

THE VOICE OF CONTROL LINE AEROMODELLERS FROM AROUND AUSTRALIA

Number 62



*Merry
Christmas*



Produced by the Victorian Control Line Advisory Committee

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Copy Deadline for next issue is: Wednesday 22nd January 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.

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COMING EVENTS



CONTROL LINE CONTEST CALENDAR 2002

DEC 8	FAI & Combined speed, Nats practice	CLAMF
DEC 15	FAI Team race, 2.5cc Open Combat, 1/2 A Team race. Model processing for the Nationals	CLAMF
DEC 28 -	56 th Australian National Championships start. ALBURY - WODONGA 2003	
JAN 4	56 th Australian National Championships finish.	
JAN 5	CLAG Country flying day	
JAN 26	FAI (Hearns), Novice & Jnr Aerobatics, Vintage "A" Team race, Classic "B" Team race.	WARRAGUL KMAC
FEB 2	Simple Rat race, Simple Goodyear.	SMAC
FEB 2	CLAG Country Flying Day	MOE
FEB 16	FAI & Combined Speed, 1/2 A Combat, Mini Goodyear.	CLAMF
FEB 23	Vintage Stunt, Class 2 Team race.	KMAC
MAR 2	Hand Launched Glider.	SMAC *
MAR 2	CLAG Country Flying Day	TRARALGON
MAR 16	FAI Team race, Goodyear, Simple Rat race.	CLAMF
MAR 23	FAI, Novice & Jnr Aerobatics, Vintage "A" Team race, Classic "B" Team race.	KMAC
APR 6	Simple Combat.	SMAC
APRIL 18 - 21	TRANS TASMAN CHALLENGE & VMAA CONTROL LINE STATE CHAMPIONSHIPS	KMAC, CLAMF

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

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 CLAM.F 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

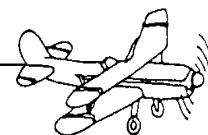
Contact :- S. Power 03 54 424 925

CLAG Contact :- Graham Keene (03) 51924485

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



COMING EVENTS



THE FOLLOWING PROGRAMME IS OPEN TO ALL MEMBERS
OF THE MODEL AERONAUTICAL ASSOCIATION OF
AUSTRALIA (M.A.A.A.)

LOCATION OF FLYING FIELDS

(ALL EVENTS START 9 am UNLESS OTHERWISE NOTED)

TAMWORTH MAC: CONTACT LEN SURTEES 02 67-61 8508

R.E.M.A.C.: PETER BOARD HIGH SCHOOL, WICKS RD.,

S.S.M.E.: LUDDENHAM ROAD, LUDDENHAM.

K.M.F.C.: ST. IVES SHOWGROUND, MONA VALE ROAD, ST. IVES.

S.A.T.: KELSO PARK, HENRY LAWSON DRIVE

I.M.A.C.: BIRKLEY ADJACENT TO FREEWAY.

MUSWELLBROOK M.F.C.: MITCHELL HILL FIELD, NEW ENGLAND HWY., MUSWELLBROOK.

NARROMINE: CONTACT STEVE BAKAC 02 68 89 2501

CLAS CONTACT MIKE COMISKY 02 9605 2062

CLAS 2002 CONTEST CALENDAR

DATE	CLUB:	EVENT:
8th Dec	KMFC	"Xmas Fun Fly, Slow Combat, Phantom Racing & Xmas Decoration"

CLASII CONTROL LINE EVENTS CALENDAR 2002

*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 johnndt@iprimus.com.au

DECEMBER Sun 8 th	Christmas breakup and Fun Fly
January 12 th	Fun Fly In
February 9 th	Combat Day FAI, 35 Slow & Open 2.5.
March 9 th	F4B Scale, S/Off Scale, Fun Scale, Vintage & Classic Stunt/ F2B
April 13 th	Vintage A & B T/R, Classic B T/R, Bendix, Class 2 G/Year
May 3,4,5,	Qld C/L State Championships (except Scale events)
May 17 th , 18 th	N.B At CLASII FIELDS IPSWICH Qld C/L Scale State Championships.
June 8 th	N.B. At CLASII FIELDS IPSWICH Fun Fly In.

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

FOOD AND DRINKS ARE AVAILABLE AT THE FIELD ON CLUB DAYS. Visitors are requested to make a gold coin donation to club funds for fun flyins. Competition events commence 9.30am. Separate entry to apply to each event. Clasi (simple) Rat rules available from Secty.

CLAC open day held at the Knox flying field on November 17th



Reeve Marsh gives some flying tuition to one of the younger trainee pilots at the recent open day

The C/Line promotional day that took place at Knox was well attended by representatives of all the Melbourne clubs and also some from the Gippsland fraternity.

The day had fine weather but a strong wind kept the aerobatic flyers from taking to the air to demonstrate their prowess.

Reeve Marsh was kept busy by a string of prospective pilots that were willing and eager to have a go at flying the Springvale clubs "Too Up" Trainer model. This model has a Cippola 2.5 engine up front. The engine was fitted with a muffler to reduce the power output and whilst running at a steady rich four stroke the model plodded around at a steady pace and did not seem to be bothered by the 20 knot winds.

Unfortunately, the public did not turn up in the anticipated numbers to justify the time and effort and expense put in by club members and the CLAC committee but a repeat performance is anticipated to take place around March.

Thanks go to all that assisted on the day and prepared the Too Up kits for sale and use as trainers.



A selection of some of the models on static display during the Melbourne fly/try control line open day. Some of the Too Up models are to be seen in the top L/H corner.

Kieth Baddocks new Vin A Voodoo before its maiden flight. This model incorporated many of Kieths proven features from a previous model. The flight performance was up to the builders expectations

Travelling Dynamometer

by Joe Supercool

Some time back, Charlie Stone mentioned in one of his reports on the state-of the-modelling-art in Western Australia that he had seen a wonderful sight cruising our radar-polluted streets. The object he had spotted appeared to be a wing protruding from a car, the said object being tested for the aerodynamic forces acting thereupon. No doubt the perpetrators of this exercise our now relaxing at Her Majesties leisure in Casurina prison, as our bobbies rack up points for their promotion to the lucrative drug squad. Objects protruding from vehicles is a definite no-no, and this is what so attracted me to the proposition: so I filed this gem at the back of my mind, ready for recall in one of my relapses from advanced old-timers disease.

Then, about 3 months ago, out of the blue, I was invited to submit an actual propeller for wind-tunnel testing: indeed, it was a competition to design the most efficient propeller for operation at 77 knots and 500 watts (.7 HP) at the shaft. Now that is definite model aeroplane territory, and I figured it was a shoo-in.

Wrong. You wouldn't believe the stupid mistakes I made in the design. First off, I refused to believe the results from my vortex software. Then I miss-read my Bolly chart for pitch at different RPM and airspeed: not only that, but I looked it up for 77 MPH!!

Further, the vortex results confused me, suggesting very large chords for what I mistakenly thought the pitch should be. I became more and more embarrassed, as nothing was working out. So I made my best guess, since any guess is better than none, and sent of my item, and 11X8.5.

Using the prop design theory was like swimming in white-water...you drown.

My only hope was to measure my prop performance before the competition guys ran their tunnel tests, and thus preserve my rapidly declining reputation. At this point Charlie's missile popped up into my conscious mind: the answer was to stick the prop out of the car window and do the aerodynamic tests as we raced down the freeway.

I had all the equipment. Two neat little walkie-

talkies with plenty of range. All I needed was for Rosemary to tear along 3k's in front of me in her little Spanish-made Holden Barina and give me a squawk when she spotted the Feds. That should keep me out of Casurina, or worse, Graylands happy-home.

As for the dynamometer, I should be able to whip that up in a week.

Wrong.

I had a pile of nice strong 2024 aluminium bar I picked up from Ryersons in Salt Lake City, Utah; it was lying in my shed unused. Those people at Ryersons were very nice, but a little strange, like most people from that part of the USA. They are located in a huge industrial complex, which was, in an earlier time, a Naval Base during WW2. These Americans really know how to organise wars.

Now a Naval Base in Utah is an interesting concept. The only water within 500 miles is present only when the Great Salt Lake floods, and I don't know when that last was. But you know, when in Rome. I figured I could get the good folks there to cut up some 2024 into lengths that would fit in my back-pack: that would let me go thru customs back home without copping import duty or bond store charges: good move.

So I drove unchallenged in thru the gates, waved to the guard as if I owned the place (confidence is everything in the US) and set off past 300 semi-trailers to Ryersons. I walked in just as I do back home but couldn't find the cash-customer counter, just a bunch of offices. Clearly another idiosyncrasy of the place. Terrible service, but at last a sweet lady divined my need for service and came out to ask what it was I wanted. Rather odd, the place was full of aluminium; you would have thought she could have guessed. So I told her I wanted some 2024 cut up to fit my back-pack and since I was paying cash, could I have



wasn't American. Maybe that accent wasn't from the Appalachians after all. They certainly have a problem with our accent. One time I went into a bar just south of Beale air force base, home of the SR71. It was set up just like Top Gun, great photos, a BBQ out the back, nice Juke Box. I put on "Desperado", really love that one. It was a good choice too, because not 20 minutes later a cowboy came in and put that on again.

I was with Number 1 daughter Beth, and since we chose to barbie some steak, I figured to skip the Bud and go for a nice Californian white. So up to the bar, and ask for 2 glasses of Chardonnay. Well the 2 girls behind the bar just looked at me, like I was Clint Eastwood, the same old problem. So to break the spell, I said "skip the Chardonnay, give us some Riesling". No response. So I tried for white

wine. W-I-N-E. Poor things were thunderstruck, just stood there with their mouths open. I had to give up and get Beth to place the order. Lucky they weren't lezzos or we'd still be there.

Now back at Ryersons.

So I got ready to spell out 2-0-2-4 when she started to speak. And what she said stunned me.

"We don't sell aluminium here".

You could have knocked me over with a feather. I could see great piles of the stuff everywhere. I only wanted all that I could carry on my back. Turns out you had to buy it by the semi-trailer full, and nobody walked in off the street to buy it, you had to have an account and get your purchasing officer to order it. Well, I wasn't taking no for an answer; I told her, look, I'm an Australian, I'm on my way home and I won't have an opportunity to get this stuff again; that I'm not only the purchasing officer, but the CEO, the accountant, the machinist and the sweeper-upper as well.

Something in there did the trick, probably the CEO bit, because she came over completely on side, took my order and my money, but couldn't give me the 2024 right away because it had to be cut in Chicago of all places, then shipped direct to me in Perth! Bugger, I was sure to be caught for Customs and Bond store, but now I was a Desperado too, so I graciously accepted her proposition, signing my autograph as always: Clint.

Now back to the Dyno. While wandering thru Target 6 months back, I spied a GMC 700 Watt Router that looked useful.

Big mistake.

The motor easily detached from the wood-working bits, and I could see it held great promise for testing F2B props. The price was a steal at \$70, so I added it to my store of useful-in-the-future items.

Since I needed to measure the power being absorbed by the prop, the motor had to be supported on a large ball-race to permit rotation under torque. After all, power is just the product of torque and RPM. The rotation was resisted by a spring, and the deflection of the spring could be converted to Newton. metres, which are the metric units of torque. The race set me back \$30, but after I peeled off the dust seals and cleaned out the grease gunk, it turned over freely enough so I was happy.

Now the prop had to be tested in an airstream if I was to get efficiency measured, so it had to be out the car window on a beam. Further, the beam had to be pivoted if I was to measure thrust and drag, so a second race was brought into play for the pivot.

Most of this can be seen in the photos.

Now, just for a moment, this is the theory.

Prop efficiency is the product of thrust times velocity, divided by power absorbed by the prop. You have to get the units right, of course. American units are horrendous, so I always work in metric. Power is Watts (just the same as in electricity), velocity is in metres per second and torque, as already stated, is in Newton. metres. I only labour this point because there are no extra constants in the equation to get the numbers right. That is why metric units are so nice to work with.

With the mechanical work done, it was just a matter of setting up the electricals.

Power was from a 600 Watt inverter I picked up in Singapore some years ago, at less than half the price in Australia. It not only supplied 240V from a 12V car battery,

but also could be used as an uninterruptible power supply for my computers. And of course, I could power-up my Doppler data acquisition computer on the field with it. You need a big inverter, because a 17" colour monitor soaks up 300 Watts on its own. Turns out there were a reason it was cheap.

So you see I had a 240V power source that could run around with me in my Laser. Incidentally, that Laser once belonged to number one daughter Beth. It pays to keep in sweet with daughters, she now does web pages and keeps my website up to date as well.

The Router motor has another good feature, a speed control switch. I rewired this so that I could operate it from within the car, with just a pot and a few wires.

RPM had me bothered for a while, until I found that Jaycar had sensors that matched the sensor in my old Skyward Tachometer. I rewired it with a switch, so that I could use the internal sensor for engine testing and the external sensor for the dyno. The latter sensor is mounted in a tube behind the prop. Seems like a simple trick, but it had problems.

Just to be thorough, I also wired an AC current meter and a voltmeter into the 240V circuit. Not all economy priced multimeters can measure AC current, so I was lucky to find a really good UpTek meter going for less than half price at Altronics, only \$40. A real bargain, so I put in a nice expensive NiMH battery to jazz it up a bit.

By this time the unit was ready for bench testing. You know, like 5 weeks later!

I pulled the strain gauge out of one of those nice Tandy 500g electronic scales, to do the torque measurement with zero deflection. Unfortunately, when I turned on the motor, it vibrated a bit and hammered the strain gauge to death. Another \$100 down the drain. So back to the spring-and-pulley, very cheap, and it works well.

With everything finally torted up, I ran up the prop on mains power. Yikes, 10000 RPM with only 2 G-clamps holding it down: scary stuff.

Reading off the AC amps and the voltage, I was horrified to find that the motor was only 35% efficient. So much for the advertised 700 Watts, the thing would have made a good hot water heater! Never mind, I could live with that. Hell, I could live with Germaine Greer if she could measure prop efficiency!

Next up I fired up the battery/inverter to see what happened. Well, I can tell you that the 10000 RPM mains sting was gone. All I got was 7000 flat out. What was wrong?

Well, that nice inverter had really lousy voltage regulation. It gave the advertised 600 Watts OK, but it started at 190V on low load and struggled up to 220V at 6000 RPM. Not what you'd call worlds best practise. But I could live with that. Hell, I could live with Monica Lewinsky if I got lucky!

With everything working, it was time to mount it in the car. A couple of pine beams across the rear seat looked business-like, so all was ready.

It takes a few seconds to set everything up when taking the torque and thrust readings, so I needed a nice long stretch of straight road. Also I needed a steady driver who didn't know this was all illegal. Not only did Grant Lucas know where there was good road (he used that road for cycle-racing time trials), but he also knows to ask no questions when things look a bit dodgy. So it was off to the

boondocks, otherwise known as Mundijong.

We installed Rosie at one end of the road, with her knitting, a bottle of water and her Walkie Talkie. Things were looking good.

Except for the tachometer. When turned on, it read 3000 RPM! Hell, this was the Sun we were under, I didn't know it shone at mains frequency! Probably it was the power lines by the roadside doing this; luckily the effect stopped when the prop was rotating.

Then it was up and down the road, with everything working well.

Well, nearly well. We lost touch with Rosie for a while, and when we got to her she was shooing off a 7' Dugite. You can't depend on Women; what if the road patrol mafia had come up, we would have been gone for sure!

Well, that about covers it all. We got a figure for prop efficiency, 43% at 60 kph and 6500 RPM. This is just the beginning; we now just need to get some anti-venom to keep Rosie on side!

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

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SUPERCool RACING PROPELLERS
42 Hepburn Way, Balga, 6061 W.A. Australia Tel/Fax: 61 8 9247 2481
Email: props@space.net.au http://www.space.net.au/~props

★ RACE ★ PROVEN ★

Stuart L. Sberlock

★ Minimum induced loss computer designed propellers

★ Advanced technology precision mouldings

K43141-26

F2ACW01	6 X 6.2	Bendix01 9 x 6
F2ACW02	6 X 6.3	Bendix02 8.5 x 6.5
F2ACW03	6 X 6.4	
F2C04	6.3 X 6.1	
F2C05	6.3 X 6	<i>Supercool</i>
F2C06	6.8 X 5.8	<i>First in Racing</i>
F2B	11 X 5	

TEAM RACE TALES

Thinking of expanding your Classic B horizons? Then plan a trip to fly at the USA Nats in mid July, 2004. It would be good to show dual U.S. Classic B winner Wayne Trivin and the others how fast our Aussie racers can go. Our heat and final times are a fair way ahead of theirs. Since the States have dropped their 100mph speed limit, which resulted in events resembling a parade more than a race, it now gives us a better chance to show our stuff. Think I'll buy a piggy bank and start saving.

The bonus will be the 2004 World C/L Champs the week before at the National Flying Site in Muncie, Indiana. Organiser Bill Lee has confirmed the July 4-July 11 dates at the National Flying Site in Muncie, Indiana. The idea is for the W.C. competitors to stay the extra week and fly at the U.S. C/L Nationals. I'll wager there'll be more than just a few Aussies running around at both meets.

The Albury Nats Classic B event is fast approaching and once again should enjoy good support. Most teams will be even better prepared this time. For example, Wilson/Ellins will have a tank that won't leak half its capacity every flight and there are even rumours of an upgraded motor... The Dream Team will do their thing with a new, lighter model and finally sorted out Thunder Tiger 25. The Cosmic Rays will need to dig deep into their box of tricks to regain the 'Firebrands' speed of last year. As you read this, they are trying new engines.

Harry Bailey is working on another vee tailed beauty. A new 'Backtrack' that may be ready for Peter Roberts to flick in early January. If not, you can back it in for Easter. With a bit of luck, we may even get the likes of Peter Hatherell and Dave Shackelford to bring their team racers along. Former Nats winner and C/L Nostalgia Webmaster David Kidd intends to come along and watch the action.

Keith Baddock and I will have to make up our minds which models to run. Will it be the proven combination of the 'Flying Purple People Eater' and FP 25? Or should we run the new 'Grassfire' with LA 25 or the new lightweight 'Swooper' with the same motor....pre Nats testing against the stopwatch will no doubt provide the answers. The 'Grassfire' will be interesting. It has arguably the best pedigree of an Aussie racer. It was just about unbeatable in the early 60's. 21st Century modifications include a thinner wing and slightly shorter and more streamlined fuselage. It is hoped a plan will be available early next year.

The interstaters may well give the Vics some real hurry up this time round. The Queensland challenge headed by Mark McDermott and his fleet of rocket ships will keep the more experienced teams on their toes. In fact it may well put the wind up a few. Bob Fry and Alasdair Taylor have forsaken the ETA replica and may well be on the pace this time with OS power. As for NSW, well, there may be a surprise or two from the vast pool of talent in that state. Gavin Knight and Brian Hoggan are getting better with

every start. And who knows...there could even be a New South Welsh dark horse or two fiddling in the line pits.

Just for the record, motor 'quietness' has come a long way in the last 40 years. A modern schneurle ported design Classic B LA 25 is designed to be not nearly as noisy as an old fashioned loop scavenged engine. Now they've got a real bark! As an extreme example, think about an old Frog 500 in a Vintage stunter. Boy, do those unmuffled things make a racket! Seriously, they can be heard a mile away in favourable conditions. I say by all means fly old time British B if you wish, but please don't say that the Aussie style team racing with the easy to buy modern motors is noisier! It simply ain't true!

Also, there is no fair way to compare a Classic B motor's noise to that of a high revving Goodyear, with buckets of nitro, pressure feed and huge venturi. A hot Goodyear engine like a Gillott Rossi typically runs a small diameter, low pitch (typically 6.5 x 5) prop in excess of 25,000 rpm. A Classic B OS 25 turns a high pitch 7 x 8 or 7 x 7 at around 16000-18000 rpm. That makes a huge difference in propeller generated sound! Maybe, just maybe, in the not to distant future, all team racers will be required by local by-laws to have mufflers. If that happens, at least all modern motors have provision to easily fit them.

Reading a technology article in the November Qantas magazine, I was surprised to learn that the Casio Computer Company intends to market methanol fuel cells that will continually power a laptop computer for more than 20 hours, compared to about five hours with conventional batteries. Amazing stuff this methanol. Albeit dangerous.

Here are some FAQ's and answers. The methanol in model engine fuel can enter the body when breathed in with contaminated air or when consumed with contaminated food or water. It can also be absorbed through skin contact. So always wash hands thoroughly after contact. Methanol does not remain in the body due to its breakdown and removal in expired air or urine.

Methanol evaporates when exposed to air. It dissolves completely when mixed with water. Once in air, it breaks down into other chemicals. Microorganisms that live in water and in soil can also break down methanol. Because it is a liquid that does not bind well to soil, methanol that makes its way into the ground and can enter groundwater.

Effects of methanol on human health and the environment depend on how much methanol is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

People have died as a result of drinking large amounts of methanol. Drinking smaller, non lethal amounts of methanol adversely affects the human nervous system. Effects range from headaches to incoordination similar to that associated with drunkenness. Delayed effects such as severe abdominal, leg, and back pain can follow the inebriation effects of methanol. Loss of vision and even blindness can also occur after exposure to amounts of methanol causing inebriation.

Human health effects associated with breathing or

otherwise consuming smaller amounts of methanol over long periods of time are not known. Workers repeatedly exposed to methanol have experienced several adverse effects. Effects range from headaches to sleep disorders and gastrointestinal problems to optic nerve damage. Laboratory studies show that repeat exposure to large amounts of methanol in air or in drinking water cause similar adverse effects in animals.

Most modellers are aware of these potential dangers and handle methanol sensibly. However, a reminder never goes astray. Safe flying.... take care. And good luck at the Albury Nationals.

John Hallowell. VH 1984.



The just completed Grassfire

RULE BOOKS

An ideal Christmas gift for the competition minded

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"

VINTAGE TEAM RACE DAY AT KMFC

There was a good attendance on a day with the best weather for a while. Welcome to newcomers Bob Fisher and Phil Poole from the Central Coast, to Peter Bradie getting more involved, and welcome back to Peter Camps who hasn't lost his touch despite just arriving back from 7 or 8 months in the far north. And all the usual gang.

Andy Kerr has been encouraging a second division in Vintage 'A' for those who want to compete but at a less frantic pace. For the first time we had the numbers for this, and I hope it will continue to encourage more fliers. Peter Bradie won it with Brian Hoggan—usually a pit man—flying for him. Second was Fisher/Poole, and third Fairall/Fairall.

Vintage 1/2A had a record seven entries, although one didn't make it to the start line. This is a nice relaxed class with cute little planes, and a good way to ease into 'A' class. Camps/Heath won it, followed by Rothwell/ Nolan, Bonello/Bradie, Potter/Hoggan, Fairall/Fairall, and Fisher/Poole.

Vintage 'A' went pretty much according to the script with Justic/Kerr first in 7.10.81 followed by Camps/Heath, Potter/Hoggan, Rothwell/Hines, Knight/Harvey, and Bonello/Nolan. It was great to have David Hines competing despite a serious illness. We all wish you well David.

Vintage 'B' had only two starters. Rothwell/Nolan lost their needle setting while putting out a fire in the engine compartment and had an awful run on the first tank, while Brian "I don't think this motor will start today?" Hoggan cruised to a comfortable victory.

Thanks for a really good day to all those who competed, and especially to those who didn't fly but never stopped helping—Len Brown, Robert Owen, Tom and Jenny Ransome, Dave Simons, etc.

John Nolan

CLAS PERPETUAL RACING TROPHY

All racing events on the CLAS calendar count towards this annual trophy. (The exception is Junior Rat, a restricted event).

Points are awarded to all places with one point for last, two for second last, etc. After 17 events this year the final tally is:

John Nolan	50	Gavin Knight	22
Steve Rothwell	44	Ray Harvey	21
Andrew Heath	42	Andy Kerr	17
Grant Potter	37	Peter Camps	16
Tony Bonello	34	David Hines	13
Brian Hoggan	32	Lachlan Fairall	12
Geoff Potter	29	Stan Pilgrim	12
Richard Justic	22		

News from ZVA

By Charlie Stone VH 4706

TARMAC Notes October and November

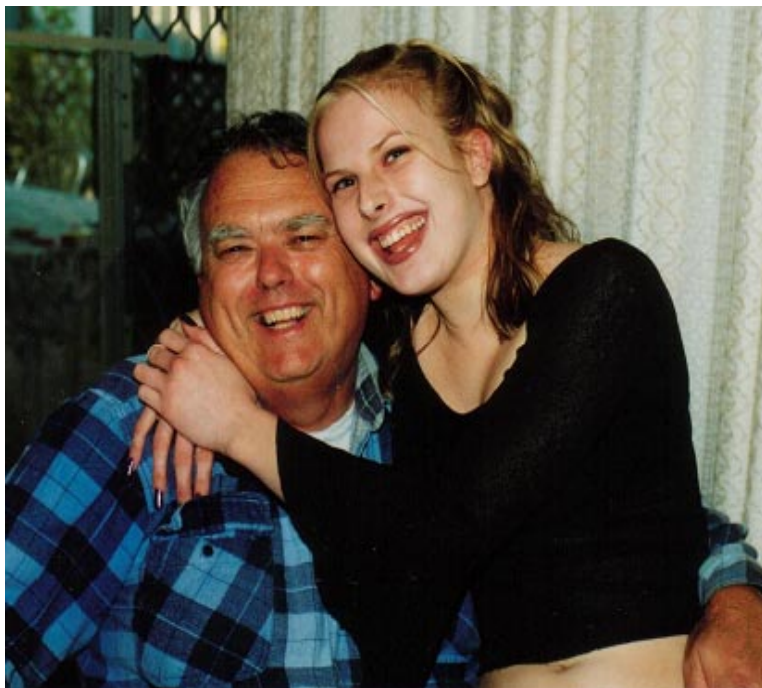
After a long break from any indoor flying activity, and encouraged as usual by the tireless Jim Stivey, I attended a night of Free Flight (only) indoor flying at Kent Street High School. Despite having served a sentence of a few years there in the distant past (much more than you get for robbery with actual violence these days), I had some initial difficulty in finding the gymnasium. That was possibly because it had not been built at the time of my incarceration.

I found that this occasion had been organized by Andy Lawson and Ken Wansborough on behalf of KAMS. Most of the people there were from that club. TARMAC was represented by Jim Stivey, Dick Morrow and myself. Jim and I had both unearthed old Hangar Rats to fly and taken along a few bits and pieces like winders and rubber lube, but not much else. I think Dick said that his indoor model was broken or had been eaten by one of the hungrier creatures that live in his workshop, so he was along as a spectator and helper.

No sooner had we entered the place and unpacked, than Jim realized that the nose bearing on his model was broken. Undeterred by this setback, he proceeded to repair the damage using the most basic of tools (I think it was a pin, a flint axe and super glue). Anyhow it wasn't too long before he had it going again. It was a great night and well worth attending. I will do my best to be at the next one - hopefully a bit better prepared.

News that will interest many of the modelers flying rubber powered models competitively, is that Tan II (the best of the currently produced rubber strip for motors), is no longer available. It seems that this useful stuff was able to be produced using material that was only available because of the golf ball manufacturing industry. (And all this time I thought that golf was a complete waste of time and energy.) Apparently a special version of a critical ingredient that was crucial to produce TAN II is no longer being produced due to the change in golf ball technology.

A lower performance rubber strip called TAN SPORT will still be readily available. (That will be handy for us lower performance aeromodellers.)



Speaking of that enthusiastic aeromodeller and TARMAC founding member, Jim Stivey, here he is seen explaining some serious aeromodelling issues to a keen Control Line fan.

I noticed Peter White's final ACLN column from the wilds of Gippsland referred to his imminent move to join us here in the West. His comment that he could now count the days by taking off his shoes and socks and still have a handful of toes left over amused me. It sounded like a statement from an Irish accountant in a leper colony.

Should the urge ever take you to view the photo illustrations of the TARMAC notes in glorious colour (or in some cases glorious black and white), a years worth of pre-owned TARMAC notes can be found secreted at: <http://members.iinet.net.au/~stivej/TARMAC/Default.htm>

On the 16th of November, we had the annual turf Racing' day organized and run as usual by Jim Stivey. It was another of the events that I did not attend this year, but I did have a note from my Mum that read 'Dear contest director, Charlie has to attend his nieces wedding on the Turf Racing day, so he won't be there'. Even if I wasn't there, I did have the results relayed to me, so I have a bit of an idea about what went on.



Dick Morrow (L) clings grimly to the fuselage of the Hangar Rat while Jim Stivey is busily drilling a hole in his metal nose bearing using only a toothpick and determination.

This year the event was based on a range of different classes of racing trying to match the current record in their category. The results would be scored as a percentage of the record much as it is in combined speed. This allowed competitors in different classes to race for the same trophy. In the final analysis there were only two classes of racing flown for the trophy; Vintage A and Plain bearing Rat racing. There were only 4 teams in Vintage A and 5 teams in PB Rat.

The fastest Vintage A heat time was a 3:50.18 by Fry/Taylor, but it was their performance in PB rat that gave them the win at 92.18% of the current Western Australian record. Second place was taken by the team of Letchford/Morrow in Vintage A with a heat time of 3:56.28 and 91.06% of the record. Third place was taken by Stivey/Adler in Vintage A with a time of 4:07.30

As in previous years, a special bonus was the Ace models 'Stop the Clock' prize where the competitor with the heat time with a number of seconds closest to those on a hidden clock would get a special prize from Scott of Ace models in Midland. While on that subject, I would like to tender thanks to Scott from all of us for his generous offer and remind those of you reading these notes that Ace models always has an exceptionally wide range of control line gear in stock. Well worth checking out (he does mail order if you don't live close by), and of course we should all support those that look after us. I suppose that I should have mentioned that this year the winner of the Ace models award was the dynamic duo of Trevor Letchford and Dick Morrow. Lucky blighters.

Stunt fliers quite often seal the hinge gaps in their models with flexible tape to prevent air leakage through the gap that can reduce the efficiency of the controls. One of the products that has been widely used for this job is Scotch brand 'Crystal Clear Tape'. This product has become increasingly hard to find, but it has now been revealed that the stuff is just as widely available as ever. The manufacturers (3M) have just confused the issue by changing the name from 'Crystal Clear tape' to number 25 'Multitask Tape'. There has been no change at all to the formula, only the name

To finish off for this month, I have some photos of events and activities that have been referred to in recent issues of these notes.

A recently discovered truth is that all jobs are easy to the person who doesn't have to do them. Have you ever had someone bring you a '5 minute' job? Have you ever completed a '5 minute job' in 5 minutes? Enquiring minds would like to know.

Charlie Stone
Emailcestone@bigpond.com

VH4706



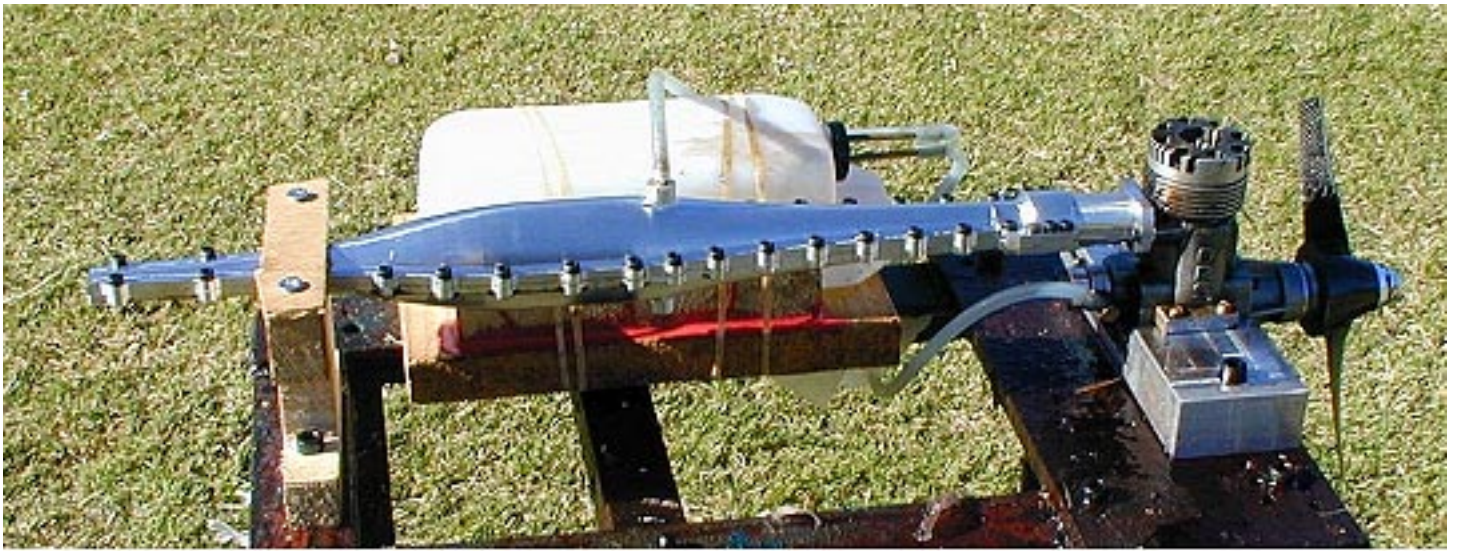
Charlie Stone (L) and Norm Kirton with the near scale Hawker Tempest Vintage A racer that won the WA State Championships this year.



This is Ron Seeley's Control Line Mustang. Although it is controlled by wires, this model uses a radio link for throttle control. Ron converted this from an R/C ARF kit and it performs well in it's C/L guise.

56th Nationals News

Processing of Control Line models will be from 11.00am at the Administration Centre on the 28/12/2002.



Here is a picture of another of the developments going on at the laboratories of Supercool products. This rather heavy duty tuned exhaust pipe that is not intended for flight has been machined both inside and out on the Supercool CNC mill. After bench testing, the basic blank can be remachined internally and re-tested. The exact proportions of the optimum setup can be finally reproduced in a much lighter medium such as thin alloy or carbon fibre/epoxy with the assurance that it will reproduce the same performance as the test unit. For more details contact Supercool props (the home of superior racing propellers)

56th Nationals Reminder

Any one wishing to compete at the 56th Nationals are reminded to get there entry forms in to the Nationals Registrar at PO BOX 298, SEAFORD, 3198. Late entries will not be charged unless you enter after the 28th December 2002.

Trans Tasman News

At the time of going to print the New Zealanders have got the following teams willing to come to Australia for the TT competition.

F2A - 3 TEAMS

F2B - 1 TEAM

F2C - 1 TEAM

F2D - 0 TEAMS

The qualifying for this team if it gets off the ground would be the 2002 State Champs & 2002/2003 Nationals.

The reason for this is no one knew at the last Nationals that a TT was going to happen so they can't be used for selection.

The qualifying for the next World Champs team to be held in 2004 in the USA should be the 2002/2003 Nationals & any 2 State Champs to be held in 2003.

The reason for this is the next Nationals after 2002/2003 will not be until around Easter 2004 which is too late because entries need to be submitted by the end of February early March 2004.

(The above is to be confirmed by Andy Kerr)

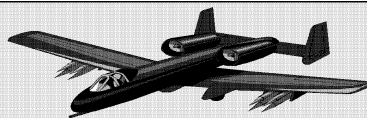
from Graeme Wilson.



The CLAMF Christmas BBQ will take place at Graeme Wilsons home on Dec 15th after the conclusion of the days flying.

BYO meat and drinks and a seat.

CONTEST RESULTS



Combined Speed held at Frankston 10/11/2002

Pos	Name	Class	Engine	Flight 1	Flight 2	Flight 3	Fastest	Km/h	%
1	R Hiern	Class 1	RH-11 Speed	15.00	15.04	15.28	15.00	240.00	99.47%
2	N Wake	Class 1	OS CZ11 PS	16.00	15.49	15.14	15.14	237.78	98.55%
3	N Wake	Class 5	Novarossi 21	15.19	15.42	15.17	15.17	237.31	97.69%
4	R Hiern	Proto	Novarossi 21	-	25.07		25.07	231.10	96.85%
5	V Marquet	Vintage Proto		49.40			49.40	117.28	72.87%
6	C Agnew	FAI	Profi	-	-				0.00%
6	N Wake	FAI	Irvine 15R	-	-				0.00%

MINI GOODYEAR at Frankston Nov 10th

1. G.Wilson/M.Ellins 3:52.90 3:26.32 OS CZ11
2. H.Bailey/P.Roberts 4:00.40 dnf 43 OS CZ11
3. K.Hunting/J.Hunting dnf 68 6:13.87 CS 11D

Queensland Final News 2002

Elsewhere in this edition of ACLN should be some pictures and an article by Rob Edgerton on a Vintage Fun Fly In held at Clasi field Ipswich last month. This day would have to be the highlight of the year in terms of fliers and models present.(see article)

This in stark contrast to the second part of the **Clasii Speed and Team Race Open** .two week's ago. In spite of a \$150 engine and a \$50 Open order up for grabs for a Clasii (simple rat)T/R event there were not enough starters for the race to be held and once again not even a single entry for Speed. Where are all the Speed modellers Robin?

Generally speaking throughout the whole of 2002 in Qld., most organised events put on by the C/L clubs around Brisbane have been very poorly supported with a lot of scheduled events not taking place due to lack of interest (should that read lack of pilots?)

Clasii has scheduled a speed event 5 times over the last 18th months but as yet not one flier has turned up.

It is now over a year since Qld has had a C/L Administrator!

What is wrong with Control Line in Queensland at the present time?

Do we have too many classes?

Has it become too technical?

Is it becoming or is it already too expensive?

Are people sick of competitions?

Have there been too many or not enough rule changes?

Do people just want to fly for FUN only?

And now to 2003 when hopefully things will improve in Qld C/L Circles.

As previously advised through ACLN the 2003 QLD. C/L State Championships will be hosted by Clasii at Ipswich flying fields and the majority of events scheduled to be held over the long weekend in May (3rd, 4th, 5th) and the Scale events F4B, Stand Off, and Fun Scale to be run on separate weekend 17th, 18th May. A probable scenario is that some events will be combined (if insufficient entries received), eg. Vintage/Classic Stunt; Vintage B/Classic B. Class 2, G/Year, Speed, etc will be run on grass.

As Qld currently does not have any F2C fliers it is most unlikely that the event will be run at all. Other states have in the past elected not to run events, which do not receive support from local fliers (even at the Nationals)

Further details will be advised in future editions of ACLN.

With nearly a couple of years passing since the last Rules Conference might I humbly suggest that NOW is the time to start on any proposed rule changes that may need to be discussed, otherwise the next Conference will come round and nothing will have been done.

On a personal note this will definitely be the last Nationals at which I will be competing in Team Racing events and in all probability my last T/R competitions altogether. Look of



Below picture: Who's giddy. A trainee pilot completes his first flight at the Knox fly/try day!



Addendum to Remote Doppler Recording.

In the article entitled "Remote Doppler Recording", on my website at www.supercoolprops.eftel.com, I discussed the possible use of Walkie-Talkies for facilitating the collection of sound data. I have now done some testing on this method and report the results here.

The Uniden UH-040XR is a reasonably priced (AUD100) and high quality transceiver operating in the UHF region at 477 MHz. The unit features 2 sockets, one a 3.5mm mono audio socket for connection to an external speaker, the other a 2.5mm mono audio socket for use by an external microphone.

The unit has no automatic gain control (AGC) feature. When using the inbuilt microphone, it is necessary to hold the unit within 150mm of the mouth to get good voice signal strength.

In the case of recording model engine sounds, this means you need a really noisy situation, such as in control-line Goodyear and F2C racing. That being the case, you don't need the system at all, as a standard tape recorder handles this easily and chances are the operator will be near the flight circle anyway.

In F3D, the operator can easily be 500m away from the desired recording location, and distance from the model can be anything from 100m to 700m. To ensure good sound pickup, it is desirable to boost the sound signal going into the unit: this implies the application of an external AGC unit connected to the microphone input on the Tx.

The point of having an AGC, is that weak sounds are amplified more strongly than loud sounds, so that the AGC output is largely independent of sound level.

Provision of this AGC unit has held up my work on the acoustic antenna for some time now. The cost of design and production of a custom AGC board is rather high. However, a solution is at hand. The electronics component and kit supply company Oatley Electronics (www.oatleyelectronics.com) offer a Laser Communicator kit, part number K073, price AUD31, which rather interestingly does not include a laser!

However, the transmitter board does feature a rather useful AGC section. Perhaps this could be modified to suit the Uniden? I spent half a day trying to make these mods work, with a rather comprehensive degree of failure. Now my electronics is rather dated (my Uni education was on valves!) but I am not that hopeless. Also, my Huang Chang oscilloscope does not tell lies, and it said I had a good signal going into the Uniden.

Just when I was ready to toss in the towel, I realised I had the AGC output connected to the SPEAKER socket on the Uniden! This degree of idiocy has plagued me all my life, so read on and perhaps you will find some more.

In modifying the Laser AGC board, it was first necessary to know just what signal level the Uniden required from an external microphone, so I purchased the Uniden hand-held Speaker/Microphone unit which plugs into the aforementioned audio sockets on the transceiver. Pulling this apart revealed an electret microphone, a 3.3k resistor, a 470pF capacitor, a switch and a speaker. No fancy electronics. This was promising, so I measured the microphone bias voltage, which was -125mV (rather less than I expected), and the output signal level. This was ± 10 mV, about right, and less than the expected 30mV.

This meant that the AGC had to deliver a maximum signal of ± 10 mV into the transceiver MICROPHONE socket. Now this could be tricky, as most audio circuitry is designed to deliver line-level signals at about 1V. And indeed, the Laser Tx was similar.

To commence the mods, I removed the unwanted components from my previously built Laser Communicator. This was no hardship, as the existing laser diode I had been using was recently made illegal, and I had already bought a new toaster.

Parts removed were VR1, Q2, R13, R14, R10 and C10. I also cut the conductor 5V supply track to R11.

VR1 was then replaced with a 500-ohm trim pot (Dick Smith part #R1763), which was a pin-for-pin replacement.

Now the problem was to make the right new connections. The signal I wanted appeared on the output side of C4, which was now open circuit after removing R10. So I connected this point to the supply side of R11 and broke the track to supply. Bad mistake, but I didn't know that yet!

The combination of R11 at 47k and VR1 at 500 ohms now formed a voltage divider which would provide my 10mV to the Uniden mic input. Of course, this was adjustable in case I got it wrong. And I did. But not by much.

Now I didn't know the input impedance of the Uniden mic in, so I figured it would be nice to have a unity gain buffer to drive my 10mV sound signal. As it happened, in removing Q2, I freed up one half of the LM358 dual op amp, so this was a candidate for the buffer. Big mistake.

Anyway, I hung a 1.5k resistor across the buffer output and neg in, mainly because I don't know any better, and put a 1k resistor and 1uF cap in the output line to the Uniden.

The 1k was an effort to protect the Uniden input from over-current and the cap was to block any stray DC, including the -125mV from the Uniden.

So I fired it up and started looking at waveforms. The input to plus-in on the buffer op-amp from the C4 cap was fine, and easily adjusted to 10mV at high sound level. So far so good.

But the output from the buffer was chopped off, only giving the top-half of the signal!! Disaster! What could be wrong? The problem was at the output pins of the op amp, so it had to be the op amp that was the problem. I had previously run a 741 op amp like this, with no problems, so I was both surprised and disappointed.

The Dick Smith catalogue listed the LM358, so I had a look at its specs. Would you believe its differential input voltage was plus only? How dopey. I guess it has something to do with making it a low power chip. But that didn't help me.

So I looked at how the other half of the chip was linked to the electret microphone output. There was an odd combination of resistors on the plus input, which appeared to be was some sort of level-shifter.

By reconnecting R11 to supply and running a line from C4 output via a 47k resistor to the VR1 pin at the R11 junction I was able to level shift and get the full-wave output from the buffer. Any DC was blocked by the output cap, so we were back in business.

After connecting the AGC to the Uniden, strapping the Uniden Tx switch to transmit and turning on the FM radio for some music, I went outside with my second Uniden and was rewarded with a strong clear signal.

Success at last. AGC today, acoustic antenna tomorrow!

Supercool



Another modelling year draws to it's conclusion and yet another ACLN is prepared for despatch to the printer.

To those of you out there that have contributed towards the content of the newsletter over the last year, a big thank you from me and a request for you to keep up the good work.

The use of email for sending articles and the increasing use of digital photographs makes my monthly workload diminish but those of you without these modern gadgets are still invited to send in your little gems (no matter how small they may be) by the old fashioned snail mail and they will be gratefully received.

Not long to go before another Nationals is upon us.

If you haven't sent your entry in yet do so as soon as possible. A little birdie told me that the double entry fee would not be enforced up to registration day but that is not official!

I am looking forward to meeting up with modellers from that will be travelling a safe and comfortable journey.

For me it is time to go back to my model building and pre a happy and prosperous New Year.

Harry.



Editor at the recent Fly/try control line day at the Knox flying field.



There isn't a January edition of ACLN

WANTED

Plan or kit of Aeroflyte "Hurricane" 1.5cc stunter.

I also want a NIB O.S. Max 3. 35 engine and could trade a NIB A.H. Amco 3.5cc BB diesel.

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Ken Donelly (03) 95603263

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No calls between Dec 15 and Feb 15

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\$50+P&P

H.Bailey. (03) 9543 2259

Email acln@ozemail.com.au

WANTED

The organisers of the 56th Nationals in Albury/Wodonga would appreciate the assistance of some volunteer C/D's for the following events.

Class 2 Team Race	29/12/02
Junior 2.5cc Combat	30/12/2002
Open Combat	03/01/2003
Classic Stunt	04/01/2003

If you can help please contact
Jim Ray (AH) (03) 9546 7170

or

Graeme Wilson (03) 9786 8153

Email vmaareg@ozemail.com.au

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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"



Model processing for the Nationals

To reduce the workload of processing at Albury the following arrangements have been made.

Entrants in the Nationals can have models processed in advance if they bring them along to the Dec 15th competition at the Frankston field.

AUSTRALIAN CONTROL LINE NEWS

If undeliverable return to:-

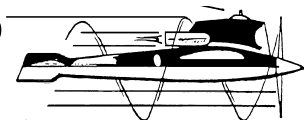
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