

From: National Control Line Racing Association
Bill Lee, President
601 Van Zandt County Road 4815
Chandler, TX 75758



TO:

SPECIAL MOUSE ISSUE!



Torque Roll!!

**The Official publication
Of the NCLRA
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President's Column- December 2004

Bill Lee

NCLRA Finances: Elsewhere in this issue you will find a financial statement of NCLRA. While the Bylaws do not require publication of this information, it seems that you, the membership, are entitled to know what's going on and how we stand.

Briefly, the financial state of NCLRA is good. Dues and income from the NATs have historically been the primary sources of income to the organization. And the major expenditure was producing and mailing the *TorqueRoll*.

Over the past 2½ years, we have grown the treasury by a substantial amount. And there are a couple of major reasons for that.

First and most significant, the cost of producing and mailing this fine publication, the *TorqueRoll*, has been very low. We have received tremendous support by the Competition Department at AMA Headquarters in this area. Without that, we would simply not be able to produce the *TorqueRoll* in anything like the quality that you have seen it over the past couple of years. We owe a great big Thank You! to AMA for their support.

Second, we have had a reasonably substantial income from the sale of the t-shirts and hats. Again, as a SIG we get support out of Headquarters: the cost to us for the hats and t-shirts is very low, and this lets us sell them at a very reasonable price and make a good profit for the organization.

We do have some outstanding "bills" that we need to consider. More on that below.

2004 World Champs: We as the CL Racing SIG were responsible for running F2C at the World Champs this past summer. And as I have mentioned before, we did a GOOD job and can be very proud of how it all worked out.

As a part of the World Champs, we needed to acquire a bunch of equipment that we have not historically had in our possession. Some of this was purchased by AMA and some (most) was purchased by me. Here is an incomplete list of "stuff":

Pipettes: These are the very accurate devices that allowed us to measure tanks quickly and accurately. We first saw them in Sebnitz in 2002 and purchased two for our own use, along with the 1-liter bottles on which they are attached. These were expensive items, but were purchased with AMA money. I have them in my possession since they were of no use to anyone else, we can use them, and I was fearful that they would be damaged or misplaced if left at AMA HQs.

Various measuring tools, micrometers, etc. Again, AMA bought these tools. Most were in use by the central technical control. AMA would like to return the unused tools, but that may not be possible. I have suggested that SOMEONE at HQs needs to have a set of GOOD micrometers, etc, and that they should be kept (under lock) at HQs. They may do that: that is their decision.

Bibs for the pilots and pitmen: my wife made all of these. We purchased all of the material, velcro, etc, and she designed and sewed them up. There is about \$100 worth of materials in

them. I have all of the bibs in my possession.

Now the "biggie", the F2C Lap Count Display system.

If you did not see the display system, please go look at a previous *TorqueRoll* where we reported on the World Champs. The system consists of the three large display boxes hanging on the tower, and a couple of boxes of electronics that were inside the tower. All were connected to a laptop computer (mine) with the software I wrote driving the entire system. Along with the displays, there are 10 hand-held lap counters which have been modified to include a microswitch, wired to the electronics of the system. At each segment, three lap counters were in use, and the software kept track of their activation each lap and displayed the lap count appropriately.

The electronics and displays were a commercial item. Well, actually, the display modules and the boards with the electronics on them were purchased. I had to build the enclosures and add all of the connection wiring, etc., myself.

The display modules and associated electronics were about \$3,600 and AMA covered that cost. But all of the rest was financed out of my pocket. I do not have an exact number, but the amount my wife has accumulated on our records is in the \$4,000 ballpark. And that is just the amount out of my pocket for just the F2C event for the World Champs.

I have spoken with AMA (especially: Dave Brown, AMA President) about working a deal with AMA. I believe the display system is useful for events other than the World Champs. Yes, it is a large, cumbersome piece of equipment, and yes, it requires someone to operate it, but it REALLY adds to the competition! We used the system (it's maiden voyage!) at a local Dallas contest this past summer before the World Champs, just as a test, and the competitors were ecstatic about it. The lap display adds a very interesting element to racing, both for the competitors as well as the spectators.

I would like to keep the system for our use, perhaps at some major local contests, but certainly at the NATs and F2C Team Selections. I proposed that to AMA and there seems to be agreement to do that, although I would need to formalize that in the future. I have the system in my possession, again, fearing its damage or loss if left at AMA HQs to be stored.

I have asked the NCLRA Board the following. I would like to recover a portion of my expenses for the F2C Lap Count Display system. In return, I will keep the system, continue to develop the software to be more usable for "local" contests, and provide the system to some selected (major) contests around the country. Something like ½ of what I have invested out of my own pocket. The Board was agreeable to this, but I have NOT YET turned in a list of expenses. Rather, I would like you as the members of NCLRA to know of this (major) expense, and if you have any concerns, please contact me as well as your District Representative.

NATs: Each year the NATs management committee meets in the fall to address issues about running the NATs. That meeting is held in Muncie, usually in October. It was held this year on October 23, and I was there. In fact, I have attended the last three of these meetings.

Well, as you know, I don't live in Muncie, although it sometimes seems like I do since I seem to spend a lot of time there. :-) So a trip to AMA HQs costs me money. My trip this

month cost me about \$300 for gas and two nights in a motel on the trip up and back, and could have been more but I had a place to stay in Muncie that did not cost me anything. Other SIGs cover, at least to some degree, the expenses of their representative for this meeting.

I am not asking for my expenses to be covered, but just need to let you know of these expenses.

NATs 2005: The NATs in 2005 will run to the same schedule as in 2004. I will have a 2005 NATs schedule on the NCLRA website by the time you receive this issue of the *TorqueRoll*.

Fox Racing at the NATs: An interesting and popular development has been taking place in Fox Race: allowing non-Fox engines to compete. Specifically, stock plain bearing 25's. Several have labeled this "LA-Fox" with the acronym initially coming from the fact that the OS LA25 was the dominant engine. However, the acronym is broader than that and has no been deemed to mean "The new Fox Race as run in Los Angeles!". :-)

This formula has been run in some contests in California with good success. So we have decided to run Fox Race on Sunday as follows:

Fox Race will be run combined "Current Fox Race Rules" and "LA-Fox Rules". The heats will be drawn without any concern for who is using what kind of equipment. However, at the end, there will be two sets of awards, one for each category.

LA-Fox Rules: Same as the standard Fox Race rules with the following changes.

1. Engine must be any **stock** plain bearing engine with maximum displacement of .25 cu. in. We will determine the maximum venturi size and publish it on the NCLRA web site as well as in a future *TorqueRoll*. See the current Fox Race rules for further specifics on the meaning of "stock".
2. Props: Propellers are to be wood or plastic, commercially available. The only rework permitted is balancing.

Yes, there are some unanswered questions, but it looks like a fun addition to CL Racing.

Membership Renewal: All memberships should be renewed now. NCLRA memberships run through the calendar year, so even if you renewed as late as the NATs or later, you still need to re-up for 2005. There is a membership renewal form in this publication. Please send it in with your dues to Tom Wilk.

Your membership expiration date is listed on the label on your issue of the *TorqueRoll*.

Elections: The NCLRA elections next year will be for your District Representatives. We need every member to consider the performance of their representative and to decide if they have been doing their job. Nomination period will be March and April of 2005.

Hall of Fame: NCLRA has a Hall of Fame. The procedures under which it is run are published on the NCLRA web site, along with the current members. Nominations must be made between January and April, and must be made in writing to the administrator, Dick Lambert. Please note that any nomination must include a short biography of the individual(s) nominated which highlights that person's achievements and/or contributions to the event of control line racing.

VP REPORT- STEVE WILK

Season Greetings from the Great White North
With all the running around getting ready for the seasons I keep thinking about the summers past and the summers to come. It is below freezing outside but on the bright side it is above Zero. We have a dusting of snow outside with inches and feet yet to come this season. But I keep thinking of warmer weather and the flying season to come. I'm Making my List and checking it Twice, No not my Christmas list, my list of new plans to build for the next flying season. Like a kid waiting for Christmas I'm waiting for the flying season. OK enough of this rambling, what I'm trying to say is Merry Christmas to all.

And now for something completely different.
I want to talk about safety this month. First, let's talk about safety in the shop. There are couple of things I do to protect myself in the shop. Without our hands it would be tough to pursue our hobby. So when I'm working with glues, resins or paint I always wear disposable rubber glove. A lot of these things can be absorbed into the skin and cause health problems down the road, this also makes for an easier clean up. And when I using CA's, I first apply hand lotion so if I do get some CA on my hands it doesn't stick to my skin as easily. Power tools can pose great dangers. Use the safety guards and use a push stick to avoid contact with your fingers. I speak first hand on all the above. I have had blisters on my fingers from resins, cut my finger apart from CA and had one finger reattached after coming in contact with the table saw. Your face also needs protection. I wear a good respirator when working with paints and resins. Which makes sense, but it is just as important to wear it when sanding. Balsa dust can affect you but the thing that can be a greater irritant is when working on Carbon Fiber props. CF dust is very fine and is easily breathed in and can also leave you with dry and itchy skin. I wear long a sleeve shirt, rubber gloves, a respirator and safety glasses to keep the dust out. I also wear safety glasses when working with power tools but also with CA.

At the field we also need to protect ourselves and not just the spinning props. I wear Safety sunglasses that protects from the sun but also from fuel getting in my eyes and dust and any other objects that I might come in contact with. When pitting, helmets are a great idea not just at a contest but when practicing as well. I see more of us wearing ear plugs when around running engines. Open exhaust helps us get the power we want but the noise can cause damage if exposed to for any length of time. And don't forget Sunscreen!

Lets face it we need our hands, eyes, ears and lungs not just our hobby but for everyday life itself. This is a great hobby and we can enjoy in safety if we take the necessary steps to protect ourselves.

My family wishes all the best to you and your Family this Holiday Season.

Steve

NORTHWEST REPORT-MIKE HAZEL

Contest Report: Fall Follies, October 9 & 10, 2004. Salem, Oregon

This is the usual last contest of season in the Northwest, racing or otherwise. This has turned into a stunt love-fest, but we still get a little racing done. This year the only class was NW Sport Race (Fox 35). We had just five entries, but went ahead and did prelim races to maximize the racing action. (and of course to make the stunt troops wait their turn!)

After the castor fumes cleared, the top three teams for the final were Mark Conner, Mac Ryan, and Todd Ryan. Mac and Todd usually team together, and this was no exception, so Todd decided to withdraw and let Pops do his entry. This then let the Nitroholics team (John Thompson / Mike Hazel) back in, but mostly for comic diversion since their entry was plagued with needle setting problems.

Mark Conner piloted a nice smooth race and snagged first place. Mark's pitman was Pat Johnston, legendary stunt guru from PotatoLand. Mark is also primarily a stunt flier, so in a strange twist of fate, the stunt fliers came, they flew, they kicked butt! Pat incidentally, provided one of the more hilarious moments in the racing. He was poised to catch the incoming deadstick racer for a pitstop, and then at the last moment saw it was not the entry he was supposed to pit. Rather than roll out of the way, he jumped over the incoming plane!

Coming close in second was Mac Ryan. And as mentioned before the Nitroholics team were there for comic diversion, and running some slow traffic.

The Official Results: NW Sport Race (140 laps)

1)	Mark Conner	9:16
2)	Mac Ryan	9:29
3)	Nitroholics Team	130 laps
4)	Todd Ryan	(withdrew from final)
5)	Joe Just	DQ (lap overrun)

Not much else going on right now, so I will tell a funny story, which just happens to be true. The names won't be changed, since nobody is innocent anyway.....

Way back about 1980, give or take a year or two, I attended one of Frank Hunt's Speed and Racing meets in Merced, California. Back then I was a semi-serious Rat entrant and pilot. One of the typical attendees at these contests was Tim

Gillott, rat race pitman and engine reworker extraordinaire, and also at times a master of glib racing humor.

Well, it seems that Tim's regular pilot was not in attendance at this contest. However, Jed Kusik was there to fly some Goodyear and Team Race. Tim goes and asks Jed to do piloting duties for him. Jed's response was less than positive, something about hiding under cars when the Rats were on the circle. However, he did somehow manage to twist Jed's arm into doing pitman duties for the entry. Hey, where's this leave Tim? Why piloting of course!

So how many of you old timers ever remember Timmo working on the handle end? With eager anticipation, I knew this was going to be great fun. When I flew Rat against TG, he usually beat me (but not always!), and that was of course with him on the airplane end. Can't remember if I was flying my Shark, or one of my Yippees. Also can't seem to remember if I had my regular pitman or not.

So anyway, the two minute countdown begins, and standing near me in the center circle, Tim bows his head and utters the pilot's prayer, "Oh Lord, please let me have the faster plane!". Moments later we were both in the air, but wait, Tim's prayer was not heard by the Racing Diety! Though he managed to finish to the race, he was plagued with sputtering pits and a not quite right needle setting. So I won the race over Tim, handle-against-handle. That's my story, and I'm sticking to it!

Later dudes! ----- Mike Hazel -----

North Central Report - Les Akre

Hello everyone, I am your new North Central District Representative. With Steve Wilk moving up to the position of Vice-President, I have been appointed as his replacement. First of all, I would like to congratulate Steve, and his father Tom, on their newly elected positions. I would also like to thank Bill Lee for this opportunity, and I will make my best effort to represent the North Central District as well as Steve has in the past.

I guess a little background is in order. I have been building and flying model airplanes since the mid 1970's. I have been involved in racing from the very start, and, although I once only specialized in Scale Racing, I have now branched out into several other racing events. I have flown some speed in the past, and may fly some stunt as payback for convincing a club full of stunt flyers to come and race. It will be worth it!

I would like to ask at this time, that anyone having any questions, concerns, or information they would like published to contact me using the contact information given at the back of each Torque Roll issue. I will send in any and all information supplied to me. On occasion, I may have need to solicit input from North Central members concerning various issues, please be generous with your time and input when these situations arise, believe me, they affect us all!

I would like to take a little time now and share the results of some testing that Paul Gibeault and I conducted.

Several members of our club have expressed negative feelings towards the Fox .35's we use in our sport racers. Generally these feelings revolve around the vibration levels produced by the Fox, and the negative effect it has on the lifespan of our airplanes. Several of our club members

(including myself) have made the move to O.S. 25 LA engines. The following test compares the performance characteristics of these two motors, in the interest of finding whether or not they can both compete at the same level.

The remote needle valve assembly on the O.S. was bypassed in favor of the traditional venturi boss mounting position because it leaked air, and caused inconsistent runs. The crankcase venturi boss holes need to be enlarged to suit the Super Tigre, or Nelson needle valve assembly used by most racers. You will also need to enlarge the holes in the venturi as well.

Here is what we found:

Flite Streak, Fox .35 8.8x8.5 APC 29% oil (Fox fuel)
Paul flying, arm on chest 23.0/7 average

Super Fly, O.S. 25 LA 7x7 APC 20% oil (std. Race blend)
Les flying, arm on chest 23.1/7 average

As you can see, the performance of the two motors was very close. Each airplane suffered from the effects of having the engine lean out during flight. Therefore, the airspeeds shown are an average of timings during the complete run. Had we tested the Fox on the std. blend of race fuel instead of the 29% oil content Fox fuel, it would have been faster by almost a ½ second. As tested, I'll call this one a draw. With the Fox .35 using the std. Race blend (20% oil), give the advantage to the Fox.

From our clubs point of view, this test shows that those club members who wish to continue to use the Fox .35 will be able to compete on even ground with the O.S. 25 LA, and vice versa.

I understand that some local clubs in Pennsylvania and California, are also allowing certain plain bearing Schneurle port engines to compete alongside the traditional Fox's in local sport race events. This makes sense from a local club level, as many clubs are small and with few members. In this day and age it would be more likely for a modeler to have a modern .20 or .25 sport motor in their possession than the traditional Fox .35 that was popular 15 to 20 years ago.

This brings me to the reason for this test in the first place. There is no point in pushing for everyone to use an XYZ motor for a racing event when most of the club members have PQR motors. Then there is the problem of club members who use the XYZ motor but are not happy with it. If we are to breed activity in racing at the local level we must be prepared to allow local racing events to follow a natural path of evolution, that is what our club intends to do.

That is all for this issue.

To everyone, happy flying, and have a Merry Christmas and a happy New Year!

South West District Column - NCLRA -
December 2004.
By Douglas Mayer

So what's new in the SouthWest this month? Also known as "All the news that fit to print, and just a bunch of extra trash!"

We just had our premier event of the year, "The Virgil Wilbur Memorial" at the end of October, here in Los Angeles. We had 2 days of organized events with the local speed fliers and the combat fliers. Each club runs their own events, and SCAR ran two days of racing, with 4 or 5 events each day. This year Jim Holland handed out custom T-Shirts that he designed in lieu of trophies. It was a nice break from the normal hardware and the T-Shirt design was really cool. We had a good turnout of LOCAL RACERS, and a good turnout from Northern California, Bob Murphy, Bill Cave, Vic Garner, Jim Holland and team Randy Bush/Jim Persson, and Uncle Mike MacCarthy who teamed up with me for some good "Back-at-it" Team Racing. Unfortunately, we had a "NO SHOW" from Arizona. We missed the Arizona guys because they really help to make for a big regional contest. We are glad that everybody else made the trip to LA for some good racing. Also in this issue is the contest results from Jim Holland and Don Burke who did all the typing and submitted to Tim Stone for me.....Thanks Guys, your help is appreciated.

I didn't take notes, but a few important items seem to stick in my memory banks. One of the most important things that made for a great weekend was the timing crew. One of our local guys, Darrel Albert, (father of combat champion, Darrin Albert), brought along 3 of his granddaughters and one of the girl's friends. These 4 little girls did a fantastic job counting laps and timing races. Not only did they do a great job, but they showed such enthusiasm with every race time recorded and of course took a load off of the participants work load. They all had over-sized NCLRA T-Shirts, which was extremely cute. They also were awarded SCAR T-Shirts at the award ceremony. The thought of a "night-shirt" comes to mind when you see a 4'-9" girl in a 4'-0" shirt.



Another note is sad for me to report. My good friend and pitman, Dale Long is out of the prop flipping business indefinitely. Dale has undergone several surgeries on his wrist for "carpal tunnel syndrome". He says that his wrists are in extreme pain. Unfortunately for both of us, he hasn't been able to flip props for over a year, and now he's reporting that he may never flip again. Dale came to the contest to hang out

with the guys, but it's a real bummer that he's stuck on the sidelines in the spectator section. One thing that Dale has been able to do is make some custom shutoffs. Look for more on this following my column.

What about the field and maintenance crew? Ron Duly and Charlie Johnson are amazing. I have never seen such an array of field maintenance equipment before. They have been showing up early for the contest(s) and making Whittier Narrows (our race site) look like a world championship site. Ron owns a professional grade paint machine and has painted all of the racing circles with a fresh coat of paint, including pitting segments. He has also recently painted the old pilot's circle black (@ 15'-0") and painted a new pilot's circle at 14'-0". Then on contest day, they show up and trimmed the grass back to the edge of the blacktop, swept the dirt and dust, got out the leaf blowers (dust blowers) and I even witnessed Ron trimming the branches on the trees!!!!



Lots of guys showed up early on Friday since it was a 2-day contest. On Friday night, I dragged out all of the guys to a local Mexican restaurant where you can get the whole fish for dinner. This includes the tail, the backbone, the head, and of course the eyeballs!! Everybody moaned and groaned when they saw Uncle Mikey and me get full fish dinners. I got a picture of Ron Duly trying to scarf some extra fish off of my fishbone. I guess all of that yard work made him hungry.



Oh Yeah, the contest was 2 weeks before halloween, so we got some good shots of the slowest pitman in the world. Word has it that this guy is still trying to get this clown started from last year's contest.



Oh yeah.....I forgot to mention that we raced our butts off for 2 days straight! The weather was just beautiful. We went around and around and around in circles until I thought that my ankle would snap off. Take a look at the contest results and it should give you a good idea of the racing that went on for the weekend.

Just yesterday, December 5th, we had our last contest of the year. It's the annual "Toys for Tots" event, which is timed very poorly in the month of December. The speed fliers always collect the toys and donate them to the local fire department for needy children. Unfortunately, December is "rainy season" in Los Angeles, and we have a 50%-50% chance of getting rained out. This year was no exception. Jim Holland reports that 8 guys showed up to donate toys and race one event until the entire contest was called off due to heavy rain. I slept in, looked out the window, rolled over and went back to sleep. It rained all day long. I'll be donating my toy at my construction site, where it will still find it's way to the fire department and a happy kid.

I called Vic Garner yesterday to give him a hard time about not driving 400 miles to get rained out. He told me that he didn't make the trip due to a recent trip to the hospital. Vic went in to have some work done on his heart and spent a week

in the hospital. I think he got his by-pass ports cleaned, got a new venturi stint and possibly got his valves chromed. Fortunately, he was able to make it home for the thanksgiving holiday to celebrate with his family, which included children, grandchildren, and great grandchildren!!! Vic sounded in great spirits, he's ready to go to re-hab therapy, and he reported to me that he's got a brand new quickie rat 90% complete. I'm glad to report that Vic's in good shape and still ready to come out to kick your ass.

Elections.....UGGGGHHHH!!!!, you say! We just finished the presidential elections, why are you talking about elections now?? Well kids, my job is on the line. Every 2 years we vote for our district officers, and nominations are due in April. By the time you read this, that's only 4 months away, and possibly only 2 newsletters. I have mixed feelings about being the SW District officer. Over the last few years my number one hobby/sport has been kite surfing. All my good buddies know this is true, but I still enjoy my airplane hobby as well. I also enjoy writing, taking photos, and editing articles. Here's the bottom line. If you would like to take over as SW District officer, contact me directly, and we'll make sure that we get you nominated for the position. Your name will end up on the ballot for our district next spring sometime. Since I still enjoy this position I have also decided to run for office. This is a great country and the NCLRA is a great organization so, **FLEX YOUR RIGHTS AND RUN FOR THE SW DISTRICT OFFICE!!!!!! CHEERS!!**

Dale Long has been making custom shut-offs in his garage. He usually has a box of them at our local contest. The craftsmanship is very good and the shut-offs are reliable. He sells a 1" tall and a 2" tall model. I believe he wants \$10.00 each, he may want a few bucks for shipping and handling. Give Dale a call and he can hook you up.....Dale Long (951) 784-4328



Remember, tighten your bolts, check your controls, and wear your sun block. From the Southwest, see ya next time.....

SOUTHEAST REPORT- BOB WHITNEY

The Rebel Rally has come and gone, Sat was not bad, but Sunday was windy and cold, made for fun keeping the diesels hot. DICK LAMBERT showcased his beautiful all carbon fiber F2C, light and stiff. DAVE HALLAS did 162 laps in his 7.5 min heat in Clown . The results as I have them;

F2C 1st Fluker,Lambert,7:17.03
2nd Gordon Yeldham 7:23.44
3rd Bill Lee dnf

F2CN 1st Gordon Yeldham 9:54.46
2nd Whitney,Hallas 9:54.88
3rd Wallack dnf

MOUSE 1 1st Hallas/Whitney 4:55.91
2nd Manfredi 5:22
3rd Whitney/Hallas 5:33.25

MOUSE 2 1st Gabe Manfredi was the only one to finish the final at 7:27.34

Fox 1st Wallick 6:07.28
2nd Ralph Aaberg 7:23.90
3rd Ron Macknet dnf

CLOWN 1st Hallas/Whitney 294 laps
2nd Pat Aaberg 292laps
3rd Manfredi 268 laps

QUICKIE RAT 1st Bill Lee 6:27.69
2nd James Allen 6:37.53
3rd Jason Allen 6:44.97

All three up events were run 3 up with no problems from the wind. Thanks Dave and Tom for all your flying, and again thanks to our BRITISH friends for making the trip, they said they felt right at home with the weather,

I heard that as of now there will be no contest in April. The Florida model association, is talking about holding one about that time. DEC 28 the SPACE COAST AERO MODELERS had their first official fly in at their new flying field, at BAY SIDE HIGH in PALM BAY FL. Room for 3 circles plus a grass area for combat. Dave Platt stopped by. He wants to get back flying U/C now that he has a field in his back yard to fly at.

Maybe it is time we quit worrying about the wind and fly all 3up events 3up, it seems that after all these years at Muncie most people have planes that can handle most winds.

EDITOR'S COLUMN-TIM STONE

NEW PROPELLER REFERENCE

Tom Wilk has been busy lately compiling his latest CD "All about propellers" CD #19. This CD contains articles from many magazines dating from the late 1930's up to the present.

The articles that Tom has archived cover a broad range of interests; electric, rubber, power propellers & shop aids for making & tweaking props. There are many articles on this CD that will interest the Racing crowd. The most successful racers tend to pay a great deal of attention to propeller selection & modification. Some of the topics covered are prop tweaking by Jed Kusik, making 'glass/CF props by Hal DeBolt & Bob Dunham, balancers & pitch gauge construction by John

Kilsdonk. Thanks to Tom for gathering & consolidating this valuable information.

WORLD CHAMPIONSHIPS ADDENDUM

Somehow in the rush to get out the August newsletter with coverage of the Nats & WC's there is something that I have just recently realized that didn't occur to me a few months ago. The amount of work & personal sacrifice that a *very few* people gave to pull off a great WC competition should be acknowledged and respected for a job well done. The evidence of this comes largely from the *silence* of the International community.

I follow the Delphi & Yahoo forums on C/L racing pretty much daily, and there has been no complaining going on there...if there *was* something to complain about it surely would come up on these forums. Hats off to all the people that volunteered their time. Tom Fluker & John McCollum spent many hours in the 'Tower' calling the races, and if you think that that is easy, try it sometime. John Ballard took on the high pressure position of registering & processing models. Bill Lee pulled the whole thing off, spending close to \$4000.00 out of pocket for the race display (Bill also built the display & had to write the program to run it) & support equipment. Sandy Lee sewed up the flying bibs, as there were none on hand. Much of this was taken for granted at the time, and we should all applaud the hard work done that represented the United States so well.

NCLRA DUES- PAYPAL OPTION

Tom Wilk has set up a Paypal option for members that want to pay their membership dues this way. This should come in pretty handy for many people. To pay dues with Paypal, first log in to your Paypal account, then send dues to; Treasurer@NCLRA.org
Note that a \$.75 surcharge is added for the Pay-Pal charges.

O.S. .25 LA FOX RETROFIT

Using O.S. .25 plain bearing in place of Fox .35 has been gaining in popularity. West Coast racers have recently added "LAFox" to their events in the Fall racing schedule. The popularity of the O.S. motor has grown for a number of reasons; Tower Hobbies combos' this motor with their 'ARFStreak' ARF kit. One of the biggest problems with the Fox .35 stunt is the excessive amount of vibration it generates.

The O.S. is superior to the Fox in this area. Many racers are just fed up with rebuilding front ends after a very short time.

Some have suggested that the O.S. or any other plain bearing .25 be allowed in NCLRA Fox; the jury is out on that one. Initial reports are that the O.S is slightly slower than the Fox; this could probably be overcome by a lighter airplane made possible by lower vibration. Les Akre sent in a photo of his

O.S. retrofit on a Brodak Superfly. It runs in the mid 23 second range for 7 laps.



Nicely done "Pink Pfink" by John Bruman. PatFlynn design updated for Texas Quickie.

NCLRA FINANCIAL REPORT

MIKE MACCARTHY

10/1/2003-10/16/2004

10/1/2003 BEGINNING BALANCE-6306.68

REVENUES

Membership dues-----1166.00
 (Note some more than 1 year)
 Donations-----71.00
 2004 Nats Supplemental Events-----690.00
 2004 Nats proceeds from AMA-----690.00
 T shirt & hat sales-----785.00

TOTAL REVENUES-----3402.00

EXPENSES

NCLRA Website-----95.40
 Hats & Shirts-----327.00
 NCLRA Banner-----124.00
 Postage-----14.10
 Hancock Fabrics-----10.00

TOTAL EXPENSES-----570.50

PROFIT-----2831.50

SEPT 30,2004 ENDING BALANCE--9138.18

As of 12/1/2004 Tom Wilk has updated me as follows;

We have monies in three accounts.

Checking – Savings – pay-pal

The grand total is **\$9,360.24**

Final Results Sheet - SCAR Virgil Wilbur

Memorial

October 23 - 24, 2004

AMA Scale Race

PLACE	entrant	heat 1	heat 2	70 laps	semi
140 Final					
1	Cave	03:13.98	03:21.97		06:38.58
2	MacCarthy	09:34.76	03:02.25	03:22.08	DNF
3	Mayer	04:24.66	03:30.35	03:06.00	DNF
4	Holland	03:26.14	02:56.13	03:15.45	DNF

SCAR Formula Unlimited

PLACE	entrant	final	140 laps
1	Bush		08:07.91
2	Cave		08:10.03
3	MacCarthy		09:01.91

4 Holland DNS

NCLRA .15 Rat

PLACE	entrant	heat 1	final	140 laps
1	Holland	02:44.62	05:40.47	
2	MacCarthy	02:44.79	DNF	
3	Cave	DNF		
4	Garner	DNF		

NCLRA Clown Race

PLACE	entrant	heat 1	heat 2	best	final 15 min
1	Persson	146		146	287
2	Holland	107	154	154	284
3	Burke	103	156	156	280
4	Duly	146	144	146	DNF
5	Cave	124	140	140	
6	Garner	39	DNF	39	
7	Mayer	DNF			

NCLRA Classic B Team Race

PLACE	entrant	heat 1	heat 2	Heat total	semi
140 laps					
1	Garner	01:25.25	03:18.00	04:43.25	03:06.00
2	Duly	02:02.82	03:58.84	06:01.66	
3	Burke	03:37.13	03:14.10	06:51.23	03:22.08
4	MacCarthy	01:59.35	05:43.19	07:42.54	03:15.45

Mouse I

PLACE	entrant	heat 1 50 laps	heat 2 50	final 100 laps	engine
1	Murphy	03:15.06	3:08.18	06:12.19	cox
2	Holland	02:33.50	DNF	36 laps	cox
3	Cave	03:04.87	DNF	DNF	cox
4	Hull	45:36.00			cox

LA Fox Race

PLACE	entrant	heat 1	heat 2	final	100 laps
		100 laps	100 laps		
1	Persson	05:55.25	05:57.37	05:48.73	
2	Mayer	DNF	05:49.28	06:19.12	
3	Burke	06:52.00	06:28.16	60 laps	
4	Holland	06:29.00		DNF	
5	Murphy	07:28.9	06:43.8		
6	Bush	DNF			

NCLRA Quickie Rat

Place	Entrant	Heat 1 70 lap	Final	140 laps
1	Holland	02:54.96		06:03.02
2	Murphy	03:00.72		06:12.63
3	Bush	03:02.19		06:15.25
4	Cave	02:54.03		DNS
5	MacCarthy	DNS		
6	Garner	DNS		
7	Persson	DNS		

The Gibeault Mouse Race Program

By Paul Gibeault

Submitted by Les Akre

Class 1 Mouse Race has always been a favorite of mine. It is cheap to fly, but oddly enough, cubic dollars 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, and sometimes frustrating. The following article represents much of what I have learned in my 20+ years of competition in this event, and it is my hope that those wanting to fly Mouse Race will find it useful.

The first part of this article will deal with setting up the engine for Mouse Race duty. The second part will cover the Airframe and race equipment, and the last part will cover tips and suggestions for success.

Engine

1. Crankshaft/Crankcase Assy.

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

Solutions: The use of the “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 the assemblies from very old engines seem to be better than the newer ones, with the exception of the new “Killer Bee” cranks, and Davis Diesel cranks, which seem to be better yet. I've had my crankshaft shear in half during the Nats final, as have others, but there is 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 anodizing eventually comes off and galls the crankpin. Also, it is a good idea to lay some 400 wet/dry sandpaper over a piece of glass, and with the addition of some WD-40, sand the back of the crankcase. This will remove any burrs that might otherwise prevent a perfect seal with the fuel tank.

Years ago, Kustom Kraftsmanship offered crankcases with an “Oilite” bronze sleeve bearing, but I have never used one. They also offered a tempered crankshaft, but there's no guarantee it won't break either, as I have seen them fail.

2. Integral Fuel Tanks

Problems: The stock fuel tanks are slow and sometimes short on range. They also can't hold a consistent needle valve setting. They are also prone to “reed float” above 17,000 rpm.

Solutions: Modify the needle valve assembly as follows, as the stock needle leaks air. Remove needle valve, discard spring, install a #4 flat washer, then a piece of ¼” fuel tubing. Re-install the needle valve and you now have one cheap, but airtight needle valve assembly.

With the tank and backplate together, remove the screen and drill out the tank and backplate inlet venturi to .082”, (this is what the record holding engine used). This produces a gain of about 500 rpm, but at the expense of less fuel economy. Use one of the larger tanks for the greatest range. These are commonly found on “Golden Bee”, “Super Bee”, or “Black Widow” engines. The newer “killer Bee” and “Venom” use them as well.

Next sand the backplate flat over glass (again with the 400 paper), as many backplates are warped and do not sit flat when bolted to the firewall. While you're at it, use your dremel tool to grind away the screen holder from the venturi area of the backplate. Do a good job of blending in this area. The fuel pickup must be located at the outboard corner, and then held in place. Using a pin drill, drill a tiny hole through the “fence” where the backplate joins the tank, and wire the neoprene tube in place with some .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 alum tubing, about ¼” long. The net effect will be that the tank front will now hold the pickup in place.

The next step is to prevent the integral tank from leaking. This is a **MUST** if you wish to hold a consistent needle setting, and have the tank shutdown consistently. This is done by wapping a piece of 1/2A dacron line around the entire peripheral groove of the tank. Hold the Dacron thread in place with saliva (crude, but effective), for final assembly.

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 “TeeDee's” in performance! My test bench results indicate that 24,000+ rpm is achievable for steady-state running with such reeds.

Final Assembly: Since all Cox engine components are notorious for coming loose, clean the 2-56 engine to tank screws with thinner, then final assemble with blue Loctite threadlocker. Every time you tear down the engine, replace

both the paper tank gasket and the venturi o-ring. This may seem like a waste, but \$2.00 worth of new gaskets is worth \$100.00 worth of reliability in 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 "BabeBee" P/L is better than a bad "TeeDee" P/L. I recommend a flying test for all P/L 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/L's to be the best. Most all of the really fast engines use these. "KillerBee" P/L's are an excellent choice as well, and nearly identical to the "TeeDee" types. It is worth noting that new "TeeDee" P/L's 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 piece of steel (something quite dense). Then with the tool in place, tap with a hammer, rotate a bit tap again and continue, checking often until all excess play is removed. It is necessary to check and adjust after every contest. At normally low rpm's this isn't critical. However, at racing rpm's (20,000+) a loose ball/socket joint reduces piston life to a few minutes.

Optimum piston/cylinder fit is to be checked with 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 an excellent feel can go ahead and lap the piston to fit. However a better way to do this is by running in the engine. Start by cutting down 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 being, that at 24,000 rpm, the reed valve crankcase will wear out quickly, 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 minutes, but really MUST be done before EVERY contest to ensure peak performance.

4. Glow Plug

Running 40 to 60 percent nitro requires the use of 5 head gaskets. Yes five! Low compression is the only way to run consistently (first 5 laps to last 5 laps) on highly nitrated fuels, whilst retaining acceptable plug life. Use only #1702 Cox high compression glow heads for maximum power and reliability. I have not found the Glow-Bee plugs to be reliable enough for mouse racing, (they are also no longer available). Some of the newer heads manufactured by Dave McDonald and others, use either standard 1/4x32 plugs or the newer turbo style plugs which offer many more heat ranges. These are worth experimenting with, especially given the high price of the #1702 Cox glow heads.

After removing a new plug from it's package, carefully sand the seal band on a plate of glass with 400 paper and oil, this will ensure the plug seal area is flat, and will seal properly when tightened. Now examine the plug element, and with a T-pin, make sure it is centered. Finally with a T-pin, very gently pry at the element where it is welded to the plug. It should be a firm weld. If it breaks loose, kiss your money goodbye, and start with a new plug. Console yourself a bit by knowing that you've just prevented yourself from using a plug that would have prematurely failed. (Most likely during a Nats final).

Finally, after a while you may notice your glow plug constantly keeps coming loose. This is due to the copper head gaskets becoming old and hardened, due to the constant heat cycling. Since the Cox engines use an annealed copper gasket, replacing the head gaskets with new ones will solve the problem.

5. Assembly & Miscellaneous Problems

Problem: Engine comes loose in flight, prop falls off, glow plug comes loose in flight.

Solutions: 1. Check and tighten the mounting bolts before every race. 2. Tighten the glow plug Vigorously before every race. 3. Replace the stock prop screw with a 5x40 x1" hardened Allen head cap screw, and check and tighten before every race. 4. If field disassembly can't be avoided, use Loc-Quik super primer T and accelerator, with blue Loctite thread locker upon reassembly.

Airframe & Race Equipment

Airplane: In my opinion, there is no better design to start with than the record holding Streaker Mk V.

Prop: You must have 4" of pitch to get rolling! Any 1/2A prop made by Cox, Tornado, or Top Flite is OK. However, cut down props (less than 5" diameter) go faster than stock. Only test flying will determine which prop(s) ultimately work best for a given combination. A Tornado black 5x4 cut to 4 3/4" has won the Nats final, so you could start there. The APC 4.75x 4 is also great, and holds the current final record.

Fuel: A minimum of 40% nitro is required to get with the program. A 60% mixture, or more, yields faster times, but only if everything else is correct, ie. You have fabulous reliability on the 40% mix, and are practiced and know what you are doing! (Be prepared to buy lots of expensive glow plugs as well!)

A most important note about mouse fuel: A minimum of 5%, preferably 10% of the oil mix must be castor oil. Should you decide to race your Cox .049 on a castor oil deficient fuel, your engine will commence a course of self destruction, and you will find out first hand why many have sworn off flying Mouse for good! You have been warned! For those of you able to blend your own fuel, I have developed a truly good fuel mix for class 1 Mouse consisting of the following:

5% Klotz bean oil (or castor oil)
15% Klotz KL 200 (or K&B x2c)
40% Methanol
40% Nitro

Pre-Race Start & Warm-Up

1. Before the first run, always prime the crankshaft with oil or raw fuel for additional lubrication at this critical time.
2. Fill tank, prime exhaust, and wind up the spring starter 1 ¼ turns to start, anything less than 1 ¼ turns will allow your engine to start backwards. 1 ¼ turns ensures a correct start first time every time.
3. Most Cox .049 engines do not take a really good needle setting until warmed up. Therefore don't be surprised if the ground and air settings differ, sometimes as much as ½ a turn! The best time to fine tune the needle valve is immediately after a flight. Important note: If your needle valve setting changes by more than a ½ turn, you have a fault! Clean or flush out the dirt, or fix the leaking tank, or loose glow plug, but stop perpetually messing with the needle valve.
4. To stop a running engine on the ground, squeeze your thumb and index finger over the tank vents. If using a uniflow tank, then just covering the uniflow vent will suffice. This will verify your tank seal. If the engine doesn't stop, but continues running, then you have a sizeable leak somewhere that must be fixed!
5. I have mentioned earlier that Cox crankshafts have a fatigue problem. You can accelerate all kinds of shaft and case problems by stopping a running engine by it's prop nut. Do not do this! Stop the engine as per step 4, and you will increase the life of these parts considerably, as well as save yourself some grief.
6. Always monitor the color of the engine exhaust oil. Usually a good running engine will alert you in advance of an impending failure by "making metal". This usually means tiny aluminum particles are being rubbed off and are visible in the exhaust oil, if you look closely. This is usually accompanied by frequent plug failures. At this point, it's best to find the trouble spot and fix it. The same holds true if your

crankcase ever makes a squeaking noise on start up, or shutdown. When this happens, we replace the whole crankcase assembly, as the crankpin has worn (tapered) and is causing the rod to slide off the crankpin and rub away at the tank.

7. Always keep your engine scrupulously clean and always protected from the elements with a plastic bag or rag. Always filter your fuel, especially when changing containers. Ensure your fuel bulb is in good shape and not cracked, hardened, or flaking rubber. Better yet, replace it yearly and not worry about it. When everything checks out Ok, and your engine still hics and coughs, it's very possible that dirt in the fuel is causing the problem. It doesn't take much dirt to raise havoc with an .049 so remember, "cleanliness is next to Mouseliness"

Tips And Suggestions

"The Engine"

I assume that if you followed my engine set-up tips, you should have a very decent running engine. I do like the New "Killer Bee" type crankcase and would recommend them over the older type if you are experiencing case problems. The new Cox "Venom" engine makes you competitive quicker, but unless you were fortunate enough to purchase one when they first arrived on the market, your chances of obtaining one for a reasonable price is long past. There is a chance you can find used "Venoms" at swap meets and other venues, but finding a new engine will require you to pay "collector" prices, which are now over \$300.00 in some cases. However, purchasing a "Venom" will not necessarily make you an instant winner, you still need to keep in mind all of the maintenance tips mentioned earlier. Besides, both AMA records have been held with much older engines, so don't go throwing out "ole reliable" just yet.

"The Model"

I assume that you have built the Streaker Mk V. with 2oz. Fiberglass cloth all over with ¼ oz. Tip weight. For a total model weight of 6 ¾ oz. In this event only, heavier is better. You will notice the advantage in windy conditions (and when isn't it windy when flying Mouse!) Unlike many designs, the heavily tip weighted Streaker can darn near fly in a storm if need be. After all, anybody can fly in calm....but successfully flying in wind separates the men from the boys!

However, if you have ignored the instructions and built your Streaker too light, and with not enough tip weight, then you will find out two things. 1) That it doesn't whip well flying high and falls out of the sky downwind, cartwheeling upon landing. 2) It builds momentum slowly and won't keep it's speed up with a dead engine, and you end up crashing in a line tangle anyway.

When flying in rainy conditions it is the pilots job to wipe the lines with a soft cloth moistened with acetone. Do this often, and always prior to every race. Much of the sticky film buildup is caused by the oily exhaust residue produced during flight. If not cleaned often, the lines can stick together causing

a lack of control, almost always with disastrous results. I have lost races neglecting this!

I assume that you will use a good quality nose wheel, and solder it on with Sta-brite silver solder. I have lost face (and races) when my wheel fell off during a race. Regular solder just doesn't cut it.

“Piloting”

An otherwise great airplane/engine combination is obviously disadvantaged by poor piloting. Here are a few suggestions you might find advantageous.

Since Mouse races often involve line tangles, (surprise, surprise!) choose a pilot with combat experience. This type of individual often has a “never say die” attitude when lines from other (often crashed) models have him wrapped up like a fly in a spiders web. He just keeps on flying, no matter what.

A good pilot when suddenly caught in a line tangle will calmly change hands if necessary to get out of it. I can fly with either hand and this ability has paid off many times. The lesson here is that not all line tangles will bring you down if you keep a cool head about you.

A great pilot must train himself to not look at his own model; but watch his opponents and his own pitman for signals. This allows you the important split second to see and avoid accidents just as they happen and fly accordingly.

Cox .049 reed valve engines do not have shutoffs (although some homebuilt engines do.) This lack of a shutoff, often causes a fatal mistake as seen in the following scenario:

You are flying along, just overtaking a slower model and your engine quits! You quickly lose airspeed and sink into the model you just overtook, bringing both models down in a line tangle. Happens every contest it seems, but consider this;

A great mouse pilot must:

Count and be aware of his lappage at all times, ie. Know what lap his model is on and how many laps his model is capable of in traffic. (for example 30 laps per tank)

At maximum laps, less five (per example, 25 laps), assume that your engine will quit if you overtake.

If you are approaching a passing situation at this critical stage then:

If you are ahead, flap your elevator (up & down) and do not pass since it is only a few laps until you will run out of fuel. If you are not ahead, as you approach to overtake, quickly whip hard with just enough height to get by safely. Do not climb any higher than absolutely necessary or your engine will surely quit! As soon as you have gotten by, stop whipping. You shouldn't have to whip for more than two seconds to accomplish this correctly! You may be warned for whipping, but better a warning than a crash. Should your Streaker's engine quit while passing, the whip momentum will allow you to complete the pass even with a dead engine! Such is the beauty of a properly weighted Streaker Mk V.

“Pitting”

An otherwise good pitman can cost you the race by launching you without first looking for traffic! Sometimes you will be taking off just as another pilot is landing. A launch at this critical time involves you in an instant line tangle/crash, and disqualification from that race. The solution is “heads up” pitting. A great pitman will grit his teeth and hang on a second or two until it's safe and clear to release. You must remember to always yield to the landing model. Seldom is a Mouse race lost by 2 or 3 seconds, but it's always lost on a pitting accident that results in disqualification.

“Conclusion”

Gestalt (geh shtahl) n. Where the sum of the whole (working together in harmony as one) is greater than the sum of the individual parts working separately. A winning Mouse race effort can basically be put down to the right amount of “Gestalt” That is to say the ability of a good team working together in a nice flowing manner; yields better results than a team with a killer model, but lack of team work and practice.

I have been most fortunate to fly with my two flying buddies. Les Akre and Todd Ryan, their superior piloting and pitting abilities have guided us to many victories. Thanks for all the great work guys, I enjoyed every minute of it! Also, thanks to John McCollum whose knowledge and expertise has helped me on many occasions.

I wish to thank the rest of you fellow Mouse racers out there for coming out to race with us. If it wasn't for all of you, Mouse race wouldn't be the one of the more popular Nats events that is today. I wish all of you the best of luck and most importantly, take it easy on my delicate ego when you beat me!

.....Mr.
Mouse

The Mouse Chronicles - by Douglas Mayer



Mouse-1 is a very logical place for people to get introduced to control line racing. The planes and motors are simple and cheap (and safe) and a good way to get started.

When I started back in the hobby after 20 years off, I started up with a mouse-1. This was a natural place for me to start because I flew almost all Cox motors when I was a kid. The 20 years off meant that I was way behind the times. I wanted to design my own airplanes, but I wasn't really copying a proven design, I was trying to recreate what we did when I was a teenager and it just didn't work. My mice were made almost entirely of balsa and they were TOO light. When the motor stopped, the plane became like a leaf on an autumn day, flitching and twittering around in the breeze.

Finally one day I met Vic Garner (for the first time) and showed him my (attempts) at a mouse racer. He sat silently looking at my planes for awhile without saying anything. I was thinking to myself "GOSH, What is he thinking?????" Finally, Vic broke the silence and looked at me with a glassy stare, "I bet this thing doesn't whip at all, does it?" Now how did he know that? Well, my mouse weighed in at about 3 ounces, Vic recommended 7 ounces for the thing to whip and glide. I was way off the mark.

Vic brought me back to his shop and gave me a crash course in constructing competitive mice. He allowed me to take measurements and do some sketches of his airplanes. I went home with a head full of new knowledge and ideas and learned one of the most important lessons that I have learned in control line racing. Mouse, Fox Race, Quickie Rat, Goodyear, it doesn't matter which event.....You must start from a proven design!!!

Other people have been doing this for years and years and if you try to invent the wheel, instead of taking a proven design and tailoring it to your own design....well, lets just say that you may have a very long road ahead of you. This long and painful lesson was learned on my mouse. I had gone through numerous designs that were all dogs, but when I took the information that I had collected from Vic, and made my own design, well, IT WORKED!!!! Awesome!!!

Now I was really on my way and I could take it from there. I had reached a workable benchmark. My first two mouse racers that I called Turbo-1X and Turbo-2X for Mouse-1 and Mouse-2, respectively, were quite successful. The original mouse-2 was a Tee-Dee model. After the introduction of the Cyclon .049, I modified my mouse-2 to become a Cyclon based airframe. I built (2) mouse-2 versions.

One Version was built with all exposed components (tank, shutoff, motor, etc), and I won 2nd place at the NATS with its debut to racing!! The next version was a sidewinder with a "Half Cowl" The front of the motor was exposed, but the rest of the components, the rear of the motor & mount, the shutoff & tank were all hidden with a sidewinder cowl. This little sucker really did quite well and many local and regional events. I probably would have done OK at the NATS if I hadn't stepped out of the dumb line and got DQ'ed, but that's a different story.



All 3 of my designs use the same wing outline and same tail outlines so you can build several planes at one time with similar components. All current designs use a basswood wing, a 1/4" plywood fuselage, a sandwiched tail with 1/64" ply between layers of 1/16" balsa.

The plywood is cut away for invisible hinges. All landing gears are fabricated with a titanium gear and a 1" Glenn Lee Racing wheel. What I would like to say is that the original Mouse-1 [TURBO-1X] is so successful that I have never changed the design in the last 5 years since its original debut.

I sell complete construction plans, done in autocad for \$10.00. My mouse-2 design is in (2) versions. The original [TURBO-2X] design is based on the Cox Tee Dee, certainly not the motor to win any races, but the design is available for \$10.00, complete construction plans done in autocad. And finally, I've got plans for the exposed controls Mouse-2-Cyclon, also \$10.00, complete construction plans done in autocad. All plans list all materials used and have instructions shown on the plans. You may contact me at mayer@kmd-arch.com, or you may contact me using the information on the back of this newsletter.



F2C FUEL BOTTLE-DAVE ROLLEY

I've had questions from several folks about my F2C fueling rig. So here are a few pictures and a description of the refueling rig I made from a MSR camping stove fuel bottle and pump.



The fuel systems in a modern F2C model are sensitive to the refueling pressure. To get consistent results you need a pressure gauge to maintain the pressure your setup works best with. The 0 - 15 psi pressure gauge came from AutoZone. Thanks go to Bob Whitney for finding those. Once I showed the packaging to Charlie, he knew right where they are in his store. I think they are about \$15 - \$20. It is mounted in a standard brass 1/8" pipe thread coupler (\$0.75?) from the local home center or a reasonable hardware store.

Above is a picture of the complete rig. The arm strap is one used as a restraining band for Tennis elbow. It is available at most drugstores. The tygon tubing on the side of the bottle is a level indicator.

All of the metal tubing is annealed 5/32" brass. I used the Dubro 5/32" tubing bender to make the bends without collapsing the brass tubing. The Tygon tubing is also 5/32".



The finger valve is made from some 5/8" brass scrap I have. I bored out the brass slug so the finger valve has a reservoir of fuel, tapped it to accept a 1/2A quick fill that Kevin Seaton (Augusta KS) makes (\$25) and the soldered it to a 0.060 brass strap that was bent to fit my index finger.

The pump assembly is pictured above. It is for MSR's kerosene stove and was about \$25. It is similar to a Coleman lantern pump and has a check valve to prevent the pressure from leaking out through the pump. There is a rebuild kit available for the pump should the seals wear out. The pumps on the MSR web site look a little different than mine and they no longer list a separate pump for kerosene. Looking at the specifications for the liquid fueled stoves, all of can use kerosene or white gas fuels. Guess that means the plastic in the pump can stand up to either fuel.

I found both the bottle and pump assembly I'm using at an LL Bean store in Columbia MD. I've found the bottles in various sizes all over the country in outdoor sporting goods stores or you can try the MSR web site:

Fuel bottles: <http://www.msrcorp.com/stoves/bottles.asp>

Fuel pumps: http://www.msrcorp.com/stoves/fuel_pumps.asp

The bottle I used is 11 oz and cost about \$10. I use the larger size bottles to store my mixed fuel. The bottles seal well enough that my wife can't tell when I have a bottle of fuel in the house. That isn't too bad when you consider that when I come back from flying I have to stop at the washing machine on my way to the shower and start a load of just my flying clothes. BTW, I've found that the fragrance-free Tide used with Spray-n-Wash gets the burned and raw fuel smell out of the clothes I wear flying. Interestingly enough, the fragrance-free All, Cheer, or Safeway brands do NOT get the fuel odor out. But they will take out the residual Spray-n-Wash smell.

The bottle is aluminum and comes with an o-ring seal, screw in plastic stopper. The body of the pump appears to be made of the same plastic. So far I haven't seen any deterioration of the plastic in F2C fuel. The ether will affect some plastic, but in this case I haven't seen any problems.

I had originally planned to use the fuel outlet on the pump but decided being able bleed off the pressure in the bottle using the brass control valve was too nice of a feature to pass up.

The secret to making this particular fueling rig is learning how to solder to aluminum. The Harris Welding supply folks have a low temperature aluminum flux designed for their low temperature silver solder (StayBright Silver Solder is a Harris brand).

Flux:

<http://www.jwharris.com/jwprod/braze solder fluxes/#alumflux>
Silver Solder:

<http://www.jwharris.com/jwprod/solder alloys/#SBSolder>

The key (other than practice) is to clean both parts (use a stainless steel toothbrush on the aluminum - and set it aside for use ONLY on aluminum), coat with the flux, and then heat the joint from the back side of the joint. Never let the flame get near the intended joint area. The aluminum will oxidize immediately and you have to start over cleaning everything. It helps to preposition flattened pieces of solder in the joint area so it will heat fast and flow into the joint. Don't overheat. I've found that the solder will flow to the heat (just like any other solder joint) until the joint gets too hot. Then it reverses direction and flows away from the heat (just like you were brazing the joint). Once the solder flows away from the joint, quit trying to make things work. Go back and clean everything, and try again.

You'll have about \$80 in the MSR based rig when you are done. I don't have any pictures of them right now, but I've also made fueling rigs from 1/2 pint F-Oblong steel cans. They are much easier to make. Tin cans are a whole lot easier to solder stuff to. I've been using blood pressure cuff bulbs to pressurize that style of rig. If you had to buy the can and could get the pressure bulb with valve for about \$10 you would have about \$60 into the rig. I also have the parts to make up Coleman pressure pumps. Using the Coleman parts, you'd have about \$65 in the rig. Right now, I don't have any cans. For the price they ask, local can suppliers must think their 1/2 pint cans are made out of gold. I have found a supplier that seems to have reasonable prices but right now I don't need

to make any more fueling rigs. Although I have considered making one for my Mouse Racer. BTW, do not use the MSR fuel bottles or pumps with alcohol based fuel. The company says it damage the parts.

I only fill the the main fuel container about 1/2 full. On my MSR rig that gives me 5 to 6 oz. Enough fuel to do a pre-on-the-circle warm up, a normal 90 second countdown warm up, and over 300 laps. (I had two pilots in the center trading off flying duties). Once the rig is pumped up to 5 psi, I get about 1 psi per stroke on the pump. So keeping it at the desired pressure on the circle is pretty easy.

If you have any questions, I'll be glad to try and answer them. Just remember, I'm new at F2C and only vaguely know what I'm doing.

have a good one,
Dave

2004Contest Calendar

NOTE!! Confirm dates, locations & events with the CD or contact listed below. NCLRA cannot be held responsible for changes, errors, omissions, etc.

JAN 29 & 30 TUCSON, ARIZONA

SOUTHWEST REGIONALS-Christopher Columbus (Silverbell) park CD Jim Hoffman 480-897-0630 email windswept4@cox.net Sat racing Formula Unlimited, Texas Quickie Rat, Fox.

NATIONAL RECORDS

SLOW RAT

JR (70 LAP)	5:16.20	SCOTT MATSON	7/10/00
(140 LAP)	6:47.37	SCOTT MATSON	7/10/00
SR (70 LAP)	4:29.63	HOWELL PUGH	7/20/94
(140 LAP)	10:58.47	DOUG SHORT	7/10/00
OP (70 LAP)	2:36.31	BOB OGE	7/18/91
(140 LAP)	5:24.94	MIKE GREB	7/19/90

½ A MOUSE 1

JR (50 LAP)	2:37.57	SCOTT MATSON	7/15/99
(100 LAP)	5:17.68	SCOTT MATSON	7/17/99
SR (50 LAP)	2:44.68	DAVE ROLLEY JR	7/15/99
(100 LAP)	5:20.11	D.J. PARR	7/16/98
OP (50 LAP)	2:12.3	JIM HOLLAND	7/16/04
(100 LAP)	4:22	RYAN/GIBEAULT	7/15/99

½ A MOUSE 2

OP (70 LAPS)	3:01.24	MACCARTHY/KERR	7/11/03
(140 LAP)	7:16.03	WHITNEY/HALLAS	7/11/03

SCALE RACING

JR (70 LAP)	2:50.65	BOB FOGG III	7/16/91
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(140 LAP)	6:08.55	BOB FOGG III	6/23/92
SR (70 LAP)	3:15.12	DOUG SHORT	7/11/00
(140 LAP)	5:40.05	BOB FOGG III	7/11/95
OP (70 LAP)	2:39.38	WILLOUGHBY/OGE	7/15/97
(140 LAP)	5:33.04	BOB FOGG II	7/16/91

F2C TEAM RACING

OP (100 LAP)	3:15.5	BRODHEAD (GBR)	7/12/04
(200 LAP)	6:45.2	ROB FITZGERALD (AUS)	7/12/04

'B' TEAM RACING

OP (35 LAPS)	1:29.3	WAYNE TRIVIN	7/13/04
(70 LAPS)	3:15.2	LES AKRE	7/13/04
(35+70 LAPS)	4:49.1	VIC GARNER	7/13/04
(140 LAPS)	6:45.1	DON BURKE	7/13/04

RAT RACING (.15 RULE)

OP (70 LAP)	2:44.6	JIM HOLLAND	7/15/04
(140 LAP)	5:33.1	JIM HOLLAND	7/15/04

JR-SR NO RECORD ESTABLISHED

NCLRA FOX

JR (100 LAP)	5:57.11	SCOTT MATSON	7/11/99
SR (100 LAP)	5:28.09	SCOTT MATSON	7/16/02
OP (100 LAP)	5:37.41	MCDONALD/MATSON	7/11/99

NCLRA CLOWN

OP (15 MINUTES)	300 LAPS	RON DULY	7/14/04
OP (7 1/2 MINUTES)	158 LAPS	RON DULY	7/14/04

NCLRA TEXAS QUICKIE RAT

SR (70 LAPS)	3:04.22	SCOTT MATSON	7/12/01
SR (140 LAPS)	6:20.20	SCOTT MATSON	7/12/01
OP (70 LAPS)	2:56.4	BILL CAVE	7/15/04
(140 LAPS)	6:03.8	BOB MURPHY	7/15/04

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US Dues: \$10

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Tom Wilk has set up a Paypal option for members that want to pay their membership dues this way. This should come in pretty handy for many people. To pay dues with Paypal, first log in to your Paypal account, then send dues to;

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Note that a \$.75 surcharge is added for the Pay-Pal charges.

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Officer's Addresses

President

Bill Lee
601 Van Zandt County Rd.4815
Chandler, Tx 75758
Phone 903-852-5599
Email Bill@WRLee.com

Vice- President

Steve Wilk
3257 Welcome Ave. N.
Crystal, MN 55422
Phone: 763-531-0604(hm)
E-Mail: swilk@cpinternet.com

Secty/Treas

Tom Wilk
301 W. Redwing St.
Duluth, MN 55803
Phone: 218-724-0928(hm)
E-Mail: tawilk36@cpinternet.com

Editor

Tim Stone
4919 Country Oaks Dr
McHenry, Il 60050
Phone 815-344-5728
Email tstone@mc.net

Northwest Representative

Mike Hazel
1073 Windmere Dr. NW
Salem, OR 97304
Phone 503-364-8593
Email ZZCLspeed@aol.com

Midwest Representative

Stewart Willoughby
95237 Aero Drive
Naperville, Il 60564
Phone 630-904-7011
Email StooDDS@aol.com

Northeast Representative

Brian Silversmith
86 Kingsland Circle
Monmoth Jct., NJ 08852
Phone 908-274-8945
Email via Phil Valente Phil_Valente@millipore.com

Southwest Representative

Doug Mayer
1727 Penmar Av #2
Venice, CA 90291
Phone 310-392-9008
Email mayer@kmd-arch.com

South Central Representative

Russ Green
615 Oldham Ln.
Granbury, TX 76048 (817) 573-7416
Email jgreen2@charter.net

Southeast Representative

Bob Whitney
456 Garvey Rd. SW
Palm Bay, Fl 32908
Phone 321-676-0554
Email F2CRACER@aol.com

North Central Representative

Les Akre
13336-129st.
Edmonton, Alberta
Canada T5L-1J8
Home 780-454-5723 Cell # 780-919-2792
Email scaleracer@hotmail.com

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