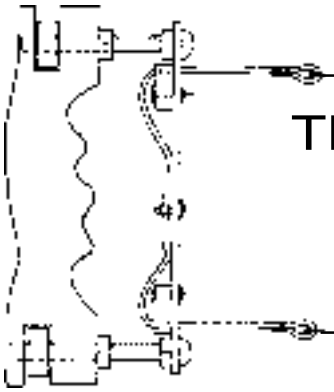


$2.00

THE VOICE OF CONTROL LINE AEROMODELLERS FROM AROUND AUSTRALIA

Number 69

Produced by the Victorian Control Line Advisory Committee

August 2003

INSIDE THIS ISSUE

Copy Deadline for next issue is: Wednesday 17th August 2003

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. This makes formatting much easier on the editor.

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

Email address:- acln@ozemail.com.au

COMING EVENTS

CONTROL LINE CONTEST CALENDAR 2003

AUG 3	Simple Combat.	SMAC
AUG 3	CLAG Country Flying Day	Traralgon
AUG 10	**FAI Team race, 2.5cc Rat race,** 1/2 A Combat.	CLAMF
AUG 24	Classic Stunt, Vintage "A" Team race, Combined Speed.	KMAC
SEPT 7	CLAG Country Competition Classic Stunt, Vintage Stunt Aust "A" Team race, Classic "B" Team race, Simple Combat.	Moe
SEPT 14	Vintage "A" Team race, Aust "A" Team race.	SMAC
SEPT 21	**FAI & Combined Speed,** Simple Rat race, 1/2 A Team race.	CLAMF
SEPT 28	FAI, Novice & Jnr Aerobatics, Classic Stunt, Bendix.	KMAC
OCT 5	CLAG Country Flying Day	Maffra
NOV 2	C.L.A.G. Country Flying Day	Knox
DEC 7	C.L.A.G. Country Flying Day	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

WMAA Horsham. Contact :- V. Cresp (03) 5382 4065

BRCAC Bendigo-Newbridge Rd . Marong

Contact :- S. Power 03 54 424 925

CLAG Contact :- Graham Keene (03) 51924485

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

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.

Subscribers to ACLN can have the latest edition of the newsletter 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.

COMING EVENTS

CLAS 2003 CONTEST CALENDAR

DATE	CLUB:	EVENT:
3rd Aug	IMAC (contact Owen Pearcey)	FUN FLY
10th Aug	KMFC	F2B Aerobatics
31st Aug	SSME	Slow Combat (Bonus points for WW2 style model).
14th Sept	KMFC	"Classic Stunt, Vintage Stunt, Simple Rat, Slow Combat, SWAP MEET"
11th Oct	REMAC	Vintage Stunt (including special award for best Fox powered model)
19th Oct	IMAC (Berkeley)	F2B Aerobatics
9th Nov	SAT (Kelso Park)	F2B Aerobatics
16th Nov	NACA (Gateshead High School)	Classic Stunt
16th Nov	KMFC	Vintage A&B, Vintage 1/2A,
3oth Nov	SSME	F2B Aerobatics
7th Dec	Doonside (at Kelso Park)	F2B Aerobatics
14th Dec	KMFC	Christmas Party and Fun Fly

"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 H.S., 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."

RULE BOOKS

Printed A4 size copies of the Control Line FAI & Australian rules are available in a spiral bound folder from CLAC,
PO BOX 298,
SEAFORD, 3198.
The cost is $8.00 for Book plus $2.50 postage.
Please make cheques payable to "Control Line Advisory Committee"

CLASII CONTROL LINE EVENTS CALENDAR 2003

Flying field at Leichardt Park just past One Mile Bridge Ipswich

Members fly most Sundays between 9am and 1pm. Club competition days are held on the second Sunday of the month. Visitors are most welcome but please bring your F.A.I .card to prove current MAAQ membership. This is a Council Park with permission given to fly only control line planes, no radio and only between the hours of 9am to 5pm. Further information on club activities can be obtained from President Mark McDermott 07 32889263 or Secretary. John Taylor 07 33927679 email johndt@iprimus.com.au

August 10th.	Clasii Rat Fun Fly
Sept 13/14	**INTERCLUB COMPETITION** "Festival of the Bridge" Mouse/Clasii Team Races. Senior / Junior. 2.5 Slow Combat. Also separate Junior Comp. Trophies and Prizes including Perpetual Replicas. A.G.M. to be advised.
October 12th	Fun Fly. (**BATHURST 1000**)
November 9th.	Clasii Rat, Mouse T/R Senior /Junior. Triaerothon.
December 14th.	Christmas Breakup and Fun Fly.
January 11th.	2004 Fun Fly

Events later in year will be advised at a later date, but as usual Clasii events will be held on second Sunday of each month

CLAMF CLUB CHAMPIONS 2002/2003

1.	Mark Ellins	140
2.	Graeme Wilson	126
3.	Ken Hunting	73
3.	Jim Ray	73
5.	John Hunting	61
6.	Murray Wilson	53
7.	Harry Bailey	51.5
8.	Noel Wake	36
9.	Callum Agnew	14
10.	Paul Stein	13
11.	Alan Lumsden	11
12.	Vern Marquet	7
12.	Peter White	7
14.	Doug Harlow	4
14.	Pter Hatherall	4
14.	David Shackleford	4
17.	Andrew Nugent	2.5
18.	Neil Baker	1

2.5 SLOW COMBAT EXTRAVAGANZA

& INTERCLUB MOUSE AND CLASII RAT T/R COMPETITION

WHEN 13th & 14th September 2003

WHERE CLASII Fields LEICHARDT PARK IPSWICH

Practice from 9.00 am to 10.00 am. 1 Circle each T/R and 2.5 Slow Combat
Interclub Mouse T/R commence 10.15am followed by Clasii Rat T/R Junior and Senior Events.
Junior and Senior 2.5 Slow Combat will be run separately if sufficient entries and will continue
Sunday commencing 9.30am

The Big First place Prize will be a Norvell 2.5 Glo motor. (NIB)

2nd and 3rd Trophies will be awarded
Separate prizes for juniors & Encouragement Awards

Entry Fee $15.00 seniors and juniors (will be eligible to win Norvell as well as Junior prizes)

INTERCLUB EVENTS

Mouse and Clasii Rat Team Races
$10.00 Entry per Team. Per Event Perpetual Trophies and Prizes.

Clasii Rat will be run 2 up Junior and seniors separately to allow new starters a less stressful competition and to gain confidence in racing events

Further details contact Mark McDermott 07 32889263
REGISTRAR John Taylor 07 33927679 Fax 07 33927529
email johndt@primus.com.au
274 Toohey Road Tarragindi Qld 4121

NB NO ADMIN FEE BUT PLEASE ADVISE YOUR INTENTION TO COMPETE NO LATER THAN 29th AUGUST OR YOU WILL BE SUBJECT TO A LATE ENTRY FEE OF $2.50.

FLYING WINS STUNT

Derek Pickard investigates why Australia¹s top stunt flier intends to stay in the number one spot.

Mark Batty has an approach to stunt flying unlike his competitors. He's not swept along by consumerism, fashions or popular folk law. He just gets out there and perfects his act where it matters.....in the air.

Mark's been Australia's Nats champ for three years straight. There's nothing revolutionary about that, others have done similar things in the past, but what makes him so different is he dominates that top slot with what many experts insist should be an uncompetitive plane.

But the Batty approach has a secret weapon which has proven to be his top asset - he takes practice very seriously and does lots. When others are spending much of their time discussing which formula might be the best, building their latest all-new plane, sorting an expensive motor and working extra hours to pay for such top toys, he's out there flying.

We are not talking about ordinary hours at the field. Mark Batty teams up with his father, John, to maximise the benefits of practice. They've a strict approach which is always applied.

Perfecting the F2B stunt pattern so it can be impressively repeated regularly takes a long time to acquire and demands as much effort to maintain. The Batty team fully appreciate this and their disciplined approach sees them practising every Saturday. Their formula is for each flight to be observed with John as the coach and critic. An average Saturday has them putting in at least 6 flights. When a Nats is coming, the practice is increased to two days weekly a month prior and then the last week has them in the air 6 times a day for the final 5 days.

Mark says he rarely flies complete patterns and prefers to break it into sections for specific practice. An example would be a schedule that always includes take-off/landing but with several wing overs, loops and a few other manoeuvres. The latter may involve squares or triangles but they're always done in pairs between level flight and could mean up to 4.

He targets high K factors and does a lot of eights, sometimes up to 10 together, again with level laps in between to "refocus". In between each flight, father and son discuss what has happened and what needs doing.

Within reason, no matter what the weather or the temperature, practice takes place. Same amount of effort, full concentration, always with coaching.

Mark Batty has realised his approach to winning is different to others and insists he won't be changing. He points out how many fliers are quick to look to technology for solutions to flying problems. He subscribes to the belief that many enthusiasts are swept along with the consumer attitude of hopefully buying results because the leading competitors have top equipment. But the enthusiasts should realise those top guys would probably be up there anyway - even if they'd kept flying their older planes.

Of the various guest flights he has had with other equipment, flying his other planes as well as observing rivals in competition, he is not convinced that a pipe or a four stroke is significantly better in delivering results. (Mark owns a Vegas/FP40, Chevell/Jett 60 and A47/Stalker 61 but he insists none offer significant advantages over his present plane.)

As to whether he might switch to a bigger plane and engine soon, he's noncommittal because he doesn't see the immediate need or gain. For now he'll continue practising and winning with his present successful formula. The profile 40 has repeatedly humbled expensive piped 60s, large four strokes and well-sorted 46/51/60 conventionals, all flown by far more experienced fliers. And some of those pilots insist their expensive and frequently altered formulas are the only way to be competitive.

But to many others, Mark Batty has proven what they always believed to be possible - winning is done in the air where a well-flown and fully sorted basic plane can be a match for anything.

To give the details, Mark's plane is a Sukhoi by Heartbeat Models of the US and is powered by an OS FP40 modified by Tom Muggleton. The outfit has clocked up a huge flying time which includes two Nats wins. It is covered in shrink plastic, weighs 44 ounces, runs an 11x5 prop on 10% nitro/ 23% oil and flies on 63ft, 15 thou lines.

History: Mark Batty returned to stunt flying after an 18-year break in 1995 and entered Novice Stunt in 1996. His first Nats was in Canberra in 1997. He won Expert in 2001, 2002 and 2003. He is a member of the Karingai Club in Sydney's north. (Son, James Batty, won Nats Advanced in 2002 flying the same old Coy Lady, which his father took to his first title.)

Mark Batty. Australia's top stunt flier with the profile 40 which has taken the top slot in two Stunt Nats. His performances with the simple plane have humbled the techno-equipped experts.

Murphy's Law Origin

The following article was excerpted from *The Desert Wings*

March 3, 1978. Murphy's Law "If anything can go wrong, it will" was born at Edwards Air Force Base in 1949 at North Base.

It was named after Capt. Edward A. Murphy, an engineer working on Air Force Project MX981, (a project) designed to see how much sudden deceleration a person can stand in a crash.

One day, after finding that a transducer was wired wrong, he cursed the technician responsible and said, "If there is any way to do it wrong, he'll find it."

The contractor's project manager kept a list of "laws" and added this one, which he called Murphy's Law.

Actually, what he did was take an old law that had been around for years in a more basic form and give it a name.

Shortly afterwards, the Air Force doctor (Dr. John Paul Stapp) who rode a sled on the deceleration track to a stop, pulling 40 Gs, gave a press conference. He said that their good safety record on the project was due to a firm belief in Murphy's Law and in the necessity to try and circumvent it.

Aerospace manufacturers picked it up and used it widely in their ads during the next few months, and soon it was being quoted in many news and magazine articles. Murphy's Law was born.

This brings us to;

"101 REASONS WHY WE DIDN'T WIN."

Many people claim that scooting across the line first is what team racing all about.

I disagree. And I reckon so does a bloke called Murphy... Now you know all about him.

It's obvious Murphy believes 'winning isn't everything' as he almost always has a hand in determining who wins and who loses.

Aerobatics, speed and combat also come with their problems. I'm quite sure that most aeromodelers can relate to more that just a few of these constant troubles that are unfortunately an integral part of our hobby/sport.

1. the wheel(s) fell off
2. the tank had a blockage
3. the plug burnt out
4. the fuel was wrong
5. the needle valve came loose
6. the fuel filter was blocked
7. the fuel tubing split
8. the fuel tubing slipped off
9. the back plate came loose
10. the battery went flat
11. the head bolts came loose
12. the tank vents came loose
13. the tank seam started leaking
14. the battery lead connector broke
15. the glow plug was too hot
16. the glow plug was too cold
17. the tank vibrated loose
18. the tank was too far inboard
19. the tank just didn't work
20. the blockoff fell off
21. the filler pipe was blocked
22. the muffler came loose
23. the silicone tubing had a pinhole
24. the propeller wasn't balanced
25. the prop got clipped on takeoff
26. the prop threw a blade(!)
27. the prop pitch was wrong
28. the tank got half filled
29. the prop diameter was wrong
30. the tank had a loose blob of solder
31. the prop broke while being flicked
32. the fuel was old
33. the pilot was too old (!)
34. the weather was too hot
35. the weather was too cold
36. the prop nut came loose
37. the spinner flew off
38. the engine vibrated loose
39. the engine cowl came off in flight
40. the lines snagged on takeoff
41. the lines weren't soldered properly
42. the 'up' was connected to the 'down'
43. the slight kink was OK for one more flight
44. the frayed line ends went unnoticed
45. the line broke in flight (!)
46. the lines were heavy weight instead of lightweight
47. the handle was picked up the wrong way (!)
48. the stainless steel lines bound together in the rain
49. the lines were too short
50. the lines were too l o n g
51. the adjustment came loose at the handle
52. the controls were out of whack
53. the bellcrank had become sloppy
54. the control horn came unsoldered
55. the lines were binding at the leadouts
56. the lines slipped off the connector
57. the controls started binding
58. the opposition accidentally walked through the lines
59. the spare lines were at home on the workbench
60. the top was left off the fuel can.
61. the spare glow plug couldn't be found
62. the only good spare propeller was missing
63. the elevator hinges came adrift
64. the wing warp wasn't there last time I looked
65. the tailplane broke on landing
66. the covering sagged
67. the covering was peeling off in flight
68. the three race models got into a stacked glide
69. the tree wasn't that close when I took off
70. the plug spanner was lent to somebody...
71. the mechanic slept in
72. the pilot thought the race was next weekend
73. the ground was just a bog
74. the grass hadn't been mowed
75. the wheels were too small to land properly
76. the rabbit holes were a problem
77. the hole in the tarmac caught the mono wheel
78. the tall pilot stood up as I was landing
79. the model was tail heavy and too sensitive
80. the model was nose heavy and flew like a brick
81. the battery wasn't connected as the mechanic tried to start

82. the glowplug connection wire broke
83. the needle valve unwound in flight
84. the compression screw backed off in flight
85. the motor was released over compressed and cooked
86. the setting was perfect in practice ten minutes ago
87. the needle was knocked during the pit stop
88. the mechanic leaned the needle when he shouldn't have
89. the mechanic stood there with half a wing in his hand
90. the pilot landed the model in the wrong segment
91. the motor couldn't be stopped after the warm up
92. the shutoff wouldn't shut off in flight
93. the shutoff kept shutting off in flight
94. the mechanic forget to reset the shutoff
95. the motor cut just a few laps from the finish.
96. the pilot brought the model in too fast
97. the time keepers lost count of the laps
98. the stop watches failed to stop
99. the mechanic missed the catch
100. the handle slipped out of the pilot's hand as the model was caught
101. the CD unfairly decided to disqualify us

I can honestly say I can relate to most of these little incidents. Most of these describe the many trials and tribulations of team racing. However, there must be at least another 101 things that go wrong in aerobatics, speed and combat.
Well, at least we now know who's responsible for all this mayhem... Murphy!!
John Hallowell.

VH 1984.

CONTROL LINE AEROMODELLERS OF GIPPSLAND Inc.

Meeting held at Moe on Sunday July 6th

Gusty wind was the order of the day for our AGM at Moe, twelve Clagsters turned up to battle the elements, unfortunately in several instances the elements won.

The scene for the days madness was set by Frank McPherson and his almost flying beer box, an innovative design which utilises the latest in recycling technology. Frank, however, failed to realise that his corrugated cardboard creation had morphed into a human hunting fiend. Those of us fortunate enough to witness this incredible transformation will forever have etched on our minds the sight of three grown men being pursued around a sports ground
only to have it end abruptly when Ron Jones intercepted the beast with a sort of rugby tackle team race catch. A brilliant piece of work Ron, it's amazing the athleticism a man can muster when confronted with an advancing propeller intent on removing his wedding tackle. The aerodynamic problem previously mentioned. ie. no lift, appears to have a simple solution. Frank's creation was constructed entirely from VB cartons and cans, but as everyone knows Melbourne Bitter has more lift !!!

All present got in some flights, Mr Good Vibes seeming very happy with his now strong running OS .35FP and tuned muffler hauling around the "Shoestring".
Frank unfortunately removed the nose from a model after a gust of wind took control.
El Presidente, Geoff Ingram, kept us entertained with his hovering "Wombat", ideally suited to the wind and always a crowd pleaser.
Ken Dowells new "Pacer" sounded just right, the Moki performing brilliantly.
My OS .40s "Stunt Grunt" bipe not liking the wind at all was retired after one flight.
John Goodge put in several flights, his "Plagiarist" Stalker .51RE running beautifully, not so the "Demon" Fox .35 still running erratically and ending the day with a minor ground to air miscalculation. Son Rian, aired his "Akrokat" OS .15, then demonstrated his RC car handling skills with a fast moving Subaru WRX.
Ken Donelly got in a couple of flights without mishap, his contribution to our AGM discussion being much appreciated.
As mentioned the wind was gusty all day, but come 4.30 and not a trace, those of us remaining, Myself, Mr Good Vibes, Ken Dowell, Geoff Ingram and Ron Jones got in some very enjoyable last minute flights.

Our Next meeting is at Traralgon, the Sept 7 meeting will now be the Country Comp. held at Moe more details later.

Graham Keene Sec/Treas CLAG Inc.

TARMAC Notes for June and July

I was saddened to hear of the passing of the British team racing mechanic Dave Campbell on the 24th of June. In his earlier days, he lived and competed in Victoria before returning to England. As many will remember, he attended the last West Australian nationals at Busselton where he and (then) team pilot Bernie Langworth proceeded to win F2C (FAI team race) as they had just done at the Victorian State Championships just a week before. He had been teamed up with Derek Heaton for the last eighteen months before his death. Dave had keen interests in many branches of the aeromodelling hobby, but his passion was for racing and in that he had a great deal of success. It is, perhaps appropriate that he became a double champion in his last two major contests, winning the British Nationals 2002 F2C and the Grand Prix of Luxembourg.

I have heard many expressions of real enthusiasm for vintage stunt since the local contest described last month. Several guys that do not currently fly control line have told me that they have been inspired to start building models for the event and a few regulars are already checking their balsa stocks. I am sure that the social aspect of meeting those old mates has a lot to do with this. We are considering repeating this event annually at about the same time (May) when the weather can be as near to perfect as it was this year.

Another image from the successful Vintage Stunt day. From left we find Mike Beilby, Theo Merrifield and Alex Cunningham discussing the finer points of the plan in hand.

Speaking of perfect weather, it has been uncharacteristically excellent for aeromodelling (though NOT for filling our depleted dams) for four weekends in a row. Much better than the usual cycle of sunny weekdays and rainy/windy weekends. In the midst of this sunny and calm spell, we had a competition to decide who would hold the Phil Trueman sponsored TARMAC stunt trophy for the next year. No models were broken in the event, but Dicky Gibbs had to withdraw because he managed to break his glasses after arriving at the field and was unable to see well enough without them to fly. For some reason he rejected my helpful suggestion that he should break off the rest of the frames and fly with one of the lenses as a monocle. I thought that would show a certain style that has been sadly lacking of late. It seems that it is still lacking. Oh well, I tried. When the day was over we had Peter White in first place, Charlie Stone in second and Mal Bone in third. Phil not only supplied the trophy, he also did a great job of judging as well.

Our dedicated speed flier Grant Lucas is in the midst of a new series of experiments. He is planning to use forced cylinder head cooling. That will allow the use of higher compression to extract more power from his engine without damage from the increased heat that will be generated. Grant is using ideas that are becoming standard practice with full size racing aircraft such as the unlimited class Reno racers. These are explained in detailed articles on Stuart Sherlock's 'Supercool' website at: http://www.supercoolprops.eftel.com/.

This is the mock up of the engine cowling that Grant Lucas will be using for his new speed model. Cooling air for the rear of the motor and exhaust pipe is fed into the cowl through the ducts at the sides, while all the cooling for the head will be taken from the front.

The plan is to shroud the motor so that a cooling mist of water/methanol mixture is ducted over the head in measured quantities to maintain the head at the optimum temperature for maximum power. Grant is well advanced with production of the hardware already and no doubt will be aiming to have it all operational by the next Nationals.

Here is a shot of the three separate parts of Grant's patterns for the ducted speed model cowling. All the cooling air for the head will enter the front plenum chamber where it will have the cooling mist introduced (from a pressurised tank behind the cylinder).

The news media and also no doubt the White House committee for location of Weapons of Mass Deception have all been driven into a frenzy of excitement by recent news from New Zealand that a home handyman is building a do it yourself cruise missile. Bruce Simpson is very interested in pulse jets and has a web site that has vast quantities of information on jets that he has built and ideas for future development. One of these ideas is to make a modern version of the World War two vintage German V1 buzz bomb or 'Doodlebug' using GPS technology for guidance. Another is his pulse jet powered Go-kart (there are photos). I imagine that he is stone deaf by now, but it obviously hasn't stopped him thinking. It is all very interesting stuff and if you would like to check it out yourself the URL for his web site is: http://www.aardvark.co.nz/pjet/

For those of you that like to keep up to speed on the local full size aviation scene, it may be of some interest to know that an L39 Albatross has recently flown from Jandakot. The L39 was a Soviet jet trainer and is the same type of aircraft used by the Russian Knights, the leading Russian aerobatic team. It is stressed to +8G –4 G and has a maximum speed of 400 knots. It is a big lump of a thing when you stand next to (underneath) it. The local aircraft is owned by Bill Wylie, who also has title to the P51 Mustang that operates from Jandakot. At least a couple of pilots have been checked out in it by an instructor imported from the East for the occasion, and no doubt it will be seen at a few local air shows from now on.

This is an L39 Albatross similar to the aircraft now based at Jandakot in Western Australia. These highly aerobatic craft were used as trainers in the Soviet air force.

Another item from the world of full sized aviation is the sad news that after 27 years, the beautiful Anglo-French Concorde is to be retired. The French who flew the first Concorde on Sunday, March 2, 1969 have parked all of theirs already, and the British fleet will be retired from service in October, although I have heard that British Airways was going to keep one airworthy for occasional air shows or displays. I hope so. I suppose that almost all of them will be destined for museums as the only successful supersonic airliner ever to enter service. I only saw a Concorde in the air once when it visited Perth and flew up the river at low altitude on the way to Perth airport. It was stunning. I am just glad that I had the chance to see it fly.

When I am browsing through articles and magazines, I take note of the little hints and tips that are scattered about. Unfortunately, I usually then proceed to forget them until just after they would have been the most useful to me. Every now and then I actually discover something for myself that is worth passing on. Probably by the time I get around to telling anyone, they already know. And so they should, since practically everyone that I know has at least fifty years of experience of almost every thing. But at best they might learn something, and at worst, they have only lost a few seconds reading or listening time.

One of these things that I discovered some time ago is that the plastic canisters that 35mm film comes packed in are very useful items. Best of all, they are free. The two brands that I am familiar with are the black Kodak ones and the clear ones used by Fuji film. The clear ones have a bit of an edge, since the level of contents is visible when the lid is on. Both types seem impervious to any of the chemicals that I routinely put in them; not being affected by any model fuel, acetone, lacquer thinners, turps, paint etc. I use them for storing small items or quantities of material, and as throwaway paint canisters for my spray gun. You get a supply whenever you buy film, but even if you are not a photographer, many folks that are, take their film back to the processing establishments in the container that it came in. Those processors then throw the canisters in the bin, so it is usually just necessary to ask nicely and you are given a bagful that will last you for ages. You knew that already, didn't you?

Taken from the TARMAC archives is another picture from the past (Photo supplied by Dick Beilby). This is Ron McPhee with his scale 'Stuka'. Keep watching this space. You may be the next person to feature here.

Perhaps one of you historians out there can help me out. One of the Australian 'Motor Boys' Ron Chernich is looking for a rare Control Line plan. It is an Australian design called a "Thunderburg" (or maybe it was "Thunderberg"). Anyway, it was an Australian kit for your typical 54", .35 flapped stunter sort of similar to the Thunderbird, but different enough with a shoulder wing (the leadouts travelled exposed, under the wing). It came out before the Aeroflyte Thunderstreak sometime in the mid '50s. If you can help out with a lead for this, please drop me a line and I will pass on the glad tidings to Ron.

Finally, not control line, but of interest to all net wandering aeromodellers is the news from Paul Dodge in Bunbury that the SWARMS model club now have their own web site at http://swarms.geomedia.com.au. Check it out, the page looks great.

This has been around for a while, but I like it. A university creative writing class was asked to write a concise essay containing the following elements: (1) Religion, (2) Royalty, (3) Sex and (4) Mystery.
The winning essay read: "My God; " said the Queen, "I'm pregnant. I wonder who did it?"

Charlie Stone VH4706
Emailcestone@bigpond.com

C.L.A.S. 2003 STATE TITLES

RESULTS

F2B Aerobatics Expert

Place	*Name*	*Score*
1.	P. Turner	3139.75
2.	B. Gardner	3013.5
3.	J. Parisi	3009.05
4.	M Batty	2996.75
5.	R. Towell	2966.0
6.	B. Eather	2923.75
7.	F. Battam	2723.75
8.	J. Batty	2718.25
9.	T. Gee	2704.5
10.	T. Bonello	2655.5
11.	J. Elias	2538.75
12.	B. Hoffman	2537.0
13.	J. McIntyre	2529.5
14.	N. Corney	2299.75
15.	P.J. Rowland	1875.0

Advanced

Place	*Name*	*Score*
1.	J. Elias	2472.5
2.	D. Murrell	2377.75
3.	P. Kenny	2250.25
4.	D. Percival	2017.25
5.	O. Pearcey	1954.75
6.	D. Harvison	1843.50

Classic Aerobatics

Place	*Name*	*Score*
1.	R. Towell	544.5
2.	F. Battam	528.0
3.	J. McIntyre	485.8
4.	D. Murrell	477.0
5.	D. Percival	426.7
6.	J. Raymond	385.3
7.	D. Keyssecker	349.3

Vintage Stunt

Place	*Name*	*Score*
1.	D. Percival	233.7
2.	F. Battam	224.5
3.	D. Murrell	219.3
4.	J. Elias	219.3
5.	J. McIntyre	209.3
6.	J. Raymond	180.3
7.	M. Haines	148.5
8.	P. Barclay	102.7
9.	D. Keyssecker	51.0

F2A Speed

Place	*Name*	*Time*
1.	H. Simons	12.34.33
2.	A. Heath	12.47.66
3.	R. Comiskey	0
4.	S. Rothwell	0

F2C Team Race

Place	*Name*	*Time*
1.	G. Knight/R. Harvey	8.02.07
2.	G. Potter/H. Simons	103 Laps
3.	R. Owen/R. Justic	D.N.F

Vintage A Team Race

Place	*Name*	*Time*
1.	S. Rothwell/D. Hines	7m 12.09
2.	A. Kerr/R. Justic	7m 32.53
3.	J. Nolan/H. Simons	122 Laps
4.	G. Knight/R. Harvey	D.N.F

Vintage B Team Race

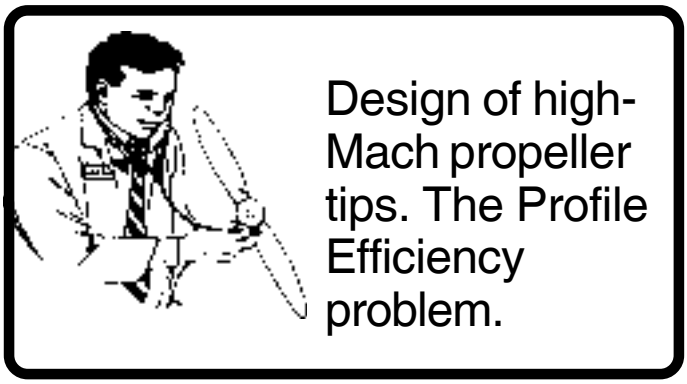
Place	*Name*	*Time*
1.	G. Knight/R. Harvey	8m 12.2
2.	J. Nolan/H. Simons	10m 45.6

Junior Simple Rat Race

Place	*Name*	*Laps*
1.	W. Rogers	171
2.	M. Littley	169
3.	L. Hines	167
4.	J. Norrie	76 (Heat)
5.	M. Comiskey	63 (Heat)

Combined Speed

Place	*Name*	*Time*
1.	M. Littley	49.85
2.	J. Nolan	No Time



Followers of this series of articles may have noticed my failure to address propeller efficiency in any detail. The fact is, that there is a great paucity of measured information on propeller efficiency. This applies to full-size as well as model propellers. I have never seen any data on efficiency from the model airplane propeller manufacturers. My article on the Travelling Dynamometer is a portent of what is to come on this site: that device at least permits the measurement of propeller efficiency over a limited range of airspeeds and RPM.

Part of the problem with measurements of propeller efficiency is that there is no single such thing. The performance of the propeller depends on the inflow field, which is set by the shape of the installation; it depends on the operating conditions of airspeed and RPM; and it depends on the firing cycle of the engine/motor. Any single set of conditions is generally not enough information.

For this reason, there is a strong temptation to calculate the efficiency from simple vortex theory. My

experience is that this is a risky approach; one can easily be in error by a factor of 2! So where does one go from here? Well, there are 2 components to efficiency, the profile effcicency and the induced efficiency. Consider first "induced efficiency".

The induced efficiency is related to the speed of the slipstream generated by the propeller. If you get your thrust from a small diameter propeller with a high velocity slipstream, you probably have low induced efficiency. In a companion article, I will show how to get a handle on induced efficiency based on the known parameters of the propeller, and its speed through the air. For the present article, I will consider profile efficiency.

Profile efficiency is related to how well the propeller airfoils perform. If the airfoils are well reproduced, and the blade has high angles as measured against the plane of rotation, then profile efficiency can be high. Because propellers are twisted, the profile efficiency is going to vary along the blade. Furthermore, because the speed of the air passing over the propeller blade varies radially out to the tip, there will be other factors to consider, such as compressibility, shock wave formation and Reynolds number. All 3 of these factors will affect the lift-to-drag ratio of the airfoils, and hence the profile efficiency.

One reason for not computing the profile efficiency is that the lift-to-drag ratios at Mach number approaching unity are not known. For low rotation speeds, this may not be a problem; in that case, one may use the chart in my book "Propeller Dynamics" for determining the profile efficiency. However, in high performance model work, such as F2A control-line speed, and F3D pylon race, tip speeds are close to Mach 1 and we are in a world of pain. There is an interesting formula relating to high speeds, known as the Glauert-Prandtl rule. I would rather pull out my own teeth than use this formula, but I'll give you a look at it here.

"The Glauert-Prandtl relates the lift coefficient or slope of the lift curve of a wing section in compressible flow with that for incompressible flow". Note that I have swiped this line from p256 and Abbott and Von Doenhoff. This way you cannot blame me when the going gets tough!

With Cli the lift coefficient at low speed (like 10 MPH), and Clc the lift coefficient in compressible flow (say 600 MPH), then:

Clc = Cli /(sqr(1-M^2))

where M is the Mach number (airspeed divided by the speed of sound), and "sqr" means "take the square root".

If one chooses to calculate values for 1/(sqr(1-M^2)), one sees that they start at unity, then, slowly at first, increase. But above about M = .5, the values start to increase rapidly and approach infinity at Mach 1 (M = 1). Now that is bit of a worry!! Maybe this is where the idea of the "sound barrier" gathered some force!

In a word, as the airfoil moves at high speed, its characteristics change. It behaves as though its thickness and camber were increasing. This must be allowed for when calculating the profile efficiency near the propeller tips, in most applications involving engine driven propellers.

However, before one gets much past M = .7, other nasty things start to happen. Yes, shock waves start to grow on the airfoil upper surface, and all your nice calculations with the Glauert-Prandtl rule get tossed out the window.

Refer to my article "Transonic Airfoils for Propellers", for a description of shock waves.

For a long time, I have been living with this problem of shock wave formation on propeller tips, especially F2A and F3D. These classes typically run tip speeds of M = .95; they are one of the most intense continuous sources of noise on the planet. The way to control shock waves, in conventional practice, is to make the propellers very thin and run them at low lift coefficients. But at M = .95, you've basically had it. When I say very thin, I mean we are down around .010" thick at the tip, and not even carbon fibre can provide a stiff structure then.

So what to do? We can't get the profile effciency because we don't know what the airfoils are doing near the tip. But help is at hand!!.

Here come the cavalry! Roughly 70 years late, but still blowing their bugles!

Back in good old Fascist Italy, circa 1931, the Alessandro Volta Foundation ran a series of conferences at the Royal Academy of Science in Rome. In alternate years, the Sciences and Humanities were given equal billing. From September 30th to October 6th, 1935, Mussolini extended his patronage to the 5th Volta conference, on the subject of High Velocities in Aviation.

It was there that the German scientist Adolf Buseman first propounded a theory which applied the sweep-back of wings to improved aerodynamic performance at high speeds. And that evening, Buseman sat down with head of aviation research in Italy, General Arturo Crocco, to review and interpret Buseman's theory. General Crocco sketched on a napkin a propeller with swept back tips, and suggested that this was the design suggested by Buseman's theory. Indeed it was, and a great insight into a problem first encountered by propellers: the formation of shock waves near the tips in aircraft such as the Schneider Cup seaplane racers.

Buseman went on to work in aviation research, in Germany, during the war. He subsequently was taken to the USA to work there. In 1944, R.T. Jones at NACA independently came to the concept of swept-back wings. A 1943 paper by Quick described German research into the use of sweep-back on propellers, and claimed some advantages. The term "some advantage" has a piquant meaning here: most propeller designers would kill their grandmother if it meant they could get an extra 1% gain in effciency!

Subsequently, the Curtis-Wright Corporation flight tested a swept propeller, and NACA tested swept propellers in their 16' tunnel. Whitcomb designed a propeller with 45 degree sweep-back at the tips, and these were tested. The results showed only a small improvement, compared with that expected from simple sweep theory. To quote from a NACA source:

" an unswept blade of slightly reduced thickness could always be found which would have equally good high-speed performance, better overall performance, significantly lower blade stresses, and freedom from the other structural complications of the swept propeller. This emphatic and disillusioning result put an end to any further attempts to exploit swept propellers"

So there! Well this was disappointing, so I did a Google search for "swept back propellers" and this is what I got:

"Considerable sweep back is helpful in allowing a propeller to more easily shed weeds". Huh!?? Blow them INTO the weeds is what I had in mind!

Now everyone who knows Supercool, also knows that Supercool is always right, and everyone else is also

wrong: even if that means the great Whitcomb! Also, nothing NACA has done invalidates anything I do!! Well I'm not afraid of blade stresses, I can't make my sections any thinner, and I've got my back in a corner! Also, I want to be a Legend in my own mind, so it was off to the theory book to see what I had to do to get a swept back propeller.

So what am I trying to do? Well I'm trying to fool the propeller tips into thinking they are going slow and thereby not forming any shock waves! This way I can use my existing low speed data, as there is no "shock stall", or "force break", or whatever you want to call the shock wave problem. It turns out that this is just what "sweep back" does do. There are various ways of looking at this, but here is one, not unlike the one given by Hoerner.

When the air approaches a swept-back wing, it can be considered to have 2 components. One component points down along the wing, while the other points across the wing, at right angles to the leading edge. Both of these components have lower speeds than the incident air. The component down the wing does nothing, as it is not following the shape of the airfoil. The other, going across the wing, sees the airfoil, and produces lift according to its lower velocity. This means the Mach number is effectively reduced by cosine(b) where b is the angle of sweep.

If this is true, then one can choose the highest Mach number one wishes, say 0.8, and increase "b", the angle of sweep, until the cross component of flow has M < 0.8!! What a piece of cake, this is a Supercool must do!!

Well, it took longer than I expected, because the prop sweep has to curve back on a circular path, while with a wing you just bend the whole lot back. More code, more bugs, but the end result is rather cool.

Testing has begun, and so far the props have not shed any blades or twisted themselves into knots. Neither have they gone fast, but 280kph at 29000 RPM is as good a start as any. Watch this space!!

One final thing. Recall we set out to get profile efficiency? Well with the shock waves gone, we can use the graph in "Propeller Dynamics" to make a good guess of the profile efficiency. For F3D, the blade angle is something like 27 degrees at 80% radius, which is a representative point to choose. To be pessimistic (which is to be wise also!) lets take the airfoil L/D to be 20. Then the profile efficiency, read from the figure, is about 0.87. That will have to do. So the highest efficiency the prop can have (since we are ignoring the induced efficiency component) is 87 percent. Things can only get worse from here, so watch for my next article!

Stuart Sherlock (Supercool)

Email props@space.net.au

Questions? & Answers!

Q.

Do you know of the location of any F2F Team Race plans? I have got a Nelson that could be put to some use if I had an airframe.
H.

Answer.

If you are looking for information about building a F2F team racing model, there are some plans on the CMBL French site http://www.cmbl.org/eng/cadreeng.htm

You can get to it from Goran Olsson's site.
http://www.plasma.kth.se/~olsson/cl.html
Look under Links).-***France:*** *Team Racing, Roland, Georges and Pascal Surugue, and Thierry Ougen, Le Mans.*
This site contains information on building wings and models, bellcrank design and pressure refueling system.
An alternative is to use any F2C wing plan. The Fuzz needs to be profile (can use the F2C side view) and can be any design as long as it is 100mm in height at the canopy.
When building, locate the engine to ensure that the CoG is 20mm back from the leading edge. Don't forget some older wing & tail designs for the purists (move CoG 5-10mm behind LE for w/t model).
Fitzy.

Aeromodellers of Logan City Inc.
EAST COAST COMBAT FEST, SPEED & TEAM RACE CHAMPIONSHIPS

A.L.C. Inc. intends holding a selected Combat, Speed and Team Racing competition at the club's facilities adjacent to Chetwynd Street, Loganholme over the weekend 4th and 5th October 2003.
Events to offered will be:
(a) 2.5 cc Slow Combat.
(b) FAI Combat.
(c) F2A Speed.
(d) F2C Team Race.
(e) Any one (1) of: Bendix, Goodyear or Class 11 Team Race, and
(f) Any one (1) of: Vintage A, Vintage B or Classic B Team Race.

Both Combat events will be conducted on a modified 'Round Robin' rather than tournament basis with the number of rounds determined by final entry numbers and the time available. Competitors will advise when they are ready to fly and bouts will proceed in that order.
Unless otherwise advised 2.5cc Slow Combat entrants will be limited to two (2) models for the duration of that event. FAI Combat will be limited to one (1) model per bout and run to F2D Modified Combat rules as far as model, engine and fuel supply specifications are concerned.
The winner of each event will be the competitor who is awarded the most streamer cuts during the event and will become Eastcoast Combat Champion whilst the contestant winning the most bouts will be awarded an Associate Championship.
Should the same competitor win both, then he or she will become Supreme Combat Champion and as defending champion have free entry to the 2004 competition. No second or third place trophies will be awarded.
It is expected that the format chosen for these events will emphasise and enhance air skills, i.e. streamer cutting, as well as provide the opportunity for every entrant to participate in an equal number of bouts whilst removing the risk of unnecessary damage by not having to go all out to win any particular bout.
Assuming sufficient entries are received, F2A Speed and F2C Team Race will each constitute, if some what belatedly, 2002/3 Queensland State Championship events. Those desiring to participate are urged to encourage any others who normally compete in these events to enter to ensure that there are enough entries for them to take place.
Again assuming F2A and F2C are held, one hardstand (Bendix, Goodyear or Class 11) and one grass (Vintage A, Vintage B or Classic B) team race will also be scheduled. The basis of selection will depend on the level of interest indicated prior to programme finalisation in late August. If either or both F2A and/ or F2C are not adequately subscribed then an equivalent number of the alternative events will be included.
It is envisaged that entry fees received by the closing date in mid September will be in the order of $10 per person per event. (Team entries $20 per team). A small surcharge might be levied for "late" entries. Catering on field will also be available at reasonable cost.

Although a firm programme will be finalised during August 2003, an indicative schedule for guidance only is:

Saturday 4th October 2003	Sunday 5th October 2003
2.5 cc Slow Combat.	FAI Combat.
F2C Team Race.	F2A Speed.
Bendix, Goodyear or Class 11 Team Race.	Vintage A, Vintage B or Classic B Team Race.

Enquiries, entry forms, further information or expressions of interest may be obtained from or directed to:

Brian Burke (07) 3200 1308 Noel Corney (07) 3341 0457

2003 Queensland Control Line Championships

This report is a compilation and condensed version of reports and results submitted by various authors who were involved with the running of the recent events.
The host club this year was the Control Line Aeronautical Society Ipswich Inc and the scheduled events were conducted over two separate weekends and at two different venues in the Ipswich area. The Team racing, Stunt and Combat events were conducted at the Ivor Marsden Memorial Park complex on the Qld. Long weekend of 3rd, 4th, 5th May. This complex is truly magnificent and allowed each group two prepared circles for competition and practice as well as plenty of extra ground available for more practice .The area is surrounded by trees, with seats and shelters in abundance .On site facilities include showers, sewered toilets and a large permanent Canteen equipped with fridges freezers etc. Breakfast was available from 8 to 9 am each day and a variety of hot and cold food and drinks was available at all times throughout each day. As the complex is only a few hundred metres from Amberley Airbase and the hard stand areas there were available as originally anticipated (prior Sept 11) the area would make an ideal place to conduct a Nationals in the future.
A large contingent of interstate competitors mainly competing in the Stunt events (the greatest number in the four Stunt events for many years by far) combined with Queensland competitors from as far away as Nambour PCYC all contributed to the overall success of the Championships in 2003.
The five Combat events were keenly contested by a very large number of competitors who duelled very hard in an effort to

emerge victorious.
Entries in the Team racing events were down, which was a pity as the prepared, rolled surfaces were as smooth as a bowling green and would have accommodated any type of models. There were only two local entries each in Bendix, Class 2, G/Year, 2.5 Rat, Mini G/Year and Combined Speed, none in F2A and only one in F4B Scale so as a result these events were not held. The F2C event was not offered, as there are currently no fliers competing in this event in Qld. Perhaps there will be sufficient interest and entries in 2004 for these events to be held.
The weather overall was good apart from strong winds at various times but generally quite pleasant with half a dozen spots of rain.
The Scale events were held at Leichardt Park on 17th and 18th May with two delayed T/R events also being held.
Stand off Scale and Fun Scale events were conducted with the assistance of some R/C fliers as judges. Competitors and judges were treated to a free sausage sizzle before static judging took place.
I would personally like to thank ALL the people who assisted in any way or area for your cooperation before during and after the Championships, with a special thanks to the ladies who assisted me in the canteen.
Bouquets to the competitors for their assistance and good sportsmanship throughout the competition, we did not have one protest.
With the number of events conducted and competitors entered, it is nearly impossible to get through the events in the available time. I believe that the Championships should be conducted over three separate weekends thus allowing competitors more time to be available to enter more events in a much more relaxed state of mind. This however is a personal opinion, but I believe the competitors and clubs involved should conduct a survey to ascertain the opinions of the majority.
On a final personal note this is the last time I will be organising or involved with C/L Championships as I believe it is time for me to step aside and let someone else with a fresh viewpoint get involved. I have also taken off my Chefs hat and BBQ apron. It is time for someone else to have a go! I intend to spend more time on F/F and R/C in the future though I will still continue to fly C/L.
John D. Taylor Registrar CLASI Inc

RESULTS

EXPERT STUNT 6 Flyers.

1ST	Joe Parisi	Pts.	1044.6
2nd	Brien Eather	Pts.	1021
3rd	Brin Gardner	Pts.	995.8

ADVANCED STUNT 7 Flyers.

1st	John McIntyre	Pts.	934.5
2nd	John Elias	Pts.	784
3rd	Garry Brett	Pts	759

CLASSIC STUNT 9 Flyers

1st	Reg Towell	Pts	567.5
2nd	Frank Battam	Pts	536
3rd	John Mckintyre	Pts	441

VINTAGE STUNT 6 Flyers.
(Judged on Static Pts due to strong winds)

1st	Don Kessyecker	pts 134

JUNIOR COMBAT

1.st……Bowie Pollard	3 wins	
2nd……Ryan Comiskey	1 win	2 losses.
3rd…….Michael Comiskey	1 win	2 losses
4th……Trent McDermott		DNF

F2D COMBAT

1st……Mike Comiskey (sr,)	6 wins	1 loss
2nd……Paul Dillon	5 wins	2 loss
3rd……Rob Owen	4wins	2 loss

OPEN COMBAT

1st……Mike Comiskey	5wins	1 loss
2nd……Michael Comiskey	4 wins	2 loss
3rd…..Rod Smith	3 wins	2 loss

2.5 SLOW COMBAT

1st……Rod Smith	5 wins	1 loss
2nd…. Mark Dillon	4 wins	2loss
3rd…..Bowie Pollard	3 wins	2 loss

.35 SLOW COMBAT

1st……Ray Bucholz	5wins	1 loss
2nd……Rod Smith	4 wins	2 loss
3rd…..Mark Dillon	3 wins	2 loss

JUNIOR RAT
1st ….McDermot/McDermot
2nd….Comiskey/Comeskey
3rd…..Pollard/Pollard DNF

VINTAGE A
1ST Dillon/ McDermot
2nd Bucholz/ Smith
3rd Garton/ Major

CLASSIC B
1st Dillon/McDermot
2nd Smith/ Taylor
3rd Garton/Major..DNS Broken Model

VINTAGE B
1st McDermot/ Dillon
2nd Taylor/ Garton

MOUSE
1st Turner/ Edgerton
2nd Bucholz/ Smith
3rd Taylor/ Smith

CLASSI RAT
1st Dillon/ Dillon
2nd McDermot/ McDermot
3rd Henderson/ Garton

Top Flite ARF "Nobler"

These kits have only just become available and we have them on order.
We dont expect them to be here before mid to end September.
At this time I would expect the retail to be around $300.00

From Dawn Trading

MASA Control Line State Championships 2004
To be held In Monarto / Murray Bridge, South Australia.
Hosted by Adelaide Model Aerosport
29 Dec 2003 – 2 Jan 2004
Bulletin 2

Program of Events:

(H) Concrete surface - Adelaide Model Aerosport, Princes Highway, Monarto
(G) Grass surface - Murray Bridge, TBA
(S) Free Flight Scramble Field, TBA

	Monday 29th Dec	Tuesday 30th	Wednesday 31st	Thursday 1st Jan	Friday 2nd
9am-1pm	Open Practice	(G) F2B (H) F2A (H) F2C (H) F2F	(G) F2B (H) F2A (H) F2C (H) F2F	(G) F2B (H) F2A (H) F2C (H) F2F	(H) Goodyear (H) Combined Speed
2pm-6pm	Open Practice	(G) Classic Stunt (G) F2D	(G) Classic Stunt (G) Vintage A T/R (G) Classic B T/R	(G) Vintage Stunt (G) 1/2A Combat	(H) Open Rat Race
7pm				(S) BBQ	
9pm				(S) FF Night Scramble	

Conditions:

1. All entrants to be current MAAA or FAI affiliated organisation members and Licences will need to be produced at the event.
2. Programmed events will be run as per current MAAA rule book.
3. Junior competitors as per specified MAAA age requirements.

Accommodation:

Princes Highway Caravan Park:
313 Old Adelaide Road, Murray Bridge
(08) 8532 2860
www.murray-river.net/princes

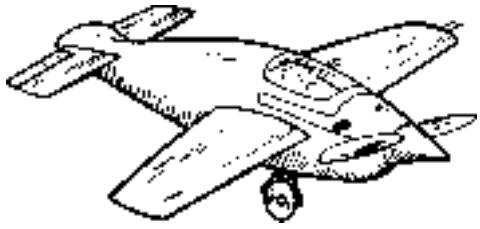
Murray Bridge Visitor Centre:
3 South Terrace, Murray Bridge
(08) 8539 1142
mbvc@rcmb.sa.gov.au

For more information contact:

Rob Fitzgerald
35 Main Street,
Eastwood, 5063
South Australia
Ph: (08) 8271 2889
Email: rfitzgerald@cssp.biz

Results of F2C European Championships held in Rouillé

1. Bondarenko-Lerner	UKR	3’15"9	Disq	3’13"2	36L	3’16"5	6’42"1
2. Ougen-Surugue	FRA	3’33"6	3’19"6	3’15"7	Disq	3’16"3	7’10"9
3. Martini-Menozzi	ITA	3’14"0	55L	76L	3’15"6	66L	164L
4. Kramarenko-Chayka	UKR	3’18"5	3’10"5	3’18"3	3’16"6	93	
5. Contente-Goulao	POR	3’14"5	34L	Disq	3’18"0	Disq	
6. Bezsmertny-Fulitka	UKR	Disq	3’16"8	1L	3’19"1	3’39"5	
7. Barragan-Barragan	ESP	Disq	3’18"7	3’35"3	3’27"8	3’35"4	
8. Shabashov-Ivanov	RUS	3’18"1	59L	80L	77L	3’27"8	
9. Crespi-Crespi	ESP	Disq	3’21"0	3’21"5	—	3’31"1	
10.Smith-Brown	GBR	3’15"2	Disq	3’25"1	3’31"6	Disq	
11. Fitzgerald-Thomason	GBR	3’21"2					
12. Surugue-Surugue	FRA	3’21"5					
13. Magli-Pirazzini	ITA	3’22"0					
14. Averine-Martchenko	RUS	3’22"4					
15. Borer-Studer	SWI	3’24"0					
16. Picard-Perret	FRA	3’24"5					
17. Dessaucy-Dessaucy	BEL	3’25"1					
18. Samuelson-Axtilius	SWE	3’25"7					
19. Marasini-Silvagni	ITA	3’26"2					
20. Cardoso-Matias	POR	3’26"4					
21. Yustenko-Yugov	RUS	3’28"2					
22. Langworth-Broadhead	GBR	3’28"3					
23. Hernandez-Hernandez	ESP	3’46"2.					



CONTEST RESULTS

Combined Speed. Frankston 13/7/03

Pos	Name	Class	Engine	Flight 1	Flight 2	Flight 3	Fastest	Km/h	%
1	R Hiern	1/2A	AME .049	8.37	DNS	DNS	8.37	173.05	95.82%
2	N Wake	Class 1	OS CZ11 PS	15.70	15.36	15.44	15.36	234.38	95.31%
3	N Wake	Class 5	Novarossi 21	15.25	14.99	14.92	14.92	241.29	93.97%
4	R Hiern	FAI	Rossi 15 mk2	14.24	NEL	14.59	14.24	252.81	87.99%
5	L Smith	Vint/FAI	Super Tigre G15	19.55	19.08	18.80	18.80	191.49	86.28%
6	K Hunting	Midge	PAW	10.64	11.66	dns	10.64	136.13	83.18%
7	V Marquet	Vintage Proto	Enya 30 ss	50.83	dns	dns	50.83	113.98	70.82%

MINI GOODYEAR 13/7/03

	rd 1	rd 2	final
1.H.Bailey/P.Roberts	3:58.94	dns	8:24.12
2.C.Ray/J.Ray	4:05.12	dns	8:24.25
3.M.Wilson/M.Ellins	4:58.25	4:39.10	10:11.06
4.J.Hunting/K.Hunting	5:00.44	4:40.03	
5.G.Wilson/M.Ellins	dns		

SMAC Contest 8th June 2003

Limbo

1st	M. Ellins	32cm
=2nd	L Follet	60cm
=2nd	R. Marsh	60cm
4th	A. Lumsden	80cm

The object of this competition is to see who can fly their model below the limbo pole. The lower the pole, the better the result!

Balloon Burst

1st	M. Ellins	5.91sec
2nd	L. Follett	
=4th	A. Lumsden	
=4th	R. Marsh	

Take off and burst a ground tethered balloon in the quickest time possible.

SMAC Contest 6th July 2003

Simple Rat Race (whipping permitted)

		Round 1	Round 2	Final
1st	Ray/Ray	100 laps	-	230 laps
2nd	Wilson/Wilson	101 laps	-	197 laps
3rd	Hunting/Hunting	98 laps	105	134 laps
4th	Wilson/Lumsden	75 laps	91 laps	

The KMAC auction was a well attended affair. There were lots of bargains to be had and many items exceeded their reserve. The auctioneer took great delight in taking bids for a collection of "Boy's" magazines that dated back to the 1950's. Very few of the items on offer were taken back home by their fetchers.

WANTED

For Gordon Burford event.
Taipan 2.5cc engine
or Taipan 2.5 crankcase and crankshaft.
Phone Trevor Taylor (Home) 03 9333 142
(Factory) 041 444 1412

For Sale

Modified "Shark" stunter.
Suit .50 -.60 motor. $200
'True scale' "Currie Wot" 40" wingspan biplane.
Suit .29 - .45 motor $200
Call Ken Taylor (03) 9738 0525

I have for sale 2 off 500ml glass measuring cylinders brand new, never been used, in a box, ready for shipping to anyone who wishes to purchase one for $50.00.

Please phone Grant Potter (02)65453012.

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"

AUSTRALIAN CONTROL LINE NEWS
If undeliverable return to:-
G. WILSON
P. O. BOX 298
SEAFORD VIC 3198

SURFACE MAIL