



The Dead Stick Flyer

Newsletter of Swan Harbor RC

Volume 33, Number 3, March 2022

www.swanharborrc.com



President/Treasurer: Steve Snyder (443) 243-4323

VP/Newsletter: Ron Lazzeri (443) 425-9006

Secretary: Dale Davis (410) 459-0399

Safety Officer: Tom Insley (443) 876-2886

Webmaster: Stephen Slotnick (908) 403-0273

Members at Large/Directors:

Jae Jang (443) 910-2439

Lewis Fillinger (443) 243-4141

Bob Bartell (443) 945-5709

March 2022 issue of the Swan Harbor RC Newsletter

Review of February Meeting Newsletter Minutes

Membership & Treasury Report

Old Business:

- **2022 Regular Dues Renewal: Deadline ends March 31, 2022**
- **Grass & Equipment Care for 2022**
- **Club Projects: Pit & Flight Line Fence, Canopy Concrete & Fans, and Plane Hold Downs**
- **Club Events: Spring Fly-In, Fall Club Picnic, Flea Market, Christmas Party**
- **New Member – New Flyer Program Update**

New Business:

- **Horizon Hobby Discount for Christmas Party Raffle Prizes**

Other Area Events:

- **Warbirds Over Delaware, Antiques and Classics, Wings Over Piper**

Tech Talk:

- **Trimming Your Plane – Steve's Discussion**
- **Trimming Charts – Going Beyond Straight & Level Flight**

Next Club Meeting:

- **Date: Tuesday, April 12, 2022, 7:00pm**
- **Location: Havre de Grace Activity Center**

Indoor Flying:

- **Last Session, Friday, April 1st, 12 Noon till 2pm**

Club Pics

General Information



Bob Walker photo

Review of February Meeting Newsletter Minutes

Steve asked the members present at the meeting if the February newsletter minutes were acceptable and if anyone had any questions or comments regarding the minutes. All members present agreed they were good.

Membership & Treasury Report

Membership: Steve informed members that the club ended the 2021 year with 86 members. As of the March meeting we now have 66 paid up returning members from 2021 and 21 members yet to renew their 2022 memberships.

Treasury: Steve reviewed the club's financial status as of the meeting date and noted the club is in great shape starting the new year out. We are rapidly approaching the membership renewal deadline of March 31st so we urge members to get their renewal dues paid in time.

2022 Regular Dues Renewal

An important reminder that the deadline for regular dues renewal of \$75.00 ends March 31, 2022. However, the sooner you get them paid we will be able to forecast what we can accomplish in 2022 with a fresh new budget.

As a reminder you can send your dues payments to Steve Snyder by check, PayPal, or cash. You can also give your dues to any board member but it would be good to drop Steve an email or text advising him to whom you gave the dues. Please make your checks payable to Swan Harbor RC. Also, see the section below on Membership Dues Policy for information on how to pay your dues, including by PayPal.

Steve's contact information:

Mobile: (443) 243-4323

Email: snyder800@gmail.com

Address: 800 Van Dyke Lane, Bel Air, MD 21014

Old Business

- **Grass & Equipment Care for 2022:**

- *The plan for 2022 is to continue with the regular grass lawn treatment maintenance and hold off on any grass overseeding for a couple of years. We will work on various spot grass repairs in the fall. The 1st lawn treatment of 2022 was applied on Thursday, March 17th by 4-Evergreen.*
- *The new Zero-Turn mower was sent to Coales for its first annual warranty service. All other mowers and equipment will be serviced as usual in-house to get them ready for the 2022 grass cutting season.*

- **Club Projects:**

- **County Project Requests:** *Two capital expenditure requests were submitted to the county that should be completed between mid-summer and the fall of 2022.*
 - **Pit and Flight Line fence to be replaced.** *The Pit area fence height will be raised to 4 feet to provide a better margin of safety for spectators behind the Pit area. There will be a 3 foot opening in the middle of each fence line so that flyers can walk through to their planes. The top of the fencing will have a padded wrap cushion.*
 - **Canopy Stone Crush to be replaced with Concrete.** *The stone crush that is under the two canopies will be removed and replaced with concrete. The stone crush will be moved to the outer sides of the canopy areas. This will provide a better surface to walk on when the ground is wet and help to eliminate stagnant water and bugs under the canopies.*
- **Club Projects:** *Two additional projects will be completed by the club:*
 - **Concrete Plane Hold Down Bases.** *A concrete base will be installed at each pit/plane flight station to provide a more secure and permanent structure.*
 - **Fans installed under each Canopy.** *A fan will be installed under each canopy to provide air circulation during the hot days of the summer. The fans will be directed so that air flows over the tables and not directly at people.*

- **Club Events: Swan Harbor RC club events scheduled for 2022 are:**

- **Spring Fly-in on Saturday, June 11th**
- **Fall Club Picnic on Saturday, September 10th**
- **Club Flea Market on Saturday, September 24th**
- **Annual Christmas Party on Saturday, December 3rd**

- **New Member - New Flyer Program:**

Several meetings ago, Steve introduced the idea of a “New Flyer Program” that he would like to get going in 2022. This program will help interested and potential new members ease into the RC hobby with good startup information.

It would include a pamphlet with information for getting started in the hobby to include a couple options for affordable trainer type RC planes, flight simulators, AMA & FAA lower cost membership, basic RC tips, and club flight mentors/instructors.

Steve would also like to review the membership policy and produce an affordable newbie trial membership to help a potential RC hobbyist ease into our club without initially breaking their financial resources and scaring them off.

Finally, he would like to solicit several member volunteers to be flight instructors and mentors for new flyers that need help getting started and trained. Our goal is to make new RC flyers feel that the initial entry into the hobby can be affordable and fun by providing them low cost yet effective options for getting started.

New Business

Horizon Hobby Discount for Christmas Party Raffle Prizes: Planning for the 2022 Christmas Party has already begun. Dale wrote a letter to Horizon Hobby, on Steve’s behalf, asking if they would provide us a club discount for the 2022 Christmas Party raffle prizes. Steve got an email reply from Horizon Hobby acknowledging they would give the club a 15% discount for the raffle prizes. Many thanks to Horizon Hobby for the generous discount to make our annual Christmas Party event fun for all.

Summer Club Meetings: At the April meeting we will discuss and plan the upcoming summer club meetings/cookouts that will be held at the Swan Harbor RC field. A decision needs to be made whether to have the meetings on Saturday at 10am or on Tuesday evening at 7pm. Saturday meetings run the risk of President Biden’s TFR’s which will shut down flying for the day. Member input is needed to make this decision so please plan to attend the meeting. Please note there will be no flying if a TFR is in effect.

Other Area Events:

- **Warbirds Over Delaware: July 13th through July 16th**
- **Antiques and Classics: Saturday, August 7th**
- **Wings Over Piper: Thursday, August 4th through 7th**

Tech Talk – Trimming Your Plane

As a continuation of our monthly Tech Talk discussions, this month Steve led a discussion from two articles, presented below, on how to Trim Your Plane. This process is not simply the routine trimming you would do right after taking off and then adjusting the up or down trims on the elevator or left or right trims on the ailerons. It would involve a sequence of flight patterns and maneuvers designed to determine the true flight performance based on the actual construction and flight characteristics of your plane. Once you set your mind to following this trimming method it is highly recommended to do it in the exact sequence and flight patterns noted. However, for the more experienced pilot, if you notice that your plane is doing something identified in one of the trimming tests, you could try to improve your plane's flight performance by performing that individual test.

1st Article:

FLIGHT TRIMMING

This article was reprinted and provided in part by the Great Planes Model Manufacturing Company, courtesy of Scale R/C Modeler magazine, Pat Potega, Editor, August 1983 issue of the magazine.

A model is not a static object. Unlike a car, which can only hunt left or right on the road (technically, a car does yaw in corners, and pitches when the brakes are applied), a plane moves through that fluid we call air in all directions simultaneously. The plane may look like it's going forward, but it could also be yawing slightly, slipping a little and simultaneously climbing or diving a bit! The controls interact. Yaw can be a rudder problem, a lateral balance problem or an aileron rigging problem. We must make many flights, with minor changes between each, to isolate and finally correct the problem.

The chart accompanying this article is intended to serve as a handy field reference when trimming your model. Laminate it in plastic and keep it in your flight box. You just might have a need to consult it at the next contest! The chart is somewhat self-explanatory, but we will briefly run through the salient points.

First, we are assuming that the model has been C.G. balanced according to the manufacturer's directions. There's nothing sacred about that spot, frankly, it only reflects the balance point where a prototype model handled the way the guy who designed it thought it should. If your model's wing has a degree more or less of incidence, then the whole balance formula is incorrect for you. But it's a good ballpark place to start.

The second assumption is that the model has been balanced laterally. Wrap a strong string or monofilament around the prop shaft behind the spinner, then tie the other end to the tail wheel or to a screw driven into the bottom of the aft fuse. Make the string into a bridle harness and suspend the entire model inverted (yes, with the wing on!). If the right wing always drops, sink some screws or lead into the left wing tip. You may be surprised to find out how much lead is needed.

At this point the model is statically trimmed. It's only a starting point, so don't be surprised if you wind up changing it all. One other critical feature is that the ailerons must have their hinge gap sealed. If shoving some Scotch tape or Monokote into the hinge gap to prevent the air from slipping from the top of the wing to the bottom, and vice-versa, bothers you, then don't do it.

To achieve the maximum lateral trim on the model, the hinge gap on the ailerons should be sealed. The easiest way to do this is to disconnect the aileron linkages and fold the ailerons as far over the top of the wing as possible (assuming they are top or center hinged). Apply a strip of clear tape along the joint line. When the aileron is returned to neutral, the tape will be invisible, and the gap will be effectively sealed. Depending on how big the ailerons are, and how large a gaping gap you normally leave when you install hinges, you could experience a 20 percent increase in aileron control response just by this simple measure.

Your first flights should be to ascertain control centering and control feel. Does the elevator always come back to neutral after a 180° turn or Split-S? Do the ailerons tend to hunt a little after a rolling maneuver? Put the plane through its paces. Control centering is either a mechanical thing (binding servos, stiff linkages, etc.), an electronic thing (bad servo resolution or dead band in the radio system), or C.G. (aft Center of Gravity will make the plane wander a bit). The last possibility will be obvious, but don't continue the testing until you have isolated the problem and corrected it.

Let's get down to the task of trimming the model. Use the tachometer every time you start the engine, to insure consistent results. These trim flights must be done in calm weather. Any wind will only make the model weathervane. Each "maneuver" on the list assumes that you will enter it dead straight-and-level. The wings must be perfectly flat, or else the maneuver will not be correct and you'll get a wrong interpretation. That's where your observer comes in. Instruct him to be especially watchful of the wings as you enter the maneuvers. Do all maneuvers at full throttle. The only deviation from this is if the plane will routinely be flown through maneuvers at a different power setting.

Let's commence with the "engine thrust angle" on the chart. Note that the observations you make can also be caused by the C.G., so be prepared to change both to see which gives the desired result. Set up a straight-and-level pass. The model should be almost hands-off. Without touching any other control on the transmitter, suddenly chop the throttle. Did the nose drop? When you add power again, did the nose pitch up a bit? If so, you need some down thrust, or nose weight. When the thrust is correct, the model should continue along the same flight path for at least a dozen plane lengths before gravity starts to naturally bring it down.

Do each maneuver several times, to make sure that you are getting a proper diagnosis. Often, a gust, an accidental nudge on the controls, or just a poor maneuver entry can mislead you. The thrust adjustments are a real pain to make. On most models, it means taking the engine out, adding shims, then reassembling the whole thing. Don't take shortcuts.

Don't try to proceed with the other adjustments until you have the thrust line and/or C.G. correct. They are the basis upon which all other trim settings are made.

Also, while you have landed, take the time to crank the clevises until the transmitter trims are at neutral. Don't leave the airplane so that the transmitter has some odd-ball combination of trim settings. One bump of the transmitter and you have lost everything. The trim must be repeatable, and the only sure way to do this is to always start with the transmitter control trims at the middle.

The next maneuver is somewhat trickier than it looks. To verify C.G., we roll the model up to a 45° bank, then take our hands off the controls. The model should go a reasonable distance with the fuse at an even keel. If the nose pitches down, remove some nose weight, and the opposite if the nose pitches up. The trick is to use only the ailerons to get the model up at a 45degree bank. We almost automatically start feeding in elevator, but that's a no-no. Do the bank in both directions, just to make sure that you are getting an accurate reading of the longitudinal balance.

We now want to test the correct alignment of both sides of the elevator (even if they aren't split, like a Pattern ship's, they can still be warped or twisted). Yaw and lateral balance will also come into play here, so be patient and eliminate the variables, one-by-one. The maneuver is a simple loop, but it must be entered with the wings perfectly level. Position the maneuver so that your assistant can observe it end-on. Always loop into the wind. Do several loops and see if the same symptom persists? Note if the model loses heading on the front or back side of the loop. If you lose it on the way up, it's probably an aileron problem, while a loss in heading on the way back down is most likely a rudder situation.

Note that the Yaw test is the same looping sequences. Here, however, we are altering rudder and ailerons, instead of the elevator halves. We must repeat that many airplanes just will not achieve adequate lateral trim without sealing the hinge gaps shut. The larger you make the loops (to a point), the more discernable the errors will be.

The Lateral Balance test has us pulling those loops very tightly. Pull straight up into a vertical and watch which wing drops. A true vertical is hard to do, so make sure that your assistant is observing from another vantage point. Note that the engine torque will affect the vertical fall off, as will rudder errors. Even though we balance the wing statically before leaving for the field, we are now trimming it dynamically.

The Aileron Coupling (or rigging) is also tested by doing Hammerheads Stalls. This time, however, we want to observe the side view of the model. Does the plane want to tuck under a bit? If so, then try trimming the ailerons down a small bit, so that they will act as flaps. If the model tends to want to go over into a loop, then rig both ailerons up a few turns on the clevises. Note that drooping the ailerons will tend to cancel any washout you have in the wing. On some models, the lack of washout can lead to some nasty characteristics at low speeds.

Again, we reiterate that all of these controls are interactive. When you change the wing incidence, it will influence the way the elevator trim is at a given C.G. Re-trimming the wing will also change the rigging on the ailerons, in effect, and they may have to be readjusted accordingly.

The whole process isn't hard. As a matter of fact, it's rather fun — but very time consuming. It's amazing what you will learn about why a plane flies the way it does, and you'll be a better pilot for it. One thing we almost guarantee, is that your planes will be more reliable and predictable when they are properly trimmed out. They will fly more efficiently and be less prone to doing radical and surprising things. Your contest scores should improve, too.

We wish to acknowledge the Orlando, Florida, club newsletter, from which the basics of the chart presented here were gleaned.

Reference the Flight Trimming chart below.



<u>TRIM FEATURE</u>	<u>MANEUVERS</u>	<u>OBSERVATIONS</u>	<u>CORRECTIONS</u>
CONTROL CENTERING	<i>Fly general circles and random maneuvers.</i>	<i>Try for hands off straight and level flight.</i>	<i>Readjust linkages so that Tx trims are centered.</i>
CONTROL THROWS	<i>Random maneuvers</i>	A. <i>Too sensitive, jerky controls.</i> B. <i>Not sufficient control.</i>	<i>If A, change linkages to reduce throws.</i> <i>If B, increase throws.</i>
ENGINE THRUST ANGLE¹	<i>From straight flight, chop throttle quickly.</i>	A. <i>Aircraft continues level path for short distance.</i> B. <i>Plane pitches nose up.</i> C. <i>Plane pitches nose down.</i>	<i>If A, trim is okay.</i> <i>If B, decrease downthrust.</i> <i>If C, increase downthrust.</i>
CENTER OF GRAVITY LONGITUDINAL BALANCE	<i>From level flight roll to 45-degree bank and neutralize controls.</i>	A. <i>Continues in bank for moderate distance.</i> B. <i>Nose pitches up.</i> C. <i>Nose drops.</i>	<i>If A, trim is good.</i> <i>If B, add nose weight.</i> <i>If C, remove nose weight.</i>
SPLIT ELEVATORS (Also Yaw and CG)	<i>Into wind, pull open loops, using only elevator. Repeat tests doing outside loops to inverted entry.</i>	A. <i>Wings are level throughout.</i> B. <i>Be planes tends toward outside when right side up, and to the inside when inverted</i> C. <i>Plane goes in on regular loops and out on inverted.</i> D. <i>Plane goes out on both types of loops.</i> E. <i>Plane goes in on both types of loops.</i>	<i>If A, trim is fine.</i> <i>if B, add weight to right wing or add right rudder</i> <i>If C, add weight to Left wing, or add left rudder</i> <i>If D, raise right half of elevator (or lower left)</i> <i>If E, raise left half of elevator (or lower right)</i>
YAW²	<i>Into wind, do open loops, using only elevator. Repeat tests doing outside loops from inverted entry.</i>	A. <i>Wings are level throughout.</i> B. <i>Yaws to right in both inside and outside loops.</i> C. <i>Yaws to left in both inside and outside loops.</i> D. <i>Yaws right on inside and left on outside loops.</i> E. <i>Yaws left in insides, and right on outside loops.</i>	<i>If A, trim is correct.</i> <i>If B, add left rudder trim.</i> <i>If C, add right rudder trim.</i> <i>If D, add left aileron trim.</i> <i>If E, add right aileron trim.</i>
LATERAL BALANCE	<i>Into wind, do tight inside loops.</i>	A. <i>Wings are level and plane falls to either side randomly.</i> B. <i>Falls off to left in loops. Worsens as loops tighten.</i> C. <i>Falls off to right in loops. Worsens as loops tighten.</i>	<i>If A, trim is correct.</i> <i>If B, add weight to right wing tip.</i> <i>If C, add weight to left wing tip.</i>
AILERON RIGGING	<i>With wings level, pull to vertical climb and neutralize controls.</i>	A. <i>Climb continues along same path.</i> B. <i>Nose tends to go to inside loop.</i> C. <i>Nose tends to go to outside loop.</i>	<i>If A, trim is correct.</i> <i>If B, raise both ailerons very slightly.</i> <i>If C, lower both ailerons very slightly.</i>

1. Engine thrust angle and C.G. interact. Check both.

2. Yaw and lateral balance produce similar symptoms. Note that fin may be crooked. Right and left references are from the plane's vantage point.

2nd Article:

“Trimming Your Plane” by Peter Goldsmith

You can trim the grass, trim the turkey, or even trim the tree, but in the RC world, “trimming” is mostly thought of as something you do with a new plane on its first flight to get it to fly straight and level, with hands off. “It may have needed a few clicks of up elevator and/or a few clicks of right or left aileron and it was good to go” is a phrase you may have heard or something pretty close to that.

But is there more that you can do to get your plane to fly better? This article will describe a systematic process that will make your aerobatic RC model fly better and allow you to fly better. This article will describe the trimming process developed by Team Horizon manager and TOC competitor Peter Goldsmith and what follows is a description of his “system.”

Several years ago, a friend of mine, Mike Hurley, was writing the Scale Aerobatics column in the AMA magazine and he interviewed Peter and published his techniques. That’s when I was first exposed to this great trimming process. I’ll be borrowing very heavily from Mike’s article. If you Google “Peter Goldsmith trimming article” you’ll find it but it’s pretty long and I’m going to try to give you the short version.

About The Trimming Process

The first thing that Peter says is that you won’t ever find a perfectly trimmed plane and so that’s not the goal. It’s pretty much impossible to do. The goal is to reduce the pilot workload so that you can concentrate on putting the plane where you want it to go and not spend energy fighting against what the plane is trying to do.

Another important note is that you must follow the recommended steps in the order shown. Each time you change something on the plane it can affect it in ways you aren’t expecting. For example, balancing the plane or determining the correct center of gravity (or CG) is the first step. If you get halfway through the balancing process and change the CG you have to start over at the beginning because the new CG has thrown off the other adjustments you’ve made.

This trimming process is intended for aerobatic planes (scale aerobatic planes like an Extra, Yak, etc.) and pattern planes. It may apply for other types of planes too.

To fully take advantage of this trimming process you’ll need a radio that has the ability to “mix” channels. An example of a mix is when you input rudder, the rudder moves as commanded but the elevator adjusts ever so slightly as well. Most radios these days have at least basic mixing capabilities.

You have to commit to the process. By that I mean it takes a lot of flights to get through it. It can take several flights on the plane just working on the first step: adjusting CG. You won't get it done in one day or even a week. Work on parts over time and go at your own speed. I've spent weeks trimming out a plane, dedicating a flight each time I come out the field to trimming and working down the list.

Servos and Linkages

Of course, the better the servos you use, the better your plane can perform. By better I mean...

- ***How fast is the servo (a faster servo is better)***
- ***How well does the servo center (does the servo center exactly at the same place every time you neutralize the transmitter's stick?)***
- ***How much torque does it put out (more torque the better)?***
- ***What kind of servo resolution do you have (the finer the better and this can be influenced by linkage setup)?***

You don't necessarily need to buy the best, most expensive servos you can find. There are many fine servos available now and it really boils down to what you want for yourself and the trimming process will benefit you regardless of the servos you use. You want tight, slop free linkages and strong pushrods that don't flex.

No matter what servos you use or what linkages you have, setting them up mechanically so that you're realizing the full potential of your servos is easy and important. For example, don't use a longer servo arm than necessary and then restrict the servo throw in order to achieve the surface deflection you want (this also reduces servo resolution). Instead, connect your pushrod as close as you can to servo center while maxing out the servo travel for more leverage and tighter servo resolution while getting the surface travel you need.

How much surface travel should you have? That can be a personal preference but I find for normal aerobatics (not 3D) I do not need any more than 10-15 degrees of elevator, maybe 20-25 degrees of aileron and 30-35 degrees of rudder to start out and then adjust as I get used to the plane.

The Process and The Order:

1) Nose to Rudder Balance: Adjusting for proper Center of Gravity (CG) on the wing:
a. Is the plane nose heavy, tail heavy, or just right?

2) Lateral Balance: Is one wing heavier than the other?

3) Engine thrust: right/left

4) Engine thrust: up/down

5) Aileron Differential: how much "up deflection" vs. "down deflection" in your ailerons

6) Throttle to Aileron mix: When you move the throttle, the aileron trim adjusts

7) Throttle to Rudder mix: when you move the throttle, the rudder trim adjusts

8) Rudder to Aileron mix: when you move the rudder stick the aileron trim adjusts

9) Rudder to Elevator mix: when you move the rudder stick, the elevator trim adjusts

10) Down line mix: making adjustments so that when the nose is pointed straight down the plane continues to maintain that straight line down and doesn't pull out on its own.

Let's get started: remember, follow the steps in the order from 1 to 10

Trimming Step	Maneuver	What To Look For	What To Do
1. <i>Center of Gravity (CG)</i>	<i>Pull to 45 degree up-line, release elevator, observe flight path</i>	<p>A. Nose rises</p> <p>B. Nose gently falls</p> <p>C. Nose falls quickly</p>	<p>A. CG too far aft, add nose weight</p> <p>B. CG is just about right</p> <p>C. CG too far forward, add tail weight</p>

Notes:

- Start with the "recommended" CG for your model
- CG is largely a matter of preference- once you get to "about right" you can adjust to your comfort level
- For precision aerobatics, a little nose heavy is better than a little tail heavy
- If your model is very sensitive in pitch with minimal control throw, you are probably tail heavy

Trimming Step	Maneuver	What To Look For	What To Do
2. <i>Dynamic Balance ("Heavy Wing")</i>	<i>Starting high, push to a vertical down line and throttle back, after about 3-4 seconds pull sharply to upright- observe if one wing drops- do this several times</i>	<p>A. Left wing consistently drops</p> <p>B. Right wing consistently drops</p> <p>C. Wings remain level</p>	<p>A. Add some weight to the right wingtip</p> <p>B. Add some weight to the left wingtip</p> <p>C. Nothing- you're good</p>

Notes:

When you pull, pull hard enough for a tight quarter loop to upright but not so hard that the plane will snap

Be careful not to input any aileron when pulling back on the elevator

Trimming Step	Maneuver	What To Look For	What To Do
3. Engine Thrust- Right/Left	<i>Fly overhead directly into any wind, pull to a vertical up-line, and observe model as it climbs without giving any corrections</i>	<p>A. Plane veers to right</p> <p>B. Plane veers to left</p> <p>C. Plane continues on a straight line</p>	<p>A. Add left thrust</p> <p>B. Add right thrust</p> <p>C. Nothing- you're good</p>

Notes:

- Works best when you have a wind coming straight at you (crosswind) and you can fly straight away, pull up and see the top of the plane
- Typically, any aerobatic plane will start out with some right thrust- a 2-3 degrees and sometimes "adding left thrust" is actually done by removing some of the right thrust
- Keep adjusting until you can get long extended up-lines with the plane continuing to climb without veering one way or the other

Trimming Step	Maneuver	What To Look For	What To Do
4. Engine Thrust- Up/Down	<i>Fly straight and level across the field at high throttle making sure that the plane is trimmed for level flight- quickly chop the throttle and observe flight path</i>	<p>A. Plane pitches up</p> <p>B. Plane pitches down</p> <p>C. Plane remains level and slowly begins to lose altitude due to reduced speed</p>	<p>A. Add up thrust, re-trim for level flight, retest</p> <p>B. Add down thrust, re-trim for level flight, retest</p> <p>C. Nothing- you're good</p>

Notes:

- When you have too much down thrust and trim for level flight you are carrying unnecessary up elevator trim to maintain altitude when flying with power. This condition shows itself when you cut the power. Once you add up thrust to correct you'll end up needing to take out some or all of the up elevator trim- you'll see that when you retest

Trimming Step	Maneuver	What To Look For	What To Do
5. Aileron Differential <i>Ailerons have more throw in one direction versus the other</i> <i>example: ailerons have 20 degrees of up deflection but only 15 degrees of down</i>	<i>Fly overhead directly into the wind or downwind, pull to a 45 degree up line, give full left aileron and perform one roll</i>	<p>A. The plane "walks to the left"</p> <p>B. The plane "walks to the right"</p> <p>C. The plane remains on the same line</p>	<p>A. Reduce down aileron throw</p> <p>B. Reduce up aileron throw</p> <p>C. Nothing- you're good</p>

Notes:

- Differential is required when the drag of the "up-going" aileron is different than the drag of the "down going" aileron
- The example above was with left aileron- do it both ways and fix for both right and left aileron

<i>Trimming Step</i>	<i>Maneuver</i>	<i>What To Look For</i>	<i>What To Do</i>
<i>6. Throttle to Aileron Mix</i>	<i>Climb to high altitude, fly overhead go to idle and push to a down line. Hands off the sticks and watch for any rolling before pulling out</i>	<i>Look to see if the plane rolls at all on the down line</i>	<i>Set up a mix in your radio so that the aileron trim changes at the low throttle settings</i>

Notes:

- Most planes require a little bit of right trim at high throttle due to the rotation of the propeller – it wants to ever so slightly roll to the left (the opposite direction of the rotation of the propeller)*
- The trim you put in for high throttle isn't needed at reduced throttle settings so you set up your radio so that the trim goes away as you reduce the throttle*

<i>Trimming Step</i>	<i>Maneuver</i>	<i>What To Look For</i>	<i>What To Do</i>
<i>7. Throttle to Rudder Mix</i>	<i>Climb to altitude, fly overhead, into the wind and push to a vertical down line for a few seconds- observe the plane</i>	<i>A. Plane veers to the right</i> <i>B. Plane veers to the left</i> <i>C. Plane continues to flight straight down</i>	<i>A. Mix in a little bit of left rudder that doesn't activate until near idle</i> <i>B. Same but right rudder</i> <i>C. Nothing- You're good</i>

Notes:

- Assuming you bothered to trim for yaw (rudder) – most don't, your plane is likely trimmed for high throttle settings. At reduced throttle settings, the plane is likely to yaw differently*
- This is a good mix to have active at only lower throttle settings (no mix at high throttle- it kicks in when you get below, say, half throttle)*

<i>Trimming Step</i>	<i>Maneuver</i>	<i>What To Look For</i>	<i>What To Do</i>
<i>8. Rudder to Aileron Mix</i>	<i>Fly wings level across the field in front of you then apply and hold right rudder</i>	<i>A. Plane slowly rolls to the right</i> <i>B. Plane slowly rolls to the left</i> <i>C. Plane does not roll</i>	<i>A. Mix in some left aileron with right rudder, retest</i> <i>B. Mix in some right aileron with right rudder, re-test</i> <i>C. Nothing- you're good</i>

Notes:

- Description above is for right rudder – you'll need to trim left rudder too. It works the same.
- Most people actually do this test on knife edge- but it's easier and just as effective to do it from level upright. You can do it both ways- knife edge or upright- to be thorough
- You usually need in the neighborhood of 3%-8% mix to eliminate rolling with rudder
- The safest way to make adjustments is to land, secure the plane, make the mix adjustment on the ground, take off and retest- repeat until satisfied

Trimming Step	Maneuver	What To Look For	What To Do
9. Rudder to Elevator Mix	Fly wings level across the field in front of you then apply and hold right rudder	A. Plane pitches down B. Plane pitches up C. Plane does not pitch	A. Mix in some up elevator with right rudder, retest B. Mix in some down elevator with rudder, retest C. Nothing- you're good

Notes:

- Description above is for right rudder – you'll need to trim for left rudder too. It works the same.
- Most people actually do this test on knife edge- but it's easier and just as effective to do it from level upright
- You can do it both ways- knife edge or upright- to be thorough
- You usually need in the neighborhood of 3%-8% mix to eliminate pitching with rudder
- The safest way to make adjustments is to land, secure the plane, make the mix adjustment on the ground, take off and retest- repeat until satisfied

Trimming Step	Maneuver	What To Look For	What To Do
10. Down Line Mix	Climb to altitude, fly overhead with the wind to the side, push to vertical down-line, center controls and observe path as the aircraft dives	A. Plane pitches towards canopy B. Plane pitches towards belly C. Plane stays perfectly on track of vertical down-line	A. Mix in a little bit of down elevator (1-2%) at idle B. Mix in a little bit of up elevator (1-2%) at idle C. Nothing- you're good

Notes:

- In almost every case, the plane will pitch toward the canopy (begins to level out)
- Let the aircraft continue on the down-line for several seconds
- Mix should not kick in until idle- anything above idle should not include the mix

April Club Meeting

- *The next club meeting will be held on Tuesday, April 12th starting at 7:00pm.*
- *An agenda will be sent out prior to each meeting.*
- *The Summer meetings at the SHRC field will be discussed and planned.*
- *We welcome everyone to the meetings to help shape the future of our club.*
- *The address for the Havre de Grace Activity Center:*
321 Lewis Lane, Havre de Grace, MD, 21078

Indoor Flying

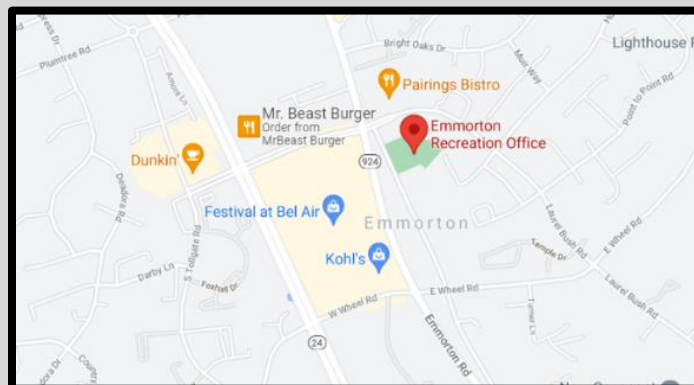
Last Call!

Scheduled Indoor Flying ends on Friday, April 1st. This is not an April Fools joke!

Dale had Indoor Flying booked and scheduled for all members to enjoy which started on Friday, October 1, 2021, and continues every consecutive Friday through April 1, 2022 from Noon to 2:00pm at the Emmorton Recreation Center.

The Emmorton Recreation Center is located at:

- *2213 Old Emmorton Rd, Bel Air, MD 21015*
- www.emmortonrec.com



Jae & his WACO (Bob Walker photo)



Mark & his Decathlon (Bob Walker photo)



Indoor Flying, looking for electric (Bob Walker photo)



Bob spotted a tripped GFCI (Bob Walker photo)



Go Ravens!



Dale "The Maniac" Davis



Bill & his Tundra



Oops!



General Information:

Membership Dues Policy

To pay your club dues for the season, either as a renewing member or a new member, please forward them to Steve Snyder, Treasurer. As you all know we depend on our dues to fund projects and general maintenance for our club.

Existing Annual Membership Renewals:

- **Annual renewal membership fee:** \$75.00
- **Renewal period:** 1/1/YR thru 3/31/YEAR
- **Payment is due by:** 3/31/YEAR

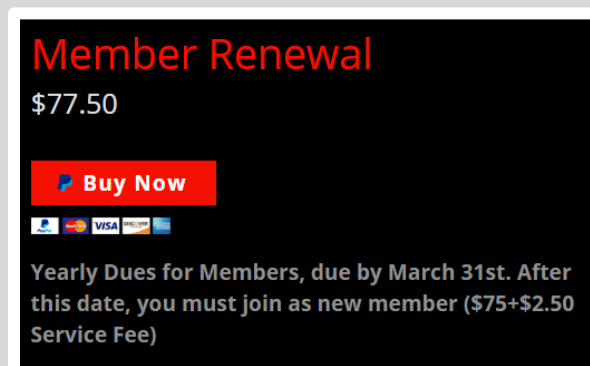
New Membership Dues:

- **Full year new membership fee:** \$125.00
- **Joining period:** 1/1/YR thru 12/31/YEAR (*)
 - **Fee Includes:**
 - \$75.00 annual membership fee
 - \$50.00 first year initiation fee

() Note: New members joining the club on 9/1/YR or after of that same year are considered paid in full for the current year and the immediately following year. The reason for this exception is that the current flying season is about 75% over and we want to give new members an incentive to join our club.*

You can pay your dues with PayPal:

If you decide to pay your dues with PayPal go to the club's website: swanharborrc.com and click on the top menu item How to Join. This section will explain everything you'll need to know regarding how to join as a new member or pay your dues as a renewing member. In this section you will see the PayPal payment option as pictured below. Please take note that the PayPal payment option has a PayPal service fee of \$2.50 added to the payment total.



What members are working on: Building a new aircraft, assembling an ARF, working on an old reliable, or want to sell something? We would love to hear about what you are working on. Send us some information and a couple of pics of your project and we will post it in the next monthly newsletter. Send your emails to: ronlazzeri@verizon.net.

Newsletter: To receive the Swan Harbor RC Newsletter by email, please send a request to: sslotnick@mac.com.

Photos: Anyone who would like to have new photos appear in the slideshow or the photo gallery is encouraged to send their photos to Stephen Slotnick at sslotnick@mac.com and he will add them as soon as he can.

Interest in Joining the Club: Please see the instructions on the Swan Harbor RC website www.swanharborrc.com under the heading "How to Join." Additional membership information or questions can be obtained from Steve Snyder at (443) 243-4324 or email: snyder800@gmail.com.

Harford County's No Smoking Policy on County Property:
We follow all county rules and regulations and ask for your cooperation.

Thank You!

