

From: National Control Line Racing Association  
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TO



Richard Kucejko from Alabama Built this beautiful Margaret June Sport Goodyear model. See inside for details.

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**Torque Roll Issue #149  
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## PRESIDENT - Bill Bischoff

First of all, I hope everybody is healthy during this Corona virus pandemic. Use your good judgement and good practices to not only avoid the virus, but to avoid spreading it as well. Once again, it's officer election season. The ballot for President, Vice President, and Secretary/ Treasurer will appear in the next newsletter. Incumbents should indicate whether they want to run again or step down. I personally am willing to go for another term, so I'll commit to it before I change my mind. Of course, challengers are welcomed and encouraged, so don't be shy. As always, before you nominate someone besides yourself, make sure that person gives consent.

## RACING RULES PROPOSAL

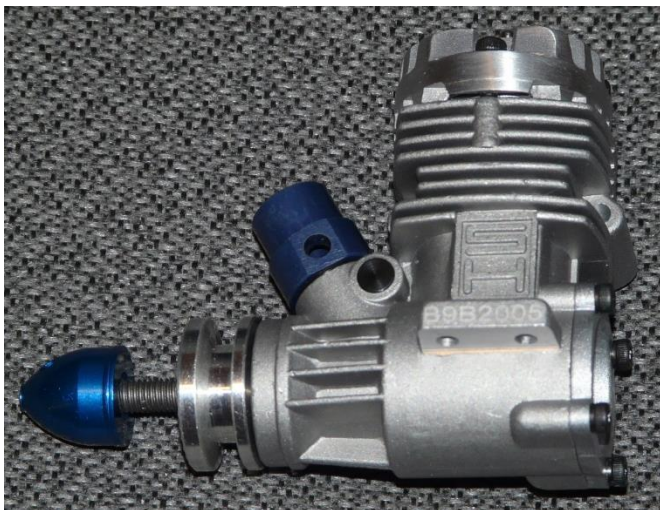
Your President has submitted a rule change proposal for event #317, Scale Racing (Goodyear). In a nutshell it says racing numbers and license numbers on the wing are optional. Racing numbers will be required on both sides of the fuselage or fin/rudder. AMA numbers may be on the wing, fuselage, or fin/rudder. This makes the rules consistent with full scale Formula One rules. My notion was that a scale paint job shouldn't be illegal in **Scale Racing!** Obviously this will have no effect on performance. Since Sport Goodyear events are modifications of AMA Goodyear, these changes will apply to the sport events as well.

## BOB WHITNEY ON DIESELS

In response to my previous request, Bob Whitney has shared some of his personal history with diesel engines, plus some diesel basics. Bob is an F2C mechanic, former NCLRA President, and NCLRA Hall of Fame member. (As a junior, Bob even competed against Moses!)

## SH 15 ENGINE UPDATE

The SH 15, legal in DMAA Sportsman Goodyear, is now readily available in the USA from [mikegoesflying.com](http://mikegoesflying.com). The price is \$76.99 and shipping is \$10.95. There was initially a discount code of "SH15intro" good for \$15.00 off, but I don't know how long it lasts. Best to call, or you can just enter the code and see what happens. By the way, my new engine came with a nice, blue anodized spinner nut. (The engine does NOT include the venturi or cut down head clamp.)



## NAPA DC540 AEROSOL PRIMER SUBSTITUTE

One very useful product I learned about on Stunt Hangar was NAPA's DC540 gray spray can primer. It dried quickly, and sanded like a dream. I used it on multiple models. Unfortunately, somewhere along the way they changed the formula. The "new" formula was thin, runny, and shy on solids; just not any good. Recently I was reading (also on Stunt Hangar) about Harbor Freight's Iron Armor sandable primer. I tried it on my new sport Goodyear, and found it to be identical to the "old" formula of DC540. It's a bargain at \$3.99 per can, not to mention Harbor Freight always has 20% off coupons.



## RICHARD KUCEJKO'S FLEET

I have been corresponding with Richard Kucejko of Alabama since last Fall. He is working on three sport Goodyears. They include a Margaret June, a Flying Models Cassutt taperwing, and a Li'l Gem/ Ole' Tiger. Richard doesn't have many other racers to fly with in Alabama, so he is enthusiastically looking forward to racing in Dallas sometime this year. We'd love to have him.



Richard Kucejko's new Sport Goodyear models.

## North Central – Paul Gibeault

So, President Bill emails me a notice that this month's N/L issue is due. What the heck can I report on from up here in *The Frozen North*, I muttered under my breath? Then the light came on! With this Covid 19 situation happening worldwide, and most everything (including my airport) shutting down I see an *opportunity*. Yes indeed, I have just declared an Open Season on model building. "*Stay calm and Build On*" I say. Just in the nick of time fellow club member Bob Whitley came over to assist on the finishing touches to my long awaited Building Table. If you don't have a decent place to build then maybe this is a good time to address this and "*Get-er-done*". Shown here is my 1" Baltic Birch 4' X 6' table with maple edging courtesy of Bob. I puzzled over how the legs would be built, but ended up cutting a metal Canadian Tire work bench apart & using its 6 adjustable metal legs & steel frame as the support structure. Right now the top protective wax coat is drying whilst I type up this report... It's almost sad that my bench looks better finished than most of my models...but I digress. Life isn't always perfect.



While I vacuumed & mopped up the shop floor, I decided to buy a new high power vacuum cleaner & go to town & clean up the whole shop. Apparently vacuuming had been sadly neglected, but with nothing else going on, there is no real good reason for a messy shop. (Besides if the COVID-19 gets me, I don't want my inheritors to know that I work in a \*!@% mess. Alrighty then, what to build? Well in my case there are always engines awaiting

building or as is most often the case for me rebuilding. There is no better time than now to order the necessary parts as required, and clean up & polish those heads & spinners for the new season. No doubt my Mouse Race Cox ball-socket joints will all need resetting after last year's brutal racing season. Why wait for Spring? Do it now!



But what to build, what to build?? Well, now is an excellent time to review all those stashed away kits just waiting for "the right time" to be built. OR, I just returned from the local print shop with PLANS for other possible winter builds.



Of course, I have decided to prioritize REPAIR WORK over any new construction. I'm amazed that I don't think a single model of mine from last season escaped without needing one or more repairs. Of course, the more closely I look the more repairs (and modification / enhancement upgrades) I see are needed. At least that means my models have been flown in competition rather than grazing shiny on the rack.



About the only holdup I see, is that my models will have to wait for warmer Spring weather for the repainting. However, with quick drying epoxy paints, only a few days will be needed for me to restore all to a state of shininess. Much unlike my usual "Modus Operandus", I will now have time to actually polish my existing models. Not that it makes them any faster, they just "look faster" is all. For what it's worth, I have found that "Novus 2" polish works very well on epoxy/polyurethane finishes. Met-Al polish also works great on aluminum & magnesium parts. Nothing beats the look of an aluminum or magnesium pan all polished & glistening in the sunlight! A few coats of wax over the metal should help it from oxidizing too quickly again.

Of course the very best thing about modelling in the shop is that it tends to take one's mind off this current calamity of the century. By the way, with all that's going on, do stay in touch with your fellow modellers and if you can, what better time to build models with your kids??

## **SOUTH CENTRAL - Bill Bischoff**

Not much has happened around the district lately. We've had lots of rain and wind and not too much flying. The Presidents' Day contest had no official flights on Saturday. Some of the contestants went out to eat, and then went back to the field for some Sport Goodyear practice. Sunday's stunt had three entries, and Lester Haury's air to air combat event was the big draw with seven. I mention this just so I can brag about taking second place! Our Spring Warm Up contest was scheduled for the end of this month. Unfortunately, due to the Corona Virus pandemic, we have been forced to postpone it for now. Sorry to everyone who was planning on attending.

## **SOUTHWEST - Doug Mayer**

I write this report in a very challenging time in our society. The Corona Virus is in full swing, and it seems that everything is shutting down. The State of California has just ordered everyone to "Shelter in Place", except for essential services. Los Angeles County also invoked a similar measure for the entire LA County. My friend has told me that the San Francisco bay area is under similar orders. My Architecture firm has an office in Shanghai, and they seem to be over the hump. Things are getting back to normal for them as the big wave has passed. We too will get thru this and get back to normal someday. The question is "how long?" We will find out in due time. In the meantime, enjoy your family and friends and bond together, and be safe. For me, I find writing to be a nice outlet, and find it to be very therapeutic, so I'm going to share several stories with you this month.

First, let's talk about airplanes!! Last month, the local guys sent out some emails to organize a practice session at the Sepulveda Dam Basin. In Los Angeles, we are very fortunate that we have 2 large public parks that have control line facilities. Most of you have heard of Whittier Narrows, but you may be unfamiliar with the Sepulveda Dam Basin.

Whittier Narrows: has (3) paved control line circles, and (2) grass circles. This is the Park where we hold all our sanctioned contests. One paved circle is used by the stunt guys, and it has minimal paint markings, but is a full-size circle. One paved circle

is used by us racing guys, and we have all the required circles and pit segments painted on the circle for all line lengths. We also have a pit section with painted line lengths. The third paved circle is used by the speed guys, and it is outfitted with a full perimeter cage, and a speed pylon. We also have 2 grass circles. One grass circle is rarely used and has a concrete carrier deck. In 20 years, I think I have seen this circle used 3 or 4 times. The other grass circle is the combat circle, and that circle is used every weekend. Whittier really is the premier site because it has site specific circles for Speed, Racing and Combat. On a contest weekend, all 3 circles experience non-stop flying.

Sepulveda Dam Basin: Apollo XI Field: Our other park is maybe less known, but very popular due to many of us living in close proximity. This is the home of the [San Fernando] Valley Circle Burners. The interesting thing about this site, is that it is a flood control basin. This dam was built by the US Army Corps of Engineers in 1941 after a devastating flood in 1938 killed 144 people. The basin has several parks, a golf course, an armory, and of course a large model airplane facility. It is not unusual that the park may be flooded after an intense Pacific Winter storm. That's the reason there are no permanent habitable structures within the basin.

You can read more about the basin here:

[https://en.wikipedia.org/wiki/Sepulveda\\_Dam](https://en.wikipedia.org/wiki/Sepulveda_Dam)

This park is used by a ton of RC fliers. The regular gas and electric fixed wing guys have a full-size RC runway. The park fliers fly over a grassy area. There are (3) old concrete control line circles, but over the years, they fell into disrepair. They are cracked up, and in pretty bad shape right now. The park built (2) new paved blacktop circles which are used today by the control line folks. The old concrete circles have been converted to a RC drone area, and a RC helicopter area. (At least someone is using those old circles). Unfortunately, this park has been thru some tumultuous times. The park is downwind less than 2 miles under the Van Nuys Airport flight path. Its common to see biz jets, small private planes, and an occasional WW-II fighter plane fly right over the field. Unfortunately, the RC guys started to fly their high-powered turbine jets at high elevations, which pissed off air control at Van Nuys, and the model airfield was almost shut down in 2019. Things are still on a rocky standing, but model airplanes continue to fly.

This field is used a lot on weekends by fellow racers Ron Duly, Dave Hull, Mike Callis, Dave Dawson, and several other sport and stunt fliers. I'm not sure what happened the weekend the guys were practicing, but I showed up late with some airplanes, and never took them out of the car. I guess my excuse is that I had to still drive an hour to my buddy's house to trade some snowboard equipment between our 2 boys. I watched the guys run a SCAR Goodyear practice heat, and hung out and chatted for a while. I did a show-and-tell with my newly printed drawings of Invictus, (see more on my full article of Invictus in this issue). Here's all that I remember from the practice session. I heard a story about a mouse flight, with a trainer plane, in the wind, with a large stunt handle, and something about an erratic flight, with a lot of up and down, and something like, "It was very exciting". Well, I guess if you show up late, you miss a lot of excitement.

We have no formal contests to report since our last report in Feb. Our next contest is scheduled for April 07 at Whittier Narrows has been cancelled due to the current situation with the Covid 19 crisis. The entire park is locked, and inaccessible to the public. We will have to keep an eye on things to see when the park opens.

I have a few stories to put things in perspective:

The flood of 1972: Harrisburg Pennsylvania: I have lived thru a few disasters that I remember very vividly. I was 9 years old in 1972, Tropical Storm Agnes came up the east coast from the Caribbean and got stuck over Central Pennsylvania for at least a week. It rained and rained and rained. The Mighty Susquehanna River is the primary tributary of the Chesapeake Bay, and it couldn't handle the deluge. The river is over a mile wide in Harrisburg, and I was blessed to have grown up on a high bank 300 feet above the river. From my parent's house, we can see the entire Susquehanna river basin, and the city of Harrisburg. All the creeks and watersheds overloaded the Susquehanna, and it crested 33 feet above normal. To this day, the 1972 flood is the largest flood in history in Harrisburg. Before the flood became critical, my mom stored water in every container that she could think of. Our kitchen table was stocked with containers of water. We used this water to drink and cook. Once the flood breached its banks, our public water supply was cut off. The water treatment plant and pumps were over run, and we had to go without water for at least 2 weeks. Fortunately, our neighbor had a swimming pool, and he invited all the neighbors to retrieve buckets of water from his pool. We used this water to flush our toilets and take sponge baths. The national Guard was stationed in our neighborhood, and they would not let allow access to our neighborhood except for the local residents. The problem was that we had an incredible view of the flood, and the neighborhood was over-run by gawkers. The National Guard was concerned that if there was an emergency, vehicles couldn't get thru the traffic mess, so they just shut down our entire neighborhood. Also, the entire town was under a mandatory curfew daily from 9:00 PM until morning. It took forever for the flood waters to recede, and when it did, it took many months, to remove all the trees, and mud and muck. Thousands of people's home and businesses were destroyed. Some people had entire basements filled with mud from floor to ceiling. It seemed to take forever for things to get back to normal. Some businesses were permanently out of business and never returned. Some homeowners took years to repair their homes and recover their losses. You can read more about it here:

<https://www.pennlive.com/life/2019/06/battered-lashed-flooded-and-paralyzed-agnes-devastated-pa-in-1972.html>

If the flood wasn't bad enough, I was in 10<sup>th</sup> grade when the Three Mile Island Nuclear Power Plant melted down in 1979. It was a Friday, and our school principal came on the PA system and said, "There has been an accident at Three Mile Island". Trust me, everybody knew what TMI was. It was only 10 miles from my house, and you know that great view of the river valley from mom & dad's house? Yep, you guessed it, we could see TMI from our house. So, the principal continues, "We are closing all doors, and windows, and shutting down the air-conditioning system. You will stay in the room you are in for the remainder of the day until your parents come to get you. We will call you to the office when your parents arrive....." Fortunately, it was a Friday, and my family had plans to go to a church retreat near State College, PA. (2 hours upwind, thank you very much!!!) That weekend was pretty creepy. We had left our home with the clothes on our back, and we never knew if we would ever see our home again. Just

think of Chernobyl!! Thank God that didn't happen to us. We had to watch the national news and listen to the radio to determine if it was safe to return to Harrisburg. My dad eventually determined it was safe to return, but my sisters and I were very frightened. As it turned out, over 50% of the population of Harrisburg self-evacuated that weekend. TMI vented radioactive steam in what the Nuclear Regulatory Commission classified as "safe levels". These reports don't disclose this, but the dairy farmers in Middletown Pennsylvania could not sell their cow's milk for years because it was tainted with radiation.

More here:

<https://www.history.com/topics/1970s/three-mile-island>  
[https://en.wikipedia.org/wiki/Three\\_Mile\\_Island\\_accident](https://en.wikipedia.org/wiki/Three_Mile_Island_accident)

So, what is next? My kids are out of school now, and I'm sure it will be for the rest of this year. Right now, they are playing video games, and doing a lot of bike riding and skateboarding. I try to encourage them to play outside and get as much exercise as possible. Without school, little league baseball, and all the other stuff that is closed, I ask myself, what else can I do with the kids? What about school days? Model airplanes!!!! Yes, I am planning to have both of my sons build a sport goodyear racer. I want to teach them to cut, carve, sand, glue, paint, screw, machine, fabricate, decorate, you name it! We all love our model airplanes, and that is what bonds us together as a group, but it has also shaped all our lives since we were kids. I want to share that experience with my boys, and hopefully it will be something they carry with them thru their lives. I'll give this a bona-fide effort, and report back to you in 2 months. Maybe I can have some good material for a construction article.

So, you may ask yourself, what is the point of all these stories? We humans are very adaptive and strong. We persevere. We fight on to live another day. We endure floods, nuclear disasters, hurricanes, tornadoes, earthquakes, fires and pandemics. We will survive this difficult time, and we will live on. Someday, my children will tell the story of the great Covid 19 pandemic of 2020 just as I have told you stories from my childhood. Remember, it's the important things in life that keep us going, like family and community. Talk to your neighbors, support each other, love your family, and stay safe. God Bless you all.  
-Douglas

## HISTORY OF THE ARGANDER GOODYEAR MODEL

### Bill Bischoff asked Tim Stone:

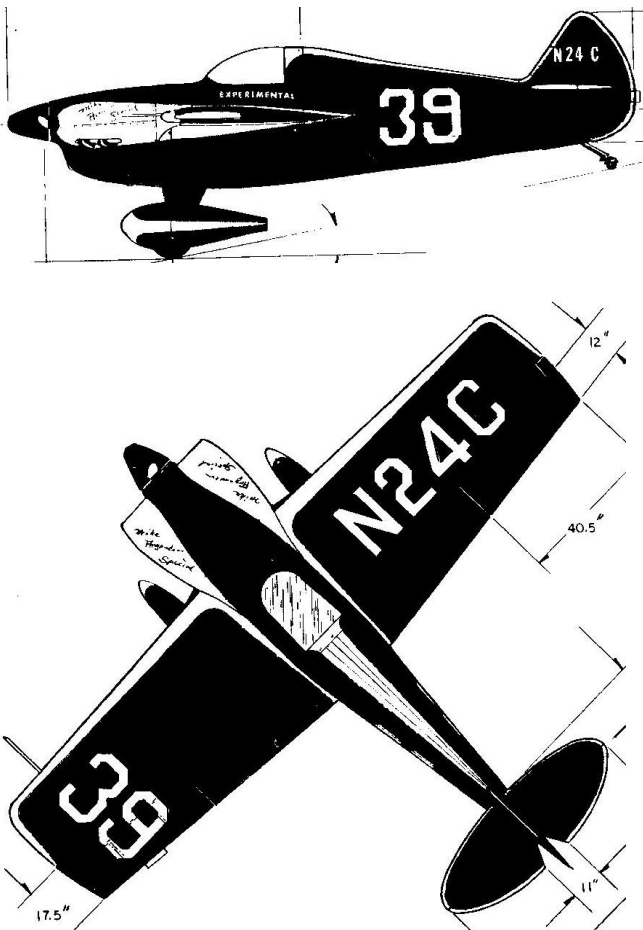
Tim, I'm looking for some Goodyear history and figured you would probably know the answer. In the early '70's the Argander was a popular model, at least in Chicago. Who was responsible for that design? Was it kitted by somebody? I seem to remember hearing something about a kit with a foam wing. Do plans exist anywhere? I know I could easily generate my own plans from a 3-view, but that's not really the point. I'm just curious about the history. The first Goodyear model I ever saw was an Argander, owned by Eric Britton (he was my age, born 1961). The G15 engine at least came from Dale Calvert. The model may have also previously been Dale's. It was originally yellow, but when Eric owned it, it was metallic blue. This was in 1974.

## Tim Stone's reply:

I started flying Goodyear about 1971. Joined the Treetown Modelaires, which was a racing club mostly in those days. Members included John Tulach, Mike Leone, Bob Oge, Glenn Lee, Bill & Bud Hughes, Thornton Jones, Al Kelly, Ron Waldron, Jim Hojnacki, Dale Calvert & his dad, Ed Niemic, Bob Phillips and my dad, Alvah, brother Al & myself. I'm probably forgetting some.

Jim Hojnacki was mostly responsible for promoting the Argander as well as the Pitts special "Little Monster". He cut foam wings (flat bottom) for both airplanes. He also sold full sized outlines of both airplanes. Back in the day, most of the club flew Arganders and a few Pitts. Glen published an article that ran in American Aircraft Modeler about the Pitts & GY in general. He had much success with his. It flew like a dream. If I remember, Jim Hojnacki was getting married & getting out of the hobby. My dad bought out his simple foam cutting rig, wing cutting fixtures for Pitts & Arganders along with outline plans. There was never any construction details. My brother & I cut foam wings for a while but there was never much demand even back then. Soon after, John Kilsdonk published plans for the Falcon special and people started building other designs.

The plans & cutting jigs have been lost over time I believe. Thanks to brother Al for refreshing my memory.



Side and Top views of the Mike Argander Special.

## Invictus Sport Goodyear Racer

by Douglas Mayer

I guess I'm a bit of a nerd when it comes to Formula 1 racing airplanes. I have spent countless hours looking at books of 3-views, Robert Hirsch's Volume #1 & #2, and The Air racer by Charles Mendenhall. I probably have every aircraft memorized from those pages. Hirsch's second volume was published in 1995. When I returned to this sport 25 years ago, this book was hot off the press. It had drawings of Jon Sharp's Nemesis, and Ray Cote's Alley Cat which were current racers on the Scene in the 90's. I am an architect by trade, and I have been designing and drawing Goodyear racers for 20 years. My latest subject is Invictus.

It seems that many of us have built all "The good planes" from these publications. But what makes a "Good Airplane"? Well, for me, its length of fuselage, and wingspan, but let's be honest, most of all it's a cool looking airplane. Really?? Well, of course. Who was ever motivated to build an airplane that you thought was ugly, or dorky looking? If you put all those hours into your construction, you had better believe that your airplane is cool looking, or you are most likely wasting your time.



The highly modified Cassutt called Invictus.

So, what about Invictus? I love the lines, the shape, the overall sex appeal. Many of the current airplanes are specific custom built, and many others are highly modified Cassutt racers. Some of these are almost impossible to identify as a Cassutt, because the owners replace the old barn door wings with new, high aspect wings. The turtle decks are often removed in favor of a bubble canopy, the original fin and rudder are replaced, and the stabilizer and elevator are replaced. The steel tube fuselage may be all that is left of a Cassutt racer after extensive mods. Outrageous and Invictus are both Cassutt racers, but don't look anything like the original kit design. In fact, as you will see below, Invictus is a classic example of a Cassutt racer being stripped to the bones, and even modifying the fuselage for a completely new airplane design. More information here on the original Cassutt design: [https://en.wikipedia.org/wiki/Cassutt\\_SpecialBefore](https://en.wikipedia.org/wiki/Cassutt_SpecialBefore)

One of our challenges these days is getting a 3-view, or enough information to create your own 3-view. Most of the current renditions of planes have come along since the Hirsch Publications, so you are on your own. Fortunately, the internet can lead to a lot of information. Sometimes, you can find a perfect side view of an airplane, and I can trace an accurate outline in AutoCAD to develop the drawings. I was able to do this with Invictus. One factor that helps to develop an airplane is the understanding that the Formula 1 rules require a minimum 66 sq. ft. wing. Almost every single Formula-1 wing is 66 sq. ft. and nothing more. When you do the math, that turns out to a model airplane wing of 150 sq. inches. With the +/- 5% rule, you can get a wing to 141 sq. inches and still be within the rules. (All F-1 racers understand that the biggest drag on the plane is the wing. The better the design, the faster she goes). If I can gather decent photographs of the wing, and the stab, I can also re-create the wings and stab outline with photos and AutoCAD. It's a bit tricky, but very accurate.

So, what of Invictus? Invictus is one of those planes that has gone thru multiple changes. I first saw a photo of "Zipper", and thought, now that's a cool airplane. I started to do some research on the internet, and I came across the following (2) articles in The IF1 Journal, Formula Forum, March/April of 2010, [https://if1airracing.com/IF1Web/index\\_htm\\_files/IF1%20Forum%202010%203-4%20MarApr.pdf](https://if1airracing.com/IF1Web/index_htm_files/IF1%20Forum%202010%203-4%20MarApr.pdf)

The first article by Gene Hubbard tells the history and background of the plane and its development. Amazingly, this plane was owned by 11 people before George Andre bought it and named it Zipper. It had previously been Knotty Boy, and then #57 Aggressor. This first article is pretty cool, because it really demonstrates how these formula One airplanes evolve over time. The second article is by George Andre and he describes how he stripped Zipper to the bones, shed a lot of unnecessary weight, and even re-shaped the fuselage. All these mods continued to make Zipper a top competitor, and George was able to take Zipper to a second place in the Gold races at Reno. George was owner #12, and for whatever reason, he sold the now successful airplane again, to its 13<sup>th</sup> owner. By some miracle, George was able to acquire race #1 for Zipper! Can you imagine getting number 1 for your airplane? How totally cool is that?



Before it became Invictus, it was called Zipper, although no relation to the original number 59 Zipper Formula One of many years ago.

The final owner was Tim Neubert who re-named the plane Invictus. Thru some research, I determined that the crazy paintjob on Invictus is actually a vinyl "Wrap" like they put on cars. There was some concern that it would not withstand the high speed of racing, but the wrap performed without any issues. The first year that Tim Neubert owned Invictus, it had some technical problems and did not race in 2008. In 2009, Invictus dominated the qualifying heats, and went on to win the Gold race with a race speed of 241 mph. The final chapter of Invictus is a huge disappointment for me. Its winning history was run short when the plane was donated to the Florida Air Museum in Lakeland International Airport, Florida.



Invictus as it now resides in the Florida Air Museum.

<https://www.floridaairmuseum.org/>. I wish that Invictus stayed on the racing circuit for a longer period to flush out its true potential. I guess its like a football quarterback that retires after they won the Superbowl. Regardless, I hope you enjoy the design of Invictus for Sport Goodyear Class. This model is compliant for DMAA, SCAR and AMA Scale racing rules. If you would like to build a model, I share all my full size .pdf drawings via email for free. I have also asked the NCLRA to make these drawings available for free on their website. Drawings are 30" x 42" print size. Just drop me an email, and I'd be happy to share any of my designs with you.

Douglasmayer58@gmail.com

More Photos of Zipper found here:

[https://if1airracing.com/IF1Web/index\\_htm\\_files/Nov2007.pdf](https://if1airracing.com/IF1Web/index_htm_files/Nov2007.pdf)

Invictus on the cover of the Journal, twice!:

[https://if1airracing.com/IF1Web/index\\_htm\\_files/IF1%20Forum%202009%2011-12%20NovDec.pdf](https://if1airracing.com/IF1Web/index_htm_files/IF1%20Forum%202009%2011-12%20NovDec.pdf)

[https://if1airracing.com/IF1Web/index\\_htm\\_files/IF1%20Forum%202011%205-6%20MayJun.pdf](https://if1airracing.com/IF1Web/index_htm_files/IF1%20Forum%202011%205-6%20MayJun.pdf)

**See 2<sup>nd</sup> last page of this issue for Invictus 3-view drawing.**

## 63 YEARS OF RUNNING DIESELS

Bob Whitney

It was so simple back then. It all started with a SuperTigre .15 (about \$8.95 ) and a can of OK CUB diesel fuel (about \$0.95) and the first year of F2C at the Nats, about 1957. That was probably one of the easiest diesels I ever used. In '58 I was given on loan a Moki 15 D that was smuggled from the FF World Champs in Poland . F2C never took hold in Florida, so I gave it back without really using it. Even then in the back of my head I wanted to try for the US F2C team.

The Russian team was invited over to fly in the last Tri-Cities Washington Nat's, and before going back they sold off most of their stuff. With the help of a very good friend I was able to buy one plane and 2 engines. Then it was game on. I wore out one engine and the plane. I built a plane for the 2nd engine ( it had needle bearings in the bottom end of the rod ). It was at this time I started learning about fuels. At the Nat's that year Fred Quedenfeld and I had low time in the final, but were disqualified for a stupid move on our part. This was about the time that the Nelson .15 diesels were making a name for themselves, and we were building our own planes. Today the good engines come from across the pond.

All this time the big mystery was the diesel fuel. As far back as I can remember we were looking for more speed and mileage from the fuel. With Stockton and Jehlik leading the pack, almost everything that could be obtained was tried. Until the last few years, it came down to four ingredients: kerosene, oil, ether, and some kind of a amyl nitrate derivative. I won't go into some of the taboo stuff that we used to run. We are talking about competition 2.5 diesels, not sport diesels.

First there is ether. Ether is for starting, and also helps cool the intake charge. There is a lot of talk right now on Stunt Hanger about using starting fluid for ether . This may be all well and good for sport fuel. When Dick Lambert got into F2C, he was given some fuel and was not having any real problems with his runs. I was using ether from Red Max and getting very inconsistent runs. When he ran out of his fuel he got some ether from Red Max and started having the same problems I was having. He did some checking and found that Red Max ether was typically used as a cleaning fluid; the lowest grade ether you can buy. We started buying anhydrous medical grade ether from Fisher Chemical and things went back to normal.

Second is oil. Forever, castor oil has been the norm with ten to 12 % being used. The only problem was that it varnishes the piston, cylinder and head in about 300 laps. The varnish buildup changes the compression and builds up heat in the engine. Not fun in a two day contest. Now the normal mix is 2/3 castor and 1/3 synthetic (Klotz or a good motorcycle 2 cycle synthetic). 1/3 is enough to keep everything clean.

## DIESEL BASICS 101

Bob Whitney

Sport diesels are very easy to operate once you understand them; racing diesels, not so much. Let me say here, never run over compressed or you will over heat and burn up the motor in one run. The compression screw (contra piston), needle valve and fuel formula all combine to get a diesel running properly. The compression screw moves a button up and down in the head to change the compression as needed. The kerosene in diesel fuel has a much higher flash point than glo fuel and needs a much higher compression ratio, about 18 to 1, I believe. This is where it gets its power. It can get away with a much smaller venturi diameter also, and will get at least 1/3 more mileage than a glo of the same size..

The diesel is very temperature critical and needs to be allowed to warm up after starting before final adjustments. The compression setting and needle valve must be worked together. What you are looking for is the high compression and a needle a couple of notches from lean.

Most sport diesels will want a prop at least one inch bigger than its glo equal, and likely more pitch.

Starting for the first time might take a little experimenting. Remember, a big prop starts easier. I find it easiest to work with the compression first. Close the needle completely. If it is too rich to begin with, it makes it harder to adjust the compression . Adjust the compression so that it feels like a glo motor. It will be under compressed. Put a little fuel in the exhaust and venturi. Flip vigorously (no wimpy flips here). If nothing happens after five or six flips, exhaust prime again. If still nothing, turn the compression screw in about 1/4 turn and try again. If it starts to pop, turn the compression screw down another 1/4 turn. Do this until it will run the prime out. Now you are ready to adjust the needle. Open it a turn at a time until the motor starts to "Bap Bap Bap". Open the needle more until it starts to smooth out. This is where the learning starts. The trick is to know whether it is too lean or over compressed. While the motor is running, turn the compression in some more and it should pick up RPM. Turn the compression in until the motor starts to sag. Back it off to where it runs smoothly. Go back to the needle and do the same, playing back and forth. In time you will learn what you are looking for. On a stunt ship raise the nose and see if it holds a setting. If the motor is not inside a cowling, it will cool off in the air and be under compressed .You will need to raise compression just a bit.

Once you have a diesel running properly, it is very easy to restart hot with a good prime. When the engine is cold I don't like to mess with compression unless necessary. Open the needle one to 1.5 turns, prime, and make sure the fuel line is full. If this doesn't work you might need to raise or lower the compression, depending on your motor. Once started, let it warm up then go back to your normal settings. For stunt, the trick is to warm up the engine one flight before your flight. Remember, for all of this to work your engine must be in good shape. An engine with low compression will be hard to start and probably will not run for any length of time.

There is so much I know I haven't covered, so if you have any questions feel free to email me at [f2cracer@aol.com](mailto:f2cracer@aol.com).

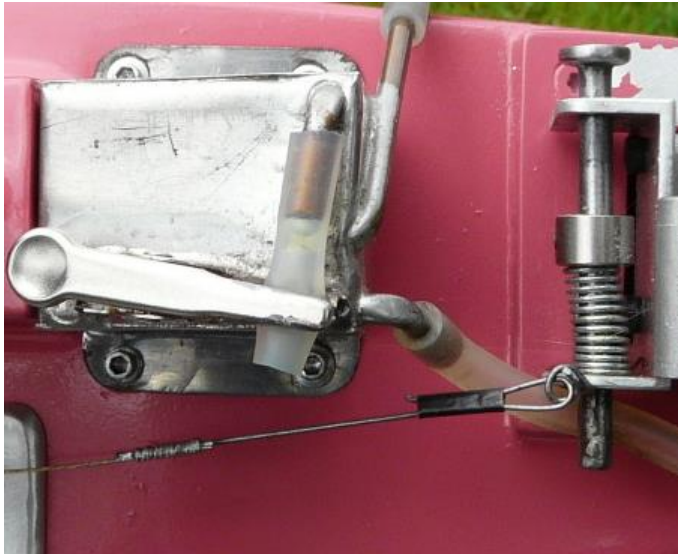


## "QUICK RELEASE" SHUTOFF CABLE

**Bill Bischoff**

You've finished your new racer. You've test flown it, the backplate mounted shutoff is working great. Now you need to take the engine off for some reason. "Oh crap! the shutoff is permanently attached to the airplane by the cable. I've got to remove the shutoff from the engine to remove the engine". *read this in your best TV announcer voice: "How many times has this happened to you? Well, not any longer..."*

OK, you get the idea. You don't want the cable permanently attached to the shutoff. Sure, you could connect the cable with a small line connector, but here's an idea that's cleaner, more compact, and with no chance of getting flipped around or fouled. The front portion of the cable essentially IS a line connector. It is bent from .025 music wire, and the "slider" is a small control line crimp sleeve. The rear end of the music wire clip is simply wrapped and soldered to the actual cable portion of the shutoff. The pictures tell the story, and saved me 2000 words!



## 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](http://nclra.org) and other published sources.  
Members can log in to NCLRA.org and submit contest details.

### NORTHEAST DISTRICT

**May 16-17,** Rouge Park, Detroit, Strathmoor's Contest, combat, carrier & racing

**June 6 & 7** Centennial Park, Toronto, T & D, stunt, scale, combat & racing.

Note: I don't see the event listing on the web site. All events listed for Toronto & Dresden are from past experience.

**June 15 – 20** Carmichaels, PA, Brodak Fly In, stunt, scale, racing, combat, carrier & speed

**June 27 & 28** Dresden, Ontario, Beanfield GP, combat, stunt, and racing

**July 4 & 5** Centennial Park, Toronto, stunt, scale, combat & racing ?

**July 25-26** Dresden, Ontario, SOCC, combat, stunt, and racing

**September 12 -13** Rouge Park, Detroit, Michigan State Meet, combat, carrier & racing

**September 19-20** Centennial Park, Toronto, stunt, racing & combat

### NORTH CENTRAL DISTRICT

None

### NORTHWEST DISTRICT

**49th Northwest Control-Line Regionals on Memorial Day Weekend, May 22-23-24.**

The Regionals this year offers 46 separate competition events. The contest will be held at Roseburg Regional Airport in Roseburg, Oregon. Limited RV space is available on site. Motels, restaurants and camping are within a short driving distance. The nearby Hampton Inn will be the Regionals host hotel. This AMA AA-sanctioned contest features four PAMPA classes of Precision Aerobatics, Old-Time Stunt, Classic/Nostalgia 30 Stunt, sportsman and expert classes of Profile Stunt; AMA Fast, High-Performance 1/2-A, 80-mph, Vintage and 15 Fast Combat; Profile, Class I, Class II, .15, Sport 40 and Nostalgia (profile and Class I/II) Navy Carrier; Mouse I, Northwest Sport, Northwest Super Sport, and Northwest Flying Clown Racing, Sportsman Flying Clown Racing; Authentic, Sport, Profile, 1/2-A and Fun Scale; and 1/2-A, 1/2-A Proto, A, B, C, D, FAI, Jet, Sport .21, .21 Proto, Northwest B Proto, Formula 40, F2D Proto and Northwest Sport Jet Speed.

Information about the contest and copies of the contest flyer and advance entry forms can be downloaded from the [flyinglines.org](http://flyinglines.org) website. Rules for Northwest competition events also are at [flyinglines.org](http://flyinglines.org).

Further information on the Regionals can be obtained from John Thompson, 2456 Quince St., Eugene, OR 97404, [e-mail JohnT4051@aol.com](mailto:JohnT4051@aol.com), or phone (541) 689-5553.

### SOUTHEAST DISTRICT

None

### MIDWEST DISTRICT

**July 13-17 Speed & Racing NATS – Muncie, IN**

Check the AMA website, [modelaircraft.org](http://modelaircraft.org) for details.

**October 3 & 4** Dayton, Ohio, carrier & racing

### SOUTH CENTRAL DISTRICT

**DALLAS 2020 RACING CONTEST SCHEDULE**  
(contests typically also feature other events)

**April 24-26:** Saturday-Quickie Rat, Super Slow Rat/Fox Race (combined), Sport Goodyear /Sunday-F2CN, Clown, Mouse I, Fox-Goldberg.

**June 13-14:** Saturday- Quickie Rat, Super Slow Rat, Sport GY, Mouse I, Fox-Goldberg.

**September 5-6:** Saturday-Quickie Rat, Super Slow Rat, Sport GY, Mouse I, Fox Goldberg.

**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](mailto: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**

**Re-scheduled due to Covid- 19 to June 13-14 Bill Nusz Speed and Herb Stockton Racing Memorial, sanction #**

*Racing Sunday only: mouse 1, SCAR Goodyear, NCLRA Clown, Super Slow Rat/Fox Race and Quickie Rat*

CD: Howard Doering [h.714-638-4937](http://h.714-638-4937) [c.714-394-5304](http://c.714-394-5304)

Racing ED:

**Sept 12-13 Wayne Trivin Memorial Speed and Racing, sanction #**

*Racing Sunday only: mouse 1, SCAR Goodyear, NCLRA Clown, Super Slow Rat/Fox Race and Quickie Rat*

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

Racing ED:

**Oct 24-25 Virgil Wilbur Memorial Speed, Combat, and Racing, sanction #**

*Racing Sunday only: mouse 1, SCAR Goodyear, NCLRA Clown, Super Slow Rat/Fox Race and Quickie Rat*

CD & Speed ED: [Howard Doering h.714-638-4937](http://Howard Doering h.714-638-4937) [c.714-394-5304](http://c.714-394-5304)

Racing ED:

**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](http://Howard Doering h.714-638-4937) [c.714-394-5304](http://c.714-394-5304)

Racing ED:

Combat ED: Don Jensen [flyjensen56@verizon.net](mailto:flyjensen56@verizon.net) Cell 909-576-3430

NOTES:

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
7. All combat is top 20 MACA score eligible. Sat: 80 mph dbl elim & HP 1/2a 42 foot, snl elim. Sunday F2D fast double elim & f2d cuts, single elim.

## **SUPPLIERS**

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[www.Petrockfarm.com](http://www.Petrockfarm.com)

### **JIM DUNKIN**

Engine reference books 816-229-9671 [dunkin@discovernet.com](mailto:dunkin@discovernet.com)

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### **ZALP ENGINES**

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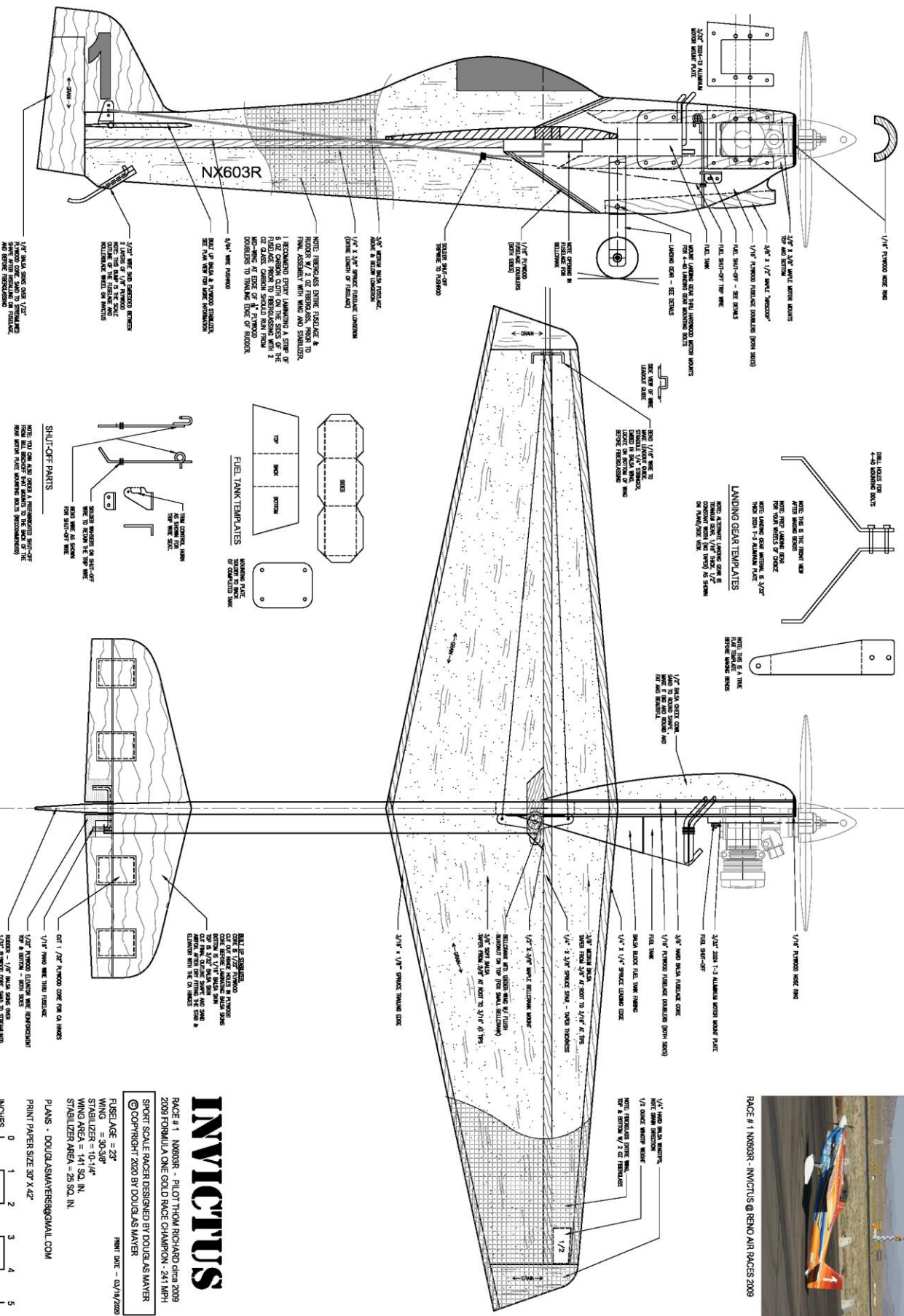
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<b>8 oz. fuel bottle with fitting</b>	<b>\$10.00</b>
<b>Racing handle, 3" spacing</b>	<b>\$25.00</b>
metal frame, wooden grip, stainless cable (other spacing available by request)	

Shipping: \$8.00 per order including fuel tanks or bottles / \$4.00 per  
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Paypal: [billbisch@hotmail.com](mailto:billbisch@hotmail.com)/ Mail checks to: William Bischoff,  
1809 Melody Ln, Garland TX 75042. For questions, call (972) 840-  
2135 or email [billbisch@hotmail.com](mailto:billbisch@hotmail.com)



RACE #1 NX603R - INVICTUS @ RENO AIR RACES 2009



# INVICTUS

RACE #1 NX603R - PILOT THOM RICHARD circa 2009  
 2009 FORMULA ONE GOLD RACE CHAMPION - 241 MPH  
 SPORT SCALE RACER DESIGNED BY DOUGLAS MAVER  
 © COPYRIGHT 2020 BY DOUGLAS MAVER  
 PRINT DATE - 02/16/2020  
 FUSELAGE = 22"  
 WING AREA = 30-36 sq ft  
 WING AREA = 141 SQ. IN.  
 STABILIZER AREA = 25 SQ. IN.  
 PLANS - DOUGLASMAVER@GMAIL.COM  
 PRINT PAPER SIZE: 30" X 42"  
 INCHES 0 1 2 3 4 5

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#### **(Open)**

Torque Roll is the official publication of the NCLRA. Published bi-monthly. All submissions are valuable & will be considered for publication subject to editing. Preferred format for publication is as a MS Word document using 10-point Times New Roman font. Any photos should be sent as a separate jpeg file, medium res. Email all as an attachment to Les Akre at the address given on this page.

### **NCLRA membership information**

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