker 61	1789.0	1862.5	1855.5	3718.0
2	Doug Grinham	Jazzmate/Stalker 61	1725.0	1747.5	1825.5	3573.0
3	Mark Ellins	Jazzer?Stalker 61	1688.0	1780.5	1756.5	3537.0
4	Craig Hemsworth	KA10ish/Stalker 51	1764.0	1730.5	1698.5	3494.5
5	Damian Sammut	Pretender/OS 25FP	1359.0	1436.5	1446.5	2883.0

The above table indicates the Results using the Classification process in place for many years. However, the 2006 FAI Rules now go about it in a totally different way.

For each Round, the Judge's scores are AVERAGED, irrespective of the number of Judges. The Competitor's Round Score is then relative to a flight score, being a maximum of 1310 for a "perfect" flight.

Then, if the Rounds are Qualifying, the best two are added for Total Qualifying Score.

However, if they are Fly-Off Rounds, the best two are again averaged, with the Competitor's Final Score being relative to a flight score.

Confusing ? The actual ranking of Places according to the Judges' Scores is obviously still the same, but the Score indicated gives a clearer and more realistic picture.

These Results are as per 2006 FAI Rules - for a Fly-Off Final.
ROUND and TOTAL Scores are relative to a single flight maximum score of 1310.

Place	Competitor	Model/Motor	Rd 1	Rd 2	Rd 3	Total
			Average of Judge's Scores	Average of Judge's Scores	Average of Judge's Scores	Average of best two Round Scores
1	PJ Rowland	Vortex/Stalker 61	894.50	931.25	927.75	929.50
2	Doug Grinham	Jazzmate/Stalker 61	862.50	873.75	912.75	893.25
3	Mark Ellins	Jazzer/Stalker 61	844.00	890.25	878.25	884.25
4	Craig Hemsworth	KA10ish/Stalker 51	882.00	865.25	849.25	873.62
5	Damian Sammut	Pretender/OS 25FP	679.50	718.25	723.25	720.75

There were no pictures available of the contest for publication.
Report by Ken Dowell



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Adelaide Aeromodellers Club Triathlon February 4th 2006

After the severe weather of the SA State Champs, the day of the 2006 AAC Triathlon was perfect: 30 degrees C, light wind and slightly overcast. Whilst the weather was co-operative, equipment gremlins caused more than their fair share of drama.

In Stunt, Mal Dyer crashed his own model practising outside loops and then unluckily crashed the club's Proton when the motor cut prematurely, breaking off the nose. With the help of Bob Edgecombe it was quickly repaired with 5 minute epoxy, allowing Mal to compete in his first AAC event.

An improving Alan Roadknight suffered a poor motor run. Rob Fitzgerald sharing Maris Dislers' Mars powered Zero did not have enough fuel to get through the pattern. Chris Carpenter's Peacemaker flew well despite the fact his Taipan Series 71 diesel is still not run in. Maris Dislers, Greg Roadknight and Peter Anglberger flew patterns that judge Russell Bond described as 'fairly recognisable'.

A place in the Rat Race would have gone to anyone who got a half decent motor run, Diesels taking all 3 places. The most dramatic heat featured an unintentional inside loop by Chris Carpenter whose down lead-out broke near the end. Chris did well to avoid the traffic and significant damage to the model. Maris' and Rob Fitzgerald alternating flying and pitting the Zero were a class above the rest of the field.

Combat was almost carnage free. Chris Carpenter was permitted to fly his backup model (this is a fun event after all) and demonstrated that with a bit of practice he could be a force at the next AAC slow combat. Peter Anglberger was fortunate that Alan Roadknight suffered a poor motor run again and managed three easy cuts. Rob Fitzgerald was unlucky to crash in the first minute of his bout, damaging the Mars and having to retire.

The contest was a great success. A number of 'old hands' came out for a look and hopefully rekindled their enthusiasm. The event also drew quite a few spectators across Unley Rd from the City BMX Park. Around half a dozen kids and adults had trial flights on the somewhat battered club Proton trainer after the competition.

Thanks to Bob Edgecombe for organising the trophies, Alan and Greg Roadknight for the BBQ and drinks and Russell Bond for judging. Thanks to all the competitors who helped time keep, lap count etc.

Results:

Stunt (Vintage)		Rat Race (10 min, 1 stop)		Combat		Overall	
1. P. Anglberger	153	1. R. Fitzgerald	169	1. P. Anglberger	533	1. P. Anglberger	
2. G. Roadknight	148	2. M. Dislers	164	2. C. Carpenter	512	2. M. Dislers	
3. M. Dislers	141	3. P. Anglberger	154	3. M. Dislers	510	3. G. Roadknight	
4. C. Carpenter	126.5	4. A. Roadknight	113	4. G. Roadknight	331	=4. C. Carpenter	
5. R. Fitzgerald	113	5. G. Roadknight	110	5. A. Roadknight	238	=4. R. Fitzgerald	
6. M. Dyer	103	6. M. Dyer	89	6. M. Dyer	225	5. A. Roadknight	
7. A. Roadknight	66	7. C. Carpenter	71	7. R. Fitzgerald	41	6. M. Dyer	

Equipment:

P. Anglberger:	Midi-Slow, Taipan Series 71 Diesel
M. Dislers:	o/d sheet wing profile Zero, Mars 2.5cc Diesel
G. Roadknight:	Proton, OS 20 glow
C. Carpenter:	Peacemaker, Taipan Series 71 Diesel
R. Fitzgerald:	M. Dislers' Zero, Mars 2.5cc Diesel
A. Roadknight:	Proton, Enya 19 glow
M. Dyer:	o/d sheet wing profile, OS15 glow

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TARMAC Notes for January and February



Thanks to the efforts of Fred Adler, our very tenuous tenure at BASI field was extended, first to the 30th of January and then to the 28th of February. With the proviso that we could actually be ejected at a weeks notice if it became necessary. The extended time has been handy, since alternatives at the moment are limited. It is a bit hard to predict exactly what will happen when BASI finally becomes unavailable as we have had the usual post Christmas slow down in activity. Some members have already moved northwards to Whiteman Park, others are waiting for developments in our negotiations with the Gosnells council for a south of the river site although that is not looking too hopeful at the time of writing. No doubt, some will just go feral and make their own arrangements, a line of thought with which I am in some sympathy. I live in hope of improved news soon.

If my reading of the FAI rule changes mooted for control line is correct, it would seem that we may yet again be allowed to use a timer to control the engine run time for F2B stunters. I never could fathom the reasoning behind banning them in the first place and if anyone can give me a clear explanation of the difference between landing a plane that has had its engine stop due to lack of fuel because the tank is empty, or lack of fuel because the fuel feed has been closed off, I should like to hear it.



Taken from the TARMAC archives is this picture showing the counter at West Coast Hobbies somewhere between 1948 and 1950. Rod Ashton is showing a model plane to a couple of customers. Note the tether car on the counter and all those old kits on the shelf. This photo was supplied by Don Hall

I read in the latest ACLN that Robin Hiern is to close down his Model Racing Services. That should cause some distress among control line racers across the nation, but I suspect particularly in Victoria where lots of people have relied on him to do the hard bits quickly. I am sure that all those chaps will find somewhere else to go, or maybe (just maybe) they will try doing it for themselves. It might be fun.

I may have mentioned it already, but I consider myself to be as much a gadgeteer as an aeromodeller. I derive quite a bit of enjoyment from making odd accessories and custom parts for my models and also building and scheming out alternative ways to do things. This should all be with the intention of reducing model weight without losing the necessary strength, but unfortunately most of my plotting seems to be spent in looking for ways around my self created disasters. These are usually the result of not enough thinking prior to going into action. Mind you, there are some things that just sneak up on you. I found an example of that while building the engine mounts for the little Montgomery Stiletto that I mentioned last month.

The plans show the engine as an OS MAX I .15, and as I still have my very first engine, an OS MAX II .15 that is very similar, I set out to install it. My old OS is a very potent piece of machinery and I wondered if the tiny Stiletto might be more than a bit overpowered with that up the front, so on further thought, it seemed like a reasonable idea to make the model accept another, slightly less dynamic engine. In my collection of stuff I unearthed two motors that might fit the bill. One was a Taipan 1.5cc diesel and the other an early model Fox .15 (baffle) motor. Both of these engines had been previously possessed by someone that in an earlier life, had probably been skilled in the art of bridge or locomotive building. Using these remembered skills, he (or perhaps she?) had drilled out the mounting bolt holes to the limit. A benefit for me was that both would just drop over the same bolts as the OS. The shaft lengths of the three engines are almost the same, so I set about fitting the ply nose ring to the engine bearers and making spacers that would put the spinner in the right place, no matter which engine was installed. The OS and the Taipan went into the bearers with no

trouble. The spinner lined up perfectly with the nose ring, for those, but not the Fox. Had I looked at it carefully I should have known, but I just assumed that (like most other engines) it would have the lower surface of the engine mounting lugs on the centre line of the crankshaft. It doesn't. On the Fox, the centre of the lugs is on the Crank centre line. This means that it sits a couple of millimeters offset compared to the other engines. Rather irritating, but it can stay that way if I finally decide to use it.

At least the underside of the mounting lugs on the Fox .15 is on the same plane on both sides of the engine, unlike its big brother the famous Fox .35 stunt. Many (if not all) of the recently made Fox .35 stunt engines have engine bearer lugs that have been left just as they came out of the casting dies. Although the finish looks excellent, the lugs taper on both the upper and lower surfaces. This means that the undersides of the lugs are not on the same plane. So, if you have carefully made your model's engine bearers flat and just bung the motor in to the mounts, it may distort the crankcase when firmly tightened down. It is possible to bed the slightly angled lugs into the bearers, but as far as I am concerned, the correct solution is to have someone with the skills and machinery mill the underside of the lugs to get them truly flat.



Here is another of the immaculately finished models built by Kim Ashton. This is his version of the Super Chipmunk. Kim seems to like the red, white and blue colour schemes and you can see why here.

Speaking (as I almost was) of reducing model weight without losing the necessary strength, there is a good technique that is known to all the old hands, but possibly not to every one of the newcomers to our control line ranks. It is careful wood selection and part of that is to weigh the balsa wood that you use when building. Balsa densities vary widely. They can be from about four pounds per cubic foot which is very light, to as high as sixteen to twenty pounds per cubic foot, which is very heavy. So two sheets of wood of the same size can be vastly different in weight, and if you just build away with no regard to the wood that you use your creation can end up much heavier than you expect.

The best trick is to carefully select and weigh your wood before you buy it and the better shops provide good scales so that you can do that. If your local shop doesn't have that facility, there is no reason why you can't take your own measuring equipment along. I use small adhesive labels marked with the density (6 lb, 7 lb etc.) and stick them on the ends of all the sheets that I buy before they are stored away. That way when you are in the midst of a building frenzy you can just take the right size, grain type and grade of wood for the job off the shelf without having to mess about weighing it.

Now there are computer programs available to calculate balsa density accurate to fractions of a gram. But all I have used since I started is a simple chart that I laboriously copied out by hand from an Aeromodeller Annual or similar while I was still at school. It has worked well enough for me over the years and I don't have to leave the workshop or fire up a computer to use it. I have now even more laboriously typed it into the computer and if all has gone to plan, you will find a copy here. Sheet weights are shown in grams and the density of wood in Pounds per Cubic Foot

Length 36 inch Thickness	Sheet width	6 lb	8 lb	10 lb	12 lb	14 lb	16 lb
1/32"	2"	3.54	4.7	5.9	7.1	8.3	9.4
1/32"	3"	5.3	7.1	8.9	10.6	12.4	14.1
1/32"	4"	7.1	9.4	11.8	14.1	16.5	18.9
1/16"	2"	7.1	9.4	11.8	14.1	16.5	18.9
1/16"	3"	10.6	14.1	17.7	21.2	24.8	28.3
1/16"	4"	14.1	18.9	23.6	28.3	33	37.8
3/32"	2"	10.6	14.1	17.7	21.2	24.8	28.3
3/32"	3"	15.9	21.3	26.6	31.9	37	42.5
3/32"	4"	21.2	28.3	35.4	42.5	49.6	56.7
1/8"	2"	14.1	18.9	23.6	28.3	33	37.8
1/8"	3"	21.2	28.3	35.4	42.5	49.6	56.7
1/8"	4"	28.3	37.8	47.3	56.7	66.1	75.6
3/16"	2"	21.2	28.3	35.4	42.5	49.6	56.7
3/16"	3"	31.9	42.5	53.1	63.8	74.4	85
3/16"	4"	42.5	56.7	70.9	85	99	113.4
1/4"	2"	28.3	37.8	47.3	56.7	66.1	75.6
1/4"	3"	42.5	56.7	70.9	85	99	113.4
1/4"	4"	56.7	75.6	94.5	113.4	132.3	151
3/8"	2"	42.5	56.7	70.9	85	99	113.4
3/8"	3"	63.8	85	106.3	127.6	148.8	170
3/8"	4"	85	113.4	141.8	170.1	198	226.8
1/2"	2"	56.7	75.6	94.5	113.4	132.3	151
1/2"	3"	85	113.4	141.8	170.1	198	226.8
1/2"	4"	113.4	151	189	226.8	264.6	302.4

If you have seen the Google Earth program in action on a computer, you will know that with it you can get a birds eye view of almost anywhere on Earth. Our club secretary Adrian Dyson is familiar with its benefits and has had a bright idea. He suggests a directory for anyone with an aeromodelling place of interest. If you want to give complete directions as to the location of something such as a flying field, first find the place on [Google Earth](#) then share the coordinates with all of us via the TARMAC website (The coordinates are shown on the bottom of the Google Earth image relative to where the cursor is resting.) More information and some examples are shown on Adrian's page that can be found at <http://members.iinet.net.au/~stivej/TARMAC/Default.htm>

With all the interest in F2C lately, I thought that this photo might inspire someone to employ a little variety of design for a change. The current crop of racers all look as alike as peas in a pod. If you build something like this one, you will stand out from the crowd, and who knows it might be the answer you have been looking for. I have no idea where I came by this picture.



Sometimes my mail brings bad news. Sometimes it brings good news. Other times it brings handy hints. This handy hint was sent to me by Peter White; ex Victorian stunt pilot, prolific builder of (his) own models (BOMs) and knower of many things. He tells me that 'It's always darkest before dawn. So if you're going to steal your neighbor's newspaper, that's the time to do it.' I should find that useful.

Combined Speed held at Frankston on Feb 12th

Pos	Name	Class	Engine	Flight 1	Flight 2	Flight 3	Fastest	Km/h	%
1	R Hiern	Class 1	Novarossi 12	14.43	14.49	14.65	14.43	249.57	99.27%
2	R Hiern	Class 5	Novarossi 21	14.19	14.41	D.N.S	14.19	253.70	98.80%
3	N Wake	Class 1	Novarossi 12	14.86	14.71	D.N.F	14.71	244.73	97.35%
4	N Wake	Class 5	Novarossi 21	14.84	N.E.L	14.78	14.78	243.57	94.86%
5	V Marquet	Vintage Proto	Enya 30	39.45	40.11	39.64	39.45	146.86	91.25%
6	V Marquet	Proto	Picco 21	N.T					0.00%
6	N Wake	Proto	Cippolla 20	D.NS					0.00%

Results of SMAC Simple Goodyear held at Knox on 5th February 2006

A small turnout on a fine day (although maybe a little windy) saw only Simple Goodyear flown (Simple Rat Race was also scheduled), run as two-up heats only with no final, results being determined on heat times.

All teams used OS 15FP motors.



Placing	Team	Heat 1	Heat 2
1st	Ellins/Hunting	5:40.69	5:30.96
2nd	Wilson/Wilson	5:34.88	6:26.91
3rd	Marsh/Reeve	9:29.60	5:56.42

EASTCOAST CLASSIC B TEAM RACE CHAMPIONSHIPS Loganholme, Queensland

Deferred due to threatening weather last November, this event resumed on Sunday 5th February with ,unfortunately the Ipswich "Rocket" once again unable to participate and John Taylor obliged to be elsewhere as free flight administrator. Consequently whilst teams were constantly mixed and matched, it all seemed to work out quite well!

	Round 1	Round 2	Final
1. REDMOND model Stan R./ Paul Dillon Stan R./ Harry B. (Standard OS 25 FP powered "scRambler")		4:28.42	9:38.92
2. SMITH model Rod S./ Michael C. (Standard OS 19 powered " Rivetter")	5:23.48	4:39.12	122 laps
3. BAILEY model Harry B./ Peter Wallace Harry B./ John Taylor Harry B./ Stan R. (M.R.S.tuned OS 25 FP powered Backtrack)	5:07	5:13.26	22 laps
4. CRAWLEY model Michael C./ Peter W. (Standard OS 25 FP powered "scRambler")	6:05.05	6:20	No room!

During the final Rod's and Harry's models "touched" in flight and despite their pitmen's best efforts neither could catch the winning model

2.5CC FUNSTUNT COMPETITION

Despite conditions that at times would have seen most serious F2B participants leave their stunters in the pits if not in their cars, eight hardy souls still attempted the "impossible"...a perfect F2B pattern in extremely gusty conditions using mostly touchy 2.5cc unflapped slow combat models!

Thankfully Ian Heath and Dennis Hopkinson handled things very competently with the following result:

Noel Corney	100 points
Rob Edgerton	85.5
Rod Smith	85
Matt Redmond	68 (Jnr)
Mark Dillon	60.5
Wayne Jackson	56
Michael Crawley	56
Dennis Hopkinson	40

"K" factors were not used and some only flew once. I believe Dennis must have had a truncated flight as he's not usually at that end of the results! Thanks to all those who were involved. Apparently one eminent modeller wants a Funstunt day every month! Have we the stamina???

Brian Burke (A.L.C. Comp. Sec'y)

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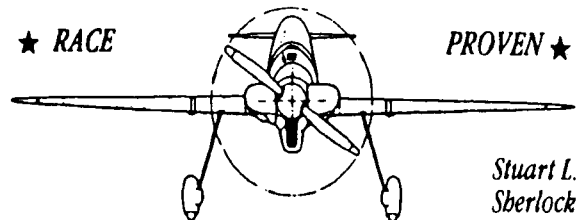
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F2C12 6.4 X 6.3

F2C13 6.4 X 6.4

F2C14 6.4 X 6.5

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F2C11 to F2C14 now with Suzuki low Re, high Mach airfoils

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