

From: National Control Line Racing Association
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TO



Kelly Hite's stunning new "Zipper" Sport Goodyear entry debuted at the Charles Ash Contest in Dallas Sept. 5.

INSIDE:
District Reports
Contest results
Suppliers/Equipment
Officers Election Results

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PRESIDENT - Bill Bischoff

So here we are again, still stuck in our mandatory building season. Some of you risk takers are going out to fly, and a few real rebels are even attending contests!

In national news, there's nothing new to report on the 2021 NATS. In international news, there's nothing to report on the re-scheduled CL World Championships. Will we return to a normal schedule and have team trials in 2021? Who knows! What I do know is that we have another great article and Goodyear plan from Doug Mayer. This time Doug focuses on the ubiquitous Shoestring. Somebody just *has* to build one with the scale pink and pale blue color scheme! How about **you**? Don't you need a new Sport Goodyear?

And speaking of building Doug Mayer designs, Dallas area modeler Kelly Hite has finished and flown the Invictus that you got a peek at last time. Kelly chose to finish his model in the white and yellow color scheme worn by Invictus when it was called "Zipper". To quote John Ballard, "pretty ain't fast, but fast is pretty". No worries here, Kelly's plane is **both**! Richard Kucejko joined us from Alabama for the Dallas Labor Day contest and got to see Kelly's plane's contest debut. He was so impressed, he went home and built one. The contest was Sept 5, and the picture was sent Sept 17. Do the math; he builds fast!

And now, on with the show!

NORTH CENTRAL – Paul Gibeault

AMA RACING 101 - Striving to get that first flip start by Paul Gibeault

I was asked to do an article about engines: compression ratios, timing, that kind of thing. It turns out that although I've accumulated a thick file with these types of articles AND have several textbooks on the subject, **I've forgotten most of it**. Even worse I haven't been able to actually apply 2 stroke theory from those books exactly onto my model aero engines. What a dilemma! But the good news is it seems the engine manufacturers have already beat me to it. But wait, I have found that there is a way for us "Joe Average" modelers to excel in the engine department. The first thing to understand is what 2-time world FAI speed champion Alexander Kalmykov once told me: "Pawel, is OK. At first I not good engineer either!" This coming from a highly decorated Russian Master of Sport. So, the question now is: Given average brain power, how can I improve? Well the easy answer is to surround yourself with engine masters & master modelers, keep your mouth shut and your ears & eyes open. Some guys just like to ramble on endlessly about engine theory. As interesting as all this 'theory' may be, the truth of the matter is you don't need to know much theory in order to do reasonably well. Although more knowledge never hurts, I hope to talk about "real field experience" here. Experience on the competition field. We racers are even more fortunate when we have events with mandated stock engines. So truthfully, who cares what your "timing numbers are" if we all use the same engine? What does the compression ratio matter if your

only alternative is to remove the one shim the engine comes with? What events like this often boil down to is trying to "optimize" the prop, the fuel tank and the model, then call it a day and have some FUN racing.

Easier said than done of course (**if you don't know what you're looking for**), which is often the case with racers, but I'll give it a try here...

PROP: "It's ALL in the prop & half in the engine" when it comes to performance. Luckily for us, that's often a matter of finding the best APC prop for our purpose. The best place to **START** is to see what the fast guys are running, & use that. IF you can find an APC prop that balances well, you're ahead of the game. Many APC props have crooked prop holes drilled and so balancing them is difficult. I've tried a number of things to correct this imbalance situation with varying degrees of success.

**** I do hope somebody smarter than me comes out with an article on how to correct an out of balance APC prop.**

It turns out (surprise, surprise) that some APC props of the same dimensions will turn up to a 1,000 RPM more (or less) than others. The best advice I can offer is to do a run up tach test with all your props to weed out the dogs... Some props on occasion are so badly out of balance, that I have to discard them for stir sticks. I've returned such props to APC & they'll gladly send me more (new) still out of balance props... ARG! It turns out that there is some "skill" involved in locating the perfect prop for a given model. On occasion, I've found that APC doesn't make the perfect prop, so I won't hesitate to cut down the diameter & experiment. As well, although the "popular" prop may be *good*, it is not necessarily ideal for all engines & all models. One reason is that various models (even of the same design) have varying degrees of drag. So, the optimum prop for a clean lightweight model may be different than for a heavier draggier model. Let's say for example that the popular prop for TQR is the narrow blade APC 7.8"D X 7"P. That prop works very well. For my particular model, I found an 8" X 7" standard wide blade works a bit better for me (& it's cheaper). **The takeaway from this discussion is that you have options, and for ultimate performance with an individual model, there is no "One size fits all" prop.** That said, on average, the "*one size fits all*" scenario works well enough, but the experimenters sometimes find faster props and end up winning more often. THAT is why it's useful to explore all kinds of different brands & types of props in search for that elusive killer prop.

This next part is about pitting: Specifically, cold starting and hot re-starting. Have you ever noticed (and envied) how those few top racers are able to get such nice and easy consistent starts and restarts from their motors? A lesser modeler on first view chalks it up to: "Obviously that guy must be using a special custom and expensive motor, because I can never get mine to start that easily... Or, obviously that guy has infinitely more experience than I could ever hope to have. To: "Well, for me I'll just have to use an electric starter and be done with it, life's too short for this endless / needless hand flipping." As a neophyte racer, I didn't know what to think until I happened to get linked up with a true master modeller from Australia, Peter Tilley. Peter was a magnificent C/L racer back in the day and held many of our records at the time.

That's not to say that there weren't other competitive racers, but it was Peter who twigged me onto **what was really necessary** to have high performance excellent starting race engines. During his reign, Peter was teamed up with an excellent pit man who subsequently left the sport. When I took over pitting duties, I was amazed that I could pretty much give Pete instant starts & restarts, with his Goodyears & rat racers. They were easier to pit than almost any model I could think of. From this & further experience I came to realize that great starting was a result of not one but several factors. In a nutshell they are:

1. Engine must have a good piston to cylinder fit.

This includes NO HEAD LEAKS. Head leaks are easily checked by spraying kerosene or soapy water around the head & checking for bubbles. There was a time where piston to cylinder fits were hit and miss. As well, if you didn't break your engine in properly, some engines were **never** going to be easy starting. A very few top racers can accurately measure (and adjust with a honing machine) the profile and roundness of a given cylinder. Good starting cylinders are all tapered from some degree of tightness at the top of the stroke to a looser fit at the bottom of the stroke. The rounder the cylinder can be made at the top (seal area) the more power it can make and the easier starting it will be.

For AMA Nat's purposes, you would ideally like to see roundness in the 1-2 ten thousandths range. For world championship use, the range is often better than .0001" and I have seen .00005" (50 millionths of an inch) roundness. A note here is that the Cox .049's were built with 50 millionths of an inch precision, which allowed most pistons to fit into most cylinders. Now although they all ran "OK" the **'better matched sets'** produced noticeably more power and easier starting than poorly matched sets. When coupled with the spring starter they all started instantly.

Trying to measure this kind of accuracy at home is entirely a mugs game of hit & miss, so I think we best leave this to the manufacturers. However, many racers have over time developed a very precise "hand feel" for what a good piston/cylinder fit should feel like. I've proven as a teaching exercise to a group of aviation mechanics (who have never held a model piston/cylinder in their lives), they could be easily trained to tell a looser & tighter piston fit to better than .0001" accuracy just by hand feel. They could not see any difference in piston size when measured with a .0001" calibrated snap gauge micrometer, but they definitely could feel which pistons were loose, medium & tight. The goal of my exercise was to show them how precise their "hand feel" was, and that .0001" (one ten thousandth of an inch) was quite easy to feel the difference. So as racers, it is good to know how your piston feels in the cylinder (with both being squeaky clean). Not that you can adjust it, but you will get to know when a piston gets too loose for consistent starting or is starting to show wear marks.

The best racing pistons are not perfectly square. They are either machined with a taper in them OR most often have a beveled edge at the top of the piston. The idea behind the beveled edge, and we're talking about a bevel of approx. 1 thousandth of an inch (.001"), is this allows the hottest part of

the piston to expand to nearly square at **running temperature** without being so tight that it wears (pinches) the cylinder liner excessively at the top, or catches on the port edges. This .001" relief is for a 2.5cc engine whereas larger displacement engines can have more than this. Although perfectly square pistons can run OK, they are often inferior & troublesome for our hand starting racing purposes. In days gone by this was a big deal, but these days most engine manufacturers build this into their engines. So, for most ABC and AAC engines, it's already done for you.

The takeaway from the above discussion is that if your engine has soft compression (or scores in the piston /cylinder) you're beat before you even start. THAT is why dirt is just so harmful to racing engines that require easy hand starting. Note: Although many of us 'racers' think we're smarter than the engine manufacturers, I highly doubt that we are. To that extent I think it is only wise to follow an engine manufacturers instruction on breaking in their engine.

I can't imagine any modern engine manufacturer giving bad advice in this department. So, if they say to take it easy or run a bit rich for the first little while, I really do think they know what they're talking about!

There is no doubt that a **properly** fitted piston in a tapered chromed cylinder makes everything in racing easier. Sadly, I no longer know of anybody who does this this kind of custom work anymore.

**** I would appreciate contacts for anybody who still offers this kind of specialty service.**

2. Glow plug / battery: These 2 items are linked for good reason. As before, start off with a popular glow plug, but it doesn't have to end there. Although the K&B standard & HD plugs work well enough for me, other glow plug types can often yield higher performance. Some glow plugs have less space where the coil sits & essentially give you a boost in compression. Some plugs have hotter & colder elements, which give different running characteristics. Sometimes they run faster! The general thought is that running the hottest plug you can get away with gives the best performance. Of course, **this is all for naught** when you burn the plug out before the end of the race! So sometimes the best racing plug may not necessarily be your fastest plug. Some manufacturers offer a full range of hot to cold plugs, so a smart racer would want to experiment here for optimum performance.

Now for the battery: Generally thought of as a "plug & play" device...it's not necessarily so! The better racers have some kind of control over the glow of the plug element. I sure like glow drivers from a power panel. They can be set for a nice orange glow but not too hot. Too bright of a glow often causes an otherwise good engine to pop, fart & kick and do everything but start easily. It also causes more pit fires. Too low of a glow simply causes a slow, inconsistent, and often, a hard start. I'm of little help here as I often use the no longer available Glo Bee Fireplug adjustable glow driver units. Even so, I often do a plug **visual glow test** before a race to see if my battery charge has degraded. I have seen firsthand a brand name glow driver indicating 3 green lights & yet when the clip was attached to a separate glow plug, it barely glowed. Once cranked up further (past "normal") to where the plug element glowed properly, the hard-starting problem vanished.

The takeaway here is that too hot of a glow is just as bad as too weak of a glow. **Both** give cause for poor starting.

3. Fuel: This is almost a no brainer with nice contest supplied fuels, but not quite, as I have seen faulty fuel cause trouble. Most of the time it's because dirt has been allowed into the fuel system. Often, but not excluding a dirty open fueling bottle. Moisture ingress into your fuel can be avoided by plugging your fuel bulb / bottle between races. Anytime you have a **partially blocked fuel filter or spray bar**, you are going to experience inconsistent starts. The fuel system **MUST** be absolutely free flowing and clean. This also includes rusty tanks and especially TANK LEAKS. If your engine continues to run when you plug the uniflow vent with your finger you have a **LEAK**. Your engine will still run & start to some extent, but you've now introduced an element of inconsistency. It may work, it may not. **The takeaway from this is: Top racers run with tight leak free fuel systems and clean fuel.**

4. Tanks: As alluded to earlier your tank & fuel system must be pressure tight. But there is another factor & that is how **evenly** your tank runs throughout the run. Checking this is done by the pit man with a stopwatch every 5 laps during a full tank run. If you have a tank that runs rich to lean you risk the very real problem of your engine coming down too hot & being hard to start. Engines that are running very hot to overlean at the end of a tank are much harder to start by the pit man. He basically has been set-up to fail.

**** I hope a full tank article in the future can be offered by a person smarter than I.**

The takeaway from this is a tank that runs steady is much more likely to give a fast re-start than a model that lands with a smoking hot over lean engine. Note: On occasion some clever pit men have found that blasting the hot cylinder with water (or fuel) during a pit stop can result in a quicker start. My opinion is, that although this **may be necessary** in order to get a fast start, if you have to do this then it is masking other problems. Sometimes this becomes necessary with an engine whose piston/cylinder fit is marginal or on the way out. A better fitting piston/cylinder assembly is often the fix, but this may not always be available right on the field.

5. Priming devices: Exhaust priming devices are often used to supply a few drops of raw fuel to the piston to ensure a first flip re-start. These are common especially in diesel powered team racers where first flip starts are essential. Priming systems for glow models are simpler and often no more than a "T- Fitting" plumbed into the tank uniflow/overflow pipe vent. They often take some practice to determine the size of the primer tube hole to prevent flooding. One caveat with exhaust primers is that they require the engines **exhaust port to be closed** in order to prevent flooding (Diesels), and flooding/fires (Glow) on re-start.

5. Loose nose, or vibrating model. Although not so common anymore now that we no longer finish our racers with dope. Some older models give inconsistent runs due to fuel ingress over time into the structure resulting in the "loose nose syndrome". Micro cracks can accumulate over time in the nose and wing attach areas. If allowed to go unchecked, the

resulting model vibration can cause all kinds of bad things affecting performance.

So, to recap: Good compression, good plug/battery/connections and good fuel assures me that I can start most anything. Attention to the "other details" allows you to sneak up onto the podium occasionally and if not, at least enjoy your racing with a minimum of fussing and frustration.

I hope this has been of some help.

Cheers,

Mr. Mouse

P.S. Keep those cards and letters coming! ;)

MIDWEST – T.J. Vieira

Racing returns this month to Dayton (October 4), so hopefully we'll have some nice pictures for the next issue. As of right now, not too much happening in the Midwest racing-wise, so let's start delving into a topic I brought up last month for next year's NATS: Pretty Points in Sport Goodyear.

The entire idea around appearance judging for this is twofold: one is to acknowledge the effort some pilots choose to put in to something that runs a VERY high risk (probability?) of being beat to snot during its lifetime and the other luring some people in from other disciplines. I know the second one is a stretch, I'll admit it. However, acknowledging the work that goes into a very nice finish I feel is important, so I offered to sponsor the award.

How do we want to judge this? I am open to any and all ideas. It can be as simple as two or three "judges" just shuffling planes around the pits to put them in order, we can let every registered pilot cast a vote, we can try and get a couple Stunt fliers to come down and do their "magic", it's completely open. I'd like to hear your opinions on this.

My current idea for judging is a simple points system, two judges, and average their scores. Tie breaker done by popular vote for the winner. For example:

-5 points for "fit". This is everything looks to be assembled nice and square, doesn't appear to be "hacked" together hastily (gaps all over the place, ill-fitting cowls, etc)

-5 points for "finish". Assuming the model is nicely assembled and built, how do the fillets look? Can you see any fiberglass weave through the paint? Are there awful paint lines? Dry spray? Are the shiny bits shiny? Etc. etc. I would say that there should be an allotment for normal wear and tear. These ARE racers, after all!

-5 points for "spirit of the project". If they are going the true scale racer route, did they do justice to the real plane? If they decided on "Atomic Pumpkin", does the shade of orange look right? If they went for an obnoxious paint scheme, is it tastefully obnoxious and attention grabbing? War plane kinda paint scheme? Does it "look" warbird-esque? While it is scale racing, personally I like creativity in paint.

With that all said and done, do I feel that this should offer someone an advantage during the race? Not really. Typically a well-built model will be quick in the air anyhow. We race because the stopwatch doesn't lie, and we hate subjectivity (well, it's also fun fighting for the best center circle position too!!!!) At most, I would say that it would afford them pit choice in their final (if they were to make it to a final heat). Even then, I feel it should only be more of a bragging right. I would also like to have it as a BOM rule. If you want to enter it, you need to have built the model. Is there any practical way to enforce that? Nope... But, that is why I feel it shouldn't give an advantage during the race. Some people don't have the time to build, and even full-scale race teams purchase planes to run.

Let's hear your thoughts on this! Feel free to drop me a line at schluterdude@gmail.com with any ideas. We'll put a totally arbitrary deadline for rules finalization as January 15, and then the February Torque Roll will have the guidelines so everyone is on the same page.

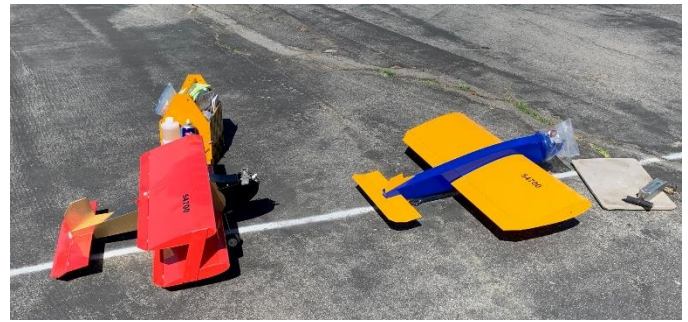
If you can't go fast, you may as well aim to look great going slow!

SOUTH WEST – Doug Mayer

The Covid report – September 2020. LA has been hit hard by the Covid-19 pandemic, and people are nervous and being cautious. LA County Parks and Recreation department has been very strict about activities, and has prohibited “large gatherings”, i.e., “Contests”. Many aeromodelers are in their senior years, and Covid poses a serious threat to everyone, especially our older brethren. Lately things are getting back to normal a little bit. People are returning to the park to practice, albeit, covid-style. Now the new norm is face masks and social distancing which makes it OK for practice, but not good for racing 2 up or 3 up. I know there is a regular group of guys who are practicing and flying on the weekends, but all of our races have been cancelled, and the park service is still formally prohibiting “Large Gatherings”, so sanctioned events are currently out of the question. Our September contest, and the Virgil Wilbur in October are both cancelled, so the only contest left this year is the Toys for Tots in December. Maybe we can salvage that contest. Time will tell.



Who are those masked men... just the California crew gettin' some Practicin' Covid style. From Left to right, Doug Mayer, Dave Dawson, Ron Duly, Greg Kovach, Dave Hull.



BI-Slob racing?? Not really, but it is said that racers will race anything...

The regular group of guys is Ron Duly, Dave Hull, Mike Callis, Dave Dawson and Greg Kovach. This crew meets at the Sepulveda basin because it is closer and more convenient to these guys than Whittier Narrows is. Personally, either park is equal-distant for me. Whittier has better shade and more tables, but they also charge \$6 a day to enter the park. I tend to just show up where the action is.

Last weekend Greg invited me out to the Basin to fly with himself and Dave Dawson. Greg is an accomplished combat pilot, but he wanted to get some 2-up time in the circle with me. (Some folks are not cool with the 2-up thing, but Greg and I were comfortable about it). Greg and Dave flew some clown before I got there. When I showed up, I flew a few test flights on my shoelace fox racer that I featured a year ago in the Torque Roll. My son wrecked it, and was afraid of it, but I flew it, and it was very well behaved and friendly. I cleaned it, and oiled it, and it's ready for its next service. Next, we flew some 2-up sport goodyear with Greg and myself as the pilots and Dave did double duty in the pits to keep 2 of us in the air. We got some good 2-up practice for Greg.

Dave Hull and Mike Callis have been working on F2CN and were out practicing on Saturday. Dave showed up on Sunday, but Mike wasn't in attendance, so Dave and Ron Duly busted out a couple of slobs. They had a BI-Slob and a MONO-Slob. I took pictures of the slobs in the racing line-up and was curious if these guys were angling for a new event? The slobs can't quite keep up with the other racers unless they are allowed to do loops and wingovers to catch up.

I look forward to racing 2 or 3 up in 2021. Hang in there, be safe and be happy. Fly some planes and get some practice for next year. Cheers.

Closing thoughts: As I was writing this report for the Torque Roll, we had a 4.6 magnitude earthquake in Los Angeles. It shook my house pretty good and had a good acoustic “rumble” to it. I always check the internet afterwards to see where the epicenter was located. I was in absolute shock to find out that the epicenter was less than 1 mile from the control line racing circles at Whittier Narrows. Apparently, the Whittier Narrows park is located within a very active seismic zone. We've had a pretty tough 2020 in California with the global pandemic, and recently with statewide wildfires, and atrocious air quality.

The last thing we need is mother earth to swallow up our racing circles. Oh well, hang in there. When things seem to get really rough, it only makes sense that things have to get better. Let's plan on a good productive 2021 coming our way. Cheers.

SOUTH CENTRAL - Bill Bischoff

CONTEST REPORT:

Charles Ash Memorial - Dallas, Sept 5, 2020

By Bill Bischoff

Covid or no Covid, we had a contest! The stunt turnout was small, yet we had eight racers in attendance. It was hot, but not California hot. It was also humid, which made it feel hotter. We began with Quickie Rat, which had four entries. Bill Lee won with a 6:48. Mike Greb followed with a slow but clean 7:33. Richard Kucejko sorted out his new Quickie well enough to finish a race, earning third. Mike Greb was Richard's fueler, airplane holder, and coach, and I was the designated driver. Kelly Hite teamed up with Gary James for the day, but a malfunctioning shutoff and an over-run relegated them to fourth place.



Kelly Hite's new Zipper; a little more familiarity with the model and he'll be right in the fray.

In Super Slow Rat, Mike Greb ran two good races, winning with a 5:41 and backing it up with a 5:51. Close behind, Billy Biscuits took second with a 5:55. Kelly Hite flew Gary James' entry to third with a 7:09. When Gary gets more practice pitting the airplane, he will be right in the fray. Bill Lee had pitting problems and had to settle for the hind teat. All eight racers entered Sport Goodyear, with eight different designs! Bill Bischoff's taper wing Booray took advantage of a fair amount of solo time to win with a 4:08. Patrick Hempel's NATS winning Knotty Girl was second with a 4:13. Bill Lee entered Patrick's backup plane, a Leighnor Mirage, and took third. Richard Kucejko's Margaret June had a line crimp let go during the pull test, and the most expedient thing to do was have him enter my Margaret June instead. He didn't seem to mind, as he has made it abundantly clear that he wants me to sell it to him. Richard turned in a very respectable pitting performance on an airplane he had no experience or practice with. Gary James is getting more comfortable pitting his unique Fraed Naught and took fifth. Our good pal from Kansas Melvin Schuette entered his straight wing BooRay. His pitting was as good as it gets, but his airplane is shy in the horsepower department. He took sixth. Mike Greb's Polecat turned an uncharacteristic 5:25 for seventh place. Mike was running a new engine and was rich enough to come up short on laps. Kelly Hite's brand-new Zipper looked great and

seemed really fast, but the newness of the model and the unfamiliarity of the pit man kept him from showing his true potential.

During the last couple of Sport Goodyear heats, it clouded up and the wind got a bit dicey. We also started having thunder and lightning, and significant storms were fast approaching. Even though we still had Mouse and Foxberg left to fly, we all thought it was in our best interest to call it a day and hastily pack up.

As we are all getting older/ slower/less energetic, we may be forced to admit that five racing events in a day is just too much. Do we cancel one or two events, or do we just carry over to the next day after stunt is done with the circle? I'm sure we'll have it all figured out by next season!

QUICKIE RAT	70 laps
1)Bill Lee	6:48.78
2)Mike Greb	7:33.34
3)Richard Kucejko	12:22.65
4)Gary James	overrun
SUPER SLOW RAT	100 laps
1)Mike Greb	5:41.31
2)Bill Bischoff	5:55.14
3)Gary James	7:09.86
4)Bill Lee	7:47.08
SPORT GOODYEAR	80 laps
1)Bill Bischoff	4:08.67
2)Patrick Hempel	4:13.95
3)Bill Lee	4:20.37
4)Richard Kucejko	4:39.07
5)Gary James	4:45.05
6)Melvin Schuette	4:51.15
7)Mike Greb	5:25.35
8)Kelly Hite	7:01.88

Shoestring 2020

By Doug Mayer

SHOESTRING...An all-time classic Formula One Airplane. Shoestring's racing record is second to none, and she's one of the most successful Formula One racers of all time. My very first control line airplane was a 1/2A scratch built Shoestring. I was 12 years old in 1975, ogling a plastic P-51 Cox airplane at the hobby shop when I met my first airplane mentor, a gentleman by the name of Tom Hartman. We got to talking, and he convinced me that the plastic Cox airplanes flew like crap, and he would be happy to help me to scratch-build a balsa airplane (AMA 1/2A Scale race rules). I cleared it with Mom and Dad and got to work with Tom building my first racer. The Shoestring was notably larger than some of the other airplanes, but the extra weight and wing really helped in the 1/2A class. I went on to win a bunch of Junior division class contests with that airplane and that's how I got started with Control Line racing 45 years ago.

The mystery of Shoestring, Race plane # 16. I've always been confused about the history of Shoestring, so I scoured the internet for several evenings, and dug up a lot of history.

I answered a lot of my own questions. The amount of information is too much to repeat, but if this article piques your interest, you can follow the links and read an amazing amount of available information on the history of Shoestring.

Everybody knows about Shoestring right?? Or at least we think we do. There have been numerous Shoestrings built over time, and race planes are constantly repainted, renamed and modified, so it can be confusing understanding which airplane is which. There are multiple 3-views of “Shoestring” with race number 16, but different Registration numbers. The documents lead you to believe it’s the same airplane. I was personally quite confused because there are (2) Shoestrings hanging out in museums right here in Southern California. They both have race number 16, and they each bear the 2 different registration numbers that appear on the 3-view documentation. I always assumed that there were 2 airplanes named “Shoestring” built and I assumed that the 3 views were of 2 different airplanes. The original Shoestring with registration number N26C is in the Planes of Fame Museum in Chino California. The modified Shoestring with the sleek canopy, and the modern Ken Stockbarger wing with registration number N16V is in the San Diego Air & Space Museum’s Gillespie Field Annex, in El Cajon, California. So, we have 2 airplanes, in 2 museums, with 2 different registration numbers, so there you have it, mystery solved. Right?

The original airplane was designed by Rob Kreimendahl, and built in a garage in Van Nuys California by Carl and Vincent Ast. Kreimendahl named the model “Mercury Air Special”. The original aircraft was Chartreuse (not yellow) and had race number 16. It had registration # N26C. Here’s where the story gets weird and confusing. The original Shoestring is sitting in the Planes of Fame museum in Chino California. Or is it? This airplane has the original elliptical wingtips, and the round rudder and stab, and a big bubble canopy. If you look at this website, and you will see this airplane at Chino, with references to “Replica” and “I don’t think this is the original” <https://www.flickr.com/photos/tags/n26c>



Photo: Robert F. Pauley

Shoestring as it appeared early in its racing career.

OK, I did a lot of research to figure all this out. The Shoestring sitting in the Planes of Fame Museum in Chino is not the original Shoestring. It is a replica of the original airplane with the original paint colors (not quite) and registration number N26C painted on it, and in its original configuration, BUT....it is a replica. BTW: I also think the green paint on the replica is too dark and not yellow enough to be a true Chartreuse like the original. I have found color photos of the original Shoestring and the paint colors don’t match.

Final Note: I shared this article with Bill Bischoff, and he seems to think that the replica has the original shoestring wing, so as Bill says, “She has some Shoestring DNA in her.” Hmmm...

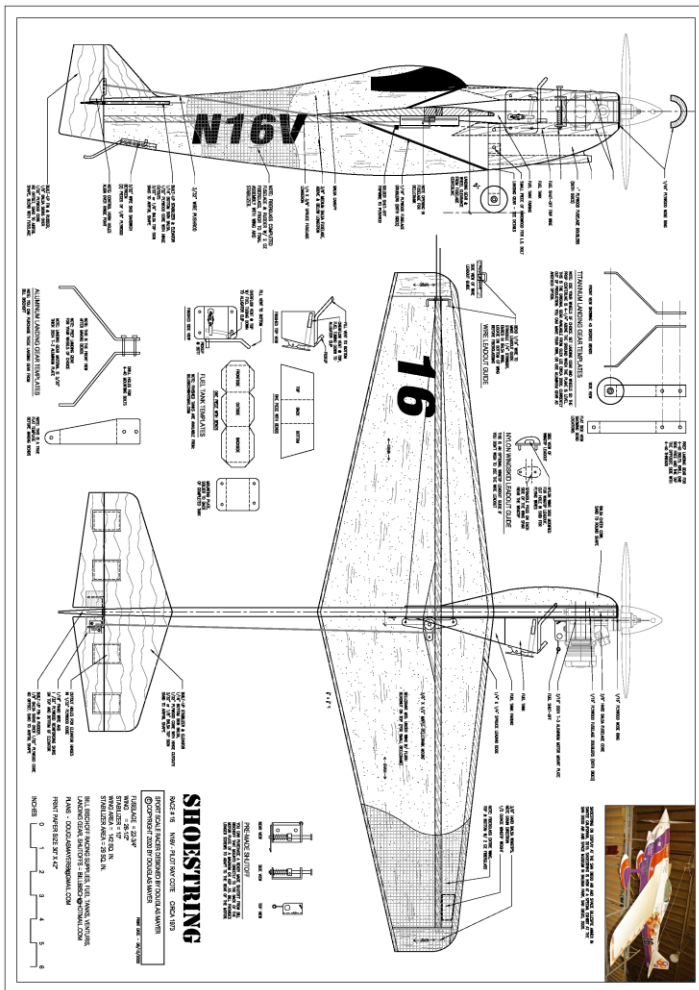
So, what about the original Shoestring? I have seen the real airplane in San Diego hanging from the rafters in the San Diego Air Museum. She still bears the Circus Circus clowns that Ray Cote painted on her when he was sponsored by Circus Circus in Reno Nevada. I have archive photos of the Circus Circus paint scheme in Reno on the tarmac, and what’s interesting is that the “Circus Circus” lettering has been painted white and it is not present on wings of the plane as it hangs in the museum, or on the fuselage. I actually have found photos of the plane in Reno with the “Circus Circus” sponsorship, and without. It appears that Ray Cote painted over the Circus Circus lettering while he was still racing, and before he donated the plane to the museum. I took quite a few photos in San Diego, which I later used to document my drawings of Shoestring that are published in this issue of Torque Roll. I was actually in awe of Shoestring hanging from the roof rafters. She is truly a beautiful airplane with all her wonderful curves and lines. <https://www.airport-data.com/aircraft/photo/000644609.html>



Original Shoestring as donated to the San Diego Air Museum by Ray Cote.

So now back to the original Shoestring mystery. Shoestring went thru several owners before ending up in the hands of Ray Cote. Cote had been racing for 20 years, and when he acquired Shoestring, he made numerous modifications over the years to its modern racing form. This becomes the modern version of Shoestring as we know it today. There are 3 sources of information that confirm the same story. This is a quote from an article listed here:

<http://www.airbum.com/pireps/PirepShoestring.html> Yellow Jacket: Son of a Shoestring, Air Progress, November 1971. *“The original drawings and engineering studies done by Kriemendahl in 1949 were lost or destroyed, a fact that worried John Anderson, one of the several past owners of the original Shoestring. Before Anderson sold the airplane to its present owner, Ray Cote, he commissioned Ketner to go through the airplane with a tape measure and dividers and come up with a set of drawings he could use for repair work in case he ever dinged it. Ketner measured and miked until he*



Shoestring plan drawn by and available from Doug Mayer. Full page drawing in the back of this issue.

had enough dimensions to make up a complete set of working drawings.” This article confirms 2 major points.

1. The original Shoestring reg N26C was indeed sold to Ray Cote who re-registered it as N16V and made extensive modifications to the original airplane. The original airplane is in San Diego in its highly modified condition, as it was retired at the end of its racing career, donated by Ray Cote.
2. The second important point is that there were reproduction drawings made by Landis Ketner while John Anderson owned the original Shoestring. These drawings were reproduced and sold and are the basis of design for the multiple other K-10 Shoestrings that were built over time.

The one thing that always confused me was the (2) different registration numbers on the same airplane. I’m guessing that Cote may have requested the N16V registration number because the “16” was her race number, while the old N26C number did not match her racing number. Never-the-less, the research tells me that it is the same airplane that was modified over time, and that the extra airplane in Chino is a replica, not the real deal.

The most accurate and complete information including photos of the original construction are found in this Chat:

<http://www.afo.com/hangartalk/showthread.php?628-Shoestring-racers>

The chat includes original family members of the Ast family, and they discuss the history behind the construction of the original airplane. The sons explain that International Formula 1 assigned race number 16 to the airplane. The boys wanted to name her “Sweet Sixteen”, but the mom came up with the name “Shoestring” because the entire project was built on a shoestring budget. The boys liked the name and the rest became history. In Fact the designer of the airplane, Rodney Kreimendahl had named the model “Mercury Air Special”, but after the Ast brothers named the first prototype “Shoestring” the name became synonymous to the type, and is the name we all know today.

Many other Shoestrings have been built from the Landis Kentner K-10 drawings.

- YELLOW JACKET #88 – N88JS – 1970 / Jim Strode
- RICKEY RAT #93 – N793V – 1970 / Vince DeLuca
- WAGNER SOLUTION #44 – N44JW – 1971 / Judy Wagner
- NOBIGTHING #24 – N24ML – 1972 / Monroe Lyeth
- Shultz-Wagner Special, ALOUETTE #2 – N8EW / Les Wagner (Judy’s husband) & Chris Schultz
- HALF FAST #30 – N118DP – 1985 / Mick Richardson

Shoestring articles: Good History Information

https://www.if1airracing.com/IF1Web/index_htm_files/mar1994.pdf

https://www.if1airracing.com/IF1Web/index_htm_files/may1994.pdf

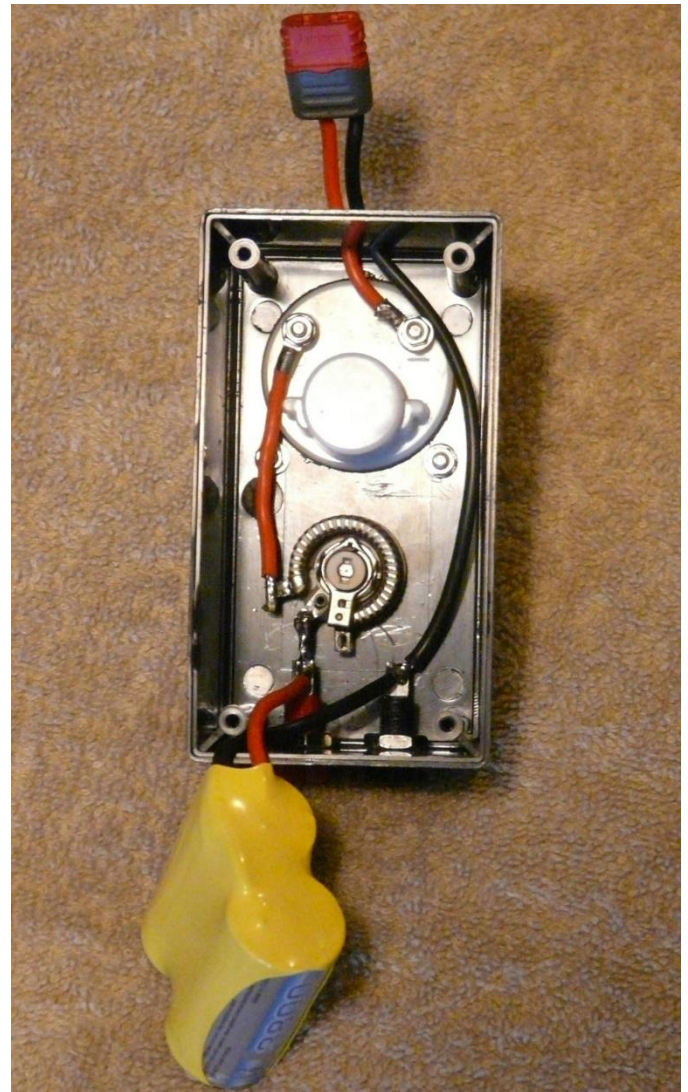
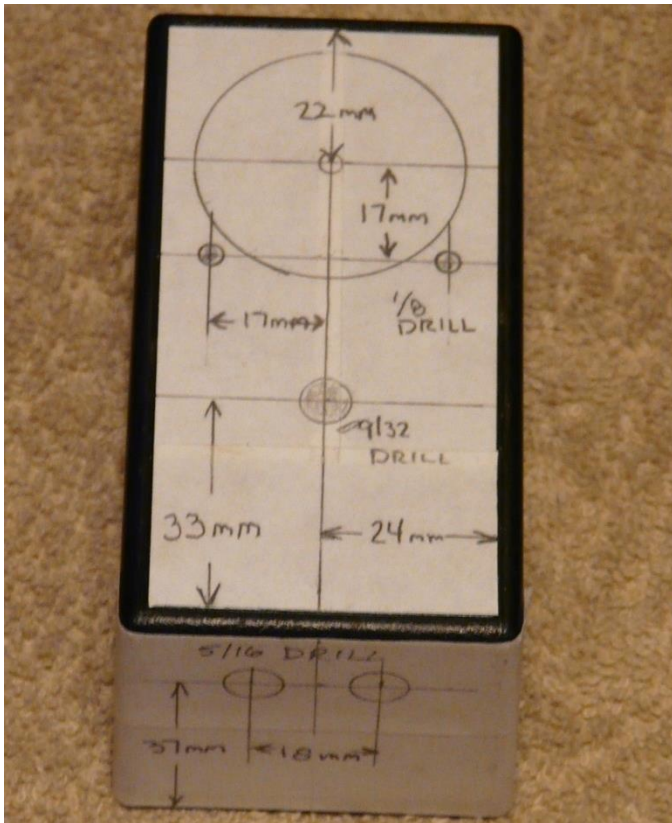
GLOBEE STYLE GLOW PLUG IGNITER Bill Bischoff

This compact glow driver shares many similarities with the time honored Globee Fireplug. Both are rechargeable, feature adjustable output, have an analog meter that is easy to read even in bright sunlight, and are small enough to wear on your arm as part of a hot glove/ hot thumb system. But unlike the Globee, I can tell you how to build one of these for your very own.

Start by gathering all the parts. Several of the items come from Allied Electronics. The black plastic enclosure is nominally 2"x2"x4". Get one red (R) and one black (B) banana jack for the charging ports. You will need two ring terminals for hooking the wiring to the amp meter, and two more if you build the battery clip shown. They're cheap; buy extras. The 1 ohm rheostat and knob are available from Surplus Sales of Nebraska (surplussales.com). You will need one of each. Thank you to Tim Stone for telling me about this source. The rheostat is the heart of the project.

The amp meter comes from ebay. There are many sellers offering the exact same meter. Be sure the meter you buy is 0-5 amps DC current, with size/model designation 91C4. This will have a face of 45mm square, or just under 2". Beyond that, shop for the best deal, but also pay attention to shipping/delivery time. These literally come on the slow boat from China.

Of course, you will need batteries, two to be exact. You can use either Ni-CD or Ni-MH cells. Just be sure to use two matching cells. Ni-CD cells are typically cheaper, but Ni-MH



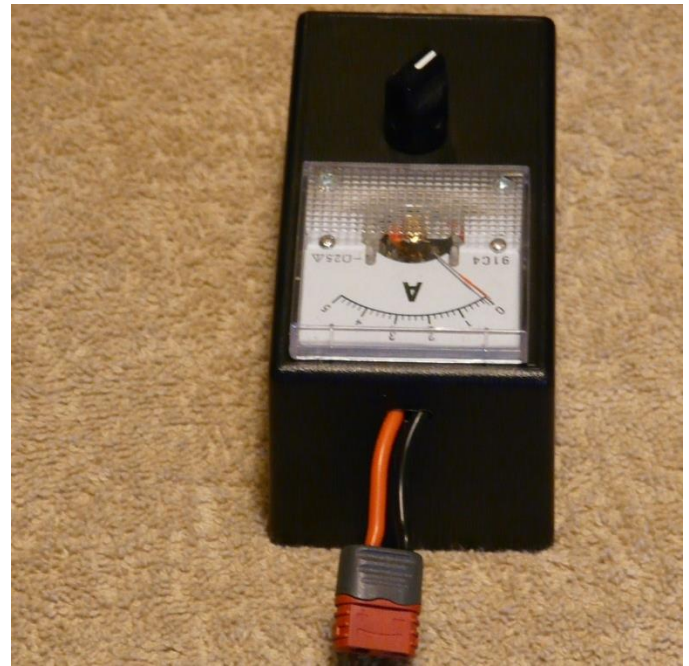
"clothespin" clip. I found the one shown on ebay. It comes as just a clip, with no leads. This was just what I was looking for. Begin by laying out the hole locations on the enclosure. You can lay them out on masking tape (I actually used address labels) or make a template out of scrap fuel tank stock if you intend to build more than one. Drill pilot holes first, then drill the holes out to their correct sizes. The hole for the meter is cut with a 1 1/2" hole saw. Go buy one if you don't have one; they are cheap and will be handy for other projects in the future.

Cut slots in the terminals on the banana jacks as shown and mount them into the enclosure. Mount the meter in the enclosure. Mount the rheostat in enclosure in the orientation shown. Do not neglect to make the small slot for the anti-rotation tab for the rheostat. Install the knob. Cut a 2" long piece of red wire, and strip 1/4" of insulation from each end. Solder a #6 ring terminal to one end of the wire and attach the ring terminal to the amp meter's left hand terminal, as viewed from the rear. Solder the other end to the most counterclockwise terminal on the rheostat as shown. Cut another piece of red wire, this time 2 1/2" long. Install a ring terminal on one end, attach it to the other meter terminal, and run the other end of the wire through the hole to the outside for the Deans connector.

cells are typically higher capacity. I use 3800mAh Ni-MH. You should be able to buy them for about \$4.00 each. Get them with solder tabs if possible. RC car battery packs can also be harvested for cells.

You will need some 16AWG wire for the internal wiring, and also for the glow plug clip. I like the super flexible silicone RC car wire. A set of Deans Ultra Plugs allows simple and positive connection and removal of the glow clip from the battery.

The glow plug clip itself is the last item on the list. Use whatever you prefer. I happen to like the old school



Cut a 5" piece of red wire, and strip 3/4" of insulation from one end. Pre-tin the bare end of the wire with solder. Lay the tinned end of the wire on the middle tab on the rheostat and bend the end of the wire so it fits into the slotted tab on the red banana plug. Solder the wire the rheostat, and then the banana plug. Cut a 9" piece of black wire. Measure from one end, and strip off the insulation between 4" and 4 1/4", leaving a small bare spot in the wire. Bend the wire at the bare spot. Pass the longer end of the wire out through the end of the enclosure to accept the Deans plug. Slip the bare spot in the wire into the slotted tab on the black banana plug and solder it in place. Trim the black and red wires for the Deans connector to equal length and install the connector. Be sure to use the female half of the connector. Never have exposed prongs on the battery side of the connection! Install the male side of the connector on your favorite glow clip.

Now that all the the wiring is complete, the last thing to do is connect the battery as shown in the photos. Cover the battery with some 3" heat shrink or electrical tape to insulate the connections. Before installing the cover plate, connect the battery and clip to a glow plug and verify proper operation.

Install the cover plate, charge the battery per the manufacturer's recommendation, then "gentlemen, start your engines!"

part name	number	vendor
enclosure	70196718	alliedelec.com
banana jack (R)	70090205	alliedelec.com
banana jack (B)	70090205	alliedelec.com
ring terminal	70083997	alliedelec.com
1 Ohm rheostat	RWA-RP103FD1R0	surplussales.com
knob	KNB-107	surplussales.com
5 amp DC meter	91C4	ebay.com
sub C battery		ebay/ various
16 AWG wire		ebay/ various
Deans connectors		ebay/ various
glow plug clip		ebay/ various

If you decide you'd like to have one of these but don't want to build it yourself, I have a limited number of them for sale, For \$50.00, you can get a fully assembled, ready to use battery less charger and glow plug lead. For \$10.00, I am selling a clothespin type glow plug clip with 36" long 16 GA silicone lead wires and a male Deans Ultra Plug style connector. Just plug it into the battery and you're good to go! Add \$8.00 for US shipping. Elsewhere, contact me first.

billbisch@hotmail.com



Richard Kucejco's "Invictus" after painting, nice Job Richard!

NATIONAL RECORDS

SLOW RAT (.25 engine)

Op (70 laps) 3:01.52 Jim Gall/ Les Akre 7/04/11
 (140 laps) 6:17.59 Russ Green/ Bill Lee 7/07/09
 (no Jr or Sr record)

½ A MOUSE 1

Jr (50 Laps) 2:37.57 Scott Matson 7/15/99
 (100 Laps) 5:17.68 Scott Matson 7/17/99
 Sr (50 Laps) 2:44.68 Dave Rolley Jr 7/15/99
 (100 Laps) 5:20.11 D.J. Parr 7/16/98
 Op (50 Laps) 2:12.3 Jim Holland 7/16/04
 (100 Laps) 4:22 Ryan & Gibeault 7/15/99

½ A MOUSE 2

Op (70 Laps) 3:01.24 MacCarthy/Kerr 7/11/03
 (140 Laps) 6:18.13 Whitney/Hallas 7/10/09

SCALE RACING

Jr (70 Laps) 2:50.65 Bob Fogg III 7/16/91
 (140 Laps) 6:08.55 Bob Fogg III 6/23/92
 Sr (70 Laps) 3:15.12 Doug Short 7/11/00
 (140 Laps) 5:40.05 Bob Fogg III 7/11/95
 Op (70 Laps) 2:39.38 Willoughby/Oge 7/15/97
 (140 Laps) 5:33.04 Bob Fogg Sr 7/16/91

F2C TEAM RACING

Op (100 Laps) 3:42 Fisher/Wilk 7/13/15
 (200 Laps) 6:43.32 Fisher/Wilk 7/16/12

F2CN (NCLRA RULES)

100 Laps 4:14.84 Bill Lee/ Russ Green 7/07/11
 200 Laps 8:37:10 Wallick/Brozo 7/15/13

NCLRA 'B' TEAM RACING

Op (35 Laps) 1:24.34 Burke/Duly 7/12/05
 (70 Laps) 3:05.73 Green/Lee 7/10/09
 (35+70 Laps) 4:33.91 Green/Lee 7/10/09
 (140 Laps) 6:08.80 Green/Lee 7/10/09

RAT RACING (.15 RULE)

Op (70 Laps) 2:44.6 Jim Holland 7/15/04
 (140 Laps) 5:33.1 Jim Holland 7/15/04
 Jr-Sr No record established

NCLRA FOX RACE

Jr (100 Laps) 5:57.11 Scott Matson 7/11/99
 Sr (100 Laps) 5:28.09 Scott Matson 7/16/02
 Op (100 Laps) 5:32.55 Tim Stone/Bob Oge 7/10/05

NCLRA CLOWN RACE

Op (7 ½ Min.) 150 Laps Bischoff/ Lee 7/15/15
 Op (15 Min.) 284 Laps Bischoff/Lee 7/15/15

NCLRA TEXAS QUICKIE RAT

(70 Laps) 2:58:72 Bill Lee/Bill Bischoff 7/18/13
 (140 Laps) 6:07.01 John McCollum/Bill Lee 7/14/05

NCLRA SUPER SLOW RAT

(100 Laps) 5:14.30 Bill Lee/Russ Green 7/05/09

CONTEST CALENDAR

Due to Covid-19 virus, many contests listed may be cancelled or re-scheduled, check and make sure before travel.

NCLRA cannot be held responsible for errors or omissions!
This calendar is compiled from data collected at the NCLRA website nclra.org. and other published sources.
Members can log in to NCLRA.org and submit contest details.

NORTHEAST DISTRICT

None

NORTH CENTRAL DISTRICT

None

NORTHWEST DISTRICT

None

SOUTHEAST DISTRICT

None

MIDWEST DISTRICT



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SOUTH CENTRAL DISTRICT

DALLAS 2020 RACING CONTEST SCHEDULE

(contests typically also feature other events)

October 9-11: Saturday- Quickie Rat, Super Slow Rat/ Fox Race (combined), Sport Goodyear /Sunday F2CN, Clown, Mouse I, Fox-Goldberg.

All events held at Dallas Hobby Park. Contact Bill Bischoff for details (billbisch@hotmail.com)

SOUTHWEST DISTRICT

2020 Whittier Narrows Speed, Combat, & Racing Contest Calendar
1511 Loma Av, Whittier Narrows Park, S. El Monte, Ca, 91733
Speed Circle Coordinates are DEC:+34.042737, RA:-118.070392
TENTATIVE

Oct 24-25 Virgil Wilbur Memorial Speed, Combat, and Racing, Canceled!

Dec 5-6 TOYS FOR TOTS Speed, Combat and Racing, sanction #

Racing Sunday only: mouse 1, SCAR Goodyear, NCLRA Clown, Super Slow Rat/Fox Race and Quickie Rat, Musciano Log Racing
Entry fee: 1 new unwrapped toy, approx value \$10-\$20.

Speed CD: [Howard Doering h.714-638-4937](mailto:Howard.Doering@h.714-638-4937) c.714-394-5304

Racing ED:

Combat ED: Don Jensen flyjensen56@verizon.net Cell 909-576-3430NOTES:

1. Contact CD or ED to confirm contest dates before traveling long distances.
2. All speed events included for AMA, NASS, and Northwest rules.
3. All Racing events Sunday only, 313, Quicky rat, NCLRA, super slow rat, NCLRA clown
4. Same Racing events each contest
5. Clown will be flown on 60' lines per NCLRA NATS rules
6. Other Racing events may be flown if two entrants show up ready to race.



Doug Mayer in awe of the Circus Circus Shoestring on his visit to the San Diego air Museum.

Dallas Model Aircraft Association

Fall Finalé 2020

October 9-11, 2020

Hobby Park, Dallas, TX

for **Control Line Speed, Racing and Air-Air Combat**

Northwest Highway & Garland Rd, Dallas TX 75238

Friday, Oct 9

Record Ratio Speed
Jet Speed
Perky Speed

Saturday, Oct 10

Record Ratio Speed
Sport Jet Speed
Perky Speed
Texas Quickie Rat
Super Slow Rat/ Fox Race
Sportsman Goodyear

Sunday, Oct 11

Record Ratio Speed
Jet Speed
Perky Speed
Clown Race
F2CN
Mouse I
Goldberg Race
Air-to-Air Combat

Pilots' meeting 9:30 AM each day

Any speed can be flown on a percent of current record basis. Super Slow Rat and Fox Race flown combined as one event. Rules for non-AMA racing events at nclra.org. Sport Jet and Perky rules at clspeed.com. 10% fuel generously provided by Ritch's Brew. Contact ED for Combat rules.

Contest director: Bill Bischoff (billbischoff@hotmail.com)

Speed event director: Patrick Hempel (ptrckhem@aol.com)

Combat Event Director: Lester Haury (nlhaury@gmail.com)

First event \$10.00 / additional events \$5.00 ea / maximum \$25.00

Sponsored by: Dallas Model Aircraft Association (dmaa-1902.org)



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Paypal: billbisch@hotmail.com/ Mail checks to: William Bischoff,
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NCLRA membership information

Basic membership is free. Simply apply on the web site : <http://www.NCLRA.org/> You will get the Torque Roll newsletter electronically every other month. In addition, you will get voting privileges for whenever a vote by the membership is required.

If you would like to receive a paper newsletter

A paper copy subscription is \$10.00 for US and non-US residents. Send payment to the Secretary/Treasurer listed above.

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