

THRUSTLINES

Indianapolis R/C Modelers Chapter 288

WWW.INDYRCMODELERS.COM

February 2010

The Editors Corner

It is Feb 2010 have you paid your Club dues for 2010 yet??? If not, please send of your check to Ron Cassell, 4592 Mohr Estates, S. Drive, New Palestine, IN 46163 **TODAY**. Also, check your AMA card. Did it expire or are you good for this year? You can renew your AMA membership online if it has expired. The Indianapolis Air Show at Mt. Comfort airport will be June 11-13 this year. There will be a tent to display our RC planes and this is a good chance for us to pickup new dues paying members. If you are interested in showing off our plane or just helping out at the tent please email me or call. You will get free admission to the show and preferred parking. In order to be a little more member friendly we would like to recognize our members on the their birthday. We don't need to know the year—just the date. Please put this info on the membership list I will pass around at the next meeting or email me the info. Also, I am the world's worst person in putting names with faces. To help me and others—we would like to put a photo directory on the club website—so at the next few meetings and/or out at the field we would like to take your photo so we can post it on the website with your name—this is not mandatory but will help us all in recognizing our fellow members at the field. One last item— Bill Gentry has arranged for a guest speaker at our March club meeting, Mr. Bob Harkey. Bob is a former Indy car driver and pilot who owns a Stearman and trained many pilots during WWII. Please plan on attending this informative meeting next Monday.

Blue Skies - Ted Brindle, Editor



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The March Meeting will be held on Monday, March 1st at 7 pm.

The Prez Sez

Things are shaping up for an outstanding year for the Indy RC Modelers. Our Newly renovated Shelter adds a finishing touch to our field.

Mike and I have also discussed a few more things that we would like to do to the field to make it more flyer friendly. Mike is in the process of making new center line markers for both ends of the field, plus a unique wind direction device. Rex Griffin is rebuilding the Frequency board, which will have two rows for 2.4 plus all the 72 megahertz frequencies. We will be placing 6 to 8 concrete pads for gas planes at the North and South ends of the pits to help protect our grass.

We have implemented a new training plan for all newcomers and an Advance course for those who want to become a more proficient pilot. Both of these programs will start in the middle of March, weather permitting at 5pm on Monday and Wednesday and conclude on October 27th.

Some of the following events have been planned, IMAC contest in May, Our Derby Days Air Show Aug. 1st and an IMAA Fall Jamboree in October. We still are talking about a date for a Swap meet and Maiden Day this spring. Plus a lot more, so stay tuned for more upcoming news and events.

Mike has rebuilt our club Web-Site, so please take the time to visit it, there's a lot of new info on it.

Looking forward to seeing everyone for the March 1st meeting.

Blue Skies

Bill

If you haven't paid your 2010 club dues please get them in Today and also check to make sure that your AMA membership is still current for 2010

The February meeting of the Indianapolis RC Modelers was called to order at 7:00 by president Bill Gentry. Attending were 23 members and 2 youngsters.

The minutes were read. One correction was needed. The dates for the IMAA meet are Oct. 2nd and 3rd. With that correction, the minutes were approved.

The treasurer's report was read with income from dues. The total paid members are now at 44 single and 4 family.

Expenditures included: rent for the meeting room to the church, instructor program to AMA, lease payment to Mr. Harold Brune, and website fees to Mike Karnes.

The report was approved.

There were no new members or guests.

Old Business:

1) We need more members. If you have any ideas for bringing in new people, please bring your ideas to the next meeting.

2) The shelter needs calking before painting. Asking for volunteers.

3) IMAC Mike sent a clipboard around the room asking volunteers to sign up for various tasks. He noted that he already has 15 pilots signed up to participate. The event is posted on the IMAC, Flying Giants, and RC Universe sites. Also at Hobby R/C and Hobby Town. Mike has the scoring program and papers etc lined up. He said we will need to run the concessions to make money. All help is greatly appreciated. From the floor, it was suggested that there be some local advertising to draw spectators from the area.

4) Norm talked to the land owner on 52 about putting up signs. As long as the signs are on his land, we do not have to worry about the state regulations. There was some discussion about the local regulations.

New Business:

1) It was proposed that some of the field rules in the bylaws be changed.

a) The old rule required that all transmitters have a red flag on the antenna. After discussion it was agreed to change to "All transmitters and receivers must meet all current AMA and FCC regulation. Refer to AMA membership manual pages ----."

b) The old rule said that all aircraft must pass a sound check. The new change would read, "We reserve the right to sound test any aircraft that we feel jeopardizes the used of our field. If in the opinion that 3 (three) club members agree to a possible sound issue, the pilot could be asked to land and not be able to fly said aircraft until at such time it can be sound tested by the guideline(s):" etc.

c) Add line 24 "Last club member leaving the field for the day must make sure building and equipment lockers are secure, the flag is down and stored and the gate is locked.

These changes were approved.

- 2) The gate combination will be changed in April.
- 3) A new embroidered shirt was presented by Bill. It is a wicking shirt and the cost is around \$40.00. A cotton T is available for around \$35.00.
- 4) Bill presented a very nice plaque to Jack Sallade for his past service as an officer of the club. He has one for Tim Mills too. Tim was not in attendance.
- 5) August 1st will be the Derby Days air show. Jack Sallade has volunteered to head up the show. Tim will do the announcing. Jack is working on getting a rocked demo and maybe a jet demo.
- 6) Bill is working on getting a guest speaker for the next meeting.

Meeting was adjourned at 8:38

Respectively submitted by Substitute Secretary Barb Middleton

Show and Tell at the Feb Club meeting



New Program for Training Beginners

Paul Peterson will be hosting a meeting of all instructors on Monday, 8 March at 7pm. The club is starting a new comprehensive flight training program for our beginners and we need to review the details of this new program with all instructors. If you would like to be an instructor please contact Paul for details—765-763-6603

Condensed from Peter Goldsmith Trimming for Precision Aerobatics

Full article can be found at the following link

<http://www.mini-iac.com/InfoCentral/tabid/74/articleType/ArticleView/articleId/122/categoryId/38/Peter-Goldsmith-How-to-reduce-your-flying-workload.aspx>

Servo and control setup for 30% to 40% airplanes

With 1" horns, and 1 ½" distance from control hook up, I am getting slightly better than 1 to 1 ratio. More importantly I am getting closer to the maximum servo power and control geometry available. With 1" horns my resolution is better, control slop is reduced, and servo wear is greatly improved. Another novel bonus is, I don't need as many servos per surface. .

Sequencing your trimming

My concept of sequencing your trimming is simple. If you get your trimming out of sequence you will end up chasing your tail.

It is very important to trim you model in the correct sequence to make sure each adjustment has no effect on the previous adjustment.

You will see I have broken each element down, and there is an intentional order in which I recommend to trim a model. Model balance especially CG is the most important as differential, and down line tracking will all be affected by the CG.

Balance

How do I know what is the correct CG for my model? If in doubt, **read the instructions**. Yep, chances are somebody from the TOC or similar has designed your aircraft and has determined over many flights where the CG should be.

For precision flying forward is better...but... too far forward can be a problem. If when entering a spin, you model mushes, kind of slides into the spin with no real stall visible, you may be too far forward. Another sign of forward CG is excessive down elevator needed for inverted flight. This is not always the reason but is a sign.

Rear CG is probably easier to see for most pilots. Model is sensitive in pitch, unpredictable around the stall, climbs when on an inverted 45deg line are some I have noticed.

CG is mainly about feel, each person will have their preferences and each aircraft will have its preferences. Be patient, spend some time on this one; it's important you are happy with your CG. I would recommend at least 10 – 15 flights before making the commitment to where it needs to be if it's a new model.

Dynamic Balance

Ok, we are happy with our CG so the next thing is dynamic balance. This is really only relevant with wing tip weight as most other axis on a model aircraft are not affected very much by the dynamic effects of high g force loads. Having said that, your wings are. Just cause they both weigh the same, and don't carry any aileron trim doesn't mean you can't have a wing weight problem.

What I do is put the model into a vertical dive (minimum of 3 – 4 seconds) and pull a hard corner at the bottom. No matter where your wings are in roll, when you pull to level, the wings must be level. Check this concept with your stick plane. It really doesn't matter where your wings are but as you pull to horizontal flight your wings must be level.

Don't be quick to make a decision, have a friend observe the proceedings, do many pull outs, make absolutely sure before you move on to the next step of trimming.

Thrust angles

Now we know our wing tip weight is correct, we should be able to, with confidence pull to some accurate vertical up lines. Number one issue with this is making sure your wings are level - don't guess! - be absolutely sure your wings are level before pulling to a vertical.

What I like to do is to fly directly over head, into the wind, where I can clearly see my wings, then pull to a vertical up line. Ok, up we go, first 100' is good, next hundred feet is good, moving through 500', still tracking well, up over 1000'

After many pull ups you really need more right thrust, as you pass through 500' you can clearly see you model drifting to the left. Apply some right rudder trim, and continue to apply it until it tracks straight. Bring the plane into land and check your rudder deflection. Use a protractor to see how many degrees of rudder you required for a straight vertical. Whatever it is, divide it by 2 and that will be what you need to add to your right thrust. If you have 2 degrees of right rudder, you will need to add 1 deg more of right thrust. It works, it really does, and it works both ways, if you need left rudder (too much right thrust) you can use the same equation.

Differential

Aileron differential is one of the most important aspects of model trim. With the multiple point rolls on both up and down lines in today's modern patterns, poor differential can be a real headache. The good news is it's pretty easy to detect and adjust for axial rolls. The important thing at this stage of the game is knowing our thrust and wing weight is correct, we can proceed with our differential setups. You're probably starting to understand the importance of trimming your model in the correct sequence. Each step compliments the last and should have no negative effects in trim.

Aileron differential is required when the drag of the down going aileron does not match the up going aileron. Before we go further, I would like to interject here that you need to make absolutely sure you are not getting surface blow back. You will never get your differential correct if you are.

I want you to use the same technique as before when checking for the thrust only this time, **pull to 45 degrees**, making sure you are either directly into the wind, or directly down wind. Using full aileron deflection, roll to the right. If the aircraft "walks" to the right, then you have **too much down travel** on your ailerons. If you roll to the right and the model "walks" to the left, you have **too much up travel** in your ailerons. Repeat this process to the left as well until you are satisfied your model is tracking true in the roll axis.

P-Mixing

You will notice this subject is the last in the sequence but, for many, it's the first thing they tackle.

What I would like to do is to break up this P-pix section into 2 sections. The first is the down line, torque offset or throttle offset mixing and second, the traditional rudder elevator/aileron mixing.

What I would hope you all pay attention to is what your model is doing on a down line (at engine idle in the roll or yaw axis). Both the yaw and roll axis, in most cases, have a bigger affect in you model tracking on down lines than any other situation. Imagine what the effects of a 5 degree error on every down line would mean. Over the length of the box, you can drift in or out by as much as 150' and the same applies to the yaw axis.

Let's do the roll axis first. You can do this 2 ways and both work well, in fact, I would suggest you try both to get the best input. Version 1 is to climb to a high altitude, simulating a typical top of the box altitude and fly directly over your head and into the wind. About 50 - 100 feet out from yourself, push down. You are now looking at the plan view of the model. Watch careful to see if the model is rolling on the down line. Most models will roll slightly to the right. Personally I have never had a model that hasn't needed a little left aileron mix on low throttle.

The second way to check for throttle/aileron mix is to fly along at level flight, medium height and reduce the throttle. Watch carefully and see if your model is rolling, chances are it will. The second P-mix is the Throttle to rudder mix. Same deal, it's hard to get you model to track correctly in the yaw axis at all speeds, you only hope is to apply a small amount of 'left' rudder on low throttle. To check for this use the same technique as the Throttle to aileron fly above yourself, directly into the wind and push down in front of yourself and watch carefully, you will be amazed, especially at the start of the down line.

If you haven't got any throttle offset to rudder, you are most likely flying around the problem and where I find it most challenging is in figure 9's and vertical and horizontal 8's.

One thing you may want to experiment with in both these scenarios is where the mix is activated. I like to have the stick offset at least above half and let it progress from there, it seems to be the best balance, plus I am not getting a sudden mix input, it progresses more or less with the speed of the model.

Rudder/Aileron Mix

I like to do flat turns, simulating rolling turn inputs. Doing a simple inside rudder turn to the left, using left rudder, the model should just yaw, with no roll affect, if the roll rolls to the left, then you need to mix 2-5% right aileron to left rudder. Repeat the process with right rudder.

Rudder/Elevator Mix

Start by doing a flat turn to the left and see what happens. If you model pitches down when rudder is applied then mix a small amount of up elevator, of if it pitches up, apply a small amount of down elevator.

Pete

The above article was provided by Mike Karnes

Indy RC Modelers Club Events

MARCH 20 INTRO to IMAC First thing is to learn how to set up and trim your Airplane. For all those who want to learn to make your new plane fly its best, or your old plane fly better. This is a lead in to a class for those interested in trying IMAC. We will be going through how to fly the BASIC sequence and how to make the figures look their best for optimum points. March 20, at 11:00am at the field rain or shine. Those thinking about coming out on May 22, 23 to try IMAC this is a good place to start. From Mike Karnes

Date—TBD— Maiden Day and TAILGATE SWAP MEET at IRCM field Swap Meet Starting at 10:00am till dark. All area clubs are invited to bring your planes out for everyone to see what you been doing this winter and get that first flight on it. Also bring the stuff you want to try to sell or trade. Concessions will be available. Flying to start at noon both days. It's a good idea to have someone else inspect your plane prior to its first flight. We would hate to see a mishap on its maiden.

MAY 22, 23 BLUE RIVER IMAC PRE –Registration is up to 18 and we have 1 as far away as Ontario, but I have only 1 from our club pre-registered. Come on, I know there are several of you that want to try to fly or are going to fly. So please go to the IMAC site and get registered. It will make it a lot easier to get the scoring program set up ahead of time. Still in need of a few more people to come out and help. From Mike Karnes





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Coming Events

- 13 Mar**—Johnson County RC Modelers Swap Meet @ the Bartholomew County 4H Fairgrounds, Columbus, IN
- 20 Mar**—Intro to IMAC Class @ Club Field Contact Mike Karnes
- 5 April**—IRCM Club Meeting
- TBD**—Indy RC Modelers Maiden Day and Swap Meet @ club field
- 9-11 April**—Toledo RC Show
- 3 May**—IRCM Club Meeting
- 22-23 May**—Indy RC Modelers IMAC event @ club field
- 7 June**—IRCM Club Meeting
- 11-13 June**—Extreme Flight Championships @ AMA Site
- 11-13 June**—Indianapolis Air Show @ Mount Comfort Airport
- 1 August**—Indy RC Modelers Derby Days Air Show
- August**—Fort Wayne Flying Circuits Electric Flyin
- August**—Fort Wayne Flying Circuits IMAA Flyin
- 3-5 Sep**—Indiana Warbird Campaign @ AMA Site
- 10-12 Sep**—Hoosier Dawn Patrol@AMA Site
- 18 Sep**—IMAA Chapter 48 Flyin @ Ellwood, IN
- 2-3 October**—Evansville RC Club Giant Scale Flyin