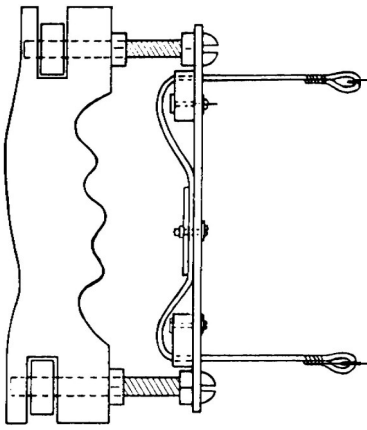


$2.30

THE VOICE OF CONTROL LINE AEROMODELLERS FROM AROUND AUSTRALIA

Number 193

Produced by the Victorian Control Line Advisory Committee

December 2014

INSIDE THIS ISSUE

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 pre typed, and please use a good black ribbon for best reproduction.

Best of all is to send a CD or use Email

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

COMING EVENTS

VICTORIAN CONTROL LINE CONTEST CALENDAR 2014/15

DATE	EVENT	CLUB
Dec 14	**Speed,** Burford A Team Race and Christmas party.	CLAMF
Dec 14	KMAC Club Day and Christmas Party	KMAC
2015		
Jan 3–6	2015 CLAMF Grand Prix	CLAMF at Albury
Jan 25	KMAC Club Day and Novice Combat Invitation	KMAC
Feb 8	**Speed,** Carrier, Simple Rat Race	CLAMF
Feb 22	Hearns Trophy and Yeoman Novice	KMAC
Mar 7-9	S. A. State Champs, events TBA	MONARTO
Mar 15	Coreflute Combat, 27 Goodyear, **Goodyear.**	CLAMF
Mar 29	KMAC Carnival and Doncaster Novelty	KMAC
Apr 3-6	Victorian State Champs, events TBA	CLAMF/KMAC
Apr 11–19	68th Australian National Championships	S.E. QLD
May 17	Warbird Stunt, **Speed,** Classic B T/R	CLAMF
May 24	Warbirds	KMAC
Jun 6,7,8	NSW State Championships, Grass Events	SYDNEY
Jun 14	**Classic FAI,** Vintage A, **F2C/F2F,** 1/2A Combat	CLAMF
Jun 28	Rat Race Invitation and Club Day	KMAC
Jul 12	**Speed,** Classic Stunt, **Mini G/Y,** Simple Rat	CLAMF
Jul 26	All Aussie Day and Vintage Combat	KMAC
Aug 9	Carrier, 27 Goodyear, **Goodyear.**	CLAMF
Sep 13	**Speed,** Vintage Combat, **2.5cc Rat Race**	CLAMF
Oct 3,4,5	NSW State Champs, Hard Surface events	ALBURY
Oct 18	Coreflute Combat, F2B, **F2F**	CLAMF
Nov 8	**Speed,** Warbird Stunt, Combat (TBA)	CLAMF
Dec 13	Vintage A, Classic B, **Classic FAI**	CLAMF

Events will be flown in order of printing.

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

CLAMF Frankston Flying Field, Old Wells Rd, Seaford (Melway 97J10), GPS -38.086777,145.148009
10.00am start

Contact :- G. Wilson (03) 9786 8153,
H. Bailey (03) 9543 2259
Email :- clamf@ozemail.com.au

Web site :- http://clamf.aerosports.net.au/

KMAC Stud Rd. Knoxfield.
(opposite Caribbean Gardens) (Melway 72 K9) 10.00am start.
Contact:- Peter Koch 0413222046 or

Steve Vallve 0409935358

Web site :- https://sites.google.com/site/knoxmacv/

CLAG has monthly fly-ins at the Moe Race Track every first Sunday of the month.

Contact :-Treasurer. Alan Frost

Email:- afrost2@skymesh.com.au

Phone 03 52817350

Secretary. Graham Vibert

Phone 03 51346393

COMING EVENTS

C.L.A.S. CONTROL LINE CONTEST CALENDAR 2014

DATE	EVENT	CLUB
Dec 7	F2B Aerobatics	Doonside (Whalan Reserve)

CCMAC- (Rutley's Road, Mannering park.)
KMFC - (Ku-ring-gai Model Flying Club) - St. Ives Showground, Mona Vale Rd, St. Ives.
NACA - (Northern Area Contest Aeromodellers) - Hunter Sports H.S.,Pacific Hwy, Gateshead. CCMAC at Rutley's Rd, Mannering Park)
SAT- (Sydney Aeromodelling Team) - "Duck Pond", Ash ford Road, Milperra.
SSME - (Sydney Society of Model Engineers) - Model Park, Luddenham Rd, Luddenham.

2014 Queensland Control Line Calendar

All MAAA flyers welcome.

Dec 6 XMAS PARTY ALL C/L Clubs Get Together.

2015

April 9-19,
56TH QUEENSLAND NATIONALS
Location: VARIOUS LOCATIONS IN SOUTH EAST QUEENSLAND

Dec 6th, Come and Try Control Line Day
Venue: AAC, Unley Road City

For further info contact:
Peter Anglberger 8264 4516 or 0448 433 282

“A” Class team racing in the mid-late '50s

Letters to the Editor

The Illawarra club was the centre of a hotbed of A Class team racing in the mid-late '50s. John Abbott, Clyde McDonald, Kevin Cass, Ray Brown and others flew in local events under the old A Class rules until probably 1958, refusing to change to FAI. I was a Junior at that time, but designed, built and competed with my own models. My Hi-Aspec' designs were competitive and were flown by others too. There were four progressions in the design:

The Mk1 was minimalist in all respects, ED Racer powered. I Buskellised the engine with the help of John Abbott. The cowl was formed from an alloy cover plate liberated from a derelict Walrus at Camden. I was very proud of this act of daring and although the model was finished overall in red, I never painted over the chromated finish on the cowl! This would have been late '55 or so. The Racer was my first new engine.

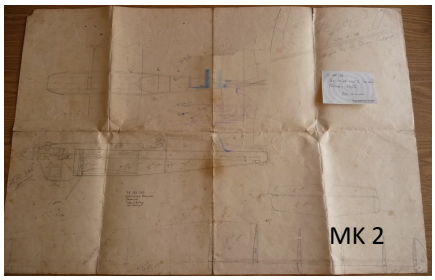
The Mk2 was a more conventional design of roughly 80sq in. It was to have the Racer, but the engine was badly damaged in a collision with a goal post.
My Dad bought me a new Taifun Tornado and that was used. Most of the local racers used the Tornado, though some were trying the Max-1 15s. Bad idea, fast, but a one tank wonder! The washed out shot shows me holding the Mk2, alongside Stan Clifton's State Champs placegetter P2V with 2 x Eta 29s.

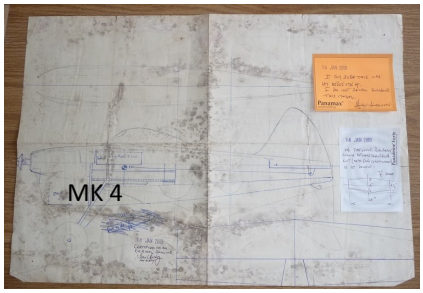
The Mk3 was up to around 90sq.in. This was a particularly successful model, which I still have. Enya 15D powered, I checked the weight recently and it is 17oz with the engine and prop, but missing the outer panel.
Modern building techniques could probably get this down to 15oz all up. I cannot locate the dwgs for this one, though they must be here somewhere.

The Mk4 was never built.

So, I have the dwgs (exc Mk3) and you are welcome to use them if of any interest. I could sketch the Mk3 from the model.

Regards
David Owen





Hi Aspec 111

Taipan 2.5-BB Series 70 “Experimental”

Maris Dislers tests the enigmatic Schnuerle-ported version of this famous Australian diesel.

Gordon Burford had a habit of handing out prototypes and experimental versions of his engines for testing. Perhaps to experienced engine men, or average modellers, as a means of testing their potential and weaknesses. Their feedback was invaluable, when making final production decisions.

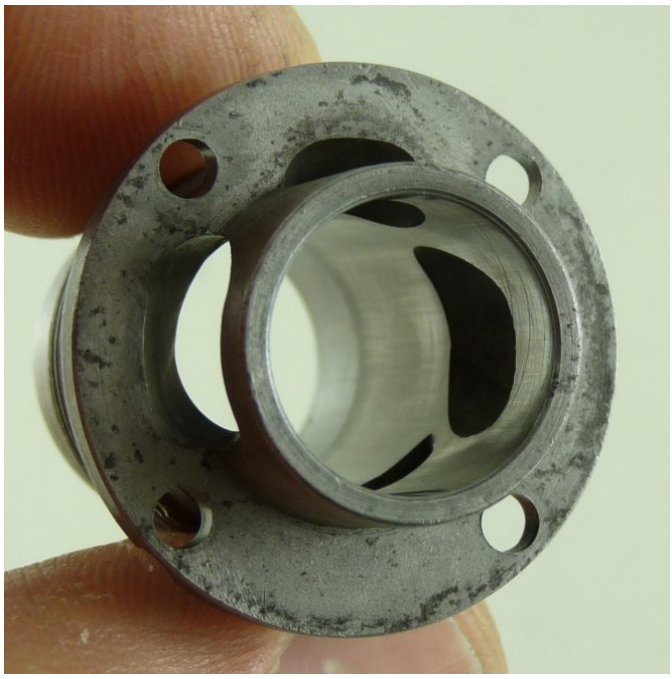
Look Ma... no exhaust port. Actually, it’s on the other side. If we shot it from that angle, you wouldn’t be able to tell this one from a regular production engine.

Peter Chinn covered the Taipan Tyro and an experimental version of the Taipan 2.5-BB Series 70 engines in his “Latest Engine News” in Aero Modeller, March 1972. That engine featured a form of Schnuerle porting, which in theory should have been a step towards improved performance. Peter did not elaborate on the tests which he doubtless conducted, leaving many curious minds guessing as to how it ran and why it did not go into production. We set about finding out and here’s our report “for the record”.

The first Series 70 2.5cc diesels were introduced late in 1969 and the type was progressively and quite extensively developed over the next few years before reaching its final “Blackhead” form towards the end of 1972. In fact, only the backplate, gaskets, bearings, prop nut/stud/washer and spraybar nut carried right through. Experimentation apparently progressed in two parallel streams, for FAI Combat and 2.5cc Rat Racing. The racing experiments aimed at increasing horsepower and airspeed, hence the Schnuerle porting idea. Around a dozen Schnuerle-ported experimental engines were made, including the one sent to Peter Chinn. Luckily, we recently got a few bits and pieces from Finn Siegmann, who together with his brother Ib were hot rat racers at that time and part of the program. With assistance from David Burke of Adelaide Aeromotive (and referring to a known genuine engine) I was able to assemble a precise replica of the type for performance testing.

This experimental version is based on the “Type 2” crankcase (original “Type 1” has no flange for exhaust ring mounting, “Type 3” has an extra 1mm of metal in front of the rear bearing). The only modification is a boost transfer passage formed by a round-nosed 8mm milling cutter, leaving barely enough metal on the side wall to do the job. Crankshaft is of the type adopted for later production, with the flanks of the crankweb milled away either side of a solid crankpin. Connecting rod is milled front & back and the gudgeon pin is hollow. That’s quite a bit of work to reduce the piston/pin/conrod weight from 10.0g to 9.8g. This engine has the “stovepipe” venturi (also adopted for later engines) with 6.9 sq mm choke area, down from a generous 11.1 sq mm with the earlier “bell mouth” type.

Mimicking Peter Chinn's photo in March 1972 Aero Modeller, our shot shows the third transfer passage and different cylinder porting. Our crankcase was salvaged after extracting a broken cylinder screw. Note the epoxy filled grooves where a Dremel cut-off disc had cut a slot in the screw shank, broken off almost flush. Heat & penetrating oil allowed it to be easily removed with a jewellers' screwdriver.



We have two cylinder types. The first has standard fore-aft transfer ports and a smaller boost port opposite the single standard (3/32 in. deep) exhaust port. It's not Schnuerle porting, as there is no attempt to direct the incoming charge away from the exhaust port. Its bore was severely corroded and could not be restored without great effort. We focused on the second cylinder, which is the same as sent to Peter Chinn. This has a 1/8 in. exhaust and the two transfer ports, still steeply inclined, are also angled towards the boost port to provide the desired loop scavenging pattern.

Note the RH transfer port's lean towards the boost port (at top). Something like Super Tigre style ports separated by a third boost port.

Production and Experimental (right) piston/conrod assemblies. Lightening attempts were perhaps a last stab at the higher speed vibration demon.

Earlier crankweb lacks counterbalancing of reciprocating masses. Experimental crankshaft (right) became later production standard.

Measured port numbers are the same as production engines; Exhaust 138 degrees, transfers/boost 134 degrees, Intake 159 degrees (opens 60 ABDC closes 39 ATDC).

On the test bench

David set the engine up essentially as it would have been in 1971. Low cylinder bore taper, dead parallel piston skirt and relatively loose fit – no modern tricks. It ran in quite easily and proved to be a very happy runner. The lack of hot exhaust goo when adjusting the needle and a bit less noise made it more pleasant than the production versions. Our test fuel contained 25% castor oil, 30% ether, 45% kero, with 1.5% ignition improver added. With the stovepipe venturi on board, we were very pleased with its response

to needle adjustment and consistent running. Restarts were very good. When warm, settings were left alone, one finger choke and a few winds of the prop until it knocked. Then a good flick and it was running again.

All went well until we fitted the APC 7x5 test propeller. When lightly loaded in that way, engine vibration shot up dramatically, so we went no further. A second series of tests with the larger bell mouth venturi saw the reliable starts disappear. Frequent false starts (even with the needle opened up a fair bit) and less consistent running. You could see the quite coarse droplets of fuel churning about near the spraybar. All signs of being "over carburetted". That probably gave rise to severe vibration even sooner in the RPM scale using the APC 8x4 and 7x6 propellers. We called it quits.

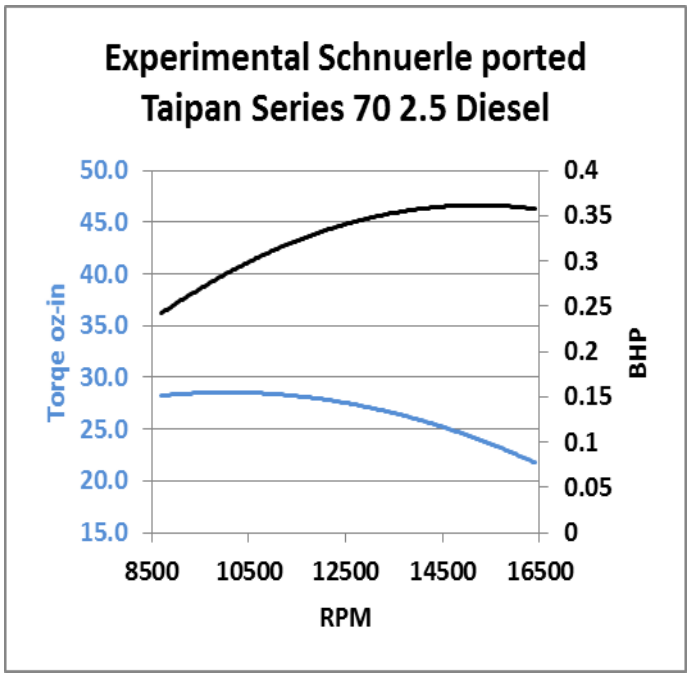
I used the RPM values gained with the stovepipe venturi, as the bell mouth type is not strictly correct for this engine as far as we know. Furthermore, the extra choke area could only coax an extra 100 to 200 RPM at mid-range speeds – nothing at the top or bottom end. The resulting performance chart shows a fairly flat peak to the power curve, with a maximum of 0.365 BHP around 15,500 RPM. Maximum torque of 28 oz-in occurs well down the scale at around 10,000 RPM.

Propeller	RPM Test 1	RPM Test 2	RPM Test 3
APC10x6	8200	8500	8700
APC 10x4	9700	10000	10300
Graupner 9x5	10100	10800	10800
APC 9x6	-	-	10900
APC 9x4	12100	12700	12600
APC 8x6	-	-	13500
Graupner 8x5	13000	13500	13700
APC 8x4	14300	14800	15200
APC 7x6	14700	15100	15700
APC 7x5	-	-	16400

Test 1 – Production engine with stovepipe venturi

Test 2 – Production engine with bell mouth venturi

Test 3 – Experimental engine with stovepipe venturi



Comparisons and conclusions

Actual power output varies quite a bit from one production Taipan 2.5-BB Series 70 to the next. As a point of reference, I've provided data from a really good production engine of intermediate type (3/32 in. exhaust ports, counterbalanced crankshaft) with both venturi types. Standard production Series 70's give their best power in the 13,000-14,000 RPM range, depending on the individual example. The Schnuerle engine needs higher speeds to show a gain of a little more power.

So here's the likely problem. The Schnuerle ported engine cannot significantly exploit the potential of its improved scavenging system, because serious vibration becomes the dominant issue. I'm guessing the lighter conrod and gudgeon pin came about once this became apparent, but were not enough to fix it. Serious stuff and our test engine now has a cracked crankcase behind the lower stiffening web as a result! A bit more running and the whole front end could fall off (just ask the Editor about that if you don't believe me).

I'm told the "combat testers" pushing their regular production engines hard found the same thing. That soon led to the stronger "Type 3" crankcase on subsequent production engines. These testers also applauded the smaller stovepipe venturi, which greatly improved consistent running in tight turns.

If kept within sensible bounds, I'd rate the Schnuerle ported 2.5-BB Series 70 Taipan diesel as superior, but what competitive kid would not want to find out how many RPM he could extract from this latest technological marvel? It seems likely that Gordon Burford figured many customers would get into all sorts of bother if that engine went onto the market. How much more experimentation would be needed to find a solution? And of course he was aware of the well advanced development of the Schnuerle ported 2.5cc racing glowplug engine, which did go into production not long afterwards. It seems he wisely stuck to the regular reverse-flow porting, but incorporated the various improvements from these test programs into later production engines.

V-shaped crack in crankcase, caused by harsh vibration spells "finish for *La Musica*". Lack of strength in front of the rear bearing was remedied in later "Type 3" crankcase which has extra metal in this area.

Editors note.

Here (on the right) is my Taipan that Maris referred to which the front end fell off.

Maris kindly supplied me with a replacement crankcase and David Burke fitted helicoils where the cylinder hold down threads had stripped. The engine has been re-built and is back in use in Burford A team race.

CLAMF Competition Day, 9/11/14

It was a big day down at the Frankston flying field on Sunday, 9th November.

Stunt was the go with competitions being held for F2B Aerobatics and the long awaited **Warbirds** competition that was to flown to the Classic pattern. It seems Classic Stunt was also combined with the Warbirds. It was great to see such a large number of stunters lined up and ready to fly at CLAMF. Combined Speed and 27 Goodyear were also flown.

Weather was reasonable with a constant southerly breeze that had the unfortunate effect of carrying dust across from the mini bike track next door. The cars in our field were covered with fine dust and the conditions for running model engines was far from ideal. Hopefully we can encourage the bikes management to be more pro-active with track watering on future days like this.

Six Warbirds lined up on the freshly mown grass surface. There are lots more models still under construction so next years event should be a beauty! Can't wait to get a look at Paul Stein's when it's finally finished… Today Paul flew his Nobler instead.

F2B specialist Mark Ellins had his ST-46 P-40 flying very smoothly and it was no surprise that he scored the highest points. John Hallowell also had the same ST-46 P-40 combination but forgot the reverse wingover (senior moment) in the first round and ran out of fuel in the overhead eights in round two. There's always next time!

Andrew Nugent's very smart silver Mustang and Enya 35 showed the benefits of practice and having everything nicely sorted out. His third place in the Warbirds reflected that. Was great to see Peter Koch from KMAC at the field. Just a pity a few more didn't follow his good example. After all, there are always lots of CLAMF modelers at Knox for their competitions. Peter had a few issues with his Fox 29 Stuka including an early engine cut, but is sure to bounce back better than ever next time. Harry Bailey enjoyed the day but his Fox 25 P-40 flight was not able to reach full potential.

WARBIRD STUNT (CLASSIC PATERN)

				Model	Engine
Mark Ellins	451	423	874	P40	ST 46
Paul Stein	394	436	830	Nobler	Brodak 40
Andrew Nugent	378	413	791	Mustang	Enya 35
John Hallowell	389	281	670	P40	ST 46
Peter Koch	55	353	408	Stuka	Fox 29
Harry Bailey	223		223	P40	Fox 25

John preps his P40 Kittyhawk Warbird stunt model.

F2B was next. It was flown on the north circle, which gave some respite from the dust clouds. Again it was Mark Ellins who showed the way with his smooth flying ex Doug Grinham 'Jazzer'. Murray Wilson showed his versatility and talent by putting in two very nice flights with his SV11.

Paul Stein's Nobler was again in the mix with a flight good enough to take 3rd place. Peter Koch 's Strega wasn't performing at its best and Andrew Nugent's effort in flying the F2B pattern for the first time with his Nobler was worthy of high praise.

Everyone who flew aerobatics on this memorable day certainly enjoyed carving up the air into little circles. Thanks to judges Peter Roberts and Graeme Wilson for doing a top job..

F2B Aerobatics

	Rd 1	Rd 2	Best	Model
Mark Ellins	1810	1768	1810	Jazzer
Murray Wilson	1628	1627	1628	SV 11
Paul Stein	1589	0	1589	Nobler
Peter Koch	1270	1458	1458	Strega
Andrew Nugent	991	0	991	Nobler


John, Mark assisting Gavan with a state-of-the-art F2B stunt model

To wind up the day's program, it was time for 27 Goodyear. Only three teams took part and two rounds were flown. Graeme and Murray Wilson recorded a very fast 5.07.22 with a Super Tigre G20D. Paul Stein and Mark Ellins were

going well until the last tank of the first heat. It was then that Paul noticed the broken fuzz… right behind the wing and severely hampering the down control. Paul could see the crack from the centre circle… Scary stuff! Harry Bailey and Peter Roberts were using a Nelson and easily getting all the necessary speed.

The final was a two up and went all the way down to the wire with Harry and Peter just pipping the Willows at the post by the slender margin of about two seconds. Top racing, lads!


27 Goodyear Team racing with Wilson/Wilson team ready for action.

27 Goodyear Team Race

	Rd 1	Rd 2	Final	Engine
H.Bailey/P.Roberts	5:39.63	5:46.47	11:26.10	Nelson
G.Wilson/M.Wilson	5:07.22	6:21.03	11:28.25	ST G20D
P.Stein/M.Ellins	5:24.14	DNS		PAW 15GT

John Hallowell
AUS 1984

Peter Roberts (official stunt judge) adds:

Warbird Stunt

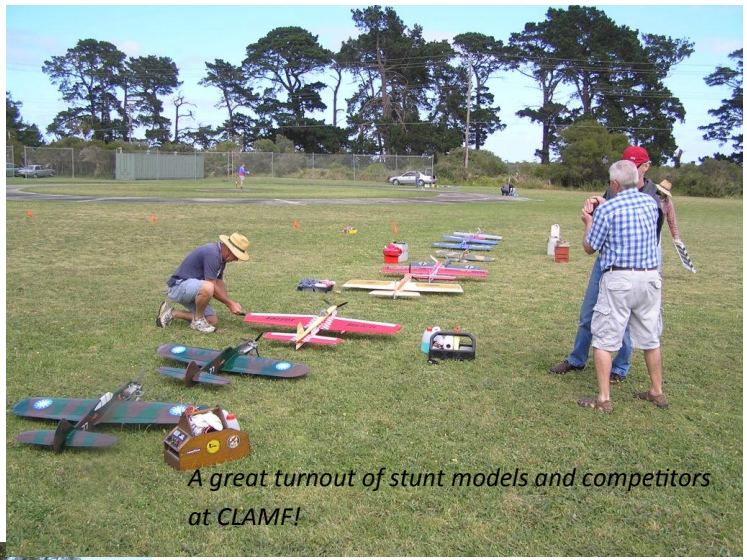
With only a couple of Classic entries it was decided to combine Classic with Warbird Stunt. Mark was high scorer with his ST46 powered Brodak P40 Profile, followed by Paul with his B40 powered Nobler ring in. Andrew and John were also flying Brodak Profile Warbirds, Andrew with an Enya 35 powered Mustang and John with an ST46 P40. Peter had a few problems with a couple of dodgy engine runs from the Fox 29 in his neat Don Still Stuka, while Harry had a wild ride from his twitchy Fox powered Goldberg P40 in the gusty conditions.

F2B

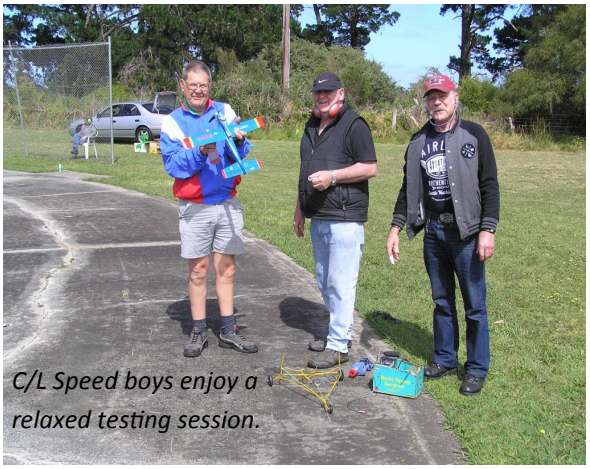
The windy conditions were a bit of a challenge, although everyone seemed to cope reasonably well. Once again Mark was top scorer with a Stalker 61 powered Jazzer. Murray's ARF SV11 with a Stalker 61 up front stayed in one piece this time! Murray could be a bit of a dark horse in future stunt comps. Paul handled the wind pretty well with his Brodak40 Nobler, while Peter's nice looking PA75 powered ARF Strega seemed to suffer a bit in the windy conditions in spite of all that grunt up front! Andrew rounded out the comp with his ARF Nobler powered by an OS LA46 which is probably the best bang for buck stunt engines around.

Peter Roberts

F2C inspired Proto Speed model powered by a Rossi 21 engine.


A great turnout of stunt models and competitors at CLAMF!


Graeme Wilson with his new toy, the venerable Topflite ARF Nobler during 'shake down' flight testing.


C/L Speed boys enjoy a relaxed testing session.

CLAMF Aerosports presents....

Swap Meet and Social Activities

2015 Air Racing, Stunt & Combat

*"**Grand Prix**" @ TCMAC*

January 3rd - 6th 2015 over 4 days

Day	Venue	0900 - 1200	1300 - 1700
Saturday 03/01/15	TCMAC	F2C T/R Rd 1 & 2 F2A Speed Rd 1 & 2	Classic Stunt
Sunday 04/01/15	TCMAC	F2A Speed Rd 3 & 4 F2C T/R Rd 3 & 4, Final	1/2A Combat Vintage A T/R Swap Meet 1600-1730
Monday 05/01/15	TCMAC	Combined Speed	Vintage Combat Classic FAI T/R
Tuesday 06/01/15	TCMAC	Classic B T/R	27 Goodyear T/R

FEDERATION AERONAUTIQUE INTERNATIONALE

CLAMF AIR RACING

Albury @ TCMAC New South Wales

For Sale

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.21 size speed pans (by request no stock at this time), Nelson style T/R pans and a few 2cc pans. Also available a new T/R pan. Julian Reichardt has hand carved a wooden replica/pattern of the pan he and Hutton Oddy used back in the 70's. This will be suitable for Classic FAI T/R. He has also sent me a copy of their T/R plan called a FART. (I didn't name it!!) All pans $25 in the "as cast state" and are cast in AA601 casting Alloy.

Reichardt/Oddy pan.

Also available to order, prop nuts and shaft extentions, carbies for most engines, and vintage T/R type tank and bottle valves. Available now the following full size plans, : Turtle, FART, Sapavolov, Timepiece, Picus, Dimple Dumpling, Past, Arrow. All $4 which includes postage in Australia.

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Email:-
hbbailey@optusnet.com.au

WANTED

Wanted dead Profi F2A crankcase, crankshaft and head for mock-up of F2A fuse [new project all carbon]. Price and details to jakeandfran@bigpond.com

If there are any dramas please email me.

Thanking you John Jacobsen. 5075

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