

# In The Box

The Official Newsletter of The International Miniature Aerobatic Club



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Education: Judging Hammerheads

Fuel Tank Vent Setup

Toby's How To

Aerobatic Poetry

And Much, Much, More!

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# Letter from the Editor

**Rich Whitlow**

As you read this, we begin the new IMAC season.

Regions are setting their schedules, arranging their Regional Judging Schools, and preparing their planes. All so we can all come together, compete and enjoy each other's company. To me that is what our beloved hobby is all about.

With all of this going on, there is a need to let everyone else know! This is your opportunity to do that! We have a newsletter available to you. All you have to do is send me the information and I will get it in the Newsletter for you.

If you go to a contest, attend a Judging School, see a great plane, build a new plane or even found a great new way to do something. Here is where you can share it.

So, I am counting on you. You are the source of all this good content. You just have to send it in to [rwhitlow@gmail.com](mailto:rwhitlow@gmail.com).

So, keep our humble newsletter in mind as you travel this season and work on your planes. Let us all know what you are up to!

I hope you enjoy the issue.

Rich Whitlow  
Newsletter Editor  
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# Letter From The President

Mike Karnes



## From the President

Spring is fast approaching and one by one the regions are coming out of winter hibernation and taking back to the air. The board spent the winter preparing for the start of 2020 so that the members enjoy another season. The all have put in a lot of time, so when you see one of the many volunteers of IMAC please thank them for all they do on your behalf.

## The NATs Are Coming

The NATS should be an experience that everyone does at least once. It's a chance to fly with people from every region at one amazing place. Make memories, have fun, and maybe win some bragging rights of being the best of the best in your class. So take advantage of going to your first NATs by getting \$50.00 OFF the normal registration fee. See you there!!!



## 2020 is Election Year

2020 is the election year for officers to the Board of Directors. If you think you would like to volunteer and help IMAC move into the future, make your intentions known. All positions are open and if you want to help IMAC into the future, please step up your organization needs you.

## IMAC Membership Cards

It has been over a year since we started mailing membership cards to all members of the US and Canada. There are still a few members missing the correct information to be able to receive one. If you would like to receive yours, please go in to your profile and look to see what might be missing.

Mike Karnes  
#IAmIMAC



# Notes from the Officers



**Vice-President  
Doug Pilcher**

## From the (Virtual) Desk of the Vice President

Well here we are in February of 2020 and some regions have been able to kick off the new season! Even here in North Texas (SC) we are not quite ready yet. Though we have some very agreeable weather for the winter. Soon enough! But Good for You if you are lucky enough to live in a region and area you have been able to begin the season.



I want to remind everyone that the IMACSWAG Store is Open – Please remember that the IMACSWAG store is a one stop shop for many things’ members have asked for and now made available directly from IMAC. From hats to License Plates to stickers and Redbooks and inserts and stick planes and scoring devices. Both Wheel and Stick design. To Check it out, go [HERE!](#)

CD’s and Scorekeepers – REMEMBER to download a NEW copy of Score! as the new 2020 sequences and K’s are preloaded in it for you. Please remember that we have available to members a step by step instruction series of downloading and prepping Score! 4.25.2 to one’s computer and assuring that the latest version of Java is installed correctly as well as the prepping of a contest folder for your contest and we have linked the Score! training class given last March to be viewed at any time. These items can be viewed under Downloads/Software and again in a step by step procedure. To Check it out, go [HERE!](#) And click on “Software”!

Online Judging School – Do not forget that in the Education section of IMAC Website we have linked the 2019-2020 PPT presentation of the Judging Seminar. Here you can download the core materials as well as view the 5-part series of the “Online Judging School” hosted by Brad Davy in the NE and follow along with the PPT slideshow and take the “Module Tests” offered at end of each section. These tests are delivered directly to our Chief Judge, Ty Lyman for review. If you were unable to attend a Judging school this year, either by distance or availability, you can now do this online on [mini-iac.org](#). To check it out, go [HERE!](#)

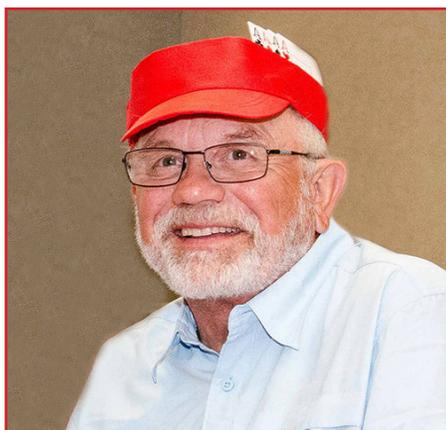
ALSO, and very importantly, please remember the new and Active forums for IMAC are located [HERE!](#) This is where all

club business and discussion is happening. We need to get all members and registered users over to the new forums. This does not however integrate with the main website. So, you will need to register on the new forums with your given name so we may verify to the main website. Aliases are unable to be cross referenced in many cases thus the need for proper names. Click highlighted link earlier in this paragraph or go here. <https://forums.mini-iac.org/>

And as always, if you have something you would like to see added, never hesitate to contact me directly at contact information below.

Doug Pilcher  
Vice President  
douglas.pilcher@gmail.com  
(903)647-2640





## Treasurer Phil Vance

Hello, everyone. As this New Year begins, it is hard for me to believe this is my 16th year as your Treasurer! I enjoy this position and am honored to serve as your treasurer for so many years.

IMAC 2020 is starting out to be an exciting year! With the new International Regions added, I am hopeful this will keep growing our membership. The membership income did increase in 2019 and I am hopeful this trend will continue in 2020.

As with every New Year, I have been extremely busy working on the 2019 End of Year Operating Statement, setting up new forms for the 2020 finances, Regional Expenses, and other reports. These items are in addition to my regular duties of maintaining the financial activities, and the membership data base. The 2019 Year End Operating Statement should be available for your viewing on the website by the time this edition of "In The Box" is published.

I would like to remind everyone to keep your membership current. You can do so by utilizing the PayPal link on the website, or mailing a personal check or money order to the IMAC address. New members can also join by using the PayPal link, or mailing their membership fee to me.

I do not know about other parts of the world, but the winter here in the Southeast Region has been very mild. The two local clubs, of which I am a

member, have had quite a few members flying both during the week and weekends. We have had several days in the mid-sixties both in January and February, with practically no snow. This added flying time should give pilots more time to practice the 2020 sequences. Even I have gotten in a few flights!

Until next time.....

Phil Vance  
IMAC Treasurer



## Secretary Samantha McKinney

The IMAC 2020 season has started for some regions and will begin within the next few months for the other regions. Many are getting their airplanes ready for the season. Clubs and CDs are busy preparing their contests for year. While reviewing the contests posted to the website, several contests do not have contest flyers. We ask that all CDs prepare a flyer for their contest. These flyers need to list the details of the event: date and time, location, schedule of events, entry fee, camping/hotel information, etc. for members and potential members. For members that are passing through regions and would like to attend a contest, this gives the correct information to schedule their trip. For potential members, this gives them all the information needed on date and time, location, contest schedule and details, etc. If the CD does not have time to create a unique flyer for their contest, the Membership and Marketing

Committee has designed a generic flyer that only needs event details added to it. The generic flyer is available on the IMAC website. If you have any questions, please contact your regional director.

The new forum website is up and running. Right now, the old Hanger forums soon be a read-only format. I would like to encourage everyone who hasn't registered to please register on the new forum website, V Bulletin. This is very important due to membership votes on changes to the By-Laws and to keep up with members within the organization. Go to the IMAC website at [www.mini-iac.org](http://www.mini-iac.org), then click on "The Hanger." You do not have to be logged into the IMAC website to access the V Bulletin website. The V Bulletin website will open in a new tab. In the upper right-hand corner, there is the login button or create new account. When creating a new account, please use your "Proper Given Name". Personally, I used my given name and same email address and same password as I did for the IMAC site so I didn't remember have two passwords. Just a reminder, if you login to the IMAC website, you must login to the V Bulletin website to access and post into the forums. If you only want access to the forums, you only have to login into V Bulletin. If you have any questions, please feel free to contact your regional director.

The regions will be hosting their Local Judging Schools, so please check the IMAC website for dates and times.

The Toledo Show is being held April 3-5th, 2020. IMAC will be having a booth. They will be offering membership discounts, details on the novice class, etc. IMAC will also be hosting a seminar during the show. Check out the flyer on the NC region page on the IMAC website. Thank you to the volunteers for all your help making this show a success!

The event team is working hard on the 2020 NATs. The NATs are July 12-15th, 2020. For information about the event, please see the forums on the V Bulletin website. Can't wait to see you there!

Samantha McKinney

# Entering The Box

(A Column for Pilots New to IMAC)

Greg Hladky

## Narrative of an IMAC Flight

An alarm is sounding in the middle of a sweet dream. I want it to go away, but it persists. Finally, the fog of sleep lifts and awareness dawns that I have an Unknown to fly in two hours.

It's the first contest of the season. As a Basic pilot I understand the Unknown will be the same sequence as my Known. That takes some pressure off, but the scores for this flight are weighted more heavily than the others and can't be dropped, so I have to make this my best flight of the weekend. Scratch that. Too much pressure. I'm here to have fun! New theme for today: I love the smell of a contest in the morning.

Before I even peek outside the tent to check wind and skies I grab my phone and look at the forecast. Partly cloudy and no more rain, but winds in Muncie will be 16 mph from the northwest by noon; only 9 mph and variable from the southwest at 9 am. The grass runway at Site 4 of AMA's International Aeromodeling Center is 9/27 (due east/west). I'm glad I practiced Schedule C as much as B. No problem there, and the speed is manageable. I'll have to pay attention to the direction my plane will yaw on the up lines, though. Sure is cold this early in the year.

Get dressed, hit the port-o-let, and eat something healthy while my batteries are charging. Drink plenty now, so I can make one more visit before my flight. I don't need any distractions once I'm airborne. Oh yeah, just one cup of hot coffee to fire up the old noggin, then check in with my wingman (caller).

Check on the progress of the charger. Red screen is not good. Charger must have found a fault shortly after it started.

Glad I checked. Easy fix (forgot to plug in the balance leads) and disaster averted. Plenty of time to assemble the plane and check that all the bolts, control surfaces, hinges, rods and links are good. Wipe her down so she shines. Gas guys just have to fill up their tanks between flights, but I don't mind removing my canopy to check everything is good under the hood while I swap out batteries.

Pilots' meeting in fifteen minutes. Now's a good time to walk over to the flight line where the judges will be and fly the sequence with my stick plane. It's just one sequence, so I'll have time to take a few warm up passes and settle my nerves. Nerves!? I love flying my plane! Nothing flies as well, and looks as good doing it, as an IMAC plane. It's a precision scale aerobatic machine!

After climbing west to about 100 feet and turning down wind I'll fly about 100 feet beyond the deadline, so about 200 feet out. With the wind blowing out, crossing the deadline should not be an issue, but pay attention. No need to zero a figure for that. Second turn is a standard procedure turn: 90 left, then 270 right back to a west heading. Now watch what the wind is doing. Am I drifting right or left? I'm going out. Add some left rudder and release. At the end of the pass pull up to a 45 and count one and two and half roll, one and two and easy pull for a 5/8 loop to level. One more pass, then another Reverse Half Cuban. Come out wings level on my line. First figure is a loop at center. Take a deep breath, relax for a moment, then call, "In the Box!"

At center pull firmly to establish the radius of a decent sized loop, about 300 to 400 feet in diameter. Keep wings level. Watch for drift and correct with some left rudder. Gyroscopic precession will be at play throughout the loop, pulling her to the right. (Remember to try a smaller

diameter prop with larger pitch to reduce the effect.) Be ready with some left rudder to avoid a corkscrew. If the winds are stronger up top I may need to increase rudder. Easy on the elevator over the top, then pull harder in the last quarter of the loop.

Next is the Half Cuban. Make that 5/8 loop big enough to feel comfortable pulling to a good 45 down line. Count, roll, count, pull.

Next is the hammerhead. The wind will determine the direction of the hammer. Establish a good vertical line. I'm drifting left! Add a touch of right rudder. Good line. At the top throttle down, wait for it to almost hang in the air, then throttle and full right rudder. A touch of left aileron through the turn. Ease off the rudder to avoid the pendulum. Nice vertical down line. Pull to level.

Quick review of the remaining figures (pay careful attention to rudder direction to stay on my line): the 360 turn (make sure I hit a minimum of 60 degree bank, then hold it! Adjust elevator to keep it centered); the Humpty Bump (nice vertical lines up and down); the Reverse Shark's Tooth (count, roll, count on the 45, nice vertical down line); the aileron roll (before center, just enough aileron for a slow roll with opposite, then same rudder – trust your rudder!); the Diagonal (or Lay Down) Humpty Bump (count to 4 on the first 45, nice big half loop, then count, roll, count on the 45 down line); the Immelmann (make it big! Roll as soon as the nose is level with same rudder); and finally, the 1½ turn positive spin.

That stall into the spin is the cause of more zeroes than I care to count. Patience! Hold altitude with increasing elevator, then, just before it starts mushing into a slow descent, kill the

throttle (you got to love electrics), kick in full up, watch for the nose and wing to drop, then immediately add full rudder and elevator. Hold the sticks until about 90 degrees of rotation remain and release. Nose down to establish a nice vertical line, then power up as I pull to level. Out of the box!

Everyone is gathering around the Contest Director, so it must be time to go over any new items for the day and answer questions. Basic will start the round, and I'm up first. Everyone will be watching my plane to see what the wind is doing at altitude. No problem. I get to fly! I won't be much help to the Advanced and Unlimited guys. They'll be climbing twice as high as me. Winds up there could be 90 degrees off the low altitude heading, or even opposite.

I'm up! OK, deep breaths. I've done this many times. It's just another flight. I get to fly! How cool is that? My caller holds the plane. Radio on, correct model selected, volts are good. Power on the plane. Check surfaces respond and move correctly. Check telemetry: flight and motor pack voltages are good. Arming switch on; normal beeps. I'm good to go! Walk over with my caller to the judges. I hear my caller greet them, announce my name and "Schedule C." I've already taxied to the center of the runway and started rolling. Another deep breath as my plane lifts off the ground. It feels good to be back in the air.

Comments are welcome. Send a letter to the editor with suggestions for future articles. Until then, stay tuned and fly right! (Or left, if Schedule C. ;-))

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## Pre-Flight for a Maiden

Poetry by:  
Greg Hladky

Say goodbye to the beauty  
you have recently built,  
to the wood and the wire  
and the blood you have spilt.

Say goodbye to the hours  
spent alone in your shop,  
to the time cutting wood  
and the glue put on top.

Say goodbye to the fortune  
you have frittered away,  
to the projects in need  
of that money some day.

Now focus entirely  
on the tasks you must do  
and assemble the parts  
laid out before you.

Check the bolts and the belts  
and the batteries, too.  
Check the surfaces move  
in the way they need to.

Check your radio functions  
thirty paces away.  
Check it again with the engine on;  
is it still OK?

Now welcome the gleam  
of a plane in your eye  
and the wonders of flying  
that plane in the sky.

While she sits on the runway  
all ready to maiden,  
say goodbye to your fears and,  
good grief, just enjoy your creation!

- Dedicated to all the pilots who have recently built an IMAC plane. It takes skill to build with precision and skill to fly with precision, but more than that, it takes courage to throw it all to the wind. Here's to the challenging sport of scale aerobatics and its brave pilots. Happy landings. Cheers!



Jan Detherage's 43% Kam Aero



# Toby's How-To

By: Toby Silhavy



This column, I would like to talk about making your own pilot figures. If you learn anything from me in these columns; teaching yourself something new will enrich your life, make you a better craftsman, and a better modeler. As you may know, a one percent (1%) penalty will occur if you do not have a pilot within your aircraft. Many would think its only one percent. I have seen several high level contests and local contests that one percent was the difference between first and second place! Here, I will show you three different methods to make pilot figures.

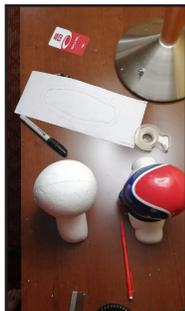
The first example is by far the most complex. It involves molding a figure with modeling clay then making a rubber mold from that figure. I usually will start with a good modeling clay bought from hobby lobby. It has taken me years to learn how to mold clay, and when I started using dental tools it opened up a whole new world of detailing for me. I won't go into modeling clay, as there are several youtube videos on how to do that. I discovered after I modelled the clay and let it sit and dry, then painting the figure with some cheap primer helped create a very smooth metal-like finish. Next step is to build a small box you can suspend the figure in to make your silicone mold. I buy all of my silicone resin from smooth-on.com. Basically, you will pour resin into your pilot mold around your

figure and let it set up. You will then use an exacto knife to cut your pilot head out vertically.



Using silicone as a mold surface will make a very nice re-useable mold that you can use 20 times or more. I will then use another smooth-on product called foam-it 3 which is an expanding foam. I will spray some cooking oil into the mold for easy release of pilot figure. I will also suspend a plastic 1/4-20 bolt imbedded into the figure to mount to the aircraft.

The second method is one of the easiest but one of the lightest methods to produce a pilot figure.



This method involves using sand-able foam blocks you purchase from hobby-lobby. My friend Ben Batts shows how he uses simple tools to cut away the basic shape then uses a sanding block to form the final shape. This method will generally take you about an hour from beginning to end if you have some basic woodworking skills. Remember to use foam-safe markers or water-solvable paint to paint your figures. This is a very cost-effective way to make your own pilot. And like the clay mold in the previous

example, you can let your imagination run wild with your pilot figures.

The third method requires a few hundred dollars in tooling, but is really cool way to make pilots. This method makes use of a 3d printer and some computer skills. I have used this method to make several pilot torsos.



Here, you can see Darth Vader and Batman I scaled up from files available on thingiverse.com.

Basically, I scale up a pilot to the size I need then I draw a 1/4-20 screw that I remove from the figure using a 3d cad program. That way, when installing a figure in your canopy you just drill one 1/4" hole and can screw the pilot from the bottom of your hatch. It takes a little time learning 3d cad but the results are spectacular. More next time on using the 3d printer.

**Toby Silhavy**  
"Chase the Dream, Not the Competition"



BE PROUD

# IAmIMAC

INTERNATIONAL MINIATURE AEROBATIC CLUB



What does this mean? Where did this come from?

I was enjoying some great live music (Samantha Fish & Johnathon Boogie Long) in downtown Baton Rouge, and I noticed a bumper sticker on the wall of the club that was leftover from a Baton Rouge Downtown marketing campaign. The bumper sticker said #IAmRedStick. This caught my attention and I started to think about what that message means, or could mean. Then an idea was born.

We all see the finger pointing all over the online world exclaiming what is so wrong with IMAC. We do it on Facebook, we do it on the Public Forums and we do it on the IMAC Forum pages. Everyone has an opinion of what *Somebody Else* can do to make IMAC better. When the truth is every face to face IMAC event and IMAC competition is typically a wonderful experience.

What is the disconnect?

I believe that what it boils down to is it is up to each and every one of us to take responsibility and say "I Am IMAC"! If I think something needs to be done, I am the one to make sure it gets done. If I meet someone who is interested in IMAC, I am the one responsible to explain IMAC in such away that they walk away with a positive opinion of IMAC. IMAC and IMAC competition is not for everyone. But, there must be a positive message presented to one who is new to IMAC so that they can determine if IMAC is what they are looking for.

It is imperative, if we want to continue to grow as an organization (and yes I meant to say continue to grow!) that we highlight the positives of IMAC and we not only present them, but we believe in these positive aspects. It is obvious when you are speaking with someone, if you do not believe in what you are saying. Especially when it is something that so many can be passionate about. Every post, conversation and comment can potentially influence someone or change someone's mind about IMAC and what it is about. In just about every little informal survey I have done, the number one thing that pilots say is key to why they continue to fly IMAC, includes the fact that the people are great and they love their IMAC family. So, when someone new is asking about IMAC let's be one of those great people and let's highlight this to them. Its easy.

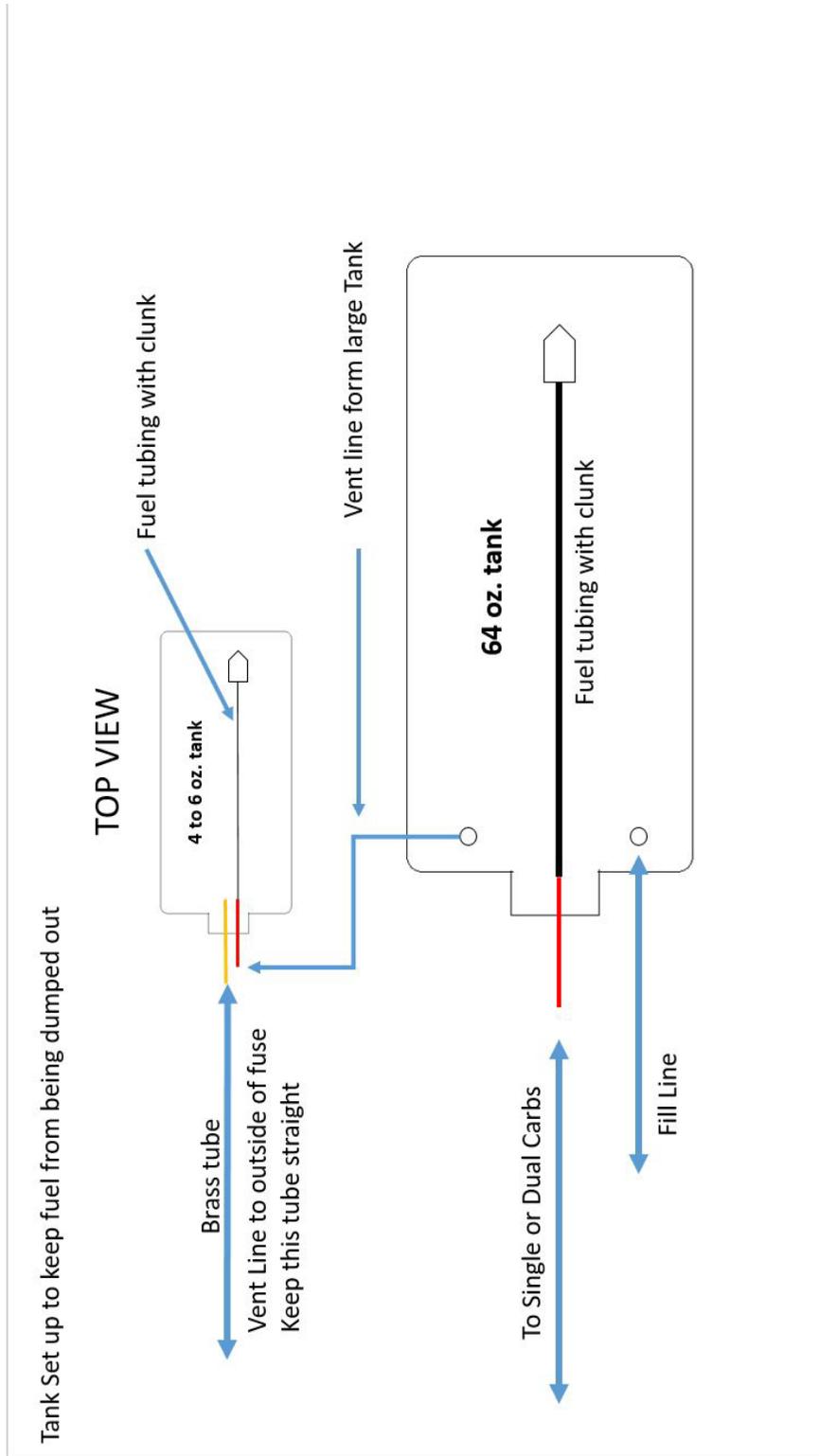
Lastly, take pride in what IMAC is. This is an International Family of great people, who happen to love RC Aerobatics. That's it. Wear your IMAC shirts with pride, your IMAC hats, your event shirts and take offense when someone is talking down your IMAC. There is a place for constructive criticism, but in the *Outrage Happy* world, it is easy for people to cross the line from constructive and destructive. Ask the person (or yourself) what positive thing will this comment do for IMAC. If no positive aspect can me accounted for, then maybe that comment should be left unsaid or typed.

So, now you know. Tag yourself and others. Raise up those doing positive things for IMAC and question those that are not doing things that will ultimately help our beloved sport.

Rich Whitlow  
#IAmIMAC

# Fuel Tank Vent Set-Up

By: Primo Rivera



# Education

By: Ty Lyman

Hammer



Talk

(Nah, the other kind...)

I hope everyone in the IMAC realm has had a super start to the latest iteration of the roaring twenties. While many of you are still in the throes of winter, spring is in sight (almost) and it's time to dust off the old rulebooks for a review. Sometimes when asked to write an article on a judging topic it's a struggle to find an inspiratory spark, and then there are times when you fire up FB and there it is, the spark presents as a bonfire. Such is the case today. There seems to be something of a kerfuffle surrounding stall turn criteria as of late; I think it's high time to put it to bed.

Stall turns, or hammerheads as they are more colloquially termed, like most other aerobatics figures are composite maneuvers constructed from a series of rudimentary aerobatics components. Specifically, in the case of two-line hammerheads, those parts include two part-loops and two vertical lines. The stall turn, however, contains one additional piece that is unique to this figure: The pivot. In order to best understand how to arrive at a score for the sum of the parts, we'll take a little dive into the specific criteria for each of these components. Now, it goes without saying – but I'm saying it anyway – that the following descriptions are those that represent a perfect figure with no deductions, much like my own, in my head, late at night. For simplicity sake, the hammerhead described is of the basic two-line variety with no roll elements.

1) The Part-loop (entry): The aircraft executes an

uninterrupted 90 degree part-loop from horizontal flight to a vertical flight path.

- The part-loop must be on a true wind corrected track (either X axis or Y axis). Any deviation from the proscribed track is downgraded at .5 points per 5 degrees of error.

- The part-loop must be in the vertical plane (not tilted one way or the other). Any deviation from the vertical plane is downgraded at .5 points per 5 degrees of error.

- The part-loop must be of a smooth, constant, and unchanging radius. Any change or interruption in the radius is deducted at 1 point per occurrence.

- The aircraft must maintain a wings-level (zero degree roll) attitude throughout the part-loop. Any deviation in the roll axis is deducted at .5 points per 5 degrees of roll error.

That's a lot of sh-tuff, and we've only completed the entry.

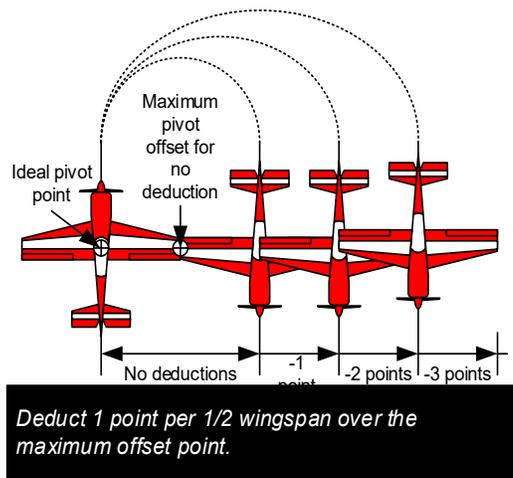
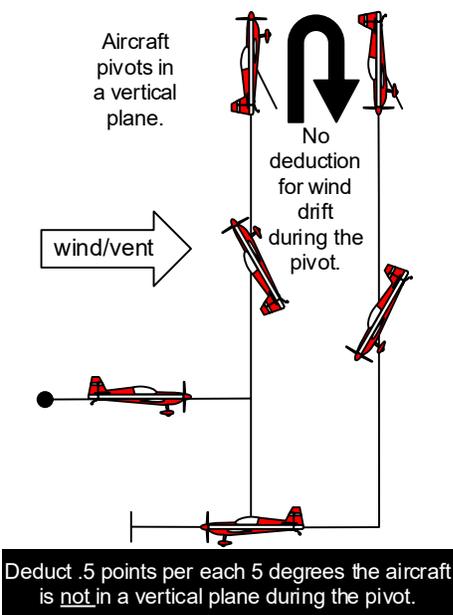
2) The Vertical Up-line: The aircraft draws a vertical up-line consisting of a true, wind-corrected, vertical track. Think of the aircraft's cg as the tip of pencil; the line it scribes must be a vertical line when viewed from any point on the compass. In other words, if you could freeze-frame the flight at the top of the line and walk around the drawn up-line out on the field, it would appear vertical from any point, no matter where you stand.

- The line must be a wind-corrected vertical track. Any deviation from vertical is deducted at .5 points per 5 degrees of error.

- The aircraft must maintain a wings-level (zero

degree roll) attitude. Any deviation in the roll axis is deducted at .5 points per 5 degrees of roll error.

Now down to business; the unique feature that makes a hammerhead, well, a hammerhead.



point offset greater than that which is permissible is deducted by one (1) point per each 1/2 wingspan beyond the allowable pivot point.

- The aircraft must maintain a zero (0) degree roll attitude (wings-level). Any roll deviation is downgraded at deducted at .5 points per 5 degrees of error.

- The aircraft may not slide backwards prior to initiating the pivot. If there is any visible backwards movement prior to the pivot, the figure is scored a zero (0).

- The pivot must be completed without any visible pendulum movement of the tail (tail wagging). Any such “wagging” is downgraded at .5 points per 5 degrees of error. This downgrade applies to each time the tail move off the vertical line and on either side of the line.

And now we’re headed towards the ground.

#### 4) The vertical downline.

- Immediately upon completing the pivot, the aircraft must establish a wind corrected vertical downline. If the aircraft draws any visible track that is not vertical, it is downgraded at .5 points per 5 degrees of error.

- Re-read point two (2), The Vertical Up-line, but do it while in a head stand. (The downline has the same criteria as the up-line).

3) The Pivot: The aircraft completes the vertical up-line and executes a 180 degree yaw axis pivot to begin the vertical downline. The pivot contains a number of intricacies of which pilots and judges must be cognizant.

- The aircraft must pivot in a vertical plane. If the aircraft presents a wind corrected pitch attitude on the up-line, it must be adjusted to a vertical attitude immediately prior to and maintained through the pivot portion of the maneuver. Any deviation from this vertical attitude is deducted at .5 points per 5 degrees of error. This vertical attitude requirement applies only to the pitch axis as the aircraft may pivot from and to a wind corrected position in the yaw axis. Note: Drift or displacement that occurs due to wind during the pivot portion of the figure is not subject to downgrade.

- The pivot must be executed within one (1) complete wingspan (measured from CG to CG). In other words, the aircraft may pivot around any point from its CG to wing tip with no downgrade. A pivot

5) See number 1. The part loop exit has the same criteria as the part loop entry, with the added requisite that it's best to execute it with a radius which facilitates completion before impact. Incidentally, radius changes in the exit part loop of hammerheads are relatively common when hammerheads are done a shade low, or when roll elements take more line length than anticipated, due to that whole ground-airplane-not good scenario.

So, there you have it, all the ingredients for a perfect hammerhead. Of course, knowing the criteria and putting that knowledge into practice are two different entities, but you can't accomplish the second without mastering the first. I should also point out that the above description reflects the simplest possible variant of the Stall Turn family. Each of the vertical lines frequently contains roll elements, which then opens an entirely new dimension of criteria to keep track of, and if that's not enough we also have three and four line (45 degree entry / exit) hammerheads, which, by the way can have roll elements on any and all the lines as well. I'd also be remiss if I did not point out that the full rules regarding Stall Turns can be found beginning on SCA 38 of the small format AMA Scale Aerobatics rulebook, or page 35 of the AMA Scale Aerobatics Rulebook, also known as the Gil Major version. Oh, and while you're there, read the whole bloody thing, it's a good way to pass a cold, wintery-but-spring-is-in-sight kind of evening...I don't want to hear it southwest, Florida, and southern hemisphere blokes.





# 2020 Scale Aerobatic National Championships

Sunday 7/12/2020 - Wednesday 7/15/2020

Academy of Model Aeronautics  
5161 E. Memorial Dr.  
Muncie, IN 47302



## Do you have what it takes?

### Schedule of Events:

Saturday 7/11/2020 - 5pm

- \*Pilots Meeting/Roll Call
- \*Brief Judging Refresher
- \*Pilot Order Draw and De-Conflict
- \*First Set of Unknowns Distributed

Sunday 07/12/2020 - Monday 07/13/2020

- \*Competition - Alt Sequences
- \*Freestyle Round

Tuesday 07/14/2020

- \*Banquet
- \*Final Unknowns Distributed

Wednesday 07/15/2020

- \*Final Flights
- \*Freestyle Final Round



Site 4 Available for practice on Saturday, July 11th

Contest will be held on Site 4.

Camping available Site 3 & 4

Contest Judging Matrix will be in place. (Scribes are judges responsibility)

Foamies/Night Flyers are allowed in evenings.

Standard 3 Day Event with Normal Drops and IRPS Points.

Fourth Day will be weighted 20% for Final Scoring.

# Regional Reports

**Latin America Regional Director  
Jorge Guzman**



Hi everyone

For several years, the issue of the importance of having a good “CALLER” and how we should name the maneuvering to fly has been addressed. A good caller must have the ability to detect the corrections to the pilot



while he is flying, both in known and unknown sequences. On many occasions, mistakes and confusion have been made in the mandrels because of their misinterpretation by naming them or how to perform them, because not all pilots call them with the same name either by language or by the country from which they fly.

As is well known, many of the callers are also pilots and are not always in the same category, which makes it difficult for them to contribute to pilots who usually help them when competitions are held. That is why, the importance of unifying the



criteria of how to name them, thus, giving the same information to the pilots that we are helping on their flight and who separate what maneuver we are referring to.



In relation to the non-dependent of a single Caller, seen many times that it is healthy to have another person help us, because you can see errors or how to improve the flight we are doing, so one of the important points before starting the flight is to get according to those involved in how they should make the call of these, what is known is known as BRIEFING before the start of our flight.

Thanks ...

JORGE GUZMÁN  
DIR.IMAC LATIN AMERICA



**Eropean Regional Director  
Manrico Mincuzzi**



None submitted.

**Asia-Pacific Regional Director  
Michael Hobson**



None submitted.



**South Central Region  
Rich Whitlow**



South Central IMAC Members, Happy New Years!

As the season begins, it is at the end of a lot of between season planning and work. We have hammered out a new schedule & worked on the fine details that it takes to get the contests scheduled. We have planned judging schools and prepared materials for those schools. We have an IMAC Skills clinic that we will hold and have completed most of the planning and preparation for that, as well.

There has also been Board Member meetings (conference calls) and out of meeting discussions on items going on. There have been Webinars and Phone Calls with AMA Representatives discussing the FAA interference in the hobby. There have been plans to attend Hobby Shows and Events. Minutes have been taken and written, Newsletters created, Knowns and Unknowns written. Forums have been migrated. Future Technology has been discussed. Also, Nat's plans are being finalized.

...and the season hasn't started.

I bring all of this up because you the members need to know what all is happening behind the scenes work that is needed, just to be able to go out on a weekend and compete and visit with our friends in the hobby.

This is an election year, so be thinking of this when you consider if you should be helping in one of the elected positions or non-elected committees. IMAC needs you. For one, I have spent the last 2 years as your Regional Director. They have been a VERY rewarding 2 years. But now it is time for someone else, with new

and fresh ideas to take up the Regional Director position.

None of this stuff is hard, none of it is Rocket Science. It just takes a willingness to lead, listen to ideas and help people enjoy this great hobby and organization. I hope you will consider some sort of involvement.

Also, as you may know, I am the event director for Nats this year. I appreciate everyone who has stepped up to help. I think it will be a great Nats. That being said, I EXPECT to see a lot of our SC contingent to travel to Muncie and represent the greatest Region in IMAC. Make your plans now and register.

Lastly, we have a lot of events coming up. Check your calendars and register and get to an event. IMAC is here for you, so that you can enjoy this great sport and visit with the great people of the South Central.

See you at the field.

Rich Whitlow  
Krzy4RC  
#IAmIMAC



**Northwest Region  
Clark Hymas**



Welcome to the NW Region

The 2020 season is underway as we held our judging school in Richland on 29 Feb 2020, a lot of good information was shared.

Season opener The Grizzly Bear will be held on 4 and 5 April 2020 at TCRCM Field in Richland followed closely by the Spring Fling on 25 and 26 April at Higgins Field in Richland. Full Schedule Below:

- Grizzly Bear IMAC 2020  
04/04/2020 Richland, Washington
- Higgins Field Spring IMAC  
04/25/2020 West Richland, Washington
- Creston Valley RC Aerobatic Comp  
05/02/2020 Creston, British Columbia
- BARKS IMAC Challenge  
05/16/2020 Boise, Idaho
- "Big Bob" Memorial Contest  
06/06/2020 Eagle Point, Oregon
- MOLRCA 20th Annual IMAC Challenge  
07/18/2020 Molalla, Oregon
- Weaver's Field Challenge  
08/01/2020 Othello, Washington
- Silver Hills IMAC  
08/22/2020 Athol, Idaho
- Stampede City IMAC  
09/05/2020 Calgary, Alberta Canada
- NW Regional Finals  
09/26/2020 Richland, WA

This year we will be having a 120 size Engine as a prize for participation in the Freestyle Contests.

More details on this later.

Please remember to bring a friend and have them try out IMAC, It's always more fun with more folks there. We look forward to a strong 2020 and hope you will all be there to help out and have fun.

Rick Crow - ARD



None submitted.



### Northeast Regional Director Update

I hope this issue of the IMAC Newsletter finds you preparing for the 2020 competition season. We've got a full calendar, with contests throughout the region. My personal thanks to all the CDs that have stepped up. Remember that the heart of IMAC will always be the competition, and without local clubs stepping up to host contests, there is no completion, and no IMAC.

We're moving the final Regional Contest to Hagerstown, MD for this year. I have been awaiting feedback from the far reaches of the region regarding a move of the final contest, but have not heard any response. In order for people to plan their schedule, I had to make a decision. It will be either the first or second weekend in October. I intend for this to be a rotating regional final, and am still looking for someone else to host it that would be more accessible to the northern reaches. As a result of the later final, we've been able to add to the September calendar.

Remember to get your name on those contests that you want to attend. In the past, I've heard people say they didn't sign up for a contest because nobody else in their class was signing up. We need to change that behavior. Signing up for contests is free. By signing up early, you express your interest in attending the contest, and perhaps your competitors will then sign up. Don't wait for everyone else – lead the pack.

If you decide you cannot attend a contest, don't forget to remove your name from the signup list as well. CDs like to use the list of contestants to help plan the contest before Saturday. Judging matrices and flight order are two of the hardest jobs a CD has, and forcing the CD to create those on Saturday morning makes the job harder. If a CD is counting on you as part of the judging matrix because your name is on the list, and then you decide not to show up, his job gets harder, and mistakes get made, which just aggravates other pilots. So sign up early, but remove your name if you decide not to go. The CDs will appreciate it!

Finally, as we open the season, I want to let everyone know that this will be my last year as North East Regional Director. Over the past several years, I have done what I could to help the region grow, but its time for me to let someone else drive. I will not be following the footsteps of past regional directors, and dropping out of the picture. I intend to stay in IMAC and continue competing. Nevertheless, its time for some new blood. I urge you to talk at contests about who you think

would make a good Regional Director, and start convincing that person to step up. We will be having elections in the fall this year, so there is still plenty of time.



Hello South East, I hope everyone had a great holiday and the New Year is off to a great start. Here is the South East the weather has been warm with lots of opportunities to fly and get ahead of our northern counterparts, but assure that they will be ready for the NATS. I hope to see many of you up there, start planning the trip now as it will be here before you know it just like our season.

Just like years past our kick-off contest starts in Sunny FL, we also have 8 schedule contest already on the site with a new one this year in NC, We need to, have to, must work hard this year to bring back old members a new ones. Last year we finished with a great Regional championship and I am already working on making this year's even bigger and better.

Do not forget to do a full inspection on your planes if they have been idle for a while. Fuel lines tend to get hard over time, connections get lose, servo screws, and engine bolts, just to mention a few.

Hope you see you at a contest in 2020

## North Central Region Toby Silhavy



### NC Regional Report February

I would like to thank you; the North Central Membership, for all of the support you have given me over the last year. You made 2019 a great year for sure, but I would like to make 2020 an even better one! To do this, I NEED EVERYONE past, present, and possible

**IMAC Primer**  
**Come Join In The Fun**  
Learn What IMAC Can Do For Your Flying Skills  
**Free**

Galveston R/C Fun Flyers  
6349 E. Co Rd 1200 S. Galveston, In

**Where:** Galveston R/C Fun Flyers  
**When:** July 11, 2020  
**Time:** 10:00 am  
**Cost:** Free  
**Club Website:** <https://sites.google.com/site/galvestonrcfunflyers/>  
**Info Contact:** Aaron Schrader 812-236-6380

future to help support this year's events! The North Central had a lot of growth last year and I would like to see that continue. I challenge every member to make some contests and bring out the new guy (or gal) to show what the NC family is all about. If everyone were to bring out one new flier we will see growth like we did in 2019. Remember, we cannot grow without YOU!

This year the North Central will be having a booth at the Toledo Weeks Signals Model Expo April 3, 4, and 5th. We need help manning the booth so if you have a

**2020 North Central Region  
Judging School**  
Saturday April 18th, 2020

School will be in the upstairs Board Room in AMA HQ.  
Registration begins at 8:30 am  
Class will start at 9:00 am  
and conclude around 4:00 pm  
We will have several breaks  
With a lunch break around noon  
Cost for the class is \$25.00  
RedBook Binders \$5.00  
RuleBook inserts \$5.00  
Site 4 will be available for practice on Friday the 17th  
The Judging Practical will also be on Site 4 Sunday the 19th  
9:30 am to 12:00 am

few hours to spare we would appreciate it. This year we will have merchandise to sell and we will have our pictures and videos to display thanks to Bert Garrison. I ask everyone in the district to send pics to Bert so he can make the slideshow. Please try to have these in by the end of February. It takes time to edit and make a nice slideshow. The more pictures the better. Please submit to Bert via bert@advancedmobilesound.com.

We will be having our yearly judging school at the AMA headquarters building April 18th. The judging seminar will be held in the upstairs board room at the AMA HQ. Registration starts at 0830 and class begins at 9am. On Sunday, a flying practical will be held. If you are thinking about getting into IMAC or you're an established member, the yearly judging school will help you understand judging principles and guidelines. Every year I learn something new. Plus, it's always a great way to dust off planes and learn the new sequences.

**IMAC BASIC PRIMER**  
hosted by  
**Kent Radio Aeromodelers**  
8001 Wingeier Ave SE  
Alto, MI 49302  
Saturday, May 2nd, 10:00 am – 5:00 pm  
CD: David Pierce

**Rise to the Challenge!**

In this Primer you will:

- Learn about the IMAC organization and mission
- Get the scoop on scale aerobatics flown in the Basic class
- Walk through the 2020 Basic sequence maneuver by maneuver
- See the elements of a good figure from the judges' perspective
- Watch a flight demonstration of the 2020 Basic sequence
- Fly the Basic sequence with coaching from experienced IMAC pilots

**Admission and Lunch is FREE! Bring any Airplane!**  
[www.kentradioaeromodelers.com](http://www.kentradioaeromodelers.com)  
For questions or more information contact David Pierce 616-406-5226

This year, we will be holding several IMAC PRIMERS. These are informal training sessions designed to help new pilots learn about IMAC. We will be having a primer at KRAM (Alto, Michigan), Galveston Indiana, and possibly another in Valparaiso Indiana. It will be very helpful if some experienced pilots could attend to help out these clubs raise IMAC awareness (several people have stepped forward to help already but more are needed).

This year we will count freestyle as a points championship like we have for the other five classes of IMAC. This has always attracted club members and the general public to come watch and participate in IMAC. It helps draw people in and is very entertaining; while also providing extra income for the host club (more entry fees, more food sold, etc.). All I used this year at the CMA IMAC was a simple \$99 speaker I got off of Amazon. It is tremendously loud and can be bluetoothed to the pilot's phone to play music. Very simple and easy to set up. If any of our contests needs help putting on a freestyle class at their contest, please let me know how I can help.

This year the North Central will again be hosting the AMA Nats in our own backyard. Yes, the wonderful AMA HQ! This year we will be on site 4 which is a great place to hold the event. I would love to see a resurgence in attendance to prove to the AMA how import IMAC is to its membership. This year Rich Whitlow will be the CD and he is trying to wrangle up some great judges to alleviate contest judging as much as possible. He will also be having a more concentrated focus on freestyle this year by holding a multi-day freestyle event! I'm very excited for this new venture and the NORTH CENTRAL should represent there! Please make plans to attend! Till next time...

# The Toledo Show R/C Model Show

April 3th, 4th, & 5th, 2020

## Join us this Season at the Largest R/C Show in the Midwest!

- ➔ IMAC Membership Show Discount (new and past members)
- ➔ New Novice Class Details
- ➔ Get Tips from the Pro's – Building Techniques, Electronics & Set-Up
- ➔ Hat's, Stick Planes, Aresti's and More!

***Saturday Seminar 11:00am***

**“Everything You Need To Know About IMAC”**

***IMAC***

INTERNATIONAL MINIATURE AEROBATIC CLUB, INC.

# Upcoming Events

## March:

7th - IMAC Judging School at Clover Creek - Toone, TN  
7th - Tucson IMAC - Tucson, AZ  
14th - Cooloola Classic - Tin Can Bay, Queensland, Australia  
21st - Ocala Flying Model Club Spring IMAC - Ocala, FL  
21st - IMAC Skills Clinic - Shreveport, LA  
21st - Cactus Classic - Apache Junction, AZ  
27th - IMAC Mexico Primera Fecha Malvinas - Toluca, Mexico  
27th - Fecha IMAC Argentina - Cordoba, Argentina  
28th - 2nd West IMAC Challenge - Odessa, TX  
28th - Wings Over Wangaratta - Wangaratta, Victoria, Australia  
29th - Whitfords IMAC 2020 - Pinjar, Western Australia

## April:

3rd - Toledo RC Model Show - Toledo, OH  
4th - Grizzly Bear IMAC - Richland, WA  
4th - IMAC Flying Judging School - Hinesville, GA  
4th - Hemet Classic - Hemet, CA  
17th - North Central Judging School - Muncie, IN  
18th - Mocksville Spring Classic - Mocksville, NC  
18th - 1st Annual SC Kansas aerobatic Challenge - Cedar Vale, KS  
18th - Salinas IMAC - Salinas, CA  
18th - Southwest Desert Points Race @ Bohn Field - Florence, AZ  
18th - Palermo IMAC National - Palermo, Italy  
18th - Regional IMAC Bogota - Cundinamarca, Columbia  
24th - First Coast IMAC Contest - Jacksonville, FL  
25th - 2020 Pegasus FMAC IMAC Classic - Hagerstown, MD  
25th - 6th Annual SHARKS Club IMAC Challenge - Shreveport, LA  
25th - Higgins Field Spring IMAC - West Richland, WA  
25th - Echuca IMAC 2020 - Koyunga, Victoria, Australia  
26th - South African Power Nationals - Johannesburg, Gouteng, SA

## May:

1st - Snap Roll Poland - Ostrow Wielkopolski, Poland  
2nd - Judging School - Vienna, MD  
2nd - KRAM IMAC Primer - Alto, MI  
2nd - RC Barnstormers Aerobatic Fun Fly - Hillsdale, KS  
2nd - Creston Valley RC Aerobatic Competition - Creston, British Co.  
2nd - Oakdale IMAC - Oakdale, CA  
2nd - 3rd Annual SC-SW Smackdown - El Paso, TX  
2nd - Bayside Buzz Fly-In and BBQ - Caboolture, Queensland, Australia  
16th - State College IMAC Challenge - Central Hall, PA  
16th - Central Indiana IMAC Challenge - Muncie, IN  
16th - BARKS IMAC Challenge - Boise, ID  
16th - 10th Annual MMRCC IMAC Challenge - Byram, MS  
16th - San Giovanni Rotondo IMAC National - Foggio, Italy  
16th - The Cashmoor IMAC Classic - Blandford Forum, Dorset, UK  
23rd - 20th Annual Columbus IMAC Challenge - Galeno, OH  
23rd - 3rd Annual Texas Panhandle IMAC Challenge - Pampa, TX  
23rd - Bear Mountain IMAC - Arvin, CA  
30th - HCRCC Spring Showdown - Newton, Kansas  
30th - Stampede Season Opener - Calgary, Alberta, Canada

## June:

5th - Concord Skyhawks IMAC Contest - Concord, NH  
6th - 24th Annual Spring Classic - Land O Lakes, FL  
6th - Gluedobbers IMAC Challenge - Broken Arrow, OK  
6th - "Big Bob" Memorial Contest - Eagle Point, OR  
6th - West Coast Aerobatic Challenge - Walnut Grove, CA  
13th - 2020 House Mountain IMAC Contest - Corryton, TN  
13th - Saranac IMAC Chuck Rencurell Memorial - Saranac, MI  
13th - Lost Squadron IMAC - Wrightsville, AR  
20th - IMAC Quebec 2020 - Levis, Quebec Canada  
20th - ESAC Jack Stoval IMAC Challenge - Vienna, MD  
20th - Orvieto IMAC National - Orvieto, Terni Italy  
20th - The Wrexham IMAC Wing Down - Ruthin, Denbigshire, UK  
26th - 4th Annual NATS Warmup for IMAC - Salina, KS  
27th - SMFC IMAC Challenge - Tabor City, NC  
27th - Mid-Michigan IMAC Challenge - Jackson, MI

# Why Join IMAC?

The International Miniature Aerobatic Club (IMAC) is an organization dedicated to sport of radio-controlled Scale Aerobatic competition. IMAC operates under the auspices of the USA's Academy of Model Aeronautics (AMA) with a designation as the Special Interest Group (SIG) for R/C Scale Aerobatics. While it's origin is American, the scope of IMAC operations now extends to over 15 countries throughout the world and continues to grow daily.

IMAC members are people just like yourself that love to fly scale aerobatic planes. Like any worthwhile endeavor it takes focus, energy and passion to succeed in this sport. As a pilot, you spend hours learning sequences, tuning your plane, or learning how to do the "perfect" spin entry. You pack up and head out to a contest all ready to compete head to head with your fellow pilots. It's great so far but think about it...what is going on behind the scenes?

- \* Who organizes this stuff?
- \* Who sets the standards so that all events operate on the same level playing field?
- \* Who helps write and maintain the rules that we all fly by?
- \* Who develops the judging schools and training programs?
- \* Who actually writes, refines, and publishes the known sequences you so diligently practice?

## It's IMAC – International Miniature Aerobatic CLUB

Yes a CLUB...people like yourself all contributing to the sport with their time, resources, and passion. If you are serious about flying scale aerobatics, IMAC membership is your way of giving back to the sport.

Yes...you get benefits like discounts off entry fees at every event and the ability to compete with other pilots in your class across your IMAC region for annual bragging rights. You get access to the full IMAC website including contest calendars, buy/sell classifieds at no charge, and a full forum for sharing information with your fellow pilots

Without an international organization like IMAC, the sport of scale aerobatics as we know it may disappear! All of the activities of the organization are focused on making the sport better whether through national judging schools, holding monthly phone conferences, working with the website, working with vendors that contribute to IMAC and these activities cost money. As a not-for-profit organization, IMAC depends on it's members. Regardless if you are in the US/Canada or somewhere in the rest of the world, the sport needs you to be part of the CLUB



Joe Thibodeau & his father David

## Join with the rest of us and support scale aerobatics!

If you fly even a few events throughout the year, you get your money back through event entry fee discounts but more importantly - you support the sport. It doesn't get any better than that!

[www.mini-iac.org](http://www.mini-iac.org)