

National Control Line Racing Association

Volume 4, Issue #2

April 1997

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Plus More!!

Positive Growth in Membership

Yes the NCLRA has experienced a positive growth in Membership. The NCLRA was formed in 1993, and each year has shown positive growth. With the addition of the Internet site we have expanded our overseas membership, and therefore we are extremely interested in articles from our racing companions from around the world.

Presidents Corner

I am happy to announce that the NCLRA has purchased some equipment that will allow us to publish pictures in the newsletter. This adds a bit more information and excitement to our newsletter. Send in those contest reports with photos to tell the whole story! Pictures are also worth a thousand words in explaining tech tips etc. Send em in & we'll use them.

Also I know many of you have equipment for sale or are looking for stuff. Send in your swap shop items wanted or for sale. The space is free for all individuals that are members.

Inside this issue you will also find a rules proposal and ballot for some proposed changes to the Fox racing rules. Your votes will decide whether to adopt these changes. This is your chance to let your opinion count.

Speaking of which, since I have moved this last summer I have a new address. I always have an open ear for opinions and ideas. Give me a call or drop me a line whenever it suits you.

You can reach me at ;

Larry Dziak
3 Starflower Dr.
Madison WI 53719
(608) 827-6779

Happy Flying & Think Spring!

Paul Gibeault has contributed a three part article on Mouse Racing, as a part of our plea last month for articles. So step up and help us with the other events, contribute an article today!!

Mouse Racing Made Easy

by Paul Gibeault

You too can build a "Killer" Mouse Race Engine!!!!
(As told by an Eight Time National Champion)

Class I Mouse Race has always been a favorite of mine. It is cheap to fly, but oddly enough, cubic dollars spent on this event have little to do with how you place in competition. Although deceptively simple looking, when taken to the limits, Cox .049 engines and their subsequent rework can be very involved. Also, flying Mouse Race is indeed a real "Head Scratcher" of an event, relative to racing Rat or Goodyear.

In Rat or Goodyear, once a reliable combination is found, you can hang it up on the wall, and no further practice is really needed. Mouse Race, on the other hand, is a real "crap-shoot". Obtaining consistent performance from contest to contest will test your patience! Racing Cox .049s is tantamount to playing Russian Roulette—you never know when they're going to blow!

Not only that, but the carnage rate in Mouse Race is second only to that of Fast Combat. No sooner do you really get rolling when you get taken down in a "mid-air" collision or a three-up line tangle. Many times the slow and steady mouse is a winner, if only by the attrition of the others!

So, any of you contemplating Mouse Race should really go for it! Rest assured, that once you have mastered the very fine art of Mouse Racing, most other events will seem like child's play by comparison. Provided you have the right attitude (relaxed and well chilled out), it's the most fun you can have for the least money. Listed below, is what you need to know to make reliable power from the Cox .049.

NCLRA Fox Racing
July 14
Sponsored by
Fox Mfg.

1. CRANKSHAFT / CRANKCASE ASSEMBLY.

Problem: Cox .049s are often prone to breaking the crankshaft - usually the crank pin parts company with the crank throw web.

Solution: The use of a "race-car" crankcase assembly reduces this problem as the crank throw web is noticeably thicker on these variants. Having personally blown-up both crankshaft types, I have found that using the assemblies from very old engines seem to be the safest bet. (yes, I've had my crankshaft shear in half during the AMA Nats final, and so have others, but there's little you can do about it, but replace it and carry on. It's all part of the fun of Mouse Racing).

A non-anodized crankcase is preferred as the colored anodizing eventually comes off and supposedly galls the crankpin. Also, it is a good idea to sand the back of the crankcase with #400 grit wet/dry sandpaper and oil (WD40) which is laid over a flat plate of glass. This will remove any burrs that might otherwise prevent a perfect seal with the tank. You can order a crankcase with an "oilite" (bronze) sleeve bearing from Kustom Kraftsmanship, but I have never used one. KK also offers a tempered crankshaft, but there's no guaranteeing it won't break either, as I have seen them fail, too.

2. INTEGRAL FUEL TANKS.

Problems: The stock Babe Bee fuel tanks are slow and sometimes short on range. They also can't hold a consistent needle valve setting. Also, they are prone to "reed float" at around 17,000 RPM.

Solution: a) Modify the NV assembly as follows, since the stock one leaks air. Remove the NV, discard spring, and substitute it for a piece of 1/4" silicone fuel tubing and a #4 washer. Now re-install the NV and voila!, you now have one cheap but airtight NV assembly.

b) With the tank and backplate together, remove the screen and drill out the tank and backplate inlet venturi to .089" (#43 drill). This produces a gain of 500 RPM, but at the expense of less economy. Use a "Golden Bee" or "Super Bee" (non-anodized) large tank for the greatest range. Next, sand the backplate flat over glass, as many backplates are warped and do not bolt on to the firewall perfectly flat. While you are at it, with a Dremel tool smooth out the backplate venturi area by grinding away the screen holder.

The fuel pickup must be located at the outboard corner, and then held in place using a pin drill, drill a tiny (.021) hole through the "fence" where the backplate joins the tank, and wire the neoprene tube in place with .020" stainless steel wire. (s/s is non-corroding). If you have a backplate with no "fence" you can also get the neoprene pickup tube to stay in place by inserting a small piece of 1/16 brass or aluminum tubing about 1/4 inch long. The net effect will be that the tank front will actually now hold the pickup in place.

c) **Mega-Power:** In a reed valve engine, top performance is only attainable by using the mylar reed. Either shape, cross or rectangular, is acceptable. The copper/beryllium reeds have just got to go. This last production mod.

allows reed engines to be on par with TeeDees! My test bench results indicate that 24,000+RPM is achievable for steady-state running with such reeds.

d) **Final assembly:** Since all Cox engine components are notorious for coming loose, clean the 2-56 engine tank screws with thinner, then final assembly is done with blue Loctite (threadlocker). Every time the engine comes apart replace both the paper tank gasket and the venturi O-ring. This may seem like a waste, but \$2.00 of new gaskets now is worth \$100 of reliability on the racing circle!

3. PISTON / CYLINDER ASSEMBLY

Problem: Not enough power!

Solution: Any type of piston/cylinder assembly made by cox can produce good results. However, a superior "fit" will overcome nearly any porting deficiency. This means that a well fitted Babe-Bee P/L is better than a bad TeeDee P/L. I recommend a flying test for all PL assemblies in your possession, as certain assemblies will occasionally defy all rules of performance.

Having said this; I find that excellent fitting TeeDee #4 P/Ls to be the best. These are found on all the real "cookers", such as Roy Andrassy's, John McCollum's, Bob Boling's, and my own. It is worth noting that new TeeDee P/Ls come with the ball socket joint set too loose. Therefore, it is a good idea to re-set the fit with a Cox factory tool (or equivalent) to .002" slop, or less. Using the piston holding fixture usually results in a mushroomed head piston (totally ruined). For best results, lay the piston on a heavy piece of 1/2" plate glass or flat thick heavy steel (something quite dense). Then with tool in place, tap with hammer, rotate a bit, tap again and continue, checking often until all excess play is removed. It is necessary to check and adjust this after every contest. At normally low RPMs this isn't critical. but, at racing RPMs (20,000+) a loose ball/socket reduces piston life to a few minutes.

Optimum piston/cylinder fit is to be checked with the parts being absolutely clean and dry. To check the fit, slide the piston up the cylinder bore (with no finger prints!) until it sticks. Ideally, it should stick flush with the glow plug land. Now, with a slight tap, the piston should fall right out of the cylinder. (if the fit is slightly looser, this may be OK too, unless power and starting consistency deteriorates). In this case the P/L assembly is worn out.

Please note that a new TeeDee P/L assembly is always too tight. Those of you with excellent feel can go ahead and lap the piston to fit. However, a better way to do this is by just running in the engine. Start by cutting a 5x3 prop until it turns up to 24,000 RPM rich. Run up to 2 dozen tanks of fuel through the engine, but for no more than 2 minutes at a time. It is better to use a TeeDee crankcase for this purpose, and transfer the P/L assembly to the reed valve crankcase when it is run in. The reason for this is that 24,000 RPM on a reed valve crankcase will wear it out in a hurry, sometimes in only a half dozen runs.

Lastly, it is very important to keep carbon varnish off the piston and especially the cylinder walls. #000 steel

wool or Scotchbrite wrapped around a small dowel wet with WD-40 or thinner easily removes all the carbon. This procedure takes only 5 minute but really must be done before every contest to ensure peak performance.

4. GLOW PLUG

Running 40 to 60% nitro requires the use of 5 head gaskets. Yes, five! (the AMA heat record at 2:18 had six in it). Low compression is the only way to run consistently (first 5 laps to last 5 laps) on highly nitrated fuels, whilst for maximum power and reliability. I haven't found Glo-Bee plugs to be reliable enough for Mouse Racing.

After removing a new Cox plug from its package, sand it with 400 wet/dry paper (and oil) over a flat glass plate. Then, carefully clean it with lacquer thinner. (this ensures a good seal, when the plug seats down). Now examine the plug element, and with a T-pin make sure that it is centered. Finally, with the T-pin, very gently pry at the element where it's welded to the plug. It should be a firm weld. If it breaks loose, kiss your money good-bye, and start with a new plug. Console yourself a bit knowing that you've just prevented yourself from using a plug that would have prematurely failed on you. (most likely during the Nats final).

Finally, after awhile you may notice your glow plug constantly keeps coming loose this usually is due to the copper head gaskets becoming old and hardened, due to the constant heat cycling. The easiest cure is to replace all old gaskets with soft annealed new ones, and the problem goes away.

5. ASSEMBLY & MISCELLANEOUS PROBLEMS

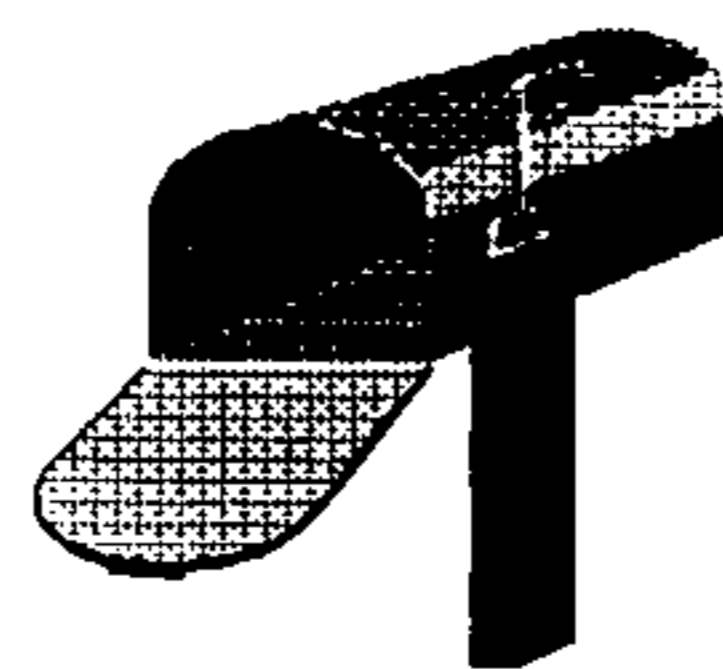
Problem: engine comes apart (unscrews) in flight, prop falls off, glow plug comes loose in flight.

Solution: a) check and tighten the engine mounting bolts before every race. b) Tighten the glow plug vigorously before every race! c) use a 5-40 x 1 allen head hardened steel prop screw and check/tighten before every race. d) If field dis-assembly can't be avoided, use Loc-Quik Super Primer Accelerator and Loctite on reassemble.

Editors Note: Watch for Part #2 of Paul's Mouse Tips in upcoming editions.

MOUSE II
July 13 2:00p.m.
Hosted by NCLRA

Thank You to
K&B for Providing
Fuel for 1997 Nats.



Mail Box

Dear Dave,

In regard to "Stoo's" comments on Walters observations I would hope to further open the discussion (controversy?) by adding my rambling observations. I side with Walter on the lifting versus symmetrical airfoils and offer the following: I have enclosed for your enjoyment Xerox Copies of the properties of NACA 64-006 (symmetrical-zero lift at zero angle of attack) and NACA 64-206 (semi-symmetrical-positive lift at zero angle of attack). Follow the graphs: ****note Graphs on Pg. 4-6**

64-006 at 2 degrees positive angle of attack has a lift coefficient of .2. Go to the next page and a CL of .2 has a drag coefficient (Cd) of between .005-.006. 64-206 at 2 degrees has a CL of .35 and a Cd of between .004-.005. Incidentally, standard roughness means that carbide granules of about .011 inches were adhered to the first 20% of the leading edge to simulate dust and grime build up in the wind tunnel. Now for fun, go to -206 and find the CL at zero angle of attack= .1 and the Cd is .004 (!) Hey! Are we getting any clues yet? Consider that a section at zero angle of attack has less frontal area than at a positive angle of attack. Are we havin' fun yet? Does every little bit count? Well, it does if you're draggin' tons of stuff thru the air at thousands of pounds of fuel per hour.

Getting on: Downforce. At the same lift one would assume the same downforce regardless of what produced the lift- NACA section or a mule (anti-gravitational devices excepted). You will note that pitching moment coefficients are on the graphs. That formula is: $M=1/2 \rho V^2 S c_m$. The graphs are from "Theory of wing Sections" by Abbott and von Doenhoff as is the formula. Well now...easier said than done. To quote aerodynamicist Eric Lister (deceased- it is always good to quote at least one deceased in a diatribe): "It should be noted that it was not necessary to know any of the aerodynamic characteristics of the wing to determine the stability of the wing - just the planform and the center of gravity location." (Well, doesn't that just frost you!) This came after two big pages of introduction to Longitudinal Stability in Section One, page 4, of "SAILPLANE DESIGNER HANDBOOK".

Back to the airfoil, graphs. There is a column of figures headed "a.c. position"; the x/c is the pitching moment in relation to the chord width. So, it is about quarter chord and we usually balance Rats and Scale racers in front of where we suppose the center of lift would be, the closer the CG is to mean center of lift the more neutrally stable (sensitive). The more distance forward the CG is of the center of lift the more positively stable and of course the more downforce is needed. It is the amount of downforce needed not how the lift is produced. I would follow Walter's suggestions of incremental CG

changes and then adjusting the sensitivity of the lever system thus the lessening of the downforce input needed.

On the subject of drafting. I fly full size (15 meter span) gliders and on tow behind the power plane the one place you do not fly is in the wake (slipstream). First because it is uncomfortable (turbulent) and secondly, you P.O. the tow pilot who has to add power to maintain airspeed. Another clue? Pilots at Reno try to find smooth air above, below or outside the traffic. Stoo, if anyone would know if you have a faster TR and if you can't get around a slow TR after you have almost lapped him your plane will slow down and the engine will "burn down". it's happened to J.E., Stockton, probably not Ballard-his arm's too big (sorry, John). Anyway this subject goes well with beer and TV racing. By the way, Perkins, Walter, raced sport cars in his other life. He and his wife had Shelby Cobras and he also pitted (that lowly word again-you readin' this, Bobby?) for some unknown stumblebum named Roger Penske. Wonder what happen to him?

If any of this raises your curiosity to the level you want some literature you can get your local bookstore to order "Theory of Wing Sections" by Abbott and Von Doenhoff get the one with the ISBN 0-486-60586-8 (the one EAA has does not have the airfoil appendices) or pay postage and call Dover Publications, NYC I think it's 800-541-9498 (you can call 800-555-1212 to see if anyone has a 800 number) \$12.95, mine has \$4.50 on the cover-how time flies.

"SAILPLANE DESIGN HANDBOOK" Is available from SDH, 2214 Regina Dr., Clarksburg, MD 20871 from Eric's daughter. It was \$6.95 in '85, she also has "DRAG REDUCTION AND STRUCTURES HANDBOOK" 301-865-3016.

PROFESSOR OF PHYSICS at Arizona State Univ., Ales Strojnik, wrote a trilogy-"LOW POWER LAMINAR DESIGN, LOW POWER LAMINAR AIRCRAFT TECHNOLOGIES, AND LOW POWER LAMINAR AIRCRAFT STRUCTURES" they were \$22 apiece postpaid; but in arithmetical terms and easy well developed text tell you how and why the design, build and make slick. From his widow: Strojnik, 2337 E. Manhattan, Tempe, AZ 85282.

Taking all the factors designing an aircraft requires a lot of explaining (five years at Va. Tech) that's why all the books, and sometimes we still can't get it right.

Speaking of aeronautical engineers (now I am) there is a weird guy that talks of shadows and 'gators, graduated from U. Va. back in the late '60's or '70's has some model racing experience and was (is) a engineering project leader (classified) for Martin-Marietta in Orlando. He once lived in Ocala and his initials are W.B. (Perkins, I'm sure) Oh well, you know how these old guys rant and rave.

Going around in circles IS Fun,
B.B. Brown

NACA 64-206
(Stations and ordinates given in per cent of airfoil chord)

Upper surface		Lower surface	
Station	Ordinate	Station	Ordinate
0	0	0	0
0.459	0.542	0.511	- 0.442
0.704	0.664	0.796	- 0.524
1.198	0.859	1.302	- 0.645
2.440	1.208	2.560	- 0.836
4.934	1.719	5.066	- 1.087
7.432	2.115	7.568	- 1.267
9.933	2.444	10.067	- 1.410
14.937	2.970	15.063	- 1.624
19.943	3.367	20.057	- 1.775
24.952	3.667	25.048	- 1.877
29.961	3.879	30.039	- 1.935
34.971	4.011	35.029	- 1.951
39.981	4.066	40.019	- 1.924
44.991	4.014	45.009	- 1.824
50.000	3.878	50.000	- 1.672
55.008	3.670	54.992	- 1.480
60.015	3.402	59.985	- 1.260
65.020	3.080	64.980	- 1.020
70.023	2.712	69.977	- 0.768
75.025	2.307	74.975	- 0.517
80.024	1.868	79.976	- 0.276
85.020	1.410	84.980	- 0.064
90.015	0.940	89.985	0.094
95.007	0.473	94.993	0.159
100.000	0	100.000	0

L.E. radius: 0.256
Slope of radius through L.E.: 0.084

For Sale!

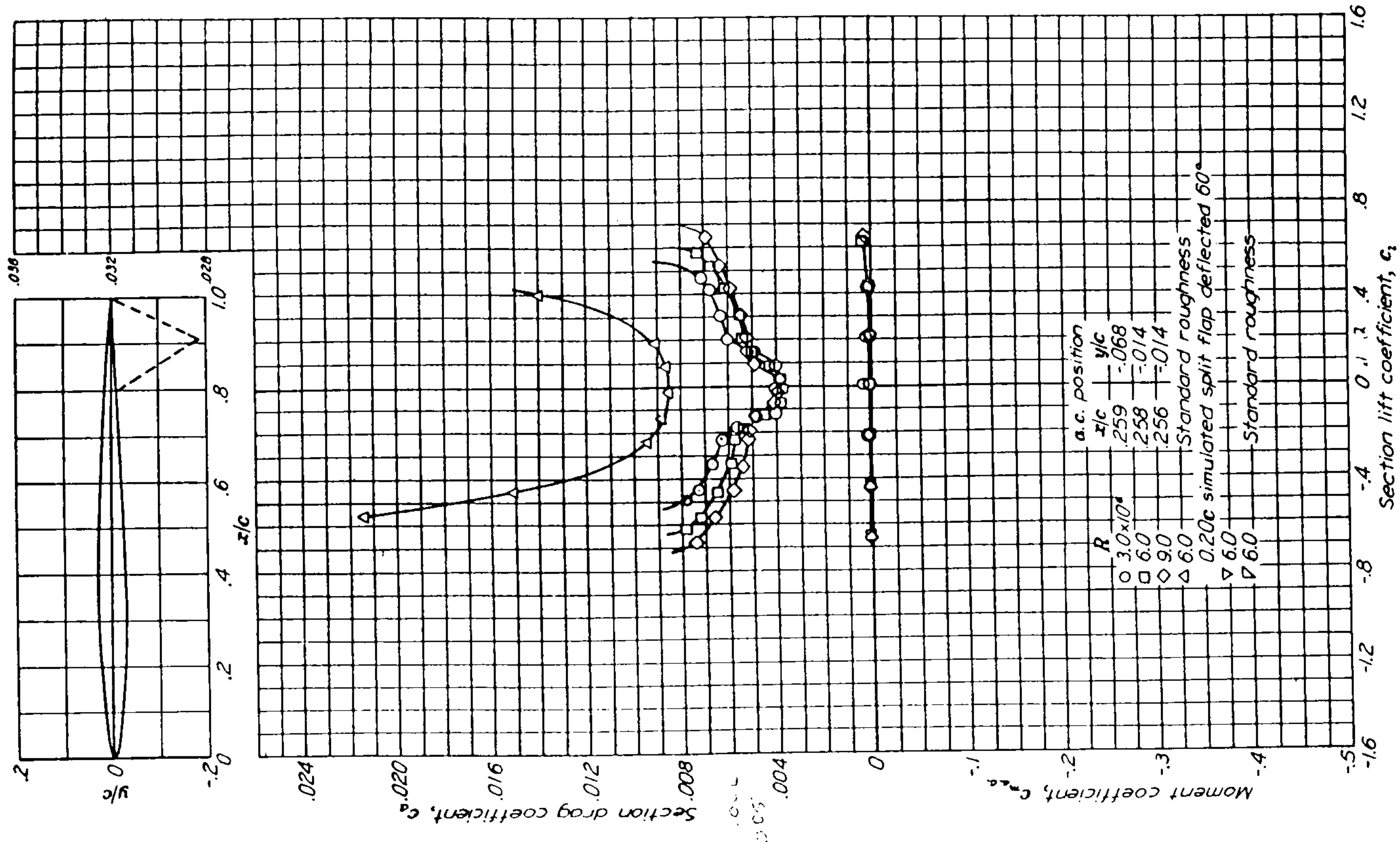
Two Vorobiev T/R engines, 1 with old style, 1 with new style multifunction valve \$250.00 each. Contact: Kenny Perkins
TX# 901-365-6749
4011 Lacewood Dr.
Memphis, TN 38115

Rules Proposal For Fox Racing

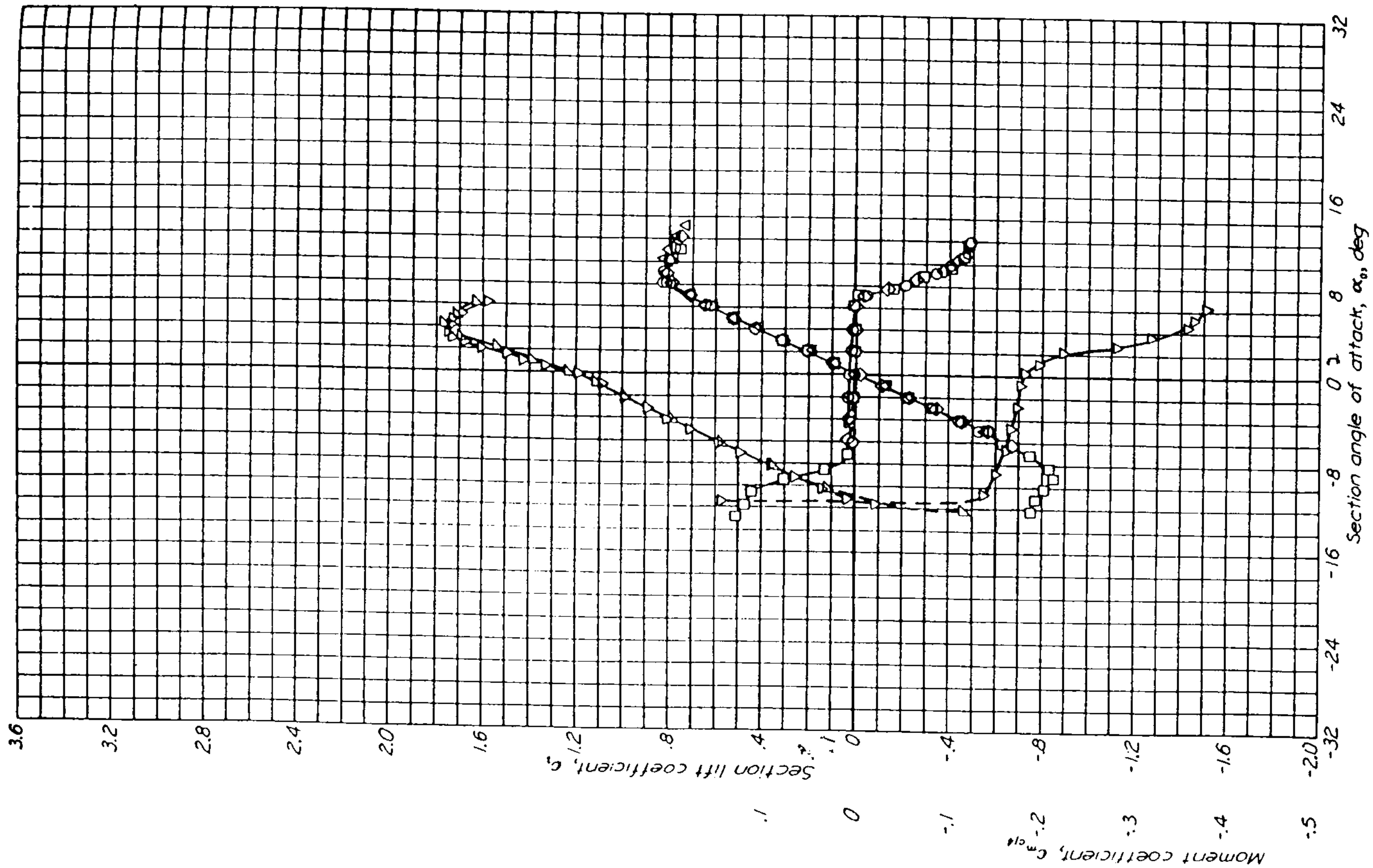
Through discussions with various members, a change has been sought in the NCLRA Fox Racing rules. The proposal listed below would eliminate the "Claim it rule" and replace it with an inspection for the top 3 finishers. Also the addition of heat races to be run where entry levels and time allow. This would allow for more participation in a event designed to attract and keep people in CL Racing.

Proposal 1; Replace the current "Claim it rule" with the following language.

****Continued on Pg. 7.**



NACA 64-006 Wing Section (Continued)



NACA 64-006 Wing Section

Continued from Pg. 4

The top three (3) finishers in the event shall have their engines undergo a mandatory technical inspection. Backplates & cylinder heads shall be removed and the engine shall be visually inspected for any modifications not allowed by current rules. Any entrant found to be in violation shall be disqualified. Any decision made by the event director shall be final.

Proposal 2; Replace the current 100 lap 2 pit 3 up language with the following;

Races are to be 100 laps 2 pit stops required. Races should be flown 3 up. Event director may run heat races if desired. Heat races shall be 100 laps 2 pits with the top times advancing to the finals. With the Final being 100 laps with 2 pits.

You are being asked to vote on these proposals!

Please fill in the ballot located below and return. Indicate either Yes or No. Your votes will decide whether to adopt these proposals. All Ballots must be received by July 1st. The results will be tabulated and announced at the NCLRA Banquet and in the subsequent issue of the newsletter. Any changes to the current rules will take effect as of Jan 1 1998.

Ballot

Proposal 1 Yes
No

Proposal 2 Yes
No

Signed _____
Name (printed) _____
Date _____

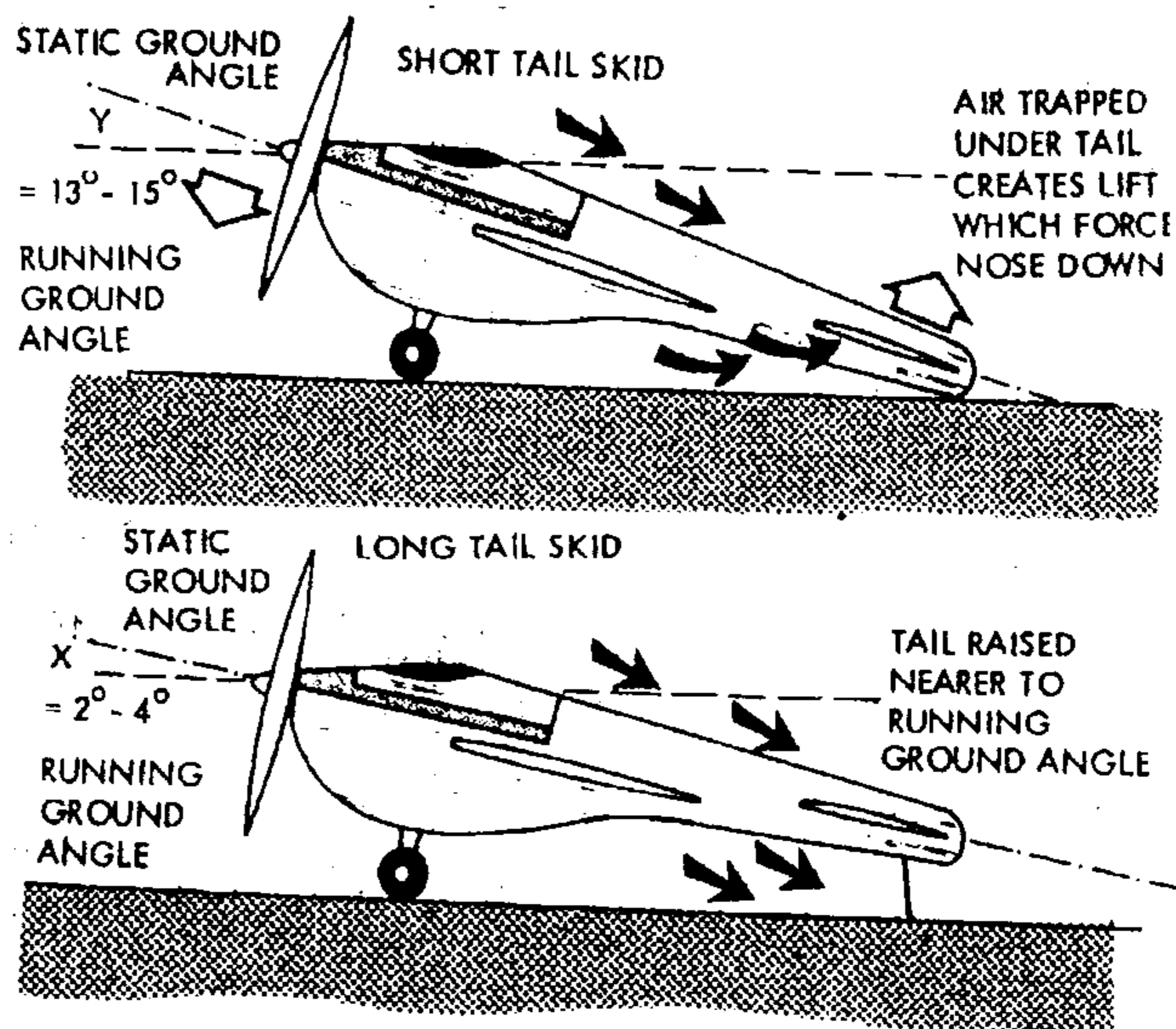
**Please Return to:
Larry Dziak
3 Starflower Dr.
Madison WI 53719
608-827-6779**

Tailskids For Windy Weather

Re-print Aeromodeler
Submitted by Bob Whitney

The problems of flying in wind are really confined primarily to the take-off. Agreed, heavy wind buffets the model badly when airborne and can also make for very heavy landings, but these do not stop you flying unless your model just cannot take it and cracks-up under the strain. It is the take-off problems that actually stop the racing. I am sure most of us recognize these wind created take-off problems for; either immediately after launch, the model nose dips sharply and uncontrollably and DRAT - there goes another prop; or the model turns in, looks at you disconcertingly and DRAT - there goes another model! The prop-smashing syndrome usually occurs when the model's tail is into the wind and the model-at-you syndrome when its nose is into the wind.

My conclusion about windy weather take-off performance was that it all depended on the 'static ground angle' vs the 'running ground angle'. I hope the sketches show what I mean.



The angle of attack of the model in these two cases is quite different. With my models angle 'x' might be 2-4° and angle 'y' 13-15° quite a difference. But why should this be so important?

First, a high 'Static Ground Angle' must be a bad thing when one considers just what must be happening to the prop-blast when the motor is started and the model is released. Quite obviously the prop blast is squeezed between the tail and the ground and the angle of the tail to the blast gives a similar effect to having a massive amount of down elevator. Even worse, when the wind is blowing hard and the tail is pointing into it, the prop blast tends to be trapped under the tail creating a high pressure zone under the tail. The result when the model is released is that its tail pops up as if powered by a big spring - a characteristic that will get worse the harder the wind blows. Little wonder then that the nose dips and

another prop burns a hole in your pocket.

Secondly, a big difference between the 'Static' and 'Running' ground angles must be a bad thing when one considers precession forces due to the rotation of the prop. On model release, even if you manage to control the nose dip explained above, inevitably the tail comes up quite sharply - especially with modern lightweight TR models that react so quickly. With the prop rotating in its usual direction (anti clockwise when viewed from the front and the tail rising, precession turns the model left. The more the tail rises, the more the left turn. Obviously a natural left turn coupled with a forward take-off point relative to the wind is a sure recipe for the pilot to get a good view of the wrong profile of his model.

If the above is true, then a long, long tailskid giving a shallow 'Static Ground Angle' should reduce the take-off upset forces to manageable proportions.

Now to prove the case, one way or another I went and modified my *Nelson Sprint* to have a long, long tail-skid (projecting almost 1 1/2in). The results were all I had hoped for vastly reduced nose-dip and left turn on model release. In fact in the wind of the Northern Gala it performed very sweetly. Incidentally, at that contest I noticed the Langworth/Broadhead's models had sprouted equally long tail-skids and chatting to Bernie Langworth revealed that he had done it for similar reasons to those I had concluded, and that he had found similar improvements.

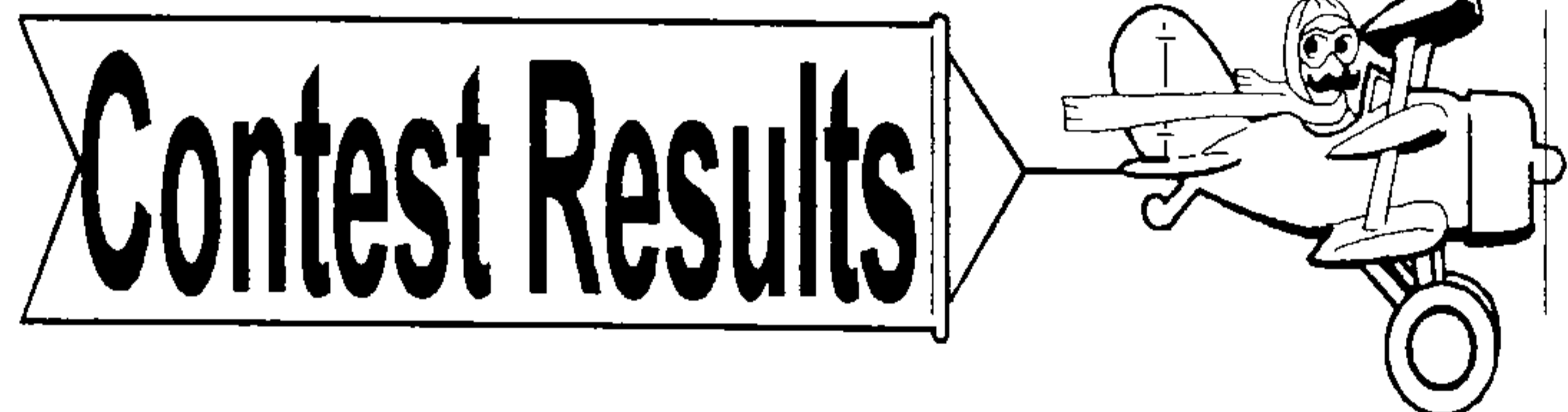
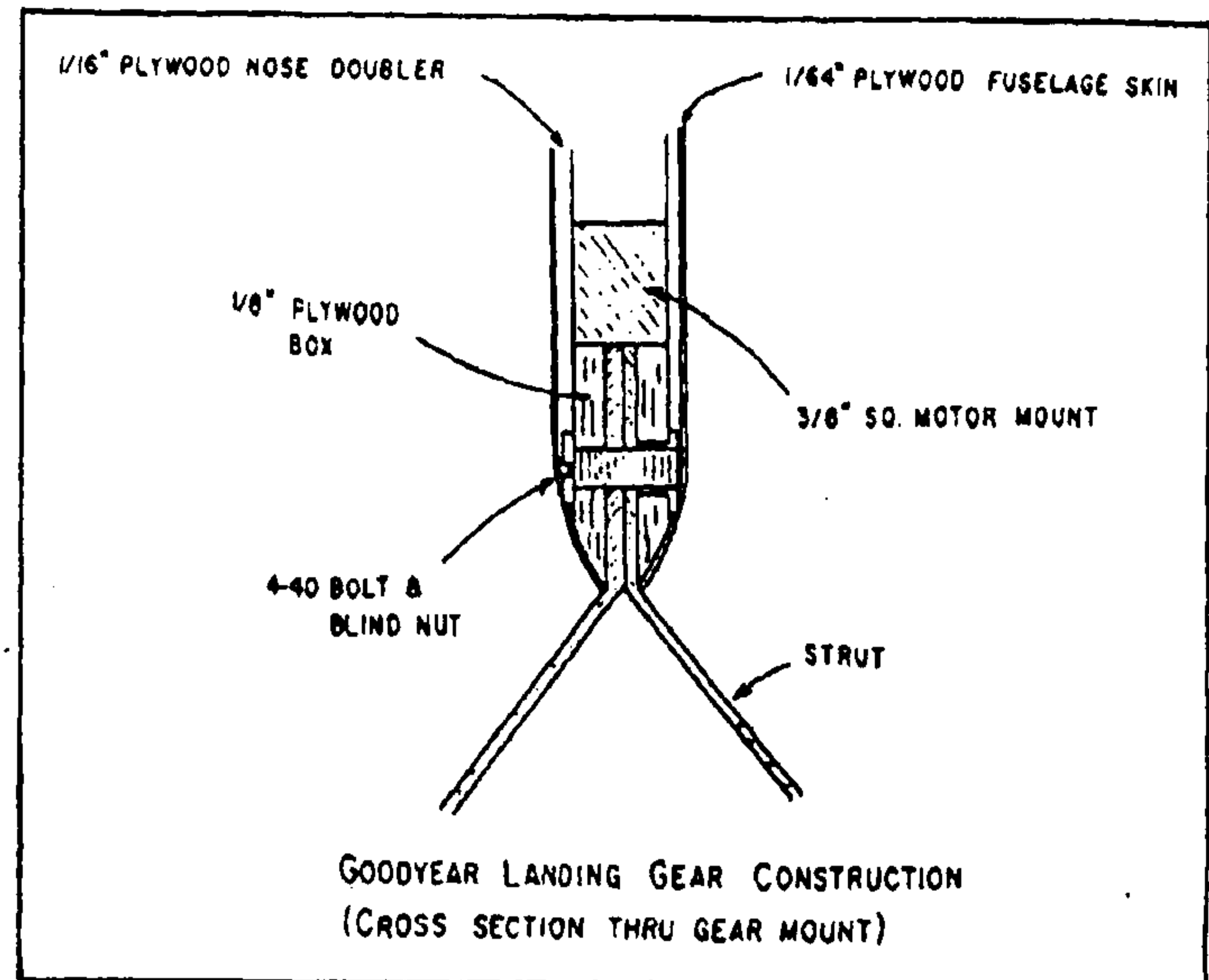
Mind you, if your model has no tip-weight, has an inward pointing wheel and has flexible flying surfaces, it is going to be horrible in the wind no matter what you do. But if your wheel is pointing in the right direction and if you have at least 10gm tip weight plus rigid flying surfaces, and you have trouble at take-off in wind, try a long tail-skid; it may well solve your problems.

Goodyear Gear:

Stoo Willoughby sent us this article, which originally appeared in Bill Lee's Racing Column in Model Aviation around 1979/80. We have taken a portion of the article for reproduction.

I build a box out of 1/8 plywood that is 1/8 inside dimension. This is just the size to hold the two struts that are side-by-side. The struts are placed in the box and the whole thing is drilled for two 4-40 bolts with two blind mounting nuts. The box and gear are glued in under the motor mount, before the 1/16 plywood doublers and 1/64 plywood fuselage skins are added. After the whole mess is together, it is suitably sanded and faired in. Bing! Enclosed gear! If you don't understand this explanation, see the drawing and try to make some sense from it.

Drawing top of next column.



Ice O Lated Racing

contributed by; Pat Matson & Ron Carr

The weather for this early event was sunny, temperature in the 40's with light winds.

NCLRA Fox Racing was flown (JSO) with 6 entrants doing battle. Airplane type ranged from (2) Mongoose IIs' a purpose built kit, a Ringmaster, and a Brodak Lightning Streak. The first and second place airplanes were both using the "old" style Fox engines, while the prop selected were Top Flight wood props.

Mouse I was also flown (JSO) with aircraft type being Scorpions, a homegrown design, and even a cardboard T/R style flying wing. The winning Mouse time also included changing a prop in the middle of the race.

Results

NCLRA Fox Racing	
Mike Matson	6:34.19
Pat Matson	6:50.14
Gary Frost	7:56.32
John Moll	8:32.28
Al Arunski	DNF
Mouse I	
Mike Matson	5:45.66
Pat Matson	6:18.50
Al Arunski	7:10.93
Alan Van Artsdalen	DNF

Ron Hoogenkamp, has sent us results from several contests, Ron also makes a point to send us the Victorian Control Line News. Thanks Ron, we really appreciate it.

Trans Tasman 1997

A friendly hard fought contest was held between New Zealand and Australia for the Trans Tasman Cup with NZ coming out on top in 3 of 4 events contested. Both teams had members who were in their first TT event and achieved personal best results at a high level of competition. Thanks must go to NZ for allowing Aerobatics to go ahead as AUS only had 1 stunt flyer interested in going, but this will not happen again, it was a 1 off exercise.

The only win for AUS came in F2C where all teams did well to win by 44 seconds overall.

The next TT is to be held in Australia, not yet known where but it will be in 1999 so start planning.



From Victorian Control Line News.

The annual trip to the Geelong flying field for Vintage T/R was made on Sunday, February

2nd. While Graeme Wilson and Mark Ellins were across the Tasman posting a world class sub-3.20 F2C T/R time, the rest of the lads were having a fairly relaxed time on the well mown circle adjacent to this popular radio field. No one seemed in a hurry to get the contest going, the half dozen entries content to take turns practice flying in the relatively calm conditions. However, the wind was steadily picking up so the real thing was soon underway. Vintage A and aerobatics were the only official events, but Vintage B and Bendix models were also on our flying agenda.

It was great to see some new faces around the circle. Mark Kennedy and young Brad Hurley are dead set keen to be involved in the action. Mar-k's pitting of Peter Hatherell's kindly loaned spare CS powered Voodoo is already of a high standard although Brad's flying is in need of a bit more practice. He'll soon be good as gold. Being tall like Colin Ray, he should immediately be comfortable and in full control when he gets to fly three up. So John Hunting kindly stepped in to fly the Voodoo for Mark and Brad watched carefully as the old Master strut his stuff. Makes it look easy, doesn't he! A best time of 4.18 resulted.

This time was marginally better than Peter Hatherell and Vic Cresp's best time of 4.23. The Horsham Hurricanes were, as usual, enjoying themselves although one gained the sneaking suspicion that they couldn't wait for Vintage B to start.

The Dream team were fooling around with Taipan power and again proved that in the right hands these motors are still a force to be reckoned with. Maybe some secret fuel helps too. I must ask! ... Times of 3.50.19 and 3.57 are a good indication that the Taipan has something extra going for it.

The Cosmic Rays were scooting along, although not at warp speed like the real cosmic rays in space. Still, their 4.03.4 was going to get them into the final and guarantee taking home a trophy of some sort. Jim's CS had plenty of revs but it was not all being translated to airspeed. Colin's flying was up to his usual high standard. He has certainly progressed over the past few years. He must now be considered as one of the elite group of top race pilots in Australia. Part of his success is his willingness to look, listen and learn. It's certainly a fact that even the world's best pilots are still learning new tricks of their trade.

Old rivals Peter Van Meurs and John Hallowell (no, I don't mean in age ... just that they have been flying against one another for almost a decade) teamed up for the first time and rotated the original Oliver Alien and PAW Footprint. Times were within a second or two with

FAI TEAMRACE

	1	2	3
1. G. Wilson/M. Ellins AUS	3:26.37	3:19.50	3:50.87
2. G. Potter/D. Bailey AUS	3:35.31	4:37.78	3:38.95
3. D. Palmer/R. Palmer NZL	3:55.38	3:38.60	DNF79
4. R. Justic/R. Owen AUS	3:38.72	DNF1	4:29.85
5. G. Lewis/R. Bolton NZL	3:41.84	4:29.50	4:32.77
6. A. Robinson/D. Robinson NZL	4:06.30	3:57.16	4:18.0
Australia	10:33.53		
New Zealand	11:17.60		

ASIA PACIFIC CONTROL LINE CHAMPIONSHIPS 1997

Held at Whangarei on the 25th & 26th of January 1997

FAI TEAMRACE

	1	2	3	FINAL
1. G. Wilson/M. Ellins AUS	3:25.21	DNF	3:29.51	7:04.56
2. G. Lewis/R. Bolton NZL	3:32.79	DNF80	3:39.16	9:30.43
3. R. Justic/R. Owen AUS	3:30.09	3:39.45	4:01.00	DNF73
4. D. Palmer/R. Palmer NZL	3:33.96	3:37.04	3:53.00	
5. G. Potter/D. Bailey AUS	3:35.54	3:59.50	DNF	
6. A. Robinson/D. Robinson NZL	4:22.92	4:36.19	3:53.11	
7. R. Brown/N. Low NZL	4:16.19	DNF3	4:01.50	

71st AMA Nationals
July 13-17
Don't Miss the Excitement

the Alien just getting the nod for a final three spot with a 4.03.81. The Factory Special PAW was returning up to 65 laps at reasonable speed before a crack developed at the tailplane and fuselage junction causing the tail to tilt and the model to hit the ground. Nothing superglue can't fix! The fastest model was the white CS Voodoo V, but a broken rod soon after takeoff in the first heat meant the end of any chance of a decent time. I have been running CS's since day one and this is my first collapsed rod! Maybe it's just luck.

The final was won by the Cosmics in the fairly pedestrian time of 8.26.03. Second was Van Meurs Hallowell with a snail paced 9.14.91 (too many stops) ahead of the Hunting brothers who retired early and had to sit it out in the rabbit crap (the Geelong field has millions of rabbits) while the others finished the race. A vote of thanks is due to the Geelong Club and the hardworking members who make this control line day possible.

The contents of the second last paragraph has reminded me that next year, in October 1998, Vintage A Team Race in Australia will be 10 years old! Hopefully, there will be a celebration of some sort for this country's most popular team speed event. Certainly we have come a long way since October'88. There have been highs and there have been lows... but mostly loads of modeling enjoyment. it would make quite a story. However, the real success is the continued enthusiasm displayed by people like you... yes, I mean you, who are reading this now. It is your keenness for the concept of Vintage Team Race that will keep this great style of racing alive and take it well into the 21 st Century. If it sounds exciting, that's because it is.

Vintage B was not run for trophies, but definitely for fun the Huntings had to run off early so their Enya 29 didn't get to take to the western district skies and Peter Van Meurs similarly powered Crescendo was still not sorted. So Ray / Ray, Hatherell / Cresp and Hallowell Kennedy lined up for a scratch race. Mark Kennedy had my old OS 25 Razzamachas quickly away and it was going strong for just over 40 laps when the glow plug came unscrewed! Now that's a new one ... and a definite starter for the second list of 101 things that go wrong! We decided to retire and watch Peter and Vic, those champions from the bush, show the others what consistency is all about. They did just that, spoiling any chance the Cosmics had of adding the daily double to their growing list of achievements. The winners won by 25 seconds in a creditable 7.45.7, ahead of Jim and Colin on 8.10.7.

Results of VTR at Geelong, 2/2/97.

1. Ray / Ray	4.30.10	4.03.40	8.26.03
2. Van Meurs / Hallowell	4.18.18	4.03.81	9.14.91
3. Hunting I Hunting	3.57:20	3.50.19	131 DNF
4. Hallowell I Vanmeurs	DNF	4.05.97	
5. Kennedy I Hunting	4.18.28	4.36.10	
6. Hatherell I Cresp	4.23.34	DNF	56

John Hallowell



Send contest information to:
Dave McDonald
 P.O. Box 384
 Daleville, IN 47334
 e-mail DMcD143@aol.com

April 26 Portland OR. Delta Park, "Spring Tune-up Racing. Events: 313 (J) (S), NW Sport Race, NW Super Sport Race, NW Flying Clown CD Wayne Spears TX# 503-286-1397

May 10 Vancouver, BC Events: NW Sport Race, PAC .15 Sport Race. Contact Mike Connor TX# 604-465-7277.

May 18 Valley Park MO. Buder Park. Midwest Speed & Racing Champs. Events: 313, 314, NCLRA Fox Racing. CD Robert Arata, 561 Goldwood Dr. Ballwin, MO. 63021 TX# 314-391-0272

May 18 NJ Gloucester County Inst. of Tech. Events: 1oz Goodyear, Quickie Rat, 2oz Big Goodyear. CD Lester Froelich 356 Walnut St. Coatesville, PA 19320 TX# 610-692-6469

May 23-25 Roseburg OR. Roseburg Airport. Northwest C/L Regionals. Events: 311, 312, 313, 314, 317, NW Goodyear, NW Sport, NW Super Sport, NW Clown. CD Craig Bartlett, 205 N.E. Cedar Lane, Corvallis, OR 97330 TX# 541-745-2025

May 24-25 Topeka KS, Gage Park, Top Class Annual. Events: #312, 313, 314, 317, Class II Goodyear, big Goodyear. CD James Lee 827 SE 43rd St. Topeka, KS 66609 TX# 913-266-7714

May 25 Sugar Grove IL, Waubense College, Midwest C/L Championships. Events: 317, 313, Fox Racing. CD Bill Calkins 317 Snow St. Sugar Grove IL 60554 TX# 630-466-1531

May 31-June 1 Muncie IN, AMA National Flying Site, Mid-America Championships. Events F2C (both days), #317, NCLRA Fox Racing. CD Dave McDonald, P.O. Box 384 Daleville, IN 47334 TX# 378-7228

June 1 Middlesex, NJ. Mountainview Park. Spring Racing Challenge. Events: 311, 312. CD Brian Silversmith 86 Kingsland Circle, Monmouth Jct. NJ 08852. TX# 908-274-8945.

June 14-15 S. Elmonte, CA. Whitter Narrows. Knights "Joust". Events: 313. CD Kenn Smith 521 jansen Ave. San Dimas, CA 91773. TX# 909-592-2100.

June 14-15 Carmichaels, PA. Brodak Fly-IN 1997.
Events: NCLRA Fox Racing, NW Flying Clown. Racing
ED Dave Braun 909-687-0374 or Brodak's #412-966-
2726

International

May 10-11 Breitenbach 13. International Jura-Cup 1997
SWITZERLAND F2A, F2B, F2C WORLD
CUP

(Borer Heiner, unt. Lebernweg 14, 4208 Nunningen,
Switzerland, Tel. & Fax. +41 - 61 - 791 08 09)

May 17-18 Madrid III Open International "San Isidro"
SPAIN F2B, F2C

(Alfredo Javier Morales Zumel, c/ Mirabel, N15, 3, C,
28044 Madrid, Spain, Tel. + 34 - 1 - 7052276, Fax. + 34
- 1 - 5930716)

May 17-19 Saint-Etienne 1997 Internationals of Saint-
Etienne FRANCE F2B WORLD CUP
F2B F2A, F2C

(Gilbert & Veronique Beringer, 42940 Chatelneuf,
France,
Tel. + 33 4 77 76 82 95, Fax. + 33 4 77 76 80 09)

May 24-25 Moscow RUSSIA Gold Engine and
Krasnorutsky Cup F2A, F2C WORLD CUP
(National Aero Club of Russia, 88/1 Volokolamskoe Sh.,
123424 Moscow,
Russia, Tel. + 7 - 095 - 232-68-50, Fax. + 7 - 095 - 194-
95-84)

June 14-15 Landres FRANCE 13th Grand Prix of
France

WORLD CUP F2A, F2C F2B, F4B
(Jean-Paul Perret, 1 rue Jean Jaures, 54640
Tucquegnieux, France,
Tel. +33 3 82 21 29 87, Fax. + 33 3 82 21 88 34)

July 5-12 50th Australian Nationals. Darwin. Events
Goodyear, F2C, 2.5cc Rat Race/Jnr, Vintage A Team,
Bendix, Mini Goodyear, 1/2 A Team Race, Vintage B
Team Race, Simple Rat Race.

CONTINENTAL CHAMPIONSHIPS

July 13-19 Valladolid SPAIN EUROPEAN
AEROMODELLING CHAMPIONSHIP
FOR C/L F2A, F2B, F2C, F2D (Antonio Rojas Ramos,
Guadalete, N2, Bajo, 47005 Valladolid, Spain,
Tel. +34 - 83 - 291541, Fax. + 34 - 83 - 308719
Email: aerosafa@vasertel.es



Editors Desk

As you can see we have had a full mail bag. I would like to thank all of those who have sent and continue to send information. It makes my job much easier when the mail man is busy. We are still looking for people to contribute articles on Goodyear, Fast & Slow Rat, and T/R.

We would also like to take a moment and thank Thomas Wilk for sending us a monumental package of three views, for many airplanes. We have secured permission to reproduce these in our newsletter, and they will be forthcoming.

It is nice to see several contests around the country are now using the NCLRA Fox Racing Rules. It is important that you take a moment and VOTE ! on the new rules proposal for this event. Remember this is our event, and you have a vote so please do so.

Next month we will announce the NCLRA Hall of Fame inductee(s) for 1997. The official induction will take place at our Nats banquet. Information on the banquet and other Nats information will also be upcoming. We are pleased that the volunteer list has grown for this years Nats, this will make Roy's job as Racing Event Director much easier. See you at the Nats.

We are pleased to continue our association with K&B in providing fuel for the 1997 Nationals. K&B has announced that you can now purchase the 10% Nats fuel, simply by calling K&B. The fuel is reported to be \$14.50 per gal/ case lot. Plus hazardous material shipping charge.

NCLRA Ad Policy;

We have received several inquires about add space. We have decided to adopt the following guidelines. Personal ads by individuals will be Free! Business Card 3 1/2 x 2" will be \$5.00 for two editions. 1/4 page will be \$20.00 for two editions. Your add must be camera ready.

What's Coming

Your Comments
Nats Preview
Hall of Fame
Contest Calendar
Plus More

**Nats Volunteers
Needed Contact
AMA Competitions Dept.**