

EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

MAY 2020



Prez's Corner – Mark Chomyn

Hope you are all fairing well as we continue to social distance and live under the stay home order. Our club continues to monitor information from California State Public Health Officer regarding the possible easing of restrictions for group events. We're also looking at current conditions at the field to determine if and when we can get back to contest conditions. At present the outdoor field is suitable for test flying efforts but longer flights under contest conditions are a bit more problematic as they would travel into areas that are currently heavily weeded. We're hoping that some weed eradication will occur before our May 24 contest date making it more suitable for contest flying but until that happens our outdoor contest schedule will remain on hold. When we are sure that field conditions and state guidelines allow, we will resume our outdoor events. Hopefully that can happen by May 24. If we make a decision to fly on May 24, we'll let our members know with an email. We anticipate making that decision no later than May 20. Our indoor schedule will be on hold until Grossmont College gets its OK to reopen.

For those of you who were contemplating a trip to the AMA indoor nationals from May 27-31, you were very disappointed to hear that the AMA has canceled the event. Likewise, the AMA is still monitoring COVID conditions and is expected to make a go, no-go decision on June 10 regarding the status of the AMA Nationals. Hopefully by that time larger gatherings will be allowed and the Nationals will be held. Until that time all of us flyers will need to remain patient and hope that we can resume our flying activities in the age of the "new normal".

If you are like me, you are taking advantage of this time to take a hard look at your building area and do a little clean up and organizing to improve conditions. I've done a sweep of my area in the garage and did a lot of soul searching. "Do I really need this?". "Wow I didn't know I had this". And, "I'll never get to this and it has to go". Results of that effort were pretty good and I think I'm getting things in better control.

The Comet Grumman Hellcat I mentioned in last months ET is completely framed up. I went through my covering tissue inventory and found some reasonable looking blue tissue. I decided to give it a try and chose to use the rudder as my test area. I ironed the tissue to get it reasonably smooth and then gave it a tear test to determine grain direction. Applied it to only one side of the rudder and then gave it a light water spray. It seemed to shrink up well and I gave it a thinned coat of nitrate. When the nitrate dried, I looked at the covering and it had lost its tight surface and was a mess of sagging paper. I decided the tissue I used wasn't going to work and removed it. Went on-line in search of a provider for tissue. After looking at several sites I was able to find Esaki blue tissue at Easy Built Models. I ordered six sheets of blue tissue and expect to return to my covering activities in a week or so.

Sad to say there are no contest results to report but hopefully that will not be the case in the future. If we miss our May outdoor contest date, I'm hopeful that by June we'll be back on the field. Until then please keep doing all you can to stay healthy and sane during these trying times.

Mark

"This generation is so dead. You ask a kid, 'What are you doing this Saturday?' And they'll be playing video games or watching cable, instead of building model cars or airplanes or doing something creative. Kids today never say, 'Man, I'm really into remote-controlled steamboats.'" - Jack White

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Mike Pykelny.....(858) 748-6235
MPykelny@dslextrême.com

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MPykelny@dslextrême.com

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Open Position(xxx) xxx-xxxx
yourname@volunteer

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kamclaughlin1@cox.net

Newsletter Editor / Membership Coordinator

Howard Haupt(858) 272-5656
hlhaupt1033@att.net

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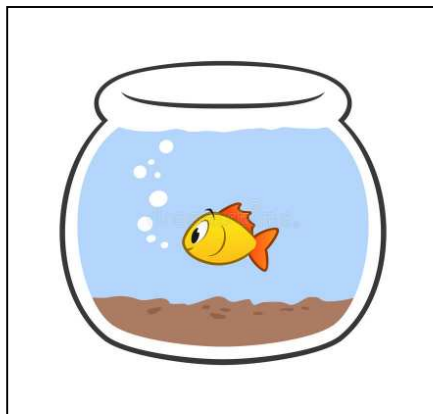
THE FINE PRINT THE FINE PRINT

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Optimum Rubber Motor Sizing



By Mike Jester

Optimum rubber motor sizing is very important to achieving maximum flight times. The optimum size of a rubber motor includes its weight, cross-section, and length. For example, the optimum rubber motor for my Old Time Rubber (OTR) Korda C Tractor, which has a 17-inch diameter free wheeler prop, weighs 40 grams, has a nominal cross-section of 2-inches, and has a length of 24-inches. It is made up of 16 strands of 1/8-inch rubber. I have been gradually working my way up towards 30 inch-ounces of launch torque with this model. The optimum rubber motor size for a given model airplane is determined by rules of thumb and test flights. Unlike a gas-powered airplane, a rubber powered airplane has to carry the full weight of the rubber for the entire duration of the flight. If you have too little rubber weight the rubber motor can't store enough energy to drive the prop in a manner that will enable the model to achieve its maximum flight duration. Too much rubber weight inhibits both climb and glide. Also, the cross-section of the motor must be sufficient to deliver the torque needed to adequately drive the prop of the model to sustain flight, which in turn depends on the diameter, blade plan, and pitch of the prop. How much energy must be stored and delivered by the rubber motor to get a good flight also depends on wing loading. Like everything else in our hobby, the optimum weight of the model compared to its lifting surface is a compromise. If the model is too light it is prone to breakage in flight and on landing. If the model is too heavy, it resists damage better than a lighter model, but it won't climb or glide as long. Also, lighter models made of balsa wood sometimes have problems retaining optimum trim due to bending and warping of very light balsa wood. My first Gollywock weighed 77.5 grams including 7 grams attributable to the TOMY timer and RF transmitter. It was over-built in terms of balsa wood that was too dense and unneeded diagonals on the fuselage. A well-built Gollywock should not exceed 60-grams, empty. I initially flew my Gollywock with a 30-gram rubber motor which is pretty standard for a Gollywock. Later, I switched to a 25-gram rubber motor and got consistently higher flight times even though the motor run was shorter. Still later, I built another Gollywock.



First Gollywock Built by Mike Jester



The length of the rubber motor also needs to be optimized. If the rubber motor is too long the rubber motor will bunch up late in the motor run and undesirably shift the CG of the model. This can be avoided by braiding the rubber motor or using a spring tensioner and a stop for the motor hook portion of the prop shaft. Together these mechanisms terminate the unwinding while there are still some turns left in the rubber motor so that it still extends somewhat tightly between the prop hook and the motor peg. The Gizmo Geezer prop assembly has a built-in spring tensioner mechanism which allows the prop to free wheel while retaining just enough turns in the rubber motor to avoid bunching. A very odd device called a "wobbly motor peg" can also alleviate problems due to a very long rubber motor. It consists of a second motor peg tube which loosely surrounds the rigid inner motor peg. The rear end of the rubber motor wraps around the wobbly motor peg. Nobody so far has given me a good technical explanation as to why a wobbly motor peg works.



Braided Rubber Motor with Crocket Hook

Indoor models typically use a twin strand (single loop) rubber motor. They should land with unused turns on their rubber motor to achieve maximum flight duration in low ceiling heights, i.e. 25 feet or less. Indoor winding is very different than outdoor winding in that it involves backing off turns which I rarely do when flying outdoor models. If the rubber motor of an indoor stick duration model is more than 2X the prop shaft hook-to-rear hook distance, the motor bunching problem begins to rear its ugly head, even though the motor is still under tension throughout the flight.

In the free flight hobby, a scale model like a Piper Cub or Piper Pawnee Brave would typically have a rubber motor that weighs 25-40% of the model weight (without the rubber motor). An outdoor sport model like my Korda C Tractor (designed for duration but not resembling a real aircraft) will typically use a higher rubber motor weight percentage. The weight of the optimum rubber motor for my Korda C is 56% of the model weight (excluding rubber). Some huge open class models can have a rubber motor that weighs 100% or more of the weight of the air frame and prop assembly (excluding rubber). This is probably true with regard to Bud Romak's legendary Dawn Patrol model.

Indoor duration models like a 3.1-gram Limited Penny Plane typically use a rubber motor that weighs about 70-80% of the model weight (air frame and prop). Some indoor free flight classes also have a maximum rubber motor weight, like the International F1D class (0.4 grams). F1D models that have a maximum wing span of 550 millimeters and weigh only 1.4 grams can fly 30 minutes plus on only 0.4 grams of rubber. Some outdoor free flight classes like the International F1B and F1G classes have rubber motor weights which are limited by rule. They are 30 grams and 10 grams, respectively, including the lubricant. A typical F1G rubber motor is 12 x 1/8-inches and is about 9- inches long. Similarly, the popular P-30 class has a motor weight limited to 10 grams, including the lubricant. A typical P-30 rubber motor is 6 x 1/8-inches and is about 19-inches long. Outdoors, the duration of a good flight is typically slightly longer than about 2 minutes unless the model encounters a thermal. Large outdoor F1B models which are made of exotic carbon fiber composite, tiny lightweight Aluminum alloy mechanical parts, and Mylar covering can cost \$2,000+ and fly 5-10 minutes on 30 grams of rubber. The rubber motors of most free flight rubber powered airplanes are wound to less than 2,000 turns. Launch torques can range from 0.1 inch-ounces for very light indoor models to 100 inch-ounces for very large outdoor models. Lew Gitlow's book on indoor free flight has a helpful chart that gives optimum rubber motor weights for various types of indoor models as a percentage of the model weight. There is also a list available on the Internet which gives optimum rubber motor sizes for many OTR models. Some plans recommend a rubber motor size. In the end, your stop watch will be your guide. My eternal gratitude goes out to my long-time mentor, John Hutchison, who patiently taught me the basics in regard to both building and flying free flight model airplanes.



F1G launch by John Hutchison at Perris, California – photo by Arline Bartick



May 5, 2020 - A day at the Perris flying field – Photos by Arline Bartick



Bernie Crowe



Clint Brooks



Don Bartick



Guy Menano



Jeff Carman →



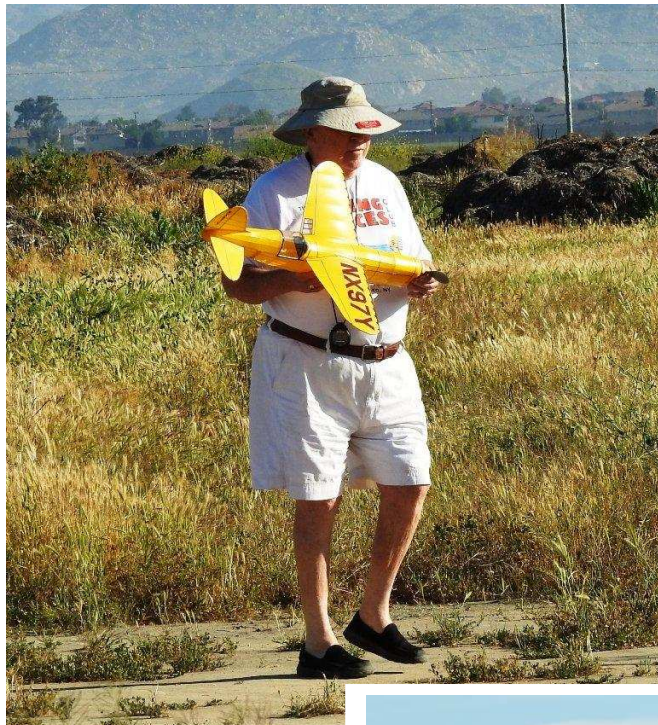
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Ray Peel



Randy Secor



Roger Willis



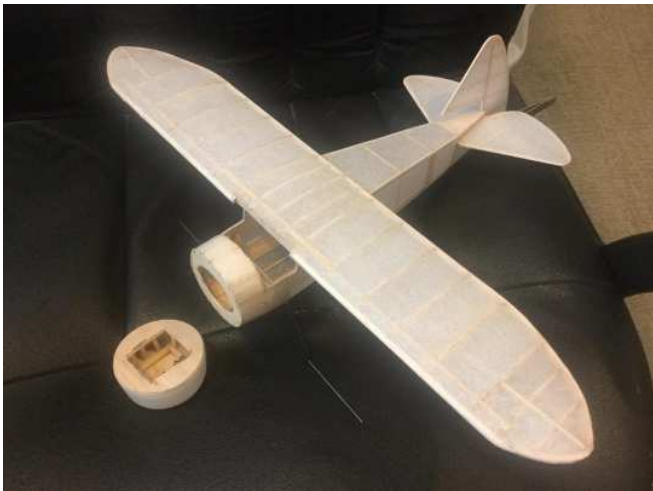
Hulan Mathis →

← Phill Ronney



FROM THE WORKSHOP – J.Merrill

Hello once again from the workshop, Previously I mentioned I had a few projects waiting in the wings. Here's another that has been on my list for awhile now. This is, or will be, a Mr. Mulligan. It's from a walnut-scale kit put out by Dumas. It's been in bare bones for months, I finally just finished covering her a few nights ago. Tissue is coated with a spray lacquer. I'm debating whether to use a white spray paint to top coat it, I think it would look a lot better, but add some weight. Let me know what you think, johnrmerrill@yahoo.com



I also am finishing up my HotBox P-30. Hopefully we can have that John Oldenkamp Memorial contest one of these days.



The below picture is of a dime scale reproduction kit from the 1930's, a Vought fighter that never went into production. I started it quite awhile ago, but finally finished it today. The tail surfaces seem a little too small, so I don't expect it'll be a very stable flyer. Had fun building it anyway.



(Continued Work Shop) – J.Merrill

Finally finished another one, a Republic P-47D Thunderbolt from early WWII. Peanut scale, 13" wingspan, built from an old Gene Dubois kit that I think I got from one of our Annual banquet raffles.

She's really tail-heavy, and heavy-ish overall, so I don't expect her to fly all that well. I had fun building it though, and that is a big part of why I enjoy our hobby.

I hope all is well with all our fellow modelers. Stay healthy friends! - John



Vought (from previous page) →

FROM THE WORKSHOP – D.Bartick

While hunkered down, I chose to build a new P-30. It is my design, High Tail 30 that was published last year in the NFFS Digest. The bones are complete. See picture attached. The bones as seen in the picture weighs 31.94 gm. Also, I have attached a pdf plan of the High Tail 30 as published. It is not an easy build, but worth the effort. My current High Tail 30 is really beat up after 3 seasons. It still wins contests. The latest was the SW Regional in Eloy, AZ back in January this year. - Don

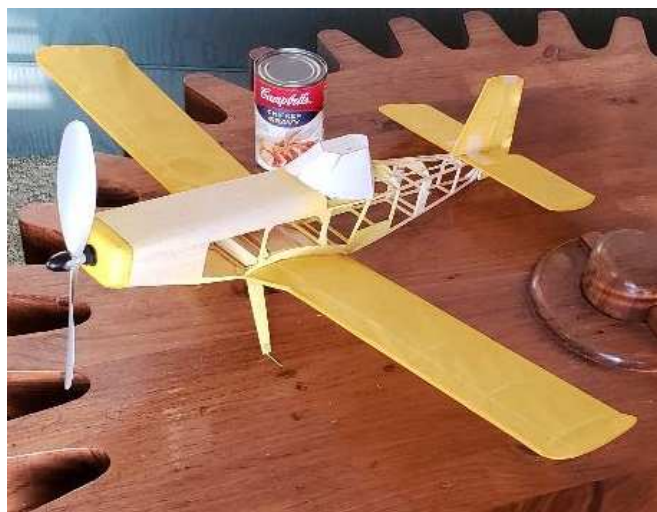


FROM THE WORKSHOP – M.Jester

Recent project was my 2X Walt Mooney Embraer Ipanema. The construction of this model started in early March, 2020. It has been slow going because I have to order so many parts and supplies from Volare Products. I have not shrunk the tissue on the wings and tail feathers. The stab and fin are just taped on for this picture. There is a paper pattern for the canopy sitting on top of the fuselage. I am hoping to cut and fold the canopy from a single piece of acetate. I would add a simulated frame made of strips of black tape.

That's an 8-inch Gizmo Geezer prop assembly on my Ipanema model. I am hoping to use a 6 x 1/8-inch rubber motor - 12.9 grams. That's a size that I use on some other outdoor models that I built. If my Ipanema turns out to be nose heavy, I will swap in an 8-inch carved balsa wood prop.

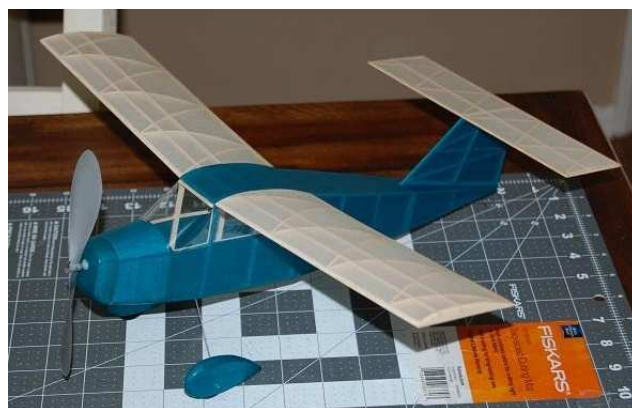
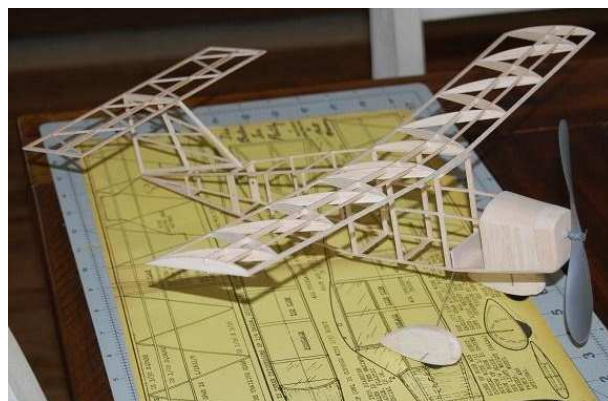
My hoped-for completion date for my Ipanema is October 1, 2020. I plan to fly it at the WESTFAC contest in Buckeye, Arizona later that month. - Mike Jester



FROM THE WORKSHOP – D.Scigliano

Here is my latest build, the old Mooney Boston Tea Partly.

This is an old design by Walt Mooney from back in the day and was published in Model Builder Magazine. I built my model directly from the pull out plans in the magazine and built per the plans. Walt had built this model and lost it in a thermal at Brown Field back in the day. The design is straight forward, though Walt did his best to design a warp free wing and tail surfaces. I tested this theory by covering the model with straight Esaki that was not pre shrunk and there are no warps. I build the model using Elmer's white glue; the frame before covering came in at 14 grams. I attached the tissue with diluted Elmer's glue, shrunk with water and brushed on 2 coats of Sig Lite dope. Final balanced weight is 18 grams and she flies great with a loop of 3/16 rubber lubed with FAI green soap/glycerin lube.

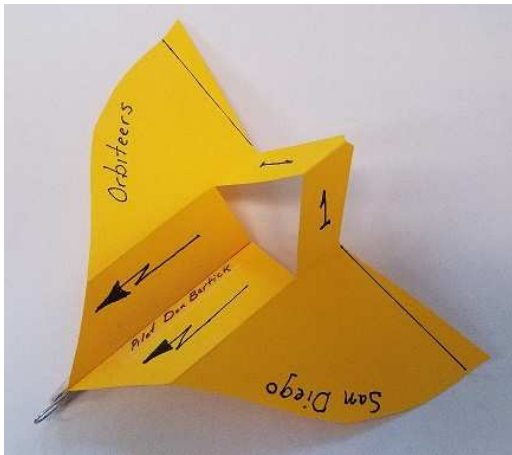


One Design Paper Airplane Living Room Postal Contest



D.Bartick Entry:

The standard sheet version did not fly at all for me. I then made it from 60# yellow paper. Can't say it flew much better, but at least it went from one end to other of the room I flew it in. Dimensions of venue: 10' X 20' X 8'. The longest flight of 15 attempts was 2.87 sec.

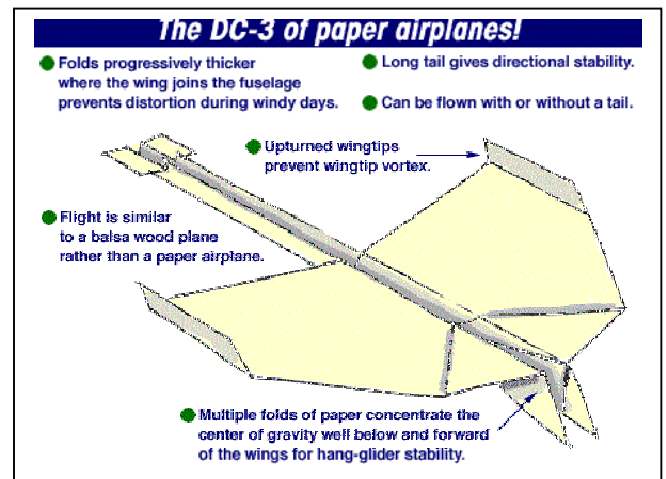


M.Jester Entry:

Received a field report from Mike flying a standard sheet One Design glider. Reported flight times in the 2 to 3 second range.

Image not available

Other Designs and Considerations:



H.Haupt Entry:

Found that the standard sheet version was a down hill flyer only, with at best a 1 to 1 glider ratio. Held over my head it managed to fly most of the way across the living room. Venue is 12' x 24' x 10' with best time of about 2.5 seconds.



Want to try again?

Fold your favorite paper airplane design and time some flights. Submit your flight time and a photo of your creation.



COVID Postal Meet

Three events: Open Power Combo, CLG/HLG Combo and One-Design Dynamoe Rubber.

No entry fee! Fly now through July 31, 2020.

Rules: All flights for an event must be completed on same day, between sunup and sundown. It need not be a sanctioned contest and self timing is allowed. Each contestant is allowed one re-entry in each event to better an existing score. Re-entry may be on the same day or a different day. Maximum of two entries per person per event.

Open Power Combo: Any AMA or NFFS gas or electric model including Nostalgia. All published rules for your respective model apply except: all motor runs are 5 seconds and all maxes are 120 seconds. Keep putting up flights at 5 & 120 until you drop a max. Overruns after the third flight result in 0 score.

Catapult/HLG Combo: All AMA Catapult/HLG rules apply: Best three of six flights, 120s maxes, then all flights count in flyoffs, and max stays at 120s until you fail to max.

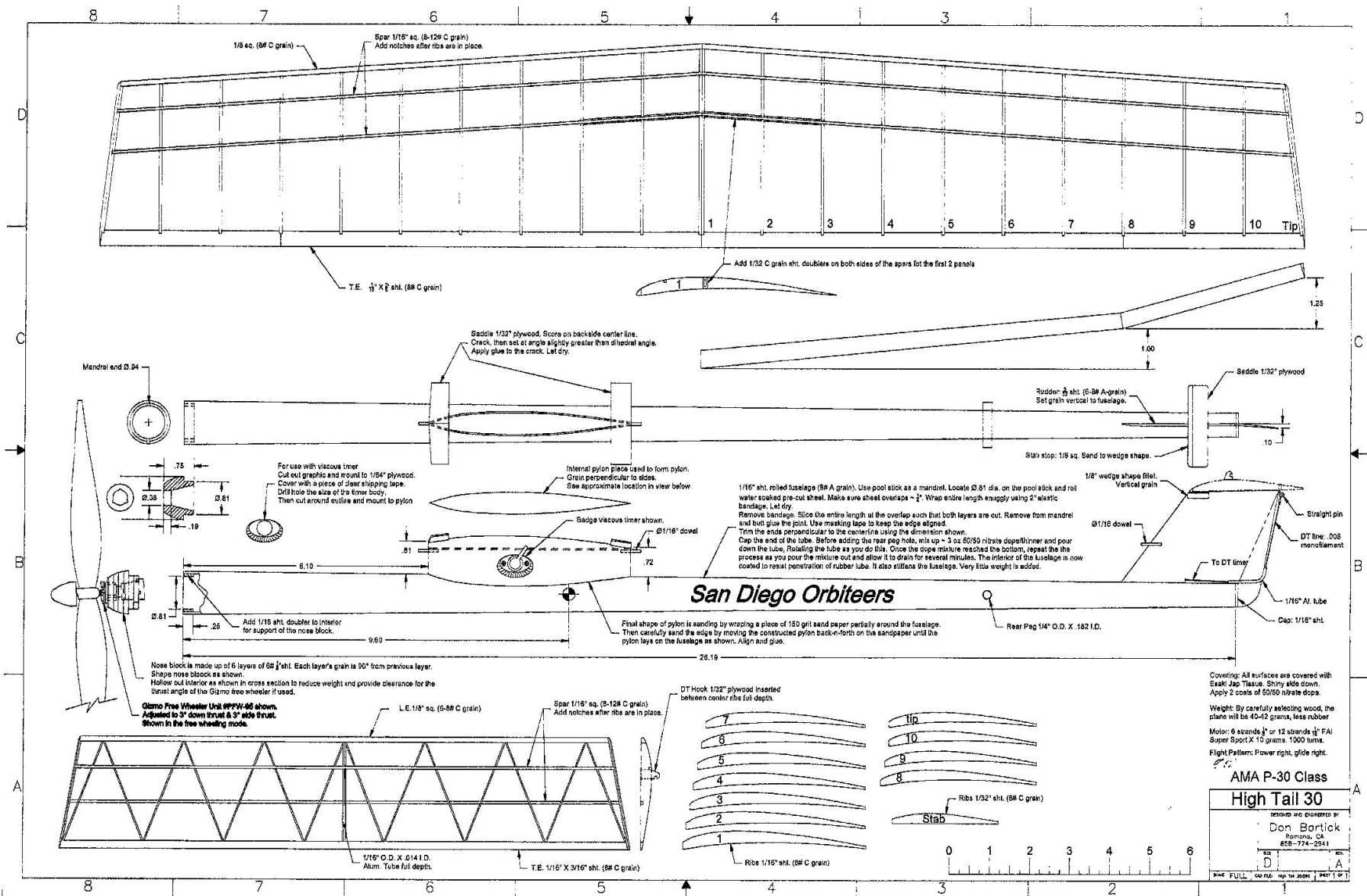
Dynamoe Rubber: Must be a SAM or FAC legal Simmers Dynamoe per 2020 Nats One-Design rules. ROG is optional. Maxes are 180 seconds; keep putting up flights until you drop a max.

Submitting Results: Submit flight-by-flight results via email to NFFS Editor Don DeLoach: <ddeloach@comcast.net>. Please also send at least one picture or video of your models...these will be published for all to enjoy. **The contest standings** will be updated frequently on NFFS' Facebook (www.facebook.com/FreeFlightDigest) and periodically in NFFS Digest.

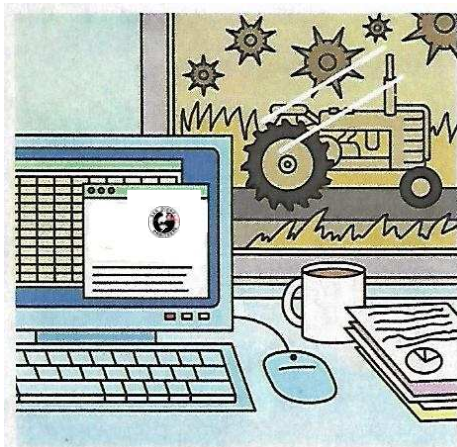


AWARDS

High scorer in each event will receive a NFFS T-shirt. Top Junior in each event also receives a T-shirt.



SAN DIEGO ORBITEERS
Howard L. Haupt / Editor
3860 Ecochee Avenue
San Diego, California 92117-4266



WHAT'S HAPPENING - MAY 2020

May / June / July - **NFFS Covid Postal Meet**

Open Power Combo
CLG/HLG Combo
One-Design Dynamoe Rubber

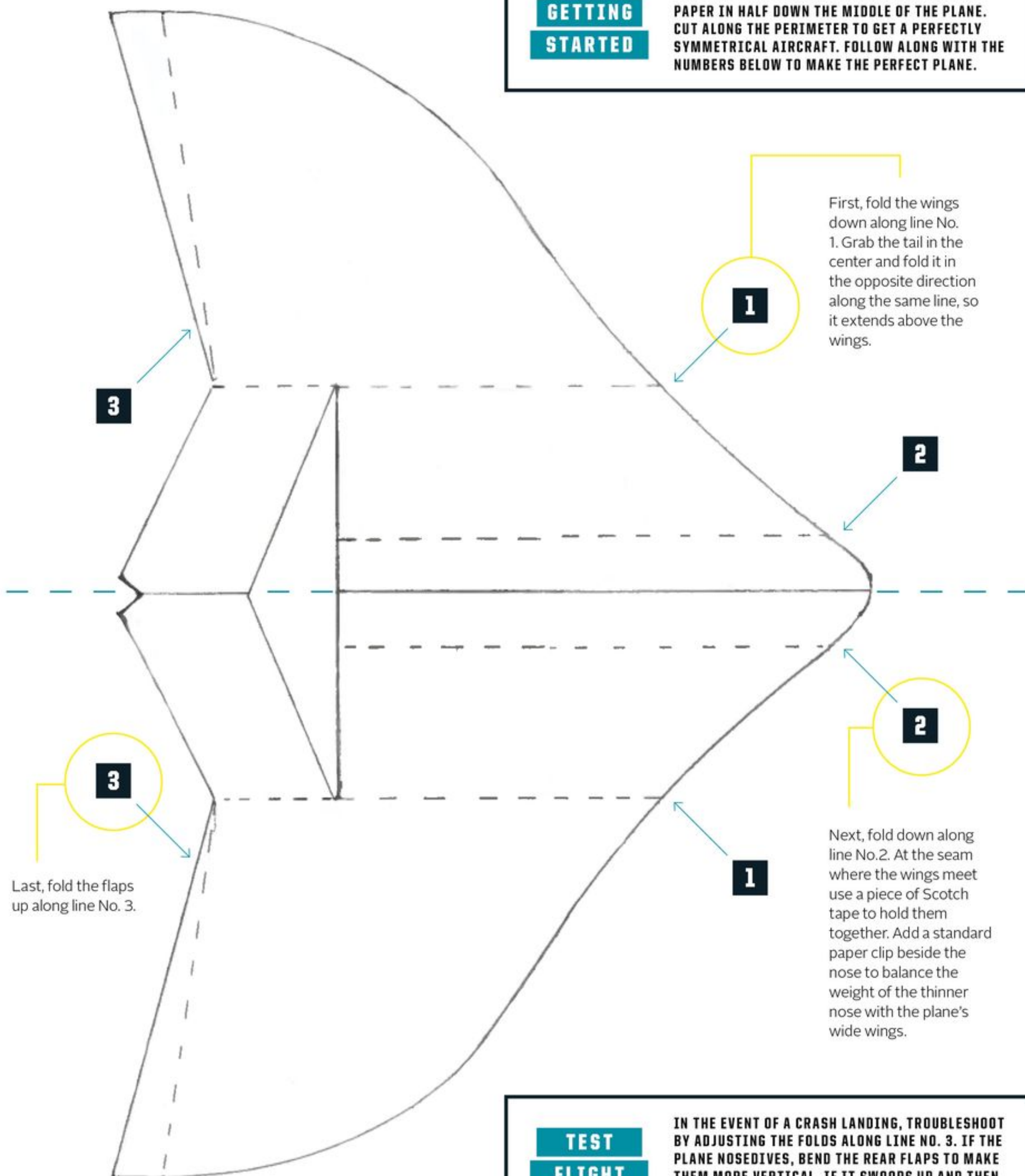
(See enclosed flyer for full details)



PAPER AIRPLANE // PRINTABLE TEMPLATE

GETTING STARTED

PRINT OUT THIS TEMPLATE. START BY FOLDING THE PAPER IN HALF DOWN THE MIDDLE OF THE PLANE. CUT ALONG THE PERIMETER TO GET A PERFECTLY SYMMETRICAL AIRCRAFT. FOLLOW ALONG WITH THE NUMBERS BELOW TO MAKE THE PERFECT PLANE.



TEST FLIGHT

IN THE EVENT OF A CRASH LANDING, TROUBLESHOOT BY ADJUSTING THE FOLDS ALONG LINE NO. 3. IF THE PLANE NOSEDIVES, BEND THE REAR FLAPS TO MAKE THEM MORE VERTICAL. IF IT SWOOPS UP AND THEN DIVES STRAIGHT DOWN, FLATTEN THEM.

