

Pine Barren Modelers R/C Club



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:

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newsletter@pbm1727.org

From the President's Desk

Why does Spring always seem to take forever to get here? The days are getting longer, but the weather still isn't cooperating. Let's hope the cold and the rain are out of here by May!

A big shout out to Paul Meier, he's worked very hard to setup and promote our very first Pylon Racing event, with three different classes. The three classes are: EDF's, Propeller and a special Aero Scout class. With these three classes, everyone should be able to race and have fun. If this goes well, we may schedule another one later in the year.

May is also the month we'll have our annual Open House. This has been pretty successful in the past and I look forward to having the communities come out and see who we are. There will be plenty of food and flying, let's hope the weather (ugh) cooperates this year.

Look forward to a safe and fun flying season, see you all at the field!

Richard Bombardier
Club President

Club Meeting Highlights

3 April 2024

All the officers and 14 regular club members braved the stormy weather, but there weren't any guests at the meeting. Considering the deluge we all ran into when we left the VFW hall, the non-visitors may have been the smart ones.

Welcome to approved new PBM member, Scott Boyars!

Field Condition Reports:

Temporary Field (Johnson's Pit): Trout season should be open at Lake Johnson... Seriously, flooding at the Pit is worse than anyone remembers, so PLEASE be careful. Mud is everywhere, so don't get stuck!

Coyle: Dennis Spatcher reported there were tire marks on the runway. The field camera has new batteries, so we can receive data for longer periods (despite less sunshine).

Safety: Pat reports all is quiet.

Treasurer: Ralph says we have lots of hats (blue and black), coffee mugs (both types), and t-shirts (*Maybe we need club umbrellas???* Ed. Bill).

Social Media: Dennis renewed our website domain, but he's looking for a better host with better service and a lower price.

In March, our website had 2,020 hits and we now have 247 members in our Facebook group. The issue with e-mails to Comcast customers appears to be fixed, but, if you aren't getting club e-mails, contact Dennis.

Old Business:

- Rich reminded everyone to check the Ways & Means table.
- Ron Pinksaw volunteered to be the club Quartermaster. (Thanks, Ron!)
- Pat Lovenstein would like us to clean out the first storage trailer, so we'd have a place to shelter (especially in those sudden summer storms).
- The weather station atop the first trailer needs to be replaced, but this means taking down the pole, and that has to wait until the weather improves.
- Rich will check with the new VFW commander as to when the next Scout breakfast will be.
- Rich hasn't yet met with the Township officials regarding the future of our flying site. He'll keep trying to schedule a meeting.
- As the weather has been very uncooperative, Pat hasn't been able to move the generator sign to its new site.
- Paul Meier submitted information regarding the defibrillator. Please see our club's official minutes for price and maintenance information.

New Business:

- Open House is May 11th, , so we'll need a field clean up day before then (probably around the end of April). Watch for an update in your email.
- Our first pylon race is May 5th. Using a satellite image, Dennis pointed out the placement of the two pylons. Come to the May meeting for further details.

This is our first race, so we may need to clarify details and/or make changes. We welcome visitors to the event, but it is NOT open to non-members. It is strictly a club event (*Please, be patient with Paul, and support this initiative, It's probably going to take a few tries, before everything gets figured out. Editor Bill*).

- Rich talked about Horizon Hobbies' special memberships. Once you've bought into one level (there are several, and they do offer a military discount), you could save a significant amount on orders from Horizon.

Models of the Month:

(Left): Don Herrman's Rigger hydroplane, built from a kit (*and with a gorgeous paint job! Ed. Bill*)

(Center): Todd Bunn's Aeromarine Titan 33, 33" fiberglass mono hull boat with a 3500K_v motor and a 150 amp ESC. Power is a 4s lipo. This is Todd's "P-limited" class boat for NAMBA. He got this as a bare hull and worked on it over the winter.

(Right): Pat Lovenstein's unmaidened Eclipse 360 helicopter, from Horizon.



The Boat Doc(k)

Don Hermann

I've raced full size tunnel boats and offshore power boats for several years.

Regardless of the horsepower the main ingredient was the propellor selection for the race conditions.

RC Race Boats have the same issues and have many choices of propellor materials.

Bronze, Aluminum, Stainless Steel, Plastic, and Carbon Filled

Before I get into some details, balancing props is very important. Even though the manufacturer says a prop is pre-balanced you should always verify. There are many prop balancing devices and I use one that I have for balancing RC airplane props.

The propeller discussion will be based on the cleaver style propellers used in most racing applications.

The diameter of the prop is very important, since too large a prop can cause too much heat to the brushless motor and the esc and possible destroy both.

A chart that I've used as a starting reference:

(2) cell Lipo 30mm to 40mm (1.18" to 1.57")

(4) cell Lipo 37mm to 46mm (1.45" to 1.81")

(6) cell Lipo 40mm to 52mm (1.57" to 2.04")

When calculating what prop you are going to use you can use the following as a reference only.

Pitch = how far forward the boat moves for one revolution.

Now that you have the number you must deduct for prop slippage. Again, the following percentages are good starting points, but testing is the best bet.

Riggers 15%

Mono 25%

Catamarans 20%

There is more to consider when using the cleaver, not only the diameter and pitch in the rake.

The angle of the rake when looking on a mounted cleaver from the rear of the transom has a dull or flat edge. You will note there is an angle to this flat area which extends to the prop hub. This angle is called the rake.

The more rake the higher the lift or the tighter of the trust cone.

Hydros, Riggers, and some Catamarans need a higher rake.

Mono uses a medium amount of rake.

Remember to balance your boat with batteries and all equipment installed for optimum performance.

Usually, Vee hulls and Catamarans balance approximately 1/3 of the length measured from the transom. Hydros balance at the location of the turn fin.

Hopefully I have brought some information pertaining to cleaver props, balancing props and balancing RC boats.

Another item I just purchased is a SKYRC GNNS Performance Analyzer model GSM020 using it for boat performance changes.

I purchased it from Amazon after reading many articles about these units. The cost was \$79.00 and it uses Blue Tooth Technology

It has a 6-hour battery life which was longer than some other models.

Once you load the APP you have the following to select from:

RC Drag Cars Speed and Elapsed Time

RC Track Performance will indicate speed only, can use it for RC Boat performance.

RC Flying will measure Altitude and Speed.

If you have any questions, please contact me at hgliderrider@aol.com

Don Hermann

Lacey Seaport Society and NAMBA Member.

Bill's Corner

An old R/C saying is that nose-heavy models fly poorly, but tail-heavy models only fly once.

It's true. Nose-heavy models aren't as responsive as properly balanced ones, but, at least we can keep them flying long enough to balance them better. Tail heavy models....well, hopefully, we can reuse the parts.

So, you ask, how does that relate to me and my RTF? Didn't the manufacturer do it for me?

For a new RTF, from a reputable manufacturer, the answer is usually "Yes". But, for one from a lesser-known manufacturer, or one that's been, 'used' and repaired...No. Repaired or misassembled models often have weight in areas the manufacturer never considered. And, complaints about CGs incorrectly noted on instructions are far from rare.

Let's look at our first phrase, that a nose-heavy model may fly poorly. It won't be so responsive. It may need a lot of 'up' trim, and may not want to leave the runway. Those are all survivable negatives– they practically guarantee a model won't snap and die on its maiden.

That's why I always try to make sure my models are nose-heavy for their maidens. Once I've put a few flights on a new model, I'll start moving the CG aft. I do that by (1) moving heavy bits aft, (2) removing nose weight, or (3) adding weight to the tail. Obviously, since we want our models to be as light as possible, option 3 is the least desirable, but it isn't off the table.

In case you're curious, the first thing I check on any new model is how it stalls. Assuming it flies smoothly enough to climb to a safe altitude (the proverbial 'two mistakes high'), I'll intentionally throttle back, pull the nose up, and see if it'll stall. If it does, I'll know what to avoid when landing or taking off.

Problem is, how do you KNOW if a model is nose (or tail) heavy? You have to know where it SHOULD balance, and where it DOES balance. Where it does balance is easy, just needing two fingers and a place out of the wind. Where it should balance takes some thought.

Time to back-step a bit and set some definitions.

One, what we call the Center of Gravity (CG) really isn't. The real CG is where a model would balance, in all three dimensions. If you could hang that model on a string, though the real CG, it would balance – inverted, knife-edge, or angled up and to one side. But, since we fly where gravity demands our attention in one direction, we modelers have accepted using an up-and-down orientation to our CG. So, we balance our models horizontally...and call it the CG.

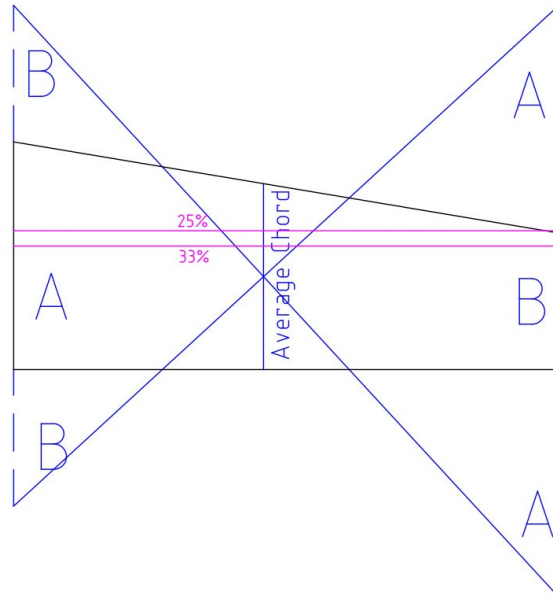
Two, a wing's chord is the distance from the Leading Edge (LE) to the trailing edge (TE), measured perpendicular to the wing LE. Taking a given constant chord wing and sweeping it back won't change the chord.

For constant chord models, finding the CG is pretty easy. It'll be about 1/4 to 1/3 of the chord back from the LE. (Designer secret coming up!) For standard airfoils (such as the famed Clark Y), the CG will be right about where the wing is thickest, which is also where the spar is placed (for the maximum wing strength).

Problem is, what do you do when the wing tapers with span? Tapered wings are more efficient than constant chord ("Hershey Bar") wings, so they show up in a lot of designs.

Answer: We find an average wing chord, and take the 25% to 33% point on it.

Let's look a a graphical way to find that average wing chord (next page).



We start by making a drawing of our wing (half will do). If our wing has a rounded tip, square it off. Graph paper works fine. If you're comfy with CAD software, that works fine, too (it better 'cause that's what I use!).

The black outline is our wing; tapered LE, straight TE. A is our wing's root chord, B is the tip chord.

Measure A and B, then use them to extend the root and tip as shown.

Now, draw diagonal lines connecting the outer extension tips.

Next, where the two diagonals cross, draw a line parallel to the wing root chord. That line is our wing's average chord.

Now that we've found the average chord, measure back 1/4 of that average chord from the LE, mark it, then measure 1/3 of the chord from the LE. This is you beginning CG range.

I STRONGLY recommend you start at the 25% point, only moving the CG backwards after you've test flown the model. I like to mark the CG on a model (Sharpies work well on most foams), so I have them available to spot check after making changes or repairs (changing colors, if needed).

A few more points about balancing models.

- Do it out of the wind!
- Do it after every change or repair (such as a lighter (or heavier) battery or propellor. Remember, the farther a weight is from the CG, the more effect it has on the balance.
- Wet-fuel fliers should balance tractor (i.e., engine-in-the-nose) models with EMPTY fuel tanks, but balance pushers (engine-in-the-tail) with full tanks.
- Does your model have Corsair or P-40 landing gear (where the wheels swing backwards when retracting)? Balance the model with the gear UP, as the wheels are behind the CG when retracted. Please, believe me – I saw a beautiful Corsair model horsed off a runway, then when the gear came up, the model snap rolled and rekitted itself.
- Tip: It's usually easier to balance low-winged models upside down.