

# Pine Barren Modelers R/C Club

June 2024



## From the President's Desk

### Club Officers

President—Rich Bombardier  
Vice Pres.—Dennis Spatcher  
Treasurer—Ralph Ferrara  
Secretary—Micki Bowne  
Safety Officer—Pat Lovenstein

### Contact Us:

For website, classified ads, or any other club information, visit our web site at:

<https://pbm1727.org>

or our Facebook group:

[PBM on Facebook](#)

Links to club officer and other e-mails are via the website.

You can also mail us at:

Pine Barren Modelers RC Club  
P.O. Box 38  
Bayville, NJ 08721

### Presidents Corner:

As the spring rains slowly come to an end, the summer heat starts to creep in. So, please be sure to stay hydrated. If you have mild to moderate dehydration, you might have the following symptoms:

- ☀ Be thirsty
- ☀ Have a dry mouth, lips and tongue
- ☀ Be dizzy or light-headed (not to be confused with normal dizzy or light-headedness)
- ☀ Have a headache
- ☀ Have dark pee

Mild dehydration can quickly become severe, so please be sure to bring your own water or beverages (We always have fluids in the small container).

Other good news is that we now have an AED in the small container and if anyone needs directions on how to use it, please see Paul Meier or myself. If we have other members who are trained in CPR, please let me know so that we can put them on our members' list indicating this.

I am happy to announce we received our check from the AMA for the Field Improvement Grant I submitted back in January. I do believe this is the first time our club has ever received a check for field improvements as a club. We should all be proud of the work we've put in to make our field look as nice as it is. Keep up the good work!

Don't forget that we have our annual Fun Fly in June, and I look forward to seeing you all there.

Richard Bombardier  
Club President

# Meeting Highlights

*(Remember, these are NOT the minutes, so they don't contain sensitive information. The complete minutes will be sent out before the next meeting).*

## 5 June 2024

All officers and 24 regular members were present.

### Field Reports:

**Coyle:** VP Dennis fixed the camera. Some old tire marks are visible, so Pete will roll the runway when he has time. Meanwhile, the military still has a porta potty there.

**Temporary Field (Johnson's Pit):** Excellent condition.

**Safety Report:** Pat thanked everyone for listening to previous safety reminders. Quote "You are doing an awesome job." Let's keep everything and everyone safe!

President Rich added that if a plane is on either end of the runway, wait until all planes have landed before going to get it. If you HAVE to get an airplane, ask pilots if it's okay to get the plane AND make sure they hear and acknowledge you. If it's in the grass, leave it there until all planes have landed. Announce when you enter the runway, make sure you get a response, then fetch your model and get back OFF the runway ASAP. DON'T dilly-dally at the scene of the wreck! Finally, when you leave the runway, call out so fliers know the runway is clear. Courtesy is a major part of safety!

**Instructors' Report:** Chief Model Instructor Gary Santaniello thanks all his fellow instructors for their hard work. He reminded all of us that if you need instruction, call him and he or another instructor will work with you. The objective is to get all fliers able to fly without depending on SAFE mode. Even if you've been flying for a while, if you have a new plane or a new type of plane, get an instructor to go over it with you (*Always a good idea for everyone, even us long-time fliers. Bill*)

### Old Business:

- ➔ Ralph reminded us it's T-shirt season and that we have plenty, hats, decals, and mugs.
- ➔ Dennis – Our website had 2297 hits; the Facebook group has 477 members.
- ➔ Ways & Means – A nice collection of aviation DVDs and VHS tapes was to be had.
- ➔ The generator sign has been moved, but now we need a sign to tell users where to park.
- ➔ Paul Meier has ordered a sign for the container, indicated the AED's location.
- ➔ Speaking of the AED, we all agreed that if there are two people at the field, then the container should be opened. Needing the AED, but having to wait until the container is hurriedly unlocked could be fatal.
- ➔ First Pylon race (2 June). Paul will make and publicize some rule changes:
  - The start line will be moved back 25-30 feet, to gain more initial speed.
  - The number of laps will increase from four to ten.
  - Starting with the July race, the event will be open non-PBM members

Additionally, the club paid for food at the first race, but won't for future races.

- ➔ Fun Fly on June 8<sup>th</sup>
  - The past two times, no guests from other clubs showed up. If that happens again, Rich suggested we don't bother with the expense and hassle of sanctioning these events.
  - Tommy D. suggested some events
  - Rich will check with Hobby Town for possible prizes.
  - The runway will be closed until the event is set up (*Totally agree, if you want to fly, help get the event set up so EVERYONE has a chance to fly. This is a CLUB function Bill*).

- President Rich hopes everyone is enjoying the new porta potty; now we need to keep it clean. (*No, he will not be the Permanent Latrine Orderly :-)! Bill*)
- We received 5-6 essays from the Middle School for the \$100 best aviation essay award. The officers will evaluate the essays and choose a winner, with the award ceremony to be on 11 June. Sadly, no one in the High School is going into aviation, so there will be no \$250 scholarship.

### New Business:

- Rich applied for an AED grant from AMA, for 25% of the total cost.
- Rich hasn't seen the VFW commander, but will keep trying to get info on the Scout breakfast dates (*We do know the next one is 30 June*).
- Rich would like to see another camera at The Pit, preferably aimed to see the runway and the safety gates. Having one would've helped in identifying whoever bent one gate. Dennis' old cameras have too high a data use rate, but he does have a good camera he can donate (provided he can get it to work).
- A debit card was authorized for Quartermaster Ron Pinksaw, for his Supply duties.
- We all agreed to have the next meeting on 3 July and to have a night flight on July 4th. Hopefully, our presence at The Pit on July 4th will minimize the mess and vandalism.
- Our next pylon race will be 21 July and will be open to other clubs. Paul will compose a flier and post it on our Facebook page.
- Jersey R/C Racing Promotions will have a rock crawling event on Fathers' Day. Meanwhile, show them your PBM club card and there'll be no sales tax on any AIRPLANE purchases.

### Model(s) of the Month:

Gary Santaniello and his 3-D printed MB-339.

Gary says this 1,034 mm span EDF took 45 hours to print and just needs some minor work before it'll be ready to maiden.

*Gary tells us more about 3-D printing (below).*




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## 3D Printing in the RC world

By Gary Santaniello

What is 3D printing? Simply put, it refers to the three spatial dimensions of width, height and depth. How does it work? Three-dimensional (3D) printing is an additive manufacturing process that creates a physical object from a digital design. The process works by laying down thin layers of material in the form of plastic, and then fusing the layers together.

It was my love of the RC flying hobby that put me on the path of 3D printing. Having older planes I could no longer get parts for, I thought to myself, "If I have the files, material and printer, I can print a plane and its parts forever"...which is both true and false. I quickly discovered that 3D printing RC planes was in its infancy (and still is), and that the way planes were being designed and assembled, it was very difficult to just replace a broken part.



# 3-D Printing

Let me explain: Most of the planes I have printed have some type of alignment tab or tongue and groove design and are attached with CA. Say the tail breaks because the plane flipped on landing. It's very difficult to separate the broken section cleanly to allow for a newly printed section to be attached. So, you wind up reprinting the entire fuselage, which can be costly depending on the price of the filament at the time.

3D printed planes are also more fragile than balsa or foam and, depending on the material and color, are more susceptible to heat and UV rays. So if left in a hot car or in the direct sun, they may warp or deform.

That said, there is still a practical place for it in the hobby in the form of accessories, that is to say I have printed ordnance for military planes, landing gear blocks to help stabilize and protect the gear from bending on hard landings, replacement parts such as hatches and mounting hard points and decorative parts such as tail cones (which can also be practical as in adding weight to the tail to accommodate a larger heavier battery up front).

I started 3D printing in 2018. My first printer was a Creality CR-10 Mini, which had a build volume of 300 x 220 x 300mm and cost under \$300.00. There were several folks at my job who were using Creality printers and offered to help me get started, and I found that there was a very large printing community to draw on for help. I started by printing small trinkets out of Polylactic Acid filament (PLA) that I gave to my co-workers, friends and family. PLA is the most common filament. It's a type of polyester made from fermented plant starch from corn, cassava, maize, sugarcane or sugar beet pulp, is the easiest to print, most cost effective, and does not give off toxic fumes.





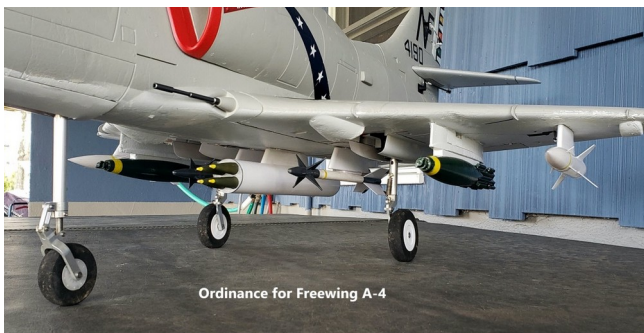
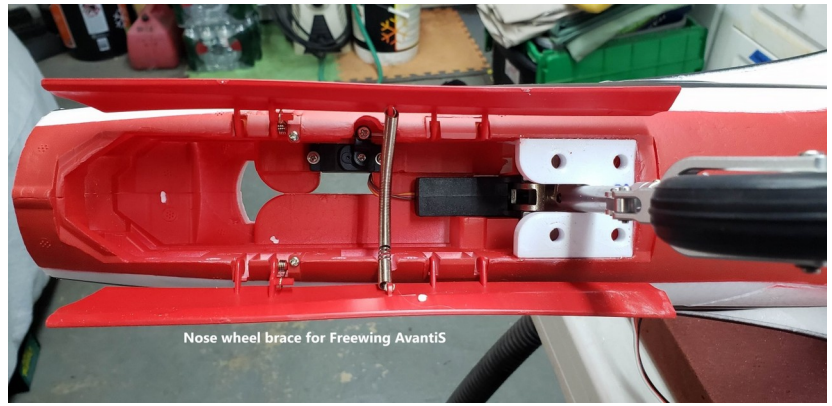
However, PLA does not stand up to heat and UV rays, which is why RC hobbyists look to the more exotic filaments like ABS (acrylonitrile, butadiene, and styrene) or ASA (a synthetic, amorphous thermoplastic). Both are available for consumer printing, but require an enclosure and good ventilation.

After 18 months or so, I felt I was ready to attempt to print a plane but needed a larger print volume. So, I sold my CR-10 Mini and purchased a Creality CR-10S Pro with a build volume of 300x300x400mm and printed my first plane, a free design by a new company named Eclipson. Eclipson offered the files on Thingiverse.com (a repository for 3D printing files). The plane was complete (save the landing gear), but for a donation of \$10.00 they'd provide those files as well. So, I supported them and printed the Model A.

I have since printed several of their planes and was a beta tester for their Model D, which was fun as you had to print and fly within three weeks and provide feedback and a flight video. In exchange you received the final design files for free.

I have also done beta testing for RC boats, and droids and have printed helicopter fuselages (which I have yet to use since I'm not a proficient heli pilot yet).

*Checkout the next two pages for more of Gary's 3-D printed projects!*







Tail Cones for Arrows 64mm Mig-29



Eclipsion Model D Beta Test



Airwolf fuselage for T-Rex 450 from Heliprinted.com



Hover Craft



Beta test for a designer in Germany





Alpha prototype test for a designer in Austria



Eclipsion Model A

Flat Bottom Boat



3-D Printing



PT Cruiser counter rotating prop

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## Bill's Corner

Back in 2011, I started working on a small tail-less model (like an F-106, but with a prop in the nose). At that time, we had a feisty beagle, named Beatrix (nicknamed Bea), who'd lost her tail due to a tumor, but never lost her playful nature. So, it seemed natural to name an acrobatic model after Beatrix.

The first Beatrix flew okay, but wouldn't stall or spin and was really rather boring to fly. Beatrix II,, with a slightly shorter nose, was much better. It would snap and spin violently, but come out of the spin quite smoothly. I wound up sending the Beatrix II plans to a Brit magazine, who published it, then sold the model when I got the bug to design something new.

Here we are now, a dozen years later, and it's time for me to do something new (again). This time, instead of a whole new model, I decided to make a built-up, tapered wing on an all foam model. Since the Beatrix series had the most tapered wing of anything I've ever designed, I scaled up the basic model – with a few changes.

Most of the model is 1/4" or 6mm foam sheet, covered with paper and a 50/50 mix of Titebond II glue and water. I've been using this *papier mache* construction for several years and find it to be pretty strong (although it can crack).

Bea 3 has only 3 ribs per side – Root, mid-span, and tip. The rest of the airfoil is maintained by tapered foam and bass spars (3 foam and one bass, per side). Top and bottom are 6 mm foam sheet, with built-up foam wing LE and TEs. Happily, foam is easy to sand!

Beatrixes 1 and 2 had fully symmetrical airfoils, but Bea 3's is a modified Clark Y, done so I could build the wing flat on a hinged board. The wing top is flat, tip to tip, with dihedral in the wing thickness taper (the wing LE sweep adds more dihedral effect).

I covered Bea 3 in Ultracote, which went on pretty well...except when I tried to loosen and re-position a piece. Apparently, Ultracote's adhesive bonds pretty well to Titebond II, resulting in the paper underneath ripping off the foam! So, any covering oopsies are PERMANENT.

Instead of my usual CA hinges and Gorilla Glue, I thought I'd try using Ultracote hinges. They worked pretty well with Super Monokote, so I figured I'd give them a try.

Bea 3 weighs in at 33 oz., RTF, a 432 sq. in. wing, and a 39.3" span. On a 1100 Kv Turnigy motor, that's around 80 watts/lb. on a 3S 1500 Lipo and an 8 X 6 prop.

I expected Bea 3's maiden to be 'interesting'. I didn't know how much elevon to start with, so I eyeballed some plans from the Outerzone web site and made a guess. I was very cautious on takeoff, but the model actually lifted off pretty easily. Keeping it aloft was a bit harder – it wanted to go DOWN! I didn't dare let go of the stick to hit the elevator trim, so I had to ask Micki to do that for me. I can't remember the last time I shook so much at a maiden flight, either!

Once we beeped in a bunch of UP, plus some right rudder and elevon, the model flew pretty nicely. Stalls were a non-issue, with the model just slowing and dropping, nose gently nodding. Rolls are a tad slow, but still good. I didn't try any spins or snap rolls, as the wind (90 degree cross, of course) was increasing and I wanted to just get used to the new shape in the sky. Those Ultracote hinges? Not a sign of trouble.

Okay, it's now Flying Season, so time to close the shop and FLY, not build (although I may do some drawing...designing IS addictive!).

By the way, except for the plans that I sold to magazines (which I haven't done since 2016) are available, for free, in CAD and PDF format. You'll have to get them printed, and I do insist you not sell them.



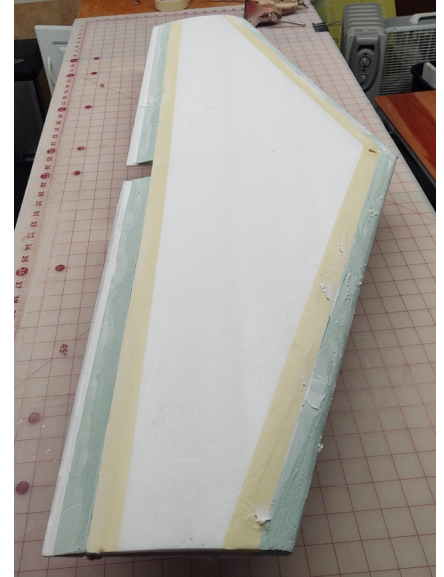


(Top Left) Beatrix I

(Top Right) Beatrix II

(Left) wing framed up and ready for the top sheet. Green foam braces LG blocks. Green and pink foams are house insulation, white is Model Plane Foam.

(Right) Wing top, LE, and TE filled in and sanded. Masking tape protects the bits I don't want sanded.



(Left) Wing at tip, showing LE and TE shaping.

(Below Left) Fuse glued to wing, then newspapered. Wing has a coat of white rattlecan primer, so brown paper doesn't show through. Elevons are behind the model.

(Bottom Right) Done and ready for test flight!

