EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

MAY 2025

Chairman's Corner – Mark Chomyn

Opening this month's article with some great news:

INDOOR FLYING IS BACK!

Longtime Orbiteer Don Bartick was successful in getting the Orbiteers use of the gymnasium at Los Coches Creek Middle School in El Cajon. The gym is reserved for our use on Sunday, June 8 from 8AM to 11AM. The gym has an 80' x 100' basketball court with a maximum ceiling height of 27'3" lowering to 24'5" at the walls. At this writing, the estimated cost per flyer to participate is estimated at $20.

It's been several years since we've been able to fly indoors and it's going to take me some relearning to get back up to speed. I need to get into the garage and find the stuff I need to get geared up to fly. All that's left of my indoor planes is an A6. I need to get a Penny Plane built, a Phantom Flash, a No Cal and a P-18. Don't think I can get them all built by June 8 but the Phantom Flash goes together quickly so I might start on that first. Let's get as many flyers as we can in that gym and let's have some fun.

We're still on hold for outdoor flying at the Perris field but hopefully it won't be too much longer before we're back to doing some outdoor flying. Checked the NFFS website and contest calendar and there's nothing noted for southern California in May. However, for those of you who want an excuse to take an east coast vacation, the FAC Non-Nats is scheduled for June 12-13 in Geneseo NY. But if you're like me and you can't get there in person, I'm pretty sure that publications like the NFFS Free Flight Digest and the Flying Aces Club News will have text and pictures for the event. And if you're like me you'll read the articles and stare at the photos and think …. Gee wish I could have been there.

I'm still (very) slowly making progress on my 54-inch Comet Taylorcraft. I started to work on getting the nose block shaped and noticed when I looked at the fuselage front former into which the nose block would be inserted there was only a round hole only 1/2 inch in diameter. I remember working on this kit with a friend when I was 12 years old. We never got past assembling the rudder and stabilizer. But if we had finished the plane, we would have likely only put one loop of rubber through the 1/2-inch hole. Nowhere near the amount of power for the size of the Taylorcraft. Looking at that hole stirred up those feelings I have about the old kit manufacturers. Why did they think that the 1/2-inch hole was adequately sized for the amount of rubber that would be needed to fly a 54-inch span plane? It seemed to me that the plane as drawn was set up for failure, and if not total failure for some fairly anemic flight times.

What was puzzling to me is that the plane plans were drafted by none other than Mr. Joe Konofes. Yes, the man of the free flight Buzzard Bombshell, that is so reliable and competitive. When he drew that 1/2-inch hole did he have any second thoughts about the constraints it would have on getting an adequately sized rubber motor inserted into the fuselage? Of course, now being older and having some free flight experience, I know that the 1/2-inch hole needs to be opened to at least a 1-inch square opening for a thrust block and an 8-10 strand 3/16-inch rubber motor.

On May 11, Mother's Day, I hope you remembered to tell your wife and/or mother how lucky you are to have them in your life. Cards and gifts are one way. An expensive dinner with champagne is another. I'll let you decide which option is better for your relationship.

Mark

"You're encouraged to give us a gentle reminder, and if that doesn't work, a good poke in the ribs oughta do the trick"
Dave Mitchell, Flying Aces Club News, On reminding an editor about an article you sent in.

Three Nite P-20
By Mike Jester

I recently built a P-20 model to fly in a small park. The rules of the unofficial P-20 event are like those of the AMA P-30 event except that the airframe is limited to 20-inches in any dimension, the minimum weight of the model is 20-grams, and the maximum weight of the rubber motor is 4 grams. The P-20 event has never gained popularity, probably because it is challenging to consistently obtain flights longer than 45 seconds. However, this is fine when you consider that the objective of this event is to have fun flying a sport model in a small park with less risk of losing the model. Be sure to mark your model with your phone number!

Three Nite P-20 By Mike Jester

This P-20 model is a 2/3- size version of my Three Nite P-30. I reduced the plan of the P-30 version and the cross-section of the spars, LEs and TEs. I built the wing and stab with ribs cut from 1/32-inch sheet balsa instead of 1/16-inch sheet balsa. I ended up using a 6-inch diameter red plastic Igra prop which is 0.30 of the 20-inch wing span. The 9 ½-inch diameter prop on my Three Nite P-30 models is 0.32 of its 29.87 inch wing span. The originators of the P-20 event flew with 8-inch diameter plastic props. In my opinion, that is way too big, and too heavy, of a prop for the small P-20 airframe. The nose block of my new P-20 model has a Gizmo Geezer adjustable nose button and a Boehm free wheel clutch from Volare Products. The all-up weight of this model (without the rubber motor) is 20.90 grams. I was casual about wood selection except that I did use 6.5# 1/16-inch sheet balsa wood in constructing the slab-sided fuselage. The covering on my Three Nite P-20 is Esaki tissue, sprayed with a 30/70 mixture of Eze Dope and water. The fuselage, tip plates, and fins were sprayed with red Design Master floral spray paint. This model is equipped with a BMK RDT set-up that is included in the all-up weight. Its onboard receiver, band burner, and 25 mA LiPo battery only weigh 2.6 grams combined! I wanted to be able to remotely DT this model if it catches a thermal or if it otherwise begins to leave the park. I positioned the wing longitudinally on the fuselage to set the CG at roughly 65%. It is conventional in the free flight hobby to refer to the CG location as a percentage. This percentage is calculated by determining how far aft of the LE of the wing the model balances longitudinally, and then by dividing that distance by the chord of the wing.

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Ready to Wind at My Nearby Small Park

I conducted some test glides of my Three Nite P-20 in my yard and they indicated no need to adjust the decalage before starting trim flights in my small nearby park in Coronado, California. Powered test flights in my local park were initially challenging. The model would not circle right with conventional down and right thrust line adjustments. I then noticed that the stab was slightly skewed, giving it a tiny amount of left rudder. Once this was corrected with a shim to provide a tiny amount of right rudder, the desired right-right flight pattern was achieved. I found the model to be over-powered with a 4 x 3/32-inch 4-gram rubber motor. I ended up using a 4 x .075-inch 4-gram rubber motor. I can wind this motor to about 1500 turns and 1.5 inch-ounces of torque. The longest flight achieved so far has been 75 seconds. Being a smaller model, it is much more susceptible to turbulence than a much larger P-30 model. My small Three Nite P-20 model is not as much fun to fly as its larger ancestor. However, it serves its intended purpose of enabling me to pursue rubber powered free flight in my nearby small park.

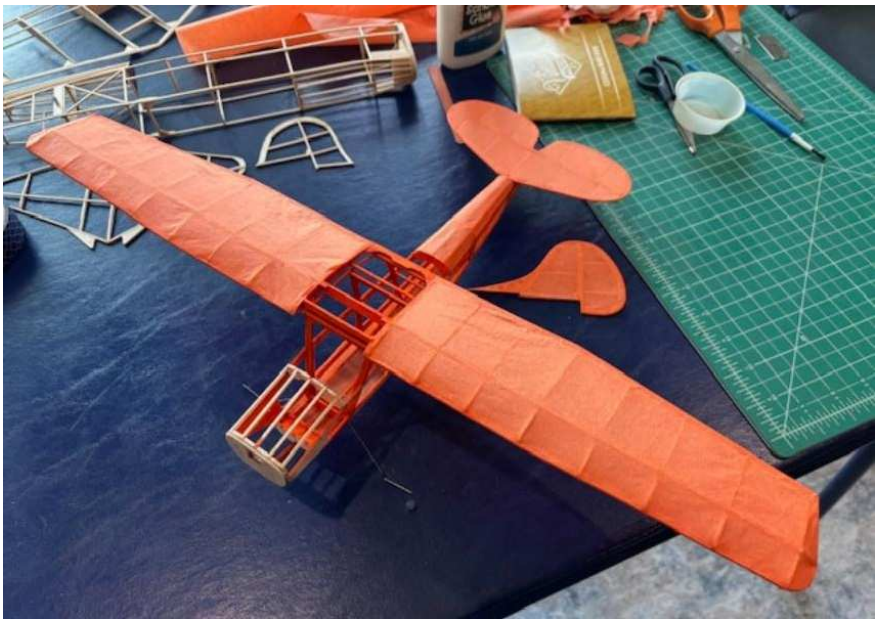
Three Nite P-20 Model After a Safe Landing Inside My Nearby Small Park

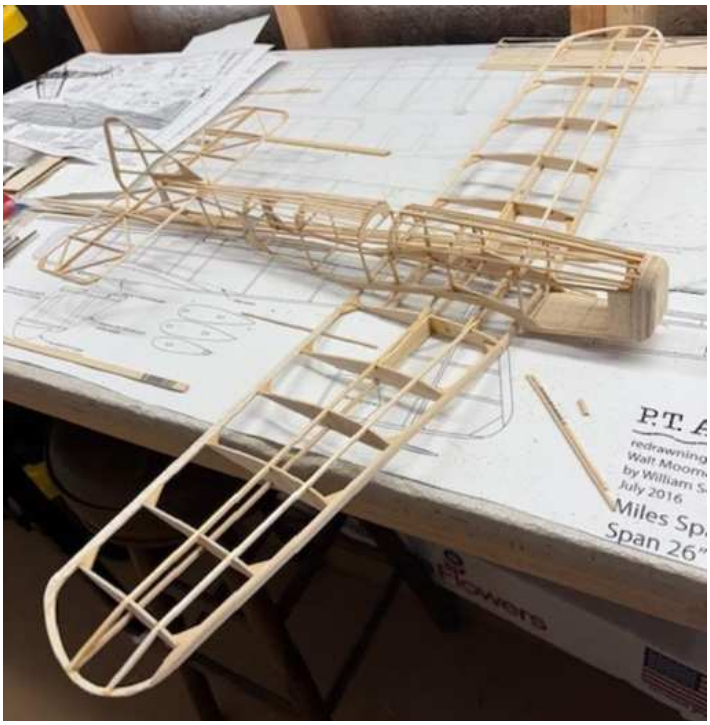
Orbiteers
SAN DIEGO

From the Workbench - J.Merrill

Being mostly off work with some medical issues, I've had time to keep a little busier this month.

I've been progressing on the L-19 Bird Dog. I thought it was a very nice kit from Vintage Model Co. in England. Laser cutting and instructions were really nice, and suitable for beginners. It's mostly covered now, just a little more to go.





I've been a little slower working on the Miles Sparrowhawk, a short kit from William Scott's P.T.Aviation. It is a "Double Mooney", or 2xPeanut. It was a 1935 British racing plane. It's just about ready to cover. I'll be ordering graphics from Cali Graphics in Texas. They do great work.

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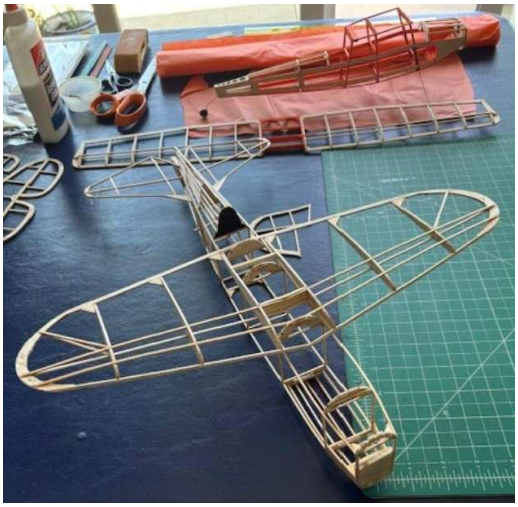
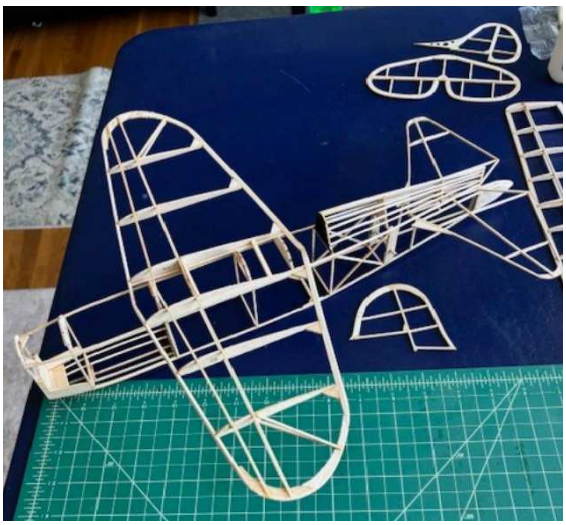
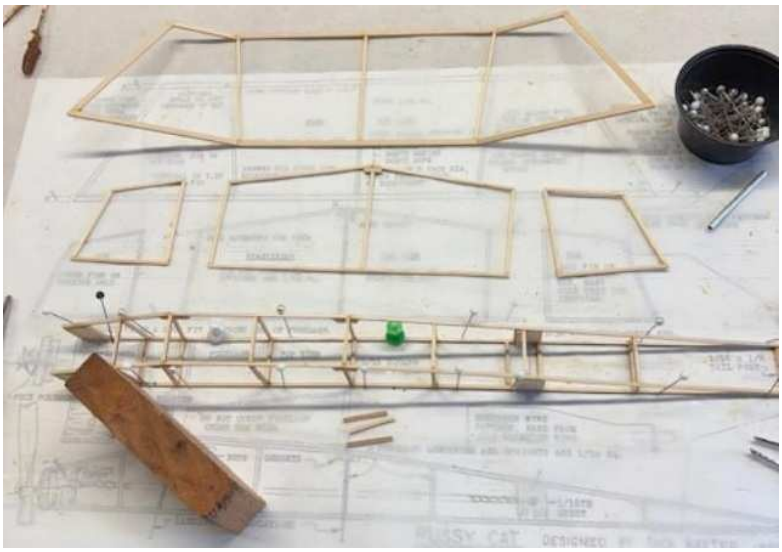
I’m now finally ready to cover the Neo-Dime scale Chambermaid. I may get the graphics from the same place.





Not one to let a recently emptied workspace go to waste, I naturally started yet another kit. This time it’s a Guillow’s Hellcat. It’s going together much quicker than I expected , and it’s a fun build. I got the wing, tail feathers, and bulk of the fuselage done in 2 days, and that’s with aliphatic glue (Titebond). I’m not anticipating any performance out of it, just building it for fun and experience.



Finally, we just learned that we can now fly in a gymnasium once again!

Very exciting, but it’s been so long, I noticed I didn’t have anything decent to fly. Thus, I started ANOTHER project, a Dick Baxter Pussy Cat. After 2 days (again, no super-glue), she’s just about ready to cover as well, just need to finish the nose.

Hopefully we’ll have a great turnout at the gym.
You should either receive an email with the details, or it may be elsewhere in this newsletter.

June Indoor Flying - Don Bartick

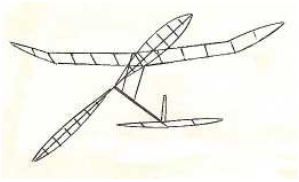
Our new indoor flying site has been secured for June 8TH , 8am-11am. The location is 9669 Dunbar Lane, El Cajon. Parking is right in front of the gym. Cost will be $20.

The site is the gym at Los Coches Creek Middle School, in El Cajon. just off I-8. The gym measures 80' X 100'. It has a pitched roof. The high point to the girders is 27'3". The roof slopes down to the interior walls. At the intersection of the roof girder to the interior wall, the height is 24'5". The typical hazard is 6 basketball backboards around the outside perimeter, that when raised the lowest point is 19' 9". This facility cost for 3 hours is $246 plus $30 for a 1-day AMA liability coverage. Total is $276. We agreed that charging attendees $20 would be fair.

Pictures from Previous Indoor Sessions - Photos by Arline Bartick

John Alling

Nich Panousis



Greg Hutchison

Don Brent

LEADING EDGE
GRAHAM WARWICK

Designer Insights

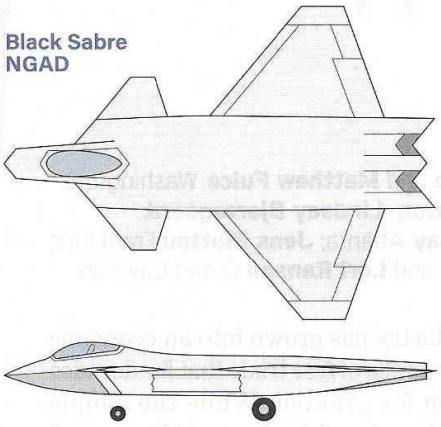
YF-23 designer **analyzes Boeing's F-47**

WHEN THE U.S. AIR FORCE announced Boeing as the winner of the Next-Generation Air Dominance fighter competition and released heavily doctored artist's impressions of the F-47, renowned aircraft designer Darold Cummings offered to analyze the design for Aviation Week.

Chief configuration designer for the YF-23, Northrop's contender for the Air Force's Advanced Tactical Fighter (ATF) competition won by Lockheed's F-22, Cummings continues to be active in aircraft design through his consulting company, ForzAero. He helped Aviation Week analyze China's new J-36 and J-50 fighters (*AW&ST* Jan. 13-26, p. 14).

Cummings had little to go on beyond his more than 50 years of experience designing aircraft, ranging from trainers and spaceplanes to long-range strike platforms and stealthy transports for Northrop, Rockwell and Boeing. Only two F-47 images were released by the Air Force, with key details obscured.

Rather than try to deduce the F-47's design directly from heavily redacted images, Cummings chose to develop his own configuration—dubbed the Black Sabre as a nod to Boeing's fighter heritage—that was shaped by design considerations consistent with the F-47's intended mission.



Source: Darold B. Cummings/ForzAero

The images appear to show a tailless aircraft with a canard configuration. At first, Cummings was skeptical of a canard on a stealthy fighter. But through its purchase of Rockwell in 1996 and McDonnell Douglas in 1997, Boeing has a history of canard designs stretching back to Rockwell's Advanced Fighter Technology Integration concept, developed by Cummings in 1973, which led to the uncrewed HiMAT testbed.

Both McDonnell Douglas and Rockwell proposed canard designs for the ATF in 1982, and the Rockwell-MBB X-31 was designed in 1995 to be a tailless demonstrator controlled by a canard and thrust vectoring. Flown in 1997, McDonnell Douglas' X-36 was a subscale model of a stealthy tailless fighter with a canard, split ailerons and thrust vectoring for directional control.

For the F-47, a canard could allow Boeing to dispense with thrust vectoring, a feature of the F-22, Cummings contends. "The canard, along with spliterons for yaw control and flaperons for pitch control, should provide all the control authority necessary for combat operation," he says.

The YF-23 did not have thrust vectoring, engines exhausting into upper-fuselage channels. "I believe the aft exhaust deck will be fixed, with an actively cooled upper surface for infrared [IR] suppression," Cummings adds. "This, combined with the deletion of thrust vectoring, should greatly reduce the IR signature."

The released F-47 images give no hint of the wing planform, but Cummings is extremely skeptical of the apparent wing dihedral. "This is totally inappropriate for a fighter," he notes. "High wings are naturally stable—in fact, too stable for good maneuverability."

Instead, modern high-wing fighters incorporate anhedral to make the aircraft less stable and more maneuverable. Boeing's Bird of Prey tailless stealth demonstrator had dihedral inboard but downturned outer wing sections, and there is no evidence of balancing outboard anhedral on the F-47.

As for the planform, with the canard layout, this could either be a clipped trapezoid—as on the F-22 and Chinese J-20—or a lambda wing, Cummings says. Through McDonnell Douglas, Boeing also has a long history with the lambda planform, including the X-36 and its contender for the Joint Strike Fighter.

But Cummings sees a problem. "This type of planform would produce a high cross-sectional area at the aft of the aircraft, which results in a poor Sears-Haack area distribution," he says. "This would make supersonic cruise in dry thrust difficult." As a result, his design has a clipped-trapezoid wing.

The F-47 images give no hint of the inlet locations or weapon bays. Drawing on his aircraft design experience, Cummings chose F-22-style side inlets as well as main and side bays for the Black Sabre. "This allows for the best integration with the least impact to the maximum fuselage cross section," he says. "This improves overall fineness ratio, which decreases air vehicle drag."

A final area of debate involved the F-47's apparently broad nose. While indicative of a lifting forward fuselage, the nose appears to be too wide for pilot visibility to comply with military standards. By shortening the nose, Cummings found an acceptable compromise.

His final Black Sabre concept is not the F-47, but it is a design that illustrates how a canard-equipped sixth-generation fighter could look. It also helps shed light on the challenges Boeing faced in producing a configuration that balances stealth, range and agility.

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WHAT'S HAPPENING - May / June 2025

Flying field currently closed for environmental assessment and study.

June Indoor Flying - Don Bartick

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